Women's 400m Split Times - by athlete

LAST UPDATE: 18-Oct-23

Abraham, Shiny (IND) (1965)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1989 IAAF World Cup (Barcelona, ESP)																	*Pascua (1990) - atletismo (I) carreras y marcha*
date 10-Sep-89 time		13.68		25.50		31.18		53.80	53.80	/ ~~8~~ 7							
reaction time		interval			11.82		5.68		22.62	**PB**	# of strides	13.68	11.82	5.68	22.62	25.50	28.30	2.80
		velocity		7.31		8.46		17.61		4.42	7.43		7.31	8.46	17.61	4.42	7.84	7.07	

Abrams, Aliyah (GUY) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Prefontaine Classic (Eugene, OR)																	*Omega Timing (2023) - diamond league race analysis*
date 17-Sep-23 time	6.77	12.37	18.15	24.29	30.62	37.27	44.31	51.97	51.97	2 / 8							
reaction time 0.137	interval		5.60	5.78	6.14	6.33	6.65	7.04	7.66		# of strides	12.37	11.92	12.98	14.70	24.29	27.68	3.39
	velocity	7.39	8.93	8.65	8.14	7.90	7.52	7.10	6.53	7.70		8.08	8.39	7.70	6.80	8.23	7.23	
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 20-Aug-23 time		12.45							51.44	3 / 5							
reaction time 0.229	interval									# of strides	12.45						
	velocity		8.03						7.78	202.5	8.03						
FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA)																	*Omega Timing (2023) - diamond league race analysis*
date 02-Jun-23 time	6.67	12.22	18.00	23.99	30.22	36.76	43.72	51.31	51.31	7 / 5							
reaction time 0.134	interval		5.55	5.78	5.99	6.23	6.54	6.96	7.59		# of strides	12.22	11.77	12.77	14.55	23.99	27.32	3.33
	velocity	7.50	9.01	8.65	8.35	8.03	7.65	7.18	6.59	7.80		8.18	8.50	7.83	6.87	8.34	7.32	
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date 20-Jul-22 time		12.46		24.54		37.52		51.79	51.79	6 / 6							
reaction time 0.157	interval			12.08		12.98		14.27		# of strides	12.46	12.08	12.98	14.27	24.54	27.25	2.71
	velocity		8.03		8.28		7.70		7.01	7.72	198.0	8.03	8.28	7.70	7.01	8.15	7.34	
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date 17-Jul-22 time		12.51		24.81		37.86		51.98	51.98	6 / 2							
reaction time 0.148	interval			12.30		13.05		14.12		# of strides	12.51	12.30	13.05	14.12	24.81	27.17	2.36
	velocity		7.99		8.13		7.66		7.08	7.70	196.2	7.99	8.13	7.66	7.08	8.06	7.36	

Abugan, Folasade (NGR) (1990)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 16-Aug-09 time		12.09		24.04		37.25		51.75	51.75	1 / 6							
reaction time 0.229	interval			11.95		13.21		14.50		# of strides	12.09	11.95	13.21	14.50	24.04	27.71	3.67
	velocity		8.27		8.37		7.57		6.90	7.73		8.27	8.37	7.57	6.90	8.32	7.22	
Heat 3 - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 15-Aug-09 time		12.56		24.68		37.64		51.70	51.70	5 / 4							
reaction time 0.217	interval			12.12		12.96		14.06		# of strides	12.56	12.12	12.96	14.06	24.68	27.02	2.34
	velocity		7.96		8.25		7.72		7.11	7.74		7.96	8.25	7.72	7.11	8.10	7.40	

Achy, Shiori (JPN) (2003)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)																	*Kijima (2019) - research on athlete performance and technique- 2019 data book*
date 18-Oct-19 time	7.28	13.53	19.90	26.61	33.51	40.59	47.92	55.60	55.60	6 / 5							
reaction time 0.185	interval		6.25	6.37	6.71	6.90	7.08	7.33	7.68		# of strides	13.53	13.08	13.98	15.01	26.61	28.99	2.38
	velocity	6.87	8.00	7.85	7.45	7.25	7.06	6.82	6.51	7.19	208.2	7.39	7.65	7.15	6.66	7.52	6.90	
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)																	*Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*
date 04-Aug-19 time	7.32	13.46	19.80	26.33	33.13	40.13	47.40	55.11	55.11	6 / 6							
reaction time	interval		6.14	6.34	6.53	6.80	7.00	7.27	7.71	**PB**	# of strides	13.46	12.87	13.80	14.98	26.33	28.78	2.45
	velocity	6.83	8.14	7.89	7.66	7.35	7.14	6.88	6.49	7.26		7.43	7.77	7.25	6.68	7.60	6.95	

Adachi, Marin (JPN) (2003)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
A FINAL - 2020 Japanese High School National Championships (Hiroshima, JPN)																	*Kobayashi (2002) - national high school and U20 national championhsips*
date 23-Oct-20 time	6.94	13.05	19.44	26.04	32.71	39.62	46.84	54.57	54.57	6 / 2							
reaction time 0.165	interval		6.11	6.39	6.60	6.67	6.91	7.22	7.73		# of strides	13.05	12.99	13.58	14.95	26.04	28.53	2.49
	velocity	7.20	8.18	7.82	7.58	7.50	7.24	6.93	6.47	7.33	210.1	7.66	7.70	7.36	6.69	7.68	7.01	

Adeleke, Rhasidat (IRL) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 23-Aug-23 time		12.22		23.54		35.90		50.13	50.13	4 / 4							
reaction time 0.181	interval			11.32		12.36		14.23		# of strides	12.22	11.32	12.36	14.23	23.54	26.59	3.05
	velocity		8.18		8.83		8.09		7.03	7.98	184.7	8.18	8.83	8.09	7.03	8.50	7.52	
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 21-Aug-23 time		12.48		24.20		36.63		49.87	49.87	5 / 2							
reaction time 0.161	interval			11.72		12.43		13.24		# of strides	12.48	11.72	12.43	13.24	24.20	25.67	1.47
	velocity		8.01		8.53		8.05		7.55	8.02	185.5	8.01	8.53	8.05	7.55	8.26	7.79	
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 20-Aug-23 time		12.90							50.80	5 / 1							
reaction time 0.163	interval									# of strides	12.90						
	velocity		7.75						7.87	185.5	7.75						
FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON)																	*Omega Timing (2023) - diamond league race analysis*
date 21-Jul-23 time	6.74	12.23	17.79	23.58	29.60	35.90	42.55	49.99	49.99	5 / 4							
reaction time 0.144	interval		5.49	5.56	5.79	6.02	6.30	6.65	7.44		# of strides	12.23	11.35	12.32	14.09	23.58	26.41	2.83
	velocity	7.42	9.11	8.99	8.64	8.31	7.94	7.52	6.72	8.00	184.7	8.18	8.81	8.12	7.10	8.48	7.57	
FINAL - 2022 European Athletics Championships (Munich, GER)																	*European Athletics (2022) - european athletics championships race analysis*
date 17-Aug-22 time		12.32		23.94		36.60		50.53	50.53	1 / 5							
reaction time 0.199	interval			11.62		12.66		13.93	**NR PB**	# of strides	12.32	11.62	12.66	13.93	23.94	26.59	2.65

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity	8.12	8.61	7.90	7.18	7.92	183.0	8.12	8.61	7.90	7.18	8.35	7.52			

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	12.33	24.15	36.68	50.81	50.81	5 / 4									
reaction time	0.178	interval		11.82	12.53	14.13		# of strides	12.33	11.82	12.53	14.13	24.15	26.66	2.51		
		velocity	8.11	8.46	7.98	7.08	7.87	183.0	8.11	8.46	7.98	7.08	8.28	7.50			

Heat 4 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	12.65	24.68	37.40	51.59	51.59	2 / 2									
reaction time	0.151	interval		12.03	12.72	14.19		# of strides	12.65	12.03	12.72	14.19	24.68	26.91	2.23		
		velocity	7.91	8.31	7.86	7.05	7.75	184.0	7.91	8.31	7.86	7.05	8.10	7.43			

Adeloye, Tosin (NGR) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2015 IAAF World Championships (Beijing, CHN)											*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*						
date 24-Aug-15 time	6.87	12.54	18.39	24.54	31.01	37.66	44.65	52.42	52.42	9 / ~~5~~							
reaction time 0.234 interval		5.67	5.85	6.15	6.47	6.65	6.99	7.77	DV	# of strides	12.54	12.00	13.12	14.76	24.54	27.88	3.34
velocity	7.28	8.82	8.55	8.13	7.73	7.52	7.15	6.44	7.63		7.97	8.33	7.62	6.78	8.15	7.17	

Aguilar, Evelyn (COL) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)											*Seiko Timing (2023) - world championship race analysis*						
date 21-Aug-23 time		12.42		24.14		37.06		51.07	51.07	2 / 5							
reaction time 0.157 interval				11.72		12.92		14.01	PB	# of strides	12.42	11.72	12.92	14.01	24.14	26.93	2.79
velocity		8.05		8.53		7.74		7.14	7.83		8.05	8.53	7.74	7.14	8.29	7.43	
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)											*Seiko Timing (2023) - world championship race analysis*						
date 20-Aug-23 time		12.37		24.09		36.90		51.27	51.27	2 / 5							
reaction time 0.163 interval				11.72		12.81		14.37	PB	# of strides	12.37	11.72	12.81	14.37	24.09	27.18	3.09
velocity		8.08		8.53		7.81		6.96	7.80		8.08	8.53	7.81	6.96	8.30	7.36	

Ajayi, Yinka (NGR) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date 07-Aug-17 time		12.56		24.74		37.71	44.55	51.85	52.10	8 / 6							
reaction time 0.247 interval				12.18		12.97	6.84	7.30		# of strides	12.56	12.18	12.97	14.14	24.74	27.11	2.37
velocity		7.96		8.21		7.71	7.31	6.85	7.68	198.2	7.96	8.21	7.71	7.07	8.08	7.38	

Akasaka, Mirei (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)											*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*						
date 23-Oct-21 time	7.08	12.85	18.79	25.13	31.89	39.40			39.40	6 / 5							
reaction time 0.196 interval		5.77	5.94	6.34	6.76	7.51				# of strides	12.85	12.28	14.27		25.13		
velocity	7.06	8.67	8.42	7.89	7.40	6.66			7.61	152.2	7.78	8.14	7.01		7.96		

Akinsulie, Esther (CAN) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2009 IAAF World Championships (Berlin, GER)											*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*						
date 15-Aug-09 time		12.60		25.34		38.77		53.21	53.21	5 / 4							
reaction time 0.194 interval				12.74		13.43		14.44		# of strides	12.60	12.74	13.43	14.44	25.34	27.87	2.53
velocity		7.94		7.85		7.45		6.93	7.52		7.94	7.85	7.45	6.93	7.89	7.18	

Al-Saiddi, Line (NOR) (2006)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)											*Omega Timing (2023) - diamond league race analysis*						
date 15-Jun-23 time	6.96	12.85	18.89	25.07	31.61	38.52	45.63	53.28	53.28	4 / 1							
reaction time 0.142 interval		5.89	6.04	6.18	6.54	6.91	7.11	7.65	PB	# of strides	12.85	12.22	13.45	14.76	25.07	28.21	3.14
velocity	7.18	8.49	8.28	8.09	7.65	7.24	7.03	6.54	7.51		7.78	8.18	7.43	6.78	7.98	7.09	

Alekseyeva, Tatyana (RUS) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 IAAF World Championships (Athens, GRE)											*Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*						
date 04-Aug-97 time	6.48	12.24	17.64	23.48	29.72	36.28	43.24	51.20	51.37	2 / 8							
reaction time 0.167 interval		5.76	5.40	5.84	6.24	6.56	6.96	7.96		# of strides	12.24	11.24	12.80	14.92	23.48	27.72	4.24
velocity	7.72	8.68	9.26	8.56	8.01	7.62	7.18	6.28	7.79		8.17	8.90	7.81	6.70	8.52	7.22	
FINAL - 1993 IAAF World Championships (Stuttgart, GER)											*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*						
date 17-Aug-93 time				23.48				50.52	50.52	5 / 4							
reaction time interval								27.04		# of strides					23.48	27.04	3.56
velocity				8.52				7.40	7.92						8.52	7.40	

Alexander, Kineke (VIN) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2015 IAAF World Championships (Beijing, CHN)											*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*						
date 24-Aug-15 time	6.92	12.74	18.82	25.14	31.65	38.24	44.98	52.24	52.24	8 / 6							
reaction time 0.217 interval		5.82	6.08	6.32	6.51	6.59	6.74	7.26		# of strides	12.74	12.40	13.10	14.00	25.14	27.10	1.96
velocity	7.23	8.59	8.22	7.91	7.68	7.59	7.42	6.89	7.66		7.85	8.06	7.63	7.14	7.96	7.38	
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)											*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*						
date 16-Aug-09 time		12.52		24.59		38.08		53.43	53.43	2 / 7							
reaction time 0.177 interval				12.07		13.49		15.35		# of strides	12.52	12.07	13.49	15.35	24.59	28.84	4.25
velocity		7.99		8.29		7.41		6.51	7.49		7.99	8.29	7.41	6.51	8.13	6.93	
Heat 2 - 2009 IAAF World Championships (Berlin, GER)											*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*						
date 15-Aug-09 time		12.91		24.83		37.78		52.44	52.44	5 / 4							
reaction time 0.193 interval				11.92		12.95		14.66		# of strides	12.91	11.92	12.95	14.66	24.83	27.61	2.78
velocity		7.75		8.39		7.72		6.82	7.63		7.75	8.39	7.72	6.82	8.05	7.24	

Allcock, Amy (GBR) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Müller Anniversary Games (London, GBR)											*Omega Timing (2018) - diamond league race analysis*						
date 22-Jul-18 time		12.8		24.9		37.6		51.36	51.36	8 / 6							
reaction time 0.157 interval				12.1		12.7		13.8	PB	# of strides	12.80	12.10	12.70	13.76	24.90	26.46	1.56
velocity		7.81		8.26		7.87		7.27	7.79	194.7	7.81	8.26	7.87	7.27	8.03	7.56	

Amertil, Christine (BAH) (1979)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																			
												Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m							
date	24-Sep-06	time	6.7	12.3	18.1	24.0	30.3	36.7	43.5	50.68	50.68	6 / 1							
reaction time		interval		5.60	5.80	5.90	6.30	6.40	6.80	7.18		# of strides	12.30	11.70	12.70	13.98	24.00	26.68	2.68
		velocity	7.46	8.93	8.62	8.47	7.94	7.81	7.35	6.96	7.89		8.13	8.55	7.87	7.15	8.33	7.50	
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)																			
												Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix							
date	19-Sep-05	time		12.53		24.40		36.42	43.03	50.09	50.09	6 / 2							
reaction time		interval				11.87		12.02	6.61	7.06	**PB**	# of strides	12.53	11.87	12.02	13.67	24.40	25.69	1.29
		velocity		7.98		8.42		8.32	7.56	7.08	7.99		7.98	8.42	8.32	7.32	8.20	7.79	
FINAL - 2004 Olympic Games (Athens, GRE)																			
												Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016							
date	24-Aug-04	time		12.1		24.0		36.4		50.4	50.37	8 / 7							
reaction time	0.276	interval				11.9		12.4		14.0		# of strides	12.10	11.90	12.40	14.00	24.00	26.40	2.40
		velocity		8.26		8.40		8.06		7.14	7.94		8.26	8.40	8.06	7.14	8.33	7.58	

Amlie, Sigrid Kongssund (NOR) (200:

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)																			
												Omega Timing (2023) - diamond league race analysis							
date	15-Jun-23	time	7.37	13.71	20.23	26.74	33.47	40.51	47.70	55.34	55.34	2 / 5							
reaction time	0.186	interval		6.34	6.52	6.51	6.73	7.04	7.19	7.64		# of strides	13.71	13.03	13.77	14.83	26.74	28.60	1.86
		velocity	6.78	7.89	7.67	7.68	7.43	7.10	6.95	6.54	7.23		7.29	7.67	7.26	6.74	7.48	6.99	
National FINAL - 2019 Bislett Games (Olso, NOR)																			
												Omega Timing (2019) - diamond league race analysis							
date	13-Jun-19	time		13.5		26.4		41.0		56.98	56.98	1 / 7							
reaction time	0.174	interval				12.9		14.6		16.0	**PB**	# of strides	13.50	12.90	14.60	15.98	26.40	30.58	4.18
		velocity		7.41		7.75		6.85		6.26	7.02		7.41	7.75	6.85	6.26	7.58	6.54	

Amoore, Judy (AUS) (1940)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)																			
												Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf							
date	17-Oct-64	time				24.2				53.4	53.4	3 / 3							
reaction time		interval								29.20		# of strides					24.20	29.20	5.00
		velocity				8.26				6.85	7.49						8.26	6.85	

Anderson, Andrea (USA) (1977)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																			
												Hymans (2008) - history of the US olympic trials - track and field							
date	16-Jul-00	time		12.2		23.4		36.0		51.32	51.32	1 / 6							
reaction time		interval				11.20		12.60		15.32		# of strides	12.20	11.20	12.60	15.32	23.40	27.92	4.52
		velocity		8.20		8.93		7.94		6.53	7.79		8.20	8.93	7.94	6.53	8.55	7.16	

Angelia, Niken (INA) (1997)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 East Java National Championships (Surabaya, INA)																			
												Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka							
date	15-Apr-16	time	7.51	15.24	22.02	29.68	38.19	46.96	54.28	64.38	64.38	/ 7							
reaction time		interval		7.73	6.78	7.66	8.51	8.77	7.32	10.10		# of strides	15.24	14.44	17.28	17.42	29.68	34.70	5.02
		velocity	6.66	6.47	7.37	6.53	5.88	5.70	6.83	4.95	6.21		6.56	6.93	5.79	5.74	6.74	5.76	

Antyukh, Natalya (RUS) (1981)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 IAAF World Championships (Osaka, JPN)																			
												Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics							
date	29-Aug-07	time	6.78	12.19	17.75	23.53	29.58	35.93	42.66	50.33	50.33	5 / 6							
reaction time	0.161	interval		5.41	5.56	5.78	6.05	6.35	6.73	7.67		# of strides	12.19	11.34	12.40	14.40	23.53	26.80	3.27
		velocity	7.37	9.24	8.99	8.65	8.26	7.87	7.43	6.52	7.95	185.0	8.20	8.82	8.06	6.94	8.50	7.46	
FINAL - 2004 Olympic Games (Athens, GRE)																			
												Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016							
date	24-Aug-04	time		12.1		23.6		35.9		49.9	49.89	6 / 3							
reaction time	0.263	interval				11.5		12.3		14.0		# of strides	12.10	11.50	12.30	14.00	23.60	26.30	2.70
		velocity		8.26		8.70		8.13		7.14	8.02		8.26	8.70	8.13	7.14	8.47	7.60	
FINAL - 2001 European Cup (Bremen, GER)																			
												Graubner (2007) - http://www.fgs.uni-halle.de							
date	23-Jun-01	time		12.76		24.72		37.36		51.37	51.37	/ 3							
reaction time		interval				11.96		12.64		14.01		# of strides	12.76	11.96	12.64	14.01	24.72	26.65	1.93
		velocity		7.84		8.36		7.91		7.14	7.79		7.84	8.36	7.91	7.14	8.09	7.50	

Aoki, Rin (JPN) (1998)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 National Sports Festival (Fukui, JPN)																			
												Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition							
date	07-Oct-18	time	6.97	13.01	19.44	26.36	33.50	40.76	48.05	55.46	55.46	1 / 6							
reaction time	0.161	interval		6.04	6.43	6.92	7.14	7.26	7.29	7.41		# of strides	13.01	13.35	14.40	14.70	26.36	29.10	2.74
		velocity	7.17	8.28	7.78	7.23	7.00	6.89	6.86	6.75	7.21		7.69	7.49	6.94	6.80	7.59	6.87	
FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			
												Yamanaka (2017) - male and female 400m analysis in the 2017 season							
date	08-Oct-17	time	7.12	13.04	19.30	26.00	33.05	40.38	47.91	55.80	55.80	2 / 6							
reaction time	0.159	interval		5.92	6.26	6.70	7.05	7.33	7.53	7.89		# of strides	13.04	12.96	14.38	15.42	26.00	29.80	3.80
		velocity	7.02	8.45	7.99	7.46	7.09	6.82	6.64	6.34	7.17	218.0	7.67	7.72	6.95	6.49	7.69	6.71	
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
												(2017) - tfdata-store.com/2017/10/12/post-1100/							
date	08-Oct-17	time		13.04		25.85		39.97		55.84	55.84	3 / 3							
reaction time	0.153	interval				12.81		14.12		15.87		# of strides	13.04	12.81	14.12	15.87	25.85	29.99	4.14
		velocity		7.67		7.81		7.08		6.30	7.16	218.0	7.67	7.81	7.08	6.30	7.74	6.67	
FINAL - 2017 Japanese National Championships (Osaka, JPN)																			
												Yamanaka (2017) - male and female 400m analysis in the 2017 season							
date	24-Jun-17	time	7.11	13.36	19.65	26.11	32.75	39.82	47.16	54.85	54.85	3 / 5							
reaction time	0.180	interval		6.25	6.29	6.46	6.64	7.07	7.34	7.69		# of strides	13.36	12.75	13.71	15.03	26.11	28.74	2.63
		velocity	7.03	8.00	7.95	7.74	7.53	7.07	6.81	6.50	7.29	218.2	7.49	7.84	7.29	6.65	7.66	6.96	
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)																			
												(2017) - tfdata-store.com/2017/07/10/post-978/							
date	23-Jun-17	time		12.95		25.42		39.23		54.49	54.49	3 / 4							
reaction time	0.156	interval				12.47		13.81		15.26		# of strides	12.95	12.47	13.81	15.26	25.42	29.07	3.65
		velocity		7.72		8.02		7.24		6.55	7.34	216.5	7.72	8.02	7.24	6.55	7.87	6.88	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.02	12.91	19.04	25.50	32.40	39.48	46.89	54.83	54.83	/ 3						
reaction time		interval		5.89	6.13	6.46	6.90	7.08	7.41	7.94		# of strides	12.91	12.59	13.98	15.35	25.50	29.33	3.83
		velocity	7.12	8.49	8.16	7.74	7.25	7.06	6.75	6.30	7.30		7.75	7.94	7.15	6.51	7.84	6.82	

FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m) — *(2017) - tfdata-store.com/2017/05/17/post-537/*

																		100m-300m
date	23-Apr-17	time		12.69		24.82		38.47			38.47	5 / 3						
reaction time		interval				12.13		13.65			**PB**	# of strides	12.69	12.13	13.65		24.82	*25.78*
		velocity		7.88		8.24		7.33			7.80	162.2	7.88	8.24	7.33		8.06	*7.76*

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	10-Oct-16	time	6.97	12.93	19.09	25.78	32.72	39.73	46.97	54.67	54.67	7 / 1						
reaction time	0.175	interval		5.96	6.16	6.69	6.94	7.01	7.24	7.70		# of strides	12.93	12.85	13.95	14.94	25.78	28.89	3.11
		velocity	7.17	8.39	8.12	7.47	7.20	7.13	6.91	6.49	7.32		7.73	7.78	7.17	6.69	7.76	6.92	

FINAL - 2016 Japanese National High School Championships (Okayama, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	29-Jul-16	time	6.99	12.65	18.55	24.96	31.80	39.07	46.51	54.14	54.14	7 / 1						
reaction time	0.177	interval		5.66	5.90	6.41	6.84	7.27	7.44	7.63		# of strides	12.65	12.31	14.11	15.07	24.96	29.18	4.22
		velocity	7.15	8.83	8.47	7.80	7.31	6.88	6.72	6.55	7.39		7.91	8.12	7.09	6.64	8.01	6.85	

FINAL - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	6.96	12.74	18.64	24.90	31.51	38.48	45.75	53.66	53.66	4 / 2						
reaction time	0.213	interval		5.78	5.90	6.26	6.61	6.97	7.27	7.91		# of strides	12.74	12.16	13.58	15.18	24.90	28.76	3.86
		velocity	7.18	8.65	8.47	7.99	7.56	7.17	6.88	6.32	7.45		7.85	8.22	7.36	6.59	8.03	6.95	

Heat 1 - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	7.09	12.93	18.99	25.36	31.95	38.80	45.89	53.44	53.44	8 / 1						
reaction time	0.215	interval		5.84	6.06	6.37	6.59	6.85	7.09	7.55	**PB**	# of strides	12.93	12.43	13.44	14.64	25.36	28.08	2.72
		velocity	7.05	8.56	8.25	7.85	7.59	7.30	7.05	6.62	7.49		7.73	8.05	7.44	6.83	7.89	7.12	

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.04	12.98	19.24	25.78	32.64	39.79	47.14	54.87	54.87	/ 2						
reaction time		interval		5.94	6.26	6.54	6.86	7.15	7.35	7.73		# of strides	12.98	12.80	14.01	15.08	25.78	29.09	3.31
		velocity	7.10	8.42	7.99	7.65	7.29	6.99	6.80	6.47	7.29		7.70	7.81	7.14	6.63	7.76	6.88	

U19 FINAL - 2015 National Sports Festival (Wakayama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	05-Oct-15	time	7.20	13.34	19.70	26.42	33.43	40.60	47.73	55.41	55.41	/ 3						
reaction time		interval		6.14	6.36	6.72	7.01	7.17	7.13	7.68		# of strides	13.34	13.08	14.18	14.81	26.42	28.99	2.57
		velocity	6.94	8.14	7.86	7.44	7.13	6.97	7.01	6.51	7.22		7.50	7.65	7.05	6.75	7.57	6.90	

FINAL - 2015 Japanese National High School Championships (Wakayama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	29-Jul-15	time	7.21	13.29	19.49	26.00	32.84	39.90	47.05	54.74	54.74	/ 3						
reaction time		interval		6.08	6.20	6.51	6.84	7.06	7.15	7.69	**PB**	# of strides	13.29	12.71	13.90	14.84	26.00	28.74	2.74
		velocity	6.93	8.22	8.06	7.68	7.31	7.08	6.99	6.50	7.31		7.52	7.87	7.19	6.74	7.69	6.96	

Aoki, Sayaka (JPN) (1986)		**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2021 Japanese National Championships (Osaka, JPN) — *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	6.96	12.76	18.64	24.71	31.08	37.86	45.16	53.42	53.42	4 / 3						
reaction time	0.204	interval		5.80	5.88	6.07	6.37	6.78	7.30	8.26		# of strides	12.76	11.95	13.15	15.56	24.71	28.71	4.00
		velocity	7.18	8.62	8.50	8.24	7.85	7.37	6.85	6.05	7.49		7.84	8.37	7.60	6.43	8.09	6.97	

FINAL - 2018 Japanese Corporate Championships (Osaka, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Sep-18	time	7.03	13.13	19.45	26.18	33.16	40.36	47.67	55.06	55.06	7 / 2						
reaction time	0.158	interval		6.10	6.32	6.73	6.98	7.20	7.31	7.39		# of strides	13.13	13.05	14.18	14.70	26.18	28.88	2.70
		velocity	7.11	8.20	7.91	7.43	7.16	6.94	6.84	6.77	7.26		7.62	7.66	7.05	6.80	7.64	6.93	

FINAL - 2017 National Sports Festival (Matsuyama, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	08-Oct-17	time	6.74	12.77	19.10	25.74	32.58	39.67	47.13	55.19	55.19	7 / 4						
reaction time	0.202	interval		6.03	6.33	6.64	6.84	7.09	7.46	8.06		# of strides	12.77	12.97	13.93	15.52	25.74	29.45	3.71
		velocity	7.42	8.29	7.90	7.53	7.31	7.05	6.70	6.20	7.25	202.2	7.83	7.71	7.18	6.44	7.77	6.79	

Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		12.91		26.06		39.97		54.75	54.75	8 / 2						
reaction time	0.232	interval				13.15		13.91		14.78		# of strides	12.91	13.15	13.91	14.78	26.06	28.69	2.63
		velocity		7.75		7.60		7.19		6.77	7.31	200.5	7.75	7.60	7.19	6.77	7.67	6.97	

FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) — *(2017) - tfdata-store.com/2017/10/05/post-1097/*

date	24-Sep-17	time		12.94		25.79		39.31		54.13	54.13	6 / 1						
reaction time	0.213	interval				12.85		13.52		14.82		# of strides	12.94	12.85	13.52	14.82	25.79	28.34	2.55
		velocity		7.73		7.78		7.40		6.75	7.39	203.5	7.73	7.78	7.40	6.75	7.75	7.06	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	6.84	12.62	18.67	24.96	31.66	38.80	46.37	54.50	54.50	/ 1						
reaction time		interval		5.78	6.05	6.29	6.70	7.14	7.57	8.13		# of strides	12.62	12.34	13.84	15.70	24.96	29.54	4.58
		velocity	7.31	8.65	8.26	7.95	7.46	7.00	6.61	6.15	7.34		7.92	8.10	7.23	6.37	8.01	6.77	

Heat 2 - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	6.89	12.83	18.95	25.31	31.96	39.01	46.60	54.87	54.87	3 / 4						
reaction time	0.264	interval		5.94	6.12	6.36	6.65	7.05	7.59	8.27		# of strides	12.83	12.48	13.70	15.86	25.31	29.56	4.25
		velocity	7.26	8.42	8.17	7.86	7.52	7.09	6.59	6.05	7.29		7.79	8.01	7.30	6.31	7.90	6.77	

FINAL - 2015 National Sports Festival (Wayakama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	6.89	13.03	19.62	26.40	33.28	40.28	47.54	55.14	55.14	9 / 5						
reaction time		interval		6.14	6.59	6.78	6.88	7.00	7.26	7.60		# of strides	13.03	13.37	13.88	14.86	26.40	28.74	2.34
		velocity	7.26	8.14	7.59	7.37	7.27	7.14	6.89	6.58	7.25		7.67	7.48	7.20	6.73	7.58	6.96	

FINAL - 2015 Japanese National Championships (Niigata, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	6.84	12.66	18.72	25.00	31.71	38.57	45.58	53.05	53.05	5 / 1						
reaction time	0.176	interval		5.82	6.06	6.28	6.71	6.86	7.01	7.47	**PB**	# of strides	12.66	12.34	13.57	14.48	25.00	28.05	3.05
		velocity	7.31	8.59	8.25	7.96	7.45	7.29	7.13	6.69	7.54	200.0	7.90	8.10	7.37	6.91	8.00	7.13	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time		13.32		26.03		38.93	46.25	53.96	53.96	8 / 7						
reaction time		interval				12.71		12.90	7.32	7.71	**PB**	# of strides	13.32	12.71	12.90	15.03	26.03	27.93	1.90
		velocity		7.51		7.87		7.75	6.83	6.49	7.41		7.51	7.87	7.75	6.65	7.68	7.16	

Aono, Akari (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17	time		13.59		26.74		40.80		56.13	56.13	4 / 8							
reaction time	interval				13.15		14.06		15.33		# of strides	13.59	13.15	14.06	15.33	26.74	29.39	2.65
	velocity		7.36		7.60		7.11		6.52	7.13	211.0	7.36	7.60	7.11	6.52	7.48	6.81	

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.55		26.70		40.31		54.87	54.87	8 / 2						
reaction time	0.209	interval				13.15		13.61		14.56		# of strides	13.55	13.15	13.61	14.56	26.70	28.17	1.47
		velocity		7.38		7.60		7.35		6.87	7.29	209.5	7.38	7.60	7.35	6.87	7.49	7.10	

Aoyama, Seika (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN)																	*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*
date 06-Jun-21	time	7.01	12.87	18.94	25.24	31.83	38.73	45.91	53.57	53.57	/ 1							
reaction time	interval		5.86	6.07	6.30	6.59	6.90	7.18	7.66		# of strides	12.87	12.37	13.49	14.84	25.24	28.33	3.09
	velocity	7.13	8.53	8.24	7.94	7.59	7.25	6.96	6.53	7.47		7.77	8.08	7.41	6.74	7.92	7.06	

FINAL - 2020 Japanese National Championships (Niigata, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	02-Oct-20	time	6.97	12.80	18.82	25.06	31.62	38.50	45.72	53.55	53.55	4 / 1						
reaction time	0.193	interval		5.83	6.02	6.24	6.56	6.88	7.22	7.83		# of strides	12.80	12.26	13.44	15.05	25.06	28.49	3.43
		velocity	7.17	8.58	8.31	8.01	7.62	7.27	6.93	6.39	7.47	210.0	7.81	8.16	7.44	6.64	7.98	7.02	

Heat 1 - 2020 Japanese National Championships (Niigata, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	01-Oct-20	time	6.86	12.59	18.49	24.66	31.11	38.00	45.28	53.29	53.29	6 / 1						
reaction time	0.185	interval		5.73	5.90	6.17	6.45	6.89	7.28	8.01		# of strides	12.59	12.07	13.34	15.29	24.66	28.63	3.97
		velocity	7.29	8.73	8.47	8.10	7.75	7.26	6.87	6.24	7.51	210.0	7.94	8.29	7.50	6.54	8.11	6.99	

FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	19-Sep-20	time	7.05	12.96	19.05	25.37	31.92	38.76	45.96	53.55	53.55	7 / 1						
reaction time	0.234	interval		5.91	6.09	6.32	6.55	6.84	7.20	7.59		# of strides	12.96	12.41	13.39	14.79	25.37	28.18	2.81
		velocity	7.09	8.46	8.21	7.91	7.63	7.31	6.94	6.59	7.47		7.72	8.06	7.47	6.76	7.88	7.10	

FINAL - 2020 World Athletics Trials (Fuji, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	06-Sep-20	time	6.93	12.83	18.92	25.13	31.55	38.37	45.66	53.41	53.41	5 / 1						
reaction time		interval		5.90	6.09	6.21	6.42	6.82	7.29	7.75		# of strides	12.83	12.30	13.24	15.04	25.13	28.28	3.15
		velocity	7.22	8.47	8.21	8.05	7.79	7.33	6.86	6.45	7.49	208.0	7.79	8.13	7.55	6.65	7.96	7.07	

FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	23-Aug-20	time	6.96	12.72	18.60	24.77	31.27	38.21	45.45	53.35	53.35	7 / 1						
reaction time	0.205	interval		5.76	5.88	6.17	6.50	6.94	7.24	7.90		# of strides	12.72	12.05	13.44	15.14	24.77	28.58	3.81
		velocity	7.18	8.68	8.50	8.10	7.69	7.20	6.91	6.33	7.50		7.86	8.30	7.44	6.61	8.07	7.00	

FINAL - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - research on athlete performance and technique- 2019 data book*

date	28-Jun-19	time	7.08	13.01	19.15	25.46	31.98	38.85	46.02	53.68	53.68	4 / 1						
reaction time	0.228	interval		5.93	6.14	6.31	6.52	6.87	7.17	7.66		# of strides	13.01	12.45	13.39	14.83	25.46	28.22	2.76
		velocity	7.06	8.43	8.14	7.92	7.67	7.28	6.97	6.53	7.45	209.5	7.69	8.03	7.47	6.74	7.86	7.09	

Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	27-Jun-19	time	6.98	12.79	18.89	25.16	31.63	38.53	45.82	53.71	53.71	5 / 1						
reaction time	0.235	interval		5.81	6.10	6.27	6.47	6.90	7.29	7.89		# of strides	12.79	12.37	13.37	15.18	25.16	28.55	3.39
		velocity	7.16	8.61	8.20	7.97	7.73	7.25	6.86	6.34	7.45		7.82	8.08	7.48	6.59	7.95	7.01	

A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Kobayashi (2019) - research on athlete performance and technique- 2019 data book*

date	03-May-19	time	7.03	13.09	19.25	25.50	32.01	38.86	46.09	53.86	53.86	/ 2						
reaction time		interval		6.06	6.16	6.25	6.51	6.85	7.23	7.77		# of strides	13.09	12.41	13.36	15.00	25.50	28.36	2.86
		velocity	7.11	8.25	8.12	8.00	7.68	7.30	6.92	6.44	7.43		7.64	8.06	7.49	6.67	7.84	7.05	

Heat 1 - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	22-Jun-18	time	7.26	13.37	19.70	26.39	33.30	40.63	48.11	55.92	55.92	4 / 5						
reaction time	0.190	interval		6.11	6.33	6.69	6.91	7.33	7.48	7.81		# of strides	13.37	13.02	14.24	15.29	26.39	29.53	3.14
		velocity	6.89	8.18	7.90	7.47	7.24	6.82	6.68	6.40	7.15	214.7	7.48	7.68	7.02	6.54	7.58	6.77	

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	7.12	13.06	19.34	25.94	32.91	40.39	48.31	56.95	56.95	8 / 8						
reaction time	0.200	interval		5.94	6.28	6.60	6.97	7.48	7.92	8.64		# of strides	13.06	12.88	14.45	16.56	25.94	31.01	5.07
		velocity	7.02	8.42	7.96	7.58	7.17	6.68	6.31	5.79	7.02		7.66	7.76	6.92	6.04	7.71	6.45	

FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	03-May-18	time	7.15	13.20	19.49	25.89	32.58	39.59	47.19	55.86	55.86	6 / 7						
reaction time	0.229	interval		6.05	6.29	6.40	6.69	7.01	7.60	8.67		# of strides	13.20	12.69	13.70	16.27	25.89	29.97	4.08
		velocity	6.99	8.26	7.95	7.81	7.47	7.13	6.58	5.77	7.16	211.7	7.58	7.88	7.30	6.15	7.72	6.67	

FINAL - 2017 Japanese National Championships (Osaka, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	6.98	12.95	19.00	25.26	31.77	38.73	46.31	54.98	54.98	4 / 6						
reaction time	0.188	interval		5.97	6.05	6.26	6.51	6.96	7.58	8.67		# of strides	12.95	12.31	13.47	16.25	25.26	29.72	4.46

		velocity	7.16	8.38	8.26	7.99	7.68	7.18	6.60	5.77	7.28	210.2	7.72	8.12	7.42	6.15	7.92	6.73

Heat 2 - 2017 Japanese National Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time		13.11		25.43		38.68		53.61	53.61	8 / 2						
reaction time	0.186	interval				12.32		13.25		14.93		# of strides	13.11	12.32	13.25	14.93	25.43	28.18	2.75
		velocity		7.63		8.12		7.55		6.70	7.46	205.0	7.63	8.12	7.55	6.70	7.86	7.10	

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/05/13/post-441/*

date	11-May-17	time		12.79		24.79		37.89		53.03	53.03	7 / 1						
reaction time		interval				12.00		13.10		15.14		# of strides	12.79	12.00	13.10	15.14	24.79	28.24	3.45
		velocity		7.82		8.33		7.63		6.61	7.54		7.82	8.33	7.63	6.61	8.07	7.08	

FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m) *(2017) - tfdata-store.com/2017/05/17/post-537/*

date	23-Apr-17	time		12.39		24.32		37.76			37.76	6 / 1						***100m-300m***
reaction time		interval				11.93		13.44			**PB**	# of strides	12.39	11.93	13.44		24.32		*25.37*
		velocity		8.07		8.38		7.44			7.94	153.0	8.07	8.38	7.44		8.22		*7.88*

FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	09-Oct-16	time	6.90	12.76	18.79	25.11	31.73	38.75	46.17	54.35	54.35	5 / 1						
reaction time	0.247	interval		5.86	6.03	6.32	6.62	7.02	7.42	8.18		# of strides	12.76	12.35	13.64	15.60	25.11	29.24	4.13
		velocity	7.25	8.53	8.29	7.91	7.55	7.12	6.74	6.11	7.36		7.84	8.10	7.33	6.41	7.96	6.84	

FINAL - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	6.73	12.46	18.40	24.54	31.01	37.89	45.12	53.04	53.04	5 / 1						
reaction time	0.221	interval		5.73	5.94	6.14	6.47	6.88	7.23	7.92		# of strides	12.46	12.08	13.35	15.15	24.54	28.50	3.96
		velocity	7.43	8.73	8.42	8.14	7.73	7.27	6.92	6.31	7.54		8.03	8.28	7.49	6.60	8.15	7.02	

Heat 3 - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	6.82	12.50	18.37	24.50	31.00	37.92	45.42	53.28	53.28	6 / 1						
reaction time	0.215	interval		5.68	5.87	6.13	6.50	6.92	7.50	7.86		# of strides	12.50	12.00	13.42	15.36	24.50	28.78	4.28
		velocity	7.33	8.80	8.52	8.16	7.69	7.23	6.67	6.36	7.51		8.00	8.33	7.45	6.51	8.16	6.95	

FINAL - 2015 National Sports Festival (Wayakama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	6.94	12.80	19.14	25.70	32.42	39.34	46.40	53.75	53.75	5 / 1						
reaction time		interval		5.86	6.34	6.56	6.72	6.92	7.06	7.35		# of strides	12.80	12.90	13.64	14.41	25.70	28.05	2.35
		velocity	7.20	8.53	7.89	7.62	7.44	7.23	7.08	6.80	7.44		7.81	7.75	7.33	6.94	7.78	7.13	

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	6.88	12.64	18.55	24.78	31.35	38.52	45.98	53.73	53.73	/ 1						
reaction time		interval		5.76	5.91	6.23	6.57	7.17	7.46	7.75		# of strides	12.64	12.14	13.74	15.21	24.78	28.95	4.17
		velocity	7.27	8.68	8.46	8.03	7.61	6.97	6.70	6.45	7.44		7.91	8.24	7.28	6.57	8.07	6.91	

FINAL - 2013 Japanese National High School Championships (Oita, JPN) *Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*

date	30-Jul-13	time		13.50		26.70		40.12		54.24	54.24	7 / 4						
reaction time		interval				13.20		13.42		14.12		# of strides	13.50	13.20	13.42	14.12	26.70	27.54	0.84
		velocity		7.41		7.58		7.45		7.08	7.37		7.41	7.58	7.45	7.08	7.49	7.26	

Arai, Arashima (JPN)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date		time	7.40	13.60	20.07	26.95	33.87	40.96	48.29	56.16	56.16	/ 7						
reaction time		interval		6.20	6.47	6.88	6.92	7.09	7.33	7.87		# of strides	13.60	13.35	14.01	15.20	26.95	29.21	2.26
		velocity	6.76	8.06	7.73	7.27	7.23	7.05	6.82	6.35	7.12		7.35	7.49	7.14	6.58	7.42	6.85	

Arendt, Helga (FRG) (1964)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	26-Sep-88	time		12.53		24.33		37.06		51.17	51.17	7 / 7						
reaction time	0.218	interval				11.80		12.73		14.11		# of strides	12.53	11.80	12.73	14.11	24.33	26.84	2.51
		velocity		7.98		8.47		7.86		7.09	7.82		7.98	8.47	7.86	7.09	8.22	7.45	

Semi-Final 2 - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.34		24.00		36.59		50.36	50.36	1 / 4						
reaction time		interval				11.66		12.59		13.77	**PB**	# of strides	12.34	11.66	12.59	13.77	24.00	26.36	2.36
		velocity		8.10		8.58		7.94		7.26	7.94		8.10	8.58	7.94	7.26	8.33	7.59	

Austin, Lauren (USA) (1986)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time				25.00		38.64	45.86	53.61	53.61	2 / 7						
reaction time		interval						13.64	7.22	7.75		# of strides			13.64	14.97	25.00	28.61	3.61
		velocity				8.00		7.33	6.93	6.45	7.46				7.33	6.68	8.00	6.99	

Azevedo, Cátia (POR) (1994)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Heat 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.79		24.72		37.63		51.93	51.93	5 / 4						
reaction time	0.191	interval				11.93		12.91		14.30		# of strides	12.79	11.93	12.91	14.30	24.72	27.21	2.49
		velocity		7.82		8.38		7.75		6.99	7.70	193.7	7.82	8.38	7.75	6.99	8.09	7.35	

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.75		24.73		37.66		51.79	51.79	1 / 7						
reaction time	0.169	interval				11.98		12.93		14.13		# of strides	12.75	11.98	12.93	14.13	24.73	27.06	2.33
		velocity		7.84		8.35		7.73		7.08	7.72		7.84	8.35	7.73	7.08	8.09	7.39	

Heat 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.94		24.77		37.65		51.55	51.55	6 / 5						
reaction time	0.181	interval				11.83		12.88		13.90		# of strides	12.94	11.83	12.88	13.90	24.77	26.78	2.01
		velocity		7.73		8.45		7.76		7.19	7.76	195.5	7.73	8.45	7.76	7.19	8.07	7.47	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) — *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.97	12.74	18.58	24.76	31.22	38.03	44.86	52.23	52.23	3 / 6						
reaction time	0.194	interval		5.77	5.84	6.18	6.46	6.81	6.83	7.37		# of strides	12.74	12.02	13.27	14.20	24.76	27.47	2.71
		velocity	7.17	8.67	8.56	8.09	7.74	7.34	7.32	6.78	7.66		7.85	8.32	7.54	7.04	8.08	7.28	

B FINAL - 2021 Weltklasse (Zürich, SUI) — *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	7.0	12.8	18.6	24.8	31.1	37.7	44.8	52.42	52.42	5 / 3						
reaction time	0.150	interval		5.80	5.80	6.20	6.30	6.60	7.10	7.62		# of strides	12.80	12.00	12.90	14.72	24.80	27.62	2.82
		velocity	7.14	8.62	8.62	8.06	7.94	7.58	7.04	6.56	7.63		7.81	8.33	7.75	6.79	8.06	7.24	

Baisden, Kendall (USA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2015 NCAA Championships (Eugene, OR) — *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	13-Jun-15	time				25.5				51.7	51.74	4 / 2						
reaction time		interval								26.20		# of strides					25.50	26.20	0.70
		velocity				7.84				7.63	7.73						7.84	7.63	

FINAL - 2014 NCAA Championships (Eugene, OR) — *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	13-Jun-14	time				24.4				51.3	51.32	7 / 3						
reaction time		interval								26.90		# of strides					24.40	26.90	2.50
		velocity				8.20				7.43	7.79						8.20	7.43	

Baker, Keshia (USA) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2012 USA Olympic Trials (Eugene, OR) — *Hymans (2020) - history of the US olympic trials - track and field*

date	24-Jun-12	time				24.2		36.7		51.23	51.23	1 / ~~6~~ 5						
reaction time	0.273	interval						12.50		14.53		# of strides		24.20	12.50	14.53	24.20	27.03	2.83
		velocity				8.26		8.00		6.88	7.81			4.13	8.00	6.88	8.26	7.40	

Baldwin, LaJada (USA) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Quarter-Final 4 - 2008 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time		13.16		26.31	32.92	39.76	46.58	54.01	54.01	5 / 7						
reaction time		interval				13.15	6.61	6.84	6.82	7.43		# of strides	13.16	13.15	13.45	14.25	26.31	27.70	1.39
		velocity		7.60		7.60	7.56	7.31	7.33	6.73	7.41		7.60	7.60	7.43	7.02	7.60	7.22	

Balogh-Sxomov, Györgyi (HUN) (194

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1972 Olympic Games (Munich, FRG) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	07-Sep-72	time				24.2				52.4	52.39	2 / 8						
reaction time		interval								28.2		# of strides					24.20	28.20	4.00
		velocity				8.26				7.09	7.64						8.26	7.09	

Bamgbose, Margaret (NGR) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 3 - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.24		23.97		37.10	44.31	51.97	52.23	9 / ~~8~~						
reaction time	0.262	interval				11.73		13.13	7.21	7.66	DV	# of strides	12.24	11.73	13.13	14.87	23.97	28.00	4.03
		velocity		8.17		8.53		7.62	6.93	6.53	7.66	188.2	8.17	8.53	7.62	6.72	8.34	7.14	

Barber, Me'Lisa (USA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time		12.62		24.72	30.88	37.57	44.60	52.10	52.10	2 / 6						
reaction time		interval				12.10	6.16	6.69	7.03	7.50		# of strides	12.62	12.10	12.85	14.53	24.72	27.38	2.66
		velocity		7.92		8.26	8.12	7.47	7.11	6.67	7.68		7.92	8.26	7.78	6.88	8.09	7.30	

Heat 2 - 2004 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		11.82		23.42		36.68	43.87	52.30	52.30	4 / 5						
reaction time		interval				11.60		13.26	7.19	8.43		# of strides	11.82	11.60	13.26	15.62	23.42	28.88	5.46
		velocity		8.46		8.62		7.54	6.95	5.93	7.65	207.0	8.46	8.62	7.54	6.40	8.54	6.93	

FINAL - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

date	21-Jun-03	time				25.34		38.10	44.07	52.04	52.04	6 / 5						
reaction time		interval						12.76	5.97	7.97		# of strides			12.76	13.94	25.34	26.70	1.36
		velocity				7.89		7.84	8.38	6.27	7.69				7.84	7.17	7.89	7.49	

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time				24.84		37.82	44.83	52.53	52.53	4 / 2						
reaction time		interval						12.98	7.01	7.70		# of strides			12.98	14.71	24.84	27.69	2.85
		velocity				8.05		7.70	7.13	6.49	7.61				7.70	6.80	8.05	7.22	

Barber, Mikele (USA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time				24.63		38.12	45.73	54.23	54.23	2 / 8						
reaction time		interval						13.49	7.61	8.50		# of strides			13.49	16.11	24.63	29.60	4.97
		velocity				8.12		7.41	6.57	5.88	7.38				7.41	6.21	8.12	6.76	

FINAL - 2000 USA Olympic Trials (Sacramento, CA) — *Hymans (2008) - history of the US olympic trials - track and field*

date	16-Jul-00	time		12.5		24.1		36.8		51.17	51.17	8 / 5						
reaction time		interval				11.60		12.70		14.37		# of strides	12.50	11.60	12.70	14.37	24.10	27.07	2.97
		velocity		8.00		8.62		7.87		6.96	7.82		8.00	8.62	7.87	6.96	8.30	7.39	

Barnes, Tiffany (USA) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time				24.73		38.49	45.80	53.83	53.83	9 / 6						
reaction time		interval						13.76	7.31	8.03		# of strides			13.76	15.34	24.73	29.10	4.37
		velocity				8.09		7.27	6.84	6.23	7.43				7.27	6.52	8.09	6.87	

Barnett-Burkart, Helen (GBR) (1958)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 2 - 1984 Olympic Games (Los Angeles, CA) (*TV Analysis*) — *Adams (1984) - 1984 olympic games - 200m & 400m*

date	05-Aug-84	time				23.88				52.26	52.26	7 / 8						

reaction time		interval							28.38	PB	# of strides						23.88	28.38	4.50
		velocity			8.38				7.05	7.65							8.38	7.05	

Baskakova, Irina (URS) (1956)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1983 IAAF World Championships (Helsinki, FIN)											*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*						
date 10-Aug-83 time				24.1				50.5	50.48	8 / 6							
reaction time		interval						26.40		# of strides					24.10	26.40	2.30
		velocity		8.30				7.58	7.92						8.30	7.58	

Baas, Mette (FIN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)											*Seiko Timing (2023) - world championship race analysis*						
date 20-Aug-23 time		12.87							52.74	7 / 7							
reaction time 0.135		interval								# of strides	12.87						
		velocity		7.77					7.58		7.77						

Baumgart-Witan, Iga (POL) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 European Athletics Championships (Munich, GER)											*European Athletics (2022) - european athletics championships race analysis*						
date 17-Aug-22 time		12.64		24.41		37.11		51.28	51.28	2 / 8							
reaction time 0.228		interval		11.77		12.70		14.17		# of strides	12.64	11.77	12.70	14.17	24.41	26.87	2.46
		velocity		8.50		7.87		7.06	7.80	180.0	7.91	8.50	7.87	7.06	8.19	7.44	
FINAL - 2020 Memorial Van Damme (Brussels, BEL)											*Omega Timing (2020) - diamond league race analysis*						
date 04-Sep-20 time	7.1	12.9	18.9	25.0	31.3	37.9	44.8	52.13	52.13	5 / 1							
reaction time 0.157		interval	5.80	6.00	6.10	6.30	6.60	6.90	7.33	# of strides	12.90	12.10	12.90	14.23	25.00	27.13	2.13
	7.04	8.62	8.33	8.20	7.94	7.58	7.25	6.82	7.67	183.2	7.75	8.26	7.75	7.03	8.00	7.37	
Semi-Final 1 - 2019 IAAF World Championships (Doha, QAT)											*Yamanaka (2019) - race analysis of men and women 400m competition*						
date 01-Oct-19 time	6.99	12.70	18.48	24.49	30.71	37.24	43.97	51.02	51.02	6 / 3							
reaction time 0.192		interval	5.71	5.78	6.01	6.22	6.53	6.73	7.05	PB # of strides	12.70	11.79	12.75	13.78	24.49	26.53	2.04
	7.15	8.76	8.65	8.32	8.04	7.66	7.43	7.09	7.84	178.7	7.87	8.48	7.84	7.26	8.17	7.54	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)											*European Athletics (2019) - race analysis*						
date 09-Sep-19 time		12.97		24.93		37.65		51.52	51.52	7 / 3							
reaction time 0.265		interval		11.96		12.72		13.87		# of strides	12.97	11.96	12.72	13.87	24.93	26.59	1.66
		velocity		7.71		8.36		7.86	7.21	7.76	182.0	7.71	8.36	7.86	7.21	8.02	7.52

Baumgart, Iga (POL) (1989)

Semi-Final 3 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date 07-Aug-17 time		12.71		24.79		37.62	44.35	51.59	51.81	2 / ~~6~~ 5							
reaction time 0.213		interval		12.08		12.83	6.73	7.24		# of strides	12.71	12.08	12.83	13.97	24.79	26.80	2.01
		velocity	7.87		8.28		7.79	7.43	6.91	7.72	183.9	7.87	8.28	7.79	7.16	8.07	7.46
Heat 6 - 2015 IAAF World Championships (Beijing, CHN)											*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*						
date 24-Aug-15 time	7.01	12.70	18.59	24.77	31.10	37.65	44.60	52.02	52.02	6 / 6							
reaction time 0.228		interval	5.69	5.89	6.18	6.33	6.55	6.95	7.42	PB # of strides	12.70	12.07	12.88	14.37	24.77	27.25	2.48
	7.13	8.79	8.49	8.09	7.90	7.63	7.19	6.74	7.69		7.87	8.29	7.76	6.96	8.07	7.34	

Beard, Jessica (USA) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Weltklasse (Zürich, SUI)											*Omega Timing (2019) - diamond league race analysis*						
date 29-Aug-19 time	7.1	12.8	18.9	25.4	31.9	38.6	45.4	52.60	52.60	8 / 8							
reaction time 0.244		interval	5.7	6.1	6.5	6.5	6.7	6.8	7.2	# of strides	12.80	12.60	13.20	14.00	25.40	27.20	1.80
	7.04	8.77	8.20	7.69	7.69	7.46	7.35	6.94	7.60		7.81	7.94	7.58	7.14	7.87	7.35	
FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA)											*Omega Timing (2019) - diamond league race analysis*						
date 06-Jun-19 time		12.4		24.3		37.3		51.55	51.55	8 / 4							
reaction time 0.237		interval		11.9		13.0		14.3		# of strides	12.40	11.90	13.00	14.25	24.30	27.25	2.95
		velocity	8.06		8.40		7.69		7.02	7.76	192.7	8.06	8.40	7.69	7.02	8.23	7.34
FINAL - 2019 Shanghai (Shanghai, CHN)											*Omega Timing (2019) - diamond league race analysis*						
date 18-May-19 time		12.3		24.0		37.0		51.40	51.40	3 / 5							
reaction time 0.236		interval		11.7		13.0		14.4		# of strides	12.30	11.70	13.00	14.40	24.00	27.40	3.40
		velocity	8.13		8.55		7.69		6.94	7.78	193.2	8.13	8.55	7.69	6.94	8.33	7.30
FINAL - 2018 Meeting de Paris (Paris, FRA)											*Omega Timing (2018) - diamond league race analysis*						
date 30-Jun-18 time		12.3		24.0		36.9		50.39	50.39	3 / 2							
reaction time 0.216		interval		11.7		12.9		13.5		# of strides	12.30	11.70	12.90	13.49	24.00	26.39	2.39
		velocity	8.13		8.55		7.75		7.41	7.94	186.7	8.13	8.55	7.75	7.41	8.33	7.58
FINAL - 2018 Bauhaus Galan (Stockholm, SWE)											*Omega Timing (2018) - diamond league race analysis*						
date 10-Jun-18 time		12.4		24.1		36.9		50.55	50.55	4 / 3							
reaction time 0.182		interval		11.7		12.8		13.7		# of strides	12.40	11.70	12.80	13.65	24.10	26.45	2.35
		velocity	8.06		8.55		7.81		7.33	7.91	192.2	8.06	8.55	7.81	7.33	8.30	7.56
FINAL - 2018 Bislett Games (Oslo, NOR)											*Omega Timing (2018) - diamond league race analysis*						
date 07-Jun-18 time		12.7		24.3		37.5		50.57	50.57	3 / 4							
reaction time 0.287		interval		11.6		13.2		13.1		# of strides	12.70	11.60	13.20	13.07	24.30	26.27	1.97
		velocity	7.87		8.62		7.58		7.65	7.91	187.7	7.87	8.62	7.58	7.65	8.23	7.61
FINAL - 2017 USATF National Championship (Sacramento, CA)											*Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*						
date 24-Jun-17 time		12.43		23.99		36.88		50.85	50.85	2 / 7							
reaction time		interval		11.56		12.89		13.97		# of strides	12.43	11.56	12.89	13.97	23.99	26.86	2.87
		velocity	8.24		8.73		8.12		7.24	7.87		8.05	8.65	7.76	7.16	8.34	7.45
FINAL - 2012 USA Olympic Trials (Eugene, OR)											*Hymans (2020) - history of the US olympic trials - track and field*						
date 24-Jun-12 time				24.1		36.8		51.52	51.52	2 / ~~8~~ 7							
reaction time 0.264		interval				12.70		14.72		# of strides		24.10	12.70	14.72	24.10	27.42	3.32
		velocity		8.30		7.87		6.79	7.76			4.15	7.87	6.79	8.30	7.29	

Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time	12.41	24.01	36.79	51.20	51.20	3 / 5								
reaction time	0.265	interval		11.60	12.78	14.41		# of strides	12.41	11.60	12.78	14.41	24.01	27.19	3.18	
		velocity	8.06	8.62	7.82	6.94	7.81		8.06	8.62	7.82	6.94	8.33	7.36		

Heat 2 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time	12.55	24.54	37.54	51.72	51.72	7 / 2								
reaction time	0.239	interval		11.99	13.00	14.18		# of strides	12.55	11.99	13.00	14.18	24.54	27.18	2.64	
		velocity	7.97	8.34	7.69	7.05	7.73		7.97	8.34	7.69	7.05	8.15	7.36		

FINAL - 2006 USATF National Junior Championship (Indianapolis, IN) — *USATF Women's Sprint Development (2006)*

date	24-Jun-06	time	13.13	18.85	25.67	32.02	38.42	44.95	51.89	51.89	6 / 1					
reaction time		interval		5.72	6.82	6.35	6.40	6.53	6.94	PB	# of strides	13.13	12.54	12.75	13.47	25.67	26.22	0.55
		velocity	7.62	8.74	7.33	7.87	7.81	7.66	7.20	7.71		7.62	7.97	7.84	7.42	7.79	7.63	

Becker, Sophie (IRL) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date 17-Jul-22	time	12.18		24.20		37.64		52.24	52.24	8 / 5							
reaction time 0.151	interval			12.02		13.44		14.60		# of strides	12.18	12.02	13.44	14.60	24.20	28.04	3.84
	velocity	8.21		8.32		7.44		6.85	7.66		8.21	8.32	7.44	6.85	8.26	7.13	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) — *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.53	12.29	18.28	24.63	31.23	37.94	44.62	51.84	51.84	4 / 4						
reaction time	0.156	interval		5.76	5.99	6.35	6.60	6.71	6.68	7.22		# of strides	12.29	12.34	13.31	13.90	24.63	27.21	2.58
		velocity	7.66	8.68	8.35	7.87	7.58	7.45	7.49	6.93	7.72		8.14	8.10	7.51	7.19	8.12	7.35	

Beckford, Lily (GBR) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																	*Omega Timing (2022) - diamond league race analysis*
date 21-May-22	time	6.8	12.4	18.7	25.0	31.6	38.4	45.5	53.46	53.46	7 / 4						
reaction time 0.212	interval		5.60	6.30	6.30	6.60	6.80	7.10	7.96		# of strides	12.40	12.60	13.40	15.06	25.00	28.46	3.46
	velocity	7.35	8.93	7.94	7.94	7.58	7.35	7.04	6.28	7.48		8.06	7.94	7.46	6.64	8.00	7.03	

Belle, Roberta (USA) (1958)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1984 USA Olympic Trials (Los Angeles, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 19-Jun-84	time			24.7				51.3	51.26	2 / 8							
reaction time	interval							26.60		# of strides					24.70	26.60	1.90
	velocity			8.10				7.52	7.80						8.10	7.52	

FINAL - 1980 USA Olympic Trials (Eugene, OR) — *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-80	time			24.2				52.7	52.67	/ 5					
reaction time		interval							28.50		# of strides				24.20	28.50	4.30
		velocity			8.26				7.02	7.59					8.26	7.02	

Best, Ashlan (CAN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)																	*Koyama (2018) - research on athlete performance and technique- 2018 data book*
date 12-Jul-18	time	6.82	12.66	18.60	24.94	31.61	38.61	45.94	53.59	53.59	8 / 8						
reaction time 0.148	interval		5.84	5.94	6.34	6.67	7.00	7.33	7.65		# of strides	12.66	12.28	13.67	14.98	24.94	28.65	3.71
	velocity	7.33	8.56	8.42	7.89	7.50	7.14	6.82	6.54	7.46	197.5	7.90	8.14	7.32	6.68	8.02	6.98	

Bévis, Marie-Louise (FRA) (1972)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 European Cup (Munich, GER)																	*Jung (2003) - http://www.fgs.uni-halle.de*
date 21-Jun-97	time		12.56		24.90		38.30		53.13	53.13	/ 6						
reaction time	interval				12.34		13.40		14.83		# of strides	12.56	12.34	13.40	14.83	24.90	28.23	3.33
	velocity		7.96		8.10		7.46		6.74	7.53		7.96	8.10	7.46	6.74	8.03	7.08	

Blake, Dominique (USA) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08	time	12.91	18.94	25.35	31.92	38.91	46.18	53.90	53.90	7 / 5							
reaction time	interval		6.03	6.41	6.57	6.99	7.27	7.72		# of strides	12.91	12.44	13.56	14.99	25.35	28.55	3.20
	velocity	7.75	8.29	7.80	7.61	7.15	6.88	6.48	7.42		7.75	8.04	7.37	6.67	7.89	7.01	

FINAL - 2006 USATF National Junior Championship (Indianapolis, IN) — *USATF Women's Sprint Development (2006)*

date	24-Jun-06	time	12.98	18.92	25.27	31.72	38.74	46.43	54.77	54.77	8 / ~~7~~					
reaction time		interval		5.94	6.35	6.45	7.02	7.69	8.34	DV	# of strides	12.98	12.29	13.47	16.03	25.27	29.50	4.23
		velocity	7.70	8.42	7.87	7.75	7.12	6.50	6.00	7.30		7.70	8.14	7.42	6.24	7.91	6.78	

Boatright, Tominique (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 USATF National Junior Championships (Carson, CA)																	*USATF Women's Sprint Development (2005)*
date 25-Jun-05	time				25.34	32.03	39.02	46.43	54.51	54.51	9 / ~~8~~ 7						
reaction time	interval					6.69	6.99	7.41	8.08	PB	# of strides			13.68	15.49	25.34	29.17	3.83
	velocity				7.89	7.47	7.15	6.75	6.19	7.34				7.31	6.46	7.89	6.86	

Bokesa, Aauri Lorena (ESP) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15	time	7.12	12.92	18.87	24.98	31.32	37.99	45.14	52.98	52.98	4 / 7						
reaction time 0.194	interval		5.80	5.95	6.11	6.34	6.67	7.15	7.84		# of strides	12.92	12.06	13.01	14.99	24.98	28.00	3.02
	velocity	7.02	8.62	8.40	8.18	7.89	7.50	6.99	6.38	7.55		7.74	8.29	7.69	6.67	8.01	7.14	

Bol, Femke (NED) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 FBK Games (Hengelo, NED)																	*Omega Timing (2023) - continental tour race analysis*
date 04-Jun-23	time	6.70	12.30	18.09	24.11	30.39	36.82	43.39	50.11	50.11	4 / 1						
reaction time 0.167	interval		5.60	5.79	6.02	6.28	6.43	6.57	6.72		# of strides	12.30	11.81	12.71	13.29	24.11	26.00	1.89
	velocity	7.46	8.93	8.64	8.31	7.96	7.78	7.61	7.44	7.98	182.5	8.13	8.47	7.87	7.52	8.30	7.69	

FINAL - 2022 European Athletics Championships (Munich, GER) — *European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time		12.20		23.70		36.17		49.44	49.44	5 / 1						
reaction time	0.252	interval				11.50		12.47		13.27	NR PB	# of strides	12.20	11.50	12.47	13.27	23.70	25.74	2.04
		velocity		8.20		8.70		8.02		7.54	8.09	180.0	8.20	8.70	8.02	7.54	8.44	7.77	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	6.80	12.36	18.12	24.03	30.07	36.38	42.94	49.75	49.75	4 / 1						
reaction time	0.172	interval		5.56	5.76	5.91	6.04	6.31	6.56	6.81	NR PB	# of strides	12.36	11.67	12.35	13.37	24.03	25.72	1.69
		velocity	7.35	8.99	8.68	8.46	8.28	7.92	7.62	7.34	8.04		8.09	8.57	8.10	7.48	8.32	7.78	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.9	12.6	18.5	24.6	30.7	37.0	43.6	50.59	50.59	4 / 4						
reaction time	0.205	interval		5.70	5.90	6.10	6.10	6.30	6.60	6.99		# of strides	12.60	12.00	12.40	13.59	24.60	25.99	1.39
		velocity	7.25	8.77	8.47	8.20	8.20	7.94	7.58	7.15	7.91	189.7	7.94	8.33	8.06	7.36	8.13	7.70	

Bolingo, Cynthia (BEL) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2023 Memorial van Damme (Brussels, BEL) *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	6.71	12.20	17.87	23.79	30.01	36.46	43.15	50.09	50.09	4 / 1						
reaction time	0.186	interval		5.49	5.67	5.92	6.22	6.45	6.69	6.94		# of strides	12.20	11.59	12.67	13.63	23.79	26.30	2.51
		velocity	7.45	9.11	8.82	8.45	8.04	7.75	7.47	7.20	7.99	192.0	8.20	8.63	7.89	7.34	8.41	7.60	

FINAL - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	23-Aug-23	time		12.19		23.66		36.30		50.33	50.33	2 / 5						
reaction time	0.190	interval				11.47		12.64		14.03		# of strides	12.19	11.47	12.64	14.03	23.66	26.67	3.01
		velocity		8.20		8.72		7.91		7.13	7.95	195.0	8.20	8.72	7.91	7.13	8.45	7.50	

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.23		23.71		36.46		49.96	49.96	8 / 3						
reaction time	0.184	interval				11.48		12.75		13.50	NR PB	# of strides	12.23	11.48	12.75	13.50	23.71	26.25	2.54
		velocity		8.18		8.71		7.84		7.41	8.01	191.0	8.18	8.71	7.84	7.41	8.44	7.62	

Heat 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.45		24.08		36.84		50.29	50.29	2 / 2						
reaction time	0.187	interval				11.63		12.76		13.45		# of strides	12.45	11.63	12.76	13.45	24.08	26.21	2.13
		velocity		8.03		8.60		7.84		7.43	7.95	192.0	8.03	8.60	7.84	7.43	8.31	7.63	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.66	12.27	17.72	23.87	29.98	36.39	43.07	50.19	50.19	5 / 3						
reaction time	0.172	interval		5.61	5.45	6.15	6.11	6.41	6.68	7.12	NR PB	# of strides	12.27	11.60	12.52	13.80	23.87	26.32	2.45
		velocity	7.51	8.91	9.17	8.13	8.18	7.80	7.49	7.02	7.97		8.15	8.62	7.99	7.25	8.38	7.60	

National FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.87	12.51	18.34	24.40	30.64	37.17	44.20	51.74	51.74	2 / 1						
reaction time	0.176	interval		5.64	5.83	6.06	6.24	6.53	7.03	7.54		# of strides	12.51	11.89	12.77	14.57	24.40	27.34	2.94
		velocity	7.28	8.87	8.58	8.25	8.01	7.66	7.11	6.63	7.73		7.99	8.41	7.83	6.86	8.20	7.32	

FINAL - 2022 European Athletics Championships (Munich, GER) *European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time		12.18		24.05		36.98		50.94	50.94	7 / 7						
reaction time	0.227	interval				11.87		12.93		13.96		# of strides	12.18	11.87	12.93	13.96	24.05	26.89	2.84
		velocity		8.21		8.42		7.73		7.16	7.85	189.0	8.21	8.42	7.73	7.16	8.32	7.44	

Borga, Rebecca (ITA) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2020) - diamond league race analysis*

date	17-Sep-20	time	7.0	13.1	19.3	25.7	32.1	38.7	45.5	52.88	52.88	1 / 9						
reaction time	0.176	interval		6.10	6.20	6.40	6.40	6.60	6.80	7.38		# of strides	13.10	12.60	13.00	14.18	25.70	27.18	1.48
		velocity	7.14	8.20	8.06	7.81	7.81	7.58	7.35	6.78	7.56		7.63	7.94	7.69	7.05	7.78	7.36	

Botlogetswe, Christine (BOT) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2019 Meeting de Paris (Paris, FRA) *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.7		24.9		37.8		52.02	52.02	2 / 6						
reaction time	0.199	interval				12.2		12.9		14.2		# of strides	12.70	12.20	12.90	14.22	24.90	27.12	2.22
		velocity		7.87		8.20		7.75		7.03	7.69	185.0	7.87	8.20	7.75	7.03	8.03	7.37	

FINAL - 2019 Athletissima (Lausanne, SUI) *Omega Timing (2019) - diamond league race analysis*

date	05-Jul-19	time		12.5		24.4		37.5		51.50	51.50	3 / 5						
reaction time	0.187	interval				11.9		13.1		14.0		# of strides	12.50	11.90	13.10	14.00	24.40	27.10	2.70
		velocity		8.00		8.40		7.63		7.14	7.77		8.00	8.40	7.63	7.14	8.20	7.38	

FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) *Omega Timing (2019) - diamond league race analysis*

date	16-Jun-19	time		12.3		23.9		36.5		50.48	50.48	6 / 3						
reaction time	0.184	interval				11.6		12.6		14.0	PB	# of strides	12.30	11.60	12.60	13.98	23.90	26.58	2.68
		velocity		8.13		8.62		7.94		7.15	7.92	182.0	8.13	8.62	7.94	7.15	8.37	7.52	

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.7		24.6		37.6		51.29	51.29	9 / 3						
reaction time	0.222	interval				11.9		13.0		13.7		# of strides	12.70	11.90	13.00	13.69	24.60	26.69	2.09
		velocity		7.87		8.40		7.69		7.30	7.80		7.87	8.40	7.69	7.30	8.13	7.49	

Bouma, Andrea (NED) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Memorial van Damme (Brussels, BEL) *Omega Timing (2021) - diamond league race analysis*

date	03-Sep-21	time	6.9	12.5	18.3	24.4	31.0	37.9	45.4	53.39	53.39	6 / 3						
reaction time	0.219	interval		5.60	5.80	6.10	6.60	6.90	7.50	7.99		# of strides	12.50	11.90	13.50	15.49	24.40	28.99	4.59
		velocity	7.25	8.93	8.62	8.20	7.58	7.25	6.67	6.26	7.49	195.0	8.00	8.40	7.41	6.46	8.20	6.90	

Brehmer, Christina (GDR) (1958)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1980 Olympic Games (Moscow, URS) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	28-Jul-80	time						36.2		49.66	49.66	5 / 3						

reaction time		interval					13.46	PB	# of strides				13.46					
		velocity				8.29	7.43	8.05					7.43					

FINAL - 1976 Olympic Games (Montreal, CAN) *Lamare (1976) - les jeux de la XXI olympia, Montreal 1976*

date	29-Jul-76	time	11.78	23.3	35.3	50.6	50.51	2 / 2										
reaction time		interval		11.52	12.00	15.30		# of strides	11.78	11.52	12.00	15.30	23.30	27.30	4.00			
		velocity	8.49	8.68	8.33	6.54	7.92		8.49	8.68	8.33	6.54	8.58	7.33				

Semi-Final 2 - 1976 Olympic Games (Montreal, CAN) *Lamare (1976) - les jeux de la XXI olympia, Montreal 1976*

date	26-Jul-76	time	12.32	24.00	36.58	50.86	50.86	4 / 2										
reaction time		interval		11.68	12.58	14.28		# of strides	12.32	11.68	12.58	14.28	24.00	26.86	2.86			
		velocity	8.12	8.56	7.95	7.00	7.86		8.12	8.56	7.95	7.00	8.33	7.45				

Breuer, Grit (GER) (1972)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	08-Aug-02	time		12.49		24.22		36.96		50.70	50.70	/ 2						
reaction time	0.161	interval				11.73		12.74		13.74		# of strides	12.49	11.73	12.74	13.74	24.22	26.48	2.26
		velocity		8.01		8.53		7.85		7.28	7.89		8.01	8.53	7.85	7.28	8.26	7.55	

Heat 3 - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	07-Aug-02	time		12.38		23.90		37.01		50.98	50.98	/ 1						
reaction time	0.150	interval				11.52		13.11		13.97		# of strides	12.38	11.52	13.11	13.97	23.90	27.08	3.18
		velocity		8.08		8.68		7.63		7.16	7.85		8.08	8.68	7.63	7.16	8.37	7.39	

FINAL - 2001 ISTAF (Berlin, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	31-Aug-01	time		12.45		24.28		37.22		50.78	50.78	/ 1						
reaction time	0.217	interval				11.83		12.94		13.56		# of strides	12.45	11.83	12.94	13.56	24.28	26.50	2.22
		velocity		8.03		8.45		7.73		7.37	7.88		8.03	8.45	7.73	7.37	8.24	7.55	

FINAL - 2001 European Cup (Bremen, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	23-Jun-01	time		12.33		24.18		37.02		50.49	50.49	/ 1						
reaction time		interval				11.85		12.84		13.47		# of strides	12.33	11.85	12.84	13.47	24.18	26.31	2.13
		velocity		8.11		8.44		7.79		7.42	7.92		8.11	8.44	7.79	7.42	8.27	7.60	

FINAL - 1999 IAAF World Championships (Seville, ESP) *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.81	12.39	18.09	24.08	30.28	36.51	43.18	50.67	50.67	6 / 7						
reaction time	0.176	interval		5.58	5.70	5.99	6.20	6.23	6.67	7.49		# of strides	12.39	11.69	12.43	14.16	24.08	26.59	2.51
		velocity	7.34	8.96	8.77	8.35	8.06	8.03	7.50	6.68	7.89		8.07	8.55	8.05	7.06	8.31	7.52	

FINAL - 1997 IAAF World Championships (Athens, GRE) *Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*

date	04-Aug-97	time	6.44	11.92	17.16	23.52	29.72	36.12	42.76	49.92	50.06	6 / 4						
reaction time	0.143	interval		5.48	5.24	6.36	6.20	6.40	6.64	7.16		# of strides	11.92	11.60	12.60	13.80	23.52	26.40	2.88
		velocity	7.76	9.12	9.54	7.86	8.06	7.81	7.53	6.98	7.99		8.39	8.62	7.94	7.25	8.50	7.58	

FINAL - 1997 European Cup (Munich, GER) *Jung (2003) - http://www.fgs.uni-halle.de*

date	21-Jun-97	time		12.27		24.02		36.67		50.38	50.38	/ 1						
reaction time		interval				11.75		12.65		13.71		# of strides	12.27	11.75	12.65	13.71	24.02	26.36	2.34
		velocity		8.15		8.51		7.91		7.29	7.94		8.15	8.51	7.91	7.29	8.33	7.59	

FINAL - 1996 Olympic Games (Atlanta, GA) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-96	time				23.76		36.3		50.71	50.71	1 / 8						
reaction time	0.219	interval						12.54		14.41		# of strides			12.54	14.41	23.76	26.95	3.19
		velocity				8.42		7.97		6.94	7.89				7.97	6.94	8.42	7.42	

FINAL - 1991 IAAF World Championships (Tokyo, JPN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	27-Aug-91	time				23.00		35.39		49.42	49.42	3 / 2						
reaction time		interval						12.39		14.03	WJR	# of strides			12.39	14.03	23.00	26.42	3.42
		velocity				8.70		8.07		7.13	8.09	193.5			8.07	7.13	8.70	7.57	

FINAL - 1991 European Cup (Frankfurt, GER) *Federle (2003) - http://www.fgs.uni-halle.de*

date	29-Jun-91	time		12.21		23.83		35.98		49.87	49.87	1 / 2						
reaction time	0.183	interval				11.62		12.15		13.89		# of strides	12.21	11.62	12.15	13.89	23.83	26.04	2.21
		velocity		8.19		8.61		8.23		7.20	8.02	194.7	8.19	8.61	8.23	7.20	8.39	7.68	

Breuer, Grit (GDR) (1972)

FINAL - 1989 IAAF World Cup (Barcelona, ESP) *Pascua (1990) - atletismo (I) carreras y marcha*

date	10-Sep-89	time		12.87		24.50		36.87		50.67	50.67	/ ~~3~~ 2						
reaction time		interval				11.63		12.37		13.80		# of strides	12.87	11.63	12.37	13.80	24.50	26.17	1.67
		velocity		7.77		8.60		8.08		7.25	7.89		7.77	8.60	8.08	7.25	8.16	7.64	

Brisco-Hooks, Valerie (USA) (1960)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	26-Sep-88	time		11.71		22.94		35.47		50.16	50.16	1 / 4						
reaction time	0.196	interval				11.23		12.53		14.69		# of strides	11.71	11.23	12.53	14.69	22.94	27.22	4.28
		velocity		8.54		8.90		7.98		6.81	7.97	199.0	8.54	8.90	7.98	6.81	8.72	7.35	

Semi-Final 2 - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.27		23.77		36.33		49.90	49.90	4 / 2						
reaction time		interval				11.50		12.56		13.57		# of strides	12.27	11.50	12.56	13.57	23.77	26.13	2.36
		velocity		8.15		8.70		7.96		7.37	8.02		8.15	8.70	7.96	7.37	8.41	7.65	

FINAL - 1984 Olympic Games (Los Angeles, CA) *Adams (1984) - 1984 olympic games - 200m & 400m*

date	06-Aug-84	time				23.5				48.83	48.83	5 / 1						
reaction time	0.182	interval								25.33	OR / NR	# of strides					23.50	25.33	1.83
		velocity				8.51				7.90	8.19	192.5					8.51	7.90	

FINAL - 1984 USA Olympic Trials (Los Angeles, CA) *Hymans (2008) - history of the US olympic trials - track and field*

date	19-Jun-84	time			23.0			49.8	49.79	3 / 2									
reaction time		interval						26.80		# of strides						23.00	26.80	3.80	
		velocity			8.70			7.46	8.03							8.70	7.46		

Brock, Laila (USA) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)																	*USATF Women's Sprint Development (1996)*
date 29-Jun-96 time				25.61		39.48	47.24	55.72	55.72	8 / 7							
reaction time interval						13.87	7.76	8.48		# of strides			13.87	16.24	25.61	30.11	4.50
velocity				7.81		7.21	6.44	5.90	7.18				7.21	6.16	7.81	6.64	

Bromfield, Junelle (JAM) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON)																	*Omega Timing (2022) - diamond league race analysis*
date 10-Aug-22 time	6.75	12.30	18.07	24.07	30.25	36.73	43.59	50.93	50.93	2 / 6							
reaction time 0.194 interval		5.55	5.77	6.00	6.18	6.48	6.86	7.34		# of strides	12.30	11.77	12.66	14.20	24.07	26.86	2.79
velocity	7.41	9.01	8.67	8.33	8.09	7.72	7.29	6.81	7.85		8.13	8.50	7.90	7.04	8.31	7.45	
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																	*Longines Timing (2022) - commonwealth games race analysis*
date 07-Aug-22 time	6.8	12.5	18.4	24.6	30.8	37.3	44.1	51.45	51.45	3 / 5							
reaction time 0.188 interval		5.70	5.90	6.20	6.20	6.50	6.80	7.35		# of strides	12.50	12.10	12.70	14.15	24.60	26.85	2.25
velocity	7.35	8.77	8.47	8.06	8.06	7.69	7.35	6.80	7.77	185.7	8.00	8.26	7.87	7.07	8.13	7.45	
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 21-Jul-16 time	6.96	12.55	18.40	24.51	30.90	37.44	44.43	52.05	52.05	4 / 3							
reaction time 0.324 interval		5.59	5.85	6.11	6.39	6.54	6.99	7.62		# of strides	12.55	11.96	12.93	14.61	24.51	27.54	3.03
velocity	7.18	8.94	8.55	8.18	7.82	7.65	7.15	6.56	7.68		7.97	8.36	7.73	6.84	8.16	7.26	

Brossier, Amandine (FRA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)																	*Seiko Timing (2023) - world championship race analysis*
date 08-Sep-23 time	6.86	12.53	18.40	24.49	30.75	37.15	43.97	51.40	51.40	8 / 1							
reaction time 0.191 interval		5.67	5.87	6.09	6.26	6.40	6.82	7.43		# of strides	12.53	11.96	12.66	14.25	24.49	26.91	2.42
velocity	7.29	8.82	8.52	8.21	7.99	7.81	7.33	6.73	7.78		7.98	8.36	7.90	7.02	8.17	7.43	
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 20-Aug-23 time		12.81		24.76		37.56		51.98	51.98	7 / 5							
reaction time 0.183 interval				11.95		12.80		14.42		# of strides	12.81	11.95	12.80	14.42	24.76	27.22	2.46
velocity		7.81		8.37		7.81		6.93	7.70	204.0	7.81	8.37	7.81	6.93	8.08	7.35	
FINAL - 2023 FBK Games (Hengelo, NED)																	*Omega Timing (2023) - continental tour race analysis*
date 04-Jun-23 time	6.93	12.59	18.53	24.78	31.30	38.23	45.63	53.65	53.65	2 / 7							
reaction time 0.171 interval		5.66	5.94	6.25	6.52	6.93	7.40	8.02		# of strides	12.59	12.19	13.45	15.42	24.78	28.87	4.09
velocity	7.22	8.83	8.42	8.00	7.67	7.22	6.76	6.23	7.46		7.94	8.20	7.43	6.49	8.07	6.93	
National FINAL - 2022 Weltklasse (Zürich, SUI)																	*Omega Timing (2022) - diamond league race analysis*
date 08-Sep-22 time	6.75	12.33	18.06	24.01	30.22	36.72	43.66	51.21	51.21	6 / 1							
reaction time 0.151 interval		5.58	5.73	5.95	6.21	6.50	6.94	7.55		# of strides	12.33	11.68	12.71	14.49	24.01	27.20	3.19
velocity	7.41	8.96	8.73	8.40	8.05	7.69	7.20	6.62	7.81		8.11	8.56	7.87	6.90	8.33	7.35	
FINAL - 2022 Meeting de Paris (Paris, FRA)																	*Omega Timing (2022) - diamond league race analysis*
date 18-Jun-22 time	6.78	12.52	18.45	24.57	30.85	37.37	44.28	51.78	51.78	3 / 7							
reaction time 0.147 interval		5.74	5.93	6.12	6.28	6.52	6.91	7.50		# of strides	12.52	12.05	12.80	14.41	24.57	27.21	2.64
velocity	7.37	8.71	8.43	8.17	7.96	7.67	7.24	6.67	7.72	201.5	7.99	8.30	7.81	6.94	8.14	7.35	
FINAL - 2021 Meeting de Paris (Paris, FRA)																	*Omega Timing (2021) - diamond league race analysis*
date 28-Aug-21 time	6.8	12.7	18.9	25.2	31.5	38.1	45.1	52.79	52.79	3 / 8							
reaction time 0.189 interval		5.90	6.20	6.30	6.30	6.60	7.00	7.69		# of strides	12.70	12.50	12.90	14.69	25.20	27.59	2.39
velocity	7.35	8.47	8.06	7.94	7.94	7.58	7.14	6.50	7.58	204.0	7.87	8.00	7.75	6.81	7.94	7.25	
FINAL - 2020 Memorial Van Damme (Brussels, BEL)																	*Omega Timing (2020) - diamond league race analysis*
date 04-Sep-20 time	7.0	12.9	19.0	25.3	31.9	38.6	45.8	53.64	53.64	1 / 7							
reaction time 0.177 interval		5.90	6.10	6.30	6.60	6.70	7.20	7.84		# of strides	12.90	12.40	13.30	15.04	25.30	28.34	3.04
velocity	7.14	8.47	8.20	7.94	7.58	7.46	6.94	6.38	7.46		7.75	8.06	7.52	6.65	7.91	7.06	
FINAL - 2019 Meeting de Paris (Paris, FRA)																	*Omega Timing (2019) - diamond league race analysis*
date 24-Aug-19 time		12.6		24.5		37.6		53.29	53.29	1 / 8							
reaction time 0.172 interval				11.9		13.1		15.7		# of strides	12.60	11.90	13.10	15.69	24.50	28.79	4.29
velocity		7.94		8.40		7.63		6.37	7.51	204.7	7.94	8.40	7.63	6.37	8.16	6.95	

Brown, Toya (USA) (1975)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)																	*USATF Women's Sprint Development (1996)*
date 17-Jun-96 time		12.26		24.13		37.16	44.38	52.27	52.27	2 / 6							
reaction time interval				11.87		13.03	7.22	7.89		# of strides	12.26	11.87	13.03	15.11	24.13	28.14	4.01
velocity		8.16		8.42		7.67	6.93	6.34	7.65		8.16	8.42	7.67	6.62	8.29	7.11	

Bryant, Rosalyn (USA) (1956)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																	*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*
date 10-Aug-83 time				24.9				50.7	50.66	7 / 8							
reaction time interval								25.80		# of strides					24.90	25.80	0.90
velocity				8.03				7.75	7.90						8.03	7.75	
FINAL - 1976 Olympic Games (Montreal, CAN)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date 29-Jul-76 time				23.3		35.8		50.7	50.65	7 / 5							
reaction time interval						12.50		14.90		# of strides			12.50	14.90	23.30	27.40	4.10
velocity				8.58		8.00		6.71	7.90				8.00	6.71	8.58	7.30	
FINAL - 1976 USA Olympic Trials (Eugene, OR)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 25-Jun-76 time				24.8				52.76	52.76	/ 3							

reaction time		interval							27.96		# of strides								24.80	27.96	3.16	
		velocity			8.06				7.15	7.58									8.06	7.15		

Bryzgina, Olga (URS) (1963)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1992 Olympic Games (Barcelona, ESP)												*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date	05-Aug-92	time				23.7		35.4		49.1	49.05	3 / 2							
reaction time		interval						11.70		13.70		# of strides			11.70	13.70	23.70	25.40	1.70
		velocity				8.44		8.55		7.30	8.15				8.55	7.30	8.44	7.87	
FINAL - 1991 IAAF World Championships (Tokyo, JPN)												*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							
date	27-Aug-91	time				23.49				49.82	49.82	6 / 4							
reaction time		interval								26.33		# of strides					23.49	26.33	2.84
		velocity				8.51				7.60	8.03	188.7					8.51	7.60	
FINAL - 1988 Olympic Games (Seoul,KOR)												*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*							
date	26-Sep-88	time		11.94		23.41		35.47		48.65	48.65	3 / 1							
reaction time	0.215	interval				11.47		12.06		13.18	OR	# of strides	11.94	11.47	12.06	13.18	23.41	25.24	1.83
		velocity		8.38		8.72		8.29		7.59	8.22	189.7	8.38	8.72	8.29	7.59	8.54	7.92	
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)												*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*							
date	25-Sep-88	time		12.19		23.82		36.38		49.33	49.33	8 / 1							
reaction time		interval				11.63		12.56		12.95		# of strides	12.19	11.63	12.56	12.95	23.82	25.51	1.69
		velocity		8.20		8.60		7.96		7.72	8.11		8.20	8.60	7.96	7.72	8.40	7.84	
FINAL - 1987 IAAF World Championships (Rome, ITA)												*Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*							
date	31-Aug-87	time		12.34		23.82		36.15		49.38	49.38	2 / 1							
reaction time		interval				11.48		12.33		13.23		# of strides	12.34	11.48	12.33	13.23	23.82	25.56	1.74
		velocity		8.10		8.71		8.11		7.56	8.10		8.10	8.71	8.11	7.56	8.40	7.82	
Semi-Final 2 - 1987 IAAF World Championships (Rome, ITA)												*Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*							
date	30-Aug-87	time		12.21		24.09		36.74		50.88	50.88	9 / 2							
reaction time		interval				11.88		12.65		14.14		# of strides	12.21	11.88	12.65	14.14	24.09	26.79	2.70
		velocity		8.19		8.42		7.91		7.07	7.86		8.19	8.42	7.91	7.07	8.30	7.47	
Heat 2 - 1987 IAAF World Championships (Rome, ITA)												*Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*							
date	29-Aug-87	time		12.51		24.50		37.22		51.62	51.62	8 / 1							
reaction time		interval				11.99		12.72		14.40		# of strides	12.51	11.99	12.72	14.40	24.50	27.12	2.62
		velocity		7.99		8.34		7.86		6.94	7.75		7.99	8.34	7.86	6.94	8.16	7.37	
FINAL - 1986 European Championships (Stuttgart, FRG)												*Bondarchuk (2007) - transfer of training in sports*							
date	28-Aug-86	time		11.82		23.41		35.75		49.67	49.67	/ 2							
reaction time		interval				11.59		12.34		13.92		# of strides	11.82	11.59	12.34	13.92	23.41	26.26	2.85
		velocity		8.46		8.63		8.10		7.18	8.05		8.46	8.63	8.10	7.18	8.54	7.62	
FINAL - 1984 Women's Friendship Games (Praha, TCH)												*Bondarchuk (2007) - transfer of training in sports*							
date	16-Aug-84	time		11.82		23.41		35.76		49.55	49.52	/ 3							
reaction time		interval				11.59		12.35		13.79		# of strides	11.82	11.59	12.35	13.79	23.41	26.14	2.73
		velocity		8.46		8.63		8.10		7.25	8.08		8.46	8.63	8.10	7.25	8.54	7.65	

Busch, Sabine (GDR) (1962)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1984 East German National Championshps (Erfurt, GDR)												*Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*							
date	02-Jun-84	time		12.54		24.06		36.08		49.24	49.24	/ 2							
reaction time		interval				11.52		12.02		13.16	PB	# of strides	12.54	11.52	12.02	13.16	24.06	25.18	1.12
		velocity		7.97		8.68		8.32		7.60	8.12		7.97	8.68	8.32	7.60	8.31	7.94	

Bussman, Gaby (FRG) (1959)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1983 IAAF World Championships (Helsinki, FIN)												*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							
date	10-Aug-83	time				23.9				49.8	49.75	5 / 4							
reaction time		interval								25.90		# of strides					23.90	25.90	2.00
		velocity				8.37				7.72	8.04						8.37	7.72	

Caicedo, Nicole (ECU) (2000)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)												*Seiko Timing (2023) - world championship race analysis*							
date	20-Aug-23	time		12.08		23.89		36.97		52.82	52.82	3 / 7							
reaction time	0.227	interval				11.81		13.08		15.85		# of strides	12.08	11.81	13.08	15.85	23.89	28.93	5.04
		velocity		8.28		8.47		7.65		6.31	7.57		8.28	8.47	7.65	6.31	8.37	6.91	

Campbell, Juliet (JAM) (1970)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1993 IAAF World Championships (Stuttgart, GER)												*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							
date	17-Aug-93	time				24.27				51.40	51.40	7 / 7							
reaction time		interval								27.13		# of strides					24.27	27.13	2.86
		velocity				8.24				7.37	7.78						8.24	7.37	

Candra, Kadek Dian (INA) (1998)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 East Java National Championships (Surabaya, INA)												*Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*							
date	15-Apr-16	time	7.84	15.24	20.98	28.76	37.29	45.48	52.36	62.08	62.08	/ 5							
reaction time		interval		7.40	5.74	7.78	8.53	8.19	6.88	9.72		# of strides	15.24	13.52	16.72	16.60	28.76	33.32	4.56
		velocity	6.38	6.76	8.71	6.43	5.86	6.11	7.27	5.14	6.44		6.56	7.40	5.98	6.02	6.95	6.00	

Carabalí, Norfalia (COL) (1964)

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1993 IAAF World Championships (Stuttgart, GER)												*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							
date	17-Aug-93	time				24.85				51.92	51.92	8 / --							
reaction time		interval								27.07	DQ	# of strides					24.85	27.07	2.22
		velocity				8.05				7.39	7.70						8.05	7.39	

Semi-Final 2 - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.91		25.13		38.29		52.65	52.65	2 / 8						
reaction time		interval				12.22		13.16		14.36		# of strides	12.91	12.22	13.16	14.36	25.13	27.52	2.39
		velocity		7.75		8.18		7.60		6.96	7.60		7.75	8.18	7.60	6.96	7.96	7.27	

Chapple, Jerrika (USA) (1984) — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time		12.73		24.81	31.13	37.84	44.60	52.08	52.08	1 / 5						
reaction time		interval				12.08	6.32	6.71	6.76	7.48		# of strides	12.73	12.08	13.03	14.24	24.81	27.27	2.46
		velocity		7.86		8.28	7.91	7.45	7.40	6.68	7.68		7.86	8.28	7.67	7.02	8.06	7.33	

Heat 2 - 2004 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.46		24.35		37.33	44.10	52.16	52.16	7 / 4						
reaction time		interval				11.89		12.98	6.77	8.06		# of strides	12.46	11.89	12.98	14.83	24.35	27.81	3.46
		velocity		8.03		8.41		7.70	7.39	6.20	7.67	195.0	8.03	8.41	7.70	6.74	8.21	7.19	

Cheeseborough, Chandra (USA) (195 — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1984 Olympic Games (Los Angeles, CA) — *Adams (1984) - 1984 olympic games - 200m & 400m*

date	06-Aug-84	time				24.2				49.05	49.05	7 / 2						
reaction time	0.212	interval								24.85	PB	# of strides					24.20	24.85	0.65
		velocity				8.26				8.05	8.15	192.0					8.26	8.05	

FINAL - 1984 USA Olympic Trials (Los Angeles, CA) — *Hymans (2008) - history of the US olympic trials - track and field*

date	19-Jun-84	time				23.8				49.3	49.28	5 / 1						
reaction time		interval								25.50	NR	# of strides					23.80	25.50	1.70
		velocity				8.40				7.84	8.12						8.40	7.84	

Chen Jingwen (CHN) (1990) — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2017 Chinese National Games (Tianjin, CHN) — *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	03-Sep-17	time		13.13		25.69		39.32		54.17	54.17	/ 6						
reaction time		interval				12.56		13.63		14.85		# of strides	13.13	12.56	13.63	14.85	25.69	28.48	2.79
		velocity		7.62		7.96		7.34		6.73	7.38	207.0	7.62	7.96	7.34	6.73	7.79	7.02	

Cheng Chong (CHN) (1992) — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2017 Chinese National Games (Tianjin, CHN) — *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	03-Sep-17	time		13.16		25.09		38.09		52.45	52.45	/ 2						
reaction time		interval				11.93		13.00		14.36	PB	# of strides	13.16	11.93	13.00	14.36	25.09	27.36	2.27
		velocity		7.60		8.38		7.69		6.96	7.63	200.0	7.60	8.38	7.69	6.96	7.97	7.31	

Chiba, Asami (JPN) (1985) — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Heat 2 - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	6.96	12.96	19.11	25.53	32.31	39.48	47.18	55.80	55.80	4 / 7						
reaction time	0.228	interval		6.00	6.15	6.42	6.78	7.17	7.70	8.62		# of strides	12.96	12.57	13.95	16.32	25.53	30.27	4.74
		velocity	7.18	8.33	8.13	7.79	7.37	6.97	6.49	5.80	7.17		7.72	7.96	7.17	6.13	7.83	6.61	

FINAL - 2015 National Sports Festival (Wayakama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	7.01	13.24	19.84	26.64	33.45	40.27	47.36	54.74	54.74	7 / 3						
reaction time		interval		6.23	6.60	6.80	6.81	6.82	7.09	7.38		# of strides	13.24	13.40	13.63	14.47	26.64	28.10	1.46
		velocity	7.13	8.03	7.58	7.35	7.34	7.33	7.05	6.78	7.31		7.55	7.46	7.34	6.91	7.51	7.12	

FINAL - 2015 Japanese National Championships (Niigata, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	6.85	12.71	18.79	25.07	31.87	38.83	45.97	53.65	53.65	9 / 5						
reaction time	0.193	interval		5.86	6.08	6.28	6.80	6.96	7.14	7.68		# of strides	12.71	12.36	13.76	14.82	25.07	28.58	3.51
		velocity	7.30	8.53	8.22	7.96	7.35	7.18	7.00	6.51	7.46	202.5	7.87	8.09	7.27	6.75	7.98	7.00	

Tanno, Asami (JPN) (1985)

Heat 6 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.81		25.36		38.66		53.30	53.30	2 / 5						
reaction time	0.161	interval				12.55		13.30		14.64		# of strides	12.81	12.55	13.30	14.64	25.36	27.94	2.58
		velocity		7.81		7.97		7.52		6.83	7.50		7.81	7.97	7.52	6.83	7.89	7.16	

Semi-Final 1 - 2007 IAAF World Championships (Osaka, JPN) — *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

date	27-Aug-07	time	6.84	12.58	18.54	24.76	31.06	37.63	44.57	51.81	51.81	3 / 8						
reaction time	0.199	interval		5.74	5.96	6.22	6.30	6.57	6.94	7.24		# of strides	12.58	12.18	12.87	14.18	24.76	27.05	2.29
		velocity	7.31	8.71	8.39	8.04	7.94	7.61	7.20	6.91	7.72	203.7	7.95	8.21	7.77	7.05	8.08	7.39	

FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN) — *Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*

date	24-Sep-06	time	6.8	12.6	18.6	24.7	31.2	38.2	45.6	53.54	53.54	5 / 2						
reaction time		interval		5.80	6.00	6.10	6.50	7.00	7.40	7.94		# of strides	12.60	12.10	13.50	15.34	24.70	28.84	4.14
		velocity	7.35	8.62	8.33	8.20	7.69	7.14	6.76	6.30	7.47		7.94	8.26	7.41	6.52	8.10	6.93	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) — *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time		12.83		25.14		37.80	44.62	51.80	51.80	4 / 4						
reaction time		interval				12.31		12.66	6.82	7.18	NR	# of strides	12.83	12.31	12.66	14.00	25.14	26.66	1.52
		velocity		7.79		8.12		7.90	7.33	6.96	7.72		7.79	8.12	7.90	7.14	7.96	7.50	

Chigbolu, Maria Benedicta (ITA) (198 — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Heat 3 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.70	12.38	18.34	24.51	30.86	37.50	44.57	52.48	52.48	6 / 5						
reaction time	0.190	interval		5.68	5.96	6.17	6.35	6.64	7.07	7.91		# of strides	12.38	12.13	12.99	14.98	24.51	27.97	3.46
		velocity	7.46	8.80	8.39	8.10	7.87	7.53	7.07	6.32	7.62		8.08	8.24	7.70	6.68	8.16	7.15	

Christianti, Emma Anita (INA) (1997) — 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2016 East Java National Championships (Surabaya, INA) — *Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*

date	15-Apr-16	time	7.11	14.27	20.46	27.56	35.66	43.44	50.03	59.81	59.81	/ 4						
reaction time		interval		7.16	6.19	7.10	8.10	7.78	6.59	9.78		# of strides	14.27	13.29	15.88	16.37	27.56	32.25	4.69
		velocity	7.03	6.98	8.08	7.04	6.17	6.43	7.59	5.11	6.69		7.01	7.52	6.30	6.11	7.26	6.20	

Clark, Zoey (GBR) (1994)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																			*Longines Timing (2022) - commonwealth games race analysis*
date	07-Aug-22	time	6.6	12.2	18.1	24.2	30.6	37.3	44.3	51.90	51.90	2 / 8							
reaction time	0.169	interval		5.60	5.90	6.10	6.40	6.70	7.00	7.60		# of strides	12.20	12.00	13.10	14.60	24.20	27.70	3.50
		velocity	7.58	8.93	8.47	8.20	7.81	7.46	7.14	6.58	7.71	204.0	8.20	8.33	7.63	6.85	8.26	7.22	
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																			*Omega Timing (2022) - diamond league race analysis*
date	21-May-22	time	6.6	12.1	18.0	24.1	30.6	37.5	44.4	51.88	51.88	4 / 1							
reaction time	0.159	interval		5.50	5.90	6.10	6.50	6.90	6.90	7.48		# of strides	12.10	12.00	13.40	14.38	24.10	27.78	3.68
		velocity	7.58	9.09	8.47	8.20	7.69	7.25	7.25	6.68	7.71		8.26	8.33	7.46	6.95	8.30	7.20	
B Race - 2021 Müller British Grand Prix (Gateshead, GBR)																			*Omega Timing (2021) - diamond league race analysis*
date	13-Jun-21	time	6.8	12.5	18.5	24.8	31.4	38.2	45.0	52.13	52.13	3 / 2							
reaction time	0.145	interval		5.70	6.00	6.30	6.60	6.80	6.80	7.13		# of strides	12.50	12.30	13.40	13.93	24.80	27.33	2.53
		velocity	7.35	8.77	8.33	7.94	7.58	7.35	7.35	7.01	7.67		8.00	8.13	7.46	7.18	8.06	7.32	
FINAL - 2018 Müller Anniversary Games (London, GBR)																			*Omega Timing (2018) - diamond league race analysis*
date	22-Jul-18	time		12.7		24.8		37.6		51.36	51.36	9 / 7							
reaction time	0.142	interval				12.1		12.8		13.8	PB	# of strides	12.70	12.10	12.80	13.76	24.80	26.56	1.76
		velocity		7.87		8.26		7.81		7.27	7.79		7.87	8.26	7.81	7.27	8.06	7.53	
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)																			*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*
date	07-Aug-17	time		12.41		24.38		37.38	44.23	51.61	51.81	8 / ~~7~~ 6							
reaction time	0.188	interval				11.97		13.00	6.85	7.38	PB	# of strides	12.41	11.97	13.00	14.23	24.38	27.23	2.85
		velocity		8.06		8.35		7.69	7.30	6.78	7.72	206.5	8.06	8.35	7.69	7.03	8.20	7.34	

Clay, Julian (USA) (1977)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 USATF National Championship (Carson, CA)																			*USATF Women's Sprint Development (2005)*
date	25-Jun-05	time		12.31	18.12	24.41	30.78	37.29	42.79	51.70	51.70	2 / 7							
reaction time		interval			5.81	6.29	6.37	6.51	5.50	8.91		# of strides	12.31	12.10	12.88	14.41	24.41	27.29	2.88
		velocity		8.12	8.61	7.95	7.85	7.68	9.09	5.61	7.74		8.12	8.26	7.76	6.94	8.19	7.33	
FINAL - 2003 USATF National Championship (Palo Alto, CA)																			*USATF Women's Sprint Development (2003)*
date	21-Jun-03	time						38.41	45.11	52.47	52.47	9 / 7							
reaction time		interval							6.70	7.36		# of strides				14.06			
		velocity						7.81	7.46	6.79	7.62					7.11			
Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA)																			*USATF Women's Sprint Development (2003)*
date	20-Jun-03	time				24.12		37.67	44.71	52.88	52.88	6 / 4							
reaction time		interval						13.55	7.04	8.17		# of strides			13.55	15.21	24.12	28.76	4.64
		velocity				8.29		7.38	7.10	6.12	7.56				7.38	6.57	8.29	6.95	

Clayton, Rushell (JAM) (1992)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Memorial van Damme (Brussels, BEL)																			*Omega Timing (2022) - diamond league race analysis*
date	02-Sep-22	time	6.98	12.64	18.53	24.69	31.03	37.71	44.69	52.02	52.02	8 / 3							
reaction time	0.233	interval		5.66	5.89	6.16	6.34	6.68	6.98	7.33	PB	# of strides	12.64	12.05	13.02	14.31	24.69	27.33	2.64
		velocity	7.16	8.83	8.49	8.12	7.89	7.49	7.16	6.82	7.69		7.91	8.30	7.68	6.99	8.10	7.32	

Coetzee, Miranda (RSA) (1997)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																			*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.34		24.06		37.01		52.30	52.30	3 / 7							
reaction time	0.184	interval				11.72		12.95		15.29		# of strides	12.34	11.72	12.95	15.29	24.06	28.24	4.18
		velocity		8.10		8.53		7.72		6.54	7.65	196.0	8.10	8.53	7.72	6.54	8.31	7.08	
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																			*Timing by Seiko (2022) - world athletics championships race analysis*
date	17-Jul-22	time		12.43		27.48		38.02		53.30	53.30	2 / 7							
reaction time	0.137	interval				15.05		10.54		15.28		# of strides	12.43	15.05	10.54	15.28	27.48	25.82	-1.66
		velocity		8.05		6.64		9.49		6.54	7.50	197.0	8.05	6.64	9.49	6.54	7.28	7.75	

Cofil, Fiordaliza (DOM) (2000)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Weltklasse (Zürich, SUI)																			*Omega Timing (2022) - diamond league race analysis*
date	08-Sep-22	time	6.78	12.47	18.30	24.23	30.30	36.57	43.10	49.93	49.93	4 / 2							
reaction time	0.162	interval		5.69	5.83	5.93	6.07	6.27	6.53	6.83		# of strides	12.47	11.76	12.34	13.36	24.23	25.70	1.47
		velocity	7.37	8.79	8.58	8.43	8.24	7.97	7.66	7.32	8.01		8.02	8.50	8.10	7.49	8.25	7.78	
FINAL - 2022 Memorial van Damme (Brussels, BEL)																			*Omega Timing (2022) - diamond league race analysis*
date	02-Sep-22	time	6.75	12.45	18.22	24.12	30.18	36.43	42.86	49.80	49.80	2 / 1							
reaction time	0.160	interval		5.70	5.77	5.90	6.06	6.25	6.43	6.94	PB	# of strides	12.45	11.67	12.31	13.37	24.12	25.68	1.56
		velocity	7.41	8.77	8.67	8.47	8.25	8.00	7.78	7.20	8.03		8.03	8.57	8.12	7.48	8.29	7.79	
FINAL - 2022 Athletissima (Lausanne, SUI)																			*Omega Timing (2022) - diamond league race analysis*
date	26-Aug-22	time	6.64	12.23	18.00	24.02	30.12	36.51	43.02	50.13	50.13	8 / 3							
reaction time	0.168	interval		5.59	5.77	6.02	6.10	6.39	6.51	7.11	PB	# of strides	12.23	11.79	12.49	13.62	24.02	26.11	2.09
		velocity	7.53	8.94	8.67	8.31	8.20	7.82	7.68	7.03	7.98	189.5	8.18	8.48	8.01	7.34	8.33	7.66	
FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON)																			*Omega Timing (2022) - diamond league race analysis*
date	10-Aug-22	time	6.74	12.43	18.25	24.31	30.51	36.80	43.39	50.55	50.55	3 / 5							
reaction time	0.166	interval		5.69	5.82	6.06	6.20	6.29	6.59	7.16		# of strides	12.43	11.88	12.49	13.75	24.31	26.24	1.93
		velocity	7.42	8.79	8.59	8.25	8.06	7.95	7.59	6.98	7.91		8.05	8.42	8.01	7.27	8.23	7.62	
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																			*Omega Timing (2022) - diamond league race analysis*
date	06-Aug-22	time	6.76	12.41	18.38	24.74	31.27	37.75	44.23	51.36	51.36	9 / 6							
reaction time	0.190	interval		5.65	5.97	6.36	6.53	6.48	6.48	7.13		# of strides	12.41	12.33	13.01	13.61	24.74	26.62	1.88
		velocity	7.40	8.85	8.38	7.86	7.66	7.72	7.72	7.01	7.79		8.06	8.11	7.69	7.35	8.08	7.51	
FINAL - 2022 World Athletics Championships (Eugene, OR)																			*Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		12.12		23.71		36.65		50.57	50.57	4 / 6						
reaction time	0.173	interval				11.59		12.94		13.92		# of strides	12.12	11.59	12.94	13.92	23.71	26.86	3.15
		velocity		8.25		8.63		7.73		7.18	7.91	190.7	8.25	8.63	7.73	7.18	8.44	7.45	

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.18		23.83		36.67		50.14	50.14	5 / 1						
reaction time	0.158	interval				11.65		12.84		13.47	PB	# of strides	12.18	11.65	12.84	13.47	23.83	26.31	2.48
		velocity		8.21		8.58		7.79		7.42	7.98	191.0	8.21	8.58	7.79	7.42	8.39	7.60	

Heat 5 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.60		24.75		37.77		51.19	51.19	7 / 1						
reaction time	0.214	interval				12.15		13.02		13.42		# of strides	12.60	12.15	13.02	13.42	24.75	26.44	1.69
		velocity		7.94		8.23		7.68		7.45	7.81	192.0	7.94	8.23	7.68	7.45	8.08	7.56	

FINAL - 2022 Meeting de Paris (Paris, FRA) *Omega Timing (2022) - diamond league race analysis*

date	18-Jun-22	time	6.77	12.39	18.19	24.23	30.51	37.01	43.69	50.76	50.76	7 / 4						
reaction time	0.191	interval		5.62	5.80	6.04	6.28	6.50	6.68	7.07		# of strides	12.39	11.84	12.78	13.75	24.23	26.53	2.30
		velocity	7.39	8.90	8.62	8.28	7.96	7.69	7.49	7.07	7.88	193.2	8.07	8.45	7.82	7.27	8.25	7.54	

Colander-Richardson, LaTasha (USA	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																	
Hymans (2008) - history of the US olympic trials - track and field																	
date	16-Jul-00	time		12.3		23.7		35.9		49.87	49.87	7 / 1						
reaction time		interval				11.40		12.20		13.97	PB	# of strides	12.30	11.40	12.20	13.97	23.70	26.17	2.47
		velocity		8.13		8.77		8.20		7.16	8.02		8.13	8.77	8.20	7.16	8.44	7.64	

Cole, Leslie (USA) (1987)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR)																	
USATF Women's Sprint Development with HPC (2008)																	
date	29-Jun-08	time			19.20	25.60	31.88	38.51	45.54	53.19	53.19	4 / 6						
reaction time		interval				6.40	6.28	6.63	7.03	7.65		# of strides			12.91	14.68	25.60	27.59	1.99
		velocity			7.81	7.81	7.96	7.54	7.11	6.54	7.52				7.75	6.81	7.81	7.25	

Coleman, Kenyata (USA) (1986)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR)																	
USATF Women's Sprint Development with HPC (2008)																	
date	29-Jun-08	time		12.35	18.89	25.30	31.68	38.51	45.62	52.92	52.92	2 / 4						
reaction time		interval			6.54	6.41	6.38	6.83	7.11	7.30		# of strides	12.35	12.95	13.21	14.41	25.30	27.62	2.32
		velocity		8.10	7.65	7.80	7.84	7.32	7.03	6.85	7.56		8.10	7.72	7.57	6.94	7.91	7.24	

FINAL - 2005 USATF National Junior Championships (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time		13.21	19.33		32.10	38.79	45.96	53.68	53.68	1 / ~~7~~ 6						
reaction time		interval			6.12		12.77	6.69	7.17	7.72		# of strides	13.21			14.89			
		velocity		7.57	8.17		7.83	7.47	6.97	6.48	7.45		7.57			6.72			

Collins, Michelle (USA) (1971)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																	
Hymans (2008) - history of the US olympic trials - track and field																	
date	16-Jul-00	time		12.3		23.5		35.7		50.29	50.29	4 / 3						
reaction time		interval				11.20		12.20		14.59		# of strides	12.30	11.20	12.20	14.59	23.50	26.79	3.29
		velocity		8.13		8.93		8.20		6.85	7.95		8.13	8.93	8.20	6.85	8.51	7.47	

Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.68		24.70		37.35	44.28	52.03	52.03	8 / 5						
reaction time		interval				12.02		12.65	6.93	7.75		# of strides	12.68	12.02	12.65	14.68	24.70	27.33	2.63
		velocity		7.89		8.32		7.91	7.22	6.45	7.69		7.89	8.32	7.91	6.81	8.10	7.32	

Connolly, Ella (AUS) (2000)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)																	
Koyama (2018) - research on athlete performance and technique- 2018 data book																	
date	12-Jul-18	time	6.63	12.37	18.33	24.62	31.15	37.89	45.01	52.82	52.82	5 / 4						
reaction time	0.186	interval		5.74	5.96	6.29	6.53	6.74	7.12	7.81		# of strides	12.37	12.25	13.27	14.93	24.62	28.20	3.58
		velocity	7.54	8.71	8.39	7.95	7.66	7.42	7.02	6.40	7.57	192.0	8.08	8.16	7.54	6.70	8.12	7.09	

Constantine, Kyra (CAN) (1998)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																	
Seiko Timing (2023) - world championship race analysis																	
date	20-Aug-23	time		12.61		24.70		37.81		52.28	52.28	8 / 6						
reaction time	0.171	interval				12.09		13.11		14.47		# of strides	12.61	12.09	13.11	14.47	24.70	27.58	2.88
		velocity		7.93		8.27		7.63		6.91	7.65		7.93	8.27	7.63	6.91	8.10	7.25	

FINAL - 2022 Commonwealth Games (Birmingham, GBR) *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.8	12.6	18.7	25.0	31.2	37.8	44.6	51.75	51.75	7 / 7						
reaction time	0.129	interval		5.80	6.10	6.30	6.20	6.60	6.80	7.15		# of strides	12.60	12.40	12.80	13.95	25.00	26.75	1.75
		velocity	7.35	8.62	8.20	7.94	8.06	7.58	7.35	6.99	7.73	176.2	7.94	8.06	7.81	7.17	8.00	7.48	

Cook, Kathy (GBR) (1960)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1984 Olympic Games (Los Angeles, CA)																	
Adams (1984) - 1984 olympic games - 200m & 400m																	
date	06-Aug-84	time				23.4				49.43	49.43	6 / 3						
reaction time	0.208	interval								26.03	NR	# of strides					23.40	26.03	2.63
		velocity				8.55				7.68	8.09	178.0					8.55	7.68	

Couckuyt, Paulien (BEL) (1997)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
National FINAL - 2022 Memorial van Damme (Brussels, BEL)																	
Omega Timing (2022) - diamond league race analysis																	
date	02-Sep-22	time	6.91	12.78	18.93	25.38	32.03	38.86	45.97	53.45	53.45	3 / 7						
reaction time	0.204	interval		5.87	6.15	6.45	6.65	6.83	7.11	7.48		# of strides	12.78	12.60	13.48	14.59	25.38	28.07	2.69
		velocity	7.24	8.52	8.13	7.75	7.52	7.32	7.03	6.68	7.48		7.82	7.94	7.42	6.85	7.88	7.13	

FINAL - 2021 Memorial van Damme (Brussels, BEL) *Omega Timing (2021) - diamond league race analysis*

date	03-Sep-21	time	6.8	12.6	18.6	24.9	31.6	38.5	45.8	53.68	53.68	7 / 4						
reaction time	0.175	interval		5.80	6.00	6.30	6.70	6.90	7.30	7.88		# of strides	12.60	12.30	13.60	15.18	24.90	28.78	3.88
		velocity	7.35	8.62	8.33	7.94	7.46	7.25	6.85	6.35	7.45	198.0	7.94	8.13	7.35	6.59	8.03	6.95	

FINAL - 2020 Memorial Van Damme (Brussels, BEL) *Omega Timing (2020) - diamond league race analysis*

date	04-Sep-20	time	6.8	12.6	18.7	25.1	31.7	38.5	45.6	53.08	53.08	6 / 6						
reaction time	0.149	interval		5.80	6.10	6.40	6.60	6.80	7.10	7.48		# of strides	12.60	12.50	13.40	14.58	25.10	27.98	2.88
		velocity	7.35	8.62	8.20	7.81	7.58	7.35	7.04	6.68	7.54	201.0	7.94	8.00	7.46	6.86	7.97	7.15	

Cousins, Jessica (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.88	18.67	24.75	31.30	37.88	45.02	52.63	52.63	2 / 5							
reaction time interval			5.79	6.08	6.55	6.58	7.14	7.61		# of strides	12.88	11.87	13.13	14.75	24.75	27.88	3.13
velocity		7.76	8.64	8.22	7.63	7.60	7.00	6.57	7.60		7.76	8.42	7.62	6.78	8.08	7.17	

Coutinho, Geisa (BRA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15 time	6.90	12.74	18.77	25.08	31.52	38.17	45.22	52.72	52.72	5 / ~~6~~ 5							
reaction time 0.187 interval		5.84	6.03	6.31	6.44	6.65	7.05	7.50		# of strides	12.74	12.34	13.09	14.55	25.08	27.64	2.56
velocity	7.25	8.56	8.29	7.92	7.76	7.52	7.09	6.67	7.59		7.85	8.10	7.64	6.87	7.97	7.24	

Cox, Crystal (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 USATF National Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06 time		11.82	17.50	23.69	29.85	36.45	43.63	51.34	51.34	5 / 6							
reaction time interval			5.68	6.19	6.16	6.60	7.18	7.71		# of strides	11.82	11.87	12.76	14.89	23.69	27.65	3.96
velocity		8.46	8.80	8.08	8.12	7.58	6.96	6.49	7.79		8.46	8.42	7.84	6.72	8.44	7.23	
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 17-Jul-04 time		12.30		23.64	29.73	36.25	42.91	50.52	50.52	2 / 4							
reaction time interval				11.34	6.09	6.52	6.66	7.61	PB	# of strides	12.30	11.34	12.61	14.27	23.64	26.88	3.24
velocity		8.13		8.82	8.21	7.67	7.51	6.57	7.92		8.13	8.82	7.93	7.01	8.46	7.44	
Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 15-Jul-04 time		12.38		23.92	30.01	36.49	43.46	51.23	51.23	5 / 4							
reaction time interval				11.54	6.09	6.48	6.97	7.77	PB	# of strides	12.38	11.54	12.57	14.74	23.92	27.31	3.39
velocity		8.08		8.67	8.21	7.72	7.17	6.44	7.81	190.7	8.08	8.67	7.96	6.78	8.36	7.32	
Heat 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 12-Jul-04 time		12.61		24.22		37.12	43.99	51.44	51.44	7 / 2							
reaction time interval				11.61		12.90	6.87	7.45	PB	# of strides	12.61	11.61	12.90	14.32	24.22	27.22	3.00
velocity		7.93		8.61		7.75	7.28	6.71	7.78		7.93	8.61	7.75	6.98	8.26	7.35	
FINAL - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 21-Jun-03 time				23.99		37.12	44.18	52.07	52.07	3 / 6							
reaction time interval						13.13	7.06	7.89		# of strides			13.13	14.95	23.99	28.08	4.09
velocity				8.34		7.62	7.08	6.34	7.68				7.62	6.69	8.34	7.12	
Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 20-Jun-03 time				24.01		37.27	44.44	52.57	52.57	7 / 3							
reaction time interval						13.26	7.17	8.13		# of strides			13.26	15.30	24.01	28.56	4.55
velocity				8.33		7.54	6.97	6.15	7.61				7.54	6.54	8.33	7.00	

Cox, Shana (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.31	18.08	24.21	31.44	37.17	44.16	51.69	51.69	3 / 3							
reaction time interval			5.77	6.13	7.23	5.73	6.99	7.53		# of strides	12.31	11.90	12.96	14.52	24.21	27.48	3.27
velocity		8.12	8.67	8.16	6.92	8.73	7.15	6.64	7.74		8.12	8.40	7.72	6.89	8.26	7.28	
FINAL - 2006 USATF National Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06 time		12.48	18.38	24.71	30.88	37.40	44.14	51.36	51.36	8 / 7							
reaction time interval			5.90	6.33	6.17	6.52	6.74	7.22		# of strides	12.48	12.23	12.69	13.96	24.71	26.65	1.94
velocity		8.01	8.47	7.90	8.10	7.67	7.42	6.93	7.79		8.01	8.18	7.88	7.16	8.09	7.50	
FINAL - 2003 USATF National Junior Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 22-Jun-03 time				23.84		37.47	44.86	53.47	53.47	5 / 6							
reaction time interval						13.63	7.39	8.61		# of strides			13.63	16.00	23.84	29.63	5.79
velocity				8.39		7.34	6.77	5.81	7.48				7.34	6.25	8.39	6.75	

Crooks, Charmaine (CAN) (1962)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date 25-Sep-88 time		12.43		24.17		36.85		51.63	51.63	5 / 7							
reaction time interval				11.74		12.68		14.78		# of strides	12.43	11.74	12.68	14.78	24.17	27.46	3.29
velocity		8.05		8.52		7.89		6.77	7.75		8.05	8.52	7.89	6.77	8.27	7.28	
FINAL - 1984 Olympic Games (Los Angeles, CA)																	*Adams (1984) - 1984 olympic games - 200m & 400m*
date 06-Aug-84 time				24.8				50.45	50.45	3 / 7							
reaction time 0.239 interval								25.65	PB	# of strides					24.80	25.65	0.85
velocity				8.06				7.80	7.93						8.06	7.80	

Cross, Brandi (USA) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.33	18.12	24.24	30.55	37.20	44.06	51.63	51.63	3 / 3							
reaction time interval			5.79	6.12	6.31	6.65	6.86	7.57	PB	# of strides	12.33	11.91	12.96	14.43	24.24	27.39	3.15
velocity		8.11	8.64	8.17	7.92	7.52	7.29	6.61	7.75		8.11	8.40	7.72	6.93	8.25	7.30	
FINAL - 2006 USATF National Junior Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06 time		12.78	18.80	24.19	31.29	37.80	44.60	51.96	51.96	4 / 2							
reaction time interval			6.02	5.39	7.10	6.51	6.80	7.36	PB	# of strides	12.78	11.41	13.61	14.16	24.19	27.77	3.58
velocity		7.82	8.31	9.28	7.04	7.68	7.35	6.79	7.70		7.82	8.76	7.35	7.06	8.27	7.20	

FINAL - 2005 USATF National Junior Championships (Carson, CA) — *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time	12.79	18.79	24.98	31.33	37.91	45.05	52.65	52.65	5 / 3							
reaction time		interval		6.00	6.19	6.35	6.58	7.14	7.60		# of strides	12.79	12.19	12.93	14.74	24.98	27.67	2.69
		velocity	7.82	8.33	8.08	7.87	7.60	7.00	6.58	7.60		7.82	8.20	7.73	6.78	8.01	7.23	

Cuddihy, Joanne (IRL) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE)											*Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles*						
date 10-Aug-06	time			24.3		37.0		51.46	51.46	/ 8							
reaction time	interval					12.70		14.46		# of strides		24.30	12.70	14.46	24.30	27.16	2.86
	velocity			8.23		15.75		6.92	7.77			4.12	7.87	6.92	8.23	7.36	

Curbishley, Allison (GBR) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2001 European Cup (Bremen, GER)											*Graubner (2007) - http://www.fgs.uni-halle.de*						
date 23-Jun-01	time	12.73		24.74		37.84		51.99	51.99	/ 5							
reaction time	interval			12.01		13.10		14.15		# of strides	12.73	12.01	13.10	14.15	24.74	27.25	2.51
	velocity	7.86		8.33		7.63		7.07	7.69		7.86	8.33	7.63	7.07	8.08	7.34	

Cuthbert, Betty (AUS) (1938)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)											*Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*						
date 17-Oct-64	time			24.3				52.0	52.0	2 / 1							
reaction time	interval							27.70	**OR**	# of strides					24.30	27.70	3.40
	velocity			8.23				7.22	7.69	*(52.01)*					8.23	7.22	

da Silva, Tiffani (BRA) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA)											*Omega Timing (2020) - diamond league race analysis*						
date 17-Sep-20	time	7.0	12.8	18.8	25.0	31.1	37.6	44.6	52.44	52.44	2 / 6						
reaction time 0.179	interval		5.80	6.00	6.20	6.10	6.50	7.00	7.84		# of strides	12.80	12.20	12.60	14.84	25.00	27.44	2.44
	velocity	7.14	8.62	8.33	8.06	8.20	7.69	7.14	6.38	7.63		7.81	8.20	7.94	6.74	8.00	7.29	

Dabney, Sharon (USA) (1957)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 USA Olympic Trials (Eugene, OR)											*Hymans (2008) - history of the US olympic trials - track and field*						
date 25-Jun-80	time			24.6				52.0	52.00	/ 4							
reaction time	interval							27.40		# of strides					24.60	27.40	2.80
	velocity			8.13				7.30	7.69						8.13	7.30	

Daichi, Saori (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)											*(2017) - tfdata-store.com/2017/10/12/post-1100/*						
date 08-Oct-17	time		13.62		26.72		40.83		56.63	56.63	3 / 5						
reaction time 0.254	interval				13.10		14.11		15.80		# of strides	13.62	13.10	14.11	15.80	26.72	29.91	3.19
	velocity		7.34		7.63		7.09		6.33	7.06	205.0	7.34	7.63	7.09	6.33	7.49	6.69	

Damyanova, Svobodka (BUL) (1955)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 Balkan Games (Sofia, BUL)											*Bondarchuk (2007) - transfer of training in sports*						
date 14-Jun-80	time		11.92		23.90				51.63	51.63	/ 1						
reaction time	interval				11.98				27.73	**PB**	# of strides	11.92	11.98			23.90	27.73	3.83
	velocity		8.39		8.35				7.21	7.75		8.39	8.35			8.37	7.21	

Das, Hima (IND) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Asian Games (Jakarta, INA)											*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*						
date 26-Aug-18	time	6.82	12.58	18.49	24.52	30.84	37.39	43.99	50.79	50.79	3 / 2						
reaction time 0.161	interval		5.76	5.91	6.03	6.32	6.55	6.60	6.80	**NJR PB**	# of strides	12.58	11.94	12.87	13.40	24.52	26.27	1.75
	velocity	7.33	8.68	8.46	8.29	7.91	7.63	7.58	7.35	7.88	197.0	7.95	8.38	7.77	7.46	8.16	7.61	

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN) — *Koyama (2018) - research on athlete performance and technique- 2018 data book*

date	12-Jul-18	time	6.84	12.69	18.69	25.00	31.51	38.03	44.59	51.47	51.47	4 / 1						
reaction time	0.180	interval		5.85	6.00	6.31	6.51	6.52	6.56	6.88		# of strides	12.69	12.31	13.03	13.44	25.00	26.47	1.47
		velocity	7.31	8.55	8.33	7.92	7.68	7.67	7.62	7.27	7.77	197.5	7.88	8.12	7.67	7.44	8.00	7.56	

Davis, Kia (USA) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)											*USATF Women's Sprint Development (2004)*						
date 15-Jul-04	time		12.41			30.64	37.39	44.96	52.27	52.27	1 / 6						
reaction time	interval					18.23	6.75	7.57	7.31		# of strides	12.41			14.88			
	velocity		8.06			8.23	7.41	6.61	6.84	7.65		8.06			6.72			

Heat 4 - 2004 USA Olympic Trials (Sacramento, CA) — *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.13		23.99		37.18	44.29	52.51	52.51	6 / 4						
reaction time		interval				11.86		13.19	7.11	8.22		# of strides	12.13	11.86	13.19	15.33	23.99	28.52	4.53
		velocity		8.24		8.43		7.58	7.03	6.08	7.62		8.24	8.43	7.58	6.52	8.34	7.01	

Davis-Thompson, Pauline (BAH) (196

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 IAAF World Championships (Athens, GRE)											*Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*						
date 04-Aug-97	time	6.58	12.30	18.18	24.18	30.38	36.79	43.39	50.55	50.68	7 / 7						
reaction time 0.120	interval		5.72	5.88	6.00	6.20	6.41	6.60	7.16		# of strides	12.30	11.88	12.61	13.76	24.18	26.37	2.19
	velocity	7.60	8.74	8.50	8.33	8.06	7.80	7.58	6.98	7.89		8.13	8.42	7.93	7.27	8.27	7.58	

FINAL - 1996 Olympic Games (Atlanta, GA) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-96	time				23.23		35.4		49.28	49.28	2 / 4						
reaction time	0.222	interval						12.17		13.88	**PB**	# of strides			12.17	13.88	23.23	26.05	2.82
		velocity				8.61		8.22		7.20	8.12				8.22	7.20	8.61	7.68	

Day, Christine (JAM) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 IAAF World Championships (Beijing, CHN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 27-Aug-15	time	6.94	12.61	18.42	24.37	30.40	36.62	43.17	50.14	50.14	8 / 4						
reaction time 0.180	interval		5.67	5.81	5.95	6.03	6.22	6.55	6.97	**PB**	# of strides	12.61	11.76	12.25	13.52	24.37	25.77	1.40
	velocity	7.20	8.82	8.61	8.40	8.29	8.04	7.63	7.17	7.98		7.93	8.50	8.16	7.40	8.21	7.76	

Heat 3 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.85	12.40	18.12	24.06	30.18	36.51	43.29	50.58	50.58	4 / 1						
reaction time	0.215	interval		5.55	5.72	5.94	6.12	6.33	6.78	7.29		# of strides	12.40	11.66	12.45	14.07	24.06	26.52	2.46
		velocity	7.30	9.01	8.74	8.42	8.17	7.90	7.37	6.86	7.91		8.06	8.58	8.03	7.11	8.31	7.54	

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.42		24.37		37.60		53.46	53.46	2 / 8						
reaction time	0.177	interval				11.95		13.23		15.86		# of strides	12.42	11.95	13.23	15.86	24.37	29.09	4.72
		velocity		8.05		8.37		7.56		6.31	7.48		8.05	8.37	7.56	6.31	8.21	6.88	

Heat 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		13.08		25.64		38.62		53.13	53.13	8 / 5						
reaction time	0.208	interval				12.56		12.98		14.51		# of strides	13.08	12.56	12.98	14.51	25.64	27.49	1.85
		velocity		7.65		7.96		7.70		6.89	7.53		7.65	7.96	7.70	6.89	7.80	7.28	

De Angeli, Virna (ITA) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 European Cup (Munich, GER)																	*Jung (2003) - http://www.fgs.uni-halle.de*
date 21-Jun-97	time		13.08		25.33		38.15		52.30	52.30	/ 4							
reaction time	interval				12.25		12.82		14.15		# of strides	13.08	12.25	12.82	14.15	25.33	26.97	1.64
	velocity		7.65		8.16		7.80		7.07	7.65		7.65	8.16	7.80	7.07	7.90	7.42	

de Carvalho, Tabata (BRA) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 20-Aug-23	time		12.46						54.15	2 / 8							
reaction time 0.181	interval									# of strides	12.46						
	velocity		8.03						7.39		8.03						

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.40		24.64		37.89		52.42	52.42	2 / 8						
reaction time	0.203	interval				12.24		13.25		14.53		# of strides	12.40	12.24	13.25	14.53	24.64	27.78	3.14
		velocity		8.06		8.17		7.55		6.88	7.63		8.06	8.17	7.55	6.88	8.12	7.20	

Heat 2 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.57		24.52		37.85		52.17	52.17	3 / 6						
reaction time	0.158	interval				11.95		13.33		14.32		# of strides	12.57	11.95	13.33	14.32	24.52	27.65	3.13
		velocity		7.96		8.37		7.50		6.98	7.67	182.0	7.96	8.37	7.50	6.98	8.16	7.23	

de Witte, Laura (NED) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Memorial van Damme (Brussels, BEL)																	*Omega Timing (2021) - diamond league race analysis*
date 03-Sep-21	time	6.8	12.5	18.4	24.7	31.3	38.4	46.1	54.84	54.84	2 / 5							
reaction time 0.188	interval		5.70	5.90	6.30	6.60	7.10	7.70	8.74		# of strides	12.50	12.20	13.70	16.44	24.70	30.14	5.44
	velocity	7.35	8.77	8.47	7.94	7.58	7.04	6.49	5.72	7.29		8.00	8.20	7.30	6.08	8.10	6.64	

de Witte, Lisanne (NED) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date 31-Aug-23	time	7.03	12.84	18.77	24.94	31.31	37.99	44.94	52.23	52.23	2 / 4							
reaction time 0.166	interval		5.81	5.93	6.17	6.37	6.68	6.95	7.29		# of strides	12.84	12.10	13.05	14.24	24.94	27.29	2.35
	velocity	7.11	8.61	8.43	8.10	7.85	7.49	7.19	6.86	7.66		7.79	8.26	7.66	7.02	8.02	7.33	

FINAL - 2023 FBK Games (Hengelo, NED) — *Omega Timing (2023) - continental tour race analysis*

date	04-Jun-23	time	7.21	13.13	19.22	25.53	32.03	38.78	45.70	53.10	53.10	1 / 6						
reaction time	0.244	interval		5.92	6.09	6.31	6.50	6.75	6.92	7.40		# of strides	13.13	12.40	13.25	14.32	25.53	27.57	2.04
		velocity	6.93	8.45	8.21	7.92	7.69	7.41	7.23	6.76	7.53		7.62	8.06	7.55	6.98	7.83	7.25	

National FINAL - 2022 Weltklasse (Zürich, SUI) — *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	7.01	12.90	19.00	25.32	31.85	38.59	45.53	52.71	52.71	1 / 6						
reaction time	0.150	interval		5.89	6.10	6.32	6.53	6.74	6.94	7.18		# of strides	12.90	12.42	13.27	14.12	25.32	27.39	2.07
		velocity	7.13	8.49	8.20	7.91	7.66	7.42	7.20	6.96	7.59		7.75	8.05	7.54	7.08	7.90	7.30	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) — *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	7.0	12.9	18.9	25.1	31.5	38.2	45.2	52.67	52.67	1 / 8						
reaction time	0.155	interval		5.90	6.00	6.20	6.40	6.70	7.00	7.47		# of strides	12.90	12.20	13.10	14.47	25.10	27.57	2.47
		velocity	7.14	8.47	8.33	8.06	7.81	7.46	7.14	6.69	7.59		7.75	8.20	7.63	6.91	7.97	7.25	

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) — *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.6	13.5	19.5	25.6	31.9	38.8	46.0	53.42	53.42	1 / 7						
reaction time	0.155	interval		5.90	6.00	6.10	6.30	6.90	7.20	7.42		# of strides	13.50	12.10	13.20	14.62	25.60	27.82	2.22
		velocity	6.58	8.47	8.33	8.20	7.94	7.25	6.94	6.74	7.49		7.41	8.26	7.58	6.84	7.81	7.19	

FINAL - 2019 Weltklasse (Zürich, SUI) — *Omega Timing (2019) - diamond league race analysis*

date	29-Aug-19	time	7.0	12.8	18.6	24.6	30.8	37.4	44.1	51.30	51.30	1 / 3						
reaction time	0.167	interval		5.8	5.8	6.0	6.2	6.6	6.7	7.2		# of strides	12.80	11.80	12.80	13.90	24.60	26.70	2.10
		velocity	7.14	8.62	8.62	8.33	8.06	7.58	7.46	6.94	7.80		7.81	8.47	7.81	7.19	8.13	7.49	

FINAL - 2019 Meeting de Paris (Paris, FRA) — *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.8		25.0		37.9		51.83	51.83	8 / 5						
reaction time	0.196	interval				12.2		12.9		13.9		# of strides	12.80	12.20	12.90	13.93	25.00	26.83	1.83
		velocity		7.81		8.20		7.75		7.18	7.72	194.0	7.81	8.20	7.75	7.18	8.00	7.45	

FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) — *Omega Timing (2019) - diamond league race analysis*

date	16-Jun-19	time		12.7		24.6		37.5		51.53	51.53	7 / 6						
reaction time	0.174	interval				11.9		12.9		14.0		# of strides	12.70	11.90	12.90	14.03	24.60	26.93	2.33
		velocity		7.87		8.40		7.75		7.13	7.76	194.0	7.87	8.40	7.75	7.13	8.13	7.43	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) — *Omega Timing (2019) - diamond league race analysis*

date	06-Jun-19	time		13.0		25.3		38.4		52.17	52.17	3 / 7						
reaction time	0.190	interval				12.3		13.1		13.8		# of strides	13.00	12.30	13.10	13.77	25.30	26.87	1.57
		velocity		7.69		8.13		7.63		7.26	7.67	194.0	7.69	8.13	7.63	7.26	7.91	7.44	

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.9		24.9		37.8		51.80	51.80	2 / 6						
reaction time	0.180	interval				12.0		12.9		14.0		# of strides	12.90	12.00	12.90	14.00	24.90	26.90	2.00
		velocity		7.75		8.33		7.75		7.14	7.72	193.2	7.75	8.33	7.75	7.14	8.03	7.43	

FINAL - 2018 Müller Anniversary Games (London, GBR) *Omega Timing (2018) - diamond league race analysis*

date	22-Jul-18	time		13.0		24.9		37.5		51.08	51.08	2 / 4						
reaction time	0.157	interval				11.9		12.6		13.6		# of strides	13.00	11.90	12.60	13.58	24.90	26.18	1.28
		velocity		7.69		8.40		7.94		7.36	7.83		7.69	8.40	7.94	7.36	8.03	7.64	

Depuydt, Manon (BEL) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Memorial van Damme (Brussels, BEL)																	
Omega Timing (2021) - diamond league race analysis																	
date 03-Sep-21	time	6.9	12.6	18.7	25.0	31.9	39.2	47.0	55.37	55.37	3 / 6							
reaction time 0.145	interval		5.70	6.10	6.30	6.90	7.30	7.80	8.37		# of strides	12.60	12.40	14.20	16.17	25.00	30.37	5.37
	velocity	7.25	8.77	8.20	7.94	7.25	6.85	6.41	5.97	7.22		7.94	8.06	7.04	6.18	8.00	6.59	

National FINAL - 2019 Memorial van Damme (Brussels, BEL) *Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	6.8	12.4	18.2	24.5	31.2	38.5	45.8	53.59	53.59	3 / 4						
reaction time	0.129	interval		5.6	5.8	6.3	6.7	7.3	7.3	7.8		# of strides	12.40	12.10	14.00	15.09	24.50	29.09	4.59
		velocity	7.35	8.93	8.62	7.94	7.46	6.85	6.85	6.42	7.46		8.06	8.26	7.14	6.63	8.16	6.88	

Désert-Mariller, Solen (FRA) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																	
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																	
date 16-Aug-09	time		12.47		24.90		37.57		53.26	53.26	7 / 8							
reaction time 0.221	interval				12.43		12.67		15.69		# of strides	12.47	12.43	12.67	15.69	24.90	28.36	3.46
	velocity		8.02		8.05		7.89		6.37	7.51		8.02	8.05	7.89	6.37	8.03	7.05	

Heat 3 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.75		24.79		37.81		51.63	51.63	6 / 3						
reaction time	0.210	interval				12.04		13.02		13.82		# of strides	12.75	12.04	13.02	13.82	24.79	26.84	2.05
		velocity		7.84		8.31		7.68		7.24	7.75		7.84	8.31	7.68	7.24	8.07	7.45	

FINAL - 2009 French National Championships (Angers, FRA) *Le Bras (2013) - analyse de la perfromance et conception de dispositifs d'entraînement*

date	28-Jul-10	time		12.2		24.1		37.2		52.2	52.31	/ 1						
reaction time		interval				11.90		13.10		15.00		# of strides	12.20	11.90	13.10	15.00	24.10	28.10	4.00
		velocity		8.20		8.40		7.63		6.67	7.65		8.20	8.40	7.63	6.67	8.30	7.12	

FINAL - 2007 European Cup (Munich, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Jun-07	time		13.01		25.47		38.76		52.60	52.60	/ 6						
reaction time	0.342	interval				12.46		13.29		13.84		# of strides	13.01	12.46	13.29	13.84	25.47	27.13	1.66
		velocity		7.69		8.03		7.52		7.23	7.60		7.69	8.03	7.52	7.23	7.85	7.37	

Dezuka, Chie (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2013 Japanese National High School Championships (Oita, JPN)																	
Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data																	
date 30-Jul-13	time		13.57		26.50		40.03		55.74	55.74	8 / 7							
reaction time	interval				12.93		13.53		15.71		# of strides	13.57	12.93	13.53	15.71	26.50	29.24	2.74
	velocity		7.37		7.73		7.39		6.37	7.18		7.37	7.73	7.39	6.37	7.55	6.84	

Diamond, Emily (GBR) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2021 Müller British Grand Prix (Gateshead, GBR)																	
Omega Timing (2021) - diamond league race analysis																	
date 13-Jun-21	time	7.1	12.9	18.9	25.1	31.4	37.9	44.7	51.89	51.89	5 / 1							
reaction time 0.164	interval		5.80	6.00	6.20	6.30	6.50	6.80	7.19		# of strides	12.90	12.20	12.80	13.99	25.10	26.79	1.69
	velocity	7.04	8.62	8.33	8.06	7.94	7.69	7.35	6.95	7.71		7.75	8.20	7.81	7.15	7.97	7.47	

Diggs, Talitha (USA) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)																	
Omega Timing (2023) - diamond league race analysis																	
date 02-Sep-23	time	6.74	12.46	18.51	24.76	31.09	37.56	44.20	51.27	51.27	7 / 6							
reaction time 0.156	interval		5.72	6.05	6.25	6.33	6.47	6.64	7.07		# of strides	12.46	12.30	12.80	13.71	24.76	26.51	1.75
	velocity	7.42	8.74	8.26	8.00	7.90	7.73	7.53	7.07	7.80		8.03	8.13	7.81	7.29	8.08	7.54	

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.29		23.97		36.72		50.86	50.86	9 / 2						
reaction time	0.174	interval				11.68		12.75		14.14		# of strides	12.29	11.68	12.75	14.14	23.97	26.89	2.92
		velocity		8.14		8.56		7.84		7.07	7.86	200.5	8.14	8.56	7.84	7.07	8.34	7.44	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.34		24.20		37.04		50.87	50.87	9 / 3						
reaction time	0.175	interval				11.86		12.84		13.83		# of strides	12.34	11.86	12.84	13.83	24.20	26.67	2.47
		velocity		8.10		8.43		7.79		7.23	7.86	199.0	8.10	8.43	7.79	7.23	8.26	7.50	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.38		24.48		37.05		50.84	50.84	6 / 3						
reaction time	0.147	interval				12.10		12.57		13.79		# of strides	12.38	12.10	12.57	13.79	24.48	26.36	1.88
		velocity		8.08		8.26		7.96		7.25	7.87	195.0	8.08	8.26	7.96	7.25	8.17	7.59	

Heat 5 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.39		24.65		37.75		51.54	51.54	3 / 2						
reaction time	0.133	interval				12.26		13.10		13.79		# of strides	12.39	12.26	13.10	13.79	24.65	26.89	2.24
		velocity		8.07		8.16		7.63		7.25	7.76	194.7	8.07	8.16	7.63	7.25	8.11	7.44	

Dimitrova, Mariyana (BUL) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE)																	
Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles																	

date	10-Aug-06	time			24.6		36.8		50.64	50.64	/ 4						
reaction time		interval					12.20		13.84	PB	# of strides		24.60	12.20	13.84	24.60	26.04	1.44
		velocity			8.13		16.39		7.23	7.90			4.07	8.20	7.23	8.13	7.68	

Disch, Karin (SUI) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Athletissima (Lausanne, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date 30-Jun-23	time	7.10	13.19	19.56	26.16	32.88	39.92	47.08	54.50	54.50	8 / 4							
reaction time 0.216	interval		6.09	6.37	6.60	6.72	7.04	7.16	7.42	PB	# of strides	13.19	12.97	13.76	14.58	26.16	28.34	2.18
	velocity	7.04	8.21	7.85	7.58	7.44	7.10	6.98	6.74	7.34		7.58	7.71	7.27	6.86	7.65	7.06	

Dixon, Diamond (USA) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date 24-Jun-12	time				24.3		36.9		50.88	50.88	8 / ~~5~~ 4							
reaction time 0.340	interval						12.60		13.98	PB	# of strides		24.30	12.60	13.98	24.30	26.58	2.28
	velocity				8.23		7.94		7.15	7.86			4.12	7.94	7.15	8.23	7.52	

Dixon, Diane (USA) (1964)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1991 IAAF World Championships (Tokyo, JPN)																	*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*
date 27-Aug-91	time				24.17				51.73	51.73	1 / 8							
reaction time	interval								27.56		# of strides					24.17	27.56	3.39
	velocity				8.27				7.26	7.73						8.27	7.26	
FINAL - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date 26-Sep-88	time		12.29		23.93		36.58		50.72	50.72	5 / 5							
reaction time 0.197	interval				11.64		12.65		14.14		# of strides	12.29	11.64	12.65	14.14	23.93	26.79	2.86
	velocity		8.14		8.59		7.91		7.07	7.89		8.14	8.59	7.91	7.07	8.36	7.47	
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date 25-Sep-88	time		12.03		23.56		36.06		49.84	49.84	8 / 3							
reaction time	interval				11.53		12.50		13.78	PB	# of strides	12.03	11.53	12.50	13.78	23.56	26.28	2.72
	velocity		8.31		8.67		8.00		7.26	8.03		8.31	8.67	8.00	7.26	8.49	7.61	
FINAL - 1987 IAAF World Championships (Rome, ITA)																	*Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*
date 31-Aug-87	time		12.32		23.94		37.01		51.13	51.13	4 / 7							
reaction time	interval				11.62		13.07		14.12		# of strides	12.32	11.62	13.07	14.12	23.94	27.19	3.25
	velocity		8.12		8.61		7.65		7.08	7.82		8.12	8.61	7.65	7.08	8.35	7.36	
FINAL - 1984 USA Olympic Trials (Los Angeles, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 19-Jun-84	time				23.9				51.3	51.26	1 / 7							
reaction time	interval								27.40		# of strides					23.90	27.40	3.50
	velocity				8.37				7.30	7.80						8.37	7.30	

Doe, Carielle (USA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 20-Jun-03	time				24.56		38.46	45.93	54.09	54.09	3 / 7							
reaction time	interval						13.90	7.47	8.16		# of strides			13.90	15.63	24.56	29.53	4.97
	velocity				8.14		7.19	6.69	6.13	7.40				7.19	6.40	8.14	6.77	

Drinkwater, Lois (USA) (1951)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1968 USA Olympic Trials (Walnut, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 25-Aug-68	time				24.7				54.0	54.0	8 / 2							
reaction time	interval								29.30		# of strides					24.70	29.30	4.60
	velocity				8.10				6.83	7.41						8.10	6.83	

Drozd, Wiktoria (POL) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date 06-Aug-22	time	7.02	12.84	18.92	25.28	31.91	38.92	46.30	54.22	54.22	7 / 4							
reaction time 0.192	interval		5.82	6.08	6.36	6.63	7.01	7.38	7.92		# of strides	12.84	12.44	13.64	15.30	25.28	28.94	3.66
	velocity	7.12	8.59	8.22	7.86	7.54	7.13	6.78	6.31	7.38		7.79	8.04	7.33	6.54	7.91	6.91	

Dunmore, Makenzie (USA) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)																	*Omega Timing (2023) - diamond league race analysis*
date 02-Sep-23	time	6.76	12.39	18.35	24.68	31.49	38.63	45.97	53.85	53.85	2 / 9							
reaction time 0.135	interval		5.63	5.96	6.33	6.81	7.14	7.34	7.88		# of strides	12.39	12.29	13.95	15.22	24.68	29.17	4.49
	velocity	7.40	8.88	8.39	7.90	7.34	7.00	6.81	6.35	7.43		8.07	8.14	7.17	6.57	8.10	6.86	

Dunn, Debbie (USA) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date 24-Jun-12	time				23.7		36.3		50.78	50.78	4 / ~~4~~							
reaction time 0.198	interval						12.60		14.48	DV	# of strides		23.70	12.60	14.48	23.70	27.08	3.38
	velocity				8.44		7.94		6.91	7.88			4.22	7.94	6.91	8.44	7.39	
FINAL - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 18-Aug-09	time		12.19		23.94		36.49		50.35	50.35	1 / 6							
reaction time 0.275	interval				11.75		12.55		13.86		# of strides	12.19	11.75	12.55	13.86	23.94	26.41	2.47
	velocity		8.20		8.51		7.97		7.22	7.94	197.2	8.20	8.51	7.97	7.22	8.35	7.57	
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 16-Aug-09	time		12.08		23.70		36.08		49.95	49.95	3 / 3							
reaction time 0.189	interval				11.62		12.38		13.87	PB	# of strides	12.08	11.62	12.38	13.87	23.70	26.25	2.55
	velocity		8.28		8.61		8.08		7.21	8.01		8.28	8.61	8.08	7.21	8.44	7.62	
Heat 4 - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 15-Aug-09	time		12.37		24.29		36.94		51.13	51.13	5 / 1							
reaction time 0.181	interval				11.92		12.65		14.19		# of strides	12.37	11.92	12.65	14.19	24.29	26.84	2.55
	velocity		8.08		8.39		7.91		7.05	7.82		8.08	8.39	7.91	7.05	8.23	7.45	

FINAL - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	03-Jul-08	time	11.90	17.05	23.42	29.90	36.66	43.96	52.41	52.41	3 / 8							
reaction time		interval		5.15	6.37	6.48	6.76	7.30	8.45		# of strides	11.90	11.52	13.24	15.75	23.42	28.99	5.57
		velocity	8.40	9.71	7.85	7.72	7.40	6.85	5.92	7.63		8.40	8.68	7.55	6.35	8.54	6.90	

Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time	12.66	19.07	25.40	31.70	38.37	44.86	52.20	52.20	7 / 2							
reaction time		interval		6.41	6.33	6.30	6.67	6.49	7.34		# of strides	12.66	12.74	12.97	13.83	25.40	26.80	1.40
		velocity	7.90	7.80	7.90	7.94	7.50	7.70	6.81	7.66		7.90	7.85	7.71	7.23	7.87	7.46	

FINAL - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	17-Jul-04	time	12.06		23.47	29.61	36.32	43.50	51.93	51.93	1 / 8							
reaction time		interval			11.41	6.14	6.71	7.18	8.43		# of strides	12.06	11.41	12.85	15.61	23.47	28.46	4.99
		velocity	8.29		8.76	8.14	7.45	6.96	5.93	7.70		8.29	8.76	7.78	6.41	8.52	7.03	

Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time	12.76		24.78	30.75	37.15	43.91	51.84	51.84	8 / 4							
reaction time		interval			12.02	5.97	6.40	6.76	7.93		# of strides	12.76	12.02	12.37	14.69	24.78	27.06	2.28
		velocity	7.84		8.32	8.38	7.81	7.40	6.31	7.72	192.2	7.84	8.32	8.08	6.81	8.07	7.39	

Heat 1 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time	12.43		24.06		36.85	43.88	51.67	51.67	5 / 3							
reaction time		interval			11.63		12.79	7.03	7.79		# of strides	12.43	11.63	12.79	14.82	24.06	27.61	3.55
		velocity	8.05		8.60		7.82	7.11	6.42	7.74		8.05	8.60	7.82	6.75	8.31	7.24	

Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time					37.97	46.25	53.46	53.46	2 / 6							
reaction time		interval						8.28	7.21		# of strides				15.49			
		velocity					7.90	6.04	6.93	7.48					6.46			

Dyer, Tonette (USA) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 15-Jul-04 time		11.98		23.94	30.36	37.24	44.76	53.70	53.70	6 / 8							
reaction time interval				11.96	6.42	6.88	7.52	8.94		# of strides	11.98	11.96	13.30	16.46	23.94	29.76	5.82
velocity		8.35		8.36	7.79	7.27	6.65	5.59	7.45	196.0	8.35	8.36	7.52	6.08	8.35	6.72	
Heat 3 - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 12-Jul-04 time		11.92		23.17		36.30	43.86	52.14	52.14	3 / 2							
reaction time interval				11.25		13.13	7.56	8.28		# of strides	11.92	11.25	13.13	15.84	23.17	28.97	5.80
velocity		8.39		8.89		7.62	6.61	6.04	7.67	196.7	8.39	8.89	7.62	6.31	8.63	6.90	

Eda, Ryo (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)																*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*	
date 29-Jul-15 time	6.91	13.05	19.37	25.99	32.97	40.24	47.81	55.82	55.82	/ 7							
reaction time interval		6.14	6.32	6.62	6.98	7.27	7.57	8.01		# of strides	13.05	12.94	14.25	15.58	25.99	29.83	3.84
velocity	7.24	8.14	7.91	7.55	7.16	6.88	6.61	6.24	7.17		7.66	7.73	7.02	6.42	7.70	6.70	

Edmonson, Malika (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)																*USATF Women's Sprint Development (1996)*	
date 29-Jun-96 time		12.53		24.67		37.95	45.09	52.95	52.95	4 / 2							
reaction time interval				12.14		13.28	7.14	7.86	**PB**	# of strides	12.53	12.14	13.28	15.00	24.67	28.28	3.61
velocity		7.98		8.24		7.53	7.00	6.36	7.55		7.98	8.24	7.53	6.67	8.11	7.07	

Eguchi, Kotomi (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)																*Yanagiya (2014) - research on athlete performance and technique- 2014 data book*	
date 30-Jul-14 time	7.14	13.17	19.25	25.46	31.91	38.80	46.09	53.94	53.94	/ 2							
reaction time interval		6.03	6.08	6.21	6.45	6.89	7.29	7.85		# of strides	13.17	12.29	13.34	15.14	25.46	28.48	3.02
velocity	7.00	8.29	8.22	8.05	7.75	7.26	6.86	6.37	7.42		7.59	8.14	7.50	6.61	7.86	7.02	

Elliott, Rosie (NZL) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																*Seiko Timing (2023) - world championship race analysis*	
date 20-Aug-23 time		13.23		25.63		38.80		52.88	52.88	3 / 8							
reaction time 0.167 interval				12.40		13.17		14.08		# of strides	13.23	12.40	13.17	14.08	25.63	27.25	1.62
velocity		7.56		8.06		7.59		7.10	7.56	186.0	7.56	8.06	7.59	7.10	7.80	7.34	
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																*Timing by Seiko (2022) - world athletics championships race analysis*	
date 17-Jul-22 time		13.54		26.15		39.75		54.92	54.92	4 / 8							
reaction time 0.147 interval				12.61		13.60		15.17		# of strides	13.54	12.61	13.60	15.17	26.15	28.77	2.62
velocity		7.39		7.93		7.35		6.59	7.28		7.39	7.93	7.35	6.59	7.65	6.95	

Ellis, Kendall (USA) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																*Timing by Seiko (2022) - world athletics championships race analysis*	
date 17-Jul-22 time		12.70		25.32		38.31		52.55	52.55	8 / 6							
reaction time 0.187 interval				12.62		12.99		14.24		# of strides	12.70	12.62	12.99	14.24	25.32	27.23	1.91
velocity		7.87		7.92		7.70		7.02	7.61	189.0	7.87	7.92	7.70	7.02	7.90	7.34	
FINAL - 2022 Doha Diamond League (Doha, QAT)																*Omega Timing (2022) - diamond league race analysis*	
date 13-May-22 time	6.7	12.7	19.2	25.8	32.4	39.0	45.5	52.58	52.58	2 / 7							
reaction time 0.223 interval		6.00	6.50	6.60	6.60	6.60	6.50	7.08		# of strides	12.70	13.10	13.20	13.58	25.80	26.78	0.98
velocity	7.46	8.33	7.69	7.58	7.58	7.58	7.69	7.06	7.61		7.87	7.63	7.58	7.36	7.75	7.47	
FINAL - 2021 Müller Grand Prix (Gateshead, GBR)																*Omega Timing (2021) - diamond league race analysis*	
date 23-May-21 time	7.3	12.9	18.7	24.6	30.7	37.4	44.6	51.86	51.86	5 / 1							
reaction time 0.179 interval		5.60	5.80	5.90	6.10	6.70	7.20	7.26		# of strides	12.90	11.70	12.80	14.46	24.60	27.26	2.66
velocity	6.85	8.93	8.62	8.47	8.20	7.46	6.94	6.89	7.71	189.5	7.75	8.55	7.81	6.92	8.13	7.34	

FINAL - 2019 Weltklasse (Zürich, SUI) *Omega Timing (2019) - diamond league race analysis*

date	29-Aug-19	time	6.8	12.5	18.3	24.4	30.9	37.7	44.7	51.92	51.92	2 / 7						
reaction time	0.202	interval		5.7	5.8	6.1	6.5	6.8	7.0	7.2		# of strides	12.50	11.90	13.30	14.22	24.40	27.52	3.12
		velocity	7.35	8.77	8.62	8.20	7.69	7.35	7.14	6.93	7.70		8.00	8.40	7.52	7.03	8.20	7.27	

FINAL - 2019 Meeting de Paris (Paris, FRA) *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.3		24.5		37.2		51.21	51.21	6 / 2						
reaction time	0.205	interval				12.2		12.7		14.0		# of strides	12.30	12.20	12.70	14.01	24.50	26.71	2.21
		velocity		8.13		8.20		7.87		7.14	7.81	186.2	8.13	8.20	7.87	7.14	8.16	7.49	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2019) - diamond league race analysis*

date	06-Jun-19	time		12.2		24.3		37.1		52.09	52.09	9 / 6						
reaction time	0.217	interval				12.1		12.8		15.0		# of strides	12.20	12.10	12.80	14.99	24.30	27.79	3.49
		velocity		8.20		8.26		7.81		6.67	7.68	189.2	8.20	8.26	7.81	6.67	8.23	7.20	

FINAL - 2017 USATF National Championship (Sacramento, CA) *Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time		12.39		23.92		36.37		50.00	50.00	6 / 3						
reaction time		interval				11.53		12.45		13.63	PB	# of strides	12.39	11.53	12.45	13.63	23.92	26.08	2.16
		velocity		8.24		8.73		8.12		7.24	8.00		8.07	8.67	8.03	7.34	8.36	7.67	

FINAL - 2017 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	10-Jun-17	time				24.3		37.2		51.1	51.06	6 / 3						
reaction time		interval						12.90		13.90		# of strides			12.90	13.90	24.30	26.80	2.50
		velocity				8.23		7.75		7.19	7.83	188.7			7.75	7.19	8.23	7.46	

Ellis-Watson, Taylor (USA) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date	03-Jul-16	time				24.1		36.6		50.25	50.25	3 / 4							
reaction time	0.602	interval						12.50		13.65	PB	# of strides			12.50	13.65	24.10	26.15	2.05
		velocity				8.30		8.00		7.33	7.96				8.00	7.33	8.30	7.65	

FINAL - 2016 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	11-Jun-16	time				24.3		37.3		50.9	50.86	5 / 2						
reaction time		interval						13.00		13.60		# of strides			13.00	13.60	24.30	26.60	2.30
		velocity				8.23		7.69		7.35	7.86				7.69	7.35	8.23	7.52	

Ellsworth, Maureen (NED) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Memorial van Damme (Brussels, BEL)																	*Omega Timing (2021) - diamond league race analysis*
date	03-Sep-21	time	7.1	12.9	18.9	25.3	32.0	39.1	46.6			8 / --							
reaction time	0.197	interval		5.80	6.00	6.40	6.70	7.10	7.50		DQ	# of strides	12.90	12.40	13.80		25.30		
		velocity	7.04	8.62	8.33	7.81	7.46	7.04	6.67				7.75	8.06	7.25		7.91		

Emmelmann, Kirsten (GDR) (1961)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date	25-Sep-88	time		12.15		23.64		36.45		50.39	50.39	3 / 5							
reaction time		interval				11.49		12.81		13.94		# of strides	12.15	11.49	12.81	13.94	23.64	26.75	3.11
		velocity		8.23		8.70		7.81		7.17	7.94		8.23	8.70	7.81	7.17	8.46	7.48	

FINAL - 1987 IAAF World Championships (Rome, ITA) *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	31-Aug-87	time		12.21		23.75		36.35		50.20	50.20	6 / 3						
reaction time		interval				11.54		12.60		13.85		# of strides	12.21	11.54	12.60	13.85	23.75	26.45	2.70
		velocity		8.19		8.67		7.94		7.22	7.97		8.19	8.67	7.94	7.22	8.42	7.56	

Semi-Final 3 - 1987 IAAF World Championships (Rome, ITA) *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	30-Aug-87	time		12.39		24.15		36.78		50.53	50.53	7 / 1						
reaction time		interval				11.76		12.63		13.75		# of strides	12.39	11.76	12.63	13.75	24.15	26.38	2.23
		velocity		8.07		8.50		7.92		7.27	7.92		8.07	8.50	7.92	7.27	8.28	7.58	

Heat 6 - 1987 IAAF World Championships (Rome, ITA) *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	29-Aug-87	time		12.32		23.98		36.74		51.62	51.62	7 / 1						
reaction time		interval				11.66		12.76		14.88		# of strides	12.32	11.66	12.76	14.88	23.98	27.64	3.66
		velocity		8.12		8.58		7.84		6.72	7.75		8.12	8.58	7.84	6.72	8.34	7.24	

Ertzgaard, Kaitesi (NOR) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Bislett Games (Olso, NOR)																	*Omega Timing (2019) - diamond league race analysis*
date	13-Jun-19	time		13.2		25.7		39.7		55.60	55.60	6 / 3							
reaction time	0.178	interval				12.5		14.0		15.9	PB	# of strides	13.20	12.50	14.00	15.90	25.70	29.90	4.20
		velocity		7.58		8.00		7.14		6.29	7.19		7.58	8.00	7.14	6.29	7.78	6.69	

Estes, Carla (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)																	*USATF Women's Sprint Development (1996)*
date	29-Jun-96	time		12.48		24.84		38.95	46.95	56.63	56.63	1 / 8							
reaction time		interval				12.36		14.11	8.00	9.68		# of strides	12.48	12.36	14.11	17.68	24.84	31.79	6.95
		velocity		8.01		8.09		7.09	6.25	5.17	7.06		8.01	8.09	7.09	5.66	8.05	6.29	

Fahr, Annina (SUI) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date	31-Aug-23	time	6.87	12.58	18.47	24.61	30.94	37.48	44.39	51.97	51.97	3 / 2							
reaction time	0.156	interval		5.71	5.89	6.14	6.33	6.54	6.91	7.58		# of strides	12.58	12.03	12.87	14.49	24.61	27.36	2.75
		velocity	7.28	8.76	8.49	8.14	7.90	7.65	7.24	6.60	7.70		7.95	8.31	7.77	6.90	8.13	7.31	

National FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.96	12.80	18.82	24.97	31.24	37.78	44.62	52.05	52.05	8 / 4						
reaction time	0.167	interval		5.84	6.02	6.15	6.27	6.54	6.84	7.43	PB	# of strides	12.80	12.17	12.81	14.27	24.97	27.08	2.11
		velocity	7.18	8.56	8.31	8.13	7.97	7.65	7.31	6.73	7.68		7.81	8.22	7.81	7.01	8.01	7.39	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

National FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.9	12.7	18.7	24.9	31.3	38.0	45.1	52.91	52.91	4 / 2						
reaction time	0.176	interval		5.80	6.00	6.20	6.40	6.70	7.10	7.81	PB	# of strides	12.70	12.20	13.10	14.91	24.90	28.01	3.11
		velocity	7.25	8.62	8.33	8.06	7.81	7.46	7.04	6.40	7.56		7.87	8.20	7.63	6.71	8.03	7.14	

Felix, Allyson (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Meeting de Paris (Paris, FRA)																	*Omega Timing (2021) - diamond league race analysis*
date	28-Aug-21	time	6.5	11.9	17.9	24.0	30.3	36.6	43.2	50.47	50.47	6 / 3							
reaction time	0.171	interval		5.40	6.00	6.10	6.30	6.30	6.60	7.27		# of strides	11.90	12.10	12.60	13.87	24.00	26.47	2.47
		velocity	7.69	9.26	8.33	8.20	7.94	7.94	7.58	6.88	7.93	184.7	8.40	8.26	7.94	7.21	8.33	7.56	

FINAL - 2019 The Match - Europe v USA (Minsk, BLR) *European Athletics (2019) - race analysis*

date	09-Sep-19	time		12.49		25.31		37.70		51.36	51.36	8 / 2						
reaction time	0.187	interval				12.82		12.39		13.66		# of strides	12.49	12.82	12.39	13.66	25.31	26.05	0.74
		velocity		8.01		7.80		8.07		7.32	7.79	186.0	8.01	7.80	8.07	7.32	7.90	7.68	

FINAL - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time		11.46		22.70		35.46	42.31	49.90	50.08	5 / 3						
reaction time	0.184	interval				11.24		12.76	6.85	7.59		# of strides	11.46	11.24	12.76	14.44	22.70	27.20	4.50
		velocity		8.73		8.90		7.84	7.30	6.59	7.99	181.6	8.73	8.90	7.84	6.93	8.81	7.35	

Semi-Final 2 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		11.65		23.22		36.01	42.98	49.94	50.12	4 / 2						
reaction time	0.178	interval				11.57		12.79	6.97	6.96		# of strides	11.65	11.57	12.79	13.93	23.22	26.72	3.50
		velocity		8.58		8.64		7.82	7.17	7.18	7.98	181.0	8.58	8.64	7.82	7.18	8.61	7.49	

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	15-Aug-16	time	6.54	11.88	17.42	23.23	29.42	35.80	42.41	49.51	49.51	4 / 2						
reaction time	0.177	interval		5.34	5.54	5.81	6.19	6.38	6.61	7.10		# of strides	11.88	11.35	12.57	13.71	23.23	26.28	3.05
		velocity	7.65	9.36	9.03	8.61	8.08	7.84	7.56	7.04	8.08	181.0	8.42	8.81	7.96	7.29	8.61	7.61	

FINAL - 2016 USA Olympic Trials (Eugene, OR) *Hymans (2020) - history of the US olympic trials - track and field*

date	03-Jul-16	time				24.2		36.5		49.68	49.68	6 / 1						
reaction time	0.206	interval						12.30		13.18		# of strides			12.30	13.18	24.20	25.48	1.28
		velocity				8.26		8.13		7.59	8.05				8.13	7.59	8.26	7.85	

FINAL - 2015 IAAF World Championships (Beijing, CHN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.29	11.46	17.15	23.34	29.46	35.67	42.24	49.26	49.26	6 / 1						
reaction time	0.164	interval		5.17	5.69	6.19	6.12	6.21	6.57	7.02	PB	# of strides	11.46	11.88	12.33	13.59	23.34	25.92	2.58
		velocity	7.95	9.67	8.79	8.08	8.17	8.05	7.61	7.12	8.12	179.5	8.73	8.42	8.11	7.36	8.57	7.72	

Heat 1 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.39	11.75	17.55	23.89	30.35	36.88	43.50	50.60	50.60	6 / 1						
reaction time	0.173	interval		5.36	5.80	6.34	6.46	6.53	6.62	7.10		# of strides	11.75	12.14	12.99	13.72	23.89	26.71	2.82
		velocity	7.82	9.33	8.62	7.89	7.74	7.66	7.55	7.04	7.91		8.51	8.24	7.70	7.29	8.37	7.49	

FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time				23.4		35.9		49.59	49.59	3 / 2						
reaction time	0.273	interval						12.50		13.69		# of strides			12.50	13.69	23.40	26.19	2.79
		velocity				8.55		8.00		7.30	8.07	175.7			8.00	7.30	8.55	7.64	

Fenton, Lorraine (JAM) (1973)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2003 IAAF World Championships (Paris, FRA)																	*Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*
date	27-Aug-03	time				23.6		35.7		49.43	49.43	5 / 2							
reaction time	0.177	interval						12.10		13.73		# of strides			12.10	13.73	23.60	25.83	2.23
		velocity				8.47		8.26		7.28	8.09				8.26	7.28	8.47	7.74	

FINAL - 2002 Herculis (Monaco, MON) *Veney - split times from PJ*

date	19-Jul-02	time		12.35		23.80		36.27		49.30	49.30	/ 2						
reaction time	0.218	interval				11.45		12.47		13.03	NR	# of strides	12.35	11.45	12.47	13.03	23.80	25.50	1.70
		velocity		8.10		8.73		8.02		7.67	8.11		8.10	8.73	8.02	7.67	8.40	7.84	

FINAL - 2000 Olympic Games (Sydney, AUS) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	25-Sep-00	time		12.14		23.70		36.00		49.58	49.58	4 / 2						
reaction time	0.452	interval				11.56		12.30		13.58	PB	# of strides	12.14	11.56	12.30	13.58	23.70	25.88	2.18
		velocity		8.24		8.65		8.13		7.36	8.07		8.24	8.65	8.13	7.36	8.44	7.73	

Graham, Lorraine (JAM) (1973)

FINAL - 1999 IAAF World Championships (Sevilla, ESP) *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.61	12.11	17.73	23.59	29.78	36.12	42.72	49.92	49.92	3 / 3						
reaction time	0.182	interval		5.50	5.62	5.86	6.19	6.34	6.60	7.20	PB	# of strides	12.11	11.48	12.53	13.80	23.59	26.33	2.74
		velocity	7.56	9.09	8.90	8.53	8.08	7.89	7.58	6.94	8.01		8.26	8.71	7.98	7.25	8.48	7.60	

Fergerson, Mable (USA) (1955)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1972 Olympic Games (Munich, FRG)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date	07-Sep-72	time				24.8				52.0	51.96	3 / 5							
reaction time		interval								27.2		# of strides					24.80	27.20	2.40
		velocity				8.06				7.35	7.70						8.06	7.35	

Firova, Tatyana (RUS) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date	14-Jun-09	time		13.00		25.28		38.20		52.36	52.36	/ 6							
reaction time	0.259	interval				12.28		12.92		14.16		# of strides	13.00	12.28	12.92	14.16	25.28	27.08	1.80
		velocity		7.69		8.14		7.74		7.06	7.64		7.69	8.14	7.74	7.06	7.91	7.39	

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time	13.21		25.44		38.29		51.85	51.85	7 / 7						
reaction time	0.192	interval			12.23		12.85		13.56		# of strides	13.21	12.23	12.85	13.56	25.44	26.41	0.97
		velocity	7.57		8.18		7.78		7.37	7.71		7.57	8.18	7.78	7.37	7.86	7.57	

FINAL - 2008 Olympic Games (Beijing, CHN) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	19-Aug-08	time	12.5		24.0		36.0		50.1	50.11	3 / 6						
reaction time	0.196	interval			11.50		12.00		14.10		# of strides	12.50	11.50	12.00	14.10	24.00	26.10	2.10
		velocity	8.00		8.70		8.33		7.09	7.98	184.0	8.00	8.70	8.33	7.09	8.33	7.66	

Floyd, Ebonie (USA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date	03-Jul-08	time	12.31	17.88	24.70	30.93	37.55	44.23	51.26	51.26	1 / 6							
reaction time		interval		5.57	6.82	6.23	6.62	6.68	7.03		# of strides	12.31	12.39	12.85	13.71	24.70	26.56	1.86
		velocity	8.12	8.98	7.33	8.03	7.55	7.49	7.11	7.80		8.12	8.07	7.78	7.29	8.10	7.53	

Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time	12.70	18.47	24.59	30.79	37.40	44.18	51.37	51.37	4 / 2						
reaction time		interval		5.77	6.12	6.20	6.61	6.78	7.19		# of strides	12.70	11.89	12.81	13.97	24.59	26.78	2.19
		velocity	7.87	8.67	8.17	8.06	7.56	7.37	6.95	7.79		7.87	8.41	7.81	7.16	8.13	7.47	

Formella, Aleksandra (POL) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date	06-Aug-22	time	7.03	12.73	18.83	25.37	32.12	38.98	46.15	53.86	53.86	4 / 3						
reaction time	0.151	interval		5.70	6.10	6.54	6.75	6.86	7.17	7.71		# of strides	12.73	12.64	13.61	14.88	25.37	28.49	3.12
		velocity	7.11	8.77	8.20	7.65	7.41	7.29	6.97	6.49	7.43		7.86	7.91	7.35	6.72	7.88	7.02	

Fox, Jessica (USA) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date	12-Jul-04	time		12.86		24.59		37.64	44.93	53.11	53.11	8 / 6						
reaction time		interval				11.73		13.05	7.29	8.18		# of strides	12.86	11.73	13.05	15.47	24.59	28.52	3.93
		velocity		7.78		8.53		7.66	6.86	6.11	7.53		7.78	8.53	7.66	6.46	8.13	7.01	

FINAL - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	21-Jun-03	time			25.36		38.36	45.11	52.58	52.58	8 / 8						
reaction time		interval					13.00	6.75	7.47		# of strides			13.00	14.22	25.36	27.22	1.86
		velocity			7.89		7.69	7.41	6.69	7.61				7.69	7.03	7.89	7.35	

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time			24.81		38.04	44.93	52.60	52.60	6 / 4						
reaction time		interval					13.23	6.89	7.67		# of strides			13.23	14.56	24.81	27.79	2.98
		velocity			8.06		7.56	7.26	6.52	7.60				7.56	6.87	8.06	7.20	

Francis, Phyllis (USA) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2019 IAAF World Championships (Doha, QAT)																	*Yamanaka (2019) - race analysis of men and women 400m competition*
date	01-Oct-19	time	6.82	12.33	17.95	23.93	30.15	36.65	43.26	50.22	50.22	5 / 2						
reaction time	0.218	interval		5.51	5.62	5.98	6.22	6.50	6.61	6.96		# of strides	12.33	11.60	12.72	13.57	23.93	26.29	2.36
		velocity	7.33	9.07	8.90	8.36	8.04	7.69	7.56	7.18	7.96	175.5	8.11	8.62	7.86	7.37	8.36	7.61	

FINAL - 2019 Meeting de Paris (Paris, FRA) *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.1		23.7		36.8		51.56	51.56	4 / 4						
reaction time	0.237	interval				11.6		13.1		14.8		# of strides	12.10	11.60	13.10	14.76	23.70	27.86	4.16
		velocity		8.26		8.62		7.63		6.78	7.76	179.2	8.26	8.62	7.63	6.78	8.44	7.18	

FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) *Omega Timing (2019) - diamond league race analysis*

date	16-Jun-19	time		12.3		24.1		36.8		50.76	50.76	5 / 4						
reaction time	0.203	interval				11.8		12.7		14.0		# of strides	12.30	11.80	12.70	13.96	24.10	26.66	2.56
		velocity		8.13		8.47		7.87		7.16	7.88	177.0	8.13	8.47	7.87	7.16	8.30	7.50	

FINAL - 2018 Meeting de Paris (Paris, FRA) *Omega Timing (2018) - diamond league race analysis*

date	30-Jun-18	time		12.3		24.2		36.9		50.50	50.50	6 / 3						
reaction time	0.198	interval				11.9		12.7		13.6		# of strides	12.30	11.90	12.70	13.60	24.20	26.30	2.10
		velocity		8.13		8.40		7.87		7.35	7.92	178.2	8.13	8.40	7.87	7.35	8.26	7.60	

FINAL - 2018 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2018) - diamond league race analysis*

date	30-Jun-18	time		12.3		24.0		36.7		50.07	50.07	5 / 2						
reaction time	0.190	interval				11.7		12.7		13.4		# of strides	12.30	11.70	12.70	13.37	24.00	26.07	2.07
		velocity		8.13		8.55		7.87		7.48	7.99	179.0	8.13	8.55	7.87	7.48	8.33	7.67	

FINAL - 2018 Bislett Games (Oslo, NOR) *Omega Timing (2018) - diamond league race analysis*

date	07-Jun-18	time		12.3		23.8		36.4		50.47	50.47	4 / 2						
reaction time	0.205	interval				11.5		12.6		14.1		# of strides	12.30	11.50	12.60	14.07	23.80	26.67	2.87
		velocity		8.13		8.70		7.94		7.11	7.93	177.0	8.13	8.70	7.94	7.11	8.40	7.50	

FINAL - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time		11.70		23.11		35.66	42.40	49.72	49.92	6 / 1						
reaction time	0.196	interval				11.41		12.55	6.74	7.32	PB	# of strides	11.70	11.41	12.55	14.06	23.11	26.61	3.50
		velocity		8.55		8.76		7.97	7.42	6.83	8.01	178.3	8.55	8.76	7.97	7.11	8.65	7.52	

Semi-Final 3 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		11.91		23.19		35.96	42.94	50.18	50.37	5 / 1						
reaction time	0.187	interval				11.28		12.77	6.98	7.24		# of strides	11.91	11.28	12.77	14.22	23.19	26.99	3.80
		velocity		8.40		8.87		7.83	7.16	6.91	7.94	179.2	8.40	8.87	7.83	7.03	8.62	7.41	

FINAL - 2017 USATF National Championship (Sacramento, CA) *Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time		12.23		23.44		36.13		49.96	49.96	4 / 2						
reaction time		interval				11.21		12.69		13.83		# of strides	12.23	11.21	12.69	13.83	23.44	26.52	3.08

		velocity		8.24		8.73		8.12		7.24	8.01		8.18	8.92	7.88	7.23	8.53	7.54

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	15-Aug-16	time	6.74	12.24	17.93	23.78	29.94	36.40	43.14	50.41	50.41	3 / 5						
reaction time	0.219	interval		5.50	5.69	5.85	6.16	6.46	6.74	7.27		# of strides	12.24	11.54	12.62	14.01	23.78	26.63	2.85
		velocity	7.42	9.09	8.79	8.55	8.12	7.74	7.42	6.88	7.93	176.2	8.17	8.67	7.92	7.14	8.41	7.51	

FINAL - 2016 USA Olympic Trials (Eugene, OR) — *Hymans (2020) - history of the US olympic trials - track and field*

date	03-Jul-16	time				24.1		36.6		49.94	49.94	2 / 2						
reaction time	0.190	interval						12.50		13.34	PB	# of strides			12.50	13.34	24.10	25.84	1.74
		velocity				8.30		8.00		7.50	8.01				8.00	7.50	8.30	7.74	

FINAL - 2015 IAAF World Championships (Beijing, CHN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.74	12.28	17.93	23.94	30.23	36.64	43.34	50.51	50.51	3 / 7						
reaction time	0.183	interval		5.54	5.65	6.01	6.29	6.41	6.70	7.17		# of strides	12.28	11.66	12.70	13.87	23.94	26.57	2.63
		velocity	7.42	9.03	8.85	8.32	7.95	7.80	7.46	6.97	7.92		8.14	8.58	7.87	7.21	8.35	7.53	

Heat 4 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.76	12.35	18.07	24.11	30.40	36.81	43.47	50.52	50.52	6 / 2						
reaction time	0.170	interval		5.59	5.72	6.04	6.29	6.41	6.66	7.05	PB	# of strides	12.35	11.76	12.70	13.71	24.11	26.41	2.30
		velocity	7.40	8.94	8.74	8.28	7.95	7.80	7.51	7.09	7.92		8.10	8.50	7.87	7.29	8.30	7.57	

FINAL - 2014 NCAA Championships (Eugene, OR) — *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	13-Jun-14	time				24.1				50.6	50.59	8 / 2						
reaction time		interval								26.50	PB	# of strides					24.10	26.50	2.40
		velocity				8.30				7.55	7.91						8.30	7.55	

Fraser, Donna (GBR) (1972)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2000 Olympic Games (Sydney, AUS) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	25-Sep-00	time		12.4		24.1		36.8		49.8	49.79	2 / 4						
reaction time	0.174	interval				11.70		12.70		13.00	PB	# of strides	12.40	11.70	12.70	13.00	24.10	25.70	1.60
		velocity		8.06		8.55		7.87		7.69	8.03		8.06	8.55	7.87	7.69	8.30	7.78	

FINAL - 1997 European Cup (Munich, GER) — *Jung (2003) - http://www.fgs.uni-halle.de*

date	21-Jun-97	time		12.70		24.57		37.09		51.51	51.51	/ 2						
reaction time		interval				11.87		12.52		14.42	PB	# of strides	12.70	11.87	12.52	14.42	24.57	26.94	2.37
		velocity		7.87		8.42		7.99		6.93	7.77		7.87	8.42	7.99	6.93	8.14	7.42	

Freeman, Cathy (AUS) (1973)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2000 Olympic Games (Sydney, AUS) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	25-Sep-00	time		12.30		24.08		36.14		49.11	49.11	6 / 1						
reaction time	0.227	interval				11.78		12.06		12.97		# of strides	12.30	11.78	12.06	12.97	24.08	25.03	0.95
		velocity		8.13		8.49		8.29		7.71	8.14		8.13	8.49	8.29	7.71	8.31	7.99	

FINAL - 1999 IAAF World Championships (Sevilla, ESP) — *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.56	12.19	17.87	23.79	29.87	35.97	42.50	49.67	49.67	5 / 1						
reaction time	0.193	interval		5.63	5.68	5.92	6.08	6.10	6.53	7.17		# of strides	12.19	11.60	12.18	13.70	23.79	25.88	2.09
		velocity	7.62	8.88	8.80	8.45	8.22	8.20	7.66	6.97	8.05		8.20	8.62	8.21	7.30	8.41	7.73	

FINAL - 1997 IAAF World Championships (Athens, GRE) — *Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*

date	04-Aug-97	time	6.54	12.26	17.90	23.70	29.70	35.90	42.50	49.54	49.77	1 / 1						
reaction time	0.226	interval		5.72	5.64	5.80	6.00	6.20	6.60	7.04		# of strides	12.26	11.44	12.20	13.64	23.70	25.84	2.14
		velocity	7.65	8.74	8.87	8.62	8.33	8.06	7.58	7.10	8.04		8.16	8.74	8.20	7.33	8.44	7.74	

FINAL - 1996 Olympic Games (Atlanta, GA) — *Vazel (2011) - speed reserve in the 400m*

date	29-Jul-96	time		12.2		23.5		35.1		48.6	48.63	4 / 2						
reaction time	0.320	interval				11.27		11.63		13.50	AR	# of strides	12.20	11.27	11.63	13.50	23.47	25.13	1.66
		velocity		8.20		8.87		8.60		7.41	8.23		8.20	8.87	8.60	7.41	8.52	7.96	

FINAL - 1995 IAAF World Championships (Gothenburg, SWE) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	08-Aug-95	time				23.3		35.7		50.6	50.60	4 / 4						
reaction time		interval						12.40		14.90		# of strides			12.40	14.90	23.30	27.30	4.00
		velocity				8.58		8.06		6.71	7.91				8.06	6.71	8.58	7.33	

FINAL - 1994 Herculis (Monaco, MON) — *Vazel (2011) - speed reserve in the 400m*

date	02-Aug-94	time		12.5		24.3		36.9		50.2	50.18	/ 1						
reaction time		interval				11.80		12.60		13.30	PB	# of strides	12.50	11.80	12.60	13.30	24.30	25.90	1.60
		velocity		8.00		8.47		7.94		7.52	7.97		8.00	8.47	7.94	7.52	8.23	7.72	

Frobe, Linnéa (SWE) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2022 Bauhaus Galan (Stockholm, SWE) — *Omega Timing (2022) - diamond league race analysis*

date	30-Jun-22	time	7.05	12.99	19.15	25.56	32.29	39.21	46.66	54.87	54.87	8 / 6						
reaction time	0.216	interval		5.94	6.16	6.41	6.73	6.92	7.45	8.21		# of strides	12.99	12.57	13.65	15.66	25.56	29.31	3.75
		velocity	7.09	8.42	8.12	7.80	7.43	7.23	6.71	6.09	7.29		7.70	7.96	7.33	6.39	7.82	6.82	

Fu Na (CHN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2017 Chinese National Games (Tianjin, CHN) — *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	03-Sep-17	time		13.13		25.36		38.59		53.25	53.25	/ 4						
reaction time		interval				12.23		13.23		14.66	PB	# of strides	13.13	12.23	13.23	14.66	25.36	27.89	2.53
		velocity		7.62		8.18		7.56		6.82	7.51	198.0	7.62	8.18	7.56	6.82	7.89	7.17	

Fuchsová, Helena (CZE) (1965)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1997 IAAF World Championships (Sevilla, ESP) — *Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*

date	04-Aug-97	time	6.62	12.18	17.70	23.66	29.90	36.38	43.14	50.50	50.66	8 / 6						
reaction time	0.159	interval		5.56	5.52	5.96	6.24	6.48	6.76	7.36		# of strides	12.18	11.48	12.72	14.12	23.66	26.84	3.18
		velocity	7.55	8.99	9.06	8.39	8.01	7.72	7.40	6.79	7.90		8.21	8.71	7.86	7.08	8.45	7.45	

Fuji, Mio (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)											*Kijima (2019) - research on athlete performance and technique- 2019 data book*						
date 18-Oct-19 time	7.16	13.43	19.79	26.46	33.24	40.21	47.34	54.73	54.73	7 / 2							
reaction time 0.172 interval		6.27	6.36	6.67	6.78	6.97	7.13	7.39		# of strides	13.43	13.03	13.75	14.52	26.46	28.27	1.81
velocity	6.98	7.97	7.86	7.50	7.37	7.17	7.01	6.77	7.31	202.2	7.45	7.67	7.27	6.89	7.56	7.07	

Fujii, Ayano (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)											*(2017) - tfdata-store.com/2017/06/02/post-835/*						
date 26-May-17 time		13.22		26.24		40.78		56.60	56.60	3 / 6							
reaction time interval				13.02		14.54		15.82		# of strides	13.22	13.02	14.54	15.82	26.24	30.36	4.12
velocity		7.56		7.68		6.88		6.32	7.07	207.5	7.56	7.68	6.88	6.32	7.62	6.59	
FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m)											*(2017) - tfdata-store.com/2017/05/17/post-537/*						
date 23-Apr-17 time		12.89		25.47		39.54			39.54	8 / 5							***100m-300m***
reaction time interval				12.58		14.07			**PB**	# of strides	12.89	12.58	14.07		25.47		*26.65*
velocity		7.76		7.95		7.11			7.59	152.0	7.76	7.95	7.11		7.85		*7.50*
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 05-Oct-15 time	7.33	13.57	20.00	26.81	33.88	41.23	48.91	57.24	57.24	/ 8							
reaction time interval		6.24	6.43	6.81	7.07	7.35	7.68	8.33		# of strides	13.57	13.24	14.42	16.01	26.81	30.43	3.62
velocity	6.82	8.01	7.78	7.34	7.07	6.80	6.51	6.00	6.99		7.37	7.55	6.93	6.25	7.46	6.57	

Fujii, Natsumi (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)											*Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*						
date 29-Jul-09 time		13.23		27.02		40.95		55.32	55.32	5 / 3							
reaction time interval				13.79		13.93		14.37		# of strides	13.23	13.79	13.93	14.37	27.02	28.30	1.28
velocity		7.56		7.25		7.18		6.96	7.23		7.56	7.25	7.18	6.96	7.40	7.07	

Fujinuma, Akane (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN)											*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*						
date 23-Sep-18 time	7.23	13.32	19.59	26.29	33.24	40.41	47.78	55.63	55.63	8 / 5							
reaction time 0.132 interval		6.09	6.27	6.70	6.95	7.17	7.37	7.85	**PB**	# of strides	13.32	12.97	14.12	15.22	26.29	29.34	3.05
velocity	6.92	8.21	7.97	7.46	7.19	6.97	6.78	6.37	7.19		7.51	7.71	7.08	6.57	7.61	6.82	

Fujisawa, Sayaka (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m)											*(2017) - tfdata-store.com/2017/05/17/post-537/*						
date 23-Apr-17 time		12.29		24.25		38.09			38.09	4 / 2							***100m-300m***
reaction time interval				11.96		13.84			**PB**	# of strides	12.29	11.96	13.84		24.25		*25.80*
velocity		8.14		8.36		7.23			7.88	151.7	8.14	8.36	7.23		8.25		*7.75*
FINAL - 2016 National Sports Festival (Kitakami, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 09-Oct-16 time	6.96	12.91	19.12	25.73	32.65	39.89	47.60	56.01	56.01	6 / 8							
reaction time 0.230 interval		5.95	6.21	6.61	6.92	7.24	7.71	8.41		# of strides	12.91	12.82	14.16	16.12	25.73	30.28	4.55
velocity	7.18	8.40	8.05	7.56	7.23	6.91	6.49	5.95	7.14		7.75	7.80	7.06	6.20	7.77	6.61	
Heat 1 - 2016 Japanese National Championships (Nagoya, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 24-Jun-16 time	7.11	13.05	19.19	25.58	32.18	39.22	46.83	55.07	55.07	6 / 4							
reaction time 0.182 interval		5.94	6.14	6.39	6.60	7.04	7.61	8.24		# of strides	13.05	12.53	13.64	15.85	25.58	29.49	3.91
velocity	7.03	8.42	8.14	7.82	7.58	7.10	6.57	6.07	7.26		7.66	7.98	7.33	6.31	7.82	6.78	
FINAL - 2015 Japanese National Championships (Niigata, JPN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 27-Jun-15 time	6.73	12.36	18.18	24.44	31.18	38.19	45.39	53.14	53.14	7 / 2							
reaction time 0.191 interval		5.63	5.82	6.26	6.74	7.01	7.20	7.75	**PB**	# of strides	12.36	12.08	13.75	14.95	24.44	28.70	4.26
velocity	7.43	8.88	8.59	7.99	7.42	7.13	6.94	6.45	7.53	201.0	8.09	8.28	7.27	6.69	8.18	6.97	

Fukuda, Shoko (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 29-Jul-16 time	7.49	13.74	20.09	26.67	33.40	40.27	47.57	55.30	55.30	3 / 5							
reaction time 0.287 interval		6.25	6.35	6.58	6.73	6.87	7.30	7.73		# of strides	13.74	12.93	13.60	15.03	26.67	28.63	1.96
velocity	6.68	8.00	7.87	7.60	7.43	7.28	6.85	6.47	7.23		7.28	7.73	7.35	6.65	7.50	6.99	
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)											*(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*						
date 17-Jun-16 time		13.65		26.55		40.13		54.93	54.93	7 / 1							
reaction time interval				12.90		13.58		14.80		# of strides	13.65	12.90	13.58	14.80	26.55	28.38	1.83
velocity		7.33		7.75		7.36		6.76	7.28		7.33	7.75	7.36	6.76	7.53	7.05	

Fukushima, Miyuki (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)											*(2017) - tfdata-store.com/2017/06/02/post-835/*						
date 26-May-17 time		13.39		26.68		41.21		56.71	56.71	2 / 7							
reaction time interval				13.29		14.53		15.50	**PB**	# of strides	13.39	13.29	14.53	15.50	26.68	30.03	3.35
velocity		7.47		7.52		6.88		6.45	7.05	210.0	7.47	7.52	6.88	6.45	7.50	6.66	

Fukuzato, Akiho (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)											*Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*						
date 29-Jul-12 time		13.53		26.86		40.55		55.49	55.49	8 / 4							
reaction time interval				13.33		13.69		14.94		# of strides	13.53	13.33	13.69	14.94	26.86	28.63	1.77
velocity		7.39		7.50		7.30		6.69	7.21		7.39	7.50	7.30	6.69	7.45	6.99	

Funabiki, Ruka (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)											*Ryutaro (2018) - research on athlete performance and technique- 2018 data book*						
date 19-Oct-18 time	7.34	13.65	20.26	27.07	34.02	41.23	48.78	56.64	56.64	1 / 6							
reaction time 0.202 interval		6.31	6.61	6.81	6.95	7.21	7.55	7.86		# of strides	13.65	13.42	14.16	15.41	27.07	29.57	2.50
velocity	6.81	7.92	7.56	7.34	7.19	6.93	6.62	6.36	7.06		7.33	7.45	7.06	6.49	7.39	6.76	

Funderbunk, Kala (USA) (1992)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2015 NCAA Championships (Eugene, OR) — *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	13-Jun-15	time				26.0				51.7	51.67	8 / 1						
reaction time		interval								25.70		# of strides					26.00	25.70	-0.30
		velocity				7.69				7.78	7.74						7.69	7.78	

Gacka, Kinga (POL) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date 06-Aug-22 time	6.92	12.68	18.59	24.77	31.25	38.05	45.06	52.62	52.62	6 / 1							
reaction time 0.184 interval		5.76	5.91	6.18	6.48	6.80	7.01	7.56		# of strides	12.68	12.09	13.28	14.57	24.77	27.85	3.08
velocity	7.23	8.68	8.46	8.09	7.72	7.35	7.13	6.61	7.60		7.89	8.27	7.53	6.86	8.07	7.18	

Gale, Lauren (CAN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date 17-Jul-22 time		12.30		24.55		37.66		52.46	52.46	5 / 5							
reaction time 0.157 interval				12.25		13.11		14.80		# of strides	12.30	12.25	13.11	14.80	24.55	27.91	3.36
velocity		8.13		8.16		7.63		6.76	7.62	191.5	8.13	8.16	7.63	6.76	8.15	7.17	

Gardner, Gwen (USA) (1960)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 USA Olympic Trials (Eugene, OR)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 25-Jun-80 time				24.0				51.7	51.68	/ 2							
reaction time interval								27.70		# of strides					24.00	27.70	3.70
velocity				8.33				7.22	7.74						8.33	7.22	

Gautadottir, Marin Stray (NOR) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)																	*Omega Timing (2023) - diamond league race analysis*
date 15-Jun-23 time	7.14	13.11	19.47	26.06	32.72	39.80	47.33	55.22	55.22	8 / 4							
reaction time 0.177 interval		5.97	6.36	6.59	6.66	7.08	7.53	7.89	PB	# of strides	13.11	12.95	13.74	15.42	26.06	29.16	3.10
velocity	7.00	8.38	7.86	7.59	7.51	7.06	6.64	6.34	7.24		7.63	7.72	7.28	6.49	7.67	6.86	

Gaworska, Aleksandra (POL) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date 06-Aug-22 time	7.13	12.98	19.03	25.39	32.04	39.08	46.58	54.79	54.79	3 / 6							
reaction time 0.202 interval		5.85	6.05	6.36	6.65	7.04	7.50	8.21		# of strides	12.98	12.41	13.69	15.71	25.39	29.40	4.01
velocity	7.01	8.55	8.26	7.86	7.52	7.10	6.67	6.09	7.30		7.70	8.06	7.30	6.37	7.88	6.80	

Gaye, Fatou (SEN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)																	*Seiko Timing (2023) - world championship race analysis*
date 08-Sep-23 time	6.83	12.85	19.15	25.74	32.72	39.74	46.84	54.19	54.19	2 / 7							
reaction time 0.197 interval		6.02	6.30	6.59	6.98	7.02	7.10	7.35		# of strides	12.85	12.89	14.00	14.45	25.74	28.45	2.71
velocity	7.32	8.31	7.94	7.59	7.16	7.12	7.04	6.80	7.38		7.78	7.76	7.14	6.92	7.77	7.03	

Gayot, Marie (FRA) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15 time	7.10	13.02	19.02	25.21	31.59	37.89	44.39	51.24	51.24	6 / 2							
reaction time 0.200 interval		5.92	6.00	6.19	6.38	6.30	6.50	6.85	PB	# of strides	13.02	12.19	12.68	13.35	25.21	26.03	0.82
velocity	7.04	8.45	8.33	8.08	7.84	7.94	7.69	7.30	7.81		7.68	8.20	7.89	7.49	7.93	7.68	

George, Patience (NGR) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)																	*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*
date 07-Aug-17 time		12.09		23.79		37.44	44.41	52.41	52.60	4 / 7							
reaction time 0.189 interval				11.70		13.65	6.97	8.00		# of strides	12.09	11.70	13.65	14.97	23.79	28.62	4.83
velocity		8.27		8.55		7.33	7.17	6.25	7.60	199.0	8.27	8.55	7.33	6.68	8.41	6.99	
Heat 5 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15 time	6.71	12.18	17.87	23.83	30.00	36.53	43.47	50.87	50.87	3 / 3							
reaction time 0.249 interval		5.47	5.69	5.96	6.17	6.53	6.94	7.40		# of strides	12.18	11.65	12.70	14.34	23.83	27.04	3.21
velocity	7.45	9.14	8.79	8.39	8.10	7.66	7.20	6.76	7.86		8.21	8.58	7.87	6.97	8.39	7.40	

George, Regina (NGR) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15 time	6.84	12.51	18.42	24.54	31.01	37.55	44.41	51.74	51.74	9 / 4							
reaction time 0.192 interval		5.67	5.91	6.12	6.47	6.54	6.86	7.33		# of strides	12.51	12.03	13.01	14.19	24.54	27.20	2.66
velocity	7.31	8.82	8.46	8.17	7.73	7.65	7.29	6.82	7.73		7.99	8.31	7.69	7.05	8.15	7.35	
Heat 7 - 2012 Olympic Games (London, GBR)																	Hadley (2012) - uka 2012 olympic games report: 400m, 4x 400m
date 03-Aug-12 time				23.54				51.24	51.24	6 / 1							
reaction time 0.175 interval								27.70		# of strides					23.54	27.70	4.16
velocity				8.50				7.22	7.81	193.0					8.50	7.22	

Ghafoor, Madiea (NED) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																	*Omega Timing (2019) - diamond league race analysis*
date 16-Jun-19 time		12.3		24.2		37.6		52.92	52.92	1 / 8							
reaction time 0.205 interval				11.9		13.4		15.3		# of strides	12.30	11.90	13.40	15.32	24.20	28.72	4.52
velocity		8.13		8.40		7.46		6.53	7.56	199.5	8.13	8.40	7.46	6.53	8.26	6.96	

Gilbert, Nina (USA) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.43	18.29	24.49	30.99	37.82	45.15	53.37	53.37	3 / 4							
reaction time interval			5.86	6.20	6.50	6.83	7.33	8.22		# of strides	12.43	12.06	13.33	15.55	24.49	28.88	4.39
velocity		8.05	8.53	8.06	7.69	7.32	6.82	6.08	7.49		8.05	8.29	7.50	6.43	8.17	6.93	

Giger, Yasmin (SUI) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Weltklasse (Zürich, SUI)																	*Omega Timing (2022) - diamond league race analysis*
date 08-Sep-22 time	7.10	13.09	19.21	25.48	31.89	38.60	45.59	52.90	52.90	3 / 8							
reaction time 0.156 interval		5.99	6.12	6.27	6.41	6.71	6.99	7.31		# of strides	13.09	12.39	13.12	14.30	25.48	27.42	1.94
velocity	7.04	8.35	8.17	7.97	7.80	7.45	7.15	6.84	7.56		7.64	8.07	7.62	6.99	7.85	7.29	

National FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	7.0	12.9	19.0	25.3	31.7	38.3	45.2	52.42	52.42	6 / 1						
reaction time	0.150	interval		5.90	6.10	6.30	6.40	6.60	6.90	7.22	PB	# of strides	12.90	12.40	13.00	12.14	25.30	27.12	1.82
		velocity	7.14	8.47	8.20	7.94	7.81	7.58	7.25	6.93	7.63		7.75	8.06	7.69	7.08	7.91	7.37	

B FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	7.1	13.1	19.4	25.8	32.3	38.9	45.8	53.03	53.03	2 / 7						
reaction time	0.164	interval		6.00	6.30	6.40	6.50	6.60	6.90	7.23		# of strides	13.10	12.70	13.10	14.13	25.80	27.23	1.43
		velocity	7.04	8.33	7.94	7.81	7.69	7.58	7.25	6.92	7.54		7.63	7.87	7.63	7.08	7.75	7.34	

B Race - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	7.1	13.1	19.5	26.0	32.4	39.1	46.1	53.39	53.39	7 / 3						
reaction time	0.148	interval		6.00	6.40	6.50	6.40	6.70	7.00	7.29		# of strides	13.10	12.90	13.10	14.29	26.00	27.39	1.39
		velocity	7.04	8.33	7.81	7.69	7.81	7.46	7.14	6.86	7.49		7.63	7.75	7.63	7.00	7.69	7.30	

Gogl-Walli, Susanne (AUT) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.50		24.25		37.37		51.50	51.50	2 / 7							
reaction time	0.168	interval				11.75		13.12		14.13		# of strides	12.50	11.75	13.12	14.13	24.25	27.25	3.00
		velocity		8.00		8.51		7.62		7.08	7.77		8.00	8.51	7.62	7.08	8.25	7.34	
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.48		24.27		37.18		51.00	51.00	4 / 4							
reaction time	0.173	interval				11.79		12.91		13.82		# of strides	12.48	11.79	12.91	13.82	24.27	26.73	2.46
		velocity		8.01		8.48		7.75		7.24	7.84		8.01	8.48	7.75	7.24	8.24	7.48	

Walli, Susanne (AUT) (1996)

National FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	7.04	12.73	18.59	24.59	30.86	37.53	44.53	51.74	51.74	4 / 2						
reaction time	0.148	interval		5.69	5.86	6.00	6.27	6.67	7.00	7.21		# of strides	12.73	11.86	12.94	14.21	24.59	27.15	2.56
		velocity	7.10	8.79	8.53	8.33	7.97	7.50	7.14	6.93	7.73		7.86	8.43	7.73	7.04	8.13	7.37	

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.73		24.97		38.13		52.37	52.37	1 / 8						
reaction time	0.157	interval				12.24		13.16		14.24		# of strides	12.73	12.24	13.16	14.24	24.97	27.40	2.43
		velocity		7.86		8.17		7.60		7.02	7.64		7.86	8.17	7.60	7.02	8.01	7.30	

Heat 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.50		24.66		37.82		52.18	52.18	3 / 4						
reaction time	0.170	interval				12.16		13.16		14.36		# of strides	12.50	12.16	13.16	14.36	24.66	27.52	2.86
		velocity		8.00		8.22		7.60		6.96	7.67	197.2	8.00	8.22	7.60	6.96	8.11	7.27	

FINAL - 2022 FBK Games (Hengelo, NED) *Omega Timing (2022) - continental tour race analysis*

date	06-Jun-22	time	6.9	12.4	18.2	24.4	30.8	37.7	45.0	53.02	53.02	1 / 8						
reaction time	0.170	interval		5.50	5.80	6.20	6.40	6.90	7.30	8.02		# of strides	12.40	12.00	13.30	15.32	24.40	28.62	4.22
		velocity	7.25	9.09	8.62	8.06	7.81	7.25	6.85	6.23	7.54		8.06	8.33	7.52	6.53	8.20	6.99	

Gola, Marlena (POL) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date	06-Aug-22	time	7.03	13.15	19.57	26.32	33.24	40.55	48.21	56.36	56.36	9 / 7							
reaction time	0.174	interval		6.12	6.42	6.75	6.92	7.31	7.66	8.15		# of strides	13.15	13.17	14.23	15.81	26.32	30.04	3.72
		velocity	7.11	8.17	7.79	7.41	7.23	6.84	6.53	6.13	7.10		7.60	7.59	7.03	6.33	7.60	6.66	

Gómez, Roxana (CUB) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.68		24.33		36.91		51.07	51.07	7 / 3							
reaction time	0.227	interval				11.65		12.58		14.16		# of strides	12.68	11.65	12.58	14.16	24.33	26.74	2.41
		velocity		7.89		8.58		7.95		7.06	7.83	193.0	7.89	8.58	7.95	7.06	8.22	7.48	
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.56		24.10		36.81		50.86	50.86	6 / 2							
reaction time	0.207	interval				11.54		12.71		14.05		# of strides	12.56	11.54	12.71	14.05	24.10	26.76	2.66
		velocity		7.96		8.67		7.87		7.12	7.86	190.2	7.96	8.67	7.87	7.12	8.30	7.47	
FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA)																	*Omega Timing (2023) - diamond league race analysis*
date	02-Jun-23	time	7.01	12.64	18.44	24.44	30.63	37.08	43.93	51.29	51.29	2 / 4							
reaction time	0.193	interval		5.63	5.80	6.00	6.19	6.45	6.85	7.36		# of strides	12.64	11.80	12.64	14.21	24.44	26.85	2.41
		velocity	7.13	8.88	8.62	8.33	8.08	7.75	7.30	6.79	7.80		7.91	8.47	7.91	7.04	8.18	7.45	
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date	20-Jul-22	time		12.70		24.77		37.40		51.12	51.12	7 / 4							
reaction time	0.192	interval				12.07		12.63		13.72		# of strides	12.70	12.07	12.63	13.72	24.77	26.35	1.58
		velocity		7.87		8.29		7.92		7.29	7.82	188.0	7.87	8.29	7.92	7.29	8.07	7.59	
Heat 5 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date	17-Jul-22	time		12.94		25.14		38.01		51.85	51.85	6 / 3							
reaction time	0.190	interval				12.20		12.87		13.84		# of strides	12.94	12.20	12.87	13.84	25.14	26.71	1.57
		velocity		7.73		8.20		7.77		7.23	7.71	188.0	7.73	8.20	7.77	7.23	7.96	7.49	
FINAL - 2022 FBK Games (Hengelo, NED)																	*Omega Timing (2022) - continental tour race analysis*
date	06-Jun-22	time	6.8	12.4	18.3	24.1	30.3	36.8	43.6	51.18	51.18	6 / 1							
reaction time	0.169	interval		5.60	5.90	5.80	6.20	6.50	6.80	7.58		# of strides	12.40	11.70	12.70	14.38	24.10	27.08	2.98
		velocity	7.35	8.93	8.47	8.62	8.06	7.69	7.35	6.60	7.82	187.5	8.06	8.55	7.87	6.95	8.30	7.39	

Semi-Final 1 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.60		24.59		37.38	44.28	51.76	52.01	3 / 5

reaction time	0.251	interval			11.99		12.79	6.90	7.48		# of strides	12.60	11.99	12.79	14.38	24.59	27.17	2.58
		velocity		7.94		8.34		7.82	7.25	6.68	7.69	190.3	7.94	8.34	7.82	6.95	8.13	7.36	

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Jul-16	time	7.19	12.86	18.79	24.89	31.13	37.67	44.53	52.24	52.24	9 / 6						
reaction time	0.227	interval		5.67	5.93	6.10	6.24	6.54	6.86	7.71	**PB**	# of strides	12.86	12.03	12.78	14.57	24.89	27.35	2.46
		velocity	6.95	8.82	8.43	8.20	8.01	7.65	7.29	6.49	7.66		7.78	8.31	7.82	6.86	8.04	7.31	

Gono, Shiina (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)											*Ryutaro (2018) - research on athlete performance and technique- 2018 data book*						
date	19-Oct-18	time	7.28	13.60	20.10	26.88	33.87	41.14	48.60	56.59	56.59	1 / 7						
reaction time	0.198	interval		6.32	6.50	6.78	6.99	7.27	7.46	7.99		# of strides	13.60	13.28	14.26	15.45	26.88	29.71	2.83
		velocity	6.87	7.91	7.69	7.37	7.15	6.88	6.70	6.26	7.07		7.35	7.53	7.01	6.47	7.44	6.73	

González, Norma (COL) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)											*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*						
date	16-Aug-09	time		12.21		23.92		37.15		51.91	51.91	1 / 6						
reaction time	0.193	interval				11.71		13.23		14.76		# of strides	12.21	11.71	13.23	14.76	23.92	27.99	4.07
		velocity		8.19		8.54		7.56		6.78	7.71		8.19	8.54	7.56	6.78	8.36	7.15	

Heat 5 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.38		24.80		37.06		51.86	51.86	3 / 4						
reaction time	0.187	interval				12.42		12.26		14.80	**PB**	# of strides	12.38	12.42	12.26	14.80	24.80	27.06	2.26
		velocity		8.08		8.05		8.16		6.76	7.71		8.08	8.05	8.16	6.76	8.06	7.39	

Gordon, Chrisann (JAM) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date	07-Aug-17	time		12.24		23.83		36.44	43.32	50.70	50.87	7 / ~~3~~ 2						
reaction time	0.172	interval				11.59		12.61	6.88	7.38		# of strides	12.24	11.59	12.61	14.26	23.83	26.87	3.04
		velocity		8.17		8.63		7.93	7.27	6.78	7.86	201.7	8.17	8.63	7.93	7.01	8.39	7.44	

FINAL - 2017 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	10-Jun-17	time				23.6		36.6		50.5	50.51	4 / 1						
reaction time		interval						13.00		13.90		# of strides			13.00	13.90	23.60	26.90	3.30
		velocity				8.47		7.69		7.19	7.92	197.5			7.69	7.19	8.47	7.43	

Graham, Kim (USA) (1971)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA)											*USATF Women's Sprint Development (1996)*						
date	19-Jun-96	time		12.55		24.34		36.84	43.63	50.87	50.87	6 / 3						
reaction time		interval				11.79		12.50	6.79	7.24		# of strides	12.55	11.79	12.50	14.03	24.34	26.53	2.19
		velocity		7.97		8.48		8.00	7.36	6.91	7.86		7.97	8.48	8.00	7.13	8.22	7.54	

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.36		23.93		36.34	43.18	50.53	50.53	4 / 1						
reaction time		interval				11.57		12.41	6.84	7.35	**PB**	# of strides	12.36	11.57	12.41	14.19	23.93	26.60	2.67
		velocity		8.09		8.64		8.06	7.31	6.80	7.92		8.09	8.64	8.06	7.05	8.36	7.52	

Grant, Sharkara (USA) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)											*USATF Women's Sprint Development (1996)*						
date	29-Jun-96	time		12.93		25.05		38.55	46.14	54.33	54.33	2 / 6						
reaction time		interval				12.12		13.50	7.59	8.19		# of strides	12.93	12.12	13.50	15.78	25.05	29.28	4.23
		velocity		7.73		8.25		7.41	6.59	6.11	7.36		7.73	8.25	7.41	6.34	7.98	6.83	

Graves-Fulgham, Mandela (USA) (198

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 USATF National Junior Championship (Indianapolis, IN)											*USATF Women's Sprint Development (2006)*						
date	24-Jun-06	time		13.06	19.10	23.64	32.11	39.39	46.88	55.11	55.11	2 / ~~8~~ 7						
reaction time		interval			6.04	4.54	8.47	7.28	7.49	8.23		# of strides	13.06	10.58	15.75	15.72	23.64	31.47	7.83
		velocity		7.66	8.28	11.01	5.90	6.87	6.68	6.08	7.26		7.66	9.45	6.35	6.36	8.46	6.36	

Grebo, Shana (FRA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Meeting de Paris (Paris, FRA)											*Omega Timing (2022) - diamond league race analysis*						
date	18-Jun-22	time	6.75	12.39	18.33	24.45	30.87	37.60	44.55	51.98	51.98	1 / 8						
reaction time	0.166	interval		5.64	5.94	6.12	6.42	6.73	6.95	7.43		# of strides	12.39	12.06	13.15	14.38	24.45	27.53	3.08
		velocity	7.41	8.87	8.42	8.17	7.79	7.43	7.19	6.73	7.70		8.07	8.29	7.60	6.95	8.18	7.26	

Green, Nicole (USA) (1971)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA)											*USATF Women's Sprint Development (1996)*						
date	19-Jun-96	time		12.59		24.56		37.28	44.30	51.95	51.95	8 / 7						
reaction time		interval				11.97		12.72	7.02	7.65		# of strides	12.59	11.97	12.72	14.67	24.56	27.39	2.83
		velocity		7.94		8.35		7.86	7.12	6.54	7.70		7.94	8.35	7.86	6.82	8.14	7.30	

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.63		24.25		36.90	43.74	51.09	51.09	3 / 4						
reaction time		interval				11.62		12.65	6.84	7.35	**PB**	# of strides	12.63	11.62	12.65	14.19	24.25	26.84	2.59
		velocity		7.92		8.61		7.91	7.31	6.80	7.83		7.92	8.61	7.91	7.05	8.25	7.45	

Greggs, Charlette (USA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)											*USATF Women's Sprint Development (2004)*						
date	15-Jul-04	time		12.60		24.34	30.60	37.27	44.41	52.87	52.87	7 / 7						
reaction time		interval				11.74	6.26	6.67	7.14	8.46		# of strides	12.60	11.74	12.93	15.60	24.34	28.53	4.19
		velocity		7.94		8.52	7.99	7.50	7.00	5.91	7.57	181.0	7.94	8.52	7.73	6.41	8.22	7.01	

Heat 3 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.48		24.26		38.00	46.96	53.71	53.71	5 / 5						
reaction time		interval				11.78		13.74	8.96	6.75		# of strides	12.48	11.78	13.74	15.71	24.26	29.45	5.19
		velocity		8.01		8.49		7.28	5.58	7.41	7.45	186.0	8.01	8.49	7.28	6.37	8.24	6.79	

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time			24.21		38.16	45.56	53.77	53.77	8 / 5							
reaction time		interval					13.95	7.40	8.21		# of strides			13.95	15.61	24.21	29.56	5.35
		velocity			8.26		7.17	6.76	6.09	7.44				7.17	6.41	8.26	6.77	

Grenot, Libania (ITA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 15-Aug-16	time	6.77	12.24	17.97	23.85	30.13	36.66	43.69	51.25	51.25	2 / 8							
reaction time 0.149	interval		5.47	5.73	5.88	6.28	6.53	7.03	7.56		# of strides	12.24	11.61	12.81	14.59	23.85	27.40	3.55
	velocity	7.39	9.14	8.73	8.50	7.96	7.66	7.11	6.61	7.80	187.5	8.17	8.61	7.81	6.85	8.39	7.30	

Heat 6 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.71	12.38	18.37	24.60	31.02	37.64	44.49	51.64	51.64	8 / 4							
reaction time	0.186	interval		5.67	5.99	6.23	6.42	6.62	6.85	7.15		# of strides	12.38	12.22	13.04	14.00	24.60	27.04	2.44
		velocity	7.45	8.82	8.35	8.03	7.79	7.55	7.30	6.99	7.75		8.08	8.18	7.67	7.14	8.13	7.40	

FINAL - 2014 European Championships (Zurich, SUI) — Incalza (2014) - https://www.youtube.com/watch?v=09l9yDmjZus&list=UU7691fXeyNFIMROfkJ-WWUg

date	15-Aug-14	time		11.95		23.49		36.30		51.10	51.10	3 / 1							
reaction time	0.180	interval				11.54		12.81		14.80		# of strides			12.81	14.80	23.49	27.61	4.12
		velocity		8.37		8.67		7.81		6.76	7.83				7.81	6.76	8.51	7.24	

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.82		25.02		37.37		50.85	50.85	5 / 4							
reaction time	0.178	interval				12.20		12.35		13.48		# of strides	12.82	12.20	12.35	13.48	25.02	25.83	0.81
		velocity		7.80		8.20		8.10		7.42	7.87		7.80	8.20	8.10	7.42	7.99	7.74	

Heat 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.89		25.00		37.64		51.45	51.45	5 / 2							
reaction time	0.188	interval				12.11		12.64		13.81		# of strides	12.89	12.11	12.64	13.81	25.00	26.45	1.45
		velocity		7.76		8.26		7.91		7.24	7.77		7.76	8.26	7.91	7.24	8.00	7.56	

Griffin, Jenna (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR)											*USATF Women's Sprint Development with HPC (2008)*						
date 29-Jun-08	time		12.41	18.42	24.72	31.38	38.28	45.41	53.20	53.20	2 / 5							
reaction time	interval			6.01	6.30	6.66	6.90	7.13	7.79		# of strides	12.41	12.31	13.56	14.92	24.72	28.48	3.76
	velocity		8.06	8.32	7.94	7.51	7.25	7.01	6.42	7.52		8.06	8.12	7.37	6.70	8.09	7.02	

Griffith, Florence (USA) (1959)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1984 USA Olympic Trials (Los Angeles, CA)											*USATF Women's Sprint Development with HPC (2008)*						
date 19-Jun-84	time				23.8				51.2	51.11	4 / 6							
reaction time	interval								27.40		# of strides					23.80	27.40	3.60
	velocity				8.40				7.30	7.83						8.40	7.30	

Gröbli, Michelle (SUI) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Athletissima (Lausanne, SUI)											*Omega Timing (2022) - diamond league race analysis*						
date 26-Aug-22	time	6.8	12.7	18.8	25.2	31.8	38.7	46.0	54.09	54.09	7 / 6							
reaction time 0.154	interval		5.90	6.10	6.40	6.60	6.90	7.30	8.09		# of strides	12.70	12.50	13.50	15.39	25.20	28.89	3.69
	velocity	7.35	8.47	8.20	7.81	7.58	7.25	6.85	6.18	7.40		7.87	8.00	7.41	6.50	7.94	6.92	

Gubelmann, Catia (SUI) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Athletissima (Lausanne, SUI)											*Omega Timing (2023) - diamond league race analysis*						
date 30-Jun-23	time	6.83	12.55	18.51	24.84	31.46	38.56	45.87	53.61	53.61	6 / 3							
reaction time 0.120	interval		5.72	5.96	6.33	6.62	7.10	7.31	7.74	**PB**	# of strides	12.55	12.29	13.72	15.05	24.84	28.77	3.93
	velocity	7.32	8.74	8.39	7.90	7.55	7.04	6.84	6.46	7.46		7.97	8.14	7.29	6.64	8.05	6.95	

Guei, Floria (FRA) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Meeting de Paris (Paris, FRA)											*Omega Timing (2018) - diamond league race analysis*						
date 30-Jun-18	time		12.5		24.4		37.2		51.71	51.71	7 / 7							
reaction time 0.184	interval				11.9		12.8		14.5		# of strides	12.50	11.90	12.80	14.51	24.40	27.31	2.91
	velocity		8.00		8.40		7.81		6.89	7.74	195.0	8.00	8.40	7.81	6.89	8.20	7.32	

FINAL - 2018 Bislett Games (Oslo, NOR) — *Omega Timing (2018) - diamond league race analysis*

date	07-Jun-18	time		12.4		24.5		37.7		51.84	51.84	1 / 8							
reaction time	0.194	interval				12.1		13.2		14.1		# of strides	12.40	12.10	13.20	14.14	24.50	27.34	2.84
		velocity		8.06		8.26		7.58		7.07	7.72	197.0	8.06	8.26	7.58	7.07	8.16	7.32	

FINAL - 2017 Meeting de Paris (Paris, FRA) — *Omega Timing (2017) - diamond league race analysis*

date	01-Jul-17	time			12.6	18.6	24.7	31.1	37.9	45.0	52.33	52.33	3 / 5						
reaction time	0.192	interval				6.0	6.1	6.4	6.8	7.1	7.3		# of strides	12.60	12.10	13.20	14.43	24.70	27.63	2.93
		velocity			7.94	8.33	8.20	7.81	7.35	7.04	6.82	7.64	192.5	7.94	8.26	7.58	6.93	8.10	7.24	

Heat 1 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.93	12.56	18.47	24.61	30.84	37.21	43.85	50.89	50.89	7 / 2							
reaction time	0.203	interval		5.63	5.91	6.14	6.23	6.37	6.64	7.04	**PB**	# of strides	12.56	12.05	12.60	13.68	24.61	26.28	1.67
		velocity	7.22	8.88	8.46	8.14	8.03	7.85	7.53	7.10	7.86		7.96	8.30	7.94	7.31	8.13	7.61	

Guevara, Ana (MEX) (1977)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 IAAF World Championships (Osaka, JPN)											*Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*						
date 29-Aug-07	time	6.90	12.47	18.28	24.31	30.24	36.50	43.05	50.16	50.16	9 / 4							
reaction time 0.183	interval		5.57	5.81	6.03	5.93	6.26	6.55	7.11		# of strides	12.47	11.84	12.19	13.66	24.31	25.85	1.54
	velocity	7.25	8.98	8.61	8.29	8.43	7.99	7.63	7.03	7.97	196.0	8.02	8.45	8.20	7.32	8.23	7.74	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-05	time					36.1		49.8	49.81	4 / 3							
reaction time	0.144	interval							13.71		# of strides				13.71			

		velocity				8.31		7.29	8.03	196.0				7.29			

FINAL - 2004 Olympic Games (Athens, GRE) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	24-Aug-04	time	12.0		23.5		35.7		49.6	49.56	3 / 2						
reaction time	0.234	interval			11.5		12.2		13.9		# of strides	12.00	11.50	12.20	13.90	23.50	26.10	2.60
		velocity	8.33		8.70		8.20		7.19	8.07		8.33	8.70	8.20	7.19	8.51	7.66	

FINAL - 2003 IAAF World Championships (Paris, FRA) — *Smith (2005) - high performance sprinting*

date	27-Aug-03	time	12.00		23.20		35.70		48.89	48.89	3 / 1						
reaction time	0.242	interval			11.20		12.50		13.19	**AR**	# of strides	12.00	11.20	12.50	13.19	23.20	25.69	2.49
		velocity	8.33		8.93		8.00		7.58	8.18		8.33	8.93	8.00	7.58	8.62	7.79	

FINAL - 2000 Olympic Games (Sydney, AUS) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	25-Sep-00	time	12.3		24.1		36.3		50.0	49.96	5 / 5						
reaction time	0.261	interval			11.80		12.20		13.70		# of strides	12.30	11.80	12.20	13.70	24.10	25.90	1.80
		velocity	8.13		8.47		8.20		7.30	8.01		8.13	8.47	8.20	7.30	8.30	7.72	

Gulli-Nance, Jess (AUS) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 03-May-16	time	7.10	13.06	19.29	25.77	32.43	39.50	46.72	54.20	54.20	/ 1						
reaction time	interval		5.96	6.23	6.48	6.66	7.07	7.22	7.48		# of strides	13.06	12.71	13.73	14.70	25.77	28.43	2.66
	velocity	7.04	8.39	8.03	7.72	7.51	7.07	6.93	6.68	7.38		7.66	7.87	7.28	6.80	7.76	7.03	

Gushchina, Yuliya (RUS) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)											*Graubner (2009) - http://www.fgs.uni-halle.de*						
date 14-Jun-09	time		12.21		24.26		37.11		51.10	51.10	/ 3						
reaction time 0.186	interval				12.05		12.85		13.99		# of strides	12.21	12.05	12.85	13.99	24.26	26.84	2.58
	velocity		8.19		8.30		7.78		7.15	7.83		8.19	8.30	7.78	7.15	8.24	7.45	

FINAL - 2008 Olympic Games (Beijing, CHN) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	19-Aug-08		11.8		23.3		35.8		50.0	50.01	5 / 4						
reaction time	0.242	interval			11.50		12.50		14.20	**PB**	# of strides	11.80	11.50	12.50	14.20	23.30	26.70	3.40
		velocity	8.47		8.70		8.00		7.04	8.00	181.5	8.47	8.70	8.00	7.04	8.58	7.49	

Häggman, Pirjo (FIN) (1951)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 Olympic Games (Moscow, URS)											*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*						
date 28-Jul-80	time						37.6		51.35	51.35	2 / 7						
reaction time	interval								13.75		# of strides				13.75			
	velocity						7.98		7.27	7.79					7.27			

FINAL - 1976 Olympic Games (Montreal, CAN) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-76	time			24.0		35.9		50.6	50.56	1 / 4						
reaction time		interval					11.90		14.70		# of strides			11.90	14.70	24.00	26.60	2.60
		velocity			8.33		8.40		6.80	7.91				8.40	6.80	8.33	7.52	

Hagiwara, Sayaka (JPN) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)									*Matsuo (2009) - 62nd high school championships: JAF scientific committee - biomechanics data collection*								
date 29-Jul-09	time		13.53		27.60		42.13		57.18	57.18	8 / 8						
reaction time	interval				14.07		14.53		15.05		# of strides	13.53	14.07	14.53	15.05	27.60	29.58	1.98
	velocity		7.39		7.11		6.88		6.64	7.00		7.39	7.11	6.88	6.64	7.25	6.76	

Halkiá, Faní (GRE) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 European Cup (Munich, GER)											*Graubner (2007) - http://www.fgs.uni-halle.de*						
date 23-Jun-07	time		12.92		24.78		37.46		51.85	51.85	/ 1						
reaction time 0.180	interval				11.86		12.68		14.39		# of strides	12.92	11.86	12.68	14.39	24.78	27.07	2.29
	velocity		7.74		8.43		7.89		6.95	7.71		7.74	8.43	7.89	6.95	8.07	7.39	

Hall, Anna (USA) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Meeting de Paris (Paris, FRA)											*Omega Timing (2023) - diamond league race analysis*						
date 09-Jun-23	time	6.54	12.02	17.76	23.72	29.89	36.45	43.35	50.82	50.82	8 / 7						
reaction time 0.179	interval		5.48	5.74	5.96	6.17	6.56	6.90	7.47	**PB**	# of strides	12.02	11.70	12.73	14.37	23.72	27.10	3.38
	velocity	7.65	9.12	8.71	8.39	8.10	7.62	7.25	6.69	7.87	182.0	8.32	8.55	7.86	6.96	8.43	7.38	

Hall, Monique (USA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2004 USA Olympic Trials (Sacramento, CA)											*USATF Women's Sprint Development (2004)*						
date 12-Jul-04	time		12.35		23.99		37.08	44.29	52.71	52.71	6 / 5						
reaction time	interval				11.64		13.09	7.21	8.42		# of strides	12.35	11.64	13.09	15.63	23.99	28.72	4.73
	velocity		8.10		8.59		7.64	6.93	5.94	7.59		8.10	8.59	7.64	6.40	8.34	6.96	

Hammond, Kathy (USA) (1951)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1972 Olympic Games (Munich, FRG)											*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*						
date 07-Sep-72	time				24.5				51.6	51.64	5 / 3						
reaction time	interval								27.1		# of strides					24.50	27.10	2.60
	velocity				8.16				7.38	7.75						8.16	7.38	

Hanchak, Heather (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)											*USATF Women's Sprint Development (1996)*						
date 29-Jun-96	time		12.56		24.57		38.02	45.59	53.69	53.69	3 / 4						
reaction time	interval				12.01		13.45	7.57	8.10		# of strides	12.56	12.01	13.45	15.67	24.57	29.12	4.55
	velocity		7.96		8.33		7.43	6.61	6.17	7.45		7.96	8.33	7.43	6.38	8.14	6.87	

Hanssens, Ilana (BEL) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Memorial van Damme (Brussels, BEL)											*Omega Timing (2021) - diamond league race analysis*						
date 03-Sep-21	time	7.1	12.9	19.1	25.7	32.6	39.9	47.7	56.27	56.27	1 / 7						
reaction time 0.169	interval		5.80	6.20	6.60	6.90	7.30	7.80	8.57		# of strides	12.90	12.80	14.20	16.37	25.70	30.57	4.87
	velocity	7.04	8.62	8.06	7.58	7.25	6.85	6.41	5.83	7.11		7.75	7.81	7.04	6.11	7.78	6.54	

Hardeman, Christina (USA) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2003 USATF National Junior Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 22-Jun-03 time				25.11		38.64	45.75	53.76	53.76	9 / 8							
reaction time interval						13.53	7.11	8.01	PB	# of strides			13.53	15.12	25.11	28.65	3.54
velocity				7.96		7.39	7.03	6.24	7.44				7.39	6.61	7.96	6.98	

Hargrove, Monica (USA) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 03-Jul-08 time		12.28	17.40	24.20	30.40	37.10	44.30	51.94	51.94	2 / 7							
reaction time interval			5.12	6.80	6.20	6.70	7.20	7.64		# of strides	12.28	11.92	12.90	14.84	24.20	27.74	3.54
velocity		8.14	9.77	7.35	8.06	7.46	6.94	6.54	7.70		8.14	8.39	7.75	6.74	8.26	7.21	
Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.65	18.93	25.24	31.64	38.36	44.89	52.36	52.36	6 / 3							
reaction time interval			6.28	6.31	6.40	6.72	6.53	7.47		# of strides	12.65	12.59	13.12	14.00	25.24	27.12	1.88
velocity		7.91	7.96	7.92	7.81	7.44	7.66	6.69	7.64		7.91	7.94	7.62	7.14	7.92	7.37	

Harper, Daina (USA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)																	*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*
date 20-May-18 time	6.73	12.36	18.18	24.25	30.49	37.03	43.85	51.29	51.29	5 / 2							
reaction time 0.205 interval		5.63	5.82	6.07	6.24	6.54	6.82	7.44		# of strides	12.36	11.89	12.78	14.26	24.25	27.04	2.79
velocity	7.43	8.88	8.59	8.24	8.01	7.65	7.33	6.72	7.80	185.7	8.09	8.41	7.82	7.01	8.25	7.40	
FINAL - 2017 USATF National Championship (Sacramento, CA)																	*Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*
date 24-Jun-17 time		12.26		23.77		36.38		50.64	50.64	8 / 6							
reaction time interval				11.51		12.61		14.26	PB	# of strides	12.26	11.51	12.61	14.26	23.77	26.87	3.10
velocity		8.24		8.73		8.12		7.24	7.90		8.16	8.69	7.93	7.01	8.41	7.44	

Hasegawa, Misato (JPN) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2010 Japanese National High School Championships (Okinawa, JPN)																	*Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data*
date 29-Jul-10 time	7.22	13.26	19.52	26.03	32.82	39.71	47.05	55.05	55.05	/ 1							
reaction time interval		6.04	6.26	6.51	6.79	6.89	7.34	8.00		# of strides	13.26	12.77	13.68	15.34	26.03	29.02	2.99
velocity	6.93	8.28	7.99	7.68	7.36	7.26	6.81	6.25	7.27		7.54	7.83	7.31	6.52	7.68	6.89	

Hastings, Natasha (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Memorial van Damme (Brussels, BEL)																	*Omega Timing (2017) - diamond league race analysis*
date 01-Sep-17 time		12.2	18.2	24.6	31.0	37.3	43.9	50.98	50.98	9 / 4							
reaction time 0.197 interval			6.00	6.40	6.40	6.30	6.60	7.08		# of strides	12.20	12.40	12.70	13.68	24.60	26.38	1.78
velocity		8.20	8.33	7.81	7.81	7.94	7.58	7.06	7.85	194.0	8.20	8.06	7.87	7.31	8.13	7.58	
FINAL - 2017 USATF National Championship (Sacramento, CA)																	*Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*
date 24-Jun-17 time		11.83		23.19		35.92		50.14	50.14	3 / 4							
reaction time interval				11.36		12.73		14.22		# of strides	11.83	11.36	12.73	14.22	23.19	26.95	3.76
velocity		8.24		8.73		8.12		7.24	7.98		8.45	8.80	7.86	7.03	8.62	7.42	
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 15-Aug-16 time	6.37	11.57	17.05	22.99	29.25	35.71	42.67	50.34	50.34	6 / 4							
reaction time 0.161 interval		5.20	5.48	5.94	6.26	6.46	6.96	7.67		# of strides	11.57	11.42	12.72	14.63	22.99	27.35	4.36
velocity	7.85	9.62	9.12	8.42	7.99	7.74	7.18	6.52	7.95	194.2	8.64	8.76	7.86	6.84	8.70	7.31	
FINAL - 2016 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date 03-Jul-16 time		11.8		23.7		36.0		50.17	50.17	7 / 3							
reaction time 0.225 interval				11.90		12.30		14.17		# of strides	11.80	11.90	12.30	14.17	23.70	26.47	2.77
velocity		8.47		8.40		8.13		7.06	7.97		8.47	8.40	8.13	7.06	8.44	7.56	
Heat 2 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15 time	6.51	11.94	17.72	23.91	30.26	36.86	43.83	51.25	51.25	7 / 3							
reaction time 0.154 interval		5.43	5.78	6.19	6.35	6.60	6.97	7.42		# of strides	11.94	11.97	12.95	14.39	23.91	27.34	3.43
velocity	7.68	9.21	8.65	8.08	7.87	7.58	7.17	6.74	7.80		8.38	8.35	7.72	6.95	8.36	7.32	
FINAL - 2013 IAAF World Championships (Moscow, RUS)																	(2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/
date 12-Aug-13 time				23.5		36.3		50.5	50.30	3 / 5							
reaction time 0.163 interval						12.80		14.20		# of strides			12.80	14.20	23.50	27.00	3.50
velocity				8.51		7.81		7.04	7.95				7.81	7.04	8.51	7.41	
FINAL - 2012 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date 24-Jun-12 time				23.9		36.5		51.28	51.28	3 / ~~7~~ 6							
reaction time 0.200 interval						12.60		14.78		# of strides		23.90	12.60	14.78	23.90	27.38	3.48
velocity				8.37		7.94		6.77	7.80			4.18	7.94	6.77	8.37	7.30	
FINAL - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 03-Jul-08 time		12.17	17.40	24.29	30.46	36.92	43.69	51.13	51.13	6 / 5							
reaction time interval			5.23	6.89	6.17	6.46	6.77	7.44		# of strides	12.17	12.12	12.63	14.21	24.29	26.84	2.55
velocity		8.22	9.56	7.26	8.10	7.74	7.39	6.72	7.82		8.22	8.25	7.92	7.04	8.23	7.45	
Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.35	18.51	25.03	31.37	37.71	44.40	51.51	51.51	7 / 1							
reaction time interval			6.16	6.52	6.34	6.34	6.69	7.11		# of strides	12.35	12.68	12.68	13.80	25.03	26.48	1.45
velocity		8.10	8.12	7.67	7.89	7.89	7.47	7.03	7.77		8.10	7.89	7.89	7.25	7.99	7.55	
FINAL - 2005 USATF National Junior Championships (Carson, CA)																	*USATF Women's Sprint Development (2005)*
date 25-Jun-05 time		12.30	18.05	24.17	30.33	36.82	43.76	51.34	51.34	6 / ~~2~~ 1							
reaction time interval			5.75	6.12	6.16	6.49	6.94	7.58	PB	# of strides	12.30	11.87	12.65	14.52	24.17	27.17	3.00
velocity		8.13	8.70	8.17	8.12	7.70	7.20	6.60	7.79		8.13	8.42	7.91	6.89	8.27	7.36	

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time			24.89		38.06	44.78	52.09	52.09	4 / 3				
reaction time		interval					13.17	6.72	7.31	PB	# of strides	13.17	14.03	24.89	27.20	2.31
		velocity			8.04		7.59	7.44	6.84	7.68		7.59	7.13	8.04	7.35	

Hatano, Minami (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/07/10/post-978/*
date 23-Jun-17	time		13.05		25.33		39.17		55.04	55.04	4 / 5						
reaction time 0.146	interval				12.28		13.84		15.87		# of strides	13.05	12.28	13.84	15.87	25.33	29.71	4.38
	velocity		7.66		8.14		7.23		6.30	7.27	206.0	7.66	8.14	7.23	6.30	7.90	6.73	

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/01/post-786/*

date	26-May-17	time		13.62		26.82		40.88		55.71	55.71	8 / 6						
reaction time		interval				13.20		14.06		14.83		# of strides	13.62	13.20	14.06	14.83	26.82	28.89	2.07
		velocity		7.34		7.58		7.11		6.74	7.18	218.0	7.34	7.58	7.11	6.74	7.46	6.92	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.51		26.57		40.76		55.93	55.93	6 / 3						
reaction time		interval				13.06		14.19		15.17		# of strides	13.51	13.06	14.19	15.17	26.57	29.36	2.79
		velocity		7.40		7.66		7.05		6.59	7.15	207.5	7.40	7.66	7.05	6.59	7.53	6.81	

FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.07	13.08	19.25	25.59	32.21	39.43	46.85	54.72	54.72	3 / 1						
reaction time		interval		6.01	6.17	6.34	6.62	7.22	7.42	7.87		# of strides	13.08	12.51	13.84	15.29	25.59	29.13	3.54
		velocity	7.07	8.32	8.10	7.89	7.55	6.93	6.74	6.35	7.31		7.65	7.99	7.23	6.54	7.82	6.87	

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	10-Oct-16	time	7.08	13.04	19.19	25.67	32.48	39.61	47.06	55.10	55.10	6 / 3						
reaction time	0.204	interval		5.96	6.15	6.48	6.81	7.13	7.45	8.04		# of strides	13.04	12.63	13.94	15.49	25.67	29.43	3.76
		velocity	7.06	8.39	8.13	7.72	7.34	7.01	6.71	6.22	7.26		7.67	7.92	7.17	6.46	7.79	6.80	

FINAL - 2016 Japanese National High School Championships (Okayama, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	29-Jul-16	time	7.01	12.94	19.05	25.47	32.28	39.34	46.57	54.21	54.21	9 / 2						
reaction time	0.161	interval		5.93	6.11	6.42	6.81	7.06	7.23	7.64	PB	# of strides	12.94	12.53	13.87	14.87	25.47	28.74	3.27
		velocity	7.13	8.43	8.18	7.79	7.34	7.08	6.92	6.54	7.38		7.73	7.98	7.21	6.72	7.85	6.96	

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.39	13.80	20.35	27.14	34.16	41.34	48.61	56.07	56.07	/ 6						
reaction time		interval		6.41	6.55	6.79	7.02	7.18	7.27	7.46		# of strides	13.80	13.34	14.20	14.73	27.14	28.93	1.79
		velocity	6.77	7.80	7.63	7.36	7.12	6.96	6.88	6.70	7.13		7.25	7.50	7.04	6.79	7.37	6.91	

Haugen, Nora (NOR) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)																	*Omega Timing (2023) - diamond league race analysis*
date 15-Jun-23	time	7.52	13.90	20.65	27.51	34.41	41.43	48.67	56.54	56.54	1 / 7						
reaction time 0.178	interval		6.38	6.75	6.86	6.90	7.02	7.24	7.87		# of strides	13.90	13.61	13.92	15.11	27.51	29.03	1.52
	velocity	6.65	7.84	7.41	7.29	7.25	7.12	6.91	6.35	7.07		7.19	7.35	7.18	6.62	7.27	6.89	

Hayashi, Maho (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																	*Matsuo (2009) - 62nd high school championships: JAF scientific committee - biomechanics data collection*
date 29-Jul-09	time		13.08		26.48		40.87		56.24	56.24	1 / 7						
reaction time	interval				13.40		14.39		15.37		# of strides	13.08	13.40	14.39	15.37	26.48	29.76	3.28
	velocity		7.65		7.46		6.95		6.51	7.11		7.65	7.46	6.95	6.51	7.55	6.72	

Hayes, Quanera (USA) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Weltklasse (Zürich, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date 09-Sep-21	time	6.7	12.4	18.3	24.3	30.3	36.4	42.9	49.88	49.88	7 / 1						
reaction time 0.188	interval		5.70	5.90	6.00	6.00	6.10	6.50	6.98		# of strides	12.40	11.90	12.10	13.48	24.30	25.58	1.28
	velocity	7.46	8.77	8.47	8.33	8.33	8.20	7.69	7.16	8.02		8.06	8.40	8.26	7.42	8.23	7.82	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.6	12.3	18.5	24.6	30.7	37.0	43.6	50.81	50.81	7 / 5						
reaction time	0.167	interval		5.70	6.20	6.10	6.10	6.30	6.60	7.21		# of strides	12.30	12.30	12.40	13.81	24.60	26.21	1.61
		velocity	7.58	8.77	8.06	8.20	8.20	7.94	7.58	6.93	7.87	178.5	8.13	8.13	8.06	7.24	8.13	7.63	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.7	12.4	18.3	24.4	30.5	36.9	43.7	51.06	51.06	4 / 3						
reaction time	0.167	interval		5.70	5.90	6.10	6.10	6.40	6.80	7.36		# of strides	12.40	12.00	12.50	14.16	24.40	26.66	2.26
		velocity	7.46	8.77	8.47	8.20	8.20	7.81	7.35	6.79	7.83		8.06	8.33	8.00	7.06	8.20	7.50	

Semi-Final 1 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.37		24.67		37.02	43.61	50.52	50.71	6 / 3						
reaction time	0.191	interval				12.30		12.35	6.59	6.91		# of strides	12.37	12.30	12.35	13.50	24.67	25.85	1.18
		velocity		8.08		8.13		8.10	7.59	7.24	7.89	175.6	8.08	8.13	8.10	7.41	8.11	7.74	

FINAL - 2017 USATF National Championship (Sacramento, CA) *Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time		12.20		23.89		36.14		49.72	49.72	7 / 1						
reaction time		interval				11.69		12.25		13.58	PB	# of strides	12.20	11.69	12.25	13.58	23.89	25.83	1.94
		velocity		8.24		8.73		8.12		7.24	8.05		8.20	8.55	8.16	7.36	8.37	7.74	

FINAL - 2016 USA Olympic Trials (Eugene, OR) *Hymans (2020) - history of the US olympic trials - track and field*

date	03-Jul-16	time			24.6		37.5		51.80	51.80	1 / 8						
reaction time	0.357	interval					12.90		14.30		# of strides			12.90	14.30	24.60	27.20	2.60
		velocity			8.13		7.75		6.99	7.72				7.75	6.99	8.13	7.35	

He Ke (CHN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Chinese National Games (Tianjin, CHN)																	*Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	03-Sep-17	time	13.30		26.00		39.43		54.43	54.43	/ 8						
reaction time		interval			12.70		13.43		15.00		# of strides	13.30	12.70	13.43	15.00	26.00	28.43	2.43
		velocity	7.52		7.87		7.45		6.67	7.35	211.0	7.52	7.87	7.45	6.67	7.69	7.03	

Healy, Phil (IRL) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR)																	*Omega Timing (2022) - diamond league race analysis*
date 05-Jun-22	time	6.80	12.66	18.65	24.87	31.30	37.96	44.72	52.28	52.28	8 / 7							
reaction time 0.140	interval		5.86	5.99	6.22	6.43	6.66	6.76	7.56		# of strides	12.66	12.21	13.09	14.32	24.87	27.41	2.54
	velocity	7.35	8.53	8.35	8.04	7.78	7.51	7.40	6.61	7.65	206.2	7.90	8.19	7.64	6.98	8.04	7.30	

Helander, Klara (SWE) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Bauhaus Galan (Stockholm, SWE)																	*Omega Timing (2022) - diamond league race analysis*
date 30-Jun-22	time	7.26	13.47	19.78	26.34	33.18	40.12	47.52	55.45	55.45	2 / 8							
reaction time 0.150	interval		6.21	6.31	6.56	6.84	6.94	7.40	7.93		# of strides	13.47	12.87	13.78	15.33	26.34	29.11	2.77
	velocity	6.89	8.05	7.92	7.62	7.31	7.20	6.76	6.31	7.21		7.42	7.77	7.26	6.52	7.59	6.87	

Henderson, Monique (USA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 03-Jul-08	time		12.23	17.63	24.51	30.68	37.23	43.72	50.98	50.98	8 / 4							
reaction time	interval			5.40	6.88	6.17	6.55	6.49	7.26		# of strides	12.23	12.28	12.72	13.75	24.51	26.47	1.96
	velocity		8.18	9.26	7.27	8.10	7.63	7.70	6.89	7.85		8.18	8.14	7.86	7.27	8.16	7.56	
Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08	time		12.66	18.72	25.12	31.45	38.03	44.72	52.24	52.24	5 / 2							
reaction time	interval			6.06	6.40	6.33	6.58	6.69	7.52		# of strides	12.66	12.46	12.91	14.21	25.12	27.12	2.00
	velocity		7.90	8.25	7.81	7.90	7.60	7.47	6.65	7.66		7.90	8.03	7.75	7.04	7.96	7.37	
FINAL - 2006 USATF National Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06	time		11.76	17.83	23.84	29.95	36.48	43.22	50.71	50.71	3 / 3							
reaction time	interval			6.07	6.01	6.11	6.53	6.74	7.49		# of strides	11.76	12.08	12.64	14.23	23.84	26.87	3.03
	velocity		8.50	8.24	8.32	8.18	7.66	7.42	6.68	7.89	191.5	8.50	8.28	7.91	7.03	8.39	7.44	
FINAL - 2005 IAAF World Championships (Helsinki, FIN)																	*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*
date 10-Aug-05	time						36.3		51.8	51.77	1 / 7							
reaction time 0.201	interval								15.47		# of strides				15.47			
	velocity						8.26		6.46	7.73					6.46			
FINAL - 2005 USATF National Championship (Carson, CA)																	*USATF Women's Sprint Development (2005)*
date 25-Jun-05	time		12.31	18.06	24.09	30.18	36.35	42.86	49.96	49.96	6 / 3							
reaction time	interval			5.75	6.03	6.09	6.17	6.51	7.10	**PB**	# of strides	12.31	11.78	12.26	13.61	24.09	25.87	1.78
	velocity		8.12	8.70	8.29	8.21	8.10	7.68	7.04	8.01		8.12	8.49	8.16	7.35	8.30	7.73	
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 17-Jul-04	time		12.06		23.89	30.18	36.59	43.08	50.75	50.75	6 / 5							
reaction time	interval				11.83	6.29	6.41	6.49	7.67		# of strides	12.06	11.83	12.70	14.16	23.89	26.86	2.97
	velocity		8.29		8.45	7.95	7.80	7.70	6.52	7.88		8.29	8.45	7.87	7.06	8.37	7.45	
Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 15-Jul-04	time		12.28		23.89	30.06	36.40	43.14	50.53	50.53	4 / 2							
reaction time	interval				11.61	6.17	6.34	6.74	7.39	**PB**	# of strides	12.28	11.61	12.51	14.13	23.89	26.64	2.75
	velocity		8.14		8.61	8.10	7.89	7.42	6.77	7.92	190.2	8.14	8.61	7.99	7.08	8.37	7.51	
Heat 4 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 12-Jul-04	time		11.92		23.69		36.58	43.34	51.06	51.06	3 / 2							
reaction time	interval				11.77		12.89	6.76	7.72		# of strides	11.92	11.77	12.89	14.48	23.69	27.37	3.68
	velocity		8.39		8.50		7.76	7.40	6.48	7.83		8.39	8.50	7.76	6.91	8.44	7.31	
Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 20-Jun-03	time						38.77	46.05	54.43	54.43	3 / 8							
reaction time	interval							7.28	8.38		# of strides				15.66			
	velocity						7.74	6.87	5.97	7.35					6.39			
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date 16-Jul-00	time		12.6		24.3		37.1		51.79	51.79	2 / 8							
reaction time	interval				11.70		12.80		14.69		# of strides	12.60	11.70	12.80	14.69	24.30	27.49	3.19
	velocity		7.94		8.55		7.81		6.81	7.72		7.94	8.55	7.81	6.81	8.23	7.28	

Hennegan, Monique (USA) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08	time		12.62	18.53	24.71	30.98	37.62	44.29	51.73	51.73	7 / 4							
reaction time	interval			5.91	6.18	6.27	6.64	6.67	7.44		# of strides	12.62	12.09	12.91	14.11	24.71	27.02	2.31
	velocity		7.92	8.46	8.09	7.97	7.53	7.50	6.72	7.73		7.92	8.27	7.75	7.09	8.09	7.40	
FINAL - 2006 USATF National Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06	time		12.04	18.17	24.18	30.46	37.13	44.04	51.46	51.46	1 / 8							
reaction time	interval			6.13	6.01	6.28	6.67	6.91	7.42		# of strides	12.04	12.14	12.95	14.33	24.18	27.28	3.10
	velocity		8.31	8.16	8.32	7.96	7.50	7.24	6.74	7.77		8.31	8.24	7.72	6.98	8.27	7.33	
FINAL - 2005 USATF National Championship (Carson, CA)																	*USATF Women's Sprint Development (2005)*
date 25-Jun-05	time		12.04	17.72	23.72	29.83	36.28	43.18	50.76	50.76	3 / 5							
reaction time	interval			5.68	6.00	6.11	6.45	6.90	7.58		# of strides	12.04	11.68	12.56	14.48	23.72	27.04	3.32
	velocity		8.31	8.80	8.33	8.18	7.75	7.25	6.60	7.88		8.31	8.56	7.96	6.91	8.43	7.40	
FINAL - 2004 Olympic Games (Athens, GRE)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date 24-Aug-04	time		12.0		23.8		35.8		50.0	49.97	5 / 4							
reaction time 0.241	interval				11.8		12.0		14.2		# of strides	12.00	11.80	12.00	14.20	23.80	26.20	2.40

		velocity	8.33	8.47		8.33		7.04	8.00		8.33	8.47	8.33	7.04	8.40	7.63		

FINAL - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	17-Jul-04	time	12.03	23.62	29.85	36.12	42.43	49.56	49.56	7 / 1								
reaction time		interval		11.59	6.23	6.27	6.31	7.13	PB	# of strides	12.03	11.59	12.50	13.44	23.62	25.94	2.32	
		velocity	8.31	8.63	8.03	7.97	7.92	7.01	8.07		8.31	8.63	8.00	7.44	8.47	7.71		

Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time	12.16	23.92	30.01	36.45	43.16	50.59	50.59	6 / 3								
reaction time		interval		11.76	6.09	6.44	6.71	7.43		# of strides	12.16	11.76	12.53	14.14	23.92	26.67	2.75	
		velocity	8.22	8.50	8.21	7.76	7.45	6.73	7.91	188.2	8.22	8.50	7.98	7.07	8.36	7.50		

Heat 4 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time	12.06	23.62		36.18	42.89	50.31	50.31	5 / 1								
reaction time		interval		11.56		12.56	6.71	7.42		# of strides	12.06	11.56	12.56	14.13	23.62	26.69	3.07	
		velocity	8.29	8.65		7.96	7.45	6.74	7.95		8.29	8.65	7.96	7.08	8.47	7.49		

Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time		24.07		37.62	44.86	53.22	53.22	8 / 5								
reaction time		interval				13.55	7.24	8.36		# of strides			13.55	15.60	24.07	29.15	5.08	
		velocity		8.31		7.38	6.91	5.98	7.52				7.38	6.41	8.31	6.86		

FINAL - 2000 USA Olympic Trials (Sacramento, CA) *Hymans (2008) - history of the US olympic trials - track and field*

date	16-Jul-00	time	12.5	24.0		36.6		50.82	50.82	3 / 4								
reaction time		interval		11.50		12.60		14.22	PB	# of strides	12.50	11.50	12.60	14.22	24.00	26.82	2.82	
		velocity	8.00	8.70		7.94		7.03	7.87		8.00	8.70	7.94	7.03	8.33	7.46		

Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time	12.74	24.80		37.65	45.03	52.50	52.50	5 / 8								
reaction time		interval		12.06		12.85	7.38	7.47		# of strides	12.74	12.06	12.85	14.85	24.80	27.70	2.90	
		velocity	7.85	8.29		7.78	6.78	6.69	7.62		7.85	8.29	7.78	6.73	8.06	7.22		

Hespel, Nina (BEL) (2001)

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
National FINAL - 2022 Memorial van Damme (Brussels, BEL)																		*Omega Timing (2022) - diamond league race analysis*	
date	02-Sep-22	time	6.90	12.65	18.76	25.19	31.85	38.82	46.23	54.47	54.47	1 / 8							
reaction time	0.196	interval		5.75	6.11	6.43	6.66	6.97	7.41	8.24		# of strides	12.65	12.54	13.63	15.65	25.19	29.28	4.09
		velocity	7.25	8.70	8.18	7.78	7.51	7.17	6.75	6.07	7.34		7.91	7.97	7.34	6.39	7.94	6.83	

Hilaire, Elan (USA) (1990)

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2006 USATF National Junior Championship (Indianapolis, IN)																		*USATF Women's Sprint Development (2006)*	
date	24-Jun-06	time		13.36	19.52	23.47	32.67	39.64	46.66	54.23	54.23	1 / 6							
reaction time		interval			6.16	3.95	9.20	6.97	7.02	7.57	PB	# of strides	13.36	10.11	16.17	14.59	23.47	30.76	7.29
		velocity		7.49	8.12	12.66	5.43	7.17	7.12	6.61	7.38		7.49	9.89	6.18	6.85	8.52	6.50	

Hillyard, Amy (GBR) (1995)

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																		*Omega Timing (2022) - diamond league race analysis*	
date	21-May-22	time	6.9	12.5	18.6	25.0	31.8	38.9	46.4	54.31	54.31	8 / 6							
reaction time	0.158	interval		5.60	6.10	6.40	6.80	7.10	7.50	7.91		# of strides	12.50	12.50	13.90	15.41	25.00	29.31	4.31
		velocity	7.25	8.93	8.20	7.81	7.35	7.04	6.67	6.32	7.37		8.00	8.00	7.19	6.49	8.00	6.82	

B Race - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	7.0	12.7	18.7	25.0	31.6	38.7	46.1	53.84	53.84	2 / 6							
reaction time	0.149	interval		5.70	6.00	6.30	6.60	7.10	7.40	7.74		# of strides	12.70	12.30	13.70	15.14	25.00	28.84	3.84
		velocity	7.14	8.77	8.33	7.94	7.58	7.04	6.76	6.46	7.43		7.87	8.13	7.30	6.61	8.00	6.93	

Hirano, Riho (JPN) (2005)

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																		*Kishima (2022) - national high school championships biomechanics data collection*	
date	03-Aug-22	time		13.97		27.27		41.49		56.29	56.29	4 / 8							
reaction time	0.224	interval				13.30		14.22		14.80		# of strides	13.97	13.30	14.22	14.80	27.27	29.02	1.75
		velocity		7.16		7.52		7.03		6.76	7.11		7.16	7.52	7.03	6.76	7.33	6.89	

Hirosawa, Mae (JPN) (1997)

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Heat 3 - 2020 Japanese National Championships (Niigata, JPN)																		*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*	
date	01-Oct-20	time	6.82	12.74	19.05	25.74	32.71	39.92	47.38	55.40	55.40	6 / 3							
reaction time	0.156	interval		5.92	6.31	6.69	6.97	7.21	7.46	8.02		# of strides	12.74	13.00	14.18	15.48	25.74	29.66	3.92
		velocity	7.33	8.45	7.92	7.47	7.17	6.93	6.70	6.23	7.22		7.85	7.69	7.05	6.46	7.77	6.74	

FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	23-Aug-20	time	7.02	13.03	19.25	25.85	32.77	39.86	47.06	54.61	54.61	9 / 4							
reaction time	0.179	interval		6.01	6.22	6.60	6.92	7.09	7.20	7.55		# of strides	13.03	12.82	14.01	14.75	25.85	28.76	2.91
		velocity	7.12	8.32	8.04	7.58	7.23	7.05	6.94	6.62	7.32		7.67	7.80	7.14	6.78	7.74	6.95	

Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	27-Jun-19	time	7.10	13.27	19.69	26.30	33.03	40.04	47.19	54.80	54.80	4 / 3							
reaction time	0.191	interval		6.17	6.42	6.61	6.73	7.01	7.15	7.61		# of strides	13.27	13.03	13.74	14.76	26.30	28.50	2.20
		velocity	7.04	8.10	7.79	7.56	7.43	7.13	6.99	6.57	7.30		7.54	7.67	7.28	6.78	7.60	7.02	

A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Kobayashi (2019) - research on athlete performance and technique- 2019 data book*

date	03-May-19	time	6.99	12.99	19.10	25.46	32.18	39.26	46.56	54.25	54.25	/ 3							
reaction time		interval		6.00	6.11	6.36	6.72	7.08	7.30	7.69		# of strides	12.99	12.47	13.80	14.99	25.46	28.79	3.33
		velocity	7.15	8.33	8.18	7.86	7.44	7.06	6.85	6.50	7.37		7.70	8.02	7.25	6.67	7.86	6.95	

FINAL - 2019 Asian Athletics Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	21-Apr-19	time	6.85	12.72	18.82	25.23	31.87	38.75	45.89	53.54	53.54	8 / 4							
reaction time	0.163	interval		5.87	6.10	6.41	6.64	6.88	7.14	7.65		# of strides	12.72	12.51	13.52	14.79	25.23	28.31	3.08
		velocity	7.30	8.52	8.20	7.80	7.53	7.27	7.00	6.54	7.47	199.5	7.86	7.99	7.40	6.76	7.93	7.06	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	6.80	12.83	19.09	25.56	32.32	39.27	46.37	53.95	53.95	8 / 2						
reaction time	0.149	interval		6.03	6.26	6.47	6.76	6.95	7.10	7.58	PB	# of strides	12.83	12.73	13.71	14.68	25.56	28.39	2.83
		velocity	7.35	8.29	7.99	7.73	7.40	7.19	7.04	6.60	7.41	199.0	7.79	7.86	7.29	6.81	7.82	7.04	

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/01/post-786/*

date	26-May-17	time		13.75		26.88		41.05		55.54	55.54	3 / 3						
reaction time		interval				13.13		14.17		14.49	PB	# of strides	13.75	13.13	14.17	14.49	26.88	28.66	1.78
		velocity		7.27		7.62		7.06		6.90	7.20	199.5	7.27	7.62	7.06	6.90	7.44	6.98	

Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.47		26.78		41.33		56.35	56.35	4 / 4						
reaction time		interval				13.31		14.55		15.02		# of strides	13.47	13.31	14.55	15.02	26.78	29.57	2.79
		velocity		7.42		7.51		6.87		6.66	7.10	199.5	7.42	7.51	6.87	6.66	7.47	6.76	

Hirota, Yuki (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 National Sports Festival (Matsuyama, JPN)																	*Yamanaka (2017) - male and female 400m analysis in the 2017 season*
date 08-Oct-17 time	7.62	13.97	20.42	27.12	33.96	41.00	48.30	55.98	55.98	9 / 8							
reaction time 0.230 interval		6.35	6.45	6.70	6.84	7.04	7.30	7.68		# of strides	13.97	13.15	13.88	14.98	27.12	28.86	1.74
velocity	6.56	7.87	7.75	7.46	7.31	7.10	6.85	6.51	7.15	197.7	7.16	7.60	7.20	6.68	7.37	6.93	

Hjelmer, Moa (SWE) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Bauhaus Galan (Stockholm, SWE)																	*Omega Timing (2022) - diamond league race analysis*
date 30-Jun-22 time	6.81	12.53	18.39	24.57	31.15	38.08	45.37	53.44	53.44	4 / 5							
reaction time 0.165 interval		5.72	5.86	6.18	6.58	6.93	7.29	8.07		# of strides	12.53	12.04	13.51	15.36	24.57	28.87	4.30
velocity	7.34	8.74	8.53	8.09	7.60	7.22	6.86	6.20	7.49		7.98	8.31	7.40	6.51	8.14	6.93	

FINAL - 2020 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2020) - diamond league race analysis*

date	23-Aug-20	time	6.9	12.7	18.7	25.1	31.7	38.8	46.1	53.79	53.79	3 / 7						
reaction time	0.171	interval		5.80	6.00	6.40	6.60	7.10	7.30	7.69		# of strides	12.70	12.40	13.70	14.99	25.10	28.69	3.59
		velocity	7.25	8.62	8.33	7.81	7.58	7.04	6.85	6.50	7.44		7.87	8.06	7.30	6.67	7.97	6.97	

FINAL - 2018 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2018) - diamond league race analysis*

date	10-Jun-18	time		12.6		24.8		38.4		53.47	53.47	1 / 8						
reaction time	0.160	interval				12.2		13.6		15.1		# of strides	12.60	12.20	13.60	15.07	24.80	28.67	3.87
		velocity		7.94		8.20		7.35		6.64	7.48	198.0	7.94	8.20	7.35	6.64	8.06	6.98	

Hoffmann, Claudia (GER) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 European Cup (Munich, GER)																	*Graubner (2007) - http://www.fgs.uni-halle.de*
date 23-Jun-07 time		12.71		24.68		37.64		52.31	52.31	/ 4							
reaction time 0.176 interval				11.97		12.96		14.67		# of strides	12.71	11.97	12.96	14.67	24.68	27.63	2.95
velocity		7.87		8.35		7.72		6.82	7.65		7.87	8.35	7.72	6.82	8.10	7.24	

Holland, Maree (AUS) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date 26-Sep-88 time		12.29		23.94		36.72		51.25	51.25	2 / 8							
reaction time 0.221 interval				11.65		12.78		14.53		# of strides	12.29	11.65	12.78	14.53	23.94	27.31	3.37
velocity		8.14		8.58		7.82		6.88	7.80		8.14	8.58	7.82	6.88	8.35	7.32	

Semi-Final 2 - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.43		24.40		36.99		50.24	50.24	/ 3						
reaction time		interval				11.97		12.59		13.25	PB	# of strides	12.43	11.97	12.59	13.25	24.40	25.84	1.44
		velocity		8.05		8.35		7.94		7.55	7.96		8.05	8.35	7.94	7.55	8.20	7.74	

Holmes, Dominique (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08 time		12.86	19.12	25.52	32.03	38.74	45.76	53.35	53.35	5 / 6							
reaction time interval			6.26	6.40	6.51	6.71	7.02	7.59		# of strides	12.86	12.66	13.22	14.61	25.52	27.83	2.31
velocity		7.78	7.99	7.81	7.68	7.45	7.12	6.59	7.50		7.78	7.90	7.56	6.84	7.84	7.19	

Holub-Kowalik, Malgorzata (POL) (19

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																	*Omega Timing (2022) - diamond league race analysis*
date 06-Aug-22 time	7.07	12.88	18.88	25.11	31.55	38.23	45.32	53.24	53.24	5 / 2							
reaction time 0.231 interval		5.81	6.00	6.23	6.44	6.68	7.09	7.92		# of strides	12.88	12.23	13.12	15.01	25.11	28.13	3.02
velocity	7.07	8.61	8.33	8.03	7.76	7.49	7.05	6.31	7.51		7.76	8.18	7.62	6.66	7.96	7.11	

Holub, Małgorzata (POL) (1992)

Heat 4 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	7.04	12.78	18.55	24.49	30.70	37.21	44.15	51.74	51.74	4 / 5						
reaction time	0.200	interval		5.74	5.77	5.94	6.21	6.51	6.94	7.59	PB	# of strides	12.78	11.71	12.72	14.53	24.49	27.25	2.76
		velocity	7.10	8.71	8.67	8.42	8.05	7.68	7.20	6.59	7.73		7.82	8.54	7.86	6.88	8.17	7.34	

Hooper, Gloria (ITA) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Luca Coscioni Memorial (Orvieto, ITA)																	*Tozzi (2017) - FIDAL - analisi gloria hooper, 25 maggio Orvieto*
date 28-May-17 time		12.73		24.63		38.17		53.40	53.67	/ 5							
reaction time interval				11.90		13.54		15.23		# of strides	12.73	11.90	13.54	15.23	24.63	28.77	4.14
velocity		7.86		8.40		7.39		6.57	7.45	199	7.86	8.40	7.39	6.57	8.12	6.95	

Horie, Mayu (JPN) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)																	*Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*
date 19-Sep-05 time		13.25		25.91		39.14	46.61	54.59	54.59	9 / 8							
reaction time interval				12.66		13.23	7.47	7.98	PB	# of strides	13.25	12.66	13.23	15.45	25.91	28.68	2.77
velocity		7.55		7.90		7.56	6.69	6.27	7.33		7.55	7.90	7.56	6.47	7.72	6.97	

Horn, Becky (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 USATF National Junior Championships (Indianapolis, IN)																	*USATF Women's Sprint Development (2005)*

date	25-Jun-05	time		12.86	18.87	25.21	31.72	38.41	45.71	53.57	53.57	8 / ~~6~~ 5						
reaction time		interval			6.01	6.34	6.51	6.69	7.30	7.86		# of strides	12.86	12.35	13.20	15.16	25.21	28.36	3.15
		velocity		7.78	8.32	7.89	7.68	7.47	6.85	6.36	7.47		7.78	8.10	7.58	6.60	7.93	7.05	

Horvat, Anita (SLO) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Heat 4 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.86		25.31		38.50		52.67	52.67	7 / 6						
reaction time	0.192	interval				12.45		13.19		14.17		# of strides	12.86	12.45	13.19	14.17	25.31	27.36	2.05
		velocity		7.78		8.03		7.58		7.06	7.59	188.0	7.78	8.03	7.58	7.06	7.90	7.31	

FINAL - 2020 Memorial Van Damme (Brussels, BEL) — *Omega Timing (2020) - diamond league race analysis*

date	04-Sep-20	time	7.2	13.1	19.2	25.5	31.8	38.4	45.3	52.70	52.70	3 / 2						
reaction time	0.188	interval		5.90	6.10	6.30	6.30	6.60	6.90	7.40		# of strides	13.10	12.40	12.90	14.30	25.50	27.20	1.70
		velocity	6.94	8.47	8.20	7.94	7.94	7.58	7.25	6.76	7.59	186.2	7.63	8.06	7.75	6.99	7.84	7.35	

Hosono, Maika (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) — *(2017) - tfdata-store.com/2017/06/01/post-786/*

date	26-May-17	time		13.89		26.92		40.93		55.59	55.59	5 / 5						
reaction time		interval				13.03		14.01		14.66	PB	# of strides	13.89	13.03	14.01	14.66	26.92	28.67	1.75
		velocity		7.20		7.67		7.14		6.82	7.20	204.5	7.20	7.67	7.14	6.82	7.43	6.98	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN) — *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.70		26.60		40.53		55.68	55.68	7 / 2						
reaction time		interval				12.90		13.93		15.15	PB	# of strides	13.70	12.90	13.93	15.15	26.60	29.08	2.48
		velocity		7.30		7.75		7.18		6.60	7.18	205.0	7.30	7.75	7.18	6.60	7.52	6.88	

Hosyuyama, Shiori (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN) — *(2017) - tfdata-store.com/2017/05/13/post-441/*

date	11-May-17	time		13.05		25.78		39.78		55.64	55.64	2 / 6						
reaction time		interval				12.73		14.00		15.86		# of strides	13.05	12.73	14.00	15.86	25.78	29.86	4.08
		velocity		7.66		7.86		7.14		6.31	7.19		7.66	7.86	7.14	6.31	7.76	6.70	

Howard, Donna (USA) (1974)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) — *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.36		24.34		37.85	44.98	52.37	52.37	1 / 7						
reaction time		interval				11.98		13.51	7.13	7.39		# of strides	12.36	11.98	13.51	14.52	24.34	28.03	3.69
		velocity		8.09		8.35		7.40	7.01	6.77	7.64		8.09	8.35	7.40	6.89	8.22	7.14	

Howard-Hill, Denean (USA) (1964)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) — *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.05		23.78		36.65	43.85	51.74	51.74	2 / 6						
reaction time		interval				11.73		12.87	7.20	7.89		# of strides	12.05	11.73	12.87	15.09	23.78	27.96	4.18
		velocity		8.30		8.53		7.77	6.94	6.34	7.73		8.30	8.53	7.77	6.63	8.41	7.15	

FINAL - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	26-Sep-88	time		12.21		24.00		36.79		51.12	51.12	8 / 6						
reaction time	0.241	interval				11.79		12.79		14.33		# of strides	12.21	11.79	12.79	14.33	24.00	27.12	3.12
		velocity		8.19		8.48		7.82		6.98	7.82		8.19	8.48	7.82	6.98	8.33	7.37	

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.11		23.90		36.37		49.87	49.87	3 / 4						
reaction time		interval				11.79		12.47		13.50	PB	# of strides	12.11	11.79	12.47	13.50	23.90	25.97	2.07
		velocity		8.26		8.48		8.02		7.41	8.02		8.26	8.48	8.02	7.41	8.37	7.70	

Howard, Denean (USA) (1964)

FINAL - 1984 USA Olympic Trials (Los Angeles, CA) — *Hymans (2008) - history of the US olympic trials - track and field*

date	19-Jun-84	time				24.0				51.1	51.05	7 / 5						
reaction time		interval								27.10		# of strides					24.00	27.10	3.10
		velocity				8.33				7.38	7.84						8.33	7.38	

FINAL - 1980 USA Olympic Trials (Eugene, OR) — *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-80	time				24.1				51.7	51.70	/ 3						
reaction time		interval								27.60		# of strides					24.10	27.60	3.50
		velocity				8.30				7.25	7.74						8.30	7.25	

Howard, Sherri (USA) (1962)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1984 USA Olympic Trials (Los Angeles, CA) — *Hymans (2008) - history of the US olympic trials - track and field*

date	19-Jun-84	time				23.5				50.4	50.40	8 / 4						
reaction time		interval								26.90		# of strides					23.50	26.90	3.40
		velocity				8.51				7.43	7.94						8.51	7.43	

FINAL - 1980 USA Olympic Trials (Eugene, OR) — *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-80	time				24.2				51.5	51.48	/ 1						
reaction time		interval								27.30		# of strides					24.20	27.30	3.10
		velocity				8.26				7.33	7.77						8.26	7.33	

Huang Guifen (CHN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2019 Shanghai (Shanghai, CHN) — *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.8		25.5		39.3		54.17	54.17	1 / 9						
reaction time	0.168	interval				12.7		13.8		14.9		# of strides	12.80	12.70	13.80	14.87	25.50	28.67	3.17
		velocity		7.81		7.87		7.25		6.72	7.38		7.81	7.87	7.25	6.72	7.84	6.98	

FINAL - 2018 Asian Games (Jakarta, INA) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	26-Aug-18	time	6.77	12.75	18.86	25.36	32.03	38.98	46.26	53.89	53.89	8 / 5						
reaction time	0.201	interval		5.98	6.11	6.50	6.67	6.95	7.28	7.63		# of strides	12.75	12.61	13.62	14.91	25.36	28.53	3.17
		velocity	7.39	8.36	8.18	7.69	7.50	7.19	6.87	6.55	7.42		7.84	7.93	7.34	6.71	7.89	7.01	

Humphrey, Erin (USA) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 USATF National Junior Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06 time		12.93	19.30	25.36	31.99	39.02	46.05	53.41	53.41	7 / 5							
reaction time interval			6.37	6.06	6.63	7.03	7.03	7.36	**PB**	# of strides	12.93	12.43	13.66	14.39	25.36	28.05	2.69
velocity		7.73	7.85	8.25	7.54	7.11	7.11	6.79	7.49		7.73	8.05	7.32	6.95	7.89	7.13	

Huroresu, Arie (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																	*Shibayama (2021) - national high school and U20 national championhsips*
date 28-Jul-21 time	7.36	13.84	20.52	27.36	34.41	41.52	48.70	56.20	56.20	2 / 6							
reaction time 0.164 interval		6.48	6.68	6.84	7.05	7.11	7.18	7.50		# of strides	13.84	13.52	14.16	14.68	27.36	28.84	1.48
velocity	6.79	7.72	7.49	7.31	7.09	7.03	6.96	6.67	7.12		7.23	7.40	7.06	6.81	7.31	6.93	

Hurtis, Muriel (FRA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2010 European Championships (Barcelona, ESP)																	*Le Bras (2013) - analyse de la perfromance et conception de dispositifs d'entraînement*
date 28-Jul-10 time		12.2		24.1		36.8		52.0	51.97	/ 3							
reaction time interval				11.97		12.63		15.20		# of strides	12.15	11.97	12.63	15.20	24.12	27.83	3.71
velocity		8.23		8.35		7.92		6.58	7.70		8.23	8.35	7.92	6.58	8.29	7.19	

Idoabigeiru, Fuka (JPN) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)																	*Kobayashi (2019) - research on athlete performance and technique- 2019 data book*
date 03-May-19 time	6.83	12.80	19.22	26.43	34.19	42.16	50.51	59.19	59.19	/ 6							
reaction time interval		5.97	6.42	7.21	7.76	7.97	8.35	8.68		# of strides	12.80	13.63	15.73	17.03	26.43	32.76	6.33
velocity	7.32	8.38	7.79	6.93	6.44	6.27	5.99	5.76	6.76		7.81	7.34	6.36	5.87	7.57	6.11	

Igoshi, Akari (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time		13.15		26.24		40.55		56.66	56.66	5 / 7							
reaction time 0.193 interval				13.09		14.31		16.11		# of strides	13.15	13.09	14.31	16.11	26.24	30.42	4.18
velocity		7.60		7.64		6.99		6.21	7.06	206.2	7.60	7.64	6.99	6.21	7.62	6.57	

Iida, Keiko (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)																	*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*
date 25-Jun-21 time	7.44	13.77	20.17	26.82	33.53	40.36	47.48	55.14	55.14	4 / 4							
reaction time 0.217 interval		6.33	6.40	6.65	6.71	6.83	7.12	7.66	**PB**	# of strides	13.77	13.05	13.54	14.78	26.82	28.32	1.50
velocity	6.72	7.90	7.81	7.52	7.45	7.32	7.02	6.53	7.25	208.0	7.26	7.66	7.39	6.77	7.46	7.06	

Ikasaki, Ai (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)																	*(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*
date 17-Jun-16 time		13.38		26.05		40.03		55.85	55.85	6 / 2							
reaction time interval				12.67		13.98		15.82		# of strides	13.38	12.67	13.98	15.82	26.05	29.80	3.75
velocity		7.47		7.89		7.15		6.32	7.16		7.47	7.89	7.15	6.32	7.68	6.71	

Ikejima, Shoko (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN)																	*Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
date 03-Aug-11 time		13.09		26.17		40.63		55.26	55.26	4 / 3							
reaction time interval				13.08		14.46		14.63	**PB**	# of strides	13.09	13.08	14.46	14.63	26.17	29.09	2.92
velocity		7.64		7.65		6.92		6.84	7.24		7.64	7.65	6.92	6.84	7.64	6.88	

Ikezaki, Airi (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time		13.72		27.01		41.41		57.06	57.06	7 / 5							
reaction time 0.287 interval				13.29		14.40		15.65		# of strides	13.72	13.29	14.40	15.65	27.01	30.05	3.04
velocity		7.29		7.52		6.94		6.39	7.01		7.29	7.52	6.94	6.39	7.40	6.66	
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																	*(2017) - tfdata-store.com/2017/06/02/post-835/*
date 26-May-17 time		13.36		26.58		41.48		57.67	57.67	2 / 7							
reaction time interval				13.22		14.90		16.19		# of strides	13.36	13.22	14.90	16.19	26.58	31.09	4.51
velocity		7.49		7.56		6.71		6.18	6.94	221.2	7.49	7.56	6.71	6.18	7.52	6.43	
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 10-Oct-16 time	7.27	13.30	19.54	26.26	33.14	40.47	48.06	56.22	56.22	2 / 6							
reaction time 0.236 interval		6.03	6.24	6.72	6.88	7.33	7.59	8.16		# of strides	13.30	12.96	14.21	15.75	26.26	29.96	3.70
velocity	6.88	8.29	8.01	7.44	7.27	6.82	6.59	6.13	7.11		7.52	7.72	7.04	6.35	7.62	6.68	
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 29-Jul-16 time	7.31	13.21	19.27	25.79	32.61	39.68	47.00	54.64	54.64	5 / 3							
reaction time 0.221 interval		5.90	6.06	6.52	6.82	7.07	7.32	7.64	**PB**	# of strides	13.21	12.58	13.89	14.96	25.79	28.85	3.06
velocity	6.84	8.47	8.25	7.67	7.33	7.07	6.83	6.54	7.32		7.57	7.95	7.20	6.68	7.75	6.93	
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 29-Jul-15 time	7.15	13.04	19.22	25.73	32.59	39.78	47.17	55.08	55.08	/ 4							
reaction time interval		5.89	6.18	6.51	6.86	7.19	7.39	7.91		# of strides	13.04	12.69	14.05	15.30	25.73	29.35	3.62
velocity	6.99	8.49	8.09	7.68	7.29	6.95	6.77	6.32	7.26		7.67	7.88	7.12	6.54	7.77	6.81	

Inaoka, Mayu (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2019 Japanese National Championships (Fukuoka, JPN)																	*Yamanaka (2019) - race analysis of men and women 400m competition*
date 27-Jun-19 time	6.95	12.85	19.04	25.68	32.66	39.98	47.65	56.01	56.01	6 / 7							
reaction time 0.211 interval		5.90	6.19	6.64	6.98	7.32	7.67	8.36		# of strides	12.85	12.83	14.30	16.03	25.68	30.33	4.65
velocity	7.19	8.47	8.08	7.53	7.16	6.83	6.52	5.98	7.14		7.78	7.79	6.99	6.24	7.79	6.59	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)																	*Kobayashi (2019) - research on athlete performance and technique- 2019 data book*
date 03-May-19 time	7.02	12.88	18.92	25.31	32.06	39.24	46.84	55.01	55.01	/ 8							
reaction time interval		5.86	6.04	6.39	6.75	7.18	7.60	8.17		# of strides	12.88	12.43	13.93	15.77	25.31	29.70	4.39
velocity	7.12	8.53	8.28	7.82	7.41	6.96	6.58	6.12	7.27		7.76	8.05	7.18	6.34	7.90	6.73	
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time	13.09	26.12	40.24	55.10	55.10	8 / 5									
reaction time	0.163	interval		13.03	14.12	14.86		# of strides	13.09	13.03	14.12	14.86	26.12	28.98	2.86		
		velocity	7.64	7.67	7.08	6.73	7.26	219.5	7.64	7.67	7.08	6.73	7.66	6.90			

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/05/13/post-441/*

date	11-May-17	time	13.04	25.49	39.23	54.65	54.65	5 / 2									
reaction time		interval		12.45	13.74	15.42	PB	# of strides	13.04	12.45	13.74	15.42	25.49	29.16	3.67		
		velocity	7.67	8.03	7.28	6.49	7.32		7.67	8.03	7.28	6.49	7.85	6.86			

Ingram, Sheila (USA) (1957)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 1976 Olympic Games (Montreal, CAN) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-76	time		24.4	35.8	50.9	50.90	3 / 6									
reaction time		interval			11.40	15.10		# of strides			11.40	15.10	24.40	26.50	2.10		
		velocity		8.20	8.77	6.62	7.86				8.77	6.62	8.20	7.55			

FINAL - 1976 USA Olympic Trials (Eugene, OR) *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-76	time		25.8		52.69	52.69	/ 1									
reaction time		interval				26.89		# of strides						25.80	26.89	1.09	
		velocity		7.75		7.44	7.59							7.75	7.44		

Irby-Jackson, Lynna (USA) (1998)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2023 Prefontaine Classic (Eugene, OR) *Omega Timing (2023) - diamond league race analysis*

date	17-Sep-23	time	6.63	12.04	17.79	23.86	30.10	36.65	43.67	51.60	51.60	9 / 7							
reaction time	0.175	interval		5.41	5.75	6.07	6.24	6.55	7.02	7.93		# of strides	12.04	11.82	12.79	14.95	23.86	27.74	3.88
		velocity	7.54	9.24	8.70	8.24	8.01	7.63	7.12	6.31	7.75		8.31	8.46	7.82	6.69	8.38	7.21	

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) *Omega Timing (2023) - diamond league race analysis*

date	02-Sep-23	time	6.60	12.16	18.17	24.33	30.53	36.84	43.36	50.45	50.45	3 / 3							
reaction time	0.155	interval		5.56	6.01	6.16	6.20	6.31	6.52	7.09		# of strides	12.16	12.17	12.51	13.61	24.33	26.12	1.79
		velocity	7.58	8.99	8.32	8.12	8.06	7.92	7.67	7.05	7.93	181.0	8.22	8.22	7.99	7.35	8.22	7.66	

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.10		23.91		36.84		50.71	50.71	4 / 3							
reaction time	0.173	interval				11.81		12.93		13.87		# of strides	12.10	11.81	12.93	13.87	23.91	26.80	2.89
		velocity		8.26		8.47		7.73		7.21	7.89	183.7	8.26	8.47	7.73	7.21	8.36	7.46	

Heat 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.06		23.83		36.57		50.81	50.81	7 / 3							
reaction time	0.187	interval				11.77		12.74		14.24		# of strides	12.06	11.77	12.74	14.24	23.83	26.98	3.15
		velocity		8.29		8.50		7.85		7.02	7.87	183.0	8.29	8.50	7.85	7.02	8.39	7.41	

FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA) *Omega Timing (2023) - diamond league race analysis*

date	02-Jun-23	time	6.66	12.28	18.26	24.43	30.55	36.85	43.54	50.84	50.84	8 / 3							
reaction time	0.183	interval		5.62	5.98	6.17	6.12	6.30	6.69	7.30		# of strides	12.28	12.15	12.42	13.99	24.43	26.41	1.98
		velocity	7.51	8.90	8.36	8.10	8.17	7.94	7.47	6.85	7.87		8.14	8.23	8.05	7.15	8.19	7.57	

Irby, Lynna (USA) (1998)

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.07		24.24		36.80		51.00	51.00	7 / 6							
reaction time	0.184	interval				12.17		12.56		14.20		# of strides	12.07	12.17	12.56	14.20	24.24	26.76	2.52
		velocity		8.29		8.22		7.96		7.04	7.84	183.0	8.29	8.22	7.96	7.04	8.25	7.47	

Heat 4 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.32		24.82		37.68		51.78	51.78	6 / 3							
reaction time	0.178	interval				12.50		12.86		14.10		# of strides	12.32	12.50	12.86	14.10	24.82	26.96	2.14
		velocity		8.12		8.00		7.78		7.09	7.72	187.0	8.12	8.00	7.78	7.09	8.06	7.42	

FINAL - 2022 Doha Diamond League (Doha, QAT) *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.6	12.6	18.8	25.2	31.7	38.3	45.2	52.86	52.86	8 / 8							
reaction time	0.222	interval		6.00	6.20	6.40	6.50	6.60	6.90	7.66		# of strides	12.60	12.60	13.10	14.56	25.20	27.66	2.46
		velocity	7.58	8.33	8.06	7.81	7.69	7.58	7.25	6.53	7.57		7.94	7.94	7.63	6.87	7.94	7.23	

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Jul-16	time	6.62	12.06	17.93	24.15	30.53	37.10	43.95	51.39	51.39	7 / 2							
reaction time	0.192	interval		5.44	5.87	6.22	6.38	6.57	6.85	7.44	PB	# of strides	12.06	12.09	12.95	14.29	24.15	27.24	3.09
		velocity	7.55	9.19	8.52	8.04	7.84	7.61	7.30	6.72	7.78		8.29	8.27	7.72	7.00	8.28	7.34	

Irie, Akiho (JPN) (2001)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2019 Japanese National High School Championships (Okinawa, JPN) *Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*

date	04-Aug-19	time	7.34	13.57	20.07	26.75	33.60	40.89	48.51	56.58	56.58	1 / 8							
reaction time		interval		6.23	6.50	6.68	6.85	7.29	7.62	8.07		# of strides	13.57	13.18	14.14	15.69	26.75	29.83	3.08
		velocity	6.81	8.03	7.69	7.49	7.30	6.86	6.56	6.20	7.07		7.37	7.59	7.07	6.37	7.48	6.70	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.16	13.31	19.69	26.24	33.02	40.08	47.45	55.23	55.23	7 / 3							
reaction time		interval		6.15	6.38	6.55	6.78	7.06	7.37	7.78		# of strides	13.31	12.93	13.84	15.15	26.24	28.99	2.75
		velocity	6.98	8.13	7.84	7.63	7.37	7.08	6.78	6.43	7.24		7.51	7.73	7.23	6.60	7.62	6.90	

Ishikawa, Kimishia (JPN)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m) *(2017) - tfdata-store.com/2017/05/17/post-537/*

date	23-Apr-17	time		12.93		25.72		40.03			40.03	2 / 7							***100m-300m***
reaction time		interval				12.79		14.31				# of strides	12.93	12.79	14.31		25.72		*27.10*
		velocity		7.73		7.82		6.99			7.49	163.0	7.73	7.82	6.99		7.78		*7.38*

Ishizuka, Haruko (JPN) (1997)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.02	13.00	19.15	25.71	32.60	39.73	47.19	55.01	55.01	6 / 3							

reaction time		interval		5.98	6.15	6.56	6.89	7.13	7.46	7.82		# of strides	13.00	12.71	14.02	15.28	25.71	29.30	3.59
		velocity	7.12	8.36	8.13	7.62	7.26	7.01	6.70	6.39	7.27		7.69	7.87	7.13	6.54	7.78	6.83	

FINAL - 2016 National Sports Festival (Kitakami, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	09-Oct-16	time	7.01	13.10	19.40	26.04	33.03	40.31	47.86	55.79	55.79	3 / 6							
reaction time	0.243	interval		6.09	6.30	6.64	6.99	7.28	7.55	7.93		# of strides	13.10	12.94	14.27	15.48	26.04	29.75	3.71
		velocity	7.13	8.21	7.94	7.53	7.15	6.87	6.62	6.31	7.17		7.63	7.73	7.01	6.46	7.68	6.72	

Heat 4 - 2016 IAAF World Junior Championships (Bydgoszcz, POL) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	19-Jul-16	time	6.96	12.94	19.15	25.63	32.37	39.61	47.16	55.20	55.20	3 / 4							
reaction time	0.166	interval		5.98	6.21	6.48	6.74	7.24	7.55	8.04		# of strides	12.94	12.69	13.98	15.59	25.63	29.57	3.94
		velocity	7.18	8.36	8.05	7.72	7.42	6.91	6.62	6.22	7.25		7.73	7.88	7.15	6.41	7.80	6.76	

FINAL - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	6.99	12.84	18.82	25.14	31.75	38.84	46.41	54.67	54.67	3 / 4							
reaction time	0.257	interval		5.85	5.98	6.32	6.61	7.09	7.57	8.26		# of strides	12.84	12.30	13.70	15.83	25.14	29.53	4.39
		velocity	7.15	8.55	8.36	7.91	7.56	7.05	6.61	6.05	7.32		7.79	8.13	7.30	6.32	7.96	6.77	

Heat 1 - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	7.00	12.85	18.85	25.09	31.68	38.73	46.25	54.23	54.23	7 / 2							
reaction time	0.250	interval		5.85	6.00	6.24	6.59	7.05	7.52	7.98		# of strides	12.85	12.24	13.64	15.50	25.09	29.14	4.05
		velocity	7.14	8.55	8.33	8.01	7.59	7.09	6.65	6.27	7.38		7.78	8.17	7.33	6.45	7.97	6.86	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	6.99	12.88	19.00	25.44	32.17	39.34	46.85	54.79	54.79	/ 2							
reaction time		interval		5.89	6.12	6.44	6.73	7.17	7.51	7.94		# of strides	12.88	12.56	13.90	15.45	25.44	29.35	3.91
		velocity	7.15	8.49	8.17	7.76	7.43	6.97	6.66	6.30	7.30		7.76	7.96	7.19	6.47	7.86	6.81	

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.04	12.97	19.10	25.51	32.17	39.14	46.44	54.21	54.21	/ 2							
reaction time		interval		5.93	6.13	6.41	6.66	6.97	7.30	7.77		# of strides	12.97	12.54	13.63	15.07	25.51	28.70	3.19
		velocity	7.10	8.43	8.16	7.80	7.51	7.17	6.85	6.44	7.38		7.71	7.97	7.34	6.64	7.84	6.97	

U19 FINAL - 2015 National Sports Festival (Wakayama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	05-Oct-15	time	6.99	12.97	19.29	25.77	32.44	39.43	46.76	54.44	54.44	/ 2							
reaction time		interval		5.98	6.32	6.48	6.67	6.99	7.33	7.68		# of strides	12.97	12.80	13.66	15.01	25.77	28.67	2.90
		velocity	7.15	8.36	7.91	7.72	7.50	7.15	6.82	6.51	7.35		7.71	7.81	7.32	6.66	7.76	6.98	

FINAL - 2015 Japanese National High School Championships (Wakayama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	29-Jul-15	time	6.91	12.75	18.82	25.07	31.62	38.49	45.70	53.30	53.30	/ 1							
reaction time		interval		5.84	6.07	6.25	6.55	6.87	7.21	7.60	**PB**	# of strides	12.75	12.32	13.42	14.81	25.07	28.23	3.16
		velocity	7.24	8.56	8.24	8.00	7.63	7.28	6.93	6.58	7.50		7.84	8.12	7.45	6.75	7.98	7.08	

FINAL - 2015 Japanese National Championships (Niigata, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	7.07	12.84	18.85	25.11	31.75	38.76	45.94	53.44	53.44	4 / 3							
reaction time	0.272	interval		5.77	6.01	6.26	6.64	7.01	7.18	7.50	**=PB**	# of strides	12.84	12.27	13.65	14.68	25.11	28.33	3.22
		velocity	7.07	8.67	8.32	7.99	7.53	7.13	6.96	6.67	7.49	200.5	7.79	8.15	7.33	6.81	7.96	7.06	

Isobe, Mami (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 21-Oct-16	time	7.38	13.66	20.12	26.79	33.71	40.86	48.21	55.96	55.96	5 / 4							
reaction time	interval		6.28	6.46	6.67	6.92	7.15	7.35	7.75		# of strides	13.66	13.13	14.07	15.10	26.79	29.17	2.38
	velocity	6.78	7.96	7.74	7.50	7.23	6.99	6.80	6.45	7.15		7.32	7.62	7.11	6.62	7.47	6.86	

Itani, Haruna (JPN) (2005)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)											*Kishima (2022) - national high school championships biomechanics data collection*						
date 03-Aug-22	time		13.47		26.65		40.87		56.25	56.25	8 / 7							
reaction time 0.195	interval				13.18		14.22		15.38	**PB**	# of strides	13.47	13.18	14.22	15.38	26.65	29.60	2.95
	velocity		7.42		7.59		7.03		6.50	7.11		7.42	7.59	7.03	6.50	7.50	6.76	

Itani, Kanna (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)											*(2017) - tfdata-store.com/2017/06/02/post-835/*						
date 26-May-17	time		13.79		27.28		41.85		57.75	57.75	5 / 8							
reaction time	interval				13.49		14.57		15.90		# of strides	13.79	13.49	14.57	15.90	27.28	30.47	3.19
	velocity		7.25		7.41		6.86		6.29	6.93	219.0	7.25	7.41	6.86	6.29	7.33	6.56	

Itkina, Mariya (URS) (1932)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)									*Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*								
date 17-Oct-64	time				24.6				54.6	54.6	5 / 5							
reaction time	interval								30.00		# of strides					24.60	30.00	5.40
	velocity				8.13				6.67	7.33						8.13	6.67	

Ito, Aimi (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)											*(2017) - tfdata-store.com/2017/10/05/post-1097/*						
date 24-Sep-17	time		13.67		27.48		41.90		57.94	57.94	3 / 8							
reaction time 0.176	interval				13.81		14.42		16.04	**PB**	# of strides	13.67	13.81	14.42	16.04	27.48	30.46	2.98
	velocity		7.32		7.24		6.93		6.23	6.90	213.0	7.32	7.24	6.93	6.23	7.28	6.57	

Iuel, Amalie (NOR) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B FINAL - 2021 Weltklasse (Zürich, SUI)											*Omega Timing (2021) - diamond league race analysis*						
date 09-Sep-21	time	7.0	12.8	18.7	24.9	31.3	37.9	44.7	51.64	51.64	6 / 1							
reaction time 0.164	interval		5.80	5.90	6.20	6.40	6.60	6.80	6.94	**NR PB**	# of strides	12.80	12.10	13.00	13.74	24.90	26.74	1.84
	velocity	7.14	8.62	8.47	8.06	7.81	7.58	7.35	7.20	7.75		7.81	8.26	7.69	7.28	8.03	7.48	

FINAL - 2018 Müller Anniversary Games (London, GBR) — *Omega Timing (2018) - diamond league race analysis*

date	22-Jul-18	time		13.2		25.5		38.3		51.99	51.99	1 / 9							

reaction time	0.183	interval			12.3		12.8		13.7		# of strides	13.20	12.30	12.80	13.69	25.50	26.49	0.99
		velocity		7.58		8.13		7.81		7.30	7.69		7.58	8.13	7.81	7.30	7.84	7.55	

Ivolam, Revina (INA) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 East Java National Championships (Surabaya, INA)										*Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*							
date 15-Apr-16 time	7.14	14.64	20.82	28.20	36.79	45.24	52.61	64.03	64.03	/ 6							
reaction time interval		7.50	6.18	7.38	8.59	8.45	7.37	11.42		# of strides	14.64	13.56	17.04	18.79	28.20	35.83	7.63
velocity	7.00	6.67	8.09	6.78	5.82	5.92	6.78	4.38	6.25		6.83	7.37	5.87	5.32	7.09	5.58	

Iwata, Mebuki (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)										*(2017) - tfdata-store.com/2017/10/12/post-1100/*							
date 08-Oct-17 time		13.33		26.80		41.73		58.01	58.01	9 / 8							
reaction time 0.254 interval				13.47		14.93		16.28		# of strides	13.33	13.47	14.93	16.28	26.80	31.21	4.41
velocity		7.50		7.42		6.70		6.14	6.90	220.5	7.50	7.42	6.70	6.14	7.46	6.41	
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)										*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*							
date 21-Oct-16 time	7.11	13.31	19.85	26.73	33.81	40.92	48.32	56.34	56.34	6 / 6							
reaction time interval		6.20	6.54	6.88	7.08	7.11	7.40	8.02		# of strides	13.31	13.42	14.19	15.42	26.73	29.61	2.88
velocity	7.03	8.06	7.65	7.27	7.06	7.03	6.76	6.23	7.10		7.51	7.45	7.05	6.49	7.48	6.75	

Iwata, Yuna (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese National Championships (Osaka, JPN)										*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date 25-Jun-21 time	6.95	12.99	19.14	25.57	32.27	39.28	46.51	54.09	54.09	5 / 5							
reaction time 0.166 interval		6.04	6.15	6.43	6.70	7.01	7.23	7.58		# of strides	12.99	12.58	13.71	14.81	25.57	28.52	2.95
velocity	7.19	8.28	8.13	7.78	7.46	7.13	6.92	6.60	7.40		7.70	7.95	7.29	6.75	7.82	7.01	
FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN)										*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date 06-Jun-21 time	7.11	13.26	19.55	26.19	32.99	39.91	47.03	54.53	54.43	/ 5							
reaction time interval		6.15	6.29	6.64	6.80	6.92	7.12	7.50		# of strides	13.26	12.93	13.72	14.62	26.19	28.34	2.15
velocity	7.03	8.13	7.95	7.53	7.35	7.23	7.02	6.67	7.35		7.54	7.73	7.29	6.84	7.64	7.06	
B FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)										*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date 03-May-21 time	7.04	13.26	19.69	26.30	33.03	39.94	47.08	54.51	54.51	6 / 1							
reaction time 0.164 interval		6.22	6.43	6.61	6.73	6.91	7.14	7.43		# of strides	13.26	13.04	13.64	14.57	26.30	28.21	1.91
velocity	7.10	8.04	7.78	7.56	7.43	7.24	7.00	6.73	7.34	209.0	7.54	7.67	7.33	6.86	7.60	7.09	
Heat 2 - 2020 Japanese National Championships (Niigata, JPN)										*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*							
date 01-Oct-20 time	7.00	13.15	19.44	25.99	33.00	40.38	48.06	56.34	56.34	6 / 4							
reaction time 0.152 interval		6.15	6.29	6.55	7.01	7.38	7.68	8.28		# of strides	13.15	12.84	14.39	15.96	25.99	30.35	4.36
velocity	7.14	8.13	7.95	7.63	7.13	6.78	6.51	6.04	7.10		7.60	7.79	6.95	6.27	7.70	6.59	
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)										*Yamanaka (2019) - research on athlete performance and technique- 2019 data book*							
date 28-Jun-19 time	6.98	13.10	19.39	25.93	32.63	39.60	46.79	54.31	54.31	3 / 5							
reaction time 0.151 interval		6.12	6.29	6.54	6.70	6.97	7.19	7.52		# of strides	13.10	12.83	13.67	14.71	25.93	28.38	2.45
velocity	7.16	8.17	7.95	7.65	7.46	7.17	6.95	6.65	7.37		7.63	7.79	7.32	6.80	7.71	7.05	
Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN)										*Yamanaka (2019) - race analysis of men and women 400m competition*							
date 27-Jun-19 time	6.84	12.83	19.05	25.56	32.23	39.17	46.41	53.97	53.97	7 / 3							
reaction time 0.135 interval		5.99	6.22	6.51	6.67	6.94	7.24	7.56		# of strides	12.83	12.73	13.61	14.80	25.56	28.41	2.85
velocity	7.31	8.35	8.04	7.68	7.50	7.20	6.91	6.61	7.41		7.79	7.86	7.35	6.76	7.82	7.04	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)										*Kobayashi (2019) - research on athlete performance and technique- 2019 data book*							
date 03-May-19 time	7.10	13.16	19.34	25.79	32.57	39.59	46.89	54.48	54.48	/ 5							
reaction time interval		6.06	6.18	6.45	6.78	7.02	7.30	7.59		# of strides	13.16	12.63	13.80	14.89	25.79	28.69	2.90
velocity	7.04	8.25	8.09	7.75	7.37	7.12	6.85	6.59	7.34		7.60	7.92	7.25	6.72	7.75	6.97	
FINAL - 2018 National Sports Festival (Fukui, JPN)										*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date 07-Oct-18 time	6.91	12.96	19.32	25.96	32.84	39.78	46.75	54.00	54.00	5 / 2							
reaction time 0.162 interval		6.05	6.36	6.64	6.88	6.94	6.97	7.25		# of strides	12.96	13.00	13.82	14.22	25.96	28.04	2.08
velocity	7.24	8.26	7.86	7.53	7.27	7.20	7.17	6.90	7.41		7.72	7.69	7.24	7.03	7.70	7.13	
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)										*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date 23-Jun-18 time	7.06	13.12	19.52	26.12	32.92	39.85	46.87	54.08	54.08	3 / 3							
reaction time 0.153 interval		6.06	6.40	6.60	6.80	6.93	7.02	7.21		# of strides	13.12	13.00	13.73	14.23	26.12	27.96	1.84
velocity	7.08	8.25	7.81	7.58	7.35	7.22	7.12	6.93	7.40	211.0	7.62	7.69	7.28	7.03	7.66	7.15	
Heat 3 - 2018 Japanese National Championships (Yamaguchi, JPN)										*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date 22-Jun-18 time	6.94	12.87	19.07	25.72	32.53	39.56	46.89	54.71	54.71	4 / 3							
reaction time 0.160 interval		5.93	6.20	6.65	6.81	7.03	7.33	7.82		# of strides	12.87	12.85	13.84	15.15	25.72	28.99	3.27
velocity	7.20	8.43	8.06	7.52	7.34	7.11	6.82	6.39	7.31		7.77	7.78	7.23	6.60	7.78	6.90	
FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)										*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date 03-May-18 time	6.96	13.04	19.29	25.74	32.44	39.35	46.56	54.16	54.16	8 / 4							
reaction time 0.163 interval		6.08	6.25	6.45	6.70	6.91	7.21	7.60		# of strides	13.04	12.70	13.61	14.81	25.74	28.42	2.68
velocity	7.18	8.22	8.00	7.75	7.46	7.24	6.93	6.58	7.39	215.0	7.67	7.87	7.35	6.75	7.77	7.04	
FINAL - 2017 National Sports Festival (Matsuyama, JPN)										*Yamanaka (2017) - male and female 400m analysis in the 2017 season*							
date 08-Oct-17 time	6.79	12.51	18.54	24.94	31.71	38.84	46.30	54.16	54.16	5 / 2							
reaction time 0.157 interval		5.72	6.03	6.40	6.77	7.13	7.46	7.86		# of strides	12.51	12.43	13.90	15.32	24.94	29.22	4.28
velocity	7.36	8.74	8.29	7.81	7.39	7.01	6.70	6.36	7.39	216.0	7.99	8.05	7.19	6.53	8.02	6.84	
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)										*(2017) - tfdata-store.com/2017/10/12/post-1100/*							
date 08-Oct-17 time		12.95		25.67		39.75		55.07	55.07	4 / 1							
reaction time 0.178 interval				12.72		14.08		15.32		# of strides	12.95	12.72	14.08	15.32	25.67	29.40	3.73
velocity		7.72		7.86		7.10		6.53	7.26	213.0	7.72	7.86	7.10	6.53	7.79	6.80	

FINAL - 2017 Japanese National Championships (Osaka, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	6.90	12.89	19.02	25.33	31.87	38.70	45.98	53.65	53.65	6 / 1						
reaction time	0.163	interval		5.99	6.13	6.31	6.54	6.83	7.28	7.67	**PB**	# of strides	12.89	12.44	13.37	14.95	25.33	28.32	2.99
		velocity	7.25	8.35	8.16	7.92	7.65	7.32	6.87	6.52	7.46	213.5	7.76	8.04	7.48	6.69	7.90	7.06	

Heat 1 - 2017 Japanese National Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time		12.94		25.45		39.11		53.82	53.82	5 / 1						
reaction time	0.173	interval				12.51		13.66		14.71		# of strides	12.94	12.51	13.66	14.71	25.45	28.37	2.92
		velocity		7.73		7.99		7.32		6.80	7.43	212.2	7.73	7.99	7.32	6.80	7.86	7.05	

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/01/post-786/*

date	26-May-17	time		13.14		25.90		39.75		54.36	54.36	7 / 1						
reaction time		interval				12.76		13.85		14.61		# of strides	13.14	12.76	13.85	14.61	25.90	28.46	2.56
		velocity		7.61		7.84		7.22		6.84	7.36	214.2	7.61	7.84	7.22	6.84	7.72	7.03	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.09		26.02		40.23		55.42	55.42	4 / 1						
reaction time		interval				12.93		14.21		15.19		# of strides	13.09	12.93	14.21	15.19	26.02	29.40	3.38
		velocity		7.64		7.73		7.04		6.58	7.22	212.5	7.64	7.73	7.04	6.58	7.69	6.80	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.14	13.21	19.44	25.84	32.63	39.69	47.00	54.53	54.53	/ 2						
reaction time		interval		6.07	6.23	6.40	6.79	7.06	7.31	7.53		# of strides	13.21	12.63	13.85	14.84	25.84	28.69	2.85
		velocity	7.00	8.24	8.03	7.81	7.36	7.08	6.84	6.64	7.34		7.57	7.92	7.22	6.74	7.74	6.97	

FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	09-Oct-16	time	7.40	13.94	20.52	27.26	34.16	41.24	48.46	56.00	56.00	9 / 7						
reaction time	0.209	interval		6.54	6.58	6.74	6.90	7.08	7.22	7.54		# of strides	13.94	13.32	13.98	14.76	27.26	28.74	1.48
		velocity	6.76	7.65	7.60	7.42	7.25	7.06	6.93	6.63	7.14		7.17	7.51	7.15	6.78	7.34	6.96	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.12	13.21	19.44	25.96	32.79	40.02	47.53	55.37	55.37	/ 5						
reaction time		interval		6.09	6.23	6.52	6.83	7.23	7.51	7.84		# of strides	13.21	12.75	14.06	15.35	25.96	29.41	3.45
		velocity	7.02	8.21	8.03	7.67	7.32	6.92	6.66	6.38	7.22		7.57	7.84	7.11	6.51	7.70	6.80	

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.05	13.01	19.10	25.54	32.17	39.06	46.26	53.79	53.79	/ 1						
reaction time		interval		5.96	6.09	6.44	6.63	6.89	7.20	7.53		# of strides	13.01	12.53	13.52	14.73	25.54	28.25	2.71
		velocity	7.09	8.39	8.21	7.76	7.54	7.26	6.94	6.64	7.44		7.69	7.98	7.40	6.79	7.83	7.08	

U19 FINAL - 2015 National Sports Festival (Wakayama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	05-Oct-15	time	7.19	13.44	19.84	26.41	33.19	40.10	47.08	54.28	54.28	/ 1						
reaction time		interval		6.25	6.40	6.57	6.78	6.91	6.98	7.20		# of strides	13.44	12.97	13.69	14.18	26.41	27.87	1.46
		velocity	6.95	8.00	7.81	7.61	7.37	7.24	7.16	6.94	7.37		7.44	7.71	7.30	7.05	7.57	7.18	

FINAL - 2015 Japanese National High School Championships (Wakayama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	29-Jul-15	time	7.05	13.16	19.39	25.83	32.52	39.51	46.71	54.37	54.37	/ 2						
reaction time		interval		6.11	6.23	6.44	6.69	6.99	7.20	7.66		# of strides	13.16	12.67	13.68	14.86	25.83	28.54	2.71
		velocity	7.09	8.18	8.03	7.76	7.47	7.15	6.94	6.53	7.36		7.60	7.89	7.31	6.73	7.74	7.01	

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	7.29	13.53	19.74	26.07	32.72	39.71	47.09	55.00	55.00	/ 5						
reaction time		interval		6.24	6.21	6.33	6.65	6.99	7.38	7.91	**PB**	# of strides	13.53	12.54	13.64	15.29	26.07	28.93	2.86
		velocity	6.86	8.01	8.05	7.90	7.52	7.15	6.78	6.32	7.27		7.39	7.97	7.33	6.54	7.67	6.91	

Iyo, Maeda (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/04/07/post-249/*

date	06-Apr-17	time		14.10		27.83		42.74		58.83	58.83	3 / 5						
reaction time		interval				13.73		14.91		16.09		# of strides	14.10	13.73	14.91	16.09	27.83	31.00	3.17
		velocity		7.09		7.28		6.71		6.22	6.80		7.09	7.28	6.71	6.22	7.19	6.45	

Izu, Eri (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 China Perfecture High School Championships (Okayama, JPN) *(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*

date	17-Jun-16	time		13.85		27.32		41.62		57.33	57.33	3 / 6						
reaction time		interval				13.47		14.30		15.71		# of strides	13.85	13.47	14.30	15.71	27.32	30.01	2.69
		velocity		7.22		7.42		6.99		6.37	6.98		7.22	7.42	6.99	6.37	7.32	6.66	

Jackson, Grace (JAM) (1961)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1988 Nikala (Nice, FRA) *Veney - split times from PJ*

date	10-Jul-88	time		12.52		23.91		36.39		49.57	49.57	/ 1						
reaction time		interval				11.39		12.48		13.18	**PB**	# of strides	12.52	11.39	12.48	13.18	23.91	25.66	1.75
		velocity		7.99		8.78		8.01		7.59	8.07		7.99	8.78	8.01	7.59	8.36	7.79	

Jackson, Shericka (JAM) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.3	12.9	18.7	24.7	31.2	38.2	45.6	53.40	53.40	4 / 6						
reaction time	0.177	interval		5.60	5.80	6.00	6.50	7.00	7.40	7.80		# of strides	12.90	11.80	13.50	15.20	24.70	28.70	4.00
		velocity	6.85	8.93	8.62	8.33	7.69	7.14	6.76	6.41	7.49		7.75	8.47	7.41	6.58	8.10	6.97	

FINAL - 2019 IAAF World Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	03-Oct-19	time	6.64	12.19	17.84	23.70	29.69	35.96	42.47	49.47	49.47	3 / 3						
reaction time	0.184	interval		5.55	5.65	5.86	5.99	6.27	6.51	7.00	**PB**	# of strides	12.19	11.51	12.26	13.51	23.70	25.77	2.07
		velocity	7.53	9.01	8.85	8.53	8.35	7.97	7.68	7.14	8.09	193.5	8.20	8.69	8.16	7.40	8.44	7.76	

Semi-Final 2 - 2019 IAAF World Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	01-Oct-19	time	6.91	12.60	18.37	24.40	30.61	36.96	43.41	50.10	50.10	7 / 3						

reaction time	0.181	interval		5.69	5.77	6.03	6.21	6.35	6.45	6.69		# of strides	12.60	11.80	12.56	13.14	24.40	25.70	1.30
		velocity	7.24	8.79	8.67	8.29	8.05	7.87	7.75	7.47	7.98	193.0	7.94	8.47	7.96	7.61	8.20	7.78	

FINAL - 2019 Athletissima (Lausanne, SUI) *Omega Timing (2019) - diamond league race analysis*

date	05-Jul-19	time		12.6		24.5		37.3		52.35	52.35	6 / 8							
reaction time	0.168	interval				11.9		12.8		15.1		# of strides	12.60	11.90	12.80	15.05	24.50	27.85	3.35
		velocity		7.94		8.40		7.81		6.64	7.64		7.94	8.40	7.81	6.64	8.16	7.18	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2019) - diamond league race analysis*

date	06-Jun-19	time		12.5		24.4		37.2		51.05	51.05	6 / 2							
reaction time	0.198	interval				11.9		12.8		13.9		# of strides	12.50	11.90	12.80	13.85	24.40	26.65	2.25
		velocity		8.00		8.40		7.81		7.22	7.84	197.0	8.00	8.40	7.81	7.22	8.20	7.50	

FINAL - 2017 Memorial van Damme (Brussels, BEL) *Omega Timing (2017) - diamond league race analysis*

date	01-Sep-17	time		12.5	18.4	24.6	31.0	37.6	44.3	51.16	51.16	3 / 5							
reaction time	0.193	interval			5.90	6.20	6.40	6.60	6.70	6.86		# of strides	12.50	12.10	13.00	13.56	24.60	26.56	1.96
		velocity		8.00	8.47	8.06	7.81	7.58	7.46	7.29	7.82	197.5	8.00	8.26	7.69	7.37	8.13	7.53	

FINAL - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time		11.91		23.43		36.28	43.10	50.57	50.76	2 / 5							
reaction time	0.194	interval				11.52		12.85	6.82	7.47		# of strides	11.91	11.52	12.85	14.29	23.43	27.14	3.71
		velocity		8.40		8.68		7.78	7.33	6.69	7.88	198.6	8.40	8.68	7.78	7.00	8.54	7.37	

Semi-Final 2 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.09		23.59		36.40	43.21	50.51	50.70	5 / 4							
reaction time	0.191	interval				11.50		12.81	6.81	7.30		# of strides	12.09	11.50	12.81	14.11	23.59	26.92	3.33
		velocity		8.27		8.70		7.81	7.34	6.85	7.89	198.5	8.27	8.70	7.81	7.09	8.48	7.43	

FINAL - 2017 Meeting de Paris (Paris, FRA) *Omega Timing (2017) - diamond league race analysis*

date	01-Jul-17	time		12.5	18.3	24.4	30.9	37.6	44.6	51.91	51.91	5 / 3							
reaction time	0.182	interval			5.8	6.1	6.5	6.7	7.0	7.3		# of strides	12.50	11.90	13.20	14.31	24.40	27.51	3.11
		velocity		8.00	8.62	8.20	7.69	7.46	7.14	6.84	7.71	197.0	8.00	8.40	7.58	6.99	8.20	7.27	

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	15-Aug-16	time	6.67	12.04	17.60	23.39	29.52	35.92	42.61	49.85	49.85	5 / 3							
reaction time	0.176	interval		5.37	5.56	5.79	6.13	6.40	6.69	7.24		# of strides	12.04	11.35	12.53	13.93	23.39	26.46	3.07
		velocity	7.50	9.31	8.99	8.64	8.16	7.81	7.47	6.91	8.02	183.0	8.31	8.81	7.98	7.18	8.55	7.56	

FINAL - 2015 IAAF World Championships (Beijing, CHN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.80	12.14	17.63	23.45	29.56	36.03	42.79	49.99	49.99	4 / 3							
reaction time	0.196	interval		5.34	5.49	5.82	6.11	6.47	6.76	7.20	**PB**	# of strides	12.14	11.31	12.58	13.96	23.45	26.54	3.09
		velocity	7.35	9.36	9.11	8.59	8.18	7.73	7.40	6.94	8.00		8.24	8.84	7.95	7.16	8.53	7.54	

Heat 5 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.70	12.29	18.00	23.93	30.20	36.66	43.39	50.41	50.41	5 / 2							
reaction time	0.183	interval		5.59	5.71	5.93	6.27	6.46	6.73	7.02		# of strides	12.29	11.64	12.73	13.75	23.93	26.48	2.55
		velocity	7.46	8.94	8.76	8.43	7.97	7.74	7.43	7.12	7.93		8.14	8.59	7.86	7.27	8.36	7.55	

Jæger, Henriette (NOR) (2003)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.80						51.33	8 / 4								
reaction time	0.164	interval									# of strides	12.80							
		velocity		7.81						7.79	198.0	7.81							

Jahn-Wilden, Rita (FRG) (1957)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1972 Olympic Games (Munich, FRG)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date	07-Sep-72	time				24.4				51.2	51.21	4 / 2							
reaction time		interval								26.8		# of strides					24.40	26.80	2.40
		velocity				8.20				7.46	7.81						8.20	7.46	

James, Tiffany (JAM) (1997)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date	21-Jul-16	time	6.85	12.52	18.30	24.29	30.59	37.13	43.94	51.32	51.32	5 / 1							
reaction time	0.153	interval		5.67	5.78	5.99	6.30	6.54	6.81	7.38	**PB**	# of strides	12.52	11.77	12.84	14.19	24.29	27.03	2.74
		velocity	7.30	8.82	8.65	8.35	7.94	7.65	7.34	6.78	7.79		7.99	8.50	7.79	7.05	8.23	7.40	

Jassim, Iman Isa (BRN) (1997)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2018 Asian Games (Jakarta, INA)																	*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*
date	26-Aug-18	time	6.77	12.73	18.85	25.35	32.00	38.89	46.22	54.19	54.19	6 / 7							
reaction time	0.158	interval		5.96	6.12	6.50	6.65	6.89	7.33	7.97		# of strides	12.73	12.62	13.54	15.30	25.35	28.84	3.49
		velocity	7.39	8.39	8.17	7.69	7.52	7.26	6.82	6.27	7.38		7.86	7.92	7.39	6.54	7.89	6.93	

Jean-Baptiste, Audrey (CAN) (1991)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Heat 3 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date	24-Aug-15	time	6.91	12.77	19.07	25.49	31.29	38.59	45.59	53.18	53.18	9 / 6							
reaction time	0.154	interval		5.86	6.30	6.42	5.80	7.30	7.00	7.59		# of strides	12.77	12.72	13.10	14.59	25.49	27.69	2.20
		velocity	7.24	8.53	7.94	7.79	8.62	6.85	7.14	6.59	7.52		7.83	7.86	7.63	6.85	7.85	7.22	

Jefferson, Kyra (USA) (1994)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2023 Doha Diamond League (Doha, QAT)																	*Omega Timing (2023) - diamond league race analysis*
date	05-May-23	time	6.85	12.60	18.76	25.20	31.92	38.84	45.91	54.00	54.00	1 / 8							
reaction time	0.164	interval		5.75	6.16	6.44	6.72	6.92	7.07	8.09		# of strides	12.60	12.60	13.64	15.16	25.20	28.80	3.60
		velocity	7.30	8.70	8.12	7.76	7.44	7.23	7.07	6.18	7.41		7.94	7.94	7.33	6.60	7.94	6.94	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	6.73	12.38	18.24	24.47	30.87	37.46	44.35	51.93	51.93	1 / 8							

reaction time	0.195	interval		5.65	5.86	6.23	6.40	6.59	6.89	7.58		# of strides	12.38	12.09	12.99	14.47	24.47	27.46	2.99
		velocity	7.43	8.85	8.53	8.03	7.81	7.59	7.26	6.60	7.70		8.08	8.27	7.70	6.91	8.17	7.28	

Jele, Lydia (BOT) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Memorial van Damme (Brussels, BEL)																	
Omega Timing (2017) - diamond league race analysis																	
date 01-Sep-17 time		12.6	18.4	24.6	31.1	37.9	45.1	53.11	53.11	2 / 8							
reaction time 0.193 interval			5.80	6.20	6.50	6.80	7.20	8.01		# of strides	12.60	12.00	13.30	15.21	24.60	28.51	3.91
velocity		7.94	8.62	8.06	7.69	7.35	6.94	6.24	7.53		7.94	8.33	7.52	6.57	8.13	7.02	
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																	
Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m																	
date 07-Aug-17 time		12.20		24.02		37.07	44.01	51.37	51.57	2 / 5							
reaction time 0.200 interval				11.82		13.05	6.94	7.36		# of strides	12.20	11.82	13.05	14.30	24.02	27.35	3.33
velocity		8.20		8.46		7.66	7.20	6.79	7.76	195.5	8.20	8.46	7.66	6.99	8.33	7.31	
FINAL - 2017 Meeting de Paris (Paris, FRA)																	
Omega Timing (2017) - diamond league race analysis																	
date 01-Jul-17 time		12.7	18.7	24.9	31.2	37.7	44.5	51.96	51.96	8 / 4							
reaction time 0.161 interval			6.0	6.2	6.3	6.5	6.8	7.5		# of strides	12.70	12.20	12.80	14.26	24.90	27.06	2.16
velocity		7.87	8.33	8.06	7.94	7.69	7.35	6.70	7.70	194.5	7.87	8.20	7.81	7.01	8.03	7.39	

Jensen, Christine Bjelland (NOR) (19

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Bislett Games (Olso, NOR)																	
Omega Timing (2019) - diamond league race analysis																	
date 13-Jun-19 time		13.3		26.1		40.3		55.70	55.70	4 / 4							
reaction time 0.161 interval				12.8		14.2		15.4		# of strides	13.30	12.80	14.20	15.40	26.10	29.60	3.50
velocity		7.52		7.81		7.04		6.49	7.18		7.52	7.81	7.04	6.49	7.66	6.76	

Jensen, Sara Dorthea (NOR) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Bislett Games (Olso, NOR)																	
Omega Timing (2019) - diamond league race analysis																	
date 13-Jun-19 time		13.6		26.1		39.4		54.83	54.83	7 / 2							
reaction time 0.194 interval				12.5		13.3		15.4		# of strides	13.60	12.50	13.30	15.43	26.10	28.73	2.63
velocity		7.35		8.00		7.52		6.48	7.30		7.35	8.00	7.52	6.48	7.66	6.96	

Jingbo, Yuki (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2013 Japanese National High School Championships (Oita, JPN)																	
Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data																	
date 30-Jul-13 time		13.47		26.53		39.98		54.24	54.24	9 / 3							
reaction time interval				13.06		13.45		14.26		# of strides	13.47	13.06	13.45	14.26	26.53	27.71	1.18
velocity		7.42		7.66		7.43		7.01	7.37		7.42	7.66	7.43	7.01	7.54	7.22	
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)																	
Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics																	
date 29-Jul-12 time		13.22		26.01		39.96		54.84	54.84	5 / 2							
reaction time interval				12.79		13.95		14.88		# of strides	13.22	12.79	13.95	14.88	26.01	28.83	2.82
velocity		7.56		7.82		7.17		6.72	7.29		7.56	7.82	7.17	6.72	7.69	6.94	

John, Yemi Mary (GBR) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																	
Omega Timing (2022) - diamond league race analysis																	
date 21-May-22 time	6.9	12.5	18.5	24.7	31.2	38.1	45.3	53.04	53.04	3 / 3							
reaction time 0.157 interval		5.60	6.00	6.20	6.50	6.90	7.20	7.74	PB	# of strides	12.50	12.20	13.40	14.94	24.70	28.34	3.64
velocity	7.25	8.93	8.33	8.06	7.69	7.25	6.94	6.46	7.54		8.00	8.20	7.46	6.69	8.10	7.06	

Jonathas, Wadeline (USA) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 FBK Games (Hengelo, NED)																	
Omega Timing (2023) - continental tour race analysis																	
date 04-Jun-23 time	6.68	12.36	18.32	24.49	30.88	37.50	44.39	51.74	51.74	6 / 2							
reaction time 0.178 interval		5.68	5.96	6.17	6.39	6.62	6.89	7.35		# of strides	12.36	12.13	13.01	14.24	24.49	27.25	2.76
velocity	7.49	8.80	8.39	8.10	7.82	7.55	7.26	6.80	7.73	179.0	8.09	8.24	7.69	7.02	8.17	7.34	
FINAL - 2022 FBK Games (Hengelo, NED)																	
Omega Timing (2022) - continental tour race analysis																	
date 06-Jun-22 time	6.7	12.4	18.4	24.6	30.9	37.5	44.5	52.17	52.17	2 / 6							
reaction time 0.180 interval		5.70	6.00	6.20	6.30	6.60	7.00	7.67		# of strides	12.40	12.20	12.90	14.67	24.60	27.57	2.97
velocity	7.46	8.77	8.33	8.06	7.94	7.58	7.14	6.52	7.67		8.06	8.20	7.75	6.82	8.13	7.25	
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																	
Omega Timing (2020) - diamond league race analysis																	
date 23-Aug-20 time	6.9	12.6	18.5	24.5	30.7	37.3	44.2	51.94	51.94	6 / 1							
reaction time 0.190 interval		5.70	5.90	6.00	6.20	6.60	6.90	7.74		# of strides	12.60	11.90	12.80	14.64	24.50	27.44	2.94
velocity	7.25	8.77	8.47	8.33	8.06	7.58	7.25	6.46	7.70	194.0	7.94	8.40	7.81	6.83	8.16	7.29	
Semi-Final 2 - 2019 IAAF World Championships (Doha, QAT)																	
Yamanaka (2019) - race analysis of men and women 400m competition																	
date 01-Oct-19 time	6.54	11.92	17.40	23.23	29.39	36.01	42.87	50.07	50.07	4 / 2							
reaction time 0.202 interval		5.38	5.48	5.83	6.16	6.62	6.86	7.20	PB	# of strides	11.92	11.31	12.78	14.06	23.23	26.84	3.61
velocity	7.65	9.29	9.12	8.58	8.12	7.55	7.29	6.94	7.99	188.0	8.39	8.84	7.82	7.11	8.61	7.45	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)																	
European Athletics (2019) - race analysis																	
date 09-Sep-19 time		12.42		24.17		36.87		51.01	51.01	4 / 1							
reaction time 0.173 interval				11.75		12.70		14.14		# of strides	12.42	11.75	12.70	14.14	24.17	26.84	2.67
velocity		8.05		8.51		7.87		7.07	7.84	193.5	8.05	8.51	7.87	7.07	8.27	7.45	

Jones, Brittany (USA) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 USATF National Junior Championships (Carson, CA)																	
USATF Women's Sprint Development (2005)																	
date 25-Jun-05 time		12.53	18.38	24.47	30.55	36.87	43.81	51.18	51.18	7 / ~~1~~							
reaction time interval			5.85	6.09	6.08	6.32	6.94	7.37	DQ	# of strides	12.53	11.94	12.40	14.31	24.47	26.71	2.24
velocity		7.98	8.55	8.21	8.22	7.91	7.20	6.78	7.82		7.98	8.38	8.06	6.99	8.17	7.49	

Jones, Janeen (USA) (1972)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																	
USATF Women's Sprint Development (1996)																	
date 17-Jun-96 time		12.70		24.66		37.60	44.77	52.49	52.49	7 / 7							
reaction time interval				11.96		12.94	7.17	7.72		# of strides	12.70	11.96	12.94	14.89	24.66	27.83	3.17
velocity		7.87		8.36		7.73	6.97	6.48	7.62		7.87	8.36	7.73	6.72	8.11	7.19	

Kabange, Mupopo (ZAM) (1992)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date 24-Aug-15	time	6.57	12.22	18.37	24.71	30.95	37.24	44.01	51.55	51.55	8 / 2							
reaction time 0.180	interval		5.65	6.15	6.34	6.24	6.29	6.77	7.54		# of strides	12.22	12.49	12.53	14.31	24.71	26.84	2.13
	velocity	7.61	8.85	8.13	7.89	8.01	7.95	7.39	6.63	7.76		8.18	8.01	7.98	6.99	8.09	7.45	
Kaczmarek, Natalia (POL) (1998)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2023 Prefontaine Classic (Eugene, OR)										*Omega Timing (2023) - diamond league race analysis*							
date 17-Sep-23	time	6.84	12.51	18.22	24.32	30.58	36.97	43.51	50.38	50.38	6 / 2							
reaction time 0.160	interval		5.67	5.71	6.10	6.26	6.39	6.54	6.87		# of strides	12.51	11.81	12.65	13.41	24.32	26.06	1.74
	velocity	7.31	8.82	8.76	8.20	7.99	7.82	7.65	7.28	7.94	193.0	7.99	8.47	7.91	7.46	8.22	7.67	
FINAL - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 23-Aug-23	time		12.30		23.46		35.92		49.57	49.57	6 / 2							
reaction time 0.168	interval				11.16		12.46		13.65		# of strides	12.30	11.16	12.46	13.65	23.46	26.11	2.65
	velocity		8.13		8.96		8.03		7.33	8.07	192.0	8.13	8.96	8.03	7.33	8.53	7.66	
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 21-Aug-23	time		12.19		23.58		36.21		49.50	49.50	5 / 1							
reaction time 0.173	interval				11.39		12.63		13.29		# of strides	12.19	11.39	12.63	13.29	23.58	25.92	2.34
	velocity		8.20		8.78		7.92		7.52	8.08	192.0	8.20	8.78	7.92	7.52	8.48	7.72	
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 20-Aug-23	time		12.39		23.74		36.65		50.02	50.02	7 / 1							
reaction time 0.179	interval				11.35		12.91		13.37		# of strides	12.39	11.35	12.91	13.37	23.74	26.28	2.54
	velocity		8.07		8.81		7.75		7.48	8.00	190.2	8.07	8.81	7.75	7.48	8.42	7.61	
FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON)										*Omega Timing (2023) - diamond league race analysis*							
date 21-Jul-23	time	6.79	12.36	17.98	23.83	29.92	36.33	42.84	49.63	49.63	6 / 1							
reaction time 0.174	interval		5.57	5.62	5.85	6.09	6.41	6.51	6.79		# of strides	12.36	11.47	12.50	13.30	23.83	25.80	1.97
	velocity	7.36	8.98	8.90	8.55	8.21	7.80	7.68	7.36	8.06	189.5	8.09	8.72	8.00	7.52	8.39	7.75	
FINAL - 2023 Meeting de Paris (Paris, FRA)										*Omega Timing (2023) - diamond league race analysis*							
date 09-Jun-23	time	6.54	12.03	17.62	23.48	29.69	36.19	42.87	50.10	50.10	6 / 4							
reaction time 0.160	interval		5.49	5.59	5.86	6.21	6.50	6.68	7.23		# of strides	12.03	11.45	12.71	13.91	23.48	26.62	3.14
	velocity	7.65	9.11	8.94	8.53	8.05	7.69	7.49	6.92	7.98	191.7	8.31	8.73	7.87	7.19	8.52	7.51	
FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA)										*Omega Timing (2023) - diamond league race analysis*							
date 02-Jun-23	time	6.74	12.33	19.97	23.93	30.12	36.60	43.35	50.41	50.41	4 / 1							
reaction time 0.142	interval		5.59	7.64	3.96	6.19	6.48	6.75	7.06		# of strides	12.33	11.60	12.67	13.81	23.93	26.48	2.55
	velocity	7.42	8.94	6.54	12.63	8.08	7.72	7.41	7.08	7.93	194.0	8.11	8.62	7.89	7.24	8.36	7.55	
FINAL - 2023 Doha Diamond League (Doha, QAT)										*Omega Timing (2023) - diamond league race analysis*							
date 05-May-23	time	6.89	12.70	18.94	25.22	31.59	38.09	44.60	51.64	51.64	8 / 3							
reaction time 0.171	interval		5.81	6.24	6.28	6.37	6.50	6.51	7.04		# of strides	12.70	12.52	12.87	13.55	25.22	26.42	1.20
	velocity	7.26	8.61	8.01	7.96	7.85	7.69	7.68	7.10	7.75	195.0	7.87	7.99	7.77	7.38	7.93	7.57	
FINAL - 2022 Weltklasse (Zürich, SUI)										*Omega Timing (2022) - diamond league race analysis*							
date 08-Sep-22	time	6.84	12.50	18.34	24.32	30.51	37.05	43.84	50.74	50.74	3 / 5							
reaction time 0.143	interval		5.66	5.84	5.98	6.19	6.54	6.79	6.90		# of strides	12.50	11.82	12.73	13.69	24.32	26.42	2.10
	velocity	7.31	8.83	8.56	8.36	8.08	7.65	7.36	7.25	7.88		8.00	8.46	7.86	7.30	8.22	7.57	
FINAL - 2022 Athletissima (Lausanne, SUI)										*Omega Timing (2022) - diamond league race analysis*							
date 26-Aug-22	time	6.80	12.40	18.22	24.26	30.55	37.16	43.89	51.03	51.03	3 / 5							
reaction time 0.150	interval		5.60	5.82	6.04	6.29	6.61	6.73	7.14		# of strides	12.40	11.86	12.90	13.87	24.26	26.77	2.51
	velocity	7.35	8.93	8.59	8.28	7.95	7.56	7.43	7.00	7.84		8.06	8.43	7.75	7.21	8.24	7.47	
FINAL - 2022 European Athletics Championships (Munich, GER)										*European Athletics (2022) - european athletics championships race analysis*							
date 17-Aug-22	time		12.17		23.59		36.29		49.94	49.94	6 / 2							
reaction time 0.178	interval				11.42		12.70		13.65		# of strides	12.17	11.42	12.70	13.65	23.59	26.35	2.76
	velocity		8.22		8.76		7.87		7.33	8.01	195.0	8.22	8.76	7.87	7.33	8.48	7.59	
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)										*Omega Timing (2022) - diamond league race analysis*							
date 06-Aug-22	time	6.83	12.53	18.27	24.23	30.37	36.69	43.13	49.86	49.86	6 / 2							
reaction time 0.145	interval		5.70	5.74	5.96	6.14	6.32	6.44	6.73	**PB**	# of strides	12.53	11.70	12.46	13.17	24.23	25.63	1.40
	velocity	7.32	8.77	8.71	8.39	8.14	7.91	7.76	7.43	8.02		7.98	8.55	8.03	7.59	8.25	7.80	
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)										*Timing by Seiko (2022) - world athletics championships race analysis*							
date 20-Jul-22	time		12.51		24.40		37.30		51.34	51.34	4 / 5							
reaction time 0.141	interval				11.89		12.90		14.04		# of strides	12.51	11.89	12.90	14.04	24.40	26.94	2.54
	velocity		7.99		8.41		7.75		7.12	7.79	197.2	7.99	8.41	7.75	7.12	8.20	7.42	
Heat 2 - 2022 World Athletics Championships (Eugene, OR)										*Timing by Seiko (2022) - world athletics championships race analysis*							
date 17-Jul-22	time		12.76		24.41		37.11		50.21	50.21	8 / 2							
reaction time 0.152	interval				11.65		12.70		13.10		# of strides	12.76	11.65	12.70	13.10	24.41	25.80	1.39
	velocity		7.84		8.58		7.87		7.63	7.97	197.5	7.84	8.58	7.87	7.63	8.19	7.75	
FINAL - 2022 Meeting de Paris (Paris, FRA)										*Omega Timing (2022) - diamond league race analysis*							
date 18-Jun-22	time	6.79	12.37	18.02	23.99	30.27	36.77	43.39	50.24	50.24	5 / 2							
reaction time 0.162	interval		5.58	5.65	5.97	6.28	6.50	6.62	6.85		# of strides	12.37	11.62	12.78	13.47	23.99	26.25	2.26
	velocity	7.36	8.96	8.85	8.38	7.96	7.69	7.55	7.30	7.96	93.0	8.08	8.61	7.82	7.42	8.34	7.62	
FINAL - 2022 Doha Diamond League (Doha, QAT)										*Omega Timing (2022) - diamond league race analysis*							
date 13-May-22	time	6.8	12.6	19.1	25.7	31.7	38.4	45.6	52.54	52.54	1 / 6							
reaction time 0.148	interval		5.80	6.50	6.60	6.00	6.70	7.20	6.94		# of strides	12.60	13.10	12.70	14.14	25.70	26.84	1.14
	velocity	7.35	8.62	7.69	7.58	8.33	7.46	6.94	7.20	7.61		7.94	7.63	7.87	7.07	7.78	7.45	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	7.0	12.8	18.6	24.6	30.7	37.2	44.0	51.00	51.00	3 / 6						
reaction time	0.186	interval		5.80	5.80	6.00	6.10	6.50	6.80	7.00		# of strides	12.80	11.80	12.60	13.80	24.60	26.40	1.80
		velocity	7.14	8.62	8.62	8.33	8.20	7.69	7.35	7.14	7.84		7.81	8.47	7.94	7.25	8.13	7.58	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.9	12.6	18.6	24.7	31.1	37.6	44.3	51.32	51.32	1 / 6						
reaction time	0.184	interval		5.70	6.00	6.10	6.40	6.50	6.70	7.02		# of strides	12.60	12.10	12.90	13.72	24.70	26.62	1.92
		velocity	7.25	8.77	8.33	8.20	7.81	7.69	7.46	7.12	7.79	196.0	7.94	8.26	7.75	7.29	8.10	7.51	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.9	12.5	18.3	24.5	30.8	37.5	44.2	51.10	51.10	8 / 4						
reaction time	0.167	interval		5.60	5.80	6.20	6.30	6.70	6.70	6.90		# of strides	12.50	12.00	13.00	13.60	24.50	26.60	2.10
		velocity	7.25	8.93	8.62	8.06	7.94	7.46	7.46	7.25	7.83		8.00	8.33	7.69	7.35	8.16	7.52	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	7.0	12.7	18.6	24.8	31.3	37.9	44.6	51.71	51.71	6 / 4						
reaction time	0.151	interval		5.70	5.90	6.20	6.50	6.60	6.70	7.11		# of strides	12.70	12.10	13.10	13.81	24.80	26.91	2.11
		velocity	7.14	8.77	8.47	8.06	7.69	7.58	7.46	7.03	7.74		7.87	8.26	7.63	7.24	8.06	7.43	

Kaiser-Brown, Natasha (USA) (1967)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*																	
date 19-Jun-96	time		12.49		24.58		37.58	44.42	51.52	51.52	2 / 6							
reaction time	interval				12.09		13.00	6.84	7.10		# of strides	12.49	12.09	13.00	13.94	24.58	26.94	2.36
	velocity		8.01		8.27		7.69	7.31	7.04	7.76		8.01	8.27	7.69	7.17	8.14	7.42	
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*																	
date 17-Jun-96	time		12.43		24.43		37.30	44.05	51.18	51.18	7 / 4							
reaction time	interval				12.00		12.87	6.75	7.13		# of strides	12.43	12.00	12.87	13.88	24.43	26.75	2.32
	velocity		8.05		8.33		7.77	7.41	7.01	7.82		8.05	8.33	7.77	7.20	8.19	7.48	
FINAL - 1993 IAAF World Championships (Stuttgart, GER) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*																	
date 17-Aug-93	time				23.78				50.17	50.17	3 / 2							
reaction time	interval								26.39		# of strides					23.78	26.39	2.61
	velocity				8.41				7.58	7.97						8.41	7.58	

Kameoka, Mitsuru (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*																	
date 08-Oct-17	time		13.12		26.49		41.61		58.52	58.52	3 / 6							
reaction time	interval				13.37		15.12		16.91		# of strides	13.12	13.37	15.12	16.91	26.49	32.03	5.54
	velocity		7.62		7.48		6.61		5.91	6.84		7.62	7.48	6.61	5.91	7.55	6.24	

Kapachinskaya, Anastasiya (RUS) (19

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*																	
date 29-Aug-11	time				23.8		36.3		50.24	50.24	6 / 3							
reaction time 0.209	interval						12.50		13.94		# of strides					23.80	26.44	2.64
	velocity				8.40		8.00		7.17	7.96	194.0					8.40	7.56	
FINAL - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*																	
date 18-Aug-09	time		12.54		24.39		36.92		50.53	50.53	2 / 7							
reaction time 0.220	interval				11.85		12.53		13.61		# of strides	12.54	11.85	12.53	13.61	24.39	26.14	1.75
	velocity		7.97		8.44		7.98		7.35	7.92	194.0	7.97	8.44	7.98	7.35	8.20	7.65	
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*																	
date 16-Aug-09	time		12.37		24.08		36.49		50.30	50.30	6 / 3							
reaction time 0.247	interval				11.71		12.41		13.81		# of strides	12.37	11.71	12.41	13.81	24.08	26.22	2.14
	velocity		8.08		8.54		8.06		7.24	7.95		8.08	8.54	8.06	7.24	8.31	7.63	
Heat 4 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*																	
date 15-Aug-09	time		12.53		24.38		37.12		51.17	51.17	6 / 2							
reaction time 0.225	interval				11.85		12.74		14.05		# of strides	12.53	11.85	12.74	14.05	24.38	26.79	2.41
	velocity		7.98		8.44		7.85		7.12	7.82		7.98	8.44	7.85	7.12	8.20	7.47	
FINAL - 2008 Olympic Games (Beijing, CHN) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*																	
date 19-Aug-08	time		12.3		24.1		36.2		50.0	50.03	9 / 5							
reaction time 0.378	interval				11.80		12.10		13.80	PB	# of strides	12.30	11.80	12.10	13.80	24.10	25.90	1.80
	velocity		8.13		8.47		8.26		7.25	8.00	194.5	8.13	8.47	8.26	7.25	8.30	7.72	
FINAL - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*																	
date 08-Aug-02	time		12.88		24.96		37.86		51.69	51.69	/ 5							
reaction time 0.286	interval				12.08		12.90		13.83		# of strides	12.88	12.08	12.90	13.83	24.96	26.73	1.77
	velocity		7.76		8.28		7.75		7.23	7.74		7.76	8.28	7.75	7.23	8.01	7.48	
Heat 3 - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*																	
date 07-Aug-02	time		12.88		24.69		37.46		51.56	51.56	/ 3							
reaction time 0.209	interval				11.81		12.77		14.10		# of strides	12.88	11.81	12.77	14.10	24.69	26.87	2.18
	velocity		7.76		8.47		7.83		7.09	7.76		7.76	8.47	7.83	7.09	8.10	7.44	

Karpiuk, Kateryna (UKR) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*																	
date 20-Aug-23	time		12.76		24.71		37.98		52.66	52.66	9 / 8							
reaction time 0.198	interval				11.95		13.27		14.68		# of strides	12.76	11.95	13.27	14.68	24.71	27.95	3.24
	velocity		7.84		8.37		7.54		6.81	7.60		7.84	8.37	7.54	6.81	8.09	7.16	

Karuyama, Yakari (JPN)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.19	13.40	19.99	26.96	34.32	42.13	50.52	59.55	59.55	1 / 8						
reaction time		interval		6.21	6.59	6.97	7.36	7.81	8.39	9.03		# of strides	13.40	13.56	15.17	17.42	26.96	32.59	5.63
		velocity	6.95	8.05	7.59	7.17	6.79	6.40	5.96	5.54	6.72		7.46	7.37	6.59	5.74	7.42	6.14	

Kashcheyeva, Zhanna (RUS) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2007 European Cup (Munich, GER) — *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Jun-07	time		12.70		24.58		37.34		51.87	51.87	/ 2						
reaction time	0.150	interval				11.88		12.76		14.53		# of strides	12.70	11.88	12.76	14.53	24.58	27.29	2.71
		velocity		7.87		8.42		7.84		6.88	7.71		7.87	8.42	7.84	6.88	8.14	7.33	

Kashiyama, Kaede (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 Japanese Corporate Championships (Osaka, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Sep-18	time	7.08	13.05	19.15	25.66	32.45	39.56	47.01	55.19	55.19	6 / 4						
reaction time		interval		5.97	6.10	6.51	6.79	7.11	7.45	8.18		# of strides	13.05	12.61	13.90	15.63	25.66	29.53	3.87
		velocity	7.06	8.38	8.20	7.68	7.36	7.03	6.71	6.11	7.25		7.66	7.93	7.19	6.40	7.79	6.77	

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	7.09	13.12	19.44	26.03	32.82	39.94	47.21	54.92	54.92	9 / 7						
reaction time	0.203	interval		6.03	6.32	6.59	6.79	7.12	7.27	7.71		# of strides	13.12	12.91	13.91	14.98	26.03	28.89	2.86
		velocity	7.05	8.29	7.91	7.59	7.36	7.02	6.88	6.49	7.28		7.62	7.75	7.19	6.68	7.68	6.92	

FINAL - 2017 National Sports Festival (Matsuyama, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	08-Oct-17	time	7.11	13.06	19.35	26.10	33.08	40.31	47.86	55.96	55.96	3 / 7						
reaction time	0.277	interval		5.95	6.29	6.75	6.98	7.23	7.55	8.10		# of strides	13.06	13.04	14.21	15.65	26.10	29.86	3.76
		velocity	7.03	8.40	7.95	7.41	7.16	6.92	6.62	6.17	7.15	209.0	7.66	7.67	7.04	6.39	7.66	6.70	

Heat 2 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.49		26.62		40.65		56.04	56.04	6 / 3						
reaction time	0.189	interval				13.13		14.03		15.39		# of strides	13.49	13.13	14.03	15.39	26.62	29.42	2.80
		velocity		7.41		7.62		7.13		6.50	7.14	208.5	7.41	7.62	7.13	6.50	7.51	6.80	

FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) — *(2017) - tfdata-store.com/2017/10/05/post-1097/*

date	24-Sep-17	time		13.22		26.00		39.55		54.91	54.91	7 / 3						
reaction time	0.243	interval				12.78		13.55		15.36		# of strides	13.22	12.78	13.55	15.36	26.00	28.91	2.91
		velocity		7.56		7.82		7.38		6.51	7.28	205.2	7.56	7.82	7.38	6.51	7.69	6.92	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.05	13.02	19.27	25.77	32.71	40.05	47.92	56.57	56.57	/ 6						
reaction time		interval		5.97	6.25	6.50	6.94	7.34	7.87	8.65		# of strides	13.02	12.75	14.28	16.52	25.77	30.80	5.03
		velocity	7.09	8.38	8.00	7.69	7.20	6.81	6.35	5.78	7.07		7.68	7.84	7.00	6.05	7.76	6.49	

FINAL - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	6.92	13.01	19.30	25.66	32.13	38.97	46.11	53.76	53.76	1 / 3						
reaction time	0.192	interval		6.09	6.29	6.36	6.47	6.84	7.14	7.65	**PB**	# of strides	13.01	12.65	13.31	14.79	25.66	28.10	2.44
		velocity	7.23	8.21	7.95	7.86	7.73	7.31	7.00	6.54	7.44		7.69	7.91	7.51	6.76	7.79	7.12	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.03	13.16	19.65	26.09	32.68	39.68	47.01	54.91	54.91	/ 3						
reaction time		interval		6.13	6.49	6.44	6.59	7.00	7.33	7.90		# of strides	13.16	12.93	13.59	15.23	26.09	28.82	2.73
		velocity	7.11	8.16	7.70	7.76	7.59	7.14	6.82	6.33	7.28		7.60	7.73	7.36	6.57	7.67	6.94	

Käsling, Dagmar (GDR) (1947)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1972 Olympic Games (Munich, FRG) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	07-Sep-72	time				24.7				52.2	52.19	1 / 7						
reaction time		interval								27.5		# of strides					24.70	27.50	2.80
		velocity				8.10				7.27	7.66						8.10	7.27	

Katayama, Shiori (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.19		26.01		40.16		55.18	55.18	2 / 4						
reaction time	0.211	interval				12.82		14.15		15.02		# of strides	13.19	12.82	14.15	15.02	26.01	29.17	3.16
		velocity		7.58		7.80		7.07		6.66	7.25	195.7	7.58	7.80	7.07	6.66	7.69	6.86	

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.36		26.63		40.88		55.74	55.74	4 / 4						
reaction time	0.182	interval				13.27		14.25		14.86		# of strides	13.36	13.27	14.25	14.86	26.63	29.11	2.48
		velocity		7.49		7.54		7.02		6.73	7.18	194.2	7.49	7.54	7.02	6.73	7.51	6.87	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) — *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	7.10	13.06	19.47	26.17	33.15	40.44	47.81	55.47	55.47	4 / 4						
reaction time	0.347	interval		5.96	6.41	6.70	6.98	7.29	7.37	7.66		# of strides	13.06	13.11	14.27	15.03	26.17	29.30	3.13
		velocity	7.04	8.39	7.80	7.46	7.16	6.86	6.78	6.53	7.21		7.66	7.63	7.01	6.65	7.64	6.83	

Kato, Shiho (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.27		26.37		40.71		56.64	56.64	9 / 6						
reaction time	0.204	interval				13.10		14.34		15.93		# of strides	13.27	13.10	14.34	15.93	26.37	30.27	3.90
		velocity		7.54		7.63		6.97		6.28	7.06	212.0	7.54	7.63	6.97	6.28	7.58	6.61	

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.07	13.19	19.64	26.51	33.68	40.98	48.46	56.37	56.37	7 / 7						
reaction time		interval		6.12	6.45	6.87	7.17	7.30	7.48	7.91		# of strides	13.19	13.32	14.47	15.39	26.51	29.86	3.35
		velocity	7.07	8.17	7.75	7.28	6.97	6.85	6.68	6.32	7.10		7.58	7.51	6.91	6.50	7.54	6.70	

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	10-Oct-16	time	7.13	13.11	19.47	26.30	33.40	40.70	48.40	56.76	56.76	3 / 7						
reaction time	0.194	interval		5.98	6.36	6.83	7.10	7.30	7.70	8.36		# of strides	13.11	13.19	14.40	16.06	26.30	30.46	4.16
		velocity	7.01	8.36	7.86	7.32	7.04	6.85	6.49	5.98	7.05		7.63	7.58	6.94	6.23	7.60	6.57	

Kawachi, Sena (JPN) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Japanese High School National Championships (Fukui, JPN) *Shibayama (2021) - national high school and U20 national championhsips*

date	28-Jul-21	time	7.04	13.26	19.70	26.36	33.21	40.08	47.05	54.53	54.53	5 / 2						
reaction time	0.152	interval		6.22	6.44	6.66	6.85	6.87	6.97	7.48	PB	# of strides	13.26	13.10	13.72	14.45	26.36	28.17	1.81
		velocity	7.10	8.04	7.76	7.51	7.30	7.28	7.17	6.68	7.34		7.54	7.63	7.29	6.92	7.59	7.10	

FINAL - 2021 Japanese U20 National Championships (Osaka, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	7.06	13.22	19.50	26.17	33.01	40.02	47.33	55.13	55.13	7 / 3						
reaction time	0.175	interval		6.16	6.28	6.67	6.84	7.01	7.31	7.80		# of strides	13.22	12.95	13.85	15.11	26.17	28.96	2.79
		velocity	7.08	8.12	7.96	7.50	7.31	7.13	6.84	6.41	7.26	211.2	7.56	7.72	7.22	6.62	7.64	6.91	

Kawada, Ayaka (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	09-May-21	time	7.05	13.18	19.49	26.05	32.80	39.74	46.92	54.46	54.46	8 / 4						
reaction time	0.170	interval		6.13	6.31	6.56	6.75	6.94	7.18	7.54		# of strides	13.18	12.87	13.69	14.72	26.05	28.41	2.36
		velocity	7.09	8.16	7.92	7.62	7.41	7.20	6.96	6.63	7.34		7.59	7.77	7.30	6.79	7.68	7.04	

FINAL - 2018 National Sports Festival (Fukui, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	07-Oct-18	time	6.87	12.91	19.27	25.92	32.76	39.66	46.65	53.97	53.97	6 / 1						
reaction time	0.183	interval		6.04	6.36	6.65	6.84	6.90	6.99	7.32		# of strides	12.91	13.01	13.74	14.31	25.92	28.05	2.13
		velocity	7.28	8.28	7.86	7.52	7.31	7.25	7.15	6.83	7.41		7.75	7.69	7.28	6.99	7.72	7.13	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	6.91	12.91	19.12	25.67	32.39	39.32	46.35	53.75	53.75	5 / 1						
reaction time	0.176	interval		6.00	6.21	6.55	6.72	6.93	7.03	7.40		# of strides	12.91	12.76	13.65	14.43	25.67	28.08	2.41
		velocity	7.24	8.33	8.05	7.63	7.44	7.22	7.11	6.76	7.44	211.5	7.75	7.84	7.33	6.93	7.79	7.12	

Heat 2 - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	22-Jun-18	time	6.90	12.78	18.90	25.35	32.09	39.09	46.35	54.05	54.05	5 / 2						
reaction time	0.174	interval		5.88	6.12	6.45	6.74	7.00	7.26	7.70		# of strides	12.78	12.57	13.74	14.96	25.35	28.70	3.35
		velocity	7.25	8.50	8.17	7.75	7.42	7.14	6.89	6.49	7.40	210.7	7.82	7.96	7.28	6.68	7.89	6.97	

FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	03-May-18	time	7.06	13.12	19.37	25.84	32.55	39.40	46.36	53.58	53.58	4 / 1						
reaction time	0.184	interval		6.06	6.25	6.47	6.71	6.85	6.96	7.22		# of strides	13.12	12.72	13.56	14.18	25.84	27.74	1.90
		velocity	7.08	8.25	8.00	7.73	7.45	7.30	7.18	6.93	7.47	210.2	7.62	7.86	7.37	7.05	7.74	7.21	

U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		12.96		25.41		39.11		53.56	53.56	5 / 1						
reaction time	0.220	interval				12.45		13.70		14.45		# of strides	12.96	12.45	13.70	14.45	25.41	28.15	2.74
		velocity		7.72		8.03		7.30		6.92	7.47	209.5	7.72	8.03	7.30	6.92	7.87	7.10	

U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		12.90		25.77		39.55		54.61	54.61	7 / 1						
reaction time	0.225	interval				12.87		13.78		15.06		# of strides	12.90	12.87	13.78	15.06	25.77	28.84	3.07
		velocity		7.75		7.77		7.26		6.64	7.32	211.0	7.75	7.77	7.26	6.64	7.76	6.93	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	6.98	12.86	19.02	25.46	32.16	39.20	46.40	53.92	53.92	5 / 1						
reaction time	0.205	interval		5.88	6.16	6.44	6.70	7.04	7.20	7.52		# of strides	12.86	12.60	13.74	14.72	25.46	28.46	3.00
		velocity	7.16	8.50	8.12	7.76	7.46	7.10	6.94	6.65	7.42		7.78	7.94	7.28	6.79	7.86	7.03	

FINAL - 2017 Japanese National Championships (Osaka, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	6.96	12.90	19.04	25.51	32.28	39.31	46.57	54.18	54.18	7 / 3						
reaction time	0.171	interval		5.94	6.14	6.47	6.77	7.03	7.26	7.61		# of strides	12.90	12.61	13.80	14.87	25.51	28.67	3.16
		velocity	7.18	8.42	8.14	7.73	7.39	7.11	6.89	6.57	7.38	214.0	7.75	7.93	7.25	6.72	7.84	6.98	

Heat 1 - 2017 Japanese National Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time		12.85		25.40		39.20		54.37	54.37	6 / 2						
reaction time	0.174	interval				12.55		13.80		15.17		# of strides	12.85	12.55	13.80	15.17	25.40	28.97	3.57
		velocity		7.78		7.97		7.25		6.59	7.36	213.2	7.78	7.97	7.25	6.59	7.87	6.90	

B FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.05	13.08	19.34	25.95	32.71	39.76	47.15	54.67	54.67	/ 1						
reaction time		interval		6.03	6.26	6.61	6.76	7.05	7.39	7.52	PB	# of strides	13.08	12.87	13.81	14.91	25.95	28.72	2.77
		velocity	7.09	8.29	7.99	7.56	7.40	7.09	6.77	6.65	7.32		7.65	7.77	7.24	6.71	7.71	6.96	

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.11	13.09	19.42	26.04	32.85	39.89	47.24	54.93	54.93	4 / 1						
reaction time		interval		5.98	6.33	6.62	6.81	7.04	7.35	7.69		# of strides	13.09	12.95	13.85	15.04	26.04	28.89	2.85
		velocity	7.03	8.36	7.90	7.55	7.34	7.10	6.80	6.50	7.28		7.64	7.72	7.22	6.65	7.68	6.92	

FINAL - 2016 Japanese National High School Championships (Okayama, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	29-Jul-16	time	7.11	13.04	19.24	25.69	32.59	39.75	47.17	54.91	54.91	4 / 4						
reaction time	0.189	interval		5.93	6.20	6.45	6.90	7.16	7.42	7.74	PB	# of strides	13.04	12.65	14.06	15.16	25.69	29.22	3.53
		velocity	7.03	8.43	8.06	7.75	7.25	6.98	6.74	6.46	7.28		7.67	7.91	7.11	6.60	7.79	6.84	

Kawakami, Ichigo (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.22		26.34		40.54		56.35	56.35	7 / 6						
reaction time	0.232	interval				13.12		14.20		15.81		# of strides	13.22	13.12	14.20	15.81	26.34	30.01	3.67
		velocity		7.56		7.62		7.04		6.33	7.10	212.2	7.56	7.62	7.04	6.33	7.59	6.66	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	7.00	13.00	19.27	25.85	32.81	40.14	47.66	55.72	55.72	8 / 5						
reaction time	0.209	interval		6.00	6.27	6.58	6.96	7.33	7.52	8.06		# of strides	13.00	12.85	14.29	15.58	25.85	29.87	4.02
		velocity	7.14	8.33	7.97	7.60	7.18	6.82	6.65	6.20	7.18		7.69	7.78	7.00	6.42	7.74	6.70	

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.01	13.13	19.42	26.11	33.22	40.42	47.86	55.77	55.77	2 / 2						
reaction time		interval		6.12	6.29	6.69	7.11	7.20	7.44	7.91		# of strides	13.13	12.98	14.31	15.35	26.11	29.66	3.55
		velocity	7.13	8.17	7.95	7.47	7.03	6.94	6.72	6.32	7.17		7.62	7.70	6.99	6.51	7.66	6.74	

Kawakubo, Moeka (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)											*Ryutaro (2018) - research on athlete performance and technique- 2018 data book*						
date	19-Oct-18	time	7.34	13.94	20.70	27.51	34.35	41.57	49.03	56.69	56.69	2 / 8						
reaction time	0.200	interval		6.60	6.76	6.81	6.84	7.22	7.46	7.66		# of strides	13.94	13.57	14.06	15.12	27.51	29.18	1.67
		velocity	6.81	7.58	7.40	7.34	7.31	6.93	6.70	6.53	7.06		7.17	7.37	7.11	6.61	7.27	6.85	

Kawasaki, Natsumi (JPN) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)											*Kijima (2019) - research on athlete performance and technique- 2019 data book*						
date	18-Oct-19	time	7.27	13.64	20.15	26.89	33.72	40.71	47.97	55.50	55.50	5 / 4						
reaction time	0.215	interval		6.37	6.51	6.74	6.83	6.99	7.26	7.53		# of strides	13.64	13.25	13.82	14.79	26.89	28.61	1.72
		velocity	6.88	7.85	7.68	7.42	7.32	7.15	6.89	6.64	7.21	205.0	7.33	7.55	7.24	6.76	7.44	6.99	

Kawata, Ayaka (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)											*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*						
date	09-May-21	time	7.05	13.18	19.49	26.05	32.80	39.74	46.92	54.46	54.46	8 / 4						
reaction time	0.170	interval		6.13	6.31	6.56	6.75	6.94	7.18	7.54		# of strides	13.18	12.87	13.69	14.72	26.05	28.41	2.36
		velocity	7.09	8.16	7.92	7.62	7.41	7.20	6.96	6.63	7.34		7.59	7.77	7.30	6.79	7.68	7.04	

Kawazu, Mayu (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date	29-Jul-16	time	6.94	12.78	18.84	25.52	32.80	40.43	48.20	56.19	56.19	8 / 8						
reaction time	0.238	interval		5.84	6.06	6.68	7.28	7.63	7.77	7.99		# of strides	12.78	12.74	14.91	15.76	25.52	30.67	5.15
		velocity	7.20	8.56	8.25	7.49	6.87	6.55	6.44	6.26	7.12		7.82	7.85	6.71	6.35	7.84	6.52	

Kelly, Ashley (IVB) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date	07-Aug-17	time		11.89		23.83		37.75	44.67	54.32	54.50	9 / 8						
reaction time	0.184	interval				11.94		13.92	6.92	9.65		# of strides	11.89	11.94	13.92	16.57	23.83	30.49	6.66
		velocity		8.41		8.38		7.18	7.23	5.18	7.34	205.7	8.41	8.38	7.18	6.04	8.39	6.56	

Kendall, Nicole (GBR) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)											*Omega Timing (2023) - diamond league race analysis*						
date	15-Jun-23	time	6.91	12.64	18.61	24.84	31.47	38.48	45.71	53.50	53.50	5 / 2						
reaction time	0.192	interval		5.73	5.97	6.23	6.63	7.01	7.23	7.79		# of strides	12.64	12.20	13.64	15.02	24.84	28.66	3.82
		velocity	7.24	8.73	8.38	8.03	7.54	7.13	6.92	6.42	7.48		7.91	8.20	7.33	6.66	8.05	6.98	

Keough, Linda (GBR) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1991 European Cup (Frankfurt, GER)											*Federle (2003) - http://www.fgs.uni-halle.de*						
date	29-Jun-91	time		12.37		24.34		37.06		51.54	51.54	8 / 4						
reaction time		interval				11.97		12.72		14.48		# of strides	12.37	11.97	12.72	14.48	24.34	27.20	2.86
		velocity		8.08		8.35		7.86		6.91	7.76		8.08	8.35	7.86	6.91	8.22	7.35	

Kidd, Ashlee (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR)											*USATF Women's Sprint Development with HPC (2008)*						
date	29-Jun-08	time		12.52	18.52	24.78	31.38	38.33	45.49	53.22	53.22	2 / 3						
reaction time		interval			6.00	6.26	6.60	6.95	7.16	7.73		# of strides	12.52	12.26	13.55	14.89	24.78	28.44	3.66
		velocity		7.99	8.33	7.99	7.58	7.19	6.98	6.47	7.52		7.99	8.16	7.38	6.72	8.07	7.03	

Kiełbasińska, Anna (POL) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON)											*Omega Timing (2023) - diamond league race analysis*						
date	21-Jul-23	time	6.82	12.60	18.56	24.70	31.05	37.79	44.83	52.67	52.67	2 / 8						
reaction time	0.189	interval		5.78	5.96	6.14	6.35	6.74	7.04	7.84		# of strides	12.60	12.10	13.09	14.88	24.70	27.97	3.27
		velocity	7.33	8.65	8.39	8.14	7.87	7.42	7.10	6.38	7.59		7.94	8.26	7.64	6.72	8.10	7.15	

FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA) *Omega Timing (2023) - diamond league race analysis*

date	02-Jun-23	time	6.65	12.37	18.24	24.46	30.79	37.43	44.39	51.76	51.76	3 / 6						
reaction time	0.157	interval		5.72	5.87	6.22	6.33	6.64	6.96	7.37		# of strides	12.37	12.09	12.97	14.33	24.46	27.30	2.84
		velocity	7.52	8.74	8.52	8.04	7.90	7.53	7.18	6.78	7.73		8.08	8.27	7.71	6.98	8.18	7.33	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.59	12.27	18.16	24.17	30.45	36.97	43.74	50.93	50.93	8 / 6						
reaction time	0.158	interval		5.68	5.89	6.01	6.28	6.52	6.77	7.19		# of strides	12.27	11.90	12.80	13.96	24.17	26.76	2.59
		velocity	7.59	8.80	8.49	8.32	7.96	7.67	7.39	6.95	7.85		8.15	8.40	7.81	7.16	8.27	7.47	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.59	12.31	18.09	24.10	30.41	37.06	43.98	51.63	51.63	6 / 7						
reaction time	0.150	interval		5.72	5.78	6.01	6.31	6.65	6.92	7.65		# of strides	12.31	11.79	12.96	14.57	24.10	27.53	3.43
		velocity	7.59	8.74	8.65	8.32	7.92	7.52	7.23	6.54	7.75		8.12	8.48	7.72	6.86	8.30	7.26	

FINAL - 2022 European Athletics Championships (Munich, GER) *European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time		12.39		24.21		36.90		50.29	50.29	4 / 3						
reaction time	0.225	interval				11.82		12.69		13.39		# of strides	12.39	11.82	12.69	13.39	24.21	26.08	1.87
		velocity		8.07		8.46		7.88		7.47	7.95	194.0	8.07	8.46	7.88	7.47	8.26	7.67	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	6.64	12.29	18.11	24.16	30.34	36.75	43.37	50.57	50.57	3 / 5							
reaction time	0.154	interval		5.65	5.82	6.05	6.18	6.41	6.62	7.20		# of strides	12.29	11.87	12.59	13.82	24.16	26.41	2.25
		velocity	7.53	8.85	8.59	8.26	8.09	7.80	7.55	6.94	7.91		8.14	8.42	7.94	7.24	8.28	7.57	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		12.28		24.12		36.89		50.81	50.81	1 / 8							
reaction time	0.147	interval				11.84		12.77		13.92		# of strides	12.28	11.84	12.77	13.92	24.12	26.69	2.57
		velocity		8.14		8.45		7.83		7.18	7.87		8.14	8.45	7.83	7.18	8.29	7.49	

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.19		23.93		36.57		50.65	50.65	4 / 3							
reaction time	0.158	interval				11.74		12.64		14.08		# of strides	12.19	11.74	12.64	14.08	23.93	26.72	2.79
		velocity		8.20		8.52		7.91		7.10	7.90	196.2	8.20	8.52	7.91	7.10	8.36	7.49	

Heat 6 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.22		24.18		37.11		50.63	50.63	7 / 1							
reaction time	0.151	interval				11.96		12.93		13.52		# of strides	12.22	11.96	12.93	13.52	24.18	26.45	2.27
		velocity		8.18		8.36		7.73		7.40	7.90	195.0	8.18	8.36	7.73	7.40	8.27	7.56	

FINAL - 2022 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2022) - diamond league race analysis*

date	30-Jun-22	time	6.63	12.25	17.96	23.91	30.15	36.60	43.35	50.60	50.60	6 / 1							
reaction time	0.155	interval		5.62	5.71	5.95	6.24	6.45	6.75	7.25		# of strides	12.25	11.66	12.69	14.00	23.91	26.69	2.78
		velocity	7.54	8.90	8.76	8.40	8.01	7.75	7.41	6.90	7.91		8.16	8.58	7.88	7.14	8.36	7.49	

FINAL - 2022 Meeting de Paris (Paris, FRA) *Omega Timing (2022) - diamond league race analysis*

date	18-Jun-22	time	6.54	12.16	17.92	23.86	30.05	36.52	43.18	50.28	50.28	6 / 3							
reaction time	0.165	interval		5.62	5.76	5.94	6.19	6.47	6.66	7.10	PB	# of strides	12.16	11.70	12.66	13.76	23.86	26.42	2.56
		velocity	7.65	8.90	8.68	8.42	8.08	7.73	7.51	7.04	7.96	194.0	8.22	8.55	7.90	7.27	8.38	7.57	

Kikuchi, Ruina (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2013 Japanese National High School Championships (Oita, JPN) *Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*

date	30-Jul-13	time		13.48		26.57		40.27		55.42	55.42	3 / 6							
reaction time		interval				13.09		13.70		15.15	PB	# of strides	13.48	13.09	13.70	15.15	26.57	28.85	2.28
		velocity		7.42		7.64		7.30		6.60	7.22		7.42	7.64	7.30	6.60	7.53	6.93	

Kimoto, Ayana (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/05/13/post-441/*

date	11-May-17	time		13.59						55.43	55.43	8 / 4							
reaction time		interval								41.84		# of strides	13.59						
		velocity		7.36						7.17	7.22		7.36						

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.54	13.94	20.52	27.37	34.51	41.96	49.64	57.96	57.96	/ 8							
reaction time		interval		6.40	6.58	6.85	7.14	7.45	7.68	8.32		# of strides	13.94	13.43	14.59	16.00	27.37	30.59	3.22
		velocity	6.63	7.81	7.60	7.30	7.00	6.71	6.51	6.01	6.90		7.17	7.45	6.85	6.25	7.31	6.54	

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	7.45	13.59	19.89	26.17	32.79	39.85	47.15	55.11	55.11	/ 6							
reaction time		interval		6.14	6.30	6.28	6.62	7.06	7.30	7.96		# of strides	13.59	12.58	13.68	15.26	26.17	28.94	2.77
		velocity	6.71	8.14	7.94	7.96	7.55	7.08	6.85	6.28	7.26		7.36	7.95	7.31	6.55	7.64	6.91	

Kimura, Tomomi (JPN) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN) *Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*

date	24-Sep-06	time	7.1	13.4	19.7	26.4	33.4	40.7	48.2	56.48	56.48	9 / 8							
reaction time		interval		6.30	6.30	6.70	7.00	7.30	7.50	8.28	PB	# of strides	13.40	13.00	14.30	15.78	26.40	30.08	3.68
		velocity	7.04	7.94	7.94	7.46	7.14	6.85	6.67	6.04	7.08		7.46	7.69	6.99	6.34	7.58	6.65	

King, Sarah (SUI) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

B Race - 2023 Athletissima (Lausanne, SUI) *Omega Timing (2023) - diamond league race analysis*

date	30-Jun-23	time	7.14	13.02	19.10	25.56	32.24	39.35	46.68	54.50	54.50	7 / 5							
reaction time	0.245	interval		5.88	6.08	6.46	6.68	7.11	7.33	7.82		# of strides	13.02	12.54	13.79	15.15	25.56	28.94	3.38
		velocity	7.00	8.50	8.22	7.74	7.49	7.03	6.82	6.39	7.34		7.68	7.97	7.25	6.60	7.82	6.91	

National FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.9	12.5	18.4	24.7	31.3	38.3	45.9	54.00	54.00	3 / 5							
reaction time	0.194	interval		5.60	5.90	6.30	6.60	7.00	7.60	8.10		# of strides	12.50	12.20	13.60	15.70	24.70	29.30	4.60
		velocity	7.25	8.93	8.47	7.94	7.58	7.14	6.58	6.17	7.41		8.00	8.20	7.35	6.37	8.10	6.83	

B Race - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.9	12.9	19.4	26.1	32.8	39.8	46.8	54.01	54.01	3 / 5							
reaction time	0.163	interval		6.00	6.50	6.70	6.70	7.00	7.00	7.21		# of strides	12.90	13.20	13.70	14.21	26.10	27.91	1.81
		velocity	7.25	8.33	7.69	7.46	7.46	7.14	7.14	6.93	7.41		7.75	7.58	7.30	7.04	7.66	7.17	

Kira, Manami (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	7.08	13.02	19.19	25.64	32.38	39.35	46.76	54.80	54.80	6 / 6							
reaction time	0.221	interval		5.94	6.17	6.45	6.74	6.97	7.41	8.04		# of strides	13.02	12.62	13.71	15.45	25.64	29.16	3.52
		velocity	7.06	8.42	8.10	7.75	7.42	7.17	6.75	6.22	7.30		7.68	7.92	7.29	6.47	7.80	6.86	

Heat 2 - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	7.05	12.93	18.95	25.29	31.88	38.80	46.08	53.83	53.83	6 / 1							
reaction time	0.199	interval		5.88	6.02	6.34	6.59	6.92	7.28	7.75	PB	# of strides	12.93	12.36	13.51	15.03	25.29	28.54	3.25
		velocity	7.09	8.50	8.31	7.89	7.59	7.23	6.87	6.45	7.43		7.73	8.09	7.40	6.65	7.91	7.01	

Kitamura, Chisato (JPN) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN) *Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-08	time	7.28	13.55	20.05	26.72	33.53	40.38	47.62	55.30	55.30	/ 1						
reaction time		interval		6.27	6.50	6.67	6.81	6.85	7.24	7.68		# of strides	13.55	13.17	13.66	14.92	26.72	28.58	1.86
		velocity	6.87	7.97	7.69	7.50	7.34	7.30	6.91	6.51	7.23		7.38	7.59	7.32	6.70	7.49	7.00	

FINAL - 2007 Japanese National High School Championships (Saga, JPN) *Hitorara (2007) - 60st high school championships: JAF scientific committee- biomechanics data*

date	02-Aug-07	time	7.43	14.31	21.92	29.36	36.41	43.46	50.74	58.38	58.38	/ 2						
reaction time		interval		6.88	7.61	7.44	7.05	7.05	7.28	7.64		# of strides	14.31	15.05	14.10	14.92	29.36	29.02	-0.34
		velocity	6.73	7.27	6.57	6.72	7.09	7.09	6.87	6.54	6.85		6.99	6.64	7.09	6.70	6.81	6.89	

Kitamura, Yume (JPN) (1995)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2017 National Sports Festival (Matsuyama, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	08-Oct-17	time	7.12	13.01	19.20	25.71	32.37	39.22	46.30	53.71	53.71	6 / 1						
reaction time	0.168	interval		5.89	6.19	6.51	6.66	6.85	7.08	7.41	**PB**	# of strides	13.01	12.70	13.51	14.49	25.71	28.00	2.29
		velocity	7.02	8.49	8.08	7.68	7.51	7.30	7.06	6.75	7.45	211.0	7.69	7.87	7.40	6.90	7.78	7.14	

Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.10		25.80		39.80		54.56	54.56	4 / 1						
reaction time	0.178	interval				12.70		14.00		14.76	**PB**	# of strides	13.10	12.70	14.00	14.76	25.80	28.76	2.96
		velocity		7.63		7.87		7.14		6.78	7.33	212.0	7.63	7.87	7.14	6.78	7.75	6.95	

Klaver, Lieke (NED) (1998)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2023 Prefontaine Classic (Eugene, OR) *Omega Timing (2023) - diamond league race analysis*

date	17-Sep-23	time	6.76	12.40	18.21	24.35	30.61	37.00	43.56	50.47	50.47	8 / 3						
reaction time	0.139	interval		5.64	5.81	6.14	6.26	6.39	6.56	6.91		# of strides	12.40	11.95	12.65	13.47	24.35	26.12	1.77
		velocity	7.40	8.87	8.61	8.14	7.99	7.82	7.62	7.24	7.93		8.06	8.37	7.91	7.42	8.21	7.66	

FINAL - 2023 Memorial van Damme (Brussels, BEL) *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	6.59	11.97	17.59	23.47	29.78	36.32	43.03	50.16	50.16	6 / 2						
reaction time	0.180	interval		5.38	5.62	5.88	6.31	6.54	6.71	7.13		# of strides	11.97	11.50	12.85	13.84	23.47	26.69	3.22
		velocity	7.59	9.29	8.90	8.50	7.92	7.65	7.45	7.01	7.97	186.0	8.35	8.70	7.78	7.23	8.52	7.49	

FINAL - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	23-Aug-23	time		11.96		23.06		35.61		50.33	50.33	5 / 6						
reaction time	0.145	interval				11.10		12.55		14.72		# of strides	11.96	11.10	12.55	14.72	23.06	27.27	4.21
		velocity		8.36		9.01		7.97		6.79	7.95	187.0	8.36	9.01	7.97	6.79	8.67	7.33	

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.15		23.52		36.16		49.87	49.87	6 / 1						
reaction time	0.177	interval				11.37		12.64		13.71		# of strides	12.15	11.37	12.64	13.71	23.52	26.35	2.83
		velocity		8.23		8.80		7.91		7.29	8.02	182.2	8.23	8.80	7.91	7.29	8.50	7.59	

Heat 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.20		23.76		36.71		50.52	50.52	6 / 1						
reaction time	0.203	interval				11.56		12.95		13.81		# of strides	12.20	11.56	12.95	13.81	23.76	26.76	3.00
		velocity		8.20		8.65		7.72		7.24	7.92	182.7	8.20	8.65	7.72	7.24	8.42	7.47	

FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2023) - diamond league race analysis*

date	21-Jul-23	time	6.67	12.02	17.56	23.34	29.49	36.01	42.78	49.99	49.99	4 / 3						
reaction time	0.247	interval		5.35	5.54	5.78	6.15	6.52	6.77	7.21		# of strides	12.02	11.32	12.67	13.98	23.34	26.65	3.31
		velocity	7.50	9.35	9.03	8.65	8.13	7.67	7.39	6.93	8.00	184.5	8.32	8.83	7.89	7.15	8.57	7.50	

FINAL - 2023 Meeting de Paris (Paris, FRA) *Omega Timing (2023) - diamond league race analysis*

date	09-Jun-23	time	6.46	11.84	17.45	23.38	29.64	36.17	42.89	50.32	50.32	7 / 5						
reaction time	0.132	interval		5.38	5.61	5.93	6.26	6.53	6.72	7.43		# of strides	11.84	11.54	12.79	14.15	23.38	26.94	3.56
		velocity	7.74	9.29	8.91	8.43	7.99	7.66	7.44	6.73	7.95	183.7	8.45	8.67	7.82	7.07	8.55	7.42	

FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA) *Omega Timing (2023) - diamond league race analysis*

date	02-Jun-23	time	6.62	12.16	17.90	23.92	30.20	36.73	43.52	50.75	50.75	6 / 2						
reaction time	0.137	interval		5.54	5.74	6.02	6.28	6.53	6.79	7.23		# of strides	12.16	11.76	12.81	14.02	23.92	26.83	2.91
		velocity	7.55	9.03	8.71	8.31	7.96	7.66	7.36	6.92	7.88		8.22	8.50	7.81	7.13	8.36	7.45	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.72	12.31	18.19	24.22	30.54	37.23	44.17	51.55	51.55	1 / 7						
reaction time	0.172	interval		5.59	5.88	6.03	6.32	6.69	6.94	7.38		# of strides	12.31	11.91	13.01	14.32	24.22	27.33	3.11
		velocity	7.44	8.94	8.50	8.29	7.91	7.47	7.20	6.78	7.76		8.12	8.40	7.69	6.98	8.26	7.32	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.69	12.26	17.94	23.87	30.16	36.76	43.58	50.87	50.87	7 / 6						
reaction time	0.182	interval		5.57	5.68	5.93	6.29	6.60	6.82	7.29		# of strides	12.26	11.61	12.89	14.11	23.87	27.00	3.13
		velocity	7.47	8.98	8.80	8.43	7.95	7.58	7.33	6.86	7.86		8.16	8.61	7.76	7.09	8.38	7.41	

FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.70	12.21	18.00	24.03	30.40	37.13	43.91	51.15	51.15	4 / 6						
reaction time	0.194	interval		5.51	5.79	6.03	6.37	6.73	6.78	7.24		# of strides	12.21	11.82	13.10	14.02	24.03	27.12	3.09
		velocity	7.46	9.07	8.64	8.29	7.85	7.43	7.37	6.91	7.82		8.19	8.46	7.63	7.13	8.32	7.37	

FINAL - 2022 European Athletics Championships (Munich, GER) *European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time		12.08		23.36		36.26		50.56	50.56	8 / 6						
reaction time	0.195	interval				11.28		12.90		14.30		# of strides	12.08	11.28	12.90	14.30	23.36	27.20	3.84
		velocity		8.28		8.87		7.75		6.99	7.91	187.0	8.28	8.87	7.75	6.99	8.56	7.35	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		11.87		23.42		36.17		50.33	50.33	8 / 4						
reaction time	0.107	interval				11.55		12.75		14.16		# of strides	11.87	11.55	12.75	14.16	23.42	26.91	3.49
		velocity		8.42		8.66		7.84		7.06	7.95	189.0	8.42	8.66	7.84	7.06	8.54	7.43	

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.09		23.80		36.69		50.18	50.18	8 / 2						
reaction time	0.140	interval				11.71		12.89		13.49	NR PB	# of strides	12.09	11.71	12.89	13.49	23.80	26.38	2.58
		velocity		8.27		8.54		7.76		7.41	7.97	184.0	8.27	8.54	7.76	7.41	8.40	7.58	

Heat 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.29		24.06		36.90		50.24	50.24	2 / 3						
reaction time	0.161	interval				11.77		12.84		13.34	NR PB	# of strides	12.29	11.77	12.84	13.34	24.06	26.18	2.12
		velocity		8.14		8.50		7.79		7.50	7.96	184.0	8.14	8.50	7.79	7.50	8.31	7.64	

FINAL - 2022 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2022) - diamond league race analysis*

date	30-Jun-22	time	6.75	12.24	17.83	23.74	29.99	36.53	43.39	50.96	50.96	7 / 2						
reaction time	0.165	interval		5.49	5.59	5.91	6.25	6.54	6.86	7.57		# of strides	12.24	11.50	12.79	14.43	23.74	27.22	3.48
		velocity	7.41	9.11	8.94	8.46	8.00	7.65	7.29	6.61	7.85		8.17	8.70	7.82	6.93	8.42	7.35	

FINAL - 2022 Meeting de Paris (Paris, FRA) *Omega Timing (2022) - diamond league race analysis*

date	18-Jun-22	time	6.55	11.92	17.47	23.34	29.59	36.16	43.12	50.80	50.80	8 / 5						
reaction time	0.157	interval		5.37	5.55	5.87	6.25	6.57	6.96	7.68	PB	# of strides	11.92	11.42	12.82	14.64	23.34	27.46	4.12
		velocity	7.63	9.31	9.01	8.52	8.00	7.61	7.18	6.51	7.87	189.7	8.39	8.76	7.80	6.83	8.57	7.28	

FINAL - 2022 FBK Games (Hengelo, NED) *Omega Timing (2022) - continental tour race analysis*

date	06-Jun-22	time	6.5	12.0	17.7	23.7	30.0	36.7	43.7	51.34	51.34	5 / 2						
reaction time	0.186	interval		5.50	5.70	6.00	6.30	6.70	7.00	7.64		# of strides	12.00	11.70	13.00	14.64	23.70	27.64	3.94
		velocity	7.69	9.09	8.77	8.33	7.94	7.46	7.14	6.54	7.79	189.0	8.33	8.55	7.69	6.83	8.44	7.24	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.7	12.1	17.8	23.7	30.0	36.6	43.6	51.09	51.09	1 / 7						
reaction time	0.199	interval		5.40	5.70	5.90	6.30	6.60	7.00	7.49		# of strides	12.10	11.60	12.90	14.49	23.70	27.39	3.69
		velocity	7.46	9.26	8.77	8.47	7.94	7.58	7.14	6.68	7.83		8.26	8.62	7.75	6.90	8.44	7.30	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.7	12.3	18.2	24.4	30.8	37.5	44.5	51.73	51.73	2 / 6						
reaction time	0.170	interval		5.60	5.90	6.20	6.40	6.70	7.00	7.23		# of strides	12.30	12.10	13.10	14.23	24.40	27.33	2.93
		velocity	7.46	8.93	8.47	8.06	7.81	7.46	7.14	6.92	7.73		8.13	8.26	7.63	7.03	8.20	7.32	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.7	12.2	18.0	24.1	30.3	37.0	44.1	51.54	51.54	5 / 3						
reaction time	0.173	interval		5.50	5.80	6.10	6.20	6.70	7.10	7.44		# of strides	12.20	11.90	12.90	14.54	24.10	27.44	3.34
		velocity	7.46	9.09	8.62	8.20	8.06	7.46	7.04	6.72	7.76	192.0	8.20	8.40	7.75	6.88	8.30	7.29	

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.3	12.9	18.7	24.6	30.8	37.6	44.8	52.03	52.03	2 / 3						
reaction time	0.167	interval		5.60	5.80	5.90	6.20	6.80	7.20	7.23		# of strides	12.90	11.70	13.00	14.43	24.60	27.43	2.83
		velocity	6.85	8.93	8.62	8.47	8.06	7.35	6.94	6.92	7.69		7.75	8.55	7.69	6.93	8.13	7.29	

FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2020) - diamond league race analysis*

date	17-Sep-20	time	6.7	12.2	17.9	23.9	30.1	36.8	43.7	50.98	50.98	4 / 1						
reaction time	0.200	interval		5.50	5.70	6.00	6.20	6.70	6.90	7.28	NUR PB	# of strides	12.20	11.70	12.90	14.18	23.90	27.08	3.18
		velocity	7.46	9.09	8.77	8.33	8.06	7.46	7.25	6.87	7.85	189.5	8.20	8.55	7.75	7.05	8.37	7.39	

FINAL - 2020 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2020) - diamond league race analysis*

date	23-Aug-20	time	6.7	12.3	18.2	24.4	30.8	37.5	44.6	52.35	52.35	4 / 3						
reaction time	0.191	interval		5.60	5.90	6.20	6.40	6.70	7.10	7.75		# of strides	12.30	12.10	13.10	14.85	24.40	27.95	3.55
		velocity	7.46	8.93	8.47	8.06	7.81	7.46	7.04	6.45	7.64		8.13	8.26	7.63	6.73	8.20	7.16	

Knezevic, Sandra (SWE) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2020 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2020) - diamond league race analysis*

date	23-Aug-20	time	7.0	12.9	19.2	25.8	32.7	40.0	47.5	55.24	55.24	1 / 8						
reaction time	0.158	interval		5.90	6.30	6.60	6.90	7.30	7.50	7.74		# of strides	12.90	12.90	14.20	15.24	25.80	29.44	3.64
		velocity	7.14	8.47	7.94	7.58	7.25	6.85	6.67	6.46	7.24		7.75	7.75	7.04	6.56	7.75	6.79	

Knight, Jessie (GBR) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2020 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2020) - diamond league race analysis*

date	23-Aug-20	time	6.9	12.7	18.7	24.9	31.4	38.1	45.1	52.42	52.42	2 / 4						
reaction time	0.146	interval		5.80	6.00	6.20	6.50	6.70	7.00	7.32		# of strides	12.70	12.20	13.20	14.32	24.90	27.52	2.62
		velocity	7.25	8.62	8.33	8.06	7.69	7.46	7.14	6.83	7.63		7.87	8.20	7.58	6.98	8.03	7.27	

Koba, Dzhoys (UKR) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Jul-16	time	7.27	13.21	19.29	25.50	32.08	38.92	46.06	53.74	53.74	3 / 8						
reaction time	0.224	interval		5.94	6.08	6.21	6.58	6.84	7.14	7.68		# of strides	13.21	12.29	13.42	14.82	25.50	28.24	2.74
		velocity	6.88	8.42	8.22	8.05	7.60	7.31	7.00	6.51	7.44		7.57	8.14	7.45	6.75	7.84	7.08	

Kobachi, Hinata (JPN) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Japanese High School National Championships (Fukui, JPN) *Shibayama (2021) - national high school and U20 national championhsips*

date	28-Jul-21	time	7.04	13.26	19.72	26.40	33.27	40.38	47.68	55.57	55.57	4 / 4						
reaction time	0.173	interval		6.22	6.46	6.68	6.87	7.11	7.30	7.89		# of strides	13.26	13.14	13.98	15.19	26.40	29.17	2.77
		velocity	7.10	8.04	7.74	7.49	7.28	7.03	6.85	6.34	7.20		7.54	7.61	7.15	6.58	7.58	6.86	

Kobayashi, Mayu (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Japanese National Championships (Osaka, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	7.17	13.04	19.02	25.21	31.65	38.37	45.43	52.86	52.86	9 / 1						
reaction time	0.201	interval		5.87	5.98	6.19	6.44	6.72	7.06	7.43	PB	# of strides	13.04	12.17	13.16	14.49	25.21	27.65	2.44
		velocity	6.97	8.52	8.36	8.08	7.76	7.44	7.08	6.73	7.57	198.0	7.67	8.22	7.60	6.90	7.93	7.23	

FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	06-Jun-21	time	7.14	13.23	19.44	25.87	32.58	39.48	46.49	53.81	53.81	/ 2						
reaction time		interval		6.09	6.21	6.43	6.71	6.90	7.01	7.32		# of strides	13.23	12.64	13.61	14.33	25.87	27.94	2.07
		velocity	7.00	8.21	8.05	7.78	7.45	7.25	7.13	6.83	7.43		7.56	7.91	7.35	6.98	7.73	7.16	

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	09-May-21	time	7.14	13.25	19.45	25.86	32.42	39.17	46.15	53.55	53.55	9 / 1						
reaction time	0.164	interval		6.11	6.20	6.41	6.56	6.75	6.98	7.40	PB	# of strides	13.25	12.61	13.31	14.38	25.86	27.69	1.83
		velocity	7.00	8.18	8.06	7.80	7.62	7.41	7.16	6.76	7.47		7.55	7.93	7.51	6.95	7.73	7.22	

Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	27-Jun-19	time	7.07	13.11	19.39	25.86	32.52	39.60	47.03	55.10	55.10	4 / 5						
reaction time	0.143	interval		6.04	6.28	6.47	6.66	7.08	7.43	8.07		# of strides	13.11	12.75	13.74	15.50	25.86	29.24	3.38
		velocity	7.07	8.28	7.96	7.73	7.51	7.06	6.73	6.20	7.26		7.63	7.84	7.28	6.45	7.73	6.84	

B FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Kobayashi (2019) - research on athlete performance and technique- 2019 data book*

date	03-May-19	time	7.06	13.16	19.31	25.72	32.48	39.53	47.04	55.00	55.00	/ 1						
reaction time		interval		6.10	6.15	6.41	6.76	7.05	7.51	7.96		# of strides	13.16	12.56	13.81	15.47	25.72	29.28	3.56
		velocity	7.08	8.20	8.13	7.80	7.40	7.09	6.66	6.28	7.27		7.60	7.96	7.24	6.46	7.78	6.83	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	7.15	13.24	19.57	26.16	32.92	39.86	46.96	54.62	54.62	4 / 6						
reaction time	0.161	interval		6.09	6.33	6.59	6.76	6.94	7.10	7.66	PB	# of strides	13.24	12.92	13.70	14.76	26.16	28.46	2.30
		velocity	6.99	8.21	7.90	7.59	7.40	7.20	7.04	6.53	7.32	203.7	7.55	7.74	7.30	6.78	7.65	7.03	

Kocembová, Tatána (TCH) (1962)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1983 IAAF World Championships (Helsinki, FIN) *Veney - split times from PJ*

date	10-Aug-83	time		12.40		23.50		35.24		48.59	48.59	1 / 2						
reaction time		interval				11.10		11.74		13.35	PB	# of strides	12.40	11.10	11.74	13.35	23.50	25.09	1.59
		velocity		8.06		9.01		8.52		7.49	8.23		8.06	9.01	8.52	7.49	8.51	7.97	

FINAL - 1982 European Championships (Athens, GRE) *Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*

date	08-Sep-82	time		12.40		24.38		37.00		50.55	50.55	/ 3						
reaction time		interval				11.98		12.62		13.55		# of strides	12.40	11.98	12.62	13.55	24.38	26.17	1.79
		velocity		8.06		8.35		7.92		7.38	7.91		8.06	8.35	7.92	7.38	8.20	7.64	

Koch, Marita (GDR) (1957)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1986 European Championships (Stuttgart, FRG) *Bondarchuk (2007) - transfer of training in sports*

date	28-Aug-86	time		11.79		22.63		34.22		48.22	48.22	/ 1						
reaction time		interval				10.84		11.59		14.00		# of strides	11.79	10.84	11.59	14.00	22.63	25.59	2.96
		velocity		8.48		9.23		8.63		7.14	8.30		8.48	9.23	8.63	7.14	8.84	7.82	

FINAL - 1985 IAAF World Cup (Canberra, AUS) *Saunders (2015) - 400m performance- time as percentages splits*

date	06-Oct-85	time		11.30		22.90		34.60		47.60	47.60	2 / 1						
reaction time		interval				11.60		11.70		13.00	WR	# of strides	11.30	11.60	11.70	13.00	22.90	24.70	1.80
		velocity		8.85		8.62		8.55		7.69	8.40	196.0	8.85	8.62	8.55	7.69	8.73	8.10	

FINAL - 1984 Women's Friendship Games (Praha, TCH) *Bondarchuk (2007) - transfer of training in sports*

date	16-Aug-84	time		11.79		22.62		34.67		48.19	48.16	/ 1						
reaction time		interval				10.83		12.05		13.52		# of strides	11.79	10.83	12.05	13.52	22.62	25.57	2.95
		velocity		8.48		9.23		8.30		7.40	8.31		8.48	9.23	8.30	7.40	8.84	7.82	

FINAL - 1984 East German Spitzenklasse (Dresden, GDR) *Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*

date	26-Jul-84	time		11.64		22.88		34.99		48.26	48.26	/ 1						
reaction time		interval				11.24		12.11		13.27		# of strides	11.64	11.24	12.11	13.27	22.88	25.38	2.50
		velocity		8.59		8.90		8.26		7.54	8.29		8.59	8.90	8.26	7.54	8.74	7.88	

FINAL - 1982 European Championships (Athens, GRE) *Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*

date	08-Sep-82	time		11.82		22.80		34.75		48.16	48.16	3 / 1						
reaction time		interval				10.98		11.95		13.41	WR	# of strides	11.82	10.98	11.95	13.41	22.80	25.36	2.56
		velocity		8.46		9.11		8.37		7.46	8.31		8.46	9.11	8.37	7.46	8.77	7.89	

FINAL - 1982 GDR vs. USA (Karl-Marx-Stadt, GDR) *Schäfer (1989) - zu strukturmerkmalen der wettkamfleistung un den entsprechenden trainingshalten*

date	09-Jul-82	time		11.70		22.76		34.97		48.77	48.77	/ 1						
reaction time		interval				11.06		12.21		13.80		# of strides	11.70	11.06	12.21	13.80	22.76	26.01	3.25
		velocity		8.55		9.04		8.19		7.25	8.20		8.55	9.04	8.19	7.25	8.79	7.69	

FINAL - 1980 Olympic Games (Moscow, URS) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	28-Jul-80	time						35.3		48.88	48.88	4 / 1						
reaction time		interval								13.58	OR	# of strides				13.58		
		velocity						8.50		7.36	8.18					7.36		

FINAL - 1979 European Cup Final (Torino, ITA) *Hymans (2015) - progression of IAAF world records - 2015 edition*

date	04-Aug-79	time				23.5		35.0		48.60	48.60	/ 1						
reaction time		interval						11.50		13.60	WR	# of strides			11.50	13.60	23.50	25.10	1.60
		velocity				8.51		8.70		7.35	8.23				8.70	7.35	8.51	7.97	

FINAL - 1979 East German Athletics Sportfest (Potsdam, GDR) Khomenkov (1982) - a textbook for a track and field coach

date	29-Jul-79	time		11.83		22.84		34.76		48.89	48.89	/ 1						
reaction time		interval				11.01		11.92		14.13	WR	# of strides	11.83	11.01	11.92	14.13	22.84	26.05	3.21
		velocity		8.45		9.08		8.39		7.08	8.18		8.45	9.08	8.39	7.08	8.76	7.68	

FINAL - 1978 European Championships (Prague, TCH) *Lamare (1978) - championnats d'Europa 1978*

date	31-Aug-78	time		11.70		23.06		35.08		48.94	48.94	5 / 1						
reaction time		interval				11.36		12.02		13.86	WR	# of strides	11.70	11.36	12.02	13.86	23.06	25.88	2.82
		velocity		8.55		8.80		8.32		7.22	8.17	199.2	8.55	8.80	8.32	7.22	8.67	7.73	

Kojima, Yuzuki (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)										*Kishima (2022) - national high school championships biomechanics data collection*							
date 03-Aug-22 time		13.25		26.15		39.53		54.04	54.04	6 / 1							
reaction time 0.206 interval				12.90		13.38		14.51	PB	# of strides	13.25	12.90	13.38	14.51	26.15	27.89	1.74
velocity		7.55		7.75		7.47		6.89	7.40	201.2	7.55	7.75	7.47	6.89	7.65	7.17	
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)										*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date 23-Oct-21 time	7.12	13.18	19.39	25.87	32.55	39.70			39.70	4 / 6							
reaction time 0.176 interval		6.06	6.21	6.48	6.68	7.15				# of strides	13.18	12.69	13.83		25.87		
velocity	7.02	8.25	8.05	7.72	7.49	6.99			7.56	153.0	7.59	7.88	7.23		7.73		

Kondo, Kana (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 National Sports Festival (Kitakami, JPN)										*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*							
date 09-Oct-16 time	7.08	13.37	19.79	26.48	33.37	40.49	47.87	55.78	55.78	8 / 4							
reaction time 0.251 interval		6.29	6.42	6.69	6.89	7.12	7.38	7.91		# of strides	13.37	13.11	14.01	15.29	26.48	29.30	2.82
velocity	7.06	7.95	7.79	7.47	7.26	7.02	6.78	6.32	7.17		7.48	7.63	7.14	6.54	7.55	6.83	

Konrad, Grace (CAN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 20-Aug-23 time		12.66		25.02		38.03		51.60	51.60	8 / 5							
reaction time 0.193 interval				12.36		13.01		13.57	PB	# of strides	12.66	12.36	13.01	13.57	25.02	26.58	1.56
velocity		7.90		8.09		7.69		7.37	7.75		7.90	8.09	7.69	7.37	7.99	7.52	

Korzuch, Julia (POL) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)										*Omega Timing (2022) - diamond league race analysis*							
date 06-Aug-22 time	7.23	13.33	19.56	26.05	32.74	39.73	46.89	54.51	54.51	8 / 5							
reaction time 0.135 interval		6.10	6.23	6.49	6.69	6.99	7.16	7.62		# of strides	13.33	12.72	13.68	14.78	26.05	28.46	2.41
velocity	6.92	8.20	8.03	7.70	7.47	7.15	6.98	6.56	7.34		7.50	7.86	7.31	6.77	7.68	7.03	

Kotlyarova, Nadezhda (RUS) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date 24-Aug-15 time	6.75	12.31	18.08	24.11	30.39	37.03	43.98	51.42	51.42	3 / 3							
reaction time 0.187 interval		5.56	5.77	6.03	6.28	6.64	6.95	7.44	PB	# of strides	12.31	11.80	12.92	14.39	24.11	27.31	3.20
velocity	7.41	8.99	8.67	8.29	7.96	7.53	7.19	6.72	7.78		8.12	8.47	7.74	6.95	8.30	7.32	

Kotlyarova, Olga (RUS) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2000 Olympic Games (Sydney, AUS)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date 25-Sep-00 time		12.3		24.0		37.7		51.0	51.04	1 / 8							
reaction time 0.188 interval				11.70		13.70		13.30		# of strides	12.30	11.70	13.70	13.30	24.00	27.00	3.00
velocity		8.13		8.55		7.30		7.52	7.84		8.13	8.55	7.30	7.52	8.33	7.41	
FINAL - 1999 IAAF World Championships (Sevilla, ESP)										*Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*							
date 26-Aug-99 time	6.86	12.51	18.23	24.26	30.57	36.85	43.41	50.72	50.72	7 / 8							
reaction time 0.185 interval		5.65	5.72	6.03	6.31	6.28	6.56	7.31		# of strides	12.51	11.75	12.59	13.87	24.26	26.46	2.20
velocity	7.29	8.85	8.74	8.29	7.92	7.96	7.62	6.84	7.89		7.99	8.51	7.94	7.21	8.24	7.56	
FINAL - 1997 European Cup (Munich, GER)										*Jung (2003) - http://www.fgs.uni-halle.de*							
date 21-Jun-97 time		12.73		24.53		37.16		51.53	51.53	/ 3							
reaction time interval				11.80		12.63		14.37		# of strides	12.73	11.80	12.63	14.37	24.53	27.00	2.47
velocity		7.86		8.47		7.92		6.96	7.76		7.86	8.47	7.92	6.96	8.15	7.41	

Koyama, Kana (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)										*(2017) - tfdata-store.com/2017/06/01/post-786/*							
date 26-May-17 time		13.57		26.58		40.41		54.82	54.82	4 / 2							
reaction time interval				13.01		13.83		14.41	PB	# of strides	13.57	13.01	13.83	14.41	26.58	28.24	1.66
velocity		7.37		7.69		7.23		6.94	7.30	199.2	7.37	7.69	7.23	6.94	7.52	7.08	
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										*(2017) - tfdata-store.com/2017/06/02/post-835/*							
date 26-May-17 time		13.57		26.61		40.75		55.55	55.55	7 / 1							
reaction time interval				13.04		14.14		14.80		# of strides	13.57	13.04	14.14	14.80	26.61	28.94	2.33
velocity		7.37		7.67		7.07		6.76	7.20	197.0	7.37	7.67	7.07	6.76	7.52	6.91	
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)										*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*							
date 16-Oct-15 time	7.27	13.52	20.00	26.74	33.56	40.54	47.76	55.59	55.59	/ 3							
reaction time interval		6.25	6.48	6.74	6.82	6.98	7.22	7.83		# of strides	13.52	13.22	13.80	15.05	26.74	28.85	2.11
velocity	6.88	8.00	7.72	7.42	7.33	7.16	6.93	6.39	7.20		7.40	7.56	7.25	6.64	7.48	6.93	

Kozak, Anna (BLR) (1974)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2001 European Cup (Bremen, GER)										*Graubner (2007) - http://www.fgs.uni-halle.de*							
date 23-Jun-01 time		12.49		24.04		36.66		52.08	52.08	/ 6							
reaction time interval				11.55		12.62		15.42		# of strides	12.49	11.55	12.62	15.42	24.04	28.04	4.00
velocity		8.01		8.66		7.92		6.49	7.68		8.01	8.66	7.92	6.49	8.32	7.13	
FINAL - 1997 European Cup (Munich, GER)										*Jung (2003) - http://www.fgs.uni-halle.de*							
date 21-Jun-97 time		12.71		24.68		37.94		53.50	53.50	/ 7							
reaction time interval				11.97		13.26		15.56		# of strides	12.71	11.97	13.26	15.56	24.68	28.82	4.14
velocity		7.87		8.35		7.54		6.43	7.48		7.87	8.35	7.54	6.43	8.10	6.94	

Krab Scheibelein, Anna (DEN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2023 Bislett Games (Oslo, NOR)										*Omega Timing (2023) - diamond league race analysis*							
date 15-Jun-23 time	7.21	13.40	19.83	26.38	33.21	40.39	47.98	56.21	56.21	7 / 6							
reaction time 0.173 interval		6.19	6.43	6.55	6.83	7.18	7.59	8.23	PB	# of strides	13.40	12.98	14.01	15.82	26.38	29.83	3.45
velocity	6.93	8.08	7.78	7.63	7.32	6.96	6.59	6.08	7.12		7.46	7.70	7.14	6.32	7.58	6.70	

Kratochvílová, Jarmila (TCH) (1951)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1983 IAAF World Championships (Helsinki, FIN)										*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							

date	10-Aug-83	time			23.1			48.0	47.99	3 / 1								
reaction time		interval						24.90	**WR / CR**	# of strides						23.10	24.90	1.80
		velocity			8.66			8.03	8.34							8.66	8.03	

FINAL - 1982 Weltklasse (Zürich, SUI) *Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*

date	18-Aug-82	time		11.64	22.64	34.94	48.86	48.86	/ 1									
reaction time		interval			11.00	12.30	13.92			# of strides	11.64	11.00	12.30	13.92	22.64	26.22	3.58	
		velocity		8.59	9.09	8.13	7.18	8.19			8.59	9.09	8.13	7.18	8.83	7.63		

FINAL - 1981 IAAF World Cup (Rome, ITA) *Quercetani (2005) - a world history of the one-lap race: 1850-2004*

date	06-Sep-81	time		11.95	23.53	35.82	48.61	48.61	/ 1									
reaction time		interval			11.58	12.29	12.79	**PB**	# of strides		11.95	11.58	12.29	12.79	23.53	25.08	1.55	
		velocity		8.37	8.64	8.14	7.82	8.23			8.37	8.64	8.14	7.82	8.50	7.97		

FINAL - 1980 Olympic Games (Moscow, URS) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	28-Jul-80	time				35.6		49.46	49.46	6 / 2								
reaction time		interval						13.86	**PB**	# of strides				13.86				
		velocity				8.43		7.22	8.09					7.22				

Krivoshapka, Antonina (RUS) (1987)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2013 IAAF World Championships (Moscow, RUS) (2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

date	12-Aug-13	time			23.5		36.0		49.0	49.78	8 / 3							
reaction time	0.209	interval					12.50		13.00		# of strides			12.50	13.00	23.50	25.50	2.00
		velocity			8.51		8.00		7.69	8.04				8.00	7.69	8.51	7.84	

FINAL - 2012 Olympic Games (London, GBR) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-12	time		11.8		23.2		35.8	50.2	50.17	5 / ~~6~~							
reaction time	0.175	interval				11.40		12.60	14.40	**DV**	# of strides	11.80	11.40	12.60	14.40	23.20	27.00	3.80
		velocity		8.47		8.77		7.94	6.94	7.97	199.5	8.47	8.77	7.94	6.94	8.62	7.41	

FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time			23.7		36.6		50.66	50.66	2 / 5							
reaction time	0.163	interval					12.90		14.06		# of strides					23.70	26.96	3.26
		velocity			8.44		7.75		7.11	7.90	199.0					8.44	7.42	

FINAL - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	18-Aug-09	time		12.13		23.59		35.90	49.71	49.71	5 / 3							
reaction time	0.187	interval				11.46		12.31	13.81		# of strides	12.13	11.46	12.31	13.81	23.59	26.12	2.53
		velocity		8.24		8.73		8.12	7.24	8.05	199.5	8.24	8.73	8.12	7.24	8.48	7.66	

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER) Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics

date	16-Aug-09	time	6.69	12.26	17.89	23.76	29.81	36.11	42.70	49.67	49.67	5 / 2							
reaction time	0.180	interval		5.57	5.63	5.87	6.05	6.30	6.59	6.97		# of strides	12.26	11.50	12.35	13.56	23.76	25.91	2.15
		velocity	7.47	8.98	8.88	8.52	8.26	7.94	7.59	7.17	8.05		8.16	8.70	8.10	7.37	8.42	7.72	

Heat 6 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.57		24.73		37.31		51.03	51.03	4 / 1							
reaction time	0.194	interval				12.16		12.58		13.72		# of strides	12.57	12.16	12.58	13.72	24.73	26.30	1.57
		velocity		7.96		8.22		7.95		7.29	7.84		7.96	8.22	7.95	7.29	8.09	7.60	

Kubokura, Satomi (JPN) (1982)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2015 National Sports Festival (Wayakama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	7.00	13.28	19.99	26.81	33.71	40.67	47.85	55.47	55.47	4 / 7							
reaction time		interval		6.28	6.71	6.82	6.90	6.96	7.18	7.62		# of strides	13.28	13.53	13.86	14.80	26.81	28.66	1.85
		velocity	7.14	7.96	7.45	7.33	7.25	7.18	6.96	6.56	7.21		7.53	7.39	7.22	6.76	7.46	6.98	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time		12.82		25.51		38.90	45.95	53.80	53.80	2 / 6							
reaction time		interval				12.69		13.39	7.05	7.85		# of strides	12.82	12.69	13.39	14.90	25.51	28.29	2.78
		velocity		7.80		7.88		7.47	7.09	6.37	7.43		7.80	7.88	7.47	6.71	7.84	7.07	

Kuboyama, Haruna (JPN) (1996)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2021 Japanese National Championships (Osaka, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	6.91	12.60	18.55	24.82	31.42	38.33	45.70	53.72	53.72	7 / 4							
reaction time	0.192	interval		5.69	5.95	6.27	6.60	6.91	7.37	8.02	**PB**	# of strides	12.60	12.22	13.51	15.39	24.82	28.90	4.08
		velocity	7.24	8.79	8.40	7.97	7.58	7.24	6.78	6.23	7.45	205.0	7.94	8.18	7.40	6.50	8.06	6.92	

FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	06-Jun-21	time	6.82	12.64	18.77	25.18	31.86	38.85	46.19	53.94	53.94	/ 3							
reaction time		interval		5.82	6.13	6.41	6.68	6.99	7.34	7.75	**PB**	# of strides	12.64	12.54	13.67	15.09	25.18	28.76	3.58
		velocity	7.33	8.59	8.16	7.80	7.49	7.15	6.81	6.45	7.42		7.91	7.97	7.32	6.63	7.94	6.95	

FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	03-May-21	time	6.87	12.73	18.99	25.69	32.58	39.67	47.02	54.90	54.90	4 / 1							
reaction time	0.224	interval		5.86	6.26	6.70	6.89	7.09	7.35	7.88	**PB**	# of strides	12.73	12.96	13.98	15.23	25.69	29.21	3.52
		velocity	7.28	8.53	7.99	7.46	7.26	7.05	6.80	6.35	7.29	213.0	7.86	7.72	7.15	6.57	7.79	6.85	

Kudo, Mei (JPN) (2002)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2021 Japanese U20 National Championships (Osaka, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	7.19	13.35	19.64	26.24	33.15	40.34	47.75	55.25	55.25	2 / 5							
reaction time	0.214	interval		6.16	6.29	6.60	6.91	7.19	7.41	7.50	**PB**	# of strides	13.35	12.89	14.10	14.91	26.24	29.01	2.77
		velocity	6.95	8.12	7.95	7.58	7.24	6.95	6.75	6.67	7.24	204.0	7.49	7.76	7.09	6.71	7.62	6.89	

U18 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) (300m) *Kijima (2019) - research on athlete performance and technique- 2019 data book*

date	18-Oct-19	time		12.90		25.48		39.22			39.22	4 / 1							***100m-300m***
reaction time	0.193	interval				12.58		13.74				# of strides	12.90	12.58	13.74		25.48		*26.32*

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity		7.75		7.95		7.28			7.65	150.2	7.75	7.95	7.28		7.85		*7.60*

Kurniawati, Dewi Ayu Agung (INA) (1

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 East Java National Championships (Surabaya, INA) — *Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*

date	15-Apr-16	time	7.01	13.52	19.54	26.60	34.46	42.12	48.69	58.48	58.48	/ 2							
reaction time		interval		6.51	6.02	7.06	7.86	7.66	6.57	9.79		# of strides	13.52	13.08	15.52	16.36	26.60	31.88	5.28
		velocity	7.13	7.68	8.31	7.08	6.36	6.53	7.61	5.11	6.84		7.40	7.65	6.44	6.11	7.52	6.27	

Kuroiwa, Sesami (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.35		26.83		41.62		57.47	57.47	2 / 7							
reaction time		interval				13.48		14.79		15.85		# of strides	13.35	13.48	14.79	15.85	26.83	30.64	3.81
		velocity		7.49		7.42		6.76		6.31	6.96	210.5	7.49	7.42	6.76	6.31	7.45	6.53	

Kuwabara, Ayako (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) — *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.13	13.06	19.14	25.57	32.42	39.62	47.19	55.60	55.60	4 / 4							
reaction time	0.199	interval		5.93	6.08	6.43	6.85	7.20	7.57	8.41		# of strides	13.06	12.51	14.05	15.98	25.57	30.03	4.46
		velocity	7.01	8.43	8.22	7.78	7.30	6.94	6.61	5.95	7.19		7.66	7.99	7.12	6.26	7.82	6.66	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) — *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	7.13	13.18	19.52	26.23	33.12	40.20	47.44	55.25	55.25	6 / 3							
reaction time	0.170	interval		6.05	6.34	6.71	6.89	7.08	7.24	7.81		# of strides	13.18	13.05	13.97	15.05	26.23	29.02	2.79
		velocity	7.01	8.26	7.89	7.45	7.26	7.06	6.91	6.40	7.24		7.59	7.66	7.16	6.64	7.62	6.89	

Kyoya, Yuka (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) — *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	7.50	13.81	20.12	26.60	33.49	40.86	48.87	57.28	57.28	/ 8							
reaction time		interval		6.31	6.31	6.48	6.89	7.37	8.01	8.41	**PB**	# of strides	13.81	12.79	14.26	16.42	26.60	30.68	4.08
		velocity	6.67	7.92	7.92	7.72	7.26	6.78	6.24	5.95	6.98		7.24	7.82	7.01	6.09	7.52	6.52	

Lacoste, Sokhna (FRA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) — *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	7.06	12.79	18.81	25.08	31.64	38.45	45.63	53.21	53.21	1 / 8							
reaction time	0.258	interval		5.73	6.02	6.27	6.56	6.81	7.18	7.58		# of strides	12.79	12.29	13.37	14.76	25.08	28.13	3.05
		velocity	7.08	8.73	8.31	7.97	7.62	7.34	6.96	6.60	7.52		7.82	8.14	7.48	6.78	7.97	7.11	

Lambert, Kylie (BEL) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

B Race - 2023 Memorial van Damme (Brussels, BEL) — *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	6.91	12.78	19.02	25.46	32.21	39.30	46.77	54.84	54.84	1 / 8							
reaction time	0.178	interval		5.87	6.24	6.44	6.75	7.09	7.47	8.07		# of strides	12.78	12.68	13.84	15.54	25.46	29.38	3.92
		velocity	7.24	8.52	8.01	7.76	7.41	7.05	6.69	6.20	7.29		7.82	7.89	7.23	6.44	7.86	6.81	

Landre, Francine (FRA) (1970)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2001 European Cup (Bremen, GER) — *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Jun-01	time		12.42		24.52		37.48		51.21	51.21	/ 2							
reaction time		interval				12.10		12.96		13.73	**=PB**	# of strides	12.42	12.10	12.96	13.73	24.52	26.69	2.17
		velocity		8.05		8.26		7.72		7.28	7.81		8.05	8.26	7.72	7.28	8.16	7.49	

Latiševa-Čudare, Gunta (LAT) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	6.75	12.55	18.45	24.60	30.96	37.65	44.49	51.83	51.83	4 / 4							
reaction time	0.203	interval		5.80	5.90	6.15	6.36	6.69	6.84	7.34		# of strides	12.55	12.05	13.05	14.18	24.60	27.23	2.63
		velocity	7.41	8.62	8.47	8.13	7.86	7.47	7.31	6.81	7.72		7.97	8.30	7.66	7.05	8.13	7.34	

Semi-Final 1 - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.56		24.50		37.36	44.23	51.35	51.57	8 / 4							
reaction time	0.216	interval				11.94		12.86	6.87	7.12		# of strides	12.56	11.94	12.86	13.99	24.50	26.85	2.35
		velocity		7.96		8.38		7.78	7.28	7.02	7.76	195.4	7.96	8.38	7.78	7.15	8.16	7.45	

Heat 3 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	7.00	12.74	18.65	24.84	31.26	37.88	44.76	52.17	52.17	7 / 4							
reaction time	0.229	interval		5.74	5.91	6.19	6.42	6.62	6.88	7.41	**NUR / PB**	# of strides	12.74	12.10	13.04	14.29	24.84	27.33	2.49
		velocity	7.14	8.71	8.46	8.08	7.79	7.55	7.27	6.75	7.67		7.85	8.26	7.67	7.00	8.05	7.32	

Laus, Camille (BEL) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

B Race - 2023 Memorial van Damme (Brussels, BEL) — *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	7.17	13.27	19.52	26.03	32.68	39.47	46.30	53.31	53.31	5 / 6							
reaction time	0.218	interval		6.10	6.25	6.51	6.65	6.79	6.83	7.01		# of strides	13.27	12.76	13.44	13.84	26.03	27.28	1.25
		velocity	6.97	8.20	8.00	7.68	7.52	7.36	7.32	7.13	7.50		7.54	7.84	7.44	7.23	7.68	7.33	

National FINAL - 2022 Memorial van Damme (Brussels, BEL) — *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	7.06	12.94	19.01	25.39	32.01	38.88	45.78	52.93	52.93	5 / 5							
reaction time	0.226	interval		5.88	6.07	6.38	6.62	6.87	6.90	7.15		# of strides	12.94	12.45	13.49	14.05	25.39	27.54	2.15
		velocity	7.08	8.50	8.24	7.84	7.55	7.28	7.25	6.99	7.56		7.73	8.03	7.41	7.12	7.88	7.26	

Heat 3 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.91		25.46		38.60		52.56	52.56	3 / 6							
reaction time	0.185	interval				12.55		13.14		13.96		# of strides	12.91	12.55	13.14	13.96	25.46	27.10	1.64
		velocity		7.75		7.97		7.61		7.16	7.61		7.75	7.97	7.61	7.16	7.86	7.38	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) — *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.87	12.71	18.74	25.09	31.68	38.64	45.50	52.77	52.77	1 / 8							
reaction time	0.216	interval		5.84	6.03	6.35	6.59	6.96	6.86	7.27		# of strides	12.71	12.38	13.55	14.13	25.09	27.68	2.59
		velocity	7.28	8.56	8.29	7.87	7.59	7.18	7.29	6.88	7.58		7.87	8.08	7.38	7.08	7.97	7.23	

FINAL - 2021 Memorial van Damme (Brussels, BEL) *Omega Timing (2021) - diamond league race analysis*

date	03-Sep-21	time	6.9	12.6	18.6	24.8	31.3	38.0	44.9	52.34	52.34	5 / 1						
reaction time	0.221	interval		5.70	6.00	6.20	6.50	6.70	6.90	7.44		# of strides	12.60	12.20	13.20	14.34	24.80	27.54	2.74
		velocity	7.25	8.77	8.33	8.06	7.69	7.46	7.25	6.72	7.64		7.94	8.20	7.58	6.97	8.06	7.26	

FINAL - 2020 Memorial Van Damme (Brussels, BEL) *Omega Timing (2020) - diamond league race analysis*

date	04-Sep-20	time	7.1	13.1	19.3	25.7	32.2	38.9	45.6	52.81	52.81	4 / 4						
reaction time	0.190	interval		6.00	6.20	6.40	6.50	6.70	6.70	7.21		# of strides	13.10	12.60	13.20	13.91	25.70	27.11	1.41
		velocity	7.04	8.33	8.06	7.81	7.69	7.46	7.46	6.93	7.57	196.2	7.63	7.94	7.58	7.19	7.78	7.38	

National FINAL - 2019 Memorial van Damme (Brussels, BEL) *Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	6.8	12.4	18.3	24.5	30.9	37.8	45.2	53.23	53.23	5 / 3						
reaction time	0.173	interval		5.6	5.9	6.2	6.4	6.9	7.4	8.0		# of strides	12.40	12.10	13.30	15.43	24.50	28.73	4.23
		velocity	7.35	8.93	8.47	8.06	7.81	7.25	6.76	6.23	7.51		8.06	8.26	7.52	6.48	8.16	6.96	

Lawrence, Deonna (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2005 USATF National Junior Championships (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time		12.86	18.95		31.53	38.05	45.18	52.98	52.98	2 / ~~5~~ 4						
reaction time		interval			6.09		12.58	6.52	7.13	7.80		# of strides	12.86			14.93		
		velocity		7.78	8.21		7.95	7.67	7.01	6.41	7.55		7.78			6.70		

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time				24.89		38.14	45.23	52.77	52.77	3 / 5						
reaction time		interval						13.25	7.09	7.54	**PB**	# of strides			13.25	14.63	24.89	27.88	2.99
		velocity				8.04		7.55	7.05	6.63	7.58				7.55	6.84	8.04	7.17	

Le-Roy, Anastasia (JAM) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 Müller Anniversary Games (London, GBR) *Omega Timing (2018) - diamond league race analysis*

date	22-Jul-18	time		12.3		24.0		36.8		50.85	50.85	4 / 2						
reaction time	0.154	interval				11.7		12.8		14.1		# of strides	12.30	11.70	12.80	14.05	24.00	26.85	2.85
		velocity		8.13		8.55		7.81		7.12	7.87	197.0	8.13	8.55	7.81	7.12	8.33	7.45	

FINAL - 2018 Meeting de Paris (Paris, FRA) *Omega Timing (2018) - diamond league race analysis*

date	30-Jun-18	time		12.7		25.1		38.2		52.44	52.44	1 / 8						
reaction time	0.173	interval				12.4		13.1		14.2		# of strides	12.70	12.40	13.10	14.24	25.10	27.34	2.24
		velocity		7.87		8.06		7.63		7.02	7.63	200.0	7.87	8.06	7.63	7.02	7.97	7.32	

Leatherwood, Lillie (USA) (1964)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1991 IAAF World Championships (Tokyo, JPN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	27-Aug-91	time				24.34				51.53	51.53	7 / 7						
reaction time		interval								27.19		# of strides					24.34	27.19	2.85
		velocity				8.22				7.36	7.76						8.22	7.36	

FINAL - 1987 IAAF World Championships (Rome, ITA) *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	31-Aug-87	time		12.70		24.37		37.07		50.82	50.82	7 / 5						
reaction time		interval				11.67		12.70		13.75		# of strides	12.70	11.67	12.70	13.75	24.37	26.45	2.08
		velocity		7.87		8.57		7.87		7.27	7.87		7.87	8.57	7.87	7.27	8.21	7.56	

FINAL - 1984 Olympic Games (Los Angeles, CA) *Adams (1984) - 1984 olympic games - 200m & 400m*

date	06-Aug-84	time				24.4				50.25	50.25	8 / 5						
reaction time	0.260	interval								25.85		# of strides					24.40	25.85	1.45
		velocity				8.20				7.74	7.96						8.20	7.74	

FINAL - 1984 USA Olympic Trials (Los Angeles, CA) *Hymans (2008) - history of the US olympic trials - track and field*

date	19-Jun-84	time				24.4				50.2	50.19	6 / 3						
reaction time		interval								25.80	**PB**	# of strides					24.40	25.80	1.40
		velocity				8.20				7.75	7.97						8.20	7.75	

Lebret, Évelyne (FRA) (1939)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1964 Olympic Games (Tokyo, JPN) *Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*

date	17-Oct-64	time				25.3				55.5	55.5	8 / 8						
reaction time		interval								30.20		# of strides					25.30	30.20	4.90
		velocity				7.91				6.62	7.21						7.91	6.62	

Lee, Jasmine (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time				25.01		38.46	45.16	52.52	52.52	8 / 4						
reaction time		interval						13.45	6.70	7.36	**PB**	# of strides			13.45	14.06	25.01	27.51	2.50
		velocity				8.00		7.43	7.46	6.79	7.62				7.43	7.11	8.00	7.27	

Lemmens, Silke (SUI) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.71	12.39	18.27	24.46	30.92	37.67	44.64	52.03	52.03	7 / 3						
reaction time	0.172	interval		5.68	5.88	6.19	6.46	6.75	6.97	7.39		# of strides	12.39	12.07	13.21	14.36	24.46	27.57	3.11
		velocity	7.45	8.80	8.50	8.08	7.74	7.41	7.17	6.77	7.69		8.07	8.29	7.57	6.96	8.18	7.25	

National FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.7	12.5	18.5	24.8	31.4	38.2	45.4	53.14	53.14	5 / 3						
reaction time	0.181	interval		5.80	6.00	6.30	6.60	6.80	7.20	7.74		# of strides	12.50	12.30	13.40	14.94	24.80	28.34	3.54
		velocity	7.46	8.62	8.33	7.94	7.58	7.35	6.94	6.46	7.53		8.00	8.13	7.46	6.69	8.06	7.06	

Heat 5 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.80		25.50		38.74		52.86	52.86	5 / 5						
reaction time	0.160	interval				12.70		13.24		14.12		# of strides	12.80	12.70	13.24	14.12	25.50	27.36	1.86
		velocity		7.81		7.87		7.55		7.08	7.57		7.81	7.87	7.55	7.08	7.84	7.31	

B FINAL - 2021 Weltklasse (Zürich, SUI) — *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.8	12.5	18.4	24.7	31.2	38.1	45.3	52.98	52.98	4 / 5						
reaction time	0.176	interval		5.70	5.90	6.30	6.50	6.90	7.20	7.68		# of strides	12.50	12.20	13.40	14.88	24.70	28.28	3.58
		velocity	7.35	8.77	8.47	7.94	7.69	7.25	6.94	6.51	7.55		8.00	8.20	7.46	6.72	8.10	7.07	

B Race - 2021 Athletissima (Lausanne, SUI) — *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.8	12.6	18.9	25.3	31.9	38.7	45.8	53.39	53.39	5 / 4						
reaction time	0.175	interval		5.80	6.30	6.40	6.60	6.80	7.10	7.59		# of strides	12.60	12.70	13.40	14.69	25.30	28.09	2.79
		velocity	7.35	8.62	7.94	7.81	7.58	7.35	7.04	6.59	7.49		7.94	7.87	7.46	6.81	7.91	7.12	

Lerf, Seraina (SUI) (2002)

B Race - 2023 Athletissima (Lausanne, SUI) — *Omega Timing (2023) - diamond league race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	30-Jun-23	time	7.31	13.53	20.05	26.74	33.42	40.35	47.58	55.43	55.43	1 / 7							
reaction time	0.163	interval		6.22	6.52	6.69	6.68	6.93	7.23	7.85		# of strides	13.53	13.21	13.61	15.08	26.74	28.69	1.95
		velocity	6.84	8.04	7.67	7.47	7.49	7.22	6.92	6.37	7.22		7.39	7.57	7.35	6.63	7.48	6.97	

Liem, Michelle (SUI) (2005)

B Race - 2023 Athletissima (Lausanne, SUI) — *Omega Timing (2023) - diamond league race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	30-Jun-23	time	7.05	12.78	18.76	25.09	31.78	38.90	46.48	54.58	54.58	3 / 6							
reaction time	0.166	interval		5.73	5.98	6.33	6.69	7.12	7.58	8.10		# of strides	12.78	12.31	13.81	15.68	25.09	29.49	4.40
		velocity	7.09	8.73	8.36	7.90	7.47	7.02	6.60	6.17	7.33		7.82	8.12	7.24	6.38	7.97	6.78	

Liang Nuo (CHN) (1999)

FINAL - 2017 Chinese National Games (Tianjin, CHN) — *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	03-Sep-17	time		12.56		24.89		38.49		53.99	53.99	/ 5							
reaction time		interval				12.33		13.60		15.50		# of strides	12.56	12.33	13.60	15.50	24.89	29.10	4.21
		velocity		7.96		8.11		7.35		6.45	7.41	202	7.96	8.11	7.35	6.45	8.04	6.87	

Liles, Johnsie (USA) (1985)

FINAL - 2005 USATF National Championship (Carson, CA) — *USATF Women's Sprint Development (2005)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	25-Jun-05	time				25.46	31.70	38.26	45.68	52.43	52.43	9 / 9							
reaction time		interval					6.24	6.56	7.42	6.75	PB	# of strides			12.80	14.17	25.46	26.97	1.51
		velocity				7.86	8.01	7.62	6.74	7.41	7.63				7.81	7.06	7.86	7.42	

Little, Shamier (USA) (1995)

FINAL - 2023 Memorial van Damme (Brussels, BEL) — *Seiko Timing (2023) - world championship race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	08-Sep-23	time	6.59	11.99	17.56	23.46	29.64	36.14	43.01	50.58	50.58	5 / 3							
reaction time	0.152	interval		5.40	5.57	5.90	6.18	6.50	6.87	7.57		# of strides	11.99	11.47	12.68	14.44	23.46	27.12	3.66
		velocity	7.59	9.26	8.98	8.47	8.09	7.69	7.28	6.61	7.91	190.0	8.34	8.72	7.89	6.93	8.53	7.37	

FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON) — *Omega Timing (2023) - diamond league race analysis*

date	21-Jul-23	time	6.68	12.07	17.57	23.32	29.43	35.75	42.40	49.68	49.68	8 / 2						
reaction time	0.259	interval		5.39	5.50	5.75	6.11	6.32	6.65	7.28	PB	# of strides	12.07	11.25	12.43	13.93	23.32	26.36	3.04
		velocity	7.49	9.28	9.09	8.70	8.18	7.91	7.52	6.87	8.05		8.29	8.89	8.05	7.18	8.58	7.59	

FINAL - 2023 Doha Diamond League (Doha, QAT) — *Omega Timing (2023) - diamond league race analysis*

date	05-May-23	time	6.65	12.11	18.04	24.30	30.73	37.26	43.82	50.84	50.84	6 / 2						
reaction time	0.177	interval		5.46	5.93	6.26	6.43	6.53	6.56	7.02		# of strides	12.11	12.19	12.96	13.58	24.30	26.54	2.24
		velocity	7.52	9.16	8.43	7.99	7.78	7.66	7.62	7.12	7.87	191.0	8.26	8.20	7.72	7.36	8.23	7.54	

FINAL - 2018 Bauhaus Galan (Stockholm, SWE) — *Omega Timing (2018) - diamond league race analysis*

date	10-Jun-18	time		12.5		24.5		37.3		50.82	50.82	7 / 4						
reaction time	0.203	interval				12.0		12.8		13.5		# of strides	12.50	12.00	12.80	13.52	24.50	26.32	1.82
		velocity		8.00		8.33		7.81		7.40	7.87	185.0	8.00	8.33	7.81	7.40	8.16	7.60	

Litvinova, Lyudmila (RUS) (1985)

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.50		24.24		36.86		50.52	50.52	6 / 3						
reaction time	0.206	interval				11.74		12.62		13.66		# of strides	12.50	11.74	12.62	13.66	24.24	26.28	2.04
		velocity		8.00		8.52		7.92		7.32	7.92		8.00	8.52	7.92	7.32	8.25	7.61	

Heat 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.92		25.13		37.83		51.31	51.31	4 / 1						
reaction time	0.209	interval				12.21		12.70		13.48		# of strides	12.92	12.21	12.70	13.48	25.13	26.18	1.05
		velocity		7.74		8.19		7.87		7.42	7.80		7.74	8.19	7.87	7.42	7.96	7.64	

Lloyd, Shereefa (JAM) (1982)

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time		12.70		24.45		37.38		51.86	51.86	2 / 8						
reaction time	0.206	interval				11.75		12.93		14.48		# of strides	12.70	11.75	12.93	14.48	24.45	27.41	2.96
		velocity		7.87		8.51		7.73		6.91	7.71		7.87	8.51	7.73	6.91	8.18	7.30	

Logvynenko, Alina (UKR) (1990)

B FINAL - 2021 Weltklasse (Zürich, SUI) — *Omega Timing (2021) - diamond league race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	09-Sep-21	time	7.1	13.0	19.0	25.2	31.6	38.2	45.1	52.94	52.94	1 / 4							
reaction time	0.173	interval		5.90	6.00	6.20	6.40	6.60	6.90	7.84		# of strides	13.00	12.20	13.00	14.74	25.20	27.74	2.54
		velocity	7.04	8.47	8.33	8.06	7.81	7.58	7.25	6.38	7.56		7.69	8.20	7.69	6.78	7.94	7.21	

Löwe, Gabriele (GDR) (1958)

FINAL - 1980 Olympic Games (Moscow, URS) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	28-Jul-80	time						37.6		51.33	51.33	1 / 6							
reaction time		interval								13.73		# of strides				13.73			
		velocity						7.98		7.28	7.79					7.28			

Lukudo, Raphaela Boaheng (ITA) (19

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) — *Omega Timing (2019) - diamond league race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

date	06-Jun-19	time		12.9		25.1		38.3		52.98	52.98	1 / 9						
reaction time	0.204	interval				12.2		13.2		14.7		# of strides	12.90	12.20	13.20	14.68	25.10	27.88	2.78
		velocity		7.75		8.20		7.58		6.81	7.55	198.0	7.75	8.20	7.58	6.81	7.97	7.17	

Mabuchi, Kanade (JPN) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 Japanese National High School Championships (Saga, JPN)										*Hitorara (2007) - 60st high school championships: JAF scientific committee- biomechanics data*							
date 02-Aug-07	time	6.83	13.57	21.05	28.49	35.70	42.88	50.28	58.01	58.01	/ 1							
reaction time	interval		6.74	7.48	7.44	7.21	7.18	7.40	7.73		# of strides	13.57	14.92	14.39	15.13	28.49	29.52	1.03
	velocity	7.32	7.42	6.68	6.72	6.93	6.96	6.76	6.47	6.90		7.37	6.70	6.95	6.61	7.02	6.78	

MacDonald, Linsey (GBR) (1964)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 Olympic Games (Moscow, URS)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date 28-Jul-80	time					37.8		52.40	52.40	7 / 8							
reaction time	interval							14.60		# of strides				14.60			
	velocity					7.94		6.85	7.63					6.85			

Maiyo, Maureen (KEN) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date 24-Aug-15	time	6.79	12.36	18.25	24.38	30.67	37.18	44.05	51.40	51.40	8 / 4							
reaction time 0.199	interval		5.57	5.89	6.13	6.29	6.51	6.87	7.35	**PB**	# of strides	12.36	12.02	12.80	14.22	24.38	27.02	2.64
	velocity	7.36	8.98	8.49	8.16	7.95	7.68	7.28	6.80	7.78		8.09	8.32	7.81	7.03	8.20	7.40	

Malíková, Barbora (CZE) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA)										*Omega Timing (2020) - diamond league race analysis*							
date 17-Sep-20	time	7.2	13.1	19.1	25.2	31.3	37.8	44.7	52.17	52.17	3 / 5							
reaction time 0.133	interval		5.90	6.00	6.10	6.10	6.50	6.90	7.47		# of strides	13.10	12.10	12.60	14.37	25.20	26.97	1.77
	velocity	6.94	8.47	8.33	8.20	8.20	7.69	7.25	6.69	7.67		7.63	8.26	7.94	6.96	7.94	7.42	
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)										*Omega Timing (2020) - diamond league race analysis*							
date 23-Aug-20	time	7.2	13.4	19.5	25.7	32.1	38.7	45.7	53.13	53.13	7 / 6							
reaction time 0.146	interval		6.20	6.10	6.20	6.40	6.60	7.00	7.43		# of strides	13.40	12.30	13.00	14.43	25.70	27.43	1.73
	velocity	6.94	8.06	8.20	8.06	7.81	7.58	7.14	6.73	7.53	208.0	7.46	8.13	7.69	6.93	7.78	7.29	

Malone-Wallace, Maicel (USA) (1969)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2000 USA Olympic Trials (Sacramento, CA)										*Hymans (2008) - history of the US olympic trials - track and field*							
date 16-Jul-00	time		12.5		24.0		36.6		51.39	51.39	6 / 7							
reaction time	interval				11.50		12.60		14.79		# of strides	12.50	11.50	12.60	14.79	24.00	27.39	3.39
	velocity		8.00		8.70		7.94		6.76	7.78		8.00	8.70	7.94	6.76	8.33	7.30	

Malone, Maicel (USA) (1969)

FINAL - 1996 USA Olympic Trials (Atlanta, GA)												*USATF Women's Sprint Development (1996)*						
date 19-Jun-96	time		12.22		23.78		36.22	43.10	50.52	50.52	5 / 1							
reaction time	interval				11.56		12.44	6.88	7.42		# of strides	12.22	11.56	12.44	14.30	23.78	26.74	2.96
	velocity		8.18		8.65		8.04	7.27	6.74	7.92		8.18	8.65	8.04	6.99	8.41	7.48	
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)												*USATF Women's Sprint Development (1996)*						
date 17-Jun-96	time		12.24		24.23		36.65	43.20	50.15	50.15	4 / 1							
reaction time	interval				11.99		12.42	6.55	6.95		# of strides	12.24	11.99	12.42	13.50	24.23	25.92	1.69
	velocity		8.17		8.34		8.05	7.63	7.19	7.98		8.17	8.34	8.05	7.41	8.25	7.72	
FINAL - 1988 USA Olympic Trials (Indianapolis, IN)												*Hymans (2008) - history of the US olympic trials - track and field*						
date 18-Jul-88	time				23.4				51.93	51.93	6 / 6							
reaction time	interval								28.53		# of strides					23.40	28.53	5.13
	velocity				8.55				7.01	7.70						8.55	7.01	

Mangione, Alice (ITA) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 20-Aug-23	time		12.62		24.51		37.62		51.57	51.57	8 / 6							
reaction time 0.189	interval				11.89		13.11		13.95		# of strides	12.62	11.89	13.11	13.95	24.51	27.06	2.55
	velocity		7.92		8.41		7.63		7.17	7.76	191.0	7.92	8.41	7.63	7.17	8.16	7.39	
FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA)										*Omega Timing (2023) - diamond league race analysis*							
date 02-Jun-23	time	6.88	12.59	18.59	24.82	31.25	37.96	45.05	52.61	52.61	1 / 8							
reaction time 0.130	interval		5.71	6.00	6.23	6.43	6.71	7.09	7.56		# of strides	12.59	12.23	13.14	14.65	24.82	27.79	2.97
	velocity	7.27	8.76	8.33	8.03	7.78	7.45	7.05	6.61	7.60		7.94	8.18	7.61	6.83	8.06	7.20	
Heat 5 - 2022 World Athletics Championships (Eugene, OR)										*Timing by Seiko (2022) - world athletics championships race analysis*							
date 17-Jul-22	time		13.27		26.06		39.13		52.72	52.72	8 / 4							
reaction time 0.205	interval				12.79		13.07		13.59		# of strides	13.27	12.79	13.07	13.59	26.06	26.66	0.60
	velocity		7.54		7.82		7.65		7.36	7.59		7.54	7.82	7.65	7.36	7.67	7.50	
FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA)										*Omega Timing (2020) - diamond league race analysis*							
date 17-Sep-20	time	7.3	13.3	19.4	25.6	31.9	38.6	45.5	52.78	52.78	9 / 8							
reaction time 0.192	interval		6.00	6.10	6.20	6.30	6.70	6.90	7.28		# of strides	13.30	12.30	13.00	14.18	25.60	27.18	1.58
	velocity	6.85	8.33	8.20	8.06	7.94	7.46	7.25	6.87	7.58		7.52	8.13	7.69	7.05	7.81	7.36	
FINAL - 2020 Memorial Van Damme (Brussels, BEL)										*Omega Timing (2020) - diamond league race analysis*							
date 04-Sep-20	time	7.2	13.0	19.0	25.3	31.8	38.5	45.4	52.85	52.85	7 / 5							
reaction time 0.195	interval		5.80	6.00	6.30	6.50	6.70	6.90	7.45		# of strides	13.00	12.30	13.20	14.35	25.30	27.55	2.25
	velocity	6.94	8.62	8.33	7.94	7.69	7.46	7.25	6.71	7.57	197.0	7.69	8.13	7.58	6.97	7.91	7.26	

Manson, Taylor (USA) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)										*Koyama (2018) - research on athlete performance and technique- 2018 data book*							
date 12-Jul-18	time	6.78	12.41	18.28	24.57	31.02	37.63	44.63	52.28	52.28	6 / 3							
reaction time 0.150	interval		5.63	5.87	6.29	6.45	6.61	7.00	7.65		# of strides	12.41	12.16	13.06	14.65	24.57	27.71	3.14
	velocity	7.37	8.88	8.52	7.95	7.75	7.56	7.14	6.54	7.65	190.0	8.06	8.22	7.66	6.83	8.14	7.22	

Marinho, Tiffani (BRA) (1999)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2023 World Athletics Championships (Budapest, HUN)												*Seiko Timing (2023) - world championship race analysis*							
date	20-Aug-23	time		12.78		25.09		38.39		53.12	53.12	6 / 7							
reaction time	0.184	interval				12.31		13.30		14.73		# of strides	12.78	12.31	13.30	14.73	25.09	28.03	2.94
		velocity		7.82		8.12		7.52		6.79	7.53		7.82	8.12	7.52	6.79	7.97	7.14	
Heat 6 - 2022 World Athletics Championships (Eugene, OR)												*Timing by Seiko (2022) - world athletics championships race analysis*							
date	17-Jul-22	time		12.92		25.29		38.39		52.80	52.80	3 / 6							
reaction time	0.188	interval				12.37		13.10		14.41		# of strides	12.92	12.37	13.10	14.41	25.29	27.51	2.22
		velocity		7.74		8.08		7.63		6.94	7.58	202.0	7.74	8.08	7.63	6.94	7.91	7.27	
FINAL - 2022 FBK Games (Hengelo, NED)												*Omega Timing (2022) - continental tour race analysis*							
date	06-Jun-22	time	6.9	12.7	18.5	25.0	31.5	38.2	45.3	52.90	52.90	8 / 7							
reaction time	0.234	interval		5.80	5.80	6.50	6.50	6.70	7.10	7.60		# of strides	12.70	12.30	13.20	14.70	25.00	27.90	2.90
		velocity	7.25	8.62	8.62	7.69	7.69	7.46	7.04	6.58	7.56		7.87	8.13	7.58	6.80	8.00	7.17	

Martin, Sophie (SUI) (2000)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Athletissima (Lausanne, SUI)												*Omega Timing (2023) - diamond league race analysis*							
date	30-Jun-23	time	7.04	12.92	19.09	25.61	32.46	39.80	47.66	56.25	56.25	2 / 8							
reaction time	0.164	interval		5.88	6.17	6.52	6.85	7.34	7.86	8.59		# of strides	12.92	12.69	14.19	16.45	25.61	30.64	5.03
		velocity	7.10	8.50	8.10	7.67	7.30	6.81	6.36	5.82	7.11		7.74	7.88	7.05	6.08	7.81	6.53	

Marx, Claudia (GER) (1978)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2002 European Championships (Munich, GER)												*Graubner (2009) - http://www.fgs.uni-halle.de*							
date	07-Aug-02	time		12.84		25.00		37.16		52.42	52.42	/ 3							
reaction time	0.157	interval				12.16		12.16		15.26		# of strides	12.84	12.16	12.16	15.26	25.00	27.42	2.42
		velocity		7.79		8.22		8.22		6.55	7.63		7.79	8.22	8.22	6.55	8.00	7.29	
FINAL - 2001 ISTAF (Berlin, GER)												*Graubner (2009) - http://www.fgs.uni-halle.de*							
date	31-Aug-01	time		12.59		24.62		37.79		52.26	52.26	/ 3							
reaction time	0.160	interval				12.03		13.17		14.47		# of strides	12.59	12.03	13.17	14.47	24.62	27.64	3.02
		velocity		7.94		8.31		7.59		6.91	7.65		7.94	8.31	7.59	6.91	8.12	7.24	

Masano, Siho (JPN) (2004)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)												*Shibayama (2021) - national high school and U20 national championhsips*							
date	28-Jul-21	time	7.43	13.90	20.64	27.55	34.69	41.86	49.09	56.69	56.69	1 / 8							
reaction time	0.206	interval		6.47	6.74	6.91	7.14	7.17	7.23	7.60		# of strides	13.90	13.65	14.31	14.83	27.55	29.14	1.59
		velocity	6.73	7.73	7.42	7.24	7.00	6.97	6.92	6.58	7.06		7.19	7.33	6.99	6.74	7.26	6.86	

Masilingi, Beatrice (NAM) (2003)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 International All Comers Meeting (Lusaka, ZAM)												*Vazel (2021) - https://twitter.com/pjvazel/status/1382341180789231617?s=21*							
date	11-Apr-21	time		12.1		23.8		36.5		49.53	49.53	5 / 2							
reaction time		interval				11.70		12.70		13.03	PB	# of strides	12.10	11.70	12.70	13.03	23.80	25.73	1.93
		velocity		8.26		8.55		7.87		7.67	8.08	182.0	8.26	8.55	7.87	7.67	8.40	7.77	

Mashita, Manami (JPN) (1991)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)												*Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*							
date	29-Jul-09	time		13.45		26.63		40.68		55.34	55.34	4 / 4							
reaction time		interval				13.18		14.05		14.66		# of strides	13.45	13.18	14.05	14.66	26.63	28.71	2.08
		velocity		7.43		7.59		7.12		6.82	7.23		7.43	7.59	7.12	6.82	7.51	6.97	

Matsuoka, Moe (JPN) (2003)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
A FINAL - 2020 Japanese High School National Championships (Hiroshima, JPN)												*Kobayashi (2002) - national high school and U20 national championhsips*							
date	23-Oct-20	time	7.30	13.66	20.12	26.72	33.53	40.58	47.95	55.68	55.68	3 / 4							
reaction time	0.205	interval		6.36	6.46	6.60	6.81	7.05	7.37	7.73		# of strides	13.66	13.06	13.86	15.10	26.72	28.96	2.24
		velocity	6.85	7.86	7.74	7.58	7.34	7.09	6.78	6.47	7.18	211.6	7.32	7.66	7.22	6.62	7.49	6.91	

Matsumoto, Chika (JPN) (1996)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 National Sports Festival (Fukui, JPN)												*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date	07-Oct-18	time	7.14	13.54	20.29	27.21	34.19	41.22	48.30	55.63	55.63	7 / 7							
reaction time	0.166	interval		6.40	6.75	6.92	6.98	7.03	7.08	7.33		# of strides	13.54	13.67	14.01	14.41	27.21	28.42	1.21
		velocity	7.00	7.81	7.41	7.23	7.16	7.11	7.06	6.82	7.19		7.39	7.32	7.14	6.94	7.35	7.04	
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)												*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date	23-Jun-18	time	7.15	13.19	19.68	26.37	33.18	40.20	47.52	55.67	55.67	2 / 8							
reaction time	0.149	interval		6.04	6.49	6.69	6.81	7.02	7.32	8.15		# of strides	13.19	13.18	13.83	15.47	26.37	29.30	2.93
		velocity	6.99	8.28	7.70	7.47	7.34	7.12	6.83	6.13	7.19		7.58	7.59	7.23	6.46	7.58	6.83	
FINAL - 2017 National Sports Festival (Matsuyama, JPN)												*Yamanaka (2017) - male and female 400m analysis in the 2017 season*							
date	08-Oct-17	time	7.23	13.51	20.05	26.81	33.66	40.73	48.01	55.63	55.63	8 / 5							
reaction time	0.214	interval		6.28	6.54	6.76	6.85	7.07	7.28	7.62		# of strides	13.51	13.30	13.92	14.90	26.81	28.82	2.01
		velocity	6.92	7.96	7.65	7.40	7.30	7.07	6.87	6.56	7.19	202.2	7.40	7.52	7.18	6.71	7.46	6.94	
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)												*(2017) - tfdata-store.com/2017/10/12/post-1100/*							
date	08-Oct-17	time				26.70		40.56		55.57	55.57	8 / 2							
reaction time	0.309	interval						13.86		15.01		# of strides			13.86	15.01	26.70	28.87	2.17
		velocity				7.49		7.22		6.66	7.20				7.22	6.66	7.49	6.93	
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)												*(2017) - tfdata-store.com/2017/06/01/post-786/*							
date	26-May-17	time		13.84		27.38		41.75		56.49	56.49	6 / 8							
reaction time		interval				13.54		14.37		14.74		# of strides	13.84	13.54	14.37	14.74	27.38	29.11	1.73
		velocity		7.23		7.39		6.96		6.78	7.08	103.7	7.23	7.39	6.96	6.78	7.30	6.87	
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)												*(2017) - tfdata-store.com/2017/06/02/post-835/*							
date	26-May-17	time		13.77		27.32		41.68		56.13	56.13	6 / 2							
reaction time		interval				13.55		14.36		14.45		# of strides	13.77	13.55	14.36	14.45	27.32	28.81	1.49

		velocity		7.26		7.38		6.96		6.92	7.13	205.7	7.26	7.38	6.96	6.92	7.32	6.94

Matsumoto, Fuya (JPN) (1997)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)												*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*							
date	21-Oct-16	time	7.33	13.54	20.00	26.82	33.96	41.33	48.82	56.64	56.64	1 / 7							
reaction time		interval		6.21	6.46	6.82	7.14	7.37	7.49	7.82		# of strides	13.54	13.28	14.51	15.31	26.82	29.82	3.00
		velocity	6.82	8.05	7.74	7.33	7.00	6.78	6.68	6.39	7.06		7.39	7.53	6.89	6.53	7.46	6.71	
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)												*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*							
date	05-Oct-15	time	7.19	13.48	20.07	26.88	33.76	40.86	48.14	55.79	55.79	/ 4							
reaction time		interval		6.29	6.59	6.81	6.88	7.10	7.28	7.65		# of strides	13.48	13.40	13.98	14.93	26.88	28.91	2.03
		velocity	6.95	7.95	7.59	7.34	7.27	7.04	6.87	6.54	7.17		7.42	7.46	7.15	6.70	7.44	6.92	
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)												*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*							
date	29-Jul-15	time	6.98	13.15	19.59	26.19	33.06	40.28	47.71	55.68	55.68	/ 5							
reaction time		interval		6.17	6.44	6.60	6.87	7.22	7.43	7.97		# of strides	13.15	13.04	14.09	15.40	26.19	29.49	3.30
		velocity	7.16	8.10	7.76	7.58	7.28	6.93	6.73	6.27	7.18		7.60	7.67	7.10	6.49	7.64	6.78	

Matsumoto, Nanako (JPN) (1996)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2021 Japanese National Championships (Osaka, JPN)												*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date	25-Jun-21	time	6.90	12.60	18.54	24.81	31.40	38.30	45.57	53.35	53.35	6 / 2							
reaction time	0.259	interval		5.70	5.94	6.27	6.59	6.90	7.27	7.78		# of strides	12.60	12.21	13.49	15.05	24.81	28.54	3.73
		velocity	7.25	8.77	8.42	7.97	7.59	7.25	6.88	6.43	7.50		7.94	8.19	7.41	6.64	8.06	7.01	
FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN)												*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date	06-Jun-21	time	7.10	13.13	19.34	25.91	32.69	39.65	46.80	54.40	54.40	/ 4							
reaction time		interval		6.03	6.21	6.57	6.78	6.96	7.15	7.60		# of strides	13.13	12.78	13.74	14.75	25.91	28.49	2.58
		velocity	7.04	8.29	8.05	7.61	7.37	7.18	6.99	6.58	7.35		7.62	7.82	7.28	6.78	7.72	7.02	
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)												*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date	09-May-21	time	6.96	12.88	19.05	25.46	32.17	39.14	46.27	53.74	53.74	4 / 2							
reaction time	0.157	interval		5.92	6.17	6.41	6.71	6.97	7.13	7.47		# of strides	12.88	12.58	13.68	14.60	25.46	28.28	2.82
		velocity	7.18	8.45	8.10	7.80	7.45	7.17	7.01	6.69	7.44		7.76	7.95	7.31	6.85	7.86	7.07	
FINAL - 2020 Japanese National Championships (Niigata, JPN)												*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*							
date	02-Oct-20	time	6.89	12.81	18.89	25.21	31.82	38.76	46.00	53.77	53.77	7 / 2							
reaction time	0.176	interval		5.92	6.08	6.32	6.61	6.94	7.24	7.77		# of strides	12.81	12.40	13.55	15.01	25.21	28.56	3.35
		velocity	7.26	8.45	8.22	7.91	7.56	7.20	6.91	6.44	7.44	204.7	7.81	8.06	7.38	6.66	7.93	7.00	
Heat 3 - 2020 Japanese National Championships (Niigata, JPN)												*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*							
date	01-Oct-20	time	6.91	12.78	18.89	25.38	32.15	39.20	46.49	54.24	54.24	4 / 1							
reaction time	0.180	interval		5.87	6.11	6.49	6.77	7.05	7.29	7.75		# of strides	12.78	12.60	13.82	15.04	25.38	28.86	3.48
		velocity	7.24	8.52	8.18	7.70	7.39	7.09	6.86	6.45	7.37	204.7	7.82	7.94	7.24	6.65	7.88	6.93	
FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN)												*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*							
date	19-Sep-20	time	7.01	12.96	19.09	25.48	32.18	39.32	46.71	54.39	54.39	5 / 2							
reaction time	0.243	interval		5.95	6.13	6.39	6.70	7.14	7.39	7.68		# of strides	12.96	12.52	13.84	15.07	25.48	28.91	3.43
		velocity	7.13	8.40	8.16	7.82	7.46	7.00	6.77	6.51	7.35		7.72	7.99	7.23	6.64	7.85	6.92	
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN)												*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*							
date	23-Aug-20	time	6.97	12.83	18.85	25.19	31.98	39.06	46.25	53.80	53.80	6 / 2							
reaction time	0.183	interval		5.86	6.02	6.34	6.79	7.08	7.19	7.55		# of strides	12.83	12.36	13.87	14.74	25.19	28.61	3.42
		velocity	7.17	8.53	8.31	7.89	7.36	7.06	6.95	6.62	7.43		7.79	8.09	7.21	6.78	7.94	6.99	
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)												*Yamanaka (2019) - research on athlete performance and technique- 2019 data book*							
date	28-Jun-19	time	6.93	12.70	18.67	24.94	31.52	38.56	45.95	53.70	53.70	5 / 3							
reaction time	0.193	interval		5.77	5.97	6.27	6.58	7.04	7.39	7.75		# of strides	12.70	12.24	13.62	15.14	24.94	28.76	3.82
		velocity	7.22	8.67	8.38	7.97	7.60	7.10	6.77	6.45	7.45	205.7	7.87	8.17	7.34	6.61	8.02	6.95	
Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN)												*Yamanaka (2019) - race analysis of men and women 400m competition*							
date	27-Jun-19	time	6.88	12.69	18.80	25.21	31.82	38.81	46.13	53.68	53.68	5 / 1							
reaction time	0.178	interval		5.81	6.11	6.41	6.61	6.99	7.32	7.55		# of strides	12.69	12.52	13.60	14.87	25.21	28.47	3.26
		velocity	7.27	8.61	8.18	7.80	7.56	7.15	6.83	6.62	7.45		7.88	7.99	7.35	6.72	7.93	7.02	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)												*Kobayashi (2019) - research on athlete performance and technique- 2019 data book*							
date	03-May-19	time	7.03	13.00	19.12	25.45	32.20	39.28	46.68	54.45	54.45	/ 4							
reaction time		interval		5.97	6.12	6.33	6.75	7.08	7.40	7.77		# of strides	13.00	12.45	13.83	15.17	25.45	29.00	3.55
		velocity	7.11	8.38	8.17	7.90	7.41	7.06	6.76	6.44	7.35		7.69	8.03	7.23	6.59	7.86	6.90	
FINAL - 2018 National Sports Festival (Fukui, JPN)												*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*							
date	07-Oct-18	time	7.10	13.06	19.29	25.87	32.66	39.66	46.91	54.70	54.70	3 / 4							
reaction time	0.208	interval		5.96	6.23	6.58	6.79	7.00	7.25	7.79		# of strides	13.06	12.81	13.79	15.04	25.87	28.83	2.96
		velocity	7.04	8.39	8.03	7.60	7.36	7.14	6.90	6.42	7.31		7.66	7.81	7.25	6.65	7.73	6.94	
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)												*(2017) - tfdata-store.com/2017/10/12/post-1100/*							
date	08-Oct-17	time		13.21		26.07		40.15		56.32	56.32	5 / 4							
reaction time	0.234	interval				12.86		14.08		16.17		# of strides	13.21	12.86	14.08	16.17	26.07	30.25	4.18
		velocity		7.57		7.78		7.10		6.18	7.10	205.2	7.57	7.78	7.10	6.18	7.67	6.61	
FINAL - 2017 Japanese National Championships (Osaka, JPN)												*Yamanaka (2017) - male and female 400m analysis in the 2017 season*							
date	24-Jun-17	time	7.08	13.15	19.37	25.85	32.55	39.65	46.92	54.72	54.72	8 / 4							
reaction time	0.180	interval		6.07	6.22	6.48	6.70	7.10	7.27	7.80		# of strides	13.15	12.70	13.80	15.07	25.85	28.87	3.02
		velocity	7.06	8.24	8.04	7.72	7.46	7.04	6.88	6.41	7.31	207.0	7.60	7.87	7.25	6.64	7.74	6.93	
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)												*(2017) - tfdata-store.com/2017/07/10/post-978/*							
date	23-Jun-17	time		13.10		25.47		38.98		54.23	54.23	3 / 3							

reaction time	0.187	interval			12.37		13.51		15.25		# of strides	13.10	12.37	13.51	15.25	25.47	28.76	3.29
		velocity		7.63		8.08		7.40		6.56	7.38	206.0	7.63	8.08	7.40	6.56	7.85	6.95

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/01/post-786/*

date	26-May-17	time		13.79		26.88		41.06		55.97	55.97	9 / 7						
reaction time		interval				13.09		14.18		14.91		# of strides	13.79	13.09	14.18	14.91	26.88	29.09	2.21
		velocity		7.25		7.64		7.05		6.71	7.15	208.5	7.25	7.64	7.05	6.71	7.44	6.88

Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.59		26.49		40.64		56.22	56.22	9 / 3						
reaction time		interval				12.90		14.15		15.58		# of strides	13.59	12.90	14.15	15.58	26.49	29.73	3.24
		velocity		7.36		7.75		7.07		6.42	7.11	210.0	7.36	7.75	7.07	6.42	7.55	6.73

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.18	13.17	19.39	25.87	32.74	39.89	47.30	55.31	55.31	/ 4						
reaction time		interval		5.99	6.22	6.48	6.87	7.15	7.41	8.01		# of strides	13.17	12.70	14.02	15.42	25.87	29.44	3.57
		velocity	6.96	8.35	8.04	7.72	7.28	6.99	6.75	6.24	7.23		7.59	7.87	7.13	6.49	7.73	6.79	

FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	09-Oct-16	time	7.20	13.24	19.50	26.13	32.88	39.89	47.18	55.09	55.09	7 / 3						
reaction time	0.210	interval		6.04	6.26	6.63	6.75	7.01	7.29	7.91		# of strides	13.24	12.89	13.76	15.20	26.13	28.96	2.83
		velocity	6.94	8.28	7.99	7.54	7.41	7.13	6.86	6.32	7.26		7.55	7.76	7.27	6.58	7.65	6.91	

FINAL - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	7.16	13.25	19.47	25.96	32.69	39.69	46.96	54.67	54.67	2 / 4						
reaction time	0.210	interval		6.09	6.22	6.49	6.73	7.00	7.27	7.71		# of strides	13.25	12.71	13.73	14.98	25.96	28.71	2.75
		velocity	6.98	8.21	8.04	7.70	7.43	7.14	6.88	6.49	7.32		7.55	7.87	7.28	6.68	7.70	6.97	

Heat 3 - 2016 Japanese National Championships (Nagoya, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	24-Jun-16	time	7.29	13.47	19.70	26.11	32.77	39.77	47.09	54.68	54.68	3 / 3						
reaction time	0.214	interval		6.18	6.23	6.41	6.66	7.00	7.32	7.59		# of strides	13.47	12.64	13.66	14.91	26.11	28.57	2.46
		velocity	6.86	8.09	8.03	7.80	7.51	7.14	6.83	6.59	7.32		7.42	7.91	7.32	6.71	7.66	7.00	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.16	13.27	19.55	26.02	32.75	39.94	47.39	55.34	55.34	/ 4						
reaction time		interval		6.11	6.28	6.47	6.73	7.19	7.45	7.95		# of strides	13.27	12.75	13.92	15.40	26.02	29.32	3.30
		velocity	6.98	8.18	7.96	7.73	7.43	6.95	6.71	6.29	7.23		7.54	7.84	7.18	6.49	7.69	6.82	

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.07	13.11	19.39	26.02	32.86	39.96	47.27	54.93	54.93	/ 3						
reaction time		interval		6.04	6.28	6.63	6.84	7.10	7.31	7.66		# of strides	13.11	12.91	13.94	14.97	26.02	28.91	2.89
		velocity	7.07	8.28	7.96	7.54	7.31	7.04	6.84	6.53	7.28		7.63	7.75	7.17	6.68	7.69	6.92	

FINAL - 2015 National Sports Festival (Wayakama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	7.20	13.60	20.27	26.98	33.71	40.48	47.41	54.69	54.69	3 / 2						
reaction time		interval		6.40	6.67	6.71	6.73	6.77	6.93	7.28		# of strides	13.60	13.38	13.50	14.21	26.98	27.71	0.73
		velocity	6.94	7.81	7.50	7.45	7.43	7.39	7.22	6.87	7.31		7.35	7.47	7.41	7.04	7.41	7.22	

FINAL - 2015 Japanese National Championships (Niigata, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	7.23	13.15	19.20	25.55	32.37	39.48	46.70	54.31	54.31	3 / 8						
reaction time	0.185	interval		5.92	6.05	6.35	6.82	7.11	7.22	7.61		# of strides	13.15	12.40	13.93	14.83	25.55	28.76	3.21
		velocity	6.92	8.45	8.26	7.87	7.33	7.03	6.93	6.57	7.37		7.60	8.06	7.18	6.74	7.83	6.95	

FINAL - 2013 Japanese National High School Championships (Oita, JPN) *Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*

date	30-Jul-13	time		13.50		26.47		39.97		54.81	54.81	5 / 5						
reaction time		interval				12.97		13.50		14.84		# of strides	13.50	12.97	13.50	14.84	26.47	28.34	1.87
		velocity		7.41		7.71		7.41		6.74	7.30		7.41	7.71	7.41	6.74	7.56	7.06	

FINAL - 2012 Japanese National High School Championships (Niigata, JPN) *Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*

date	29-Jul-12	time		14.16		27.31		41.05		56.10	56.10	4 / 6						
reaction time		interval				13.15		13.74		15.05		# of strides	14.16	13.15	13.74	15.05	27.31	28.79	1.48
		velocity		7.06		7.60		7.28		6.64	7.13		7.06	7.60	7.28	6.64	7.32	6.95	

Matsuo, Kina (JPN) (2000)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.35	13.56	19.94	26.71	33.71	40.90	48.13	55.86	55.86	3 / 3						
reaction time		interval		6.21	6.38	6.77	7.00	7.19	7.23	7.73		# of strides	13.56	13.15	14.19	14.96	26.71	29.15	2.44
		velocity	6.80	8.05	7.84	7.39	7.14	6.95	6.92	6.47	7.16		7.37	7.60	7.05	6.68	7.49	6.86	

Mawdsley, Sharlene (IRL) (1998)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.47		24.13		37.24		51.78	51.78	2 / 7						
reaction time	0.177	interval				11.66		13.11		14.54		# of strides	12.47	11.66	13.11	14.54	24.13	27.65	3.52
		velocity		8.02		8.58		7.63		6.88	7.72		8.02	8.58	7.63	6.88	8.29	7.23	

Heat 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.41		23.90		36.83		51.17	51.17	5 / 4						
reaction time	0.169	interval				11.49		12.93		14.34	**PB**	# of strides	12.41	11.49	12.93	14.34	23.90	27.27	3.37
		velocity		8.06		8.70		7.73		6.97	7.82	195.5	8.06	8.70	7.73	6.97	8.37	7.33	

FINAL - 2023 FBK Games (Hengelo, NED) *Omega Timing (2023) - continental tour race analysis*

date	04-Jun-23	time	6.74	12.40	18.36	24.54	30.91	37.62	44.66	52.14	52.14	5 / 4						
reaction time	0.143	interval		5.66	5.96	6.18	6.37	6.71	7.04	7.48		# of strides	12.40	12.14	13.08	14.52	24.54	27.60	3.06
		velocity	7.42	8.83	8.39	8.09	7.85	7.45	7.10	6.68	7.67	192.5	8.06	8.24	7.65	6.89	8.15	7.25	

Mboma, Christine (NAM) (2003)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2021 Irena Szewinska Memorial (Bydgoszcz, POL) *Vazel (2021) - https://twitter.com/pjvazel/status/1410310278391140362?s=21*

date	30-Jun-21	time	11.9	23.0	35.2	48.54	48.54	4 / 1							
reaction time	0.342	interval		11.10	12.20	13.34	WJR	# of strides	11.90	11.10	12.20	13.34	23.00	25.54	2.54
		velocity	8.40	9.01	8.20	7.50	8.24	191.0	8.40	9.01	8.20	7.50	8.70	7.83	

FINAL - 2021 International All Comers Meeting (Lusaka, ZAM) *Vazel (2021) - https://twitter.com/pjvazel/status/1382341180789231617?s=21*

date	11-Apr-21	time	13.0	24.3	36.5	49.24	49.24	1 / 1							
reaction time		interval		11.30	12.20	12.74	WJR	# of strides	13.00	11.30	12.20	12.74	24.30	24.94	0.64
		velocity	7.69	8.85	8.20	7.85	8.12	195.0	7.69	8.85	8.20	7.85	8.23	8.02	

McAulay, Carys (GBR) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																	*Omega Timing (2022) - diamond league race analysis*
date	21-May-22	time	6.9	12.5	18.4	24.6	31.1	38.2	45.8	54.35	54.35	2 / 7							
reaction time	0.160	interval		5.60	5.90	6.20	6.50	7.10	7.60	8.55		# of strides	12.50	12.10	13.60	16.15	24.60	29.75	5.15
		velocity	7.25	8.93	8.47	8.06	7.69	7.04	6.58	5.85	7.36		8.00	8.26	7.35	6.19	8.13	6.72	

McConnell, Lee (GBR) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date	14-Jun-09	time		12.49		24.76		37.77		52.22	52.22	/ 4							
reaction time	0.282	interval				12.27		13.01		14.45		# of strides	12.49	12.27	13.01	14.45	24.76	27.46	2.70
		velocity		8.01		8.15		7.69		6.92	7.66		8.01	8.15	7.69	6.92	8.08	7.28	

McConnell, Lee (GBR) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date	14-Jun-09	time		12.49		24.76		37.77		52.22	52.22	/ 4							
reaction time	0.282	interval				12.27		13.01		14.45		# of strides	12.49	12.27	13.01	14.45	24.76	27.46	2.70
		velocity		8.01		8.15		7.69		6.92	7.66		8.01	8.15	7.69	6.92	8.08	7.28	

FINAL - 2003 IAAF World Championships (Paris, FRA) *Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*

date	27-Aug-03	time			23.3		36.5		51.07	51.07	1 / 7					
reaction time	0.205	interval					13.20		14.57		# of strides			13.20	14.57	23.30	27.77	4.47
		velocity			8.58		7.58		6.86	7.83				7.58	6.86	8.58	7.20	

FINAL - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	08-Aug-02	time		12.58		24.33		37.02		51.02	51.02	/ 3				
reaction time	0.209	interval				11.75		12.69		14.00	PB	# of strides	12.58	11.75	12.69	14.00	24.33	26.69	2.36
		velocity		7.95		8.51		7.88		7.14	7.84		7.95	8.51	7.88	7.14	8.22	7.49	

Heat 3 - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	07-Aug-02	time		12.66		24.52		37.37		51.24	51.24	/ 2				
reaction time	0.218	interval				11.86		12.85		13.87		# of strides	12.66	11.86	12.85	13.87	24.52	26.72	2.20
		velocity		7.90		8.43		7.78		7.21	7.81		7.90	8.43	7.78	7.21	8.16	7.49	

McCorory, Francena (USA) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 USA Olympic Trials (Eugene, OR)																	*Hymans (2020) - history of the US olympic trials - track and field*
date	03-Jul-16	time			23.9		36.1		50.37	50.37	5 / 5						
reaction time	0.368	interval					12.20		14.27		# of strides			12.20	14.27	23.90	26.47	2.57
		velocity			8.37		8.20		7.01	7.94				8.20	7.01	8.37	7.56	

FINAL - 2013 IAAF World Championships (Moscow, RUS) (2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

date	12-Aug-13	time			23.3		35.7		50.7	50.68	6 / 6					
reaction time	0.241	interval					12.40		15.00		# of strides			12.40	15.00	23.30	27.40	4.10
		velocity			8.58		8.06		6.67	7.89				8.06	6.67	8.58	7.30	

FINAL - 2012 Olympic Games (London, GBR) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-12	time		12.2		23.8		35.8		50.3	50.33	9 / ~~7~~ 6				
reaction time	0.196	interval				11.60		12.00		14.50		# of strides	12.20	11.60	12.00	14.50	23.80	26.50	2.70
		velocity		8.20		8.62		8.33		6.90	7.95	189.7	8.20	8.62	8.33	6.90	8.40	7.55	

FINAL - 2012 USA Olympic Trials (Eugene, OR) *Hymans (2020) - history of the US olympic trials - track and field*

date	24-Jun-12	time			23.5		36.0		50.43	50.43	6 / 3					
reaction time	0.259	interval					12.50		14.43		# of strides		23.50	12.50	14.43	23.50	26.93	3.43
		velocity			8.51		8.00		6.93	7.93			4.26	8.00	6.93	8.51	7.43	

FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time			23.7		36.1		50.45	50.45	5 / 4					
reaction time	0.198	interval					12.40		14.35		# of strides			12.40	14.35	23.70	26.75	3.05
		velocity			8.44		8.06		6.97	7.93	185.0			8.06	6.97	8.44	7.48	

Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time	13.01	19.04	25.61	32.45	40.02		57.73	57.73	4 / 6					
reaction time		interval		6.03	6.57	6.84	7.57		17.71		# of strides	13.01	12.60	14.41	17.71	25.61	32.12	6.51
		velocity	7.69	8.29	7.61	7.31	6.61		5.65	6.93		7.69	7.94	6.94	5.65	7.81	6.23	

McDonald, Natassha (CAN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date	17-Jul-22	time		12.52		24.91		37.99		52.41	52.41	5 / 5							
reaction time	0.169	interval				12.39		13.08		14.42		# of strides	12.52	12.39	13.08	14.42	24.91	27.50	2.59
		velocity		7.99		8.07		7.65		6.93	7.63	170.0	7.99	8.07	7.65	6.93	8.03	7.27	

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Jul-16	time	7.13	12.90	18.89	25.12	31.61	38.37	45.53	53.35	53.35	8 / 7				
reaction time	0.181	interval		5.77	5.99	6.23	6.49	6.76	7.16	7.82		# of strides	12.90	12.22	13.25	14.98	25.12	28.23	3.11
		velocity	7.01	8.67	8.35	8.03	7.70	7.40	6.98	6.39	7.50		7.75	8.18	7.55	6.68	7.96	7.08	

McLaughlin-Levrone, Sydney (USA) (

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2023 Meeting de Paris (Paris, FRA) *Omega Timing (2023) - diamond league race analysis*

date	09-Jun-23	time	6.30	11.59	17.02	22.66	28.59	34.94	41.88	49.71	49.71	4 / 2						
reaction time	0.155	interval		5.29	5.43	5.64	5.93	6.35	6.94	7.83	**PB**	# of strides	11.59	11.07	12.28	14.77	22.66	27.05	4.39
		velocity	7.94	9.45	9.21	8.87	8.43	7.87	7.20	6.39	8.05	185.7	8.63	9.03	8.14	6.77	8.83	7.39	

McLaughlin, Sydney (USA) (1999)

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.7		24.9		37.2		50.78	50.78	6 / 2						
reaction time	0.147	interval				12.2		12.3		13.6		# of strides	12.70	12.20	12.30	13.58	24.90	25.88	0.98
		velocity		7.87		8.20		8.13		7.36	7.88	184.5	7.87	8.20	8.13	7.36	8.03	7.73	

McLeod, Candice (JAM) (1996)

FINAL - 2023 Prefontaine Classic (Eugene, OR) *Omega Timing (2023) - diamond league race analysis*

			50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
date	17-Sep-23	time	6.79	12.37	18.04	23.98	30.13	36.53	43.34	50.76	50.76	4 / 4							
reaction time	0.157	interval		5.58	5.67	5.94	6.15	6.40	6.81	7.42		# of strides	12.37	11.61	12.55	14.23	23.98	26.78	2.80
		velocity	7.36	8.96	8.82	8.42	8.13	7.81	7.34	6.74	7.88	200.5	8.08	8.61	7.97	7.03	8.34	7.47	

FINAL - 2023 Memorial van Damme (Brussels, BEL) *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	6.78	12.25	17.93	23.87	30.10	36.57	43.41	50.82	50.82	7 / 5						
reaction time	0.175	interval		5.47	5.68	5.94	6.23	6.47	6.84	7.41		# of strides	12.25	11.62	12.70	14.25	23.87	26.95	3.08
		velocity	7.37	9.14	8.80	8.42	8.03	7.73	7.31	6.75	7.87	199.2	8.16	8.61	7.87	7.02	8.38	7.42	

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) *Omega Timing (2023) - diamond league race analysis*

date	02-Sep-23	time	6.75	12.32	18.05	24.02	30.14	36.51	43.07	50.19	50.19	6 / 2						
reaction time	0.160	interval		5.57	5.73	5.97	6.12	6.37	6.56	7.12		# of strides	12.32	11.70	12.49	13.68	24.02	26.17	2.15
		velocity	7.41	8.98	8.73	8.38	8.17	7.85	7.62	7.02	7.97	197.7	8.12	8.55	8.01	7.31	8.33	7.64	

FINAL - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	23-Aug-23	time		12.36		22.63		36.40		51.08	51.08	3 / 7						
reaction time	0.167	interval				10.27		13.77		14.68		# of strides	12.36	10.27	13.77	14.68	22.63	28.45	5.82
		velocity		8.09		9.74		7.26		6.81	7.83	203.0	8.09	9.74	7.26	6.81	8.84	7.03	

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.56		24.15		36.90		50.62	50.62	9 / 4						
reaction time	0.206	interval				11.59		12.75		13.72		# of strides	12.56	11.59	12.75	13.72	24.15	26.47	2.32
		velocity		7.96		8.63		7.84		7.29	7.90	201.0	7.96	8.63	7.84	7.29	8.28	7.56	

Heat 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.46		24.01		36.60		50.37	50.37	4 / 3						
reaction time	0.190	interval				11.55		12.59		13.77		# of strides	12.46	11.55	12.59	13.77	24.01	26.36	2.35
		velocity		8.03		8.66		7.94		7.26	7.94	198.0	8.03	8.66	7.94	7.26	8.33	7.59	

FINAL - 2023 Meeting de Paris (Paris, FRA) *Omega Timing (2023) - diamond league race analysis*

date	09-Jun-23	time	6.76	12.40	18.19	24.18	30.40	36.82	43.49	50.80	50.80	2 / 6						
reaction time	0.173	interval		5.64	5.79	5.99	6.22	6.42	6.67	7.31		# of strides	12.40	11.78	12.64	13.98	24.18	26.62	2.44
		velocity	7.40	8.87	8.64	8.35	8.04	7.79	7.50	6.84	7.87		8.06	8.49	7.91	7.15	8.27	7.51	

FINAL - 2023 Golden Gala Pietro Mennea (Firenze, ITA) *Omega Timing (2023) - diamond league race analysis*

date	02-Jun-23	time	6.71	12.28	18.08	24.20	30.44	37.01	44.16	52.09	52.09	5 / 7						
reaction time	0.132	interval		5.57	5.80	6.12	6.24	6.57	7.15	7.93		# of strides	12.28	11.92	12.81	15.08	24.20	27.89	3.69
		velocity	7.45	8.98	8.62	8.17	8.01	7.61	6.99	6.31	7.68	204.0	8.14	8.39	7.81	6.63	8.26	7.17	

FINAL - 2023 Doha Diamond League (Doha, QAT) *Omega Timing (2023) - diamond league race analysis*

date	05-May-23	time	6.82	12.47	18.56	24.78	31.11	37.67	44.69	52.43	52.43	7 / 5						
reaction time	0.172	interval		5.65	6.09	6.22	6.33	6.56	7.02	7.74		# of strides	12.47	12.31	12.89	14.76	24.78	27.65	2.87
		velocity	7.33	8.85	8.21	8.04	7.90	7.62	7.12	6.46	7.63	203.0	8.02	8.12	7.76	6.78	8.07	7.23	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.66	12.18	17.88	23.76	29.75	36.07	42.76	50.03	50.03	7 / 4						
reaction time	0.149	interval		5.52	5.70	5.88	5.99	6.32	6.69	7.27		# of strides	12.18	11.58	12.31	13.96	23.76	26.27	2.51
		velocity	7.51	9.06	8.77	8.50	8.35	7.91	7.47	6.88	8.00		8.21	8.64	8.12	7.16	8.42	7.61	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	7.02	12.71	18.40	24.28	30.39	36.79	43.46	50.76	50.76	8 / 5						
reaction time	0.214	interval		5.69	5.69	5.88	6.11	6.40	6.67	7.30		# of strides	12.71	11.57	12.51	13.97	24.28	26.48	2.20
		velocity	7.12	8.79	8.79	8.50	8.18	7.81	7.50	6.85	7.88		7.87	8.64	7.99	7.16	8.24	7.55	

FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.71	12.21	17.86	23.78	29.94	36.43	43.26	50.80	50.80	7 / 4						
reaction time	0.162	interval		5.50	5.65	5.92	6.16	6.49	6.83	7.54		# of strides	12.21	11.57	12.65	14.37	23.78	27.02	3.24
		velocity	7.45	9.09	8.85	8.45	8.12	7.70	7.32	6.63	7.87	200.7	8.19	8.64	7.91	6.96	8.41	7.40	

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	6.79	12.36	18.06	23.97	30.04	36.30	42.85	49.87	49.87	7 / 2						
reaction time	0.137	interval		5.57	5.70	5.91	6.07	6.26	6.55	7.02		# of strides	12.36	11.61	12.33	13.57	23.97	25.90	1.93
		velocity	7.36	8.98	8.77	8.46	8.24	7.99	7.63	7.12	8.02	198.2	8.09	8.61	8.11	7.37	8.34	7.72	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	6.83	12.46	18.27	24.29	30.41	36.65	43.14	50.22	50.22	7 / 3						
reaction time	0.183	interval		5.63	5.81	6.02	6.12	6.24	6.49	7.08		# of strides	12.46	11.83	12.36	13.57	24.29	25.93	1.64
		velocity	7.32	8.88	8.61	8.31	8.17	8.01	7.70	7.06	7.96	199.0	8.03	8.45	8.09	7.37	8.23	7.71	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		12.30		24.17		36.65		50.78	50.78	5 / 7						
reaction time	0.159	interval				11.87		12.48		14.13		# of strides	12.30	11.87	12.48	14.13	24.17	26.61	2.44
		velocity		8.13		8.42		8.01		7.08	7.88	200.2	8.13	8.42	8.01	7.08	8.27	7.52	

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	12.25	23.74	36.28	50.05	50.05	3 / 2								
reaction time	0.149	interval		11.49	12.54	13.77		# of strides	12.25	11.49	12.54	13.77	23.74	26.31	2.57	
		velocity	8.16	8.70	7.97	7.26	7.99	198.7	8.16	8.70	7.97	7.26	8.42	7.60		

Heat 6 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	12.24	24.11	36.82	50.76	50.76	1 / 2								
reaction time	0.160	interval		11.87	12.71	13.94		# of strides	12.24	11.87	12.71	13.94	24.11	26.65	2.54	
		velocity	8.17	8.42	7.87	7.17	7.88		8.17	8.42	7.87	7.17	8.30	7.50		

FINAL - 2022 Doha Diamond League (Doha, QAT) *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.7	12.4	18.6	25.0	31.4	38.0	44.9	52.37	52.37	3 / 5						
reaction time	0.183	interval		5.70	6.20	6.40	6.40	6.60	6.90	7.47		# of strides	12.40	12.60	13.00	14.37	25.00	27.37	2.37
		velocity	7.46	8.77	8.06	7.81	7.81	7.58	7.25	6.69	7.64	207.5	8.06	7.94	7.69	6.96	8.00	7.31	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	7.0	12.9	19.0	25.1	31.3	37.6	44.1	50.96	50.96	8 / 5						
reaction time	0.152	interval		5.90	6.10	6.10	6.20	6.30	6.50	6.86		# of strides	12.90	12.20	12.50	13.36	25.10	25.86	0.76
		velocity	7.14	8.47	8.20	8.20	8.06	7.94	7.69	7.29	7.85		7.75	8.20	8.00	7.49	7.97	7.73	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.7	12.3	18.2	24.3	30.5	36.9	43.7	51.41	51.41	2 / 7						
reaction time	0.160	interval		5.60	5.90	6.10	6.20	6.40	6.80	7.71		# of strides	12.30	12.00	12.60	14.51	24.30	27.11	2.81
		velocity	7.46	8.93	8.47	8.20	8.06	7.81	7.35	6.49	7.78	206.0	8.13	8.33	7.94	6.89	8.23	7.38	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.8	12.4	18.1	24.1	30.4	36.9	43.7	51.26	51.26	5 / 5						
reaction time	0.158	interval		5.60	5.70	6.00	6.30	6.50	6.80	7.56		# of strides	12.40	11.70	12.80	14.36	24.10	27.16	3.06
		velocity	7.35	8.93	8.77	8.33	7.94	7.69	7.35	6.61	7.80	203.0	8.06	8.55	7.81	6.96	8.30	7.36	

McNary, Lauren (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time	12.60	18.73	25.34	31.54	38.40	45.60	53.60	53.60	6 / 7						
reaction time		interval		6.13	6.61	6.20	6.86	7.20	8.00		# of strides	12.60	12.74	13.06	15.20	25.34	28.26	2.92
		velocity	7.94	8.16	7.56	8.06	7.29	6.94	6.25	7.46		7.94	7.85	7.66	6.58	7.89	7.08	

FINAL - 2005 USATF National Junior Championships (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time	12.96	18.93	25.23	31.58	38.07	45.07	52.48	52.48	4 / ~~3~~ 2						
reaction time		interval		5.97	6.30	6.35	6.49	7.00	7.41	PB	# of strides	12.96	12.27	12.84	14.41	25.23	27.25	2.02
		velocity	7.72	8.38	7.94	7.87	7.70	7.14	6.75	7.62		7.72	8.15	7.79	6.94	7.93	7.34	

McPherson, Stephenie (JAM) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2023 Doha Diamond League (Doha, QAT) *Omega Timing (2023) - diamond league race analysis*

date	05-May-23	time	6.90	12.58	18.54	24.74	31.13	37.92	44.95	52.93	52.93	3 / 6						
reaction time	0.139	interval		5.68	5.96	6.20	6.39	6.79	7.03	7.98		# of strides	12.58	12.16	13.18	15.01	24.74	28.19	3.45
		velocity	7.25	8.80	8.39	8.06	7.82	7.36	7.11	6.27	7.56	193.0	7.95	8.22	7.59	6.66	8.08	7.09	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.97	12.72	18.67	24.68	30.87	37.38	44.44	52.32	52.32	2 / 8						
reaction time	0.127	interval		5.75	5.95	6.01	6.19	6.51	7.06	7.88		# of strides	12.72	11.96	12.70	14.94	24.68	27.64	2.96
		velocity	7.17	8.70	8.40	8.32	8.08	7.68	7.08	6.35	7.65		7.86	8.36	7.87	6.69	8.10	7.24	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.70	12.22	17.95	23.84	29.96	36.56	43.66	51.73	51.73	1 / 8						
reaction time	0.136	interval		5.52	5.73	5.89	6.12	6.60	7.10	8.07		# of strides	12.22	11.62	12.72	15.17	23.84	27.89	4.05
		velocity	7.46	9.06	8.73	8.49	8.17	7.58	7.04	6.20	7.73		8.18	8.61	7.86	6.59	8.39	7.17	

FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.85	12.51	18.46	24.56	30.80	37.26	44.11	51.63	51.63	2 / 7						
reaction time	0.139	interval		5.66	5.95	6.10	6.24	6.46	6.85	7.52		# of strides	12.51	12.05	12.70	14.37	24.56	27.07	2.51
		velocity	7.30	8.83	8.40	8.20	8.01	7.74	7.30	6.65	7.75		7.99	8.30	7.87	6.96	8.14	7.39	

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	6.82	12.45	18.27	24.29	30.47	36.89	43.59	50.52	50.52	6 / 4						
reaction time	0.138	interval		5.63	5.82	6.02	6.18	6.42	6.70	6.93		# of strides	12.45	11.84	12.60	13.63	24.29	26.23	1.94
		velocity	7.33	8.88	8.59	8.31	8.09	7.79	7.46	7.22	7.92	186.5	8.03	8.45	7.94	7.34	8.23	7.62	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	6.82	12.48	18.27	24.28	30.32	36.61	43.14	50.31	50.31	5 / 4						
reaction time	0.149	interval		5.66	5.79	6.01	6.04	6.29	6.53	7.17		# of strides	12.48	11.80	12.33	13.70	24.28	26.03	1.75
		velocity	7.33	8.83	8.64	8.32	8.28	7.95	7.66	6.97	7.95		8.01	8.47	8.11	7.30	8.24	7.68	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time	12.36	23.98	36.52	50.36	50.36	2 / 5								
reaction time	0.131	interval		11.62	12.54	13.84		# of strides	12.36	11.62	12.54	13.84	23.98	26.38	2.40	
		velocity	8.09	8.61	7.97	7.23	7.94		8.09	8.61	7.97	7.23	8.34	7.58		

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	12.38	24.07	36.72	50.56	50.56	3 / 3								
reaction time	0.133	interval		11.69	12.65	13.84		# of strides	12.38	11.69	12.65	13.84	24.07	26.49	2.42	
		velocity	8.08	8.55	7.91	7.23	7.91	187.7	8.08	8.55	7.91	7.23	8.31	7.55		

Heat 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	12.38	24.27	36.73	50.15	50.15	4 / 1								
reaction time	0.123	interval		11.89	12.46	13.42		# of strides	12.38	11.89	12.46	13.42	24.27	25.88	1.61	
		velocity	8.08	8.41	8.03	7.45	7.98	186.2	8.08	8.41	8.03	7.45	8.24	7.73		

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.57	12.09	17.79	23.76	30.11	36.78	43.53	51.37	51.37	6 / 3						
reaction time	0.134	interval		5.52	5.70	5.97	6.35	6.67	6.75	7.84		# of strides	12.09	11.67	13.02	14.59	23.76	27.61	3.85
		velocity	7.61	9.06	8.77	8.38	7.87	7.50	7.41	6.38	7.79	190.0	8.27	8.57	7.68	6.85	8.42	7.24	

FINAL - 2022 Doha Diamond League (Doha, QAT) *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.6	12.5	18.7	24.9	31.2	37.7	44.4	51.69	51.69	6 / 2						
reaction time	0.128	interval		5.90	6.20	6.20	6.30	6.50	6.70	7.29		# of strides	12.50	12.40	12.80	13.99	24.90	26.79	1.89
		velocity	7.58	8.47	8.06	8.06	7.94	7.69	7.46	6.86	7.74	191.7	8.00	8.06	7.81	7.15	8.03	7.47	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.8	12.4	18.2	24.1	30.1	36.5	43.2	50.25	50.25	4 / 4						
reaction time	0.130	interval		5.60	5.80	5.90	6.00	6.40	6.70	7.05		# of strides	12.40	11.70	12.40	13.75	24.10	26.15	2.05
		velocity	7.35	8.93	8.62	8.47	8.33	7.81	7.46	7.09	7.96	187.2	8.06	8.55	8.06	7.27	8.30	7.65	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.8	12.2	17.9	23.7	29.8	36.4	43.1	50.44	50.44	4 / 1						
reaction time	0.136	interval		5.40	5.70	5.80	6.10	6.60	6.70	7.34		# of strides	12.20	11.50	12.70	14.04	23.70	26.74	3.04
		velocity	7.35	9.26	8.77	8.62	8.20	7.58	7.46	6.81	7.93	188.0	8.20	8.70	7.87	7.12	8.44	7.48	

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.4	13.2	19.0	25.0	31.1	37.8	44.9	51.96	51.96	6 / 2						
reaction time	0.129	interval		5.80	5.80	6.00	6.10	6.70	7.10	7.06		# of strides	13.20	11.80	12.80	14.16	25.00	26.96	1.96
		velocity	6.76	8.62	8.62	8.33	8.20	7.46	7.04	7.08	7.70	194.0	7.58	8.47	7.81	7.06	8.00	7.42	

Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	01-Oct-19	time	6.71	12.28	17.91	23.81	29.94	36.38	43.16	50.70	50.70	6 / 1						
reaction time	0.134	interval		5.57	5.63	5.90	6.13	6.44	6.78	7.54		# of strides	12.28	11.53	12.57	14.32	23.81	26.89	3.08
		velocity	7.45	8.98	8.88	8.47	8.16	7.76	7.37	6.63	7.89	187.5	8.14	8.67	7.96	6.98	8.40	7.44	

FINAL - 2019 Weltklasse (Zürich, SUI) *Omega Timing (2019) - diamond league race analysis*

date	29-Aug-19	time	6.9	12.5	18.4	24.4	30.7	37.3	44.3	51.90	51.90	5 / 6						
reaction time	0.126	interval		5.6	5.9	6.0	6.3	6.6	7.0	7.6		# of strides	12.50	11.90	12.90	14.60	24.40	27.50	3.10
		velocity	7.25	8.93	8.47	8.33	7.94	7.58	7.14	6.58	7.71	190.0	8.00	8.40	7.75	6.85	8.20	7.27	

FINAL - 2019 Meeting de Paris (Paris, FRA) *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.6		24.5		37.4		51.11	51.11	7 / 1						
reaction time	0.136	interval				11.9		12.9		13.7		# of strides	12.60	11.90	12.90	13.71	24.50	26.61	2.11
		velocity		7.94		8.40		7.75		7.29	7.83	188.5	7.94	8.40	7.75	7.29	8.16	7.52	

FINAL - 2019 Athletissima (Lausanne, SUI) *Omega Timing (2019) - diamond league race analysis*

date	05-Jul-19	time		12.6		24.3		36.8		50.88	50.88	7 / 3						
reaction time	0.140	interval				11.7		12.5		14.1		# of strides	12.60	11.70	12.50	14.08	24.30	26.58	2.28
		velocity		7.94		8.55		8.00		7.10	7.86		7.94	8.55	8.00	7.10	8.23	7.52	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2019) - diamond league race analysis*

date	06-Jun-19	time		12.5		24.2		37.1		51.39	51.39	4 / 3						
reaction time	0.152	interval				11.7		12.9		14.3		# of strides	12.50	11.70	12.90	14.29	24.20	27.19	2.99
		velocity		8.00		8.55		7.75		7.00	7.78	190.0	8.00	8.55	7.75	7.00	8.26	7.36	

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.5		24.5		37.3		51.39	51.39	7 / 4						
reaction time	0.142	interval				12.0		12.8		14.1		# of strides	12.50	12.00	12.80	14.09	24.50	26.89	2.39
		velocity		8.00		8.33		7.81		7.10	7.78	190.0	8.00	8.33	7.81	7.10	8.16	7.44	

FINAL - 2018 Müller Anniversary Games (London, GBR) *Omega Timing (2018) - diamond league race analysis*

date	22-Jul-18	time		12.3		24.0		36.7		50.31	50.31	5 / 1						
reaction time	0.133	interval				11.7		12.7		13.6		# of strides	12.30	11.70	12.70	13.61	24.00	26.31	2.31
		velocity		8.13		8.55		7.87		7.35	7.95	184.5	8.13	8.55	7.87	7.35	8.33	7.60	

FINAL - 2018 Meeting de Paris (Paris, FRA) *Omega Timing (2018) - diamond league race analysis*

date	30-Jun-18	time		12.4		24.4		37.1		50.85	50.85	2 / 5						
reaction time	0.139	interval				12.0		12.7		13.8		# of strides	12.40	12.00	12.70	13.75	24.40	26.45	2.05
		velocity		8.06		8.33		7.87		7.27	7.87	186.7	8.06	8.33	7.87	7.27	8.20	7.56	

FINAL - 2017 Memorial van Damme (Brussels, BEL) *Omega Timing (2017) - diamond league race analysis*

date	01-Sep-17	time			12.4	18.2	24.2	30.6	37.3	44.3	51.72	51.72	5 / 7						
reaction time	0.140	interval				5.80	6.00	6.40	6.70	7.00	7.42		# of strides	12.40	11.80	13.10	14.42	24.20	27.52	3.32
		velocity			8.06	8.62	8.33	7.81	7.46	7.14	6.74	7.73	186.0	8.06	8.47	7.63	6.93	8.26	7.27	

FINAL - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time			12.05		23.54		36.33	43.20	50.70	50.86	8 / 6						
reaction time	0.162	interval					11.49		12.79	6.87	7.50		# of strides	12.05	11.49	12.79	14.37	23.54	27.16	3.62
		velocity			8.30		8.70		7.82	7.28	6.67	7.86	188.0	8.30	8.70	7.82	6.96	8.50	7.36	

Semi-Final 1 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time			12.18		23.73		36.47	43.16	50.40	50.56	7 / 2						
reaction time	0.159	interval					11.55		12.74	6.69	7.24		# of strides	12.18	11.55	12.74	13.93	23.73	26.67	2.94
		velocity			8.21		8.66		7.85	7.47	6.91	7.91	188.3	8.21	8.66	7.85	7.18	8.43	7.50	

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	15-Aug-16	time	6.79	12.36	18.03	23.85	29.94	36.36	43.26	50.97	50.97	8 / 6						
reaction time	0.133	interval		5.57	5.67	5.82	6.09	6.42	6.90	7.71		# of strides	12.36	11.49	12.51	14.61	23.85	27.12	3.27
		velocity	7.36	8.98	8.82	8.59	8.21	7.79	7.25	6.49	7.85	187.2	8.09	8.70	7.99	6.84	8.39	7.37	

FINAL - 2015 IAAF World Championships (Beijing, CHN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.78	12.41	18.18	24.27	30.36	36.58	43.19	50.42	50.42	9 / 5						
reaction time	0.150	interval		5.63	5.77	6.09	6.09	6.22	6.61	7.23		# of strides	12.41	11.86	12.31	13.84	24.27	26.15	1.88
		velocity	7.37	8.88	8.67	8.21	8.21	8.04	7.56	6.92	7.93		8.06	8.43	8.12	7.23	8.24	7.65	

Heat 4 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.68	12.22	17.93	23.86	30.07	36.63	43.42	50.34	50.34	5 / 1						
reaction time	0.169	interval		5.54	5.71	5.93	6.21	6.56	6.79	6.92		# of strides	12.22	11.64	12.77	13.71	23.86	26.48	2.62
		velocity	7.49	9.03	8.76	8.43	8.05	7.62	7.36	7.23	7.95		8.18	8.59	7.83	7.29	8.38	7.55	

FINAL - 2013 IAAF World Championships (Moscow, RUS) (2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

date	12-Aug-13	time				23.7		36.0		49.6	49.99	2 / 4						
reaction time	0.198	interval						12.30		13.60		# of strides			12.30	13.60	23.70	25.90	2.20
		velocity				8.44		8.13		7.35	8.00				8.13	7.35	8.44	7.72	

Merino, Julia (ESP) (1971)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1989 IAAF World Cup (Barcelona, ESP)																	*Pascua (1990) - atletismo (I) carreras y marcha*
date	10-Sep-89	time		13.45		25.20		38.95		53.63	53.63	/ ~~7~~ 6							
reaction time		interval				11.75		13.75		14.68		# of strides	13.45	11.75	13.75	14.68	25.20	28.43	3.23
		velocity		7.43		8.51		7.27		6.81	7.46		7.43	8.51	7.27	6.81	7.94	7.03	

Merry, Katharine (GBR) (1974)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2000 Olympic Games (Sydney, AUS)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date	25-Sep-00	time		12.32		23.80		36.08		49.72	49.72	3 / 3							
reaction time	0.270	interval				11.48		12.28		13.64	**PB**	# of strides	12.32	11.48	12.28	13.64	23.80	25.92	2.12
		velocity		8.12		8.71		8.14		7.33	8.05		8.12	8.71	8.14	7.33	8.40	7.72	

FINAL - 1999 IAAF World Championships (Sevilla, ESP) *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.68	12.24	17.95	23.91	30.04	36.37	43.12	50.52	50.52	1 / 5						
reaction time	0.193	interval		5.56	5.71	5.96	6.13	6.33	6.75	7.40		# of strides	12.24	11.67	12.46	14.15	23.91	26.61	2.70
		velocity	7.49	8.99	8.76	8.39	8.16	7.90	7.41	6.76	7.92		8.17	8.57	8.03	7.07	8.36	7.52	

Mikhailyuk, Mariya (RUS) (1991)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Heat 3 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date	24-Aug-15	time	6.91	12.69	18.64	24.90	31.29	37.74	44.57	52.16	52.16	5 / 3							
reaction time	0.229	interval		5.78	5.95	6.26	6.39	6.45	6.83	7.59		# of strides	12.69	12.21	12.84	14.42	24.90	27.26	2.36
		velocity	7.24	8.65	8.40	7.99	7.82	7.75	7.32	6.59	7.67		7.88	8.19	7.79	6.93	8.03	7.34	

Mikhina, Elina (KAZ) (1994)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2019 Asian Athletics Championships (Doha, QAT)																	*Yamanaka (2019) - race analysis of men and women 400m competition*
date	21-Apr-19	time	7.05	12.83	18.85	25.33	32.04	38.93	45.99	53.19	53.19	3 / 2							
reaction time	0.244	interval		5.78	6.02	6.48	6.71	6.89	7.06	7.20		# of strides	12.83	12.50	13.60	14.26	25.33	27.86	2.53
		velocity	7.09	8.65	8.31	7.72	7.45	7.26	7.08	6.94	7.52		7.79	8.00	7.35	7.01	7.90	7.18	

FINAL - 2018 Asian Games (Jakarta, INA) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	26-Aug-18	time	7.07	12.94	19.09	25.48	32.03	38.70	45.51	52.63	52.63	1 / 3						
reaction time	0.206	interval		5.87	6.15	6.39	6.55	6.67	6.81	7.12		# of strides	12.94	12.54	13.22	13.93	25.48	27.15	1.67
		velocity	7.07	8.52	8.13	7.82	7.63	7.50	7.34	7.02	7.60	189.0	7.73	7.97	7.56	7.18	7.85	7.37	

Miki, Shiori (JPN) (1991)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN)																	*Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data*
date	29-Jul-08	time	7.27	13.49	20.02	26.76	33.77	40.89	48.31	56.03	56.03	/ 3							
reaction time		interval		6.22	6.53	6.74	7.01	7.12	7.42	7.72		# of strides	13.49	13.27	14.13	15.14	26.76	29.27	2.51
		velocity	6.88	8.04	7.66	7.42	7.13	7.02	6.74	6.48	7.14		7.41	7.54	7.08	6.61	7.47	6.83	

Miklós, Andrea (ROU) (1999)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.43		24.09		36.98		50.77	50.77	6 / 5							
reaction time	0.178	interval				11.66		12.89		13.79		# of strides	12.43	11.66	12.89	13.79	24.09	26.68	2.59
		velocity		8.05		8.58		7.76		7.25	7.88	203.0	8.05	8.58	7.76	7.25	8.30	7.50	

Heat 5 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.55							51.24	4 / 2						
reaction time	0.192	interval										# of strides	12.55						
		velocity		7.97							7.81	199.7	7.97						

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN) *Koyama (2018) - research on athlete performance and technique- 2018 data book*

date	12-Jul-18	time	6.93	12.70	18.65	24.86	31.31	37.99	44.81	52.07	52.07	3 / 2						
reaction time	0.198	interval		5.77	5.95	6.21	6.45	6.68	6.82	7.26	**PB**	# of strides	12.70	12.16	13.13	14.08	24.86	27.21	2.35
		velocity	7.22	8.67	8.40	8.05	7.75	7.49	7.33	6.89	7.68	195.0	7.87	8.22	7.62	7.10	8.05	7.35	

Miles-Clark, Jearl (USA) (1966)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date	16-Jul-00	time		12.5		24.2		36.4		50.23	50.23	5 / 2							
reaction time		interval				11.70		12.20		13.83		# of strides	12.50	11.70	12.20	13.83	24.20	26.03	1.83
		velocity		8.00		8.55		8.20		7.23	7.96		8.00	8.55	8.20	7.23	8.26	7.68	

FINAL - 1997 IAAF World Championships (Athens, GRE) *Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*

date	04-Aug-97	time	6.67	12.23	17.79	23.75	29.83	36.07	42.67	49.75	49.90	4 / 3						
reaction time	0.143	interval		5.56	5.56	5.96	6.08	6.24	6.60	7.08		# of strides	12.23	11.52	12.32	13.68	23.75	26.00	2.25
		velocity	7.50	8.99	8.99	8.39	8.22	8.01	7.58	7.06	8.02		8.18	8.68	8.12	7.31	8.42	7.69	

FINAL - 1996 Olympic Games (Atlanta, GA) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-96	time				23.97		36.1		49.55	49.55	8 / 5						
reaction time	0.320	interval						12.13		13.45	**PB**	# of strides			12.13	13.45	23.97	25.58	1.61
		velocity				8.34		8.24		7.43	8.07				8.24	7.43	8.34	7.82	

FINAL - 1996 USA Olympic Trials (Atlanta, GA) — *USATF Women's Sprint Development (1996)*

date	19-Jun-96	time	12.28	24.05	36.60	43.33	50.61	50.61	4 / 2							
reaction time		interval		11.77	12.55	6.73	7.28		# of strides	12.28	11.77	12.55	14.01	24.05	26.56	2.51
		velocity	8.14	8.50	7.97	7.43	6.87	7.90		8.14	8.50	7.97	7.14	8.32	7.53	

Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) — *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time	12.64	24.43	36.96	43.46	50.45	50.45	3 / 2							
reaction time		interval		11.79	12.53	6.50	6.99		# of strides	12.64	11.79	12.53	13.49	24.43	26.02	1.59
		velocity	7.91	8.48	7.98	7.69	7.15	7.93		7.91	8.48	7.98	7.41	8.19	7.69	

FINAL - 1993 IAAF World Championships (Stuttgart, GER) — *Smith (1994) - 400m pace control*

date	17-Aug-93	time		23.95	36.33		49.82	49.82	6 / 1							
reaction time		interval			12.38		13.49	**PB**	# of strides			12.38	13.49	23.95	25.87	1.92
		velocity		8.35	8.08		7.41	8.03				8.08	7.41	8.35	7.73	

Miles, Jearl (USA) (1966)

FINAL - 1991 IAAF World Championships (Tokyo, JPN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	27-Aug-91	time		23.72			50.50	50.50	8 / 5							
reaction time		interval					26.78		# of strides					23.72	26.78	3.06
		velocity		8.43			7.47	7.92						8.43	7.47	

Miller, Polina (RUS) (2000)

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2021 Athletissima (Lausanne, SUI)																		*Omega Timing (2021) - diamond league race analysis*
date	26-Aug-21	time	6.7	12.3	18.3	24.4	30.6	37.2	44.3	52.16	52.16	4 / 1							
reaction time	0.139	interval		5.60	6.00	6.10	6.20	6.60	7.10	7.86		# of strides	12.30	12.10	12.80	14.96	24.40	27.76	3.36
		velocity	7.46	8.93	8.33	8.20	8.06	7.58	7.04	6.36	7.67		8.13	8.26	7.81	6.68	8.20	7.20	

FINAL - 2019 The Match - Europe v USA (Minsk, BLR) — *European Athletics (2019) - race analysis*

date	09-Sep-19	time		12.48		24.13		37.06		52.79	52.79	3 / 7							
reaction time	0.192	interval				11.65		12.93		15.73		# of strides	12.48	11.65	12.93	15.73	24.13	28.66	4.53
		velocity		8.01		8.58		7.73		6.36	7.58	202.0	8.01	8.58	7.73	6.36	8.29	6.98	

Miller-Uibo, Shaunae (BAH) (1994)

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																		*Omega Timing (2023) - diamond league race analysis*
date	31-Aug-23	time	6.78	12.39	18.27	24.48	30.83	37.32	44.20	51.83	51.83	6 / 1							
reaction time	0.156	interval		5.61	5.88	6.21	6.35	6.49	6.88	7.63		# of strides	12.39	12.09	12.84	14.51	24.48	27.35	2.87
		velocity	7.37	8.91	8.50	8.05	7.87	7.70	7.27	6.55	7.72		8.07	8.27	7.79	6.89	8.17	7.31	

Heat 3 - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.65		24.80		37.70		52.65	52.65	8 / 7							
reaction time	0.151	interval				12.15		12.90		14.95		# of strides	12.65	12.15	12.90	14.95	24.80	27.85	3.05
		velocity		7.91		8.23		7.75		6.69	7.60	178.0	7.91	8.23	7.75	6.69	8.06	7.18	

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) — *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	6.56	11.90	17.47	23.32	29.31	35.43	41.97	49.28	49.28	4 / 1							
reaction time	0.146	interval		5.34	5.57	5.85	5.99	6.12	6.54	7.31		# of strides	11.90	11.42	12.11	13.85	23.32	25.96	2.64
		velocity	7.62	9.36	8.98	8.55	8.35	8.17	7.65	6.84	8.12	173.5	8.40	8.76	8.26	7.22	8.58	7.70	

FINAL - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		11.76		23.24		35.61		49.11	49.11	3 / 1							
reaction time	0.123	interval				11.48		12.37		13.50		# of strides	11.76	11.48	12.37	13.50	23.24	25.87	2.63
		velocity		8.50		8.71		8.08		7.41	8.14	173.5	8.50	8.71	8.08	7.41	8.61	7.73	

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		11.78		23.43		35.71		49.55	49.55	6 / 1							
reaction time	0.129	interval				11.65		12.28		13.84		# of strides	11.78	11.65	12.28	13.84	23.43	26.12	2.69
		velocity		8.49		8.58		8.14		7.23	8.07	172.0	8.49	8.58	8.14	7.23	8.54	7.66	

Heat 1 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.03		24.13		36.84		51.10	51.10	7 / 1							
reaction time	0.123	interval				12.10		12.71		14.26		# of strides	12.03	12.10	12.71	14.26	24.13	26.97	2.84
		velocity		8.31		8.26		7.87		7.01	7.83	175.0	8.31	8.26	7.87	7.01	8.29	7.42	

FINAL - 2022 Meeting de Paris (Paris, FRA) — *Omega Timing (2022) - diamond league race analysis*

date	18-Jun-22	time	6.53	11.92	17.54	23.44	29.56	35.82	42.44	50.10	50.10	4 / 1							
reaction time	0.142	interval		5.39	5.62	5.90	6.12	6.26	6.62	7.66		# of strides	11.92	11.52	12.38	14.28	23.44	26.66	3.22
		velocity	7.66	9.28	8.90	8.47	8.17	7.99	7.55	6.53	7.98	175.0	8.39	8.68	8.08	7.00	8.53	7.50	

FINAL - 2022 Doha Diamond League (Doha, QAT) — *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.4	10.7	18.1	24.7	31.1	37.5	44.1	51.84	51.84	5 / 3							
reaction time	0.143	interval		4.30	7.40	6.60	6.40	6.40	6.60	7.74		# of strides	10.70	14.00	12.80	14.34	24.70	27.14	2.44
		velocity	7.81	11.63	6.76	7.58	7.81	7.81	7.58	6.46	7.72	180.0	9.35	7.14	7.81	6.97	8.10	7.37	

FINAL - 2020 Olympic Games (Tokyo, JPN) — *Vazel (2021) - https://twitter.com/pjvazel/status/1423626073472962565?s=21*

date	06-Aug-21	time		12.1		23.4		35.3		48.36	48.36	7 / 1							
reaction time	0.162	interval				11.30		11.90		13.06		# of strides	12.10	11.30	11.90	13.06	23.40	24.96	1.56
		velocity		8.26		8.85		8.40		7.66	8.27	175.5	8.26	8.85	8.40	7.66	8.55	8.01	

FINAL - 2019 IAAF World Championships (Doha, QAT) — *Yamanaka (2019) - race analysis of men and women 400m competition*

date	03-Oct-19	time	6.58	12.06	17.72	23.61	29.63	35.67	41.81	48.37	48.37	7 / 2							
reaction time	0.145	interval		5.48	5.66	5.89	6.02	6.04	6.14	6.56	**NR PB**	# of strides	12.06	11.55	12.06	12.70	23.61	24.76	1.15
		velocity	7.60	9.12	8.83	8.49	8.31	8.28	8.14	7.62	8.27	173.0	8.29	8.66	8.29	7.87	8.47	8.08	

Semi-Final 2 - 2019 IAAF World Championships (Doha, QAT) — *Yamanaka (2019) - race analysis of men and women 400m competition*

date	01-Oct-19	time	6.57	12.13	17.85	23.83	29.92	36.06	42.43	49.66	49.66	6 / 1							
reaction time	0.144	interval		5.56	5.72	5.98	6.09	6.14	6.37	7.23		# of strides	12.13	11.70	12.23	13.60	23.83	25.83	2.00

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity	7.61	8.99	8.74	8.36	8.21	8.14	7.85	6.92	8.05	173.0	8.24	8.55	8.18	7.35	8.39	7.74

FINAL - 2018 Herculis Meeting International d'Athlétisme (Monaco, MON) — *Vazel (2018.08.03) - https://twitter.com/pjvazel*

date	20-Jul-18	time				23.5		36.1		48.97	48.97	6 / 1						
reaction time		interval						12.60		12.87	**NR**	# of strides		23.50	12.60	12.87	23.50	25.47	1.97
		velocity				8.51		7.94		7.77	8.17	177.0		4.26	7.94	7.77	8.51	7.85	

FINAL - 2017 Memorial van Damme (Brussels, BEL) — *Omega Timing (2017) - diamond league race analysis*

date	01-Sep-17	time		12.0	17.8	23.8	30.1	36.4	42.8	49.46	49.46	7 / 1						
reaction time	0.147	interval			5.80	6.00	6.30	6.30	6.40	6.66		# of strides	12.00	11.80	12.60	13.06	23.80	25.66	1.86
		velocity		8.33	8.62	8.33	7.94	7.94	7.81	7.51	8.09	179.0	8.33	8.47	7.94	7.66	8.40	7.79	

FINAL - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time		11.46		22.74		35.20	41.93	50.33	50.49	7 / 4						
reaction time	0.160	interval				11.28		12.46	6.73	8.40		# of strides	11.46	11.28	12.46	15.13	22.74	27.59	4.85
		velocity		8.73		8.87		8.03	7.43	5.95	7.92	182.2	8.73	8.87	8.03	6.61	8.80	7.25	

Semi-Final 1 - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		11.93		23.58		36.12	42.85	50.20	50.36	5 / 1						
reaction time	0.161	interval				11.65		12.54	6.73	7.35		# of strides	11.93	11.65	12.54	14.08	23.58	26.62	3.04
		velocity		8.38		8.58		7.97	7.43	6.80	7.94	180.2	8.38	8.58	7.97	7.10	8.48	7.51	

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	15-Aug-16	time	6.49	11.80	17.23	22.98	29.03	35.34	42.10	49.44	49.44	7 / 1						
reaction time	0.155	interval		5.31	5.43	5.75	6.05	6.31	6.76	7.34	**PB**	# of strides	11.80	11.18	12.36	14.10	22.98	26.46	3.48
		velocity	7.70	9.42	9.21	8.70	8.26	7.92	7.40	6.81	8.09	182.0	8.47	8.94	8.09	7.09	8.70	7.56	

FINAL - 2015 IAAF World Championships (Beijing, CHN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.78	12.24	17.90	23.84	30.01	36.14	42.65	49.67	49.67	5 / 2						
reaction time	0.176	interval		5.46	5.66	5.94	6.17	6.13	6.51	7.02	**PB**	# of strides	12.24	11.60	12.30	13.53	23.84	25.83	1.99
		velocity	7.37	9.16	8.83	8.42	8.10	8.16	7.68	7.12	8.05		8.17	8.62	8.13	7.39	8.39	7.74	

Heat 6 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.76	12.30	18.05	24.11	30.28	36.64	43.28	50.53	50.53	5 / 1						
reaction time	0.181	interval		5.54	5.75	6.06	6.17	6.36	6.64	7.25		# of strides	12.30	11.81	12.53	13.89	24.11	26.42	2.31
		velocity	7.40	9.03	8.70	8.25	8.10	7.86	7.53	6.90	7.92		8.13	8.47	7.98	7.20	8.30	7.57	

Minami, Chihiro (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)											*Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*						
date 29-Jul-17	time	7.24	13.17	19.40	25.98	32.91	40.36	48.20	56.63	56.63	3 / 8							
reaction time 0.229	interval		5.93	6.23	6.58	6.93	7.45	7.84	8.43		# of strides	13.17	12.81	14.38	16.27	25.98	30.65	4.67
	velocity	6.91	8.43	8.03	7.60	7.22	6.71	6.38	5.93	7.06		7.59	7.81	6.95	6.15	7.70	6.53	

Minami, Enari (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 16-Oct-15	time	7.15	13.23	19.60	26.41	33.45	40.92	48.64	56.78	56.78	/ 8							
reaction time	interval		6.08	6.37	6.81	7.04	7.47	7.72	8.14		# of strides	13.23	13.18	14.51	15.86	26.41	30.37	3.96
	velocity	6.99	8.22	7.85	7.34	7.10	6.69	6.48	6.14	7.04		7.56	7.59	6.89	6.31	7.57	6.59	

Mingilishi, Niddy (ZAM) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2022 World Athletics Championships (Eugene, OR)											*Timing by Seiko (2022) - world athletics championships race analysis*						
date 17-Jul-22	time		12.84		25.06		38.38		52.84	52.84	5 / 7							
reaction time 0.163	interval				12.22		13.32		14.46		# of strides	12.84	12.22	13.32	14.46	25.06	27.78	2.72
	velocity		7.79		8.18		7.51		6.92	7.57	192.0	7.79	8.18	7.51	6.92	7.98	7.20	

Mito, Yuriko (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)											*(2017) - tfdata-store.com/2017/06/02/post-835/*						
date 26-May-17	time		13.80		27.11		41.31		56.69	56.69	8 / 6							
reaction time	interval				13.31		14.20		15.38		# of strides	13.80	13.31	14.20	15.38	27.11	29.58	2.47
	velocity		7.25		7.51		7.04		6.50	7.06	201.2	7.25	7.51	7.04	6.50	7.38	6.76	

Miyachi, Ririka (JPN) (2005)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)											*Kishima (2022) - national high school championships biomechanics data collection*						
date 03-Aug-22	time		13.57		26.75		40.80		55.64	55.64	7 / 5							
reaction time 0.201	interval				13.18		14.05		14.84	**PB**	# of strides	13.57	13.18	14.05	14.84	26.75	28.89	2.14
	velocity		7.37		7.59		7.12		6.74	7.19	198.7	7.37	7.59	7.12	6.74	7.48	6.92	

Mizuguchi, Moe (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U18 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) (300m)											*Kijima (2019) - research on athlete performance and technique- 2019 data book*						
date 18-Oct-19	time		12.98		25.54		39.53			39.53	6 / 4							***100m-300m***
reaction time 0.192	interval				12.56		13.99				# of strides	12.98	12.56	13.99		25.54		*26.55*
	velocity		7.70		7.96		7.15			7.59	149.2	7.70	7.96	7.15		7.83		*7.53*

Mizuguchi, Sayo (JPN) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN)											*Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data*						
date 29-Jul-08	time	7.02	13.10	19.42	25.94	32.96	40.12	47.73	55.91	55.91	/ 2							
reaction time	interval		6.08	6.32	6.52	7.02	7.16	7.61	8.18		# of strides	13.10	12.84	14.18	15.79	25.94	29.97	4.03
	velocity	7.12	8.22	7.91	7.67	7.12	6.98	6.57	6.11	7.15		7.63	7.79	7.05	6.33	7.71	6.67	

Montsho, Amantle (BOT) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date 07-Aug-17	time		12.09		23.70		36.58	43.55	51.08	51.28	6 / ~~4~~ 3							
reaction time 0.203	interval				11.61		12.88	6.97	7.53		# of strides	12.09	11.61	12.88	14.50	23.70	27.38	3.68
	velocity		8.27		8.61		7.76	7.17	6.64	7.80	187.0	8.27	8.61	7.76	6.90	8.44	7.30	

FINAL - 2013 IAAF World Championships (Moscow, RUS) — (2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

date	12-Aug-13	time		23.4	35.0	48.7	49.41	5 / 2							
reaction time	0.273	interval			11.60	13.70		# of strides			11.60	13.70	23.40	25.30	1.90
		velocity		8.55	8.62	7.30	8.10				8.62	7.30	8.55	7.91	

FINAL - 2012 Olympic Games (London, GBR) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-12	time	12.2	23.9	36.3	49.8	49.75	7 / 4							
reaction time	0.198	interval		11.70	12.40	13.50		# of strides	12.20	11.70	12.40	13.50	23.90	25.90	2.00
		velocity	8.20	8.55	8.06	7.41	8.04	182.0	8.20	8.55	8.06	7.41	8.37	7.72	

Semi-Final 2 - 2012 Olympic Games (London, GBR) — Hadley (2012) - uka 2012 olympic games report: 400m, 4x 400m

date	04-Aug-12	time		23.45	36.06	50.15	50.15	5 / 1							
reaction time	0.205	interval			12.61	14.09		# of strides			12.61	14.09	23.45	26.70	3.25
		velocity		8.53	7.93	7.10	7.98	184.0			7.93	7.10	8.53	7.49	

FINAL - 2011 IAAF World Championships (Daegu, KOR) — *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time		23.3	35.7	49.56	49.56	4 / 1							
reaction time	0.247	interval			12.40	13.86	NR	# of strides			12.40	13.86	23.30	26.26	2.96
		velocity		8.58	8.06	7.22	8.07	183.5			8.06	7.22	8.58	7.62	

FINAL - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	18-Aug-09	time	12.38	24.47	37.05	50.65	50.65	8 / 8							
reaction time	0.212	interval		12.09	12.58	13.60		# of strides	12.38	12.09	12.58	13.60	24.47	26.18	1.71
		velocity	8.08	8.27	7.95	7.35	7.90	178.0	8.08	8.27	7.95	7.35	8.17	7.64	

Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time	12.20	23.74	36.26	49.89	49.89	4 / 2							
reaction time	0.220	interval		11.54	12.52	13.63		# of strides	12.20	11.54	12.52	13.63	23.74	26.15	2.41
		velocity	8.20	8.67	7.99	7.34	8.02		8.20	8.67	7.99	7.34	8.42	7.65	

Heat 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time	12.31	23.86	36.68	50.65	50.65	8 / 1							
reaction time	0.219	interval		11.55	12.82	13.97		# of strides	12.31	11.55	12.82	13.97	23.86	26.79	2.93
		velocity	8.12	8.66	7.80	7.16	7.90		8.12	8.66	7.80	7.16	8.38	7.47	

FINAL - 2009 ISTAF (Berlin, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Jun-09	time	12.56	24.73	37.42	50.94	50.94	/ 2							
reaction time	0.572	interval		12.17	12.69	13.52		# of strides	12.56	12.17	12.69	13.52	24.73	26.21	1.48
		velocity	7.96	8.22	7.88	7.40	7.85		7.96	8.22	7.88	7.40	8.09	7.63	

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time	13.04	24.83	37.69	51.54	51.54	3 / 4							
reaction time	0.387	interval		11.79	12.86	13.85		# of strides	13.04	11.79	12.86	13.85	24.83	26.71	1.88
		velocity	7.67	8.48	7.78	7.22	7.76		7.67	8.48	7.78	7.22	8.05	7.49	

FINAL - 2008 Olympic Games (Beijing, CHN) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	19-Aug-08	time	12.3	24.2	36.8	51.2	51.18	8 / 8							
reaction time	0.299	interval		11.90	12.60	14.40		# of strides	12.30	11.90	12.60	14.40	24.20	27.00	2.80
		velocity	8.13	8.40	7.94	6.94	7.82		8.13	8.40	7.94	6.94	8.26	7.41	

Moraa, Mary (KEN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON)																	*Omega Timing (2023) - diamond league race analysis*
date	21-Jul-23	time	7.04	12.73	18.58	24.63	30.83	37.21	43.71	50.48	50.48	3 / 6							
reaction time	0.180	interval		5.69	5.85	6.05	6.20	6.38	6.50	6.77		# of strides	12.73	11.90	12.58	13.27	24.63	25.85	1.22
		velocity	7.10	8.79	8.55	8.26	8.06	7.84	7.69	7.39	7.92		7.86	8.40	7.95	7.54	8.12	7.74	

FINAL - 2022 Memorial van Damme (Brussels, BEL) — *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	7.10	12.92	18.68	24.63	30.81	37.25	43.83	50.67	50.67	3 / 4							
reaction time	0.168	interval		5.82	5.76	5.95	6.18	6.44	6.58	6.84	NR PB	# of strides	12.92	11.71	12.62	13.42	24.63	26.04	1.41
		velocity	7.04	8.59	8.68	8.40	8.09	7.76	7.60	7.31	7.89		7.74	8.54	7.92	7.45	8.12	7.68	

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN) — *Koyama (2018) - research on athlete performance and technique- 2018 data book*

date	12-Jul-18	time	7.05	12.85	18.89	25.29	31.84	38.53	45.46	52.94	52.94	7 / 5							
reaction time	0.286	interval		5.80	6.04	6.40	6.55	6.69	6.93	7.48		# of strides	12.85	12.44	13.24	14.41	25.29	27.65	2.36
		velocity	7.09	8.62	8.28	7.81	7.63	7.47	7.22	6.68	7.56	202.0	7.78	8.04	7.55	6.94	7.91	7.23	

Morán, Paola (MEX) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.58		24.32		37.18		51.46	51.46	6 / 6							
reaction time	0.215	interval				11.74		12.86		14.28		# of strides	12.58	11.74	12.86	14.28	24.32	27.14	2.82
		velocity		7.95		8.52		7.78		7.00	7.77	190.0	7.95	8.52	7.78	7.00	8.22	7.37	

Heat 3 - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.41		24.53		37.35		51.59	51.59	6 / 2							
reaction time	0.189	interval				12.12		12.82		14.24		# of strides	12.41	12.12	12.82	14.24	24.53	27.06	2.53
		velocity		8.06		8.25		7.80		7.02	7.75	188.0	8.06	8.25	7.80	7.02	8.15	7.39	

Heat 1 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.46		24.87		37.78		52.28	52.28	5 / 5							
reaction time	0.190	interval				12.41		12.91		14.50		# of strides	12.46	12.41	12.91	14.50	24.87	27.41	2.54
		velocity		8.03		8.06		7.75		6.90	7.65	192.7	8.03	8.06	7.75	6.90	8.04	7.30	

Morauskaité, Modesta Justé (LTU) (1

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.42		24.13		37.21		52.15	52.15	3 / 8							
reaction time	0.160	interval				11.71		13.08		14.94		# of strides	12.42	11.71	13.08	14.94	24.13	28.02	3.89
		velocity		8.05		8.54		7.65		6.69	7.67		8.05	8.54	7.65	6.69	8.29	7.14	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	12.50	24.15	36.83	51.06	51.06	7 / 5							
reaction time	0.159	interval		11.65	12.68	14.23		# of strides	12.50	11.65	12.68	14.23	24.15	26.91	2.76
		velocity	8.00	8.58	7.89	7.03	7.83	194.2	8.00	8.58	7.89	7.03	8.28	7.43	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	12.37	24.49	37.11	52.19	52.19	4 / 7							
reaction time	0.176	interval		12.12	12.62	15.08		# of strides	12.37	12.12	12.62	15.08	24.49	27.70	3.21
		velocity	8.08	8.25	7.92	6.63	7.66	194.0	8.08	8.25	7.92	6.63	8.17	7.22	

Heat 3 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	12.49	24.36	37.07	51.27	51.27	5 / 2							
reaction time	0.136	interval		11.87	12.71	14.20		# of strides	12.49	11.87	12.71	14.20	24.36	26.91	2.55
		velocity	8.01	8.42	7.87	7.04	7.80	192.5	8.01	8.42	7.87	7.04	8.21	7.43	

Mori, Ayano (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/04/07/post-249/*
date 06-Apr-17	time	13.93		27.73				59.14	59.14	9 / 6							
reaction time	interval			13.80				31.41		# of strides	13.93	13.80			27.73	31.41	3.68
	velocity	7.18		7.25				6.37	6.76		7.18	7.25			7.21	6.37	

Mori, Kanon (JPN) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																	*Shibayama (2021) - national high school and U20 national championhsips*
date 28-Jul-21	time	7.13	13.40	19.99	26.74	33.84	41.00	48.20	55.54	55.54	6 / 3							
reaction time 0.184	interval		6.27	6.59	6.75	7.10	7.16	7.20	7.34		# of strides	13.40	13.34	14.26	14.54	26.74	28.80	2.06
	velocity	7.01	7.97	7.59	7.41	7.04	6.98	6.94	6.81	7.20		7.46	7.50	7.01	6.88	7.48	6.94	

Mori, Miyu (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)																	*Yanagiya (2014) - research on athlete performance and technique- 2014 data book*
date 30-Jul-14	time	7.01	13.10	19.35	25.83	32.49	39.71	47.05	54.79	54.79	/ 4							
reaction time	interval		6.09	6.25	6.48	6.66	7.22	7.34	7.74		# of strides	13.10	12.73	13.88	15.08	25.83	28.96	3.13
	velocity	7.13	8.21	8.00	7.72	7.51	6.93	6.81	6.46	7.30		7.63	7.86	7.20	6.63	7.74	6.91	

Morinaga, Saki (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																	*Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*
date 29-Jul-09	time		13.42		26.95		41.23		56.21	56.21	7 / 6							
reaction time	interval				13.53		14.28		14.98		# of strides	13.42	13.53	14.28	14.98	26.95	29.26	2.31
	velocity		7.45		7.39		7.00		6.68	7.12		7.45	7.39	7.00	6.68	7.42	6.84	

Movchan, Tatyana (UKR) (1970)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 European Cup (Munich, GER)																	*Jung (2003) - http://www.fgs.uni-halle.de*
date 21-Jun-97	time		12.66		24.46		37.58		52.56	52.56	/ 5							
reaction time	interval				11.80		13.12		14.98		# of strides	12.66	11.80	13.12	14.98	24.46	28.10	3.64
	velocity		7.90		8.47		7.62		6.68	7.61		7.90	8.47	7.62	6.68	8.18	7.12	

Mu, Athing (USA) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 NCAA Championships (Eugene, OR)																	*Vazel (2021) - https://twitter.com/pjvazel/status/1403991035081023493?s=21*
date 06-Jun-21	time		12.1		23.7		36.1		49.57	49.57	7 / 1							
reaction time 0.172	interval				11.60		12.40		13.47	NJR PB	# of strides	12.10	11.60	12.40	13.47	23.70	25.87	2.17
	velocity		8.26		8.62		8.06		7.42	8.07	180.5	8.26	8.62	8.06	7.42	8.44	7.73	

Quarter-Final 2 - 2021 NCAA Preliminary West Round (College Station, TX) — *Vazel (2021) - https://twitter.com/pjvazel/status/1403991035081023493?s=21*

date	29-May-21	time	12.1	23.5	35.9	49.68	49.68	6 / 1							
reaction time	0.172	interval		11.40	12.40	13.78	NJR PB	# of strides	12.10	11.40	12.40	13.78	23.50	26.18	2.68
		velocity	8.26	8.77	8.06	7.26	8.05	181.0	8.26	8.77	8.06	7.26	8.51	7.64	

FINAL - 2019 The Match - Europe v USA (Minsk, BLR) — *European Athletics (2019) - race analysis*

date	09-Sep-19	time	12.97	25.66	39.29	54.34	54.34	2 / 8							
reaction time	0.182	interval		12.69	13.63	15.05		# of strides	12.97	12.69	13.63	15.05	25.66	28.68	3.02
		velocity	7.71	7.88	7.34	6.64	7.36		7.71	7.88	7.34	6.64	7.79	6.97	

Muhammad, Dalilah (USA) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Orlen Janusz Kosuciński Memorial (Chorzów, POL)																	*Vazel (2019) - statistical analysis and historical context of the new 400H world record*
date 16-Jun-19	time			24.3				50.60	50.60	/ 1							
reaction time	interval							26.3	PB	# of strides		24.30		26.30	24.30	26.30	2.00
	velocity			8.23				7.60	7.91			8.23		7.60	8.23	7.60	

Muir, Carline (CAN) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2015 IAAF World Championships (Beijing, CHN)																	*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*
date 24-Aug-15	time	6.89	12.45	18.18	24.14	30.39	36.96	44.04	51.70	51.70	4 / 5							
reaction time 0.229	interval		5.56	5.73	5.96	6.25	6.57	7.08	7.66		# of strides	12.45	11.69	12.82	14.74	24.14	27.56	3.42
	velocity	7.26	8.99	8.73	8.39	8.00	7.61	7.06	6.53	7.74		8.03	8.55	7.80	6.78	8.29	7.26	

Müller, Laura (GER) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 FBK Games (Hengelo, NED)																	*Omega Timing (2023) - continental tour race analysis*
date 04-Jun-23	time	6.81	12.37	18.10	24.14	30.52	37.22	44.37	52.08	52.08	8 / 3							
reaction time 0.235	interval		5.56	5.73	6.04	6.38	6.70	7.15	7.71		# of strides	12.37	11.77	13.08	14.86	24.14	27.94	3.80
	velocity	7.34	8.99	8.73	8.28	7.84	7.46	6.99	6.49	7.68		8.08	8.50	7.65	6.73	8.29	7.16	

Müller, Petra (GDR) (1965)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*
date 26-Sep-88	time		12.33		24.10		36.34		49.45	49.45	6 / 2							
reaction time 0.232	interval				11.77		12.24		13.11		# of strides	12.33	11.77	12.24	13.11	24.10	25.35	1.25
	velocity		8.11		8.50		8.17		7.63	8.09	192.0	8.11	8.50	8.17	7.63	8.30	7.89	

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time	12.45	23.94	36.09	49.50	49.50	4 / 2							
reaction time		interval		11.49	12.15	13.41		# of strides	12.45	11.49	12.15	13.41	23.94	25.56	1.62
		velocity	8.03	8.70	8.23	7.46	8.08		8.03	8.70	8.23	7.46	8.35	7.82	

FINAL - 1987 IAAF World Championships (Rome, ITA) — *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	31-Aug-87	time	12.20	23.64	36.07	49.94	49.94	3 / 2							
reaction time		interval		11.44	12.43	13.87		# of strides	12.20	11.44	12.43	13.87	23.64	26.30	2.66
		velocity	8.20	8.74	8.05	7.21	8.01		8.20	8.74	8.05	7.21	8.46	7.60	

Semi-Final 2 - 1987 IAAF World Championships (Rome, ITA) — *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	30-Aug-87	time	12.11	23.98	36.43	50.15	50.15	7 / 1							
reaction time		interval		11.87	12.45	13.72		# of strides	12.11	11.87	12.45	13.72	23.98	26.17	2.19
		velocity	8.26	8.42	8.03	7.29	7.98		8.26	8.42	8.03	7.29	8.34	7.64	

Heat 2 - 1987 IAAF World Championships (Rome, ITA) — *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	29-Aug-87	time	12.59	24.81	37.30	51.68	51.68	7 / 1							
reaction time		interval		12.22	12.49	14.38		# of strides	12.59	12.22	12.49	14.38	24.81	26.87	2.06
		velocity	7.94	8.18	8.01	6.95	7.74		7.94	8.18	8.01	6.95	8.06	7.44	

FINAL - 1986 Golden Oval (Dresden, GDR) — *Bondarchuk (2007) - transfer of training in sports*

date	16-Aug-86	time	11.00	22.14		49.79	49.79	/ 2							
reaction time		interval		11.14		27.65	PB	# of strides	11.00	11.14			22.14	27.65	5.51
		velocity	9.09	8.98		7.23	8.03		9.09	8.98			9.03	7.23	

Munkácsi, Antónia (HUN) (1938)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN) — *Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*																	
date	17-Oct-64	time		24.8				54.4	54.4	1 / 4							
reaction time		interval						29.60		# of strides					24.80	29.60	4.80
		velocity		8.06				6.76	7.35						8.06	6.76	

Mupopo, Kabange (ZAM) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*																	
date	09-Aug-17	time		11.66		23.40		36.26	43.16	50.97	51.15	9 / ~~7~~							
reaction time	0.184	interval				11.74		12.86	6.90	7.81	DV	# of strides	11.66	11.74	12.86	14.71	23.40	27.57	4.17
		velocity		8.58		8.52		7.78	7.25	6.40	7.82	195.6	8.58	8.52	7.78	6.80	8.55	7.25	
Semi-Final 3 - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*																	
date	07-Aug-17	time		12.09		23.74		36.32	43.04	50.40	50.60	4 / ~~2~~							
reaction time	0.204	interval				11.65		12.58	6.72	7.36	DV	# of strides	12.09	11.65	12.58	14.08	23.74	26.66	2.92
		velocity		8.27		8.58		7.95	7.44	6.79	7.91	194.2	8.27	8.58	7.95	7.10	8.42	7.50	

Murakami, Hikaru (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) — *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*																	
date	19-Oct-18	time	7.18	13.56	19.99	26.62	33.42	40.53	47.90	55.75	55.75	3 / 4							
reaction time	0.244	interval		6.38	6.43	6.63	6.80	7.11	7.37	7.85		# of strides	13.56	13.06	13.91	15.22	26.62	29.13	2.51
		velocity	6.96	7.84	7.78	7.54	7.35	7.03	6.78	6.37	7.17		7.37	7.66	7.19	6.57	7.51	6.87	

Muto, Nana (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN) — *Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*																	
date	24-Sep-06	time	6.9	12.9	19.1	25.6	32.4	39.8	47.5	55.53	55.53	3 / 7							
reaction time		interval		6.00	6.20	6.50	6.80	7.40	7.70	8.03		# of strides	12.90	12.70	14.20	15.73	25.60	29.93	4.33
		velocity	7.25	8.33	8.06	7.69	7.35	6.76	6.49	6.23	7.20		7.75	7.87	7.04	6.36	7.81	6.68	

Myers, Sandra (ESP) (1961)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1993 IAAF World Championships (Stuttgart, GER) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*																	
date	17-Aug-93	time				23.63				51.22	51.22	1 / 6							
reaction time		interval								27.59		# of strides					23.63	27.59	3.96
		velocity				8.46				7.25	7.81						8.46	7.25	
FINAL - 1991 IAAF World Championships (Tokyo, JPN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*																	
date	27-Aug-91	time				23.82				49.78	49.78	5 / 3							
reaction time		interval								25.96		# of strides					23.82	25.96	2.14
		velocity				8.40				7.70	8.04	193.7					8.40	7.70	

Nachula, Racheal (ZAM) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*																	
date	15-Aug-09	time		13.14		25.58		38.88		53.21	53.21	2 / 5							
reaction time	0.184	interval				12.44		13.30		14.33		# of strides	13.14	12.44	13.30	14.33	25.58	27.63	2.05
		velocity		7.61		8.04		7.52		6.98	7.52		7.61	8.04	7.52	6.98	7.82	7.24	

Nafiah, Nikmatul (INA)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 East Java National Championships (Surabaya, INA) — *Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*																	
date	15-Apr-16	time	7.04	13.73	20.06	26.96	34.92	42.84	49.74	59.64	59.64	/ 3							
reaction time		interval		6.69	6.33	6.90	7.96	7.92	6.90	9.90		# of strides	13.73	13.23	15.88	16.80	26.96	32.68	5.72
		velocity	7.10	7.47	7.90	7.25	6.28	6.31	7.25	5.05	6.71		7.28	7.56	6.30	5.95	7.42	6.12	

Nagura, Ayaka (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN) — *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*																	
date	03-Aug-11	time		13.65		26.93		40.70		55.63	55.63	8 / 7							
reaction time		interval				13.28		13.77		14.93		# of strides	13.65	13.28	13.77	14.93	26.93	28.70	1.77
		velocity		7.33		7.53		7.26		6.70	7.19		7.33	7.53	7.26	6.70	7.43	6.97	

Nagura, Chiaki (JPN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN) — *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*																	
date	03-Aug-11	time		13.13		26.18		39.68		54.96	54.96	5 / 2							

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time		interval			13.05		13.50		15.28	PB	# of strides	13.13	13.05	13.50	15.28	26.18	28.78	2.60
		velocity	7.62		7.66		7.41		6.54	7.28		7.62	7.66	7.41	6.54	7.64	6.95	

Nakajima, Aiharu (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/04/07/post-249/*
date 06-Apr-17 time		12.90		25.41		39.97		57.20	57.20	5 / 3							
reaction time interval				12.51		14.56		17.23		# of strides	12.90	12.51	14.56	17.23	25.41	31.79	6.38
velocity		7.75		7.99		6.87		5.80	6.99	210.7	7.75	7.99	6.87	5.80	7.87	6.29	

Nakajima, Airi (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 21-Oct-16 time	7.27	13.30	19.54	26.10	33.08	40.48	48.56	57.33	57.33	7 / 8							
reaction time interval		6.03	6.24	6.56	6.98	7.40	8.08	8.77		# of strides	13.30	12.80	14.38	16.85	26.10	31.23	5.13
velocity	6.88	8.29	8.01	7.62	7.16	6.76	6.19	5.70	6.98		7.52	7.81	6.95	5.93	7.66	6.40	
Race B - 2016 Shizuoka International Meeting (Fukuroi, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 03-May-16 time	6.91	12.76	18.94	25.46	32.30	39.78	47.78	56.49	56.49	/ 3							
reaction time interval		5.85	6.18	6.52	6.84	7.48	8.00	8.71		# of strides	12.76	12.70	14.32	16.71	25.46	31.03	5.57
velocity	7.24	8.55	8.09	7.67	7.31	6.68	6.25	5.74	7.08		7.84	7.87	6.98	5.98	7.86	6.45	
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 16-Oct-15 time	7.10	13.01	19.44	26.18	33.05	40.13	47.45	55.10	55.10	/ 4							
reaction time interval		5.91	6.43	6.74	6.87	7.08	7.32	7.65		# of strides	13.01	13.17	13.95	14.97	26.18	28.92	2.74
velocity	7.04	8.46	7.78	7.42	7.28	7.06	6.83	6.54	7.26		7.69	7.59	7.17	6.68	7.64	6.92	
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 05-Oct-15 time	7.11	13.32	19.72	26.49	33.37	40.55	47.99	55.85	55.85	/ 5							
reaction time interval		6.21	6.40	6.77	6.88	7.18	7.44	7.86		# of strides	13.32	13.17	14.06	15.30	26.49	29.36	2.87
velocity	7.03	8.05	7.81	7.39	7.27	6.96	6.72	6.36	7.16		7.51	7.59	7.11	6.54	7.55	6.81	

Nakajima, Sayaka (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time		12.88		25.95		40.29		56.14	56.14	3 / 5							
reaction time 0.155 interval				13.07		14.34		15.85		# of strides	12.88	13.07	14.34	15.85	25.95	30.19	4.24
velocity		7.76		7.65		6.97		6.31	7.13	220.0	7.76	7.65	6.97	6.31	7.71	6.62	
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)																	*Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*
date 29-Jul-17 time	7.03	12.75	18.94	25.62	32.65	40.14	47.98	56.41	56.41	2 / 7							
reaction time 0.170 interval		5.72	6.19	6.68	7.03	7.49	7.84	8.43		# of strides	12.75	12.87	14.52	16.27	25.62	30.79	5.17
velocity	7.11	8.74	8.08	7.49	7.11	6.68	6.38	5.93	7.09		7.84	7.77	6.89	6.15	7.81	6.50	

Nakamichi, Ayane (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time		13.37		26.40		40.63		55.60	55.60	8 / 7							
reaction time 0.208 interval				13.03		14.23		14.97		# of strides	13.37	13.03	14.23	14.97	26.40	29.20	2.80
velocity		7.48		7.67		7.03		6.68	7.19	203.0	7.48	7.67	7.03	6.68	7.58	6.85	
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time		13.22		26.18		40.40		55.64	55.64	4 / 3							
reaction time 0.238 interval				12.96		14.22		15.24		# of strides	13.22	12.96	14.22	15.24	26.18	29.46	3.28
velocity		7.56		7.72		7.03		6.56	7.19	205.5	7.56	7.72	7.03	6.56	7.64	6.79	

Nakamura, Mayumi (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/04/07/post-249/*
date 06-Apr-17 time		13.91		27.58		42.34		58.70	58.70	6 / 4							
reaction time interval				13.67		14.76		16.36		# of strides	13.91	13.67	14.76	16.36	27.58	31.12	3.54
velocity		7.19		7.32		6.78		6.11	6.81		7.19	7.32	6.78	6.11	7.25	6.43	

Nakano, Nano (JPN) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Japanese U20 National Championships (Hiroshima, JPN)																	*Kobayashi (2002) - national high school and U20 national championhsips*
date 23-Oct-20 time	7.34	13.66	20.14	26.81	33.72	40.90	48.21	55.83	55.83	6 / 1							
reaction time 0.197 interval		6.32	6.48	6.67	6.91	7.18	7.31	7.62		# of strides	13.66	13.15	14.09	14.93	26.81	29.02	2.21
velocity	6.81	7.91	7.72	7.50	7.24	6.96	6.84	6.56	7.16	213.3	7.32	7.60	7.10	6.70	7.46	6.89	
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)																	*Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*
date 04-Aug-19 time	7.36	13.72	20.13	26.70	33.47	40.46	47.55	55.07	55.07	4 / 5							
reaction time interval		6.36	6.41	6.57	6.77	6.99	7.09	7.52	PB	# of strides	13.72	12.98	13.76	14.61	26.70	28.37	1.67
velocity	6.79	7.86	7.80	7.61	7.39	7.15	7.05	6.65	7.26		7.29	7.70	7.27	6.84	7.49	7.05	
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)																	*Ryutaro (2018) - research on athlete performance and technique- 2018 data book*
date 19-Oct-18 time	7.27	13.63	20.14	26.87	33.67	40.72	48.04	55.74	55.74	7 / 3							
reaction time 0.157 interval		6.36	6.51	6.73	6.80	7.05	7.32	7.70		# of strides	13.63	13.24	13.85	15.02	26.87	28.87	2.00
velocity	6.88	7.86	7.68	7.43	7.35	7.09	6.83	6.49	7.18		7.34	7.55	7.22	6.66	7.44	6.93	

Nakao, Yuzuki (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																	*Kishima (2022) - national high school championships biomechanics data collection*
date 03-Aug-22 time		13.30		26.13		39.83		55.20	55.20	5 / 2							
reaction time 0.185 interval				12.83		13.70		15.37	PB	# of strides	13.30	12.83	13.70	15.37	26.13	29.07	2.94
velocity		7.52		7.79		7.30		6.51	7.25	203.0	7.52	7.79	7.30	6.51	7.65	6.88	
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)																	*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*
date 23-Oct-21 time	7.03	12.90	18.93	25.30	32.00	39.15			39.15	8 / 3							
reaction time 0.199 interval		5.87	6.03	6.37	6.70	7.15			PB	# of strides	12.90	12.40	13.85		25.30		
velocity	7.11	8.52	8.29	7.85	7.46	6.99			7.66	152.0	7.75	8.06	7.22		7.91		

Naruse, Miki (JPN) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.33	13.74	20.29	27.05	34.07	41.21	48.55	56.06	56.06	5 / 6						
reaction time		interval		6.41	6.55	6.76	7.02	7.14	7.34	7.51		# of strides	13.74	13.31	14.16	14.85	27.05	29.01	1.96
		velocity	6.82	7.80	7.63	7.40	7.12	7.00	6.81	6.66	7.14		7.28	7.51	7.06	6.73	7.39	6.89	

Naruse, Miki (JPN) (1982)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																			*Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*
date	24-Sep-06	time	7.10	13.20	19.30	26.00	32.90	40.20	47.70	55.36	55.36	8 / 6							
reaction time		interval		6.10	6.10	6.70	6.90	7.30	7.50	7.66		# of strides	13.20	12.80	14.20	15.16	26.00	29.36	3.36
		velocity	7.04	8.20	8.20	7.46	7.25	6.85	6.67	6.53	7.23		7.58	7.81	7.04	6.60	7.69	6.81	

Naser, Salwa Eid (BRN) (1998)			**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2023 Meeting de Paris (Paris, FRA)																			*Omega Timing (2023) - diamond league race analysis*
date	09-Jun-23	time	6.52	11.81	17.30	23.15	29.37	35.97	42.75	49.95	49.95	3 / 3							
reaction time	0.143	interval		5.29	5.49	5.85	6.22	6.60	6.78	7.20		# of strides	11.81	11.34	12.82	13.98	23.15	26.80	3.65
		velocity	7.67	9.45	9.11	8.55	8.04	7.58	7.37	6.94	8.01	186.2	8.47	8.82	7.80	7.15	8.64	7.46	

FINAL - 2019 IAAF World Championships (Doha, QAT)																			*Yamanaka (2019) - race analysis of men and women 400m competition*
date	03-Oct-19	time	6.71	12.09	17.57	23.20	29.03	35.10	41.43	48.14	48.14	5 / 1							
reaction time	0.186	interval		5.38	5.48	5.63	5.83	6.07	6.33	6.71	**NR PB**	# of strides	12.09	11.11	11.90	13.04	23.20	24.94	1.74
		velocity	7.45	9.29	9.12	8.88	8.58	8.24	7.90	7.45	8.31	181.2	8.27	9.00	8.40	7.67	8.62	8.02	

Semi-Final 1 - 2019 IAAF World Championships (Doha, QAT)																			*Yamanaka (2019) - race analysis of men and women 400m competition*
date	01-Oct-19	time	6.79	12.15	17.58	23.33	29.45	35.93	42.71	49.79	49.79	7 / 1							
reaction time	0.185	interval		5.36	5.43	5.75	6.12	6.48	6.78	7.08		# of strides	12.15	11.18	12.60	13.86	23.33	26.46	3.13
		velocity	7.36	9.33	9.21	8.70	8.17	7.72	7.37	7.06	8.03	183.0	8.23	8.94	7.94	7.22	8.57	7.56	

FINAL - 2019 Weltklasse (Zürich, SUI)																			*Omega Timing (2019) - diamond league race analysis*
date	29-Aug-19	time	6.9	12.3	18.0	23.9	30.1	36.5	43.3	50.24	50.24	4 / 1							
reaction time	0.145	interval		5.4	5.7	5.9	6.2	6.4	6.8	6.9		# of strides	12.30	11.60	12.60	13.74	23.90	26.34	2.44
		velocity	7.25	9.26	8.77	8.47	8.06	7.81	7.35	7.20	7.96	184.0	8.13	8.62	7.94	7.28	8.37	7.59	

FINAL - 2019 Athletissima (Lausanne, SUI)																			*Omega Timing (2019) - diamond league race analysis*
date	05-Jul-19	time		12.3		23.9		36.1		49.17	49.17	5 / 1							
reaction time	0.168	interval				11.6		12.2		13.1		# of strides	12.30	11.60	12.20	13.07	23.90	25.27	1.37
		velocity		8.13		8.62		8.20		7.65	8.14	184.2	8.13	8.62	8.20	7.65	8.37	7.91	

FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																			*Omega Timing (2019) - diamond league race analysis*
date	16-Jun-19	time		12.2		23.7		36.3		50.13	50.13	4 / 1							
reaction time	0.165	interval				11.5		12.6		13.8		# of strides	12.20	11.50	12.60	13.83	23.70	26.43	2.73
		velocity		8.20		8.70		7.94		7.23	7.98	193.2	8.20	8.70	7.94	7.23	8.44	7.57	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA)																			*Omega Timing (2019) - diamond league race analysis*
date	06-Jun-19	time		12.6		24.4		36.7		50.26	50.26	5 / 1							
reaction time	0.178	interval				11.8		12.3		13.6		# of strides	12.60	11.80	12.30	13.56	24.40	25.86	1.46
		velocity		7.94		8.47		8.13		7.37	7.96	188.0	7.94	8.47	8.13	7.37	8.20	7.73	

FINAL - 2019 Shanghai (Shanghai, CHN)																			*Omega Timing (2019) - diamond league race analysis*
date	18-May-19	time		12.3		24.1		36.9		50.65	50.65	4 / 1							
reaction time	0.182	interval				11.8		12.8		13.8		# of strides	12.30	11.80	12.80	13.75	24.10	26.55	2.45
		velocity		8.13		8.47		7.81		7.27	7.90	187.5	8.13	8.47	7.81	7.27	8.30	7.53	

FINAL - 2019 Asian Athletics Championships (Doha, QAT)																			*Yamanaka (2019) - race analysis of men and women 400m competition*
date	21-Apr-19	time	6.64	12.15	18.00	24.26	30.67	37.24	44.08	51.34	51.34	4 / 1							
reaction time	0.187	interval		5.51	5.85	6.26	6.41	6.57	6.84	7.26		# of strides	12.15	12.11	12.98	14.10	24.26	27.08	2.82
		velocity	7.53	9.07	8.55	7.99	7.80	7.61	7.31	6.89	7.79	187.0	8.23	8.26	7.70	7.09	8.24	7.39	

FINAL - 2018 Asian Games (Jakarta, INA)																			*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*
date	26-Aug-18	time	6.69	12.30	18.10	24.14	30.40	36.77	43.29	50.09	50.09	5 / 1							
reaction time	0.156	interval		5.61	5.80	6.04	6.26	6.37	6.52	6.80	**CR**	# of strides	12.30	11.84	12.63	13.32	24.14	25.95	1.81
		velocity	7.47	8.91	8.62	8.28	7.99	7.85	7.67	7.35	7.99	187.5	8.13	8.45	7.92	7.51	8.29	7.71	

FINAL - 2018 Herculis Meeting International d'Athlétisme (Monaco, MON)																			*Vazel (2018.08.03) - https://twitter.com/pjvazel*
date	20-Jul-18	time				23.7		36.2		49.08	49.08	5 / 2							
reaction time		interval						12.50		12.88	**NR**	# of strides		23.70	12.50	12.88	23.70	25.38	1.68
		velocity				8.44		8.00		7.76	8.15	184.0		4.22	8.00	7.76	8.44	7.88	

FINAL - 2018 Meeting de Paris (Paris, FRA)																			*Omega Timing (2018) - diamond league race analysis*
date	30-Jun-18	time		12.5		24.3		36.7		49.55	49.55	5 / 1							
reaction time	0.159	interval				11.8		12.4		12.9	**AR**	# of strides	12.50	11.80	12.40	12.85	24.30	25.25	0.95
		velocity		8.00		8.47		8.06		7.78	8.07	183.7	8.00	8.47	8.06	7.78	8.23	7.92	

FINAL - 2018 Bauhaus Galan (Stockholm, SWE)																			*Omega Timing (2018) - diamond league race analysis*
date	10-Jun-18	time		12.4		24.2		36.7		49.84	49.84	6 / 1							
reaction time	0.165	interval				11.8		12.5		13.1	**NR**	# of strides	12.40	11.80	12.50	13.14	24.20	25.64	1.44
		velocity		8.06		8.47		8.00		7.61	8.03	184.7	8.06	8.47	8.00	7.61	8.26	7.80	

FINAL - 2018 Bislett Games (Oslo, NOR)																			*Omega Timing (2018) - diamond league race analysis*
date	07-Jun-18	time		12.4		24.0		36.5		49.98	49.98	5 / 1							
reaction time	0.161	interval				11.6		12.5		13.5		# of strides	12.40	11.60	12.50	13.48	24.00	25.98	1.98
		velocity		8.06		8.62		8.00		7.42	8.00	186.0	8.06	8.62	8.00	7.42	8.33	7.70	

FINAL - 2017 Memorial van Damme (Brussels, BEL)																			*Omega Timing (2017) - diamond league race analysis*
date	01-Sep-17	time		12.2	17.9	23.9	30.0	36.4	42.9	49.88	49.88	6 / 2							
reaction time	0.158	interval			5.70	6.00	6.10	6.40	6.50	6.98	**NR AJR PB**	# of strides	12.20	11.70	12.50	13.48	23.90	25.98	2.08
		velocity		8.20	8.77	8.33	8.20	7.81	7.69	7.16	8.02	186.0	8.20	8.55	8.00	7.42	8.37	7.70	

FINAL - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	09-Aug-17	time	12.01	23.50	35.93	42.60	49.86	50.06	4 / 2							
reaction time	0.203	interval		11.49	12.43	6.67	7.26	**NR / NJR**	# of strides	12.01	11.49	12.43	13.93	23.50	26.36	2.86
		velocity	8.33	8.70	8.05	7.50	6.89	7.99	189.6	8.33	8.70	8.05	7.18	8.51	7.59	

Semi-Final 2 - 2017 IAAF World Championships (London, GBR) — *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time	11.70	23.97	36.37	42.98	49.88	50.08	7 / 1							
reaction time	0.200	interval		12.27	12.40	6.61	6.90	**NR / NJR**	# of strides	11.70	12.27	12.40	13.51	23.97	25.91	1.94
		velocity	8.55	8.15	8.06	7.56	7.25	7.99	189.2	8.55	8.15	8.06	7.40	8.34	7.72	

Nazarova, Irina (URS) (1957)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 Olympic Games (Moscow, URS)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date	28-Jul-80	time				36.2		50.07	50.07	8 / 4							
reaction time		interval						13.87	**PB**	# of strides				13.87			
		velocity				8.29		7.21	7.99					7.21			

Nazarova, Natalya (RUS) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2004 Olympic Games (Athens, GRE)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date	24-Aug-04	time	12.2	23.8		36.3		50.7	50.65	7 / 8							
reaction time	0.251	interval		11.6		12.5		14.4		# of strides	12.20	11.60	12.50	14.40	23.80	26.90	3.10
		velocity	8.20	8.62		8.00		6.94	7.90		8.20	8.62	8.00	6.94	8.40	7.43	

FINAL - 2003 IAAF World Championships (Paris, FRA) — *Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*

date	27-Aug-03	time		23.6		36.0		49.98	49.98	7 / 4						
reaction time	0.170	interval				12.40		13.98		# of strides			12.40	13.98	23.60	26.38	2.78
		velocity		8.47		8.06		7.15	8.00				8.06	7.15	8.47	7.58	

FINAL - 1999 IAAF World Championships (Sevilla, ESP) — *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.70	12.29	18.04	24.09	30.47	36.91	43.53	50.61	50.61	2 / 6						
reaction time	0.176	interval		5.59	5.75	6.05	6.38	6.44	6.62	7.08		# of strides	12.29	11.80	12.82	13.70	24.09	26.52	2.43
		velocity	7.46	8.94	8.70	8.26	7.84	7.76	7.55	7.06	7.90		8.14	8.47	7.80	7.30	8.30	7.54	

Nazarova, Olga (URS) (1965)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1992 Olympic Games (Barcelona, ESP)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date	05-Aug-92	time		24.0		35.8		49.7	49.69	8 / 4							
reaction time		interval				11.80		13.90		# of strides			11.80	13.90	24.00	25.70	1.70
		velocity		8.33		8.47		7.19	8.05				8.47	7.19	8.33	7.78	

FINAL - 1991 European Cup (Frankfurt, GER) — *Federle (2003) - http://www.fgs.uni-halle.de*

date	29-Jun-91	time	12.79	24.35	36.74		51.17	51.17	7 / 3							
reaction time		interval		11.56	12.39		14.43		# of strides	12.79	11.56	12.39	14.43	24.35	26.82	2.47
		velocity	7.82	8.65	8.07		6.93	7.82		7.82	8.65	8.07	6.93	8.21	7.46	

FINAL - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	26-Sep-88	time	12.15	23.59	35.78		49.90	49.90	4 / 3							
reaction time	0.231	interval		11.44	12.19		14.12		# of strides	12.15	11.44	12.19	14.12	23.59	26.31	2.72
		velocity	8.23	8.74	8.20		7.08	8.02	201.5	8.23	8.74	8.20	7.08	8.48	7.60	

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time	12.28	23.73	35.79		49.11	49.11	5 / 1							
reaction time		interval		11.45	12.06		13.32	**NR**	# of strides	12.28	11.45	12.06	13.32	23.73	25.38	1.65
		velocity	8.14	8.73	8.29		7.51	8.14		8.14	8.73	8.29	7.51	8.43	7.88	

FINAL - 1987 IAAF World Championships (Rome, ITA) — *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	31-Aug-87	time	12.90	24.68	37.40		51.20	51.20	1 / 8							
reaction time		interval		11.78	12.72		13.80		# of strides	12.90	11.78	12.72	13.80	24.68	26.52	1.84
		velocity	7.75	8.49	7.86		7.25	7.81		7.75	8.49	7.86	7.25	8.10	7.54	

Nekhubui, Shirley (RSA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 FBK Games (Hengelo, NED)										*Omega Timing (2023) - continental tour race analysis*							
date	04-Jun-23	time	6.95	12.75	18.88	25.30	31.94	38.90	46.39	54.64	54.64	7 / 8						
reaction time	0.189	interval		5.80	6.13	6.42	6.64	6.96	7.49	8.25		# of strides	12.75	12.55	13.60	15.74	25.30	29.34	4.04
		velocity	7.19	8.62	8.16	7.79	7.53	7.18	6.68	6.06	7.32		7.84	7.97	7.35	6.35	7.91	6.82	

Neubauer, Dagmar (GDR) (1962)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)										*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*							
date	25-Sep-88	time		12.31		24.18		37.01	50.92	50.92	2 / 8							
reaction time		interval				11.87		12.83	13.91		# of strides	12.31	11.87	12.83	13.91	24.18	26.74	2.56
		velocity		8.12		8.42		7.79	7.19	7.86		8.12	8.42	7.79	7.19	8.27	7.48	

Rübsam-Neubauer, Dagmar (GDR) (1962)

FINAL - 1984 East German National Championshps (Erfurt, GDR) — *Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdendisziplinen im olympiazyklus 1981/84*

date	02-Jun-84	time		12.46		24.12		36.43	49.58	49.58	/ 3							
reaction time		interval				11.66		12.31	13.15	**PB**	# of strides	12.46	11.66	12.31	13.15	24.12	25.46	1.34
		velocity		8.03		8.58		8.12	7.60	8.07		8.03	8.58	8.12	7.60	8.29	7.86	

FINAL - 1983 IAAF World Championships (Helsinki, FIN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-83	time		24.1				50.5	50.48	7 / 7						
reaction time		interval						26.40		# of strides					24.10	26.40	2.30
		velocity		8.30				7.58	7.92						8.30	7.58	

Neufville, Marilyn (JAM) (1952)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1970 Commonwealth Games (Edinburgh, GBR)										*Hymans (2015) - progression of IAAF world records - 2015 edition*							
date	23-Jul-70	time		23.8				51.0	51.0	/ 1							
reaction time		interval						27.2	**WR**	# of strides					23.80	27.20	3.40
		velocity		8.40				7.35	7.84	(51.02)					8.40	7.35	

Newnham, Emily (GBR) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date 31-Aug-23 time	7.06	13.01	19.28	25.81	32.29	38.80	45.51	52.59	52.59	1 / 8							
reaction time 0.177 interval		5.95	6.27	6.53	6.48	6.51	6.71	7.08		# of strides	13.01	12.80	12.99	13.79	25.81	26.78	0.97
velocity	7.08	8.40	7.97	7.66	7.72	7.68	7.45	7.06	7.61		7.69	7.81	7.70	7.25	7.75	7.47	

Nguyen Thi Hang (VIE) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Asian Games (Jakarta, INA)																	*Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*
date 26-Aug-18 time	6.89	12.77	18.94	25.33	32.06	39.09	46.47	54.30	54.30	2 / 8							
reaction time 0.175 interval		5.88	6.17	6.39	6.73	7.03	7.38	7.83	**PB**	# of strides	12.77	12.56	13.76	15.21	25.33	28.97	3.64
velocity	7.26	8.50	8.10	7.82	7.43	7.11	6.78	6.39	7.37		7.83	7.96	7.27	6.57	7.90	6.90	

Niederberger, Julia (SUI) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date 31-Aug-23 time	6.86	12.59	18.48	24.63	31.03	37.77	44.75	52.11	52.11	5 / 3							
reaction time 0.153 interval		5.73	5.89	6.15	6.40	6.74	6.98	7.36		# of strides	12.59	12.04	13.14	14.34	24.63	27.48	2.85
velocity	7.29	8.73	8.49	8.13	7.81	7.42	7.16	6.79	7.68		7.94	8.31	7.61	6.97	8.12	7.28	
National FINAL - 2022 Weltklasse (Zürich, SUI)																	*Omega Timing (2022) - diamond league race analysis*
date 08-Sep-22 time	6.84	12.72	18.81	25.00	31.43	38.23	45.35	52.86	52.86	2 / 7							
reaction time 0.172 interval		5.88	6.09	6.19	6.43	6.80	7.12	7.51		# of strides	12.72	12.28	13.23	14.63	25.00	27.86	2.86
velocity	7.31	8.50	8.21	8.08	7.78	7.35	7.02	6.66	7.57		7.86	8.14	7.56	6.84	8.00	7.18	
B Race - 2021 Athletissima (Lausanne, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date 26-Aug-21 time	7.3	13.4	20.1	27.1	34.0	41.2	48.2	55.54	55.54	1 / 8							
reaction time 0.199 interval		6.10	6.70	7.00	6.90	7.20	7.00	7.34		# of strides	13.40	13.70	14.10	14.34	27.10	28.44	1.34
velocity	6.85	8.20	7.46	7.14	7.25	6.94	7.14	6.81	7.20		7.46	7.30	7.09	6.97	7.38	7.03	

Nielsen, Laviai (GBR) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Memorial van Damme (Brussels, BEL)																	*Seiko Timing (2023) - world championship race analysis*
date 08-Sep-23 time	6.69	12.18	17.92	23.92	30.16	36.67	43.47	50.84	50.84	3 / 6							
reaction time 0.174 interval		5.49	5.74	6.00	6.24	6.51	6.80	7.37		# of strides	12.18	11.74	12.75	14.17	23.92	26.92	3.00
velocity	7.47	9.11	8.71	8.33	8.01	7.68	7.35	6.78	7.87		8.21	8.52	7.84	7.06	8.36	7.43	
FINAL - 2021 Müller Grand Prix (Gateshead, GBR)																	*Omega Timing (2021) - diamond league race analysis*
date 23-May-21 time	7.2	12.8	18.6	24.6	31.0	37.9	45.7	53.96	53.96	3 / 8							
reaction time 0.140 interval		5.60	5.80	6.00	6.40	6.90	7.80	8.26		# of strides	12.80	11.80	13.30	16.06	24.60	29.36	4.76
velocity	6.94	8.93	8.62	8.33	7.81	7.25	6.41	6.05	7.41		7.81	8.47	7.52	6.23	8.13	6.81	
FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA)																	*Omega Timing (2020) - diamond league race analysis*
date 17-Sep-20 time	6.8	12.5	18.5	24.6	30.9	37.6	44.7	52.45	52.45	6 / 7							
reaction time 0.154 interval		5.70	6.00	6.10	6.30	6.70	7.10	7.75		# of strides	12.50	12.10	13.00	14.85	24.60	27.85	3.25
velocity	7.35	8.77	8.33	8.20	7.94	7.46	7.04	6.45	7.63		8.00	8.26	7.69	6.73	8.13	7.18	
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																	*Omega Timing (2020) - diamond league race analysis*
date 23-Aug-20 time	6.7	12.4	18.4	24.6	30.9	37.5	44.4	52.16	52.16	8 / 2							
reaction time 0.140 interval		5.70	6.00	6.20	6.30	6.60	6.90	7.76		# of strides	12.40	12.20	12.90	14.66	24.60	27.56	2.96
velocity	7.46	8.77	8.33	8.06	7.94	7.58	7.25	6.44	7.67		8.06	8.20	7.75	6.82	8.13	7.26	
FINAL - 2019 Weltklasse (Zürich, SUI)																	*Omega Timing (2019) - diamond league race analysis*
date 29-Aug-19 time	6.8	12.4	18.4	24.6	31.0	37.5	44.3	51.70	51.70	7 / 5							
reaction time 0.157 interval		5.6	6.0	6.2	6.4	6.5	6.8	7.4		# of strides	12.40	12.20	12.90	14.20	24.60	27.10	2.50
velocity	7.35	8.93	8.33	8.06	7.81	7.69	7.35	6.76	7.74	194.5	8.06	8.20	7.75	7.04	8.13	7.38	
FINAL - 2019 Athletissima (Lausanne, SUI)																	*Omega Timing (2019) - diamond league race analysis*
date 05-Jul-19 time		12.5		24.6		37.4		51.31	51.31	1 / 4							
reaction time 0.160 interval				12.1		12.8		13.9		# of strides	12.50	12.10	12.80	13.91	24.60	26.71	2.11
velocity		8.00		8.26		7.81		7.19	7.80		8.00	8.26	7.81	7.19	8.13	7.49	
FINAL - 2018 Müller Anniversary Games (London, GBR)																	*Omega Timing (2018) - diamond league race analysis*
date 22-Jul-18 time		12.6		24.6		37.2		51.70	51.70	3 / 8							
reaction time 0.154 interval				12.0		12.6		14.5	**PB**	# of strides	12.60	12.00	12.60	14.50	24.60	27.10	2.50
velocity		7.94		8.33		7.94		6.90	7.74		7.94	8.33	7.94	6.90	8.13	7.38	

Nishida, Ayaka (JPN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 National Sports Festival (Wayakama, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 04-Oct-15 time	7.09	13.27	19.85	26.64	33.60	40.53	47.63	55.10	55.10	8 / 4							
reaction time interval		6.18	6.58	6.79	6.96	6.93	7.10	7.47		# of strides	13.27	13.37	13.89	14.57	26.64	28.46	1.82
velocity	7.05	8.09	7.60	7.36	7.18	7.22	7.04	6.69	7.26		7.54	7.48	7.20	6.86	7.51	7.03	
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN)																	*Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
date 03-Aug-11 time		13.28		26.65		40.22		55.52	55.52	2 / 6							
reaction time interval				13.37		13.57		15.30		# of strides	13.28	13.37	13.57	15.30	26.65	28.87	2.22
velocity		7.53		7.48		7.37		6.54	7.20		7.53	7.48	7.37	6.54	7.50	6.93	

Nishida, Mina (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/05/13/post-441/*
date 11-May-17 time		13.29		25.76		39.86		56.14	56.14	3 / 8							
reaction time interval				12.47		14.10		16.28		# of strides	13.29	12.47	14.10	16.28	25.76	30.38	4.62
velocity		7.52		8.02		7.09		6.14	7.13		7.52	8.02	7.09	6.14	7.76	6.58	

Nwachukwu, Sorina (GER) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER)																	*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*
date 16-Aug-09 time		12.56		24.90		37.74		51.98	51.98	8 / 6							
reaction time 0.210 interval				12.34		12.84		14.24		# of strides	12.56	12.34	12.84	14.24	24.90	27.08	2.18

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		velocity	7.96	8.10	7.79	7.02	7.70		7.96	8.10	7.79	7.02	8.03	7.39	

Heat 2 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time	12.87	25.07	37.74	51.74	51.74	6 / 3									
reaction time	0.208	interval		12.20	12.67	14.00		# of strides	12.87	12.20	12.67	14.00	25.07	26.67	1.60
		velocity	7.77	8.20	7.89	7.14	7.73		7.77	8.20	7.89	7.14	7.98	7.50	

FINAL - 2009 ISTAF (Berlin, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Jun-09	time	12.38	24.42	37.49	52.45	52.45	/ 7									
reaction time	0.313	interval		12.04	13.07	14.96		# of strides	12.38	12.04	13.07	14.96	24.42	28.03	3.61
		velocity	8.08	8.31	7.65	6.68	7.63		8.08	8.31	7.65	6.68	8.19	7.14	

Nyhus, Mille Eide (NOR) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2019 Bislett Games (Olso, NOR) — *Omega Timing (2019) - diamond league race analysis*

date	13-Jun-19	time	13.2	26.5	41.2	57.22	57.22	8 / 8									
reaction time	0.208	interval		13.3	14.7	16.0	PB	# of strides	13.20	13.30	14.70	16.02	26.50	30.72	4.22
		velocity	7.58	7.52	6.80	6.24	6.99		7.58	7.52	6.80	6.24	7.55	6.51	

Odagaki, Aki (JPN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 Japanese National Championships (Nagoya, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	25-Jun-16	time	7.18	13.53	19.95	26.56	33.23	40.13	47.35	55.01	55.01	7 / 7						
reaction time	0.223	interval		6.35	6.42	6.61	6.67	6.90	7.22	7.66		# of strides	13.53	13.03	13.57	14.88	26.56	28.45	1.89
		velocity	6.96	7.87	7.79	7.56	7.50	7.25	6.93	6.53	7.27		7.39	7.67	7.37	6.72	7.53	7.03	

Race B - 2016 Shizuoka International Meeting (Fukuroi, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.41	13.88	20.55	27.25	33.90	40.76	48.07	55.80	55.80	/ 2						
reaction time		interval		6.47	6.67	6.70	6.65	6.86	7.31	7.73		# of strides	13.88	13.37	13.51	15.04	27.25	28.55	1.30
		velocity	6.75	7.73	7.50	7.46	7.52	7.29	6.84	6.47	7.17		7.20	7.48	7.40	6.65	7.34	7.01	

FINAL - 2011 Japanese National High School Championships (Okinawa, JPN) — *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*

date	03-Aug-11	time		13.38		26.98		41.28		55.52	55.52	3 / 5						
reaction time		interval				13.60		14.30		14.24		# of strides	13.38	13.60	14.30	14.24	26.98	28.54	1.56
		velocity		7.47		7.35		6.99		7.02	7.20		7.47	7.35	6.99	7.02	7.41	7.01	

Ogoegbunam, Amaka (NGR) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Heat 4 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.74		24.74		37.95		52.85	52.85	3 / ~~3~~						
reaction time	0.166	interval				12.00		13.21		14.90	DV	# of strides	12.74	12.00	13.21	14.90	24.74	28.11	3.37
		velocity		7.85		8.33		7.57		6.71	7.57		7.85	8.33	7.57	6.71	8.08	7.11	

Ogunkoya, Falilat (NGR) (1968)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2000 Olympic Games (Sydney, AUS) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	25-Sep-00	time		12.3		24.2		36.6		50.1	50.12	8 / 7						
reaction time	0.254	interval				11.90		12.40		13.50		# of strides	12.30	11.90	12.40	13.50	24.20	25.90	1.70
		velocity		8.13		8.40		8.06		7.41	7.98		8.13	8.40	8.06	7.41	8.26	7.72	

FINAL - 1999 IAAF World Championships (Sevilla, ESP) — *Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999*

date	26-Aug-99	time	6.55	12.14	17.82	23.66	29.79	35.95	42.63	50.03	50.03	4 / 4						
reaction time	0.157	interval		5.59	5.68	5.84	6.13	6.16	6.68	7.40		# of strides	12.14	11.52	12.29	14.08	23.66	26.37	2.71
		velocity	7.63	8.94	8.80	8.56	8.16	8.12	7.49	6.76	8.00		8.24	8.68	8.14	7.10	8.45	7.58	

FINAL - 1997 IAAF World Championships (Athens, GRE) — *Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*

date	04-Aug-97	time	6.58	12.30	17.94	23.70	29.78	35.98	42.74	50.14	50.27	3 / 5						
reaction time	0.126	interval		5.72	5.64	5.76	6.08	6.20	6.76	7.40		# of strides	12.30	11.40	12.28	14.16	23.70	26.44	2.74
		velocity	7.60	8.74	8.87	8.68	8.22	8.06	7.40	6.76	7.96		8.13	8.77	8.14	7.06	8.44	7.56	

FINAL - 1996 Olympic Games (Atlanta, GA) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-96	time				23.54		35.5		49.10	49.10	5 / 3						
reaction time	0.288	interval						11.96		13.60	AR PB	# of strides			11.96	13.60	23.54	25.56	2.02
		velocity				8.50		8.36		7.35	8.15				8.36	7.35	8.50	7.82	

FINAL - 1989 IAAF World Cup (Barcelona, ESP) — *Pascua (1990) - atletismo (I) carreras y marcha*

date	10-Sep-89	time		12.27		24.90		37.17		51.67	51.67	/ ~~4~~ 3						
reaction time		interval				12.63		12.27		14.50		# of strides	12.27	12.63	12.27	14.50	24.90	26.77	1.87
		velocity		8.15		7.92		8.15		6.90	7.74		8.15	7.92	8.15	6.90	8.03	7.47	

Ohuruogu, Christine (GBR) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2015 IAAF World Championships (Beijing, CHN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Aug-15	time	6.68	12.10	17.77	23.76	29.92	36.29	43.07	50.63	50.63	7 / 8						
reaction time	0.189	interval		5.42	5.67	5.99	6.16	6.37	6.78	7.56		# of strides	12.10	11.66	12.53	14.34	23.76	26.87	3.11
		velocity	7.49	9.23	8.82	8.35	8.12	7.85	7.37	6.61	7.90		8.26	8.58	7.98	6.97	8.42	7.44	

Heat 2 - 2015 IAAF World Championships (Beijing, CHN) — *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.88	12.60	18.55	24.77	31.05	37.30	43.90	51.01	51.01	3 / 1						
reaction time	0.177	interval		5.72	5.95	6.22	6.28	6.25	6.60	7.11		# of strides	12.60	12.17	12.53	13.71	24.77	26.24	1.47
		velocity	7.27	8.74	8.40	8.04	7.96	8.00	7.58	7.03	7.84		7.94	8.22	7.98	7.29	8.07	7.62	

FINAL - 2013 IAAF World Championships (Moscow, RUS) — (2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

date	12-Aug-13	time				23.8		35.7		49.0	49.41	4 / 1						
reaction time	0.247	interval						11.90		13.30	NR	# of strides			11.90	13.30	23.80	25.20	1.40
		velocity				8.40		8.40		7.52	8.10				8.40	7.52	8.40	7.94	

FINAL - 2012 Olympic Games (London, GBR) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-12	time		12.2		23.9		36.2		49.7	49.70	8 / 2						
reaction time	0.174	interval				11.70		12.30		13.50		# of strides	12.20	11.70	12.30	13.50	23.90	25.80	1.90
		velocity		8.20		8.55		8.13		7.41	8.05	183.0	8.20	8.55	8.13	7.41	8.37	7.75	

FINAL - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	18-Aug-09	time	12.56	24.32	36.76	50.21	50.21	7 / 5							
reaction time	0.231	interval		11.76	12.44	13.45		# of strides	12.56	11.76	12.44	13.45	24.32	25.89	1.57
		velocity	7.96	8.50	8.04	7.43	7.97	184.2	7.96	8.50	8.04	7.43	8.22	7.72	

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time	12.51	24.43	36.92	50.35	50.35	4 / 2							
reaction time	0.204	interval		11.92	12.49	13.43		# of strides	12.51	11.92	12.49	13.43	24.43	25.92	1.49
		velocity	7.99	8.39	8.01	7.45	7.94		7.99	8.39	8.01	7.45	8.19	7.72	

Heat 5 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time	12.74	24.62	37.36	51.30	51.30	4 / 2							
reaction time	0.263	interval		11.88	12.74	13.94		# of strides	12.74	11.88	12.74	13.94	24.62	26.68	2.06
		velocity	7.85	8.42	7.85	7.17	7.80		7.85	8.42	7.85	7.17	8.12	7.50	

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time	12.75	24.85	37.72	50.83	50.83	4 / 2							
reaction time	0.234	interval		12.10	12.87	13.11		# of strides	12.75	12.10	12.87	13.11	24.85	25.98	1.13
		velocity	7.84	8.26	7.77	7.63	7.87		7.84	8.26	7.77	7.63	8.05	7.70	

FINAL - 2008 Olympic Games (Beijing, CHN) *(TV Analysis)* — *Graubner (2008) - http://www.fgs.uni-halle.de*

date	19-Aug-08	time	12.40	23.83	36.24	49.62	49.62	4 / 1							
reaction time	0.237	interval		11.43	12.41	13.38		# of strides	12.40	11.43	12.41	13.38	23.83	25.79	1.96
		velocity	8.06	8.75	8.06	7.47	8.06	185.2	8.06	8.75	8.06	7.47	8.39	7.75	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time	12.54	24.37	36.97	50.20	50.20	4 / 3							
reaction time	0.185	interval		11.83	12.60	13.23		# of strides	12.54	11.83	12.60	13.23	24.37	25.83	1.46
		velocity	7.97	8.45	7.94	7.56	7.97		7.97	8.45	7.94	7.56	8.21	7.74	

FINAL - 2007 IAAF World Championships (Osaka, JPN) — *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

date	29-Aug-07	time	6.86	12.27	17.98	23.85	29.87	36.14	42.72	49.61	49.61	6 / 1							
reaction time	0.219	interval		5.41	5.71	5.87	6.02	6.27	6.58	6.89	PB	# of strides	12.27	11.58	12.29	13.47	23.85	25.76	1.91
		velocity	7.29	9.24	8.76	8.52	8.31	7.97	7.60	7.26	8.06	183.5	8.15	8.64	8.14	7.42	8.39	7.76	

Ohuruogu, Victoria (GBR) (1993)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2023 Prefontaine Classic (Eugene, OR) — *Omega Timing (2023) - diamond league race analysis*

date	17-Sep-23	time	6.88	12.50	18.33	24.47	30.77	37.28	44.03	51.15	51.15	3 / 6							
reaction time	0.162	interval		5.62	5.83	6.14	6.30	6.51	6.75	7.12		# of strides	12.50	11.97	12.81	13.87	24.47	26.68	2.21
		velocity	7.27	8.90	8.58	8.14	7.94	7.68	7.41	7.02	7.82		8.00	8.35	7.81	7.21	8.17	7.50	

FINAL - 2023 Memorial van Damme (Brussels, BEL) — *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	6.92	12.66	18.47	24.45	30.60	37.02	43.73	50.81	50.81	8 / 4							
reaction time	0.218	interval		5.74	5.81	5.98	6.15	6.42	6.71	7.08		# of strides	12.66	11.79	12.57	13.79	24.45	26.36	1.91
		velocity	7.23	8.71	8.61	8.36	8.13	7.79	7.45	7.06	7.87		7.90	8.48	7.96	7.25	8.18	7.59	

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) — *Omega Timing (2023) - diamond league race analysis*

date	02-Sep-23	time	6.97	12.69	18.67	24.81	30.96	37.38	44.05	51.24	51.24	8 / 5							
reaction time	0.221	interval		5.72	5.98	6.14	6.15	6.42	6.67	7.19		# of strides	12.69	12.12	12.57	13.86	24.81	26.43	1.62
		velocity	7.17	8.74	8.36	8.14	8.13	7.79	7.50	6.95	7.81		7.88	8.25	7.96	7.22	8.06	7.57	

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time	12.39	24.21	36.91	50.74	50.74	8 / 4							
reaction time	0.238	interval		11.82	12.70	13.83		# of strides	12.39	11.82	12.70	13.83	24.21	26.53	2.32
		velocity	8.07	8.46	7.87	7.23	7.88	192.0	8.07	8.46	7.87	7.23	8.26	7.54	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	12.46	24.10	36.76	50.60	50.60	2 / 2							
reaction time	0.181	interval		11.64	12.66	13.84		# of strides	12.46	11.64	12.66	13.84	24.10	26.50	2.40
		velocity	8.03	8.59	7.90	7.23	7.91	192.0	8.03	8.59	7.90	7.23	8.30	7.55	

FINAL - 2022 European Athletics Championships (Munich, GER) — *European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time	12.51	24.43	37.04	50.51	50.51	3 / 4							
reaction time	0.269	interval		11.92	12.61	13.47		# of strides	12.51	11.92	12.61	13.47	24.43	26.08	1.65
		velocity	7.99	8.39	7.93	7.42	7.92	192.0	7.99	8.39	7.93	7.42	8.19	7.67	

FINAL - 2022 Commonwealth Games (Birmingham, GBR) — *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.8	12.5	18.3	24.4	30.6	37.1	43.7	50.72	50.72	4 / 2							
reaction time	0.147	interval		5.70	5.80	6.10	6.20	6.50	6.60	7.02	PB	# of strides	12.50	11.90	12.70	13.62	24.40	26.32	1.92
		velocity	7.35	8.77	8.62	8.20	8.06	7.69	7.58	7.12	7.89	195.5	8.00	8.40	7.87	7.34	8.20	7.60	

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	12.55	24.55	37.29	50.99	50.99	8 / 5							
reaction time	0.178	interval		12.00	12.74	13.70	PB	# of strides	12.55	12.00	12.74	13.70	24.55	26.44	1.89
		velocity	7.97	8.33	7.85	7.30	7.84	193.2	7.97	8.33	7.85	7.30	8.15	7.56	

Heat 6 - 2022 World Athletics Championships (Eugene, OR) — *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	12.67	24.78	37.40	51.07	51.07	6 / 3							
reaction time	0.190	interval		12.11	12.62	13.67		# of strides	12.67	12.11	12.62	13.67	24.78	26.29	1.51
		velocity	7.89	8.26	7.92	7.32	7.83	193.5	7.89	8.26	7.92	7.32	8.07	7.61	

Oikawa, Maaya (JPN) (2001)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) — *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.49	13.95	20.57	27.41	34.34	41.55	48.92	56.65	56.65	8 / 7							
reaction time		interval		6.46	6.62	6.84	6.93	7.21	7.37	7.73		# of strides	13.95	13.46	14.14	15.10	27.41	29.24	1.83

		velocity	6.68	7.74	7.55	7.31	7.22	6.93	6.78	6.47	7.06		7.17	7.43	7.07	6.62	7.30	6.84	

Okabe, Yuika (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 16-Oct-15 time	7.13	13.12	19.40	26.06	33.01	40.34	48.09	56.40	56.40	/ 8							
reaction time interval		5.99	6.28	6.66	6.95	7.33	7.75	8.31		# of strides	13.12	12.94	14.28	16.06	26.06	30.34	4.28
velocity	7.01	8.35	7.96	7.51	7.19	6.82	6.45	6.02	7.09		7.62	7.73	7.00	6.23	7.67	6.59	

Okamoto, Yuna (CHN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2013 Japanese National High School Championships (Oita, JPN)											*Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*						
date 30-Jul-13 time		13.60		26.80		40.83		56.06	56.06	2 / 8							
reaction time interval				13.20		14.03		15.23		# of strides	13.60	13.20	14.03	15.23	26.80	29.26	2.46
velocity		7.35		7.58		7.13		6.57	7.14		7.35	7.58	7.13	6.57	7.46	6.84	

Oki, Sayaka (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2013 Japanese National High School Championships (Oita, JPN)											*Yanagiya (2014) - research on athlete performance and technique- 2014 data book*						
date 30-Jul-13 time	7.05	13.48	19.89	26.27	32.80	39.58	46.47	53.66	53.66	4 / 1							
reaction time interval		6.43	6.41	6.38	6.53	6.78	6.89	7.19		# of strides	13.48	12.79	13.31	14.08	26.27	27.39	1.12
velocity	7.09	7.78	7.80	7.84	7.66	7.37	7.26	6.95	7.45		7.42	7.82	7.51	7.10	7.61	7.30	
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)											*Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*						
date 29-Jul-12 time		12.93		25.38		39.14		54.31	54.31	6 / 1							
reaction time interval				12.45		13.76		15.17		# of strides	12.93	12.45	13.76	15.17	25.38	28.93	3.55
velocity		7.73		8.03		7.27		6.59	7.37		7.73	8.03	7.27	6.59	7.88	6.91	

Okolo, Courtney (USA) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)											*European Athletics (2019) - race analysis*						
date 09-Sep-19 time		12.40		24.33		37.02		52.20	52.20	6 / 5							
reaction time 0.228 interval				11.93		12.69		15.18		# of strides	12.40	11.93	12.69	15.18	24.33	27.87	3.54
velocity		8.06		8.38		7.88		6.59	7.66	202.7	8.06	8.38	7.88	6.59	8.22	7.18	
National FINAL - 2019 Memorial van Damme (Brussels, BEL)											*Omega Timing (2019) - diamond league race analysis*						
date 06-Sep-19 time	7.0	12.7	18.6	24.7	31.1	37.7	44.6	52.13	52.13	6 / 1							
reaction time 0.213 interval		5.7	5.9	6.1	6.4	6.6	6.9	7.5		# of strides	12.70	12.00	13.00	14.43	24.70	27.43	2.73
velocity	7.14	8.77	8.47	8.20	7.81	7.58	7.25	6.64	7.67		7.87	8.33	7.69	6.93	8.10	7.29	
FINAL - 2019 Athletissima (Lausanne, SUI)											*Omega Timing (2019) - diamond league race analysis*						
date 05-Jul-19 time		12.5		24.1		36.7		51.85	51.85	8 / 7							
reaction time 0.217 interval				11.6		12.6		15.2		# of strides	12.50	11.60	12.60	15.15	24.10	27.75	3.65
velocity		8.00		8.62		7.94		6.60	7.71		8.00	8.62	7.94	6.60	8.30	7.21	
FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA)											*Omega Timing (2019) - diamond league race analysis*						
date 06-Jun-19 time		12.6		24.7		37.6		52.17	52.17	2 / 8							
reaction time 0.222 interval				12.1		12.9		14.6		# of strides	12.60	12.10	12.90	14.57	24.70	27.47	2.77
velocity		7.94		8.26		7.75		6.86	7.67	198.7	7.94	8.26	7.75	6.86	8.10	7.28	
FINAL - 2018 Müller Anniversary Games (London, GBR)											*Omega Timing (2018) - diamond league race analysis*						
date 22-Jul-18 time		12.7		24.8		37.4		50.93	50.93	6 / 3							
reaction time 0.223 interval				12.1		12.6		13.5		# of strides	12.70	12.10	12.60	13.53	24.80	26.13	1.33
velocity		7.87		8.26		7.94		7.39	7.85	192.0	7.87	8.26	7.94	7.39	8.06	7.65	
FINAL - 2018 Meeting de Paris (Paris, FRA)											*Omega Timing (2018) - diamond league race analysis*						
date 30-Jun-18 time		12.7		24.7		37.4		51.15	51.15	8 / 6							
reaction time 0.246 interval				12.0		12.7		13.8		# of strides	12.70	12.00	12.70	13.75	24.70	26.45	1.75
velocity		7.87		8.33		7.87		7.27	7.82	193.0	7.87	8.33	7.87	7.27	8.10	7.56	
FINAL - 2018 Bauhaus Galan (Stockholm, SWE)											*Omega Timing (2018) - diamond league race analysis*						
date 10-Jun-18 time		12.5		24.5		37.0		51.28	51.28	8 / 6							
reaction time 0.234 interval				12.0		12.5		14.3		# of strides	12.50	12.00	12.50	14.28	24.50	26.78	2.28
velocity		8.00		8.33		8.00		7.00	7.80	194.0	8.00	8.33	8.00	7.00	8.16	7.47	
FINAL - 2018 Bislett Games (Oslo, NOR)											*Omega Timing (2018) - diamond league race analysis*						
date 07-Jun-18 time		12.3		24.1		36.7		51.22	51.22	7 / 6							
reaction time 0.236 interval				11.8		12.6		14.5		# of strides	12.30	11.80	12.60	14.52	24.10	27.12	3.02
velocity		8.13		8.47		7.94		6.89	7.81	194.7	8.13	8.47	7.94	6.89	8.30	7.37	
FINAL - 2017 Memorial van Damme (Brussels, BEL)											*Omega Timing (2017) - diamond league race analysis*						
date 01-Sep-17 time		12.5	18.4	24.4	30.7	37.2	43.9	50.91	50.91	4 / 3							
reaction time 0.259 interval			5.90	6.00	6.30	6.50	6.70	7.01		# of strides	12.50	11.90	12.80	13.71	24.40	26.51	2.11
velocity		8.00	8.47	8.33	7.94	7.69	7.46	7.13	7.86	192.7	8.00	8.40	7.81	7.29	8.20	7.54	
FINAL - 2017 Meeting de Paris (Paris, FRA)											*Omega Timing (2017) - diamond league race analysis*						
date 01-Jul-17 time		12.6	18.4	24.7	31.1	37.5	44.2	51.19	51.19	7 / 2							
reaction time 0.242 interval			5.8	6.3	6.4	6.4	6.7	7.0		# of strides	12.60	12.10	12.80	13.69	24.70	26.49	1.79
velocity		7.94	8.62	7.94	7.81	7.81	7.46	7.15	7.81	191.7	7.94	8.26	7.81	7.30	8.10	7.55	
FINAL - 2017 USATF National Championship (Sacramento, CA)											*Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*						
date 24-Jun-17 time		12.67		24.29		36.92		51.23	51.23	1 / 8							
reaction time interval				11.62		12.63		14.31		# of strides	12.67	11.62	12.63	14.31	24.29	26.94	2.65
velocity		8.24		8.73		8.12		7.24	7.81		7.89	8.61	7.92	6.99	8.23	7.42	
FINAL - 2016 USA Olympic Trials (Eugene, OR)											*Hymans (2020) - history of the US olympic trials - track and field*						
date 03-Jul-16 time				24.3		36.6		50.39	50.39	4 / 6							
reaction time 0.271 interval						12.30		13.79		# of strides			12.30	13.79	24.30	26.09	1.79
velocity				8.23		8.13		7.25	7.94				8.13	7.25	8.23	7.67	

FINAL - 2016 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	11-Jun-16	time		24.3		36.8		50.4	50.36	4 / 1				
reaction time		interval				12.50		13.60		# of strides	12.50	13.60	24.30	26.10	1.80
		velocity		8.23		8.00		7.35	7.94		8.00	7.35	8.23	7.66	

FINAL - 2014 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	13-Jun-14	time		24.1				50.2	50.23	4 / 1				
reaction time		interval						26.10		# of strides			24.10	26.10	2.00
		velocity		8.30				7.66	7.96				8.30	7.66	

Okuda, Masumi (JPN) (1996)

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	30-Jul-14	time	7.39	13.56	19.65	26.03	32.78	39.95	47.63	56.10	56.10	/ 7							
reaction time		interval		6.17	6.09	6.38	6.75	7.17	7.68	8.47		# of strides	13.56	12.47	13.92	16.15	26.03	30.07	4.04
		velocity	6.77	8.10	8.21	7.84	7.41	6.97	6.51	5.90	7.13		7.37	8.02	7.18	6.19	7.68	6.65	

Okumura, Yuri (JPN) (2000)

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	19-Oct-18	time	7.20	13.08	19.39	26.18	33.24	40.66	48.35	56.59	56.59	7 / 8							
reaction time	0.185	interval		5.88	6.31	6.79	7.06	7.42	7.69	8.24		# of strides	13.08	13.10	14.48	15.93	26.18	30.41	4.23
		velocity	6.94	8.50	7.92	7.36	7.08	6.74	6.50	6.07	7.07		7.65	7.63	6.91	6.28	7.64	6.58	

U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		12.86		25.43		39.21		54.11	54.11	7 / 2							
reaction time	0.171	interval				12.57		13.78		14.90		# of strides	12.86	12.57	13.78	14.90	25.43	28.68	3.25
		velocity		7.78		7.96		7.26		6.71	7.39	210.0	7.78	7.96	7.26	6.71	7.86	6.97	

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		12.93		25.83		39.84		54.75	54.75	6 / 1							
reaction time	0.177	interval				12.90		14.01		14.91		# of strides	12.93	12.90	14.01	14.91	25.83	28.92	3.09
		velocity		7.73		7.75		7.14		6.71	7.31	211.5	7.73	7.75	7.14	6.71	7.74	6.92	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	29-Jul-17	time	6.95	12.87	19.12	25.68	32.54	39.68	47.00	54.75	54.75	7 / 2							
reaction time	0.187	interval		5.92	6.25	6.56	6.86	7.14	7.32	7.75		# of strides	12.87	12.81	14.00	15.07	25.68	29.07	3.39
		velocity	7.19	8.45	8.00	7.62	7.29	7.00	6.83	6.45	7.31		7.77	7.81	7.14	6.64	7.79	6.88	

Onishi, Aonori (JPN)

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	02-Aug-18	time	7.09	13.02	19.20	25.59	32.15	39.17	46.74	55.24	55.24	6 / 4							
reaction time		interval		5.93	6.18	6.39	6.56	7.02	7.57	8.50		# of strides	13.02	12.57	13.58	16.07	25.59	29.65	4.06
		velocity	7.05	8.43	8.09	7.82	7.62	7.12	6.61	5.88	7.24		7.68	7.96	7.36	6.22	7.82	6.75	

Onishi, Manae (JPN) (2000)

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	19-Oct-18	time	7.32	13.30	19.45	25.93	32.70	39.74	47.10	55.14	55.14	5 / 2							
reaction time	0.272	interval		5.98	6.15	6.48	6.77	7.04	7.36	8.04		# of strides	13.30	12.63	13.81	15.40	25.93	29.21	3.28
		velocity	6.83	8.36	8.13	7.72	7.39	7.10	6.79	6.22	7.25		7.52	7.92	7.24	6.49	7.71	6.85	

Ono, Mizuna (JPN) (2002)

A FINAL - 2020 Japanese High School National Championships (Hiroshima, JPN) *Kobayashi (2002) - national high school and U20 national championhsips*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	23-Oct-20	time	6.92	13.04	19.40	25.96	32.75	39.73	46.89	54.48	54.48	5 / 1							
reaction time	0.166	interval		6.12	6.36	6.56	6.79	6.98	7.16	7.59		# of strides	13.04	12.92	13.77	14.75	25.96	28.52	2.56
		velocity	7.23	8.17	7.86	7.62	7.36	7.16	6.98	6.59	7.34	196.7	7.67	7.74	7.26	6.78	7.70	7.01	

U18 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) (300m) *Kijima (2019) - research on athlete performance and technique- 2019 data book*

date	18-Oct-19	time		12.69		25.16		39.52			39.52	5 / 3							***100m-300m***
reaction time	0.166	interval				12.47		14.36				# of strides	12.69	12.47	14.36		25.16		*26.83*
		velocity		7.88		8.02		6.96			7.59	147.5	7.88	8.02	6.96		7.95		*7.45*

Onoue, Rika (JPN) (1999)

FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	21-Oct-16	time	7.32	13.64	20.15	26.88	33.77	40.83	48.21	56.17	56.17	8 / 5							
reaction time		interval		6.32	6.51	6.73	6.89	7.06	7.38	7.96		# of strides	13.64	13.24	13.95	15.34	26.88	29.29	2.41
		velocity	6.83	7.91	7.68	7.43	7.26	7.08	6.78	6.28	7.12		7.33	7.55	7.17	6.52	7.44	6.83	

Onuora, Anyika (GBR) (1984)

FINAL - 2018 Müller Anniversary Games (London, GBR) *Omega Timing (2018) - diamond league race analysis*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	22-Jul-18	time		13.0		25.2		37.4		51.13	51.13	7 / 5							
reaction time	0.167	interval				12.2		12.2		13.7		# of strides	13.00	12.20	12.20	13.73	25.20	25.93	0.73
		velocity		7.69		8.20		8.20		7.28	7.82	193.5	7.69	8.20	8.20	7.28	7.94	7.71	

FINAL - 2018 Bislett Games (Oslo, NOR) *Omega Timing (2018) - diamond league race analysis*

date	07-Jun-18	time		12.9		25.1		38.4		51.60	51.60	8 / 7							
reaction time	0.156	interval				12.2		13.3		13.2		# of strides	12.90	12.20	13.30	13.20	25.10	26.50	1.40
		velocity		7.75		8.20		7.52		7.58	7.75	200.0	7.75	8.20	7.52	7.58	7.97	7.55	

Heat 5 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.86	12.43	18.42	24.64	30.87	37.11	43.79	51.14	51.14	6 / 4							
reaction time	0.167	interval		5.57	5.99	6.22	6.23	6.24	6.68	7.35	**PB**	# of strides	12.43	12.21	12.47	14.03	24.64	26.50	1.86
		velocity	7.29	8.98	8.35	8.04	8.03	8.01	7.49	6.80	7.82		8.05	8.19	8.02	7.13	8.12	7.55	

Oshima, Airi (JPN) (2000)

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	09-May-21	time	7.20	13.43	19.87	26.60	33.42	40.28	47.19	54.25	54.25	7 / 3							
reaction time	0.146	interval		6.23	6.44	6.73	6.82	6.86	6.91	7.06		# of strides	13.43	13.17	13.68	13.97	26.60	27.65	1.05

		velocity	6.94	8.03	7.76	7.43	7.33	7.29	7.24	7.08	7.37		7.45	7.59	7.31	7.16	7.52	7.23	

FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN) — *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	03-May-21	time	7.27	13.33	19.75	26.49	33.36	40.39	47.80	56.10	56.10	5 / 3							
reaction time	0.185	interval		6.06	6.42	6.74	6.87	7.03	7.41	8.30		# of strides	13.33	13.16	13.90	15.71	26.49	29.61	3.12
		velocity	6.88	8.25	7.79	7.42	7.28	7.11	6.75	6.02	7.13		7.50	7.60	7.19	6.37	7.55	6.75	

FINAL - 2020 Japanese National Championships (Niigata, JPN) — *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	02-Oct-20	time	7.07	13.13	19.52	26.15	32.89	39.77	46.77	54.16	54.16	6 / 4							
reaction time	0.174	interval		6.06	6.39	6.63	6.74	6.88	7.00	7.39		# of strides	13.13	13.02	13.62	14.39	26.15	28.01	1.86
		velocity	7.07	8.25	7.82	7.54	7.42	7.27	7.14	6.77	7.39	225.7	7.62	7.68	7.34	6.95	7.65	7.14	

Heat 1 - 2020 Japanese National Championships (Niigata, JPN) — *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	01-Oct-20	time	7.04	12.93	19.04	25.49	32.21	39.18	46.37	53.96	53.96	4 / 2							
reaction time	0.172	interval		5.89	6.11	6.45	6.72	6.97	7.19	7.59	**PB**	# of strides	12.93	12.56	13.69	14.78	25.49	28.47	2.98
		velocity	7.10	8.49	8.18	7.75	7.44	7.17	6.95	6.59	7.41	220.7	7.73	7.96	7.30	6.77	7.85	7.02	

FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN) — *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	23-Aug-20	time	7.16	13.12	19.20	25.54	32.11	38.93	46.09	53.97	53.97	4 / 3							
reaction time	0.161	interval		5.96	6.08	6.34	6.57	6.82	7.16	7.88	**PB**	# of strides	13.12	12.42	13.39	15.04	25.54	28.43	2.89
		velocity	6.98	8.39	8.22	7.89	7.61	7.33	6.98	6.35	7.41		7.62	8.05	7.47	6.65	7.83	7.03	

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) — *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.31	13.35	19.67	26.31	33.12	40.12	47.39	55.33	55.33	2 / 3							
reaction time	0.178	interval		6.04	6.32	6.64	6.81	7.00	7.27	7.94		# of strides	13.35	12.96	13.81	15.21	26.31	29.02	2.71
		velocity	6.84	8.28	7.91	7.53	7.34	7.14	6.88	6.30	7.23		7.49	7.72	7.24	6.57	7.60	6.89	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) — *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.55	13.91	20.55	27.37	34.35	41.45	48.64	56.08	56.08	2 / 7							
reaction time		interval		6.36	6.64	6.82	6.98	7.10	7.19	7.44		# of strides	13.91	13.46	14.08	14.63	27.37	28.71	1.34
		velocity	6.62	7.86	7.53	7.33	7.16	7.04	6.95	6.72	7.13		7.19	7.43	7.10	6.84	7.31	6.97	

Ota, Yuki (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)										*(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*							
date 17-Jun-16 time		13.61		26.87		40.65		56.26	56.26	8 / 4							
reaction time interval				13.26		13.78		15.61		# of strides	13.61	13.26	13.78	15.61	26.87	29.39	2.52
velocity		7.35		7.54		7.26		6.41	7.11		7.35	7.54	7.26	6.41	7.44	6.81	

Otsuki, Naoko (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)										*(2017) - tfdata-store.com/2017/10/05/post-1097/*							
date 24-Sep-17 time		13.37		26.46		40.63		56.59	56.59	8 / 5							
reaction time 0.318 interval				13.09		14.17		15.96		# of strides	13.37	13.09	14.17	15.96	26.46	30.13	3.67
velocity		7.48		7.64		7.06		6.27	7.07	206.0	7.48	7.64	7.06	6.27	7.56	6.64	

Packer, Ann (GBR) (1942)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)										*Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*							
date 17-Oct-64 time				24.6				52.2	52.2	6 / 2							
reaction time interval								27.60	*(52.20)*	# of strides					24.60	27.60	3.00
velocity				8.13				7.25	7.66						8.13	7.25	

Palframan, Justine (RSA) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date 24-Aug-15 time	6.69	12.32	18.30	24.43	30.79	37.34	44.47	52.45	52.45	8 / 6							
reaction time 0.168 interval		5.63	5.98	6.13	6.36	6.55	7.13	7.98		# of strides	12.32	12.11	12.91	15.11	24.43	28.02	3.59
velocity	7.47	8.88	8.36	8.16	7.86	7.63	7.01	6.27	7.63		8.12	8.26	7.75	6.62	8.19	7.14	

Pan Gaoqin (CHN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Chinese National Games (Tianjin, CHN)										*Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*							
date 03-Sep-17 time		13.56		26.60		39.92		54.35	54.35	/ 7							
reaction time interval				13.04		13.32		14.43		# of strides	13.56	13.04	13.32	14.43	26.60	27.75	1.15
velocity		7.37		7.67		7.51		6.93	7.36	206.0	7.37	7.67	7.51	6.93	7.52	7.21	

Parrish, Donniece (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR)										*USATF Women's Sprint Development with HPC (2008)*							
date 29-Jun-08 time		12.65	18.73	25.00	31.67	38.68	45.95	54.14	54.14	6 / 6							
reaction time interval			6.08	6.27	6.67	7.01	7.27	8.19		# of strides	12.65	12.35	13.68	15.46	25.00	29.14	4.14
velocity		7.91	8.22	7.97	7.50	7.13	6.88	6.11	7.39		7.91	8.10	7.31	6.47	8.00	6.86	

Patterson, Angel (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)										*USATF Women's Sprint Development (1996)*							
date 29-Jun-96 time		12.94		25.11		38.58	45.96	53.95	53.95	6 / 5							
reaction time interval				12.17		13.47	7.38	7.99		# of strides	12.94	12.17	13.47	15.37	25.11	28.84	3.73
velocity		7.73		8.22		7.42	6.78	6.26	7.41		7.73	8.22	7.42	6.51	7.96	6.93	

Paulino, Marileidy (DOM) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Prefontaine Classic (Eugene, OR)										*Omega Timing (2023) - diamond league race analysis*							
date 17-Sep-23 time	6.83	12.45	18.06	23.91	29.98	36.27	42.74	49.58	49.58	5 / 1							
reaction time 0.182 interval		5.62	5.61	5.85	6.07	6.29	6.47	6.84		# of strides	12.45	11.46	12.36	13.31	23.91	25.67	1.76
velocity	7.32	8.90	8.91	8.55	8.24	7.95	7.73	7.31	8.07	172.2	8.03	8.73	8.09	7.51	8.36	7.79	
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)										*Omega Timing (2023) - diamond league race analysis*							
date 02-Sep-23 time	6.70	12.40	18.20	24.20	30.20	36.40	42.70	49.36	49.36	5 / 1							
reaction time 0.160 interval		5.70	5.80	6.00	6.00	6.20	6.30	6.66		# of strides	12.40	11.80	12.20	12.96	24.20	25.16	0.96
velocity	7.46	8.77	8.62	8.33	8.33	8.06	7.94	7.51	8.10	171.2	8.06	8.47	8.20	7.72	8.26	7.95	

FINAL - 2023 World Athletics Championships (Budapest, HUN) — *Seiko Timing (2023) - world championship race analysis*

date	23-Aug-23	time		12.28		23.36		35.34		48.76	48.76	7 / 1						
reaction time	0.200	interval				11.08		11.98		13.42	NR PB	# of strides	12.28	11.08	11.98	13.42	23.36	25.40	2.04
		velocity		8.14		9.03		8.35		7.45	8.20	172.0	8.14	9.03	8.35	7.45	8.56	7.87	

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.29		23.68		36.08		49.54	49.54	7 / 1						
reaction time	0.187	interval				11.39		12.40		13.46		# of strides	12.29	11.39	12.40	13.46	23.68	25.86	2.18
		velocity		8.14		8.78		8.06		7.43	8.07	171.0	8.14	8.78	8.06	7.43	8.45	7.73	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.37		23.82		36.16		49.90	49.90	5 / 1						
reaction time	0.207	interval				11.45		12.34		13.74		# of strides	12.37	11.45	12.34	13.74	23.82	26.08	2.26
		velocity		8.08		8.73		8.10		7.28	8.02	172.0	8.08	8.73	8.10	7.28	8.40	7.67	

FINAL - 2023 Meeting de Paris (Paris, FRA) *Omega Timing (2023) - diamond league race analysis*

date	09-Jun-23	time	6.62	12.13	17.69	23.43	29.30	35.40	41.85	49.12	49.12	5 / 1						
reaction time	0.189	interval		5.51	5.56	5.74	5.87	6.10	6.45	7.27		# of strides	12.13	11.30	11.97	13.72	23.43	25.69	2.26
		velocity	7.55	9.07	8.99	8.71	8.52	8.20	7.75	6.88	8.14	171.0	8.24	8.85	8.35	7.29	8.54	7.79	

FINAL - 2023 Doha Diamond League (Doha, QAT) *Omega Timing (2023) - diamond league race analysis*

date	05-May-23	time	6.84	12.53	18.45	24.60	30.79	37.19	43.59	50.51	50.51	5 / 1						
reaction time	0.183	interval		5.69	5.92	6.15	6.19	6.40	6.40	6.92		# of strides	12.53	12.07	12.59	13.32	24.60	25.91	1.31
		velocity	7.31	8.79	8.45	8.13	8.08	7.81	7.81	7.23	7.92	174.7	7.98	8.29	7.94	7.51	8.13	7.72	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.81	12.33	17.96	23.67	29.50	35.60	42.04	48.99	48.99	6 / 1						
reaction time	0.172	interval		5.52	5.63	5.71	5.83	6.10	6.44	6.95	NR PB	# of strides	12.33	11.34	11.93	13.39	23.67	25.32	1.65
		velocity	7.34	9.06	8.88	8.76	8.58	8.20	7.76	7.19	8.16		8.11	8.82	8.38	7.47	8.45	7.90	

FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.60	11.98	17.51	23.29	29.35	35.83	42.55	49.87	49.87	6 / 1						
reaction time	0.178	interval		5.38	5.53	5.78	6.06	6.48	6.72	7.32		# of strides	11.98	11.31	12.54	14.04	23.29	26.58	3.29
		velocity	7.58	9.29	9.04	8.65	8.25	7.72	7.44	6.83	8.02	173.7	8.35	8.84	7.97	7.12	8.59	7.52	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		12.21		23.78		36.10		49.60	49.60	6 / 2						
reaction time	0.189	interval				11.57		12.32		13.50		# of strides	12.21	11.57	12.32	13.50	23.78	25.82	2.04
		velocity		8.19		8.64		8.12		7.41	8.06	175.2	8.19	8.64	8.12	7.41	8.41	7.75	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.18		23.67		36.22		49.98	49.98	3 / 1						
reaction time	0.171	interval				11.49		12.55		13.76		# of strides	12.18	11.49	12.55	13.76	23.67	26.31	2.64
		velocity		8.21		8.70		7.97		7.27	8.00	173.0	8.21	8.70	7.97	7.27	8.45	7.60	

Heat 4 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.14		23.74		36.39		50.76	50.76	4 / 1						
reaction time	0.173	interval				11.60		12.65		14.37		# of strides	12.14	11.60	12.65	14.37	23.74	27.02	3.28
		velocity		8.24		8.62		7.91		6.96	7.88	173.7	8.24	8.62	7.91	6.96	8.42	7.40	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.64	12.26	18.00	23.89	30.04	36.52	43.05	50.10	50.10	5 / 1						
reaction time	0.171	interval		5.62	5.74	5.89	6.15	6.48	6.53	7.05		# of strides	12.26	11.63	12.63	13.58	23.89	26.21	2.32
		velocity	7.53	8.90	8.71	8.49	8.13	7.72	7.66	7.09	7.98	173.0	8.16	8.60	7.92	7.36	8.37	7.63	

FINAL - 2022 Doha Diamond League (Doha, QAT) *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.6	12.3	18.4	24.6	30.9	37.3	43.9	51.20	51.20	4 / 1						
reaction time	0.209	interval		5.70	6.10	6.20	6.30	6.40	6.60	7.30		# of strides	12.30	12.30	12.70	13.90	24.60	26.60	2.00
		velocity	7.58	8.77	8.20	8.06	7.94	7.81	7.58	6.85	7.81	179.2	8.13	8.13	7.87	7.19	8.13	7.52	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.8	12.5	18.3	24.3	30.3	36.5	43.0	49.96	49.96	5 / 2						
reaction time	0.179	interval		5.70	5.80	6.00	6.00	6.20	6.50	6.96		# of strides	12.50	11.80	12.20	13.46	24.30	25.66	1.36
		velocity	7.35	8.77	8.62	8.33	8.33	8.06	7.69	7.18	8.01	176.5	8.00	8.47	8.20	7.43	8.23	7.79	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.8	12.5	18.4	24.4	30.4	36.6	43.1	50.12	50.12	5 / 1						
reaction time	0.196	interval		5.70	5.90	6.00	6.00	6.20	6.50	7.02		# of strides	12.50	11.90	12.20	13.52	24.40	25.72	1.32
		velocity	7.35	8.77	8.47	8.33	8.33	8.06	7.69	7.12	7.98	176.0	8.00	8.40	8.20	7.40	8.20	7.78	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.9	12.5	18.2	24.2	30.2	36.6	43.3	50.40	50.40	6 / 1						
reaction time	0.189	interval		5.60	5.70	6.00	6.00	6.40	6.70	7.10		# of strides	12.50	11.70	12.40	13.80	24.20	26.20	2.00
		velocity	7.25	8.93	8.77	8.33	8.33	7.81	7.46	7.04	7.94	177.0	8.00	8.55	8.06	7.25	8.26	7.63	

Pavlova, Pepa (BUL) (1961)		**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1986 Bulgarian National Championships (Sofia, BUL)																	*Bondarchuk (2007) - transfer of training in sports*	
date	13-Aug-86	time		11.30		22.68				51.40	51.40	/ 1						
reaction time		interval				11.38				28.72	PB	# of strides	11.30	11.38			22.68	28.72	6.04
		velocity		8.85		8.79				6.96	7.78		8.85	8.79			8.82	6.96	

Payne-Wiggins, Marita (CAN) (1960)		**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																	*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*	
date	25-Sep-88	time		12.15		23.92		36.81		50.29	50.29	1 / 7						
reaction time		interval				11.77		12.89		13.48		# of strides	12.15	11.77	12.89	13.48	23.92	26.37	2.45
		velocity		8.23		8.50		7.76		7.42	7.95		8.23	8.50	7.76	7.42	8.36	7.58	

FINAL - 1984 Olympic Games (Los Angeles, CA) — *Adams (1984) - 1984 olympic games - 200m & 400m*

date	06-Aug-84	time			24.6			49.91	49.91	2 / 4							
reaction time	0.251	interval						25.31	NR	# of strides					24.60	25.31	0.71
		velocity			8.13			7.90	8.01						8.13	7.90	

FINAL - 1983 IAAF World Championships (Helsinki, FIN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-83	time			23.6			50.1	50.06	6 / 5							
reaction time		interval						26.50	AR	# of strides					23.60	26.50	2.90
		velocity			8.47			7.55	7.99						8.47	7.55	

Peeters, Cathelijn (NED) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)																	*Seiko Timing (2023) - world championship race analysis*
date 08-Sep-23	time	7.04	12.91	18.99	25.36	31.87	38.56	45.44	52.72	52.72	4 / 5							
reaction time 0.222	interval		5.87	6.08	6.37	6.51	6.69	6.88	7.28		# of strides	12.91	12.45	13.20	14.16	25.36	27.36	2.00
	velocity	7.10	8.52	8.22	7.85	7.68	7.47	7.27	6.87	7.59		7.75	8.03	7.58	7.06	7.89	7.31	

Pellaud, Rachel (SUI) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Athletissima (Lausanne, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date 30-Jun-23	time	7.12	12.99	19.11	25.53	32.06	38.78	45.66	53.11	53.11	4 / 1							
reaction time 0.173	interval		5.87	6.12	6.42	6.53	6.72	6.88	7.45		# of strides	12.99	12.54	13.25	14.33	25.53	27.58	2.05
	velocity	7.02	8.52	8.17	7.79	7.66	7.44	7.27	6.71	7.53		7.70	7.97	7.55	6.98	7.83	7.25	
National FINAL - 2022 Athletissima (Lausanne, SUI)																	*Omega Timing (2022) - diamond league race analysis*
date 26-Aug-22	time	7.1	13.1	19.2	25.5	32.1	39.0	46.0	53.47	53.47	2 / 4							
reaction time 0.153	interval		6.00	6.10	6.30	6.60	6.90	7.00	7.47		# of strides	13.10	12.40	13.50	14.47	25.50	27.97	2.47
	velocity	7.04	8.33	8.20	7.94	7.58	7.25	7.14	6.69	7.48		7.63	8.06	7.41	6.91	7.84	7.15	
FINAL - 2021 Athletissima (Lausanne, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date 26-Aug-21	time	7.2	13.2	19.4	25.9	32.5	39.3	46.2	53.52	53.52	1 / 8							
reaction time 0.182	interval		6.00	6.20	6.50	6.60	6.80	6.90	7.32		# of strides	13.20	12.70	13.40	14.22	25.90	27.62	1.72
	velocity	6.94	8.33	8.06	7.69	7.58	7.35	7.25	6.83	7.47		7.58	7.87	7.46	7.03	7.72	7.24	

Pérec, Marie-José (FRA) (1968)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 Herculis (Monaco, MON)																	*Vazel (2018.07.20) - https://twitter.com/pjvazel*
date 10-Aug-96	time		12.0		23.3		35.7		49.2	49.18	/ 1							
reaction time	interval				11.30		12.40		13.48		# of strides	12.00	11.30	12.40	13.48	23.30	25.88	2.58
	velocity		8.33		8.85		8.06		7.42	8.13		8.33	8.85	8.06	7.42	8.58	7.73	
FINAL - 1996 Olympic Games (Atlanta, GA)																	*Vazel (2011) - speed reserve in the 400m*
date 29-Jul-96	time		12.05		23.28		35.10		48.25	48.25	3 / 1							
reaction time 0.209	interval				11.23		11.82		13.15	OR / NR	# of strides	12.05	11.23	11.82	13.15	23.28	24.97	1.69
	velocity		8.30		8.90		8.46		7.60	8.29	170.5	8.30	8.90	8.46	7.60	8.59	8.01	
Semi-Final 2 - 1996 Olympic Games (Atlanta, GA)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date 28-Jul-96	time				23.7				49.2	49.19	/ 1							
reaction time	interval								25.50		# of strides					23.70	25.50	1.80
	velocity				8.44				7.84	8.13						8.44	7.84	
FINAL - 1995 IAAF World Championships (Gothenburg, SWE)																	*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*
date 08-Aug-95	time				23.5		35.7		49.28	49.28	6 / 1							
reaction time	interval						12.20		13.58		# of strides			12.20	13.58	23.50	25.78	2.28
	velocity				8.51		8.20		7.36	8.12	174.7			8.20	7.36	8.51	7.76	
FINAL - 1992 Olympic Games (Barcelona, ESP)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date 05-Aug-92	time				23.8		35.5		48.9	48.83	5 / 1							
reaction time	interval						11.70		13.40		# of strides			11.70	13.40	23.80	25.10	1.30
	velocity				8.40		8.55		7.46	8.19				8.55	7.46	8.40	7.97	
FINAL - 1991 IAAF World Championships (Tokyo, JPN)																	*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*
date 27-Aug-91	time				22.82		35.12		49.13	49.13	4 / 1							
reaction time	interval						12.30		14.01	NR	# of strides			12.30	14.01	22.82	26.31	3.49
	velocity				8.76		8.13		7.14	8.14	170.7			8.13	7.14	8.76	7.60	
FINAL - 1991 European Cup (Frankfurt, GER)																	*Federle (2003) - http://www.fgs.uni-halle.de*
date 29-Jun-91	time		12.43		23.92		35.93		49.32	49.32	6 / 1							
reaction time 0.336	interval				11.49		12.01		13.39	PB	# of strides	12.43	11.49	12.01	13.39	23.92	25.40	1.48
	velocity		8.05		8.70		8.33		7.47	8.11		8.05	8.70	8.33	7.47	8.36	7.87	
FINAL - 1989 IAAF World Cup (Barcelona, ESP)																	*Pascua (1990) - atletismo (I) carreras y marcha*
date 10-Sep-89	time		12.52		24.00		36.52		50.53	50.53	/ ~~4~~							
reaction time	interval				11.48		12.52		14.01	DQ	# of strides	12.52	11.48	12.52	14.01	24.00	26.53	2.53
	velocity		7.99		8.71		7.99		7.14	7.92		7.99	8.71	7.99	7.14	8.33	7.54	
FINAL - 1988 French National Championships (Tours, FRA)																	*Vazel (2011) - speed reserve in the 400m*
date 14-Aug-88	time		12.8		24.6		37.4		51.3	51.35	/ 1							
reaction time	interval				11.80		12.80		13.90	PB	# of strides	12.80	11.80	12.80	13.90	24.60	26.70	2.10
	velocity		7.81		8.47		7.81		7.19	7.79	170.5	7.81	8.47	7.81	7.19	8.13	7.49	

Perkins, Angel (USA) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 15-Jul-04	time		12.11		23.97	30.45	37.30	44.66	52.84	52.84	7 / 7							
reaction time	interval				11.86	6.48	6.85	7.36	8.18		# of strides	12.11	11.86	13.33	15.54	23.97	28.87	4.90
	velocity		8.26		8.43	7.72	7.30	6.79	6.11	7.57		8.26	8.43	7.50	6.44	8.34	6.93	
Heat 4 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 12-Jul-04	time		12.01		23.96		37.22	44.24	52.46	52.46	4 / 3							

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time		interval			11.95		13.26	7.02	8.22		# of strides	12.01	11.95	13.26	15.24	23.96	28.50	4.54
		velocity	8.33		8.37		7.54	7.12	6.08	7.62		8.33	8.37	7.54	6.56	8.35	7.02	

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time			24.42		37.67	44.70	52.06	52.06	6 / 2						
reaction time		interval					13.25	7.03	7.36	**PB**	# of strides			13.25	14.39	24.42	27.64	3.22
		velocity			8.19		7.55	7.11	6.79	7.68				7.55	6.95	8.19	7.24	

Perpoli, Danielle (ITA) (1968)

	50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2001 European Cup (Bremen, GER)																	*Graubner (2007) - http://www.fgs.uni-halle.de*
date 23-Jun-01	time		12.73		25.12		38.34		52.13	52.13	/ 7						
reaction time	interval				12.39		13.22		13.79	**PB**	# of strides	12.73	12.39	13.22	13.79	25.12	27.01	1.89
	velocity		7.86		8.07		7.56		7.25	7.67		7.86	8.07	7.56	7.25	7.96	7.40	

Pesnopevtseva, Olga (URS) (1968)

	50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1986 IAAF World Junior Championships (Athens, GRE)																	*Moravec (1986) - IAAF biomechanical research - Athens 1986 - sprints*
date 18-Jul-86	time		13.11		25.38		37.74		52.17	52.17	/ 2						
reaction time	interval				12.27		12.36		14.43		# of strides	13.11	12.27	12.36	14.43	25.38	26.79	1.41
	velocity		7.63		8.15		8.09		6.93	7.67		7.63	8.15	8.09	6.93	7.88	7.47	

Petržilková, Tereza (CZE) (1993)

	50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date 21-Aug-23	time		12.83		24.86		37.87		51.94	51.94	9 / 8						
reaction time 0.192	interval				12.03		13.01		14.07		# of strides	12.83	12.03	13.01	14.07	24.86	27.08	2.22
	velocity		7.79		8.31		7.69		7.11	7.70		7.79	8.31	7.69	7.11	8.05	7.39	

Heat 5 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.75						51.30	6 / 3						
reaction time	0.152	interval									# of strides	12.75					
		velocity		7.84						7.80	195.0	7.84					

Pinigina, Mariya (URS) (1958)

	50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1987 IAAF World Championships (Rome, ITA)																	*Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*
date 31-Aug-87	time		12.40		23.85		36.53		50.53	50.53	5 / 4						
reaction time	interval				11.45		12.68		14.00		# of strides	12.29	11.86	12.91	14.01	23.85	26.68	2.83
	velocity		8.06		8.73		7.89		7.14	7.92		8.14	8.43	7.75	7.14	8.39	7.50	

Kulchunova-Pinigina, Mariya (URS) (1958)

FINAL - 1983 IAAF World Championships Helsinki, FIN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-83	time			23.2				49.2	49.19	4 / 3						
reaction time		interval							26.00		# of strides					23.20	26.00	2.80
		velocity			8.62				7.69	8.13						8.62	7.69	

Pipi, Ama (GBR) (1995)

	50m	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)																	*Omega Timing (2023) - diamond league race analysis*
date 02-Sep-23	time	6.87	12.57	18.50	24.73	31.10	37.49	44.14	51.51	51.51	9 / 8						
reaction time 0.198	interval		5.70	5.93	6.23	6.37	6.39	6.65	7.37		# of strides	12.57	12.16	12.76	14.02	24.73	26.78	2.05
	velocity	7.28	8.77	8.43	8.03	7.85	7.82	7.52	6.78	7.77		7.96	8.22	7.84	7.13	8.09	7.47	

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.42		23.89		36.80		51.17	51.17	5 / 4						
reaction time	0.173	interval				11.47		12.91		14.37		# of strides	12.42	11.47	12.91	14.37	23.89	27.28	3.39
		velocity		8.05		8.72		7.75		6.96	7.82	194.2	8.05	8.72	7.75	6.96	8.37	7.33	

Heat 2 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.37		24.11		37.02		50.81	50.81	9 / 2						
reaction time	0.168	interval				11.74		12.91		13.79		# of strides	12.37	11.74	12.91	13.79	24.11	26.70	2.59
		velocity		8.08		8.52		7.75		7.25	7.87	192.0	8.08	8.52	7.75	7.25	8.30	7.49	

FINAL - 2023 Meeting de Paris (Paris, FRA) *Omega Timing (2023) - diamond league race analysis*

date	09-Jun-23	time	6.65	12.13	17.92	24.00	30.50	37.22	44.13	51.76	51.76	1 / 8						
reaction time	0.153	interval		5.48	5.79	6.08	6.50	6.72	6.91	7.63		# of strides	12.13	11.87	13.22	14.54	24.00	27.76	3.76
		velocity	7.52	9.12	8.64	8.22	7.69	7.44	7.24	6.55	7.73		8.24	8.42	7.56	6.88	8.33	7.20	

FINAL - 2022 Commonwealth Games (Birmingham, GBR) *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.8	12.6	18.7	24.9	31.2	37.7	44.4	51.36	51.36	8 / 4						
reaction time	0.204	interval		5.80	6.10	6.20	6.30	6.50	6.70	6.96		# of strides	12.60	12.30	12.80	13.66	24.90	26.46	1.56
		velocity	7.35	8.62	8.20	8.06	7.94	7.69	7.46	7.18	7.79	196.0	7.94	8.13	7.81	7.32	8.03	7.56	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.48		24.64		37.70		52.28	52.28	8 / 8						
reaction time	0.174	interval				12.16		13.06		14.58		# of strides	12.48	12.16	13.06	14.58	24.64	27.64	3.00
		velocity		8.01		8.22		7.66		6.86	7.65		8.01	8.22	7.66	6.86	8.12	7.24	

Heat 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.43		24.23		37.12		51.32	51.32	7 / 3						
reaction time	0.171	interval				11.80		12.89		14.20		# of strides	12.43	11.80	12.89	14.20	24.23	27.09	2.86
		velocity		8.05		8.47		7.76		7.04	7.79	196.7	8.05	8.47	7.76	7.04	8.25	7.38	

FINAL - 2022 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2022) - diamond league race analysis*

date	30-Jun-22	time	6.90	12.50	18.26	24.28	30.69	37.40	44.28	51.80	51.80	3 / 3						
reaction time	0.191	interval		5.60	5.76	6.02	6.41	6.71	6.88	7.52		# of strides	12.50	11.78	13.12	14.40	24.28	27.52	3.24
		velocity	7.25	8.93	8.68	8.31	7.80	7.45	7.27	6.65	7.72		8.00	8.49	7.62	6.94	8.24	7.27	

FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR) *Omega Timing (2022) - diamond league race analysis*

date	21-May-22	time	6.8	12.3	18.3	24.4	30.9	37.6	44.7	52.57	52.57	5 / 2						
reaction time	0.177	interval		5.50	6.00	6.10	6.50	6.70	7.10	7.87		# of strides	12.30	12.10	13.20	14.97	24.40	28.17	3.77

		velocity	7.35	9.09	8.33	8.20	7.69	7.46	7.04	6.35	7.61		8.13	8.26	7.58	6.68	8.20	7.10	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	7.0	12.8	18.8	25.0	31.5	38.1	45.0	52.50	52.50	8 / 7							
reaction time	0.134	interval		5.80	6.00	6.20	6.50	6.60	6.90	7.50		# of strides	12.80	12.20	13.10	14.40	25.00	27.50	2.50
		velocity	7.14	8.62	8.33	8.06	7.69	7.58	7.25	6.67	7.62		7.81	8.20	7.63	6.94	8.00	7.27	

Pirvu, Monica (ROU) (1973)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 1997 European Cup (Munich, GER) *Jung (2003) - http://www.fgs.uni-halle.de*

date	21-Jun-97	time		13.18		25.93		39.60		54.87	54.87	/ 8							
reaction time		interval				12.75		13.67		15.27		# of strides	13.18	12.75	13.67	15.27	25.93	28.94	3.01
		velocity		7.59		7.84		7.32		6.55	7.29		7.59	7.84	7.32	6.55	7.71	6.91	

Pompey, Aliann (GUY) (1978)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.25		24.05		36.70		50.71	50.71	8 / 4							
reaction time	0.178	interval				11.80		12.65		14.01	NR	# of strides	12.25	11.80	12.65	14.01	24.05	26.66	2.61
		velocity		8.16		8.47		7.91		7.14	7.89		8.16	8.47	7.91	7.14	8.32	7.50	

Heat 5 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.52		24.88		37.67		51.38	51.38	6 / 3							
reaction time	0.184	interval				12.36		12.79		13.71		# of strides	12.52	12.36	12.79	13.71	24.88	26.50	1.62
		velocity		7.99		8.09		7.82		7.29	7.79		7.99	8.09	7.82	7.29	8.04	7.55	

Ponette, Helena (BEL) (2000)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2023 Memorial van Damme (Brussels, BEL) *Seiko Timing (2023) - world championship race analysis*

date	08-Sep-23	time	7.02	12.55	18.33	24.42	30.74	37.29	44.25	51.87	51.87	2 / 7							
reaction time	0.148	interval		5.53	5.78	6.09	6.32	6.55	6.96	7.62		# of strides	12.55	11.87	12.87	14.58	24.42	27.45	3.03
		velocity	7.12	9.04	8.65	8.21	7.91	7.63	7.18	6.56	7.71		7.97	8.42	7.77	6.86	8.19	7.29	

Heat 5 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.68							51.52	9 / 6							
reaction time	0.212	interval									PB	# of strides	12.68						
		velocity		7.89							7.76		7.89						

National FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.97	12.60	18.35	24.38	30.72	37.46	44.40	51.82	51.82	6 / 2							
reaction time	0.146	interval		5.63	5.75	6.03	6.34	6.74	6.94	7.42	PB	# of strides	12.60	11.78	13.08	14.36	24.38	27.44	3.06
		velocity	7.17	8.88	8.70	8.29	7.89	7.42	7.20	6.74	7.72		7.94	8.49	7.65	6.96	8.20	7.29	

Ponteen, Tiandra (SKN) (1984)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.16		23.83		37.28		53.22	53.22	1 / 7							
reaction time	0.162	interval				11.67		13.45		15.94		# of strides	12.16	11.67	13.45	15.94	23.83	29.39	5.56
		velocity		8.22		8.57		7.43		6.27	7.52		8.22	8.57	7.43	6.27	8.39	6.81	

Heat 1 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.90		25.30		38.29		52.54	52.54	7 / 4							
reaction time	0.177	interval				12.40		12.99		14.25		# of strides	12.90	12.40	12.99	14.25	25.30	27.24	1.94
		velocity		7.75		8.06		7.70		7.02	7.61		7.75	8.06	7.70	7.02	7.91	7.34	

Poovamma, Machettira Raju (IND) (19	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2019 Asian Athletics Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	21-Apr-19	time	6.94	12.69	18.79	25.20	31.77	38.56	45.60	53.21	53.21	5 / 3							
reaction time	0.202	interval		5.75	6.10	6.41	6.57	6.79	7.04	7.61		# of strides	12.69	12.51	13.36	14.65	25.20	28.01	2.81
		velocity	7.20	8.70	8.20	7.80	7.61	7.36	7.10	6.57	7.52	187.7	7.88	7.99	7.49	6.83	7.94	7.14	

Porter, Shanelle (USA) (1972)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.55		24.15		36.78	43.68	51.35	51.35	5 / 5							
reaction time		interval				11.60		12.63	6.90	7.67		# of strides	12.55	11.60	12.63	14.57	24.15	27.20	3.05
		velocity		7.97		8.62		7.92	7.25	6.52	7.79		7.97	8.62	7.92	6.86	8.28	7.35	

Pospelova, Svetlana (RUS) (1979	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2006 European Championships (Göteborg, SWE) *Behm (2006) - Championnats d'Europe Göteborg 2006… Le 400m avec ou sans obstacles*

date	10-Aug-06	time				24.9		37.1		50.90	50.90	/ 7							
reaction time		interval						12.20		13.80		# of strides		24.90	12.20	13.80	24.90	26.00	1.10
		velocity				8.03		16.39		7.25	7.86			4.02	8.20	7.25	8.03	7.69	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-05	time						35.8		50.1	50.11	5 / 4							
reaction time	0.130	interval								14.31		# of strides				14.31			
		velocity						8.38		6.99	7.98	184.7				6.99			

FINAL - 2003 IAAF World Championships (Paris, FRA) *Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*

date	27-Aug-03	time				23.7		36.7		51.30	51.30	2 / 8							
reaction time	0.145	interval						13.00		14.60		# of strides			13.00	14.60	23.70	27.60	3.90
		velocity				8.44		7.69		6.85	7.80				7.69	6.85	8.44	7.25	

Probert-Scutt, Michelle (GBR) (1960)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

Semi-Final 2 - 1984 Olympic Games (Los Angeles, CA) (*TV Analysis*) *Adams (1984) - 1984 olympic games - 200m & 400m*

date	05-Aug-84	time				24.41				52.07	52.07	4 / 6							
reaction time		interval								27.66		# of strides					24.41	27.66	3.25
		velocity				8.19				7.23	7.68						8.19	7.23	

Prokopek, Grazyna (POL) (1977)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	08-Aug-02	time	12.61	24.54	37.33	51.53	51.53	/ 4								
reaction time	0.171	interval		11.93	12.79	14.20		# of strides	12.61	11.93	12.79	14.20	24.54	26.99	2.45	
		velocity	7.93	8.38	7.82	7.04	7.76		7.93	8.38	7.82	7.04	8.15	7.41		

Heat 2 - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	07-Aug-02	time	12.76	24.66	37.41	52.01	52.01	/ 2								
reaction time	0.181	interval		11.90	12.75	14.60		# of strides	12.76	11.90	12.75	14.60	24.66	27.35	2.69	
		velocity	7.84	8.40	7.84	6.85	7.69		7.84	8.40	7.84	6.85	8.11	7.31		

Putalová, Iveta (SVK) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2015 IAAF World Championships (Beijing, CHN)											*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*						
date	24-Aug-15	time	6.72	12.26	18.03	24.20	30.68	37.44	44.72	52.52	52.52	5 / 7						
reaction time	0.219	interval		5.54	5.77	6.17	6.48	6.76	7.28	7.80		# of strides	12.26	11.94	13.24	15.08	24.20	28.32	4.12
		velocity	7.44	9.03	8.67	8.10	7.72	7.40	6.87	6.41	7.62		8.16	8.38	7.55	6.63	8.26	7.06	

Pryce, Nickisha (JAM) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)											*Seiko Timing (2023) - world championship race analysis*						
date	21-Aug-23	time		12.10		23.39		36.25		51.24	51.24	8 / 5						
reaction time	0.186	interval				11.29		12.86		14.99		# of strides	12.10	11.29	12.86	14.99	23.39	27.85	4.46
		velocity		8.26		8.86		7.78		6.67	7.81	191.0	8.26	8.86	7.78	6.67	8.55	7.18	

Heat 4 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.30		23.77		36.31		50.38	50.38	9 / 1						
reaction time	0.210	interval				11.47		12.54		14.07		# of strides	12.30	11.47	12.54	14.07	23.77	26.61	2.84
		velocity		8.13		8.72		7.97		7.11	7.94	187.5	8.13	8.72	7.97	7.11	8.41	7.52	

Pyhyda, Nataliya (UKR) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2015 IAAF World Championships (Beijing, CHN)											*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*						
date	24-Aug-15	time	6.60	12.29	18.07	24.15	30.46	37.06	43.88	51.07	51.07	3 / 3						
reaction time	0.184	interval		5.69	5.78	6.08	6.31	6.60	6.82	7.19		# of strides	12.29	11.86	12.91	14.01	24.15	26.92	2.77
		velocity	7.58	8.79	8.65	8.22	7.92	7.58	7.33	6.95	7.83		8.14	8.43	7.75	7.14	8.28	7.43	

Quirot, Ana Fidelia (CUB) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1989 IAAF World Cup (Barcelona, ESP)																*Pascua (1990) - atletismo (I) carreras y marcha*	
date	10-Sep-89	time		12.88		23.40		36.28		50.60	50.60	/ ~~2~~ 1						
reaction time		interval				10.52		12.88		14.32		# of strides	12.88	10.52	12.88	14.32	23.40	27.20	3.80
		velocity		7.76		9.51		7.76		6.98	7.91		7.76	9.51	7.76	6.98	8.55	7.35	

FINAL - 1988 Nikala (Nice, FRA) *Veney - split times from PJ*

date	10-Jul-88	time		12.10		23.59		36.13		49.81	49.81	/ 2						
reaction time		interval				11.49		12.54		13.68		# of strides	12.10	11.49	12.54	13.68	23.59	26.22	2.63
		velocity		8.26		8.70		7.97		7.31	8.03		8.26	8.70	7.97	7.31	8.48	7.63	

FINAL - 1985 IAAF World Cup (Canberra, AUS) *Vazel (2011) - speed reserve in the 400m*

date	06-Oct-85				24.9			50.9	50.86	6 / 4						
reaction time		interval						26.00	**PB**	# of strides					24.90	26.00	1.10
		velocity			8.03			7.69	7.86						8.03	7.69	

Radecka-Pakaszewska, Zuzanna (POL

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 European Cup (Munich, GER)																*Graubner (2007) - http://www.fgs.uni-halle.de*	
date	23-Jun-07	time		12.52		24.61		37.67		52.59	52.59	/ 5						
reaction time	0.218	interval				12.09		13.06		14.92		# of strides	12.52	12.09	13.06	14.92	24.61	27.98	3.37
		velocity		7.99		8.27		7.66		6.70	7.61		7.99	8.27	7.66	6.70	8.13	7.15	

Rapai, Fanni (HUN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)											*Seiko Timing (2023) - world championship race analysis*						
date	20-Aug-23	time		12.92		25.02		38.38		52.73	52.73	2 / 7						
reaction time	0.177	interval				12.10		13.36		14.35	**PB**	# of strides	12.92	12.10	13.36	14.35	25.02	27.71	2.69
		velocity		7.74		8.26		7.49		6.97	7.59		7.74	8.26	7.49	6.97	7.99	7.22	

Rasnayake, Chandrika (SRI) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2009 IAAF World Championships (Berlin, GER)											*Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*						
date	15-Aug-09	time		13.21		25.70		38.90		53.68	53.68	4 / ~~4~~ 3						
reaction time	0.162	interval				12.49		13.20		14.78		# of strides	13.21	12.49	13.20	14.78	25.70	27.98	2.28
		velocity		7.57		8.01		7.58		6.77	7.45		7.57	8.01	7.58	6.77	7.78	7.15	

Rattray-Williams, Cathy (JAM) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)											*Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*						
date	25-Sep-88	time		12.59		24.41		36.97		50.82	50.82	7 / 6						
reaction time		interval				11.82		12.56		13.85	**PB**	# of strides	12.59	11.82	12.56	13.85	24.41	26.41	2.00
		velocity		7.94		8.46		7.96		7.22	7.87		7.94	8.46	7.96	7.22	8.19	7.57	

Răzor, Bianca (ROU) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)											*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*						
date	07-Aug-17	time		12.58		24.58		37.63	44.55	51.91	52.09	2 / 6						
reaction time	0.180	interval				12.00		13.05	6.92	7.36		# of strides	12.58	12.00	13.05	14.28	24.58	27.33	2.75
		velocity		7.95		8.33		7.66	7.23	6.79	7.68	202.4	7.95	8.33	7.66	7.00	8.14	7.32	

Heat 5 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.94	12.63	18.47	24.46	30.55	36.81	43.37	50.37	50.37	9 / 1						
reaction time	0.194	interval		5.69	5.84	5.99	6.09	6.26	6.56	7.00	**PB**	# of strides	12.63	11.83	12.35	13.56	24.46	25.91	1.45
		velocity	7.20	8.79	8.56	8.35	8.21	7.99	7.62	7.14	7.94		7.92	8.45	8.10	7.37	8.18	7.72	

Recio, Belén (ESP) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 European Cup (Munich, GER)																*Graubner (2007) - http://www.fgs.uni-halle.de*	

date	23-Jun-07	time	13.30		25.76		38.91		54.16	54.16	/ 8						
reaction time	0.228	interval			12.46		13.15		15.25		# of strides	13.30	12.46	13.15	15.25	25.76	28.40	2.64
		velocity	7.52		8.03		7.60		6.56	7.39		7.52	8.03	7.60	6.56	7.76	7.04	

Reed, Cassandra (USA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 12-Jul-04	time	12.42		24.59		37.92	44.92	53.14	53.14	7 / 5							
reaction time	interval			12.17		13.33	7.00	8.22		# of strides	12.42	12.17	13.33	15.22	24.59	28.55	3.96
	velocity	8.05		8.22		7.50	7.14	6.08	7.53		8.05	8.22	7.50	6.57	8.13	7.01	

Reid, Suziann (USA) (1977)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 USATF National Championship (Carson, CA)																*USATF Women's Sprint Development (2005)*	
date 25-Jun-05	time	12.31	18.06	24.36	30.63	37.07	42.54	51.45	51.45	1 / 6							
reaction time	interval		5.75	6.30	6.27	6.44	5.47	8.91		# of strides	12.31	12.05	12.71	14.38	24.36	27.09	2.73
	velocity	8.12	8.70	7.94	7.97	7.76	9.14	5.61	7.77		8.12	8.30	7.87	6.95	8.21	7.38	
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 17-Jul-04	time	12.25		24.60	30.78	38.39	44.18	51.61	51.61	5 / 7							
reaction time	interval			12.35	6.18	7.61	5.79	7.43		# of strides	12.25	12.35	13.79	13.22	24.60	27.01	2.41
	velocity	8.16		8.10	8.09	6.57	8.64	6.73	7.75		8.16	8.10	7.25	7.56	8.13	7.40	
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 15-Jul-04	time	12.25		24.64	30.65	37.17	43.78	51.14	51.14	5 / 2							
reaction time	interval			12.39	6.01	6.52	6.61	7.36		# of strides	12.25	12.39	12.53	13.97	24.64	26.50	1.86
	velocity	8.16		8.07	8.32	7.67	7.56	6.79	7.82	193.0	8.16	8.07	7.98	7.16	8.12	7.55	
Heat 2 - 2004 USA Olympic Trials (Sacramento, CA)																*USATF Women's Sprint Development (2004)*	
date 12-Jul-04	time	12.18		24.12		37.09	43.61	51.03	51.03	8 / 2							
reaction time	interval			11.94		12.97	6.52	7.42		# of strides	12.18	11.94	12.97	13.94	24.12	26.91	2.79
	velocity	8.21		8.38		7.71	7.67	6.74	7.84	197.0	8.21	8.38	7.71	7.17	8.29	7.43	
FINAL - 1996 USATF National Junior Championships (Deleware, OH)																*USATF Women's Sprint Development (1996)*	
date 29-Jun-96	time	12.16		24.05		37.45	44.77	52.46	52.46	5 / 1							
reaction time	interval			11.89		13.40	7.32	7.69		# of strides	12.16	11.89	13.40	15.01	24.05	28.41	4.36
	velocity	8.22		8.41		7.46	6.83	6.50	7.62		8.22	8.41	7.46	6.66	8.32	7.04	
Semi-Final 1 - 1996 USA Olympic Trials (Deleware, OH)																*USATF Women's Sprint Development (1996)*	
date 17-Jun-96	time	12.56		24.76		38.55	46.18	54.39	54.39	8 / 8							
reaction time	interval			12.20		13.79	7.63	8.21		# of strides	12.56	12.20	13.79	15.84	24.76	29.63	4.87
	velocity	7.96		8.20		7.25	6.55	6.09	7.35		7.96	8.20	7.25	6.31	8.08	6.75	

Rendina, Charlene (AUS) (1947)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1972 Olympic Games (Munich, FRG)																*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*	
date 07-Sep-72	time			25.0				52.0	51.99	8 / 6							
reaction time	interval							27.0		# of strides					25.00	27.00	2.00
	velocity			8.00				7.41	7.69						8.00	7.41	

Renzhina, Yekaterina (RUS) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2015 IAAF World Championships (Beijing, CHN)																*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*	
date 24-Aug-15	time	6.84	12.55	18.44	24.67	31.06	37.49	44.25	51.55	51.55	7 / 3						
reaction time 0.193	interval		5.71	5.89	6.23	6.39	6.43	6.76	7.30		# of strides	12.55	12.12	12.82	14.06	24.67	26.88	2.21
	velocity	7.31	8.76	8.49	8.03	7.82	7.78	7.40	6.85	7.76		7.97	8.25	7.80	7.11	8.11	7.44	

Restrepo, Ximena (COL) (1969)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1993 IAAF World Championships (Stuttgart, GER)																*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*	
date 17-Aug-93	time			23.71				50.91	50.91	2 / 5							
reaction time	interval							27.20		# of strides					23.71	27.20	3.49
	velocity			8.44				7.35	7.86						8.44	7.35	
FINAL - 1992 Olympic Games (Barcelona, ESP)																*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*	
date 05-Aug-92	time			24.0		35.7		49.7	49.64	5 / 3							
reaction time	interval					11.70		14.00	NR	# of strides			11.70	14.00	24.00	25.70	1.70
	velocity			8.33		8.55		7.14	8.06				8.55	7.14	8.33	7.78	
FINAL - 1991 IAAF World Championships (Tokyo, JPN)																*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*	
date 27-Aug-91	time			24.08				50.79	50.79	2 / 6							
reaction time	interval							26.71		# of strides					24.08	26.71	2.63
	velocity			8.31				7.49	7.88						8.31	7.49	

Richard, Janet (MLT) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																*Seiko Timing (2023) - world championship race analysis*	
date 20-Aug-23	time		12.97		25.51		39.24		54.50	54.50	5 / 8						
reaction time 0.172	interval				12.54		13.73		15.26		# of strides	12.97	12.54	13.73	15.26	25.51	28.99	3.48
	velocity		7.71		7.97		7.28		6.55	7.34		7.71	7.97	7.28	6.55	7.84	6.90	

Richards, Sandie (JAM) (1968)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1997 IAAF World Championships (Athens, GRE)																*Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997*	
date 04-Aug-97	time	6.50	12.06	17.82	23.70	29.78	36.02	42.62	49.62	49.79	5 / 2						
reaction time 0.167	interval		5.56	5.76	5.88	6.08	6.24	6.60	7.00	PB	# of strides	12.06	11.64	12.32	13.60	23.70	25.92	2.22
	velocity	7.69	8.99	8.68	8.50	8.22	8.01	7.58	7.14	8.03		8.29	8.59	8.12	7.35	8.44	7.72	
FINAL - 1996 Olympic Games (Atlanta, GA)																*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*	
date 29-Jul-96	time			23.64		36.1		50.45	50.45	7 / 7							
reaction time 0.341	interval					12.46		14.35		# of strides			12.46	14.35	23.64	26.81	3.17
	velocity			8.46		8.03		6.97	7.93				8.03	6.97	8.46	7.46	

FINAL - 1993 IAAF World Championships (Stuttgart, GER) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	17-Aug-93	time			23.77			50.44	50.44	4 / 3						
reaction time		interval						26.67		# of strides					23.77	26.67	2.90
		velocity			8.41			7.50	7.93						8.41	7.50	

FINAL - 1992 Olympic Games (Barcelona, ESP) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-92	time			24.0	36.3		50.2	50.19	2 / 7						
reaction time		interval				12.30		13.90		# of strides			12.30	13.90	24.00	26.20	2.20
		velocity			8.33	8.13		7.19	7.97				8.13	7.19	8.33	7.63	

FINAL - 1986 IAAF World Junior Championships (Athens, GRE) — *Moravec (1986) - IAAF biomechanical research - Athens 1986 - sprints*

date	18-Jul-86	time		13.01	24.96	38.06		52.23	52.23	/ 3						
reaction time		interval			11.95	13.10		14.17		# of strides	13.01	11.95	13.10	14.17	24.96	27.27	2.31
		velocity		7.69	8.37	7.63		7.06	7.66		7.69	8.37	7.63	7.06	8.01	7.33	

Richards-Ross, Sanya (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2012 Olympic Games (London, GBR) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-12	time		11.9	23.7	36.0		49.6	49.55	6 / 1							
reaction time	0.189	interval			11.80	12.30		13.60		# of strides	11.90	11.80	12.30	13.60	23.70	25.90	2.20
		velocity		8.40	8.47	8.13		7.35	8.07	190.5	8.40	8.47	8.13	7.35	8.44	7.72	

Semi-Final 1 - 2012 Olympic Games (London, GBR) — Hadley (2012) - uka 2012 olympic games report: 400m, 4x 400m

date	04-Aug-12	time			23.25	35.97		50.07	50.07	4 / 1						
reaction time	0.149	interval				12.72		14.10		# of strides			12.72	14.10	23.25	26.82	3.57
		velocity			8.60	7.86		7.09	7.99	189.7			7.86	7.09	8.60	7.46	

FINAL - 2012 USA Olympic Trials (Eugene, OR) — *Hymans (2020) - history of the US olympic trials - track and field*

date	24-Jun-12	time			23.8	36.1		49.28	49.28	5 / 1						
reaction time	0.232	interval				12.30		13.18		# of strides		23.80	12.30	13.18	23.80	25.48	1.68
		velocity			8.40	8.13		7.59	8.12			4.20	8.13	7.59	8.40	7.85	

FINAL - 2011 IAAF World Championships (Daegu, KOR) — *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time			24.1	36.8		51.32	51.32	1 / 7						
reaction time	0.195	interval				12.70		14.52		# of strides					24.10	27.22	3.12
		velocity			8.30	7.87		6.89	7.79	188.0					8.30	7.35	

Richards, Sanya (USA) (1985)

FINAL - 2009 Memorial Van Damme (Brussels, BEL) — *Vazel (2011) - speed reserve in the 400m*

date	04-Sep-09	time		12.0	23.9	36.0		48.8	48.83	/ 1						
reaction time	0.201	interval			11.90	12.10		12.80		# of strides	12.00	11.90	12.10	12.80	23.90	24.90	1.00
		velocity		8.33	8.40	8.26		7.81	8.19		8.33	8.40	8.26	7.81	8.37	8.03	

FINAL - 2009 Weltklasse (Zurich, SUI) — *Vazel (2011) - speed reserve in the 400m*

date	28-Aug-09	time		12.0	24.0	36.0		48.9	48.94	/ 1						
reaction time	0.214	interval			12.00	12.00		12.90		# of strides	12.00	12.00	12.00	12.90	24.00	24.90	0.90
		velocity		8.33	8.33	8.33		7.75	8.17		8.33	8.33	8.33	7.75	8.33	8.03	

FINAL - 2009 IAAF World Championships (Berlin, GER) — Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics

date	18-Aug-09	time	6.34	11.81	17.51	23.50	29.49	35.62	41.99	49.00	49.00	3 / 1						
reaction time	0.164	interval		5.47	5.70	5.99	5.99	6.13	6.37	7.01		# of strides	11.81	11.69	12.12	13.38	23.50	25.50	2.00
		velocity	7.89	9.14	8.77	8.35	8.35	8.16	7.85	7.13	8.16	187.7	8.47	8.55	8.25	7.47	8.51	7.84	

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.08		24.15		36.41		50.21	50.21	3 / 1						
reaction time	0.192	interval				12.07		12.26		13.80		# of strides	12.08	12.07	12.26	13.80	24.15	26.06	1.91
		velocity		8.28		8.29		8.16		7.25	7.97		8.28	8.29	8.16	7.25	8.28	7.67	

Heat 5 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.46		24.89		37.50		51.06	51.06	7 / 1						
reaction time	0.176	interval				12.43		12.61		13.56		# of strides	12.46	12.43	12.61	13.56	24.89	26.17	1.28
		velocity		8.03		8.05		7.93		7.37	7.83		8.03	8.05	7.93	7.37	8.04	7.64	

FINAL - 2009 ISTAF (Berlin, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Jun-09	time		12.27		24.36		36.62		49.57	49.57	/ 1						
reaction time	0.361	interval				12.09		12.26		12.95		# of strides	12.27	12.09	12.26	12.95	24.36	25.21	0.85
		velocity		8.15		8.27		8.16		7.72	8.07		8.15	8.27	8.16	7.72	8.21	7.93	

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time		12.44		24.64		37.16		50.41	50.41	5 / 1						
reaction time	0.173	interval				12.20		12.52		13.25		# of strides	12.44	12.20	12.52	13.25	24.64	25.77	1.13
		velocity		8.04		8.20		7.99		7.55	7.93		8.04	8.20	7.99	7.55	8.12	7.76	

FINAL - 2008 Olympic Games (Beijing, CHN) — *Vazel (2011) - speed reserve in the 400m*

date	19-Aug-08	time		11.75		23.50		35.66		49.93	49.93	7 / 3						
reaction time	0.196	interval				11.75		12.16		14.27		# of strides	11.75	11.75	12.16	14.27	23.50	26.43	2.93
		velocity		8.51		8.51		8.22		7.01	8.01	189.5	8.51	8.51	8.22	7.01	8.51	7.57	

Semi-Final 2 - 2008 Olympic Games (Beijing, CHN) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	17-Aug-08	time						35.5		49.9	49.90	7 / 1						
reaction time	0.190	interval								14.40		# of strides				14.40		
		velocity						8.45		6.94	8.02					6.94		

FINAL - 2008 USA Olympic Trials (Eugene, OR) — *USATF Women's Sprint Development with HPC (2008)*

date	03-Jul-08	time		11.87	17.18	24.07	30.09	36.43	42.79	49.89	49.89	5 / 1						
reaction time		interval			5.31	6.89	6.02	6.34	6.36	7.10		# of strides	11.87	12.20	12.36	13.46	24.07	25.82	1.75
		velocity		8.42	9.42	7.26	8.31	7.89	7.86	7.04	8.02		8.42	8.20	8.09	7.43	8.31	7.75	

Quarter-Final 3 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time	12.11	18.24	24.48	30.48	36.80	43.64	51.08	51.08	5 / 1							
reaction time		interval		6.13	6.24	6.00	6.32	6.84	7.44		# of strides	12.11	12.37	12.32	14.28	24.48	26.60	2.12
		velocity	8.26	8.16	8.01	8.33	7.91	7.31	6.72	7.83		8.26	8.08	8.12	7.00	8.17	7.52	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time	11.88		23.71		36.06		49.27	49.27	5 / 1							
reaction time	0.166	interval			11.83		12.35		13.21		# of strides	11.88	11.83	12.35	13.21	23.71	25.56	1.85
		velocity	8.42		8.45		8.10		7.57	8.12		8.42	8.45	8.10	7.57	8.44	7.82	

FINAL - 2007 ISTAF (Berlin, GER) *(TV Analysis)* *Graubner (2008) - http://www.fgs.uni-halle.de*

date	16-Sep-07	time	12.03		23.89		36.24		49.27	49.27	4 / 1							
reaction time	0.251	interval			11.86		12.35		13.03		# of strides	12.03	11.86	12.35	13.03	23.89	25.38	1.49
		velocity	8.31		8.43		8.10		7.67	8.12	188.5	8.31	8.43	8.10	7.67	8.37	7.88	

FINAL - 2007 DN Galan (Stockholm, SWE) *Vazel (2011) - speed reserve in the 400m*

date	07-Aug-07	time	11.8		23.6		36.0		49.7	49.72	/ 2							
reaction time		interval			11.80		12.40		13.70		# of strides	11.80	11.80	12.40	13.70	23.60	26.10	2.50
		velocity	8.47		8.47		8.06		7.30	8.05		8.47	8.47	8.06	7.30	8.47	7.66	

FINAL - 2007 USATF National Championships (Indianapolis, IN) *Vazel (2011) - speed reserve in the 400m*

date	23-Jun-07	time	11.85		23.40		35.90		50.68	50.68	4 / 4							
reaction time		interval			11.55		12.50		14.78		# of strides	11.85	11.55	12.50	14.78	23.40	27.28	3.88
		velocity	8.44		8.66		8.00		6.77	7.89	193.5	8.44	8.66	8.00	6.77	8.55	7.33	

FINAL - 2006 IAAF World Cup (Athens, GRE) *(TV Analysis)* *Graubner (2008) - http://www.fgs.uni-halle.de*

date	16-Sep-06	time	11.93		23.82		35.83		48.70	48.70	7 / 1							
reaction time	0.175	interval			11.89		12.01		12.87	AR	# of strides	11.93	11.89	12.01	12.87	23.82	24.88	1.06
		velocity	8.38		8.41		8.33		7.77	8.21		8.38	8.41	8.33	7.77	8.40	8.04	

FINAL - 2006 USATF National Championship (Indianapolis, IN) *USATF Women's Sprint Development (2006)*

date	24-Jun-06	time	11.40	17.11	23.37	29.46	35.78	42.36	49.27	49.27	4 / 1							
reaction time		interval		5.71	6.26	6.09	6.32	6.58	6.91		# of strides	11.40	11.97	12.41	13.49	23.37	25.90	2.53
		velocity	8.77	8.76	7.99	8.21	7.91	7.60	7.24	8.12	190.0	8.77	8.35	8.06	7.41	8.56	7.72	

FINAL - 2005 Weltklasse (Zurich, SUI) *ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)*

date	19-Aug-05	time	11.9		23.7		35.6		48.92	48.92	/ 1							
reaction time	0.269	interval			11.80		11.90		13.32	PB	# of strides	11.90	11.80	11.90	13.32	23.70	25.22	1.52
		velocity	8.40		8.47		8.40		7.51	8.18		8.40	8.47	8.40	7.51	8.44	7.93	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) *Vazel (2011) - speed reserve in the 400m*

date	10-Aug-05	time	12.4		23.5		35.6		49.7	49.74	3 / 2							
reaction time	0.155	interval			11.10		12.10		14.10		# of strides	12.40	11.10	12.10	14.10	23.50	26.20	2.70
		velocity	8.06		9.01		8.26		7.09	8.04	193.7	8.06	9.01	8.26	7.09	8.51	7.63	

FINAL - 2005 USATF National Championship (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time	12.08	17.90	23.99	29.85	35.99	42.44	49.28	49.28	4 / 1							
reaction time		interval		5.82	6.09	5.86	6.14	6.45	6.84	PB	# of strides	12.08	11.91	12.00	13.29	23.99	25.29	1.30
		velocity	8.28	8.59	8.21	8.53	8.14	7.75	7.31	8.12		8.28	8.40	8.33	7.52	8.34	7.91	

FINAL - 2005 Jamaica Invitational (Kingston, JAM) *ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)*

date	07-May-05	time	12.3		24.6		36.9		49.96	49.96	/ 1							
reaction time		interval			12.30		12.30		13.06		# of strides	12.30	12.30	12.30	13.06	24.60	25.36	0.76
		velocity	8.13		8.13		8.13		7.66	8.01		8.13	8.13	8.13	7.66	8.13	7.89	

FINAL - 2004 Olympic Games (Athens, GRE) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	24-Aug-04	time	11.9		23.5		35.8		50.2	50.19	2 / 6							
reaction time	0.205	interval			11.6		12.3		14.4		# of strides	11.90	11.60	12.30	14.40	23.50	26.70	3.20
		velocity	8.40		8.62		8.13		6.94	7.97		8.40	8.62	8.13	6.94	8.51	7.49	

FINAL - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	17-Jul-04	time	12.00		23.87	30.00	36.20	42.59	49.89	49.89	3 / 2							
reaction time		interval			11.87	6.13	6.20	6.39	7.30	AJR	# of strides	12.00	11.87	12.33	13.69	23.87	26.02	2.15
		velocity	8.33		8.42	8.16	8.06	7.82	6.85	8.02		8.33	8.42	8.11	7.30	8.38	7.69	

Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time	11.99		23.86	30.65	36.67	43.21	50.34	50.34	3 / 1							
reaction time		interval			11.87	6.79	6.02	6.54	7.13		# of strides	11.99	11.87	12.81	13.67	23.86	26.48	2.62
		velocity	8.34		8.42	7.36	8.31	7.65	7.01	7.95	193.0	8.34	8.42	7.81	7.32	8.38	7.55	

Heat 2 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time	11.98		23.66		36.43	42.92	50.22	50.22	6 / 1							
reaction time		interval			11.68		12.77	6.49	7.30		# of strides	11.98	11.68	12.77	13.79	23.66	26.56	2.90
		velocity	8.35		8.56		7.83	7.70	6.85	7.96	193.7	8.35	8.56	7.83	7.25	8.45	7.53	

FINAL - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	21-Jun-03	time			23.79		36.96	43.63	51.01	51.01	4 / 1							
reaction time		interval					13.17	6.67	7.38		# of strides			13.17	14.05	23.79	27.22	3.43
		velocity			8.41		7.59	7.50	6.78	7.84				7.59	7.12	8.41	7.35	

Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time			23.96		37.17	44.01	51.74	51.74	7 / 1							
reaction time		interval					13.21	6.84	7.73		# of strides			13.21	14.57	23.96	27.78	3.82
		velocity			8.35		7.57	7.31	6.47	7.73				7.57	6.86	8.35	7.20	

Richardson-Briscoe, Jillian (CAN) (19	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1992 Olympic Games (Barcelona, ESP) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-92	time		23.9		35.8		50.0	49.93	4 / 5						
reaction time		interval				11.90		14.20		# of strides			11.90	14.20	23.90	26.10	2.20
		velocity		8.37		8.40		7.04	8.01				8.40	7.04	8.37	7.66	

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR) *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time	11.99	23.57		36.19		49.91	49.91	7 / 5						
reaction time		interval		11.58		12.62		13.72		# of strides	11.99	11.58	12.62	13.72	23.57	26.34	2.77
		velocity	8.34	8.64		7.92		7.29	8.01		8.34	8.64	7.92	7.29	8.49	7.59	

Richardson, Jillian (CAN) (1965)

FINAL - 1987 IAAF World Championships (Rome, ITA) *Moravec (1990) - time analyis of the sprints - Rome 1987 Scientific Report (2nd ed)*

date	31-Aug-87	time	12.82	24.76		37.32		51.03	51.03	8 / 6						
reaction time		interval		11.94		12.56		13.71		# of strides	12.82	11.94	12.56	13.71	24.76	26.27	1.51
		velocity	7.80	8.38		7.96		7.29	7.84		7.80	8.38	7.96	7.29	8.08	7.61	

Risberg Thoor, Josephine (SWE) (19

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Bauhaus Galan (Stockholm, SWE)																	*Omega Timing (2022) - diamond league race analysis*
date 30-Jun-22	time	7.27	13.38	19.56	25.96	32.80	39.76	47.19	55.39	55.39	1 / 7							
reaction time 0.213	interval		6.11	6.18	6.40	6.84	6.96	7.43	8.20		# of strides	13.38	12.58	13.80	15.63	25.96	29.43	3.47
	velocity	6.88	8.18	8.09	7.81	7.31	7.18	6.73	6.10	7.22		7.47	7.95	7.25	6.40	7.70	6.80	

Rivers, Theodoesha (USA) (1979)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USATF National Junior Championships (Delaware, OH)																	*USATF Women's Sprint Development (1996)*
date 29-Jun-96	time			25.18		38.44	45.59	53.39	53.39	7 / 3							
reaction time	interval					13.26	7.15	7.80	**PB**	# of strides			13.26	14.95	25.18	28.21	3.03
	velocity			7.94		7.54	6.99	6.41	7.49				7.54	6.69	7.94	7.09	

Roberson, Daye Shon (USA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 NCAA Championships (Eugene, OR)																	*USTFCCCA (2017) - NCAA DI outdoor championship history*
date 13-Jun-15	time			25.5				51.7	51.74	7 / 3							
reaction time	interval							26.20		# of strides					25.50	26.20	0.70
	velocity			7.84				7.63	7.73						7.84	7.63	

Robinson, Moushaumi (USA) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 2 - 2008 USA Olympic Trials (Atlanta, GA)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08	time		12.16	18.09	24.26	30.70	37.35	44.21	52.02	52.02	4 / 4							
reaction time	interval			5.93	6.17	6.44	6.65	6.86	7.81		# of strides	12.16	12.10	13.09	14.67	24.26	27.76	3.50
	velocity		8.22	8.43	8.10	7.76	7.52	7.29	6.40	7.69		8.22	8.26	7.64	6.82	8.24	7.20	
FINAL - 2006 USATF National Championship (Indianapolis, IN)																	*USATF Women's Sprint Development (2006)*
date 24-Jun-06	time		11.96	17.93	24.34	30.68	37.22	44.04	51.13	51.13	7 / 4							
reaction time	interval			5.97	6.41	6.34	6.54	6.82	7.09		# of strides	11.96	12.38	12.88	13.91	24.34	26.79	2.45
	velocity		8.36	8.38	7.80	7.89	7.65	7.33	7.05	7.82		8.36	8.08	7.76	7.19	8.22	7.47	
FINAL - 2005 USATF National Championship (Carson, CA)																	*USATF Women's Sprint Development (2005)*
date 25-Jun-05	time		12.42	18.39	24.58	30.69	36.80	43.33	50.38	50.38	7 / 4							
reaction time	interval			5.97	6.19	6.11	6.11	6.53	7.05	**PB**	# of strides	12.42	12.16	12.22	13.58	24.58	25.80	1.22
	velocity		8.05	8.38	8.08	8.18	8.18	7.66	7.09	7.94		8.05	8.22	8.18	7.36	8.14	7.75	
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 17-Jul-04	time		12.22		24.04	30.43	37.01	43.72	51.54	51.54	8 / 6							
reaction time	interval				11.82	6.39	6.58	6.71	7.82	**PB**	# of strides	12.22	11.82	12.97	14.53	24.04	27.50	3.46
	velocity		8.18		8.46	7.82	7.60	7.45	6.39	7.76		8.18	8.46	7.71	6.88	8.32	7.27	
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 15-Jul-04	time		12.16			30.15	37.07	43.91	51.72	51.72	2 / 3							
reaction time	interval					17.99	6.92	6.84	7.81	**PB**	# of strides	12.16			14.65			
	velocity		8.22			8.34	7.23	7.31	6.40	7.73		8.22			6.83			
Heat 1 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date 12-Jul-04	time		12.43		24.14		36.88	44.11	52.14	52.14	3 / 4							
reaction time	interval				11.71		12.74	7.23	8.03		# of strides	12.43	11.71	12.74	15.26	24.14	28.00	3.86
	velocity		8.05		8.54		7.85	6.92	6.23	7.67		8.05	8.54	7.85	6.55	8.29	7.14	
FINAL - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 21-Jun-03	time				25.01		38.04	44.66	51.93	51.93	7 / 4							
reaction time	interval						13.03	6.62	7.27		# of strides			13.03	13.89	25.01	26.92	1.91
	velocity				8.00		7.67	7.55	6.88	7.70				7.67	7.20	8.00	7.43	
Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA)																	*USATF Women's Sprint Development (2003)*
date 20-Jun-03	time				24.19		37.75	44.61	52.35	52.35	4 / 2							
reaction time	interval						13.56	6.86	7.74		# of strides			13.56	14.60	24.19	28.16	3.97
	velocity				8.27		7.37	7.29	6.46	7.64				7.37	6.85	8.27	7.10	

Rockmeier, Birgit (GER) (1973)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2002 European Championships (Munich, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date 08-Aug-02	time		12.75		25.02		38.46		52.91	52.91	/ 8							
reaction time 0.127	interval				12.27		13.44		14.45		# of strides	12.75	12.27	13.44	14.45	25.02	27.89	2.87
	velocity		7.84		8.15		7.44		6.92	7.56		7.84	8.15	7.44	6.92	7.99	7.17	
Heat 1 - 2002 European Championships (Munich, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date 07-Aug-02	time		12.72		25.00		37.95		52.28	52.28	/ 2							
reaction time 0.137	interval				12.28		12.95		14.33		# of strides	12.72	12.28	12.95	14.33	25.00	27.28	2.28
	velocity		7.86		8.14		7.72		6.98	7.65		7.86	8.14	7.72	6.98	8.00	7.33	

FINAL - 2001 ISTAF (Berlin, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	31-Aug-01	time		12.31		24.53		37.69		53.04	53.04	/ 5						
reaction time	0.158	interval				12.22		13.16		15.35		# of strides	12.31	12.22	13.16	15.35	24.53	28.51	3.98
		velocity		8.12		8.18		7.60		6.51	7.54		8.12	8.18	7.60	6.51	8.15	7.02	

Rooks, Cynethia (USA) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR)																	
date 29-Jun-08 time		12.52	18.80	25.25	31.59	38.34	45.22	52.95	52.95	3 / 5							
reaction time interval			6.28	6.45	6.34	6.75	6.88	7.73		# of strides	12.52	12.73	13.09	14.61	25.25	27.70	2.45
velocity		7.99	7.96	7.75	7.89	7.41	7.27	6.47	7.55		7.99	7.86	7.64	6.84	7.92	7.22	

USATF Women's Sprint Development with HPC (2008)

Rubie, Anneliese (AUS) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)																	
date 20-May-18 time	6.76	12.62	18.75	25.02	31.49	38.11	44.81	51.82	51.82	3 / 3							
reaction time 0.184 interval		5.86	6.13	6.27	6.47	6.62	6.70	7.01		# of strides	12.62	12.40	13.09	13.71	25.02	26.80	1.78
velocity	7.40	8.53	8.16	7.97	7.73	7.55	7.46	7.13	7.72		7.92	8.06	7.64	7.29	7.99	7.46	

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

Heat 1 - 2015 IAAF World Championships (Beijing, CHN)																	
date 24-Aug-15 time	6.68	12.37	18.28	24.47	30.77	37.35	44.25	51.69	51.69	4 / 5							
reaction time 0.184 interval		5.69	5.91	6.19	6.30	6.58	6.90	7.44	PB	# of strides	12.37	12.10	12.88	14.34	24.47	27.22	2.75
velocity	7.49	8.79	8.46	8.08	7.94	7.60	7.25	6.72	7.74		8.08	8.26	7.76	6.97	8.17	7.35	

Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims

Rücker, Anja (GER) (1972)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1999 IAAF World Championships (Sevilla, ESP)																	
date 26-Aug-99 time	6.80	12.41	18.10	24.03	30.09	36.21	42.66	49.74	49.74	8 / 2							
reaction time 0.203 interval		5.61	5.69	5.93	6.06	6.12	6.45	7.08	PB	# of strides	12.41	11.62	12.18	13.53	24.03	25.71	1.68
velocity	7.35	8.91	8.79	8.43	8.25	8.17	7.75	7.06	8.04		8.06	8.61	8.21	7.39	8.32	7.78	

Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999

Ruicu, Otilia (ROU) (1978)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2001 European Cup (Bremen, GER)																	
date 23-Jun-01 time		12.67		24.98		37.79		51.65	51.65	/ 4							
reaction time interval				12.31		12.81		13.86	NR	# of strides	12.67	12.31	12.81	13.86	24.98	26.67	1.69
velocity		7.89		8.12		7.81		7.22	7.74		7.89	8.12	7.81	7.22	8.01	7.50	

Graubner (2007) - http://www.fgs.uni-halle.de

Salamin, Noémie (SUI) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2022 Athletissima (Lausanne, SUI)																	
date 26-Aug-22 time	6.8	12.8	19.1	25.7	32.6	39.8	47.5	55.88	55.88	1 / 8							
reaction time 0.159 interval		6.00	6.30	6.60	6.90	7.20	7.70	8.38	PB	# of strides	12.80	12.90	14.10	16.08	25.70	30.18	4.48
velocity	7.35	8.33	7.94	7.58	7.25	6.94	6.49	5.97	7.16		7.81	7.75	7.09	6.22	7.78	6.63	

Omega Timing (2022) - diamond league race analysis

Ruzina, Yelena (URS) (1964)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1989 IAAF World Cup (Barcelona, ESP)																	
date 10-Sep-89 time		13.01		24.90		38.21		52.48	52.48	/ ~~6~~ 5							
reaction time interval				11.89		13.31		14.27		# of strides	13.01	11.89	13.31	14.27	24.90	27.58	2.68
velocity		7.69		8.41		7.51		7.01	7.62		7.69	8.41	7.51	7.01	8.03	7.25	

Pascua (1990) - atletismo (I) carreras y marcha

Ryzhora, Kseniya (RUS) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2013 IAAF World Championships (Moscow, RUS)																	
date 12-Aug-13 time				23.6		36.3		51.0	50.98	7 / 7							
reaction time 0.195 interval						12.70		14.70		# of strides			12.70	14.70	23.60	27.40	3.80
velocity				8.47		7.87		6.80	7.85				7.87	6.80	8.47	7.30	

(2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/

Saalberg, Eveline (NED) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)																	
date 08-Sep-23 time	6.93	12.65	18.50	24.66	31.11	37.84	44.78	52.31	52.31	7 / 4							
reaction time 0.222 interval		5.72	5.85	6.16	6.45	6.73	6.94	7.53		# of strides	12.65	12.01	13.18	14.47	24.66	27.65	2.99
velocity	7.22	8.74	8.55	8.12	7.75	7.43	7.20	6.64	7.65		7.91	8.33	7.59	6.91	8.11	7.23	

Seiko Timing (2023) - world championship race analysis

FINAL - 2023 Weltklasse (Zürich, SUI)																	
date 31-Aug-23 time	6.82	12.41	18.17	24.21	30.63	37.41	44.57	52.32	52.32	4 / 6							
reaction time 0.209 interval		5.59	5.76	6.04	6.42	6.78	7.16	7.75		# of strides	12.41	11.80	13.20	14.91	24.21	28.11	3.90
velocity	7.33	8.94	8.68	8.28	7.79	7.37	6.98	6.45	7.65		8.06	8.47	7.58	6.71	8.26	7.11	

Omega Timing (2023) - diamond league race analysis

FINAL - 2023 FBK Games (Hengelo, NED)																	
date 04-Jun-23 time	6.84	12.45	18.33	24.47	30.98	37.75	44.84	52.57	52.57	3 / 5							
reaction time 0.234 interval		5.61	5.88	6.14	6.51	6.77	7.09	7.73		# of strides	12.45	12.02	13.28	14.82	24.47	28.10	3.63
velocity	7.31	8.91	8.50	8.14	7.68	7.39	7.05	6.47	7.61		8.03	8.32	7.53	6.75	8.17	7.12	

Omega Timing (2023) - continental tour race analysis

National FINAL - 2022 Weltklasse (Zürich, SUI)																	
date 08-Sep-22 time	6.97	12.61	18.41	24.52	31.00	37.91	44.97	52.40	52.40	5 / 5							
reaction time 0.207 interval		5.64	5.80	6.11	6.48	6.91	7.06	7.43		# of strides	12.61	11.91	13.39	14.49	24.52	27.88	3.36
velocity	7.17	8.87	8.62	8.18	7.72	7.24	7.08	6.73	7.63		7.93	8.40	7.47	6.90	8.16	7.17	

Omega Timing (2022) - diamond league race analysis

National FINAL - 2022 Memorial van Damme (Brussels, BEL)																	
date 02-Sep-22 time	6.96	12.58	18.38	24.44	30.80	37.59	44.74	52.48	52.48	7 / 4							
reaction time 0.226 interval		5.62	5.80	6.06	6.36	6.79	7.15	7.74		# of strides	12.58	11.86	13.15	14.89	24.44	28.04	3.60
velocity	7.18	8.90	8.62	8.25	7.86	7.36	6.99	6.46	7.62		7.95	8.43	7.60	6.72	8.18	7.13	

Omega Timing (2022) - diamond league race analysis

Heat 3 - 2022 World Athletics Championships (Eugene, OR)																	
date 17-Jul-22 time		12.76		25.00		38.37		52.59	52.59	2 / 7							
reaction time 0.190 interval				12.24		13.37		14.22		# of strides	12.76	12.24	13.37	14.22	25.00	27.59	2.59
velocity		7.84		8.17		7.48		7.03	7.61		7.84	8.17	7.48	7.03	8.00	7.25	

Timing by Seiko (2022) - world athletics championships race analysis

FINAL - 2022 Bauhaus Galan (Stockholm, SWE)																	
date 30-Jun-22 time	6.94	12.53	18.20	24.32	30.91	37.81	45.00	52.92	52.92	5 / 4							
reaction time 0.209 interval		5.59	5.67	6.12	6.59	6.90	7.19	7.92		# of strides	12.53	11.79	13.49	15.11	24.32	28.60	4.28
velocity	7.20	8.94	8.82	8.17	7.59	7.25	6.95	6.31	7.56		7.98	8.48	7.41	6.62	8.22	6.99	

Omega Timing (2022) - diamond league race analysis

FINAL - 2022 FBK Games (Hengelo, NED) — *Omega Timing (2022) - continental tour race analysis*

date	06-Jun-22	time	6.9	12.5	18.3	24.4	30.7	37.6	44.5	51.80	51.80	4 / 5						
reaction time	0.181	interval		5.60	5.80	6.10	6.30	6.90	6.90	7.30		# of strides	12.50	11.90	13.20	14.20	24.40	27.40	3.00
		velocity	7.25	8.93	8.62	8.20	7.94	7.25	7.25	6.85	7.72		8.00	8.40	7.58	7.04	8.20	7.30	

FINAL - 2021 Memorial van Damme (Brussels, BEL) — *Omega Timing (2021) - diamond league race analysis*

date	03-Sep-21	time	7.0	12.6	18.4	24.5	31.0	37.8	44.9	52.38	52.38	4 / 2						
reaction time	0.225	interval		5.60	5.80	6.10	6.50	6.80	7.10	7.48		# of strides	12.60	11.90	13.30	14.58	24.50	27.88	3.38
		velocity	7.14	8.93	8.62	8.20	7.69	7.35	7.04	6.68	7.64		7.94	8.40	7.52	6.86	8.16	7.17	

Saito, Ami (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	10-Oct-16	time	6.97	13.03	19.34	26.10	33.01	40.17	47.57	55.55	55.55	9 / 4						
reaction time	0.198	interval		6.06	6.31	6.76	6.91	7.16	7.40	7.98		# of strides	13.03	13.07	14.07	15.38	26.10	29.45	3.35
		velocity	7.17	8.25	7.92	7.40	7.24	6.98	6.76	6.27	7.20		7.67	7.65	7.11	6.50	7.66	6.79	

Saito, Erika (JPN) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2010 Japanese National High School Championships (Okinawa, JPN) — *Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-10	time	7.10	13.32	19.82	26.47	33.29	40.39	47.89	55.93	55.93	/ 3						
reaction time		interval		6.22	6.50	6.65	6.82	7.10	7.50	8.04		# of strides	13.32	13.15	13.92	15.54	26.47	29.46	2.99
		velocity	7.04	8.04	7.69	7.52	7.33	7.04	6.67	6.22	7.15		7.51	7.60	7.18	6.44	7.56	6.79	

Saito, Mayu (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.26		26.56		40.79		56.67	56.67	7 / 5						
reaction time	0.180	interval				13.30		14.23		15.88	PB	# of strides	13.26	13.30	14.23	15.88	26.56	30.11	3.55
		velocity		7.54		7.52		7.03		6.30	7.06	212.7	7.54	7.52	7.03	6.30	7.53	6.64	

Saki, Shima (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) — *Kijima (2019) - research on athlete performance and technique- 2019 data book*

date	18-Oct-19	time	7.57	14.10	20.75	27.48	34.24	41.01	47.81	54.63	54.63	4 / 1						
reaction time	0.241	interval		6.53	6.65	6.73	6.76	6.77	6.80	6.82		# of strides	14.10	13.38	13.53	13.62	27.48	27.15	-0.33
		velocity	6.61	7.66	7.52	7.43	7.40	7.39	7.35	7.33	7.32		7.09	7.47	7.39	7.34	7.28	7.37	

Salamin, Noémie (SUI) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

B Race - 2023 Athletissima (Lausanne, SUI) — *Omega Timing (2023) - diamond league race analysis*

date	30-Jun-23	time	7.02	12.81	18.92	25.27	31.80	38.60	45.76	53.46	53.46	5 / 2						
reaction time	0.215	interval		5.79	6.11	6.35	6.53	6.80	7.16	7.70		# of strides	12.81	12.46	13.33	14.86	25.27	28.19	2.92
		velocity	7.12	8.64	8.18	7.87	7.66	7.35	6.98	6.49	7.48		7.81	8.03	7.50	6.73	7.91	7.09	

National FINAL - 2022 Athletissima (Lausanne, SUI) — *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	7.1	13.1	19.3	25.9	32.8	39.9	47.3	55.35	55.35	8 / 7						
reaction time	0.206	interval		6.00	6.20	6.60	6.90	7.10	7.40	8.05		# of strides	13.10	12.80	14.00	15.45	25.90	29.45	3.55
		velocity	7.04	8.33	8.06	7.58	7.25	7.04	6.76	6.21	7.23		7.63	7.81	7.14	6.47	7.72	6.79	

Salin, Ritta (FIN) (1950)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1976 Olympic Games (Montreal, CAN) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-76	time				23.8				51.0	50.98	6 / 7						
reaction time		interval								27.2		# of strides					23.80	27.20	3.40
		velocity				8.40				7.35	7.85						8.40	7.35	

Sambell, Kathy (AUS) (1963)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1989 IAAF World Cup (Barcelona, ESP) — *Pascua (1990) - atletismo (I) carreras y marcha*

date	10-Sep-89	time		13.41		25.01		38.42		53.92	53.92	/ ~~9~~ 8						
reaction time		interval				11.60		13.41		15.50		# of strides	13.41	11.60	13.41	15.50	25.01	28.91	3.90
		velocity		7.46		8.62		7.46		6.45	7.42		7.46	8.62	7.46	6.45	8.00	6.92	

Sananes, Déborah (FRA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2019 Meeting de Paris (Paris, FRA) — *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.5		24.5		37.6		52.04	52.04	3 / 7						
reaction time	0.227	interval				12.0		13.1		14.4		# of strides	12.50	12.00	13.10	14.44	24.50	27.54	3.04
		velocity		8.00		8.33		7.63		6.93	7.69	195.2	8.00	8.33	7.63	6.93	8.16	7.26	

FINAL - 2017 Meeting de Paris (Paris, FRA) — *Omega Timing (2017) - diamond league race analysis*

date	01-Jul-17	time		12.8	18.8	25.1	31.6	38.5	45.8	53.41	53.41	1 / ~~7~~ 6						
reaction time	0.207	interval			6.0	6.3	6.5	6.9	7.3	7.6		# of strides	12.80	12.30	13.40	14.91	25.10	28.31	3.21
		velocity		7.81	8.33	7.94	7.69	7.25	6.85	6.57	7.49	198.7	7.81	8.13	7.46	6.71	7.97	7.06	

Sanders, Nicola (GBR) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.13		23.79		36.19		50.45	50.45	6 / 4						
reaction time	0.160	interval				11.66		12.40		14.26		# of strides	12.13	11.66	12.40	14.26	23.79	26.66	2.87
		velocity		8.24		8.58		8.06		7.01	7.93		8.24	8.58	8.06	7.01	8.41	7.50	

Heat 6 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.59		24.62		37.04		51.64	51.64	3 / 2						
reaction time	0.171	interval				12.03		12.42		14.60		# of strides	12.59	12.03	12.42	14.60	24.62	27.02	2.40
		velocity		7.94		8.31		8.05		6.85	7.75		7.94	8.31	8.05	6.85	8.12	7.40	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time		12.59		24.40		36.69		50.44	50.44	3 / 5						
reaction time	0.177	interval				11.81		12.29		13.75		# of strides	12.59	11.81	12.29	13.75	24.40	26.04	1.64
		velocity		7.94		8.47		8.14		7.27	7.93		7.94	8.47	8.14	7.27	8.20	7.68	

FINAL - 2007 IAAF World Championships (Osaka, JPN) — *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

date	29-Aug-07	time	6.83	12.47	18.20	24.17	29.96	36.21	42.72	49.65	49.65	4 / 2							
reaction time	0.175	interval		5.64	5.73	5.97	5.79	6.25	6.51	6.93	PB	# of strides	12.47	11.70	12.04	13.44	24.17	25.48	1.31
		velocity	7.32	8.87	8.73	8.38	8.64	8.00	7.68	7.22	8.06	190.0	8.02	8.55	8.31	7.44	8.27	7.85	

FINAL - 2006 European Championships (Göteborg, SWE) *Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles*

date	10-Aug-06	time				24.4		37.0		50.87	50.87	/ 6							
reaction time		interval						12.60		13.87		# of strides		24.40	12.60	13.87	24.40	26.47	2.07
		velocity				8.20		15.87		7.21	7.86			4.10	7.94	7.21	8.20	7.56	

Sapenter, Debra (USA) (1952)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1976 Olympic Games (Montreal, CAN)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date 29-Jul-76	time				24.0			51.7	51.66	5 / 8							
reaction time	interval							27.7		# of strides					24.00	27.70	3.70
	velocity				8.33			7.22	7.74						8.33	7.22	

FINAL - 1976 USA Olympic Trials (Eugene, OR) *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-76	time				24.8				52.73	52.73	/ 2							
reaction time		interval								27.93		# of strides					24.80	27.93	3.13
		velocity				8.06				7.16	7.59						8.06	7.16	

Sato, Hinako (JPN) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)										*(2017) - tfdata-store.com/2017/06/01/post-786/*							
date 26-May-17	time		13.50		26.55		40.73		55.54	55.54	2 / 3								
reaction time	interval				13.05		14.18		14.81		# of strides	13.50	13.05	14.18	14.81	26.55	28.99	2.44
	velocity		7.41		7.66		7.05		6.75	7.20	214.7	7.41	7.66	7.05	6.75	7.53	6.90	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.62		26.82		40.88		56.11	56.11	5 / 4							
reaction time		interval				13.20		14.06		15.23		# of strides	13.62	13.20	14.06	15.23	26.82	29.29	2.47
		velocity		7.34		7.58		7.11		6.57	7.13	214.0	7.34	7.58	7.11	6.57	7.46	6.83	

FINAL - 2015 National Sports Festival (Wayakama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	6.89	13.03	19.62	26.40	33.28	40.28	47.54	55.14	55.14	9 / 5							
reaction time		interval		6.14	6.59	6.78	6.88	7.00	7.26	7.60		# of strides	13.03	13.37	13.88	14.86	26.40	28.74	2.34
		velocity	7.26	8.14	7.59	7.37	7.27	7.14	6.89	6.58	7.25		7.67	7.48	7.20	6.73	7.58	6.96	

FINAL - 2015 Japanese National Championships (Niigata, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	7.17	12.95	18.95	25.20	31.76	38.82	46.13	54.00	54.00	2 / 7							
reaction time	0.184	interval		5.78	6.00	6.25	6.56	7.06	7.31	7.87	PB	# of strides	12.95	12.25	13.62	15.18	25.20	28.80	3.60
		velocity	6.97	8.65	8.33	8.00	7.62	7.08	6.84	6.35	7.41		7.72	8.16	7.34	6.59	7.94	6.94	

FINAL - 2014 Japanese National High School Championships (Kofu, JPN) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	7.18	13.25	19.25	25.49	32.06	39.08	46.57	54.63	54.63	/ 3							
reaction time		interval		6.07	6.00	6.24	6.57	7.02	7.49	8.06	PB	# of strides	13.25	12.24	13.59	15.55	25.49	29.14	3.65
		velocity	6.96	8.24	8.33	8.01	7.61	7.12	6.68	6.20	7.32		7.55	8.17	7.36	6.43	7.85	6.86	

Sato, Mayu (JPN) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)										*Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*							
date 24-Sep-06	time	6.8	12.9	19.0	25.3	31.8	38.7	45.9	53.56	53.56	2 / 3								
reaction time	interval		6.10	6.10	6.30	6.50	6.90	7.20	7.66		# of strides	12.90	12.40	13.40	14.86	25.30	28.26	2.96
	velocity	7.35	8.20	8.20	7.94	7.69	7.25	6.94	6.53	7.47		7.75	8.06	7.46	6.73	7.91	7.08	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time		12.85		25.63		39.25	46.58	54.70	54.70	1 / 9							
reaction time		interval				12.78		13.62	7.33	8.12		# of strides	12.85	12.78	13.62	15.45	25.63	29.07	3.44
		velocity		7.78		7.82		7.34	6.82	6.16	7.31		7.78	7.82	7.34	6.47	7.80	6.88	

Sato, Shihori (JPN) (2005)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)										*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*							
date 23-Oct-21	time	6.88	12.58	18.54	24.91	31.56	38.69			38.69	9 / 2								
reaction time 0.211	interval		5.70	5.96	6.37	6.65	7.13			PB	# of strides	12.58	12.33	13.78		24.91			
	velocity	7.27	8.77	8.39	7.85	7.52	7.01			7.75	149.5	7.95	8.11	7.26		8.03			

Sato, Shizuka (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 National Sports Festival (Kitakami, JPN)										*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*							
date 09-Oct-16	time	7.41	13.54	19.95	26.52	33.42	40.52	47.91	55.78	55.78	2 / 4								
reaction time 0.208	interval		6.13	6.41	6.57	6.90	7.10	7.39	7.87		# of strides	13.54	12.98	14.00	15.26	26.52	29.26	2.74	
	velocity	6.75	8.16	7.80	7.61	7.25	7.04	6.77	6.35	7.17		7.39	7.70	7.14	6.55	7.54	6.84		

Schmidt, Alica (GER) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)										*Omega Timing (2023) - diamond league race analysis*							
date 31-Aug-23	time	6.79	12.46	18.29	24.39	30.79	37.54	44.69	52.43	52.43	8 / 7								
reaction time 0.155	interval		5.67	5.83	6.10	6.40	6.75	7.15	7.74		# of strides	12.46	11.93	13.15	14.89	24.39	28.04	3.65	
	velocity	7.36	8.82	8.58	8.20	7.81	7.41	6.99	6.46	7.63		8.03	8.38	7.60	6.72	8.20	7.13		

Schmidt, Gertrud (GER) (1942)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)										*Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*							
date 17-Oct-64	time				25.8				55.4	55.4	7 / 7								
reaction time	interval								29.60		# of strides					25.80	29.60	3.80	
	velocity				7.75				6.76	7.22						7.75	6.76		

Schwab, Corinna (GER) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)										*Omega Timing (2022) - diamond league race analysis*							
date 06-Aug-22	time	6.87	12.52	18.45	24.72	31.02	37.50	44.29	51.72	51.72	2 / 7								
reaction time 0.209	interval		5.65	5.93	6.27	6.30	6.48	6.79	7.43		# of strides	12.52	12.20	12.78	14.22	24.72	27.00	2.28	
	velocity	7.28	8.85	8.43	7.97	7.94	7.72	7.36	6.73	7.73		7.99	8.20	7.82	7.03	8.09	7.41		

FINAL - 2022 FBK Games (Hengelo, NED) *Omega Timing (2022) - continental tour race analysis*

date	06-Jun-22	time	6.6	12.1	17.9	23.9	30.1	36.8	43.9	51.76	51.76	3 / 4						
reaction time	0.201	interval		5.50	5.80	6.00	6.20	6.70	7.10	7.86		# of strides	12.10	11.80	12.90	14.96	23.90	27.86	3.96
		velocity	7.58	9.09	8.62	8.33	8.06	7.46	7.04	6.36	7.73		8.26	8.47	7.75	6.68	8.37	7.18	

B FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.7	12.2	17.9	24.0	30.4	37.1	44.1	51.69	51.69	3 / 2						
reaction time	0.171	interval		5.50	5.70	6.10	6.40	6.70	7.00	7.59		# of strides	12.20	11.80	13.10	14.59	24.00	27.69	3.69
		velocity	7.46	9.09	8.77	8.20	7.81	7.46	7.14	6.59	7.74		8.20	8.47	7.63	6.85	8.33	7.22	

FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2020) - diamond league race analysis*

date	17-Sep-20	time	6.8	12.6	18.6	24.8	31.0	37.6	44.6	52.12	52.12	8 / 4						
reaction time	0.155	interval		5.80	6.00	6.20	6.20	6.60	7.00	7.52		# of strides	12.60	12.20	12.80	14.52	24.80	27.32	2.52
		velocity	7.35	8.62	8.33	8.06	8.06	7.58	7.14	6.65	7.67		7.94	8.20	7.81	6.89	8.06	7.32	

Scott, Gabby (PUR) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	21-Aug-23	time		12.48		24.19		37.36		51.52	51.52	4 / 6							
reaction time	0.177	interval				11.71		13.17		14.16		# of strides	12.48	11.71	13.17	14.16	24.19	27.33	3.14
		velocity		8.01		8.54		7.59		7.06	7.76		8.01	8.54	7.59	7.06	8.27	7.32	
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.40		24.18		37.15		51.07	51.07	7 / 3							
reaction time	0.171	interval				11.78		12.97		13.92		# of strides	12.40	11.78	12.97	13.92	24.18	26.89	2.71
		velocity		8.06		8.49		7.71		7.18	7.83	184.0	8.06	8.49	7.71	7.18	8.27	7.44	
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date	20-Jul-22	time		12.59		24.65		37.69		51.97	51.97	7 / 7							
reaction time	0.215	interval				12.06		13.04		14.28		# of strides	12.59	12.06	13.04	14.28	24.65	27.32	2.67
		velocity		7.94		8.29		7.67		7.00	7.70	188.7	7.94	8.29	7.67	7.00	8.11	7.32	
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																	*Timing by Seiko (2022) - world athletics championships race analysis*
date	17-Jul-22	time		12.90		25.22		38.11		52.05	52.05	4 / 3							
reaction time	0.182	interval				12.32		12.89		13.94		# of strides	12.90	12.32	12.89	13.94	25.22	26.83	1.61
		velocity		7.75		8.12		7.76		7.17	7.68	189.0	7.75	8.12	7.76	7.17	7.93	7.45	

Scott, Jarvis (USA) (1947)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1968 USA Olympic Trials (Walnut, CA)																	*Hymans (2008) - history of the US olympic trials - track and field*
date	25-Aug-68	time				24.7				53.5	53.5	3 / 1							
reaction time		interval								28.80		# of strides					24.70	28.80	4.10
		velocity				8.10				6.94	7.48						8.10	6.94	

Seidler, Helga (GDR) (1949)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1972 Olympic Games (Munich, FRG)																	*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*
date	07-Sep-72	time				24.4				51.9	51.84	6 / 4							
reaction time		interval								27.5		# of strides					24.40	27.50	3.10
		velocity				8.20				7.27	7.72						8.20	7.27	

Semenya, Caster (RSA) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 African Championships (Asaba Asaba, NGR)																	*Vazel (2018.08.03) - https://twitter.com/pjvazel*
date	03-Aug-18	time				24.3		36.7		49.96	49.96	4 / 1							
reaction time		interval						12.40		13.26	NR	# of strides		24.30	12.40	13.26	24.30	25.66	1.36
		velocity				8.23		8.06		7.54	8.01	194.0		4.12	8.06	7.54	8.23	7.79	

Senn, Giulia (SUI) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)																	*Omega Timing (2023) - diamond league race analysis*
date	31-Aug-23	time	6.83	12.71	18.79	24.98	31.31	37.93	44.91	52.28	52.28	7 / 5							
reaction time	0.168	interval		5.88	6.08	6.19	6.33	6.62	6.98	7.37		# of strides	12.71	12.27	12.95	14.35	24.98	27.30	2.32
		velocity	7.32	8.50	8.22	8.08	7.90	7.55	7.16	6.78	7.65		7.87	8.15	7.72	6.97	8.01	7.33	
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																	*Seiko Timing (2023) - world championship race analysis*
date	20-Aug-23	time		12.60		24.72		37.95		52.66	52.66	5 / 6							
reaction time	0.157	interval				12.12		13.23		14.71		# of strides	12.60	12.12	13.23	14.71	24.72	27.94	3.22
		velocity		7.94		8.25		7.56		6.80	7.60		7.94	8.25	7.56	6.80	8.09	7.16	
B Race - 2021 Athletissima (Lausanne, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date	26-Aug-21	time	7.2	13.4	20.1	26.7	33.5	40.6	47.6	55.06	55.06	8 / 6							
reaction time	0.154	interval		6.20	6.70	6.60	6.80	7.10	7.00	7.46		# of strides	13.40	13.30	13.90	14.46	26.70	28.36	1.66
		velocity	6.94	8.06	7.46	7.58	7.35	7.04	7.14	6.70	7.26		7.46	7.52	7.19	6.92	7.49	7.05	

Šerkšniene, Agné (LTU) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B FINAL - 2021 Weltklasse (Zürich, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date	09-Sep-21	time	6.8	12.6	18.6	24.9	31.4	38.2	45.3	52.99	52.99	7 / 6							
reaction time	0.193	interval		5.80	6.00	6.30	6.50	6.80	7.10	7.69		# of strides	12.60	12.30	13.30	14.79	24.90	28.09	3.19
		velocity	7.35	8.62	8.33	7.94	7.69	7.35	7.04	6.50	7.55		7.94	8.13	7.52	6.76	8.03	7.12	
B Race - 2021 Athletissima (Lausanne, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date	26-Aug-21	time	6.7	12.5	18.9	25.4	31.7	38.4	45.5	53.22	53.22	6 / 2							
reaction time	0.173	interval		5.80	6.40	6.50	6.30	6.70	7.10	7.72		# of strides	12.50	12.90	13.00	14.82	25.40	27.82	2.42
		velocity	7.46	8.62	7.81	7.69	7.94	7.46	7.04	6.48	7.52		8.00	7.75	7.69	6.75	7.87	7.19	
FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA)																	*Omega Timing (2020) - diamond league race analysis*
date	17-Sep-20	time	6.8	12.5	18.5	24.6	30.8	37.3	44.2	51.80	51.80	7 / 2							
reaction time	0.160	interval		5.70	6.00	6.10	6.20	6.50	6.90	7.60		# of strides	12.50	12.10	12.70	14.50	24.60	27.20	2.60
		velocity	7.35	8.77	8.33	8.20	8.06	7.69	7.25	6.58	7.72		8.00	8.26	7.87	6.90	8.13	7.35	

Seta, Haruna (JPN) (2006)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																	
date 03-Aug-22 time		13.57		26.40		40.28		55.43	55.43	2 / 4							
reaction time 0.211 interval				12.83		13.88		15.15	PB	# of strides	13.57	12.83	13.88	15.15	26.40	29.03	2.63
velocity		7.37		7.79		7.20		6.60	7.22	198.2	7.37	7.79	7.20	6.60	7.58	6.89	

Kishima (2022) - national high school championships biomechanics data collection

Seyerling, Heide (RSA) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2000 Olympic Games (Sydney, AUS)																	
date 25-Sep-00 time		12.2		24.3		36.5		50.1	50.05	7 / 6							
reaction time 0.175 interval				12.10		12.20		13.60	NR / PB	# of strides	12.20	12.10	12.20	13.60	24.30	25.80	1.50
velocity		8.20		8.26		8.20		7.35	7.99		8.20	8.26	8.20	7.35	8.23	7.75	

Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016

Seyni, Aminatou (NIG) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Athletissima (Lausanne, SUI)																	
date 05-Jul-19 time		12.6		24.4		36.6		49.19	49.19	4 / 2							
reaction time 0.223 interval				11.8		12.2		12.6	NR	# of strides	12.60	11.80	12.20	12.59	24.40	24.79	0.39
velocity		7.94		8.47		8.20		7.94	8.13		7.94	8.47	8.20	7.94	8.20	8.07	

Omega Timing (2019) - diamond league race analysis

FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																	
date 16-Jun-19 time		12.8		24.5		37.1		50.24	50.24	3 / 2							
reaction time 0.219 interval				11.7		12.6		13.1	NR	# of strides	12.80	11.70	12.60	13.14	24.50	25.74	1.24
velocity		7.81		8.55		7.94		7.61	7.96	195.0	7.81	8.55	7.94	7.61	8.16	7.77	

Omega Timing (2019) - diamond league race analysis

Shcherbak, Oksana (UKR) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 European Cup (Munich, GER)																	
date 23-Jun-07 time		13.29		25.71		38.80		52.63	52.63	/ 7							
reaction time 0.192 interval				12.42		13.09		13.83		# of strides	13.29	12.42	13.09	13.83	25.71	26.92	1.21
velocity		7.52		8.05		7.64		7.23	7.60		7.52	8.05	7.64	7.23	7.78	7.43	

Graubner (2007) - http://www.fgs.uni-halle.de

Sheoran, Nirmala (IND) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Asian Games (Jakarta, INA)																	
date 26-Aug-18 time	7.06	12.93	18.95	25.15	31.60	38.33	45.37	52.96	52.96	4 / 4							
reaction time 0.277 interval		5.87	6.02	6.20	6.45	6.73	7.04	7.59		# of strides	12.93	12.22	13.18	14.63	25.15	27.81	2.66
velocity	7.08	8.52	8.31	8.06	7.75	7.43	7.10	6.59	7.55	183.0	7.73	8.18	7.59	6.84	7.95	7.19	

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																	
date 07-Aug-17 time		12.62		24.53		38.16	45.26	52.78	53.07	3 / ~~7~~							
reaction time 0.285 interval				11.91		13.63	7.10	7.52	DV	# of strides	12.62	11.91	13.63	14.62	24.53	28.25	3.72
velocity		7.92		8.40		7.34	7.04	6.65	7.54	182.6	7.92	8.40	7.34	6.84	8.15	7.08	

Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m

Shibata, Chiharu (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																	
date 08-Oct-17 time		13.36		26.57		40.66		56.16	56.16	6 / 4							
reaction time 0.235 interval				13.21		14.09		15.50		# of strides	13.36	13.21	14.09	15.50	26.57	29.59	3.02
velocity		7.49		7.57		7.10		6.45	7.12	209.7	7.49	7.57	7.10	6.45	7.53	6.76	

(2017) - tfdata-store.com/2017/10/12/post-1100/

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)																	
date 11-May-17 time		13.69		26.65		40.11		55.26	55.26	6 / 3							
reaction time				12.96		13.46		15.15		# of strides	13.69	12.96	13.46	15.15	26.65	28.61	1.96
velocity		7.30		7.72		7.43		6.60	7.24		7.30	7.72	7.43	6.60	7.50	6.99	

(2017) - tfdata-store.com/2017/05/13/post-441/

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																	
date 16-Oct-15 time	7.25	13.41	19.84	26.52	33.21	40.15	47.38	55.18	55.18	/ 5							
reaction time		6.16	6.43	6.68	6.69	6.94	7.23	7.80		# of strides	13.41	13.11	13.63	15.03	26.52	28.66	2.14
velocity	6.90	8.12	7.78	7.49	7.47	7.20	6.92	6.41	7.25		7.46	7.63	7.34	6.65	7.54	6.98	

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																	
date 05-Oct-15 time	7.24	13.49	19.94	26.61	33.54	40.58	48.01	56.04	56.04	/ 6							
reaction time		6.25	6.45	6.67	6.93	7.04	7.43	8.03		# of strides	13.49	13.12	13.97	15.46	26.61	29.43	2.82
velocity	6.91	8.00	7.75	7.50	7.22	7.10	6.73	6.23	7.14		7.41	7.62	7.16	6.47	7.52	6.80	

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

Shibata, Mie (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																	
date 21-Oct-16 time	7.14	13.25	19.60	26.25	33.14	40.31	47.83	55.52	55.52	8 / 4							
reaction time		6.11	6.35	6.65	6.89	7.17	7.52	7.69		# of strides	13.25	13.00	14.06	15.21	26.25	29.27	3.02
velocity	7.00	8.18	7.87	7.52	7.26	6.97	6.65	6.50	7.20		7.55	7.69	7.11	6.57	7.62	6.83	

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																	
date 10-Oct-16 time	7.13	13.27	19.65	26.49	33.60	40.97	48.72	56.95	56.95	8 / 8							
reaction time 0.189		6.14	6.38	6.84	7.11	7.37	7.75	8.23		# of strides	13.27	13.22	14.48	15.98	26.49	30.46	3.97
velocity	7.01	8.14	7.84	7.31	7.03	6.78	6.45	6.08	7.02		7.54	7.56	6.91	6.26	7.55	6.57	

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

FINAL - 2016 Japanese National High School Championships (Okayama, JPN)																	
date 29-Jul-16 time	7.04	12.95	19.17	25.81	32.81	40.16	47.86	55.88	55.88	6 / 7							
reaction time 0.181		5.91	6.22	6.64	7.00	7.35	7.70	8.02		# of strides	12.95	12.86	14.35	15.72	25.81	30.07	4.26
velocity	7.10	8.46	8.04	7.53	7.14	6.80	6.49	6.23	7.16		7.72	7.78	6.97	6.36	7.75	6.65	

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)																	
date 16-Oct-15 time	7.09	13.05	19.44	26.20	33.15	40.47	48.06	55.88	55.88	/ 4							
reaction time		5.96	6.39	6.76	6.95	7.32	7.59	7.82		# of strides	13.05	13.15	14.27	15.41	26.20	29.68	3.48
velocity	7.05	8.39	7.82	7.40	7.19	6.83	6.59	6.39	7.16		7.66	7.60	7.01	6.49	7.63	6.74	

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																	
date 05-Oct-15 time	7.07	13.10	19.47	26.28	33.40	40.74	48.37	56.46	56.46	/ 7							
reaction time		6.03	6.37	6.81	7.12	7.34	7.63	8.09		# of strides	13.10	13.18	14.46	15.72	26.28	30.18	3.90

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

		velocity	7.07	8.29	7.85	7.34	7.02	6.81	6.55	6.18	7.08		7.63	7.59	6.92	6.36	7.61	6.63

Shibayama, Sayaka (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m)																	*(2017) - tfdata-store.com/2017/05/17/post-537/*
date 23-Apr-17	time		12.56		25.11		40.10			40.10	9 / 8						***100m-300m***
reaction time	interval				12.55		14.99				# of strides	12.56	12.55	14.99		25.11		*27.54*
	velocity		7.96		7.97		6.67			7.48	154.7	7.96	7.97	6.67		7.96		*7.26*

Shihi, Natsumi (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																	*Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*
date 29-Jul-09	time		13.58		27.37		41.62		55.75	55.75	6 / 5							
reaction time	interval				13.79		14.25		14.13		# of strides	13.58	13.79	14.25	14.13	27.37	28.38	1.01
	velocity		7.36		7.25		7.02		7.08	7.17		7.36	7.25	7.02	7.08	7.31	7.05	

Shiiya, Kanako (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Japanese National Championships (Osaka, JPN)																	*Yamanaka (2017) - male and female 400m analysis in the 2017 season*
date 24-Jun-17	time	7.19	13.39	19.74	26.33	33.15	40.37	48.02	56.20	56.20	2 / 8							
reaction time 0.229	interval		6.20	6.35	6.59	6.82	7.22	7.65	8.18		# of strides	13.39	12.94	14.04	15.83	26.33	29.87	3.54
	velocity	6.95	8.06	7.87	7.59	7.33	6.93	6.54	6.11	7.12	203.2	7.47	7.73	7.12	6.32	7.60	6.70	
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/07/10/post-978/*
date 23-Jun-17	time		13.58		26.41		39.95		54.69	54.69	6 / 4							
reaction time	interval				12.83		13.54		14.74		# of strides	13.58	12.83	13.54	14.74	26.41	28.28	1.87
	velocity		7.36		7.79		7.39		6.78	7.31	198.5	7.36	7.79	7.39	6.78	7.57	7.07	
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 21-Oct-16	time	7.29	13.52	19.95	26.61	33.43	40.39	47.53	54.99	54.99	4 / 2							
reaction time	interval		6.23	6.43	6.66	6.82	6.96	7.14	7.46		# of strides	13.52	13.09	13.78	14.60	26.61	28.38	1.77
	velocity	6.86	8.03	7.78	7.51	7.33	7.18	7.00	6.70	7.27		7.40	7.64	7.26	6.85	7.52	7.05	
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 16-Oct-15	time	7.31	13.43	19.89	26.67	33.62	40.82	48.21	55.91	55.91	/ 6							
reaction time	interval		6.12	6.46	6.78	6.95	7.20	7.39	7.70		# of strides	13.43	13.24	14.15	15.09	26.67	29.24	2.57
	velocity	6.84	8.17	7.74	7.37	7.19	6.94	6.77	6.49	7.15		7.45	7.55	7.07	6.63	7.50	6.84	

Shimada, Manayu (JPN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN)																	*Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
date 03-Aug-11	time		13.33		26.78		39.68		54.88	54.88	6 / 1							
reaction time	interval				13.45		12.90		15.20	**PB**	# of strides	13.33	13.45	12.90	15.20	26.78	28.10	1.32
	velocity		7.50		7.43		7.75		6.58	7.29		7.50	7.43	7.75	6.58	7.47	7.12	

Shimada, Yukina (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 10-Oct-16	time	6.83	12.72	18.85	25.39	32.28	39.48	47.04	54.82	54.82	4 / 2							
reaction time 0.215	interval		5.89	6.13	6.54	6.89	7.20	7.56	7.78		# of strides	12.72	12.67	14.09	15.34	25.39	29.43	4.04
	velocity	7.32	8.49	8.16	7.65	7.26	6.94	6.61	6.43	7.30		7.86	7.89	7.10	6.52	7.88	6.80	
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 29-Jul-16	time	7.09	13.17	19.37	25.79	32.57	39.77	47.52	55.65	55.65	2 / 6							
reaction time 0.204	interval		6.08	6.20	6.42	6.78	7.20	7.75	8.13		# of strides	13.17	12.62	13.98	15.88	25.79	29.86	4.07
	velocity	7.05	8.22	8.06	7.79	7.37	6.94	6.45	6.15	7.19		7.59	7.92	7.15	6.30	7.75	6.70	
FINAL - 2016 Japanese National Championships (Nagoya, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 25-Jun-16	time	7.09	13.12	19.35	25.86	32.62	39.69	47.20	55.02	55.02	8 / 8							
reaction time 0.214	interval		6.03	6.23	6.51	6.76	7.07	7.51	7.82		# of strides	13.12	12.74	13.83	15.33	25.86	29.16	3.30
	velocity	7.05	8.29	8.03	7.68	7.40	7.07	6.66	6.39	7.27		7.62	7.85	7.23	6.52	7.73	6.86	
Heat 3 - 2016 Japanese National Championships (Nagoya, JPN)																	*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 24-Jun-16	time	6.98	12.91	18.95	25.24	31.79	38.94	46.63	54.59	54.59	8 / 2							
reaction time 0.208	interval		5.93	6.04	6.29	6.55	7.15	7.69	7.96	**PB**	# of strides	12.91	12.33	13.70	15.65	25.24	29.35	4.11
	velocity	7.16	8.43	8.28	7.95	7.63	6.99	6.50	6.28	7.33		7.75	8.11	7.30	6.39	7.92	6.81	
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)																	*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
date 16-Oct-15	time	7.22	13.42	19.87	26.47	33.29	40.38	47.66	54.85	54.85	/ 1							
reaction time	interval		6.20	6.45	6.60	6.82	7.09	7.28	7.19		# of strides	13.42	13.05	13.91	14.47	26.47	28.38	1.91
	velocity	6.93	8.06	7.75	7.58	7.33	7.05	6.87	6.95	7.29		7.45	7.66	7.19	6.91	7.56	7.05	

Shimaoka, Masami (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/04/07/post-249/*
date 06-Apr-17	time		13.40		26.43		40.91		57.17	57.17	4 / 2							
reaction time	interval				13.03		14.48		16.26		# of strides	13.40	13.03	14.48	16.26	26.43	30.74	4.31
	velocity		7.46		7.67		6.91		6.15	7.00	206.5	7.46	7.67	6.91	6.15	7.57	6.51	

Shinden, Nozomi (JPN) (2003)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																	*Shibayama (2021) - national high school and U20 national championhsips*
date 28-Jul-21	time	7.45	13.90	20.44	27.04	33.96	41.08	48.42	56.35	56.35	8 / 7							
reaction time 0.236	interval		6.45	6.54	6.60	6.92	7.12	7.34	7.93		# of strides	13.90	13.14	14.04	15.27	27.04	29.31	2.27
	velocity	6.71	7.75	7.65	7.58	7.23	7.02	6.81	6.31	7.10		7.19	7.61	7.12	6.55	7.40	6.82	

Shingu, Miho (JPN) (1991)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/10/05/post-1097/*
date 24-Sep-17	time		13.34		26.45		40.42		55.40	55.40	4 / 4							
reaction time 0.161	interval				13.11		13.97		14.98		# of strides	13.34	13.11	13.97	14.98	26.45	28.95	2.50
	velocity		7.50		7.63		7.16		6.68	7.22	199.7	7.50	7.63	7.16	6.68	7.56	6.91	

FINAL - 2009 Japanese National High School Championships (Nara, JPN) *Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*

date	29-Jul-09	time		13.07		26.17		40.08		54.21	54.21	3 / 1						
reaction time		interval				13.10		13.91		14.13		# of strides	13.07	13.10	13.91	14.13	26.17	28.04	1.87
		velocity		7.65		7.63		7.19		7.08	7.38		7.65	7.63	7.19	7.08	7.64	7.13	

Shintaku, Asami (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Denka Athletics Challenge Cup (Niigata, JPN) — *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	06-Jun-21	time	7.15	13.39	19.82	26.56	33.37	40.26	47.27	54.79	54.79	/ 6							
reaction time		interval		6.24	6.43	6.74	6.81	6.89	7.01	7.52		# of strides	13.39	13.17	13.70	14.53	26.56	28.23	1.67
		velocity	6.99	8.01	7.78	7.42	7.34	7.26	7.13	6.65	7.30		7.47	7.59	7.30	6.88	7.53	7.08	

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN) — *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	09-May-21	time	7.15	13.49	20.00	26.63	33.37	40.18	47.21	54.89	54.89	3 / 5							
reaction time	0.143	interval		6.34	6.51	6.63	6.74	6.81	7.03	7.68		# of strides	13.49	13.14	13.55	14.71	26.63	28.26	1.63
		velocity	6.99	7.89	7.68	7.54	7.42	7.34	7.11	6.51	7.29		7.41	7.61	7.38	6.80	7.51	7.08	

FINAL - 2018 National Sports Festival (Fukui, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	07-Oct-18	time	7.27	13.55	20.20	27.07	33.98	40.91	47.94	55.28	55.28	8 / 5							
reaction time	0.144	interval		6.28	6.65	6.87	6.91	6.93	7.03	7.34		# of strides	13.55	13.52	13.84	14.37	27.07	28.21	1.14
		velocity	6.88	7.96	7.52	7.28	7.24	7.22	7.11	6.81	7.24		7.38	7.40	7.23	6.96	7.39	7.09	

FINAL - 2018 Japanese Corporate Championships (Osaka, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Sep-18	time	7.24	13.36	19.55	26.15	32.94	39.93	47.30	55.15	55.15	5 / 3							
reaction time	0.153	interval		6.12	6.19	6.60	6.79	6.99	7.37	7.85		# of strides	13.36	12.79	13.78	15.22	26.15	29.00	2.85
		velocity	6.91	8.17	8.08	7.58	7.36	7.15	6.78	6.37	7.25		7.49	7.82	7.26	6.57	7.65	6.90	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	7.12	13.34	19.84	26.49	33.25	40.17	47.38	55.25	55.25	9 / 7							
reaction time	0.161	interval		6.22	6.50	6.65	6.76	6.92	7.21	7.87		# of strides	13.34	13.15	13.68	15.08	26.49	28.76	2.27
		velocity	7.02	8.04	7.69	7.52	7.40	7.23	6.93	6.35	7.24		7.50	7.60	7.31	6.63	7.55	6.95	

FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) — *(2017) - tfdata-store.com/2017/10/05/post-1097/*

date	24-Sep-17	time		13.65		26.95		41.04		56.81	56.81	9 / 6							
reaction time	0.152	interval				13.30		14.09		15.77		# of strides	13.65	13.30	14.09	15.77	26.95	29.86	2.91
		velocity		7.33		7.52		7.10		6.34	7.04	227.7	7.33	7.52	7.10	6.34	7.42	6.70	

FINAL - 2017 Japanese National Championships (Osaka, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	7.25	13.56	20.07	26.70	33.41	40.35	47.66	55.59	55.59	9 / 7							
reaction time	0.146	interval		6.31	6.51	6.63	6.71	6.94	7.31	7.93		# of strides	13.56	13.14	13.65	15.24	26.70	28.89	2.19
		velocity	6.90	7.92	7.68	7.54	7.45	7.20	6.84	6.31	7.20	221.0	7.37	7.61	7.33	6.56	7.49	6.92	

Heat 1 - 2017 Japanese National Championships (Osaka, JPN) — *(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time		13.47		26.32		39.70		54.40	54.40	7 / 3							
reaction time	0.170	interval				12.85		13.38		14.70		# of strides	13.47	12.85	13.38	14.70	26.32	28.08	1.76
		velocity		7.42		7.78		7.47		6.80	7.35	218.7	7.42	7.78	7.47	6.80	7.60	7.12	

B FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) — *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	7.02	13.06	19.27	25.77	32.36	39.27	46.81	55.07	55.07	/ 2							
reaction time		interval		6.04	6.21	6.50	6.59	6.91	7.54	8.26		# of strides	13.06	12.71	13.50	15.80	25.77	29.30	3.53
		velocity	7.12	8.28	8.05	7.69	7.59	7.24	6.63	6.05	7.26		7.66	7.87	7.41	6.33	7.76	6.83	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	7.14	13.16	19.39	25.93	32.70	40.01	47.86	56.51	56.51	/ 7							
reaction time		interval		6.02	6.23	6.54	6.77	7.31	7.85	8.65		# of strides	13.16	12.77	14.08	16.50	25.93	30.58	4.65
		velocity	7.00	8.31	8.03	7.65	7.39	6.84	6.37	5.78	7.08		7.60	7.83	7.10	6.06	7.71	6.54	

FINAL - 2015 National Sports Festival (Wayakama, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	04-Oct-15	time	7.28	13.64	20.27	27.07	33.80	40.60	47.70	55.40	55.40	4 / 7							
reaction time		interval		6.36	6.63	6.80	6.73	6.80	7.10	7.70		# of strides	13.64	13.43	13.53	14.80	27.07	28.33	1.26
		velocity	6.87	7.86	7.54	7.35	7.43	7.35	7.04	6.49	7.22		7.33	7.45	7.39	6.76	7.39	7.06	

FINAL - 2015 Japanese National Championships (Niigata, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	7.07	13.03	19.05	25.21	31.77	38.53	45.68	53.78	53.78	6 / 6							
reaction time	0.180	interval		5.96	6.02	6.16	6.56	6.76	7.15	8.10	PB	# of strides	13.03	12.18	13.32	15.25	25.21	28.57	3.36
		velocity	7.07	8.39	8.31	8.12	7.62	7.40	6.99	6.17	7.44	221.2	7.67	8.21	7.51	6.56	7.93	7.00	

FINAL - 2011 Japanese National High School Championships (Okinawa, JPN) — *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*

date	03-Aug-11	time		13.58		27.10		40.77		57.56	57.56	9 / 8							
reaction time		interval				13.52		13.67		16.79		# of strides	13.58	13.52	13.67	16.79	27.10	30.46	3.36
		velocity		7.36		7.40		7.32		5.96	6.95		7.36	7.40	7.32	5.96	7.38	6.57	

Shiomi, Ayano (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) — *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.19	13.24	19.40	25.81	32.49	39.45	46.61	54.32	54.32	3 / 1							
reaction time		interval		6.05	6.16	6.41	6.68	6.96	7.16	7.71	PB	# of strides	13.24	12.57	13.64	14.87	25.81	28.51	2.70
		velocity	6.95	8.26	8.12	7.80	7.49	7.18	6.98	6.49	7.36		7.55	7.96	7.33	6.72	7.75	7.02	

U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time				26.05		40.03		54.62	54.62	9 / 3							
reaction time	0.192	interval						13.98		14.59		# of strides			13.98	14.59	26.05	28.57	2.52
		velocity				7.68		7.15		6.85	7.32	223.5			7.15	6.85	7.68	7.00	

U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) — *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.43		26.32		40.21		55.01	55.01	5 / 3							
reaction time	0.193	interval				12.89		13.89		14.80		# of strides	13.43	12.89	13.89	14.80	26.32	28.69	2.37
		velocity		7.45		7.76		7.20		6.76	7.27	222.5	7.45	7.76	7.20	6.76	7.60	6.97	

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN) *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	7.28	13.43	19.80	26.59	33.61	40.74	48.06	55.73	55.73	9 / 6						
reaction time	0.252	interval		6.15	6.37	6.79	7.02	7.13	7.32	7.67		# of strides	13.43	13.16	14.15	14.99	26.59	29.14	2.55
		velocity	6.87	8.13	7.85	7.36	7.12	7.01	6.83	6.52	7.18		7.45	7.60	7.07	6.67	7.52	6.86	

FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	7.32	13.50	19.89	26.58	33.55	40.80	48.30	56.04	56.04	2 / 5						
reaction time		interval		6.18	6.39	6.69	6.97	7.25	7.50	7.74		# of strides	13.50	13.08	14.22	15.24	26.58	29.46	2.88
		velocity	6.83	8.09	7.82	7.47	7.17	6.90	6.67	6.46	7.14		7.41	7.65	7.03	6.56	7.52	6.79	

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	7.50	13.96	20.55	27.35	34.36	41.48	48.68	56.13	56.13	/ 7						
reaction time		interval		6.46	6.59	6.80	7.01	7.12	7.20	7.45		# of strides	13.96	13.39	14.13	14.65	27.35	28.78	1.43
		velocity	6.67	7.74	7.59	7.35	7.13	7.02	6.94	6.71	7.13		7.16	7.47	7.08	6.83	7.31	6.95	

Shiranaga, Yumiko (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2012 Japanese National High School Championships (Niigata, JPN) *Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*

date	29-Jul-12	time		13.34		26.30		40.12		55.47	55.47	7 / 3						
reaction time		interval				12.96		13.82		15.35		# of strides	13.34	12.96	13.82	15.35	26.30	29.17	2.87
		velocity		7.50		7.72		7.24		6.51	7.21		7.50	7.72	7.24	6.51	7.60	6.86	

Sibley, Licretia (USA) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Heat 4 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.69		24.60		37.92	44.96	53.24	53.24	8 / 6						
reaction time		interval				11.91		13.32	7.04	8.28		# of strides	12.69	11.91	13.32	15.32	24.60	28.64	4.04
		velocity		7.88		8.40		7.51	7.10	6.04	7.51		7.88	8.40	7.51	6.53	8.13	6.98	

Sieger, Susanne (GDR) (1968)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1986 IAAF World Junior Championships (Athens, GRE) *Moravec (1986) - IAAF biomechanical research - Athens 1986 - sprints*

date	18-Jul-86	time		12.82		24.57		37.44		52.02	52.02	/ 1						
reaction time		interval				11.75		12.87		14.58	CR	# of strides	12.82	11.75	12.87	14.58	24.57	27.45	2.88
		velocity		7.80		8.51		7.77		6.86	7.69		7.80	8.51	7.77	6.86	8.14	7.29	

Simkins, Krista (USA) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2005 USATF National Junior Championships (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time		13.45	19.45		32.38	39.26	46.69	55.09	55.09	3 / ~~9~~ 8						
reaction time		interval			6.00		12.93	6.88	7.43	8.40		# of strides	13.45			15.83			
		velocity		7.43	8.33		7.73	7.27	6.73	5.95	7.26		7.43			6.32			

Simwaka, Asimenye (MAW) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2022 Commonwealth Games (Birmingham, GBR) *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.5	11.8	17.6	23.8	30.1	36.7	43.7	51.55	51.55	5 / 6						
reaction time	0.190	interval		5.30	5.80	6.20	6.30	6.60	7.00	7.85	NR PB	# of strides	11.80	12.00	12.90	14.85	23.80	27.75	3.95
		velocity	7.69	9.43	8.62	8.06	7.94	7.58	7.14	6.37	7.76	211.0	8.47	8.33	7.75	6.73	8.40	7.21	

Slettum, Elisabeth (NOR) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2023 Bislett Games (Oslo, NOR) *Omega Timing (2023) - diamond league race analysis*

date	15-Jun-23	time	6.93	12.83	18.95	25.37	32.06	39.01	46.16	53.60	53.60	6 / 3						
reaction time	0.185	interval		5.90	6.12	6.42	6.69	6.95	7.15	7.44		# of strides	12.83	12.54	13.64	14.59	25.37	28.23	2.86
		velocity	7.22	8.47	8.17	7.79	7.47	7.19	6.99	6.72	7.46		7.79	7.97	7.33	6.85	7.88	7.08	

Smith, Phylis (GBR) (1965)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1992 Olympic Games (Barcelona, ESP) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	05-Aug-92	time				24.1		36.4		50.9	50.87	7 / 8						
reaction time		interval						12.30		14.50		# of strides			12.30	14.50	24.10	26.80	2.70
		velocity				8.30		8.13		6.90	7.86				8.13	6.90	8.30	7.46	

Smith, Stephanie (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2005 USATF National Championship (Carson, CA) *USATF Women's Sprint Development (2005)*

date	25-Jun-05	time		12.86	18.87	24.93	31.15	37.63	44.49	51.83	51.83	8 / 8						
reaction time		interval			6.01	6.06	6.22	6.48	6.86	7.34		# of strides	12.86	12.07	12.70	14.20	24.93	26.90	1.97
		velocity		7.78	8.32	8.25	8.04	7.72	7.29	6.81	7.72		7.78	8.29	7.87	7.04	8.02	7.43	

FINAL - 2003 USATF National Junior Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	22-Jun-03	time				24.07		37.25	44.26	52.04	52.04	7 / 1						
reaction time		interval						13.18	7.01	7.78	PB	# of strides			13.18	14.79	24.07	27.97	3.90
		velocity				8.31		7.59	7.13	6.43	7.69				7.59	6.76	8.31	7.15	

Sokolowska, Julia (POL) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL) *Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	7.25	13.58	20.12	26.87	33.90	41.09	48.56	56.61	56.61	2 / 8						
reaction time	0.172	interval		6.33	6.54	6.75	7.03	7.19	7.47	8.05		# of strides	13.58	13.29	14.22	15.52	26.87	29.74	2.87
		velocity	6.90	7.90	7.65	7.41	7.11	6.95	6.69	6.21	7.07		7.36	7.52	7.03	6.44	7.44	6.72	

Spelmeyer, Ruth Sophia (GER) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2019 Memorial van Damme (Brussels, BEL) *Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	7.0	13.0	19.0	25.3	31.9	38.6	45.8	53.62	53.62	8 / 5						
reaction time	0.170	interval		6.0	6.0	6.3	6.6	6.7	7.2	7.8		# of strides	13.00	12.30	13.30	15.02	25.30	28.32	3.02
		velocity	7.14	8.33	8.33	7.94	7.58	7.46	6.94	6.39	7.46		7.69	8.13	7.52	6.66	7.91	7.06	

Semi-Final 3 - 2017 IAAF World Championships (London, GBR) *Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*

date	07-Aug-17	time		12.74		24.76		37.59	44.34	51.61	51.77	3 / ~~5~~ 4						
reaction time	0.164	interval				12.02		12.83	6.75	7.27		# of strides	12.74	12.02	12.83	14.02	24.76	26.85	2.09
		velocity		7.85		8.32		7.79	7.41	6.88	7.73	189.7	7.85	8.32	7.79	7.13	8.08	7.45	

Spencer, Ashley (USA) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 USA Olympic Trials (Eugene, OR) *Hymans (2020) - history of the US olympic trials - track and field*

date	03-Jul-16	time		24.1	36.7	51.09	51.09	8 / 7						
reaction time	0.614	interval			12.60	14.39		# of strides			12.60	14.39	24.10	26.99	2.89
		velocity		8.30	7.94	6.95	7.83				7.94	6.95	8.30	7.41	

Stambolova, Vania (BUL) (1983)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE) *Behm (2006) - Championnats d'Europe Göteborg 2006… Le 400m avec ou sans obstacles*																	
date	10-Aug-06	time		23.7		35.8		49.85	49.85	/ 1							
reaction time		interval				12.10		14.05		# of strides		23.70	12.10	14.05	23.70	26.15	2.45
		velocity		8.44		16.53		7.12	8.02			4.22	8.26	7.12	8.44	7.65	
Semi-Final 1 - 2006 European Championships (Göteborg, SWE) *(TV Analysis)* *Graubner (2008) - http://www.fgs.uni-halle.de*																	
date	09-Aug-06	time		12.67		24.33		36.58		49.69	49.69	/ 1							
reaction time	0.232	interval				11.66		12.25		13.11		# of strides	12.67	11.66	12.25	13.11	24.33	25.36	1.03
		velocity		7.89		8.58		8.16		7.63	8.05		7.89	8.58	8.16	7.63	8.22	7.89	

Stamenova, Rositsa (BUL) (1955)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1984 Women's Friendship Games (Praha, TCH) *Bondarchuk (2007) - transfer of training in sports*																	
date	16-Aug-84	time		11.30		23.64			50.82	50.82	/ 6							
reaction time		interval				12.34			27.18	**PB**	# of strides	11.30	12.34			23.64	27.18	3.54
		velocity		8.85		8.10			7.36	7.87		8.85	8.10			8.46	7.36	

Stepter, Jaide (USA) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) *Omega Timing (2019) - diamond league race analysis*																	
date	16-Jun-19	time		12.1		23.8		36.6		51.44	51.44	8 / 5							
reaction time	0.158	interval				11.7		12.8		14.8		# of strides	12.10	11.70	12.80	14.84	23.80	27.64	3.84
		velocity		8.26		8.55		7.81		6.74	7.78	191.0	8.26	8.55	7.81	6.74	8.40	7.24	
FINAL - 2018 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2018) - diamond league race analysis*																	
date	10-Jun-18	time		12.4		24.2		36.9		50.99	50.99	3 / 5							
reaction time	0.149	interval				11.8		12.7		14.1		# of strides	12.40	11.80	12.70	14.09	24.20	26.79	2.59
		velocity		8.06		8.47		7.87		7.10	7.84	190.2	8.06	8.47	7.87	7.10	8.26	7.47	
FINAL - 2018 Bislett Games (Oslo, NOR) *Omega Timing (2018) - diamond league race analysis*																	
date	07-Jun-18	time		12.3		23.9		36.9		50.78	50.78	2 / 5							
reaction time	0.166	interval				11.6		13.0		13.9		# of strides	12.30	11.60	13.00	13.88	23.90	26.88	2.98
		velocity		8.13		8.62		7.69		7.20	7.88	188.5	8.13	8.62	7.69	7.20	8.37	7.44	

Stevens, Rochelle (USA) (1966)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*																	
date	19-Jun-96	time		12.20		23.99		36.75	43.64	51.16	51.16	1 / 4							
reaction time		interval				11.79		12.76	6.89	7.52		# of strides	12.20	11.79	12.76	14.41	23.99	27.17	3.18
		velocity		8.20		8.48		7.84	7.26	6.65	7.82		8.20	8.48	7.84	6.94	8.34	7.36	
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*																	
date	17-Jun-96	time		12.42		24.13		36.88	43.45	50.65	50.65	6 / 3							
reaction time		interval				11.71		12.75	6.57	7.20		# of strides	12.42	11.71	12.75	13.77	24.13	26.52	2.39
		velocity		8.05		8.54		7.84	7.61	6.94	7.90		8.05	8.54	7.84	7.26	8.29	7.54	
FINAL - 1992 Olympic Games (Barcelona, ESP) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*																	
date	05-Aug-92	time		24.1		36.2			50.1	50.11	1 / 6							
reaction time		interval				12.10			13.90		# of strides			12.10	13.90	24.10	26.00	1.90
		velocity		8.30		8.26			7.19	7.98				8.26	7.19	8.30	7.69	
FINAL - 1989 IAAF World Cup (Barcelona, ESP) *Pascua (1990) - atletismo (I) carreras y marcha*																	
date	10-Sep-89	time		12.40		24.90		37.30		52.16	52.16	/ ~~5~~ 4							
reaction time		interval				12.50		12.40		14.86		# of strides	12.40	12.50	12.40	14.86	24.90	27.26	2.36
		velocity		8.06		8.00		8.06		6.73	7.67		8.06	8.00	8.06	6.73	8.03	7.34	

Stiverne, Aiyanna (CAN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*																	
date	17-Jul-22	time		12.50		25.12		38.62		53.07	53.07	4 / 6							
reaction time	0.115	interval				12.62		13.50		14.45		# of strides	12.50	12.62	13.50	14.45	25.12	27.95	2.83
		velocity		8.00		7.92		7.41		6.92	7.54	203.5	8.00	7.92	7.41	6.92	7.96	7.16	

Strophal, Ellen (GDR) (1952)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1976 Olympic Games (Montreal, CAN) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*																	
date	29-Jul-76	time				23.7		35.7		50.6	50.55	8 / 3							
reaction time		interval						12.00		14.90		# of strides			12.00	14.90	23.70	26.90	3.20
		velocity				8.44		8.33		6.71	7.91				8.33	6.71	8.44	7.43	

Stroy, Esther (USA) (1953)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1968 USA Olympic Trials (Walnut, CA) *Hymans (2008) - history of the US olympic trials - track and field*																	
date	25-Aug-68	time				25.2			54.3	54.3	6 / 3							
reaction time		interval							29.10		# of strides					25.20	29.10	3.90
		velocity				7.94			6.87	7.37						7.94	6.87	

Sudo, Mio (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*																	
date	25-Jun-21	time	7.18	13.40	19.69	26.31	33.13	40.10	47.30	54.92	54.92	5 / 1							
reaction time	0.182	interval		6.22	6.29	6.62	6.82	6.97	7.20	7.62		# of strides	13.40	12.91	13.79	14.82	26.31	28.61	2.30
		velocity	6.96	8.04	7.95	7.55	7.33	7.17	6.94	6.56	7.28	203.5	7.46	7.75	7.25	6.75	7.60	6.99	
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN) *Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*																	
date	04-Aug-19	time	7.29	13.57	19.98	26.56	33.26	40.21	47.20	54.65	54.65	3 / 3							
reaction time		interval		6.28	6.41	6.58	6.70	6.95	6.99	7.45	**PB**	# of strides	13.57	12.99	13.65	14.44	26.56	28.09	1.53

		velocity	6.86	7.96	7.80	7.60	7.46	7.19	7.15	6.71	7.32		7.37	7.70	7.33	6.93	7.53	7.12	

FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.42	13.86	20.31	26.89	33.67	40.56	47.63	55.00	55.00	4 / 1							
reaction time	0.189	interval		6.44	6.45	6.58	6.78	6.89	7.07	7.37		# of strides	13.86	13.03	13.67	14.44	26.89	28.11	1.22
		velocity	6.74	7.76	7.75	7.60	7.37	7.26	7.07	6.78	7.27		7.22	7.67	7.32	6.93	7.44	7.11	

U20 FINAL - 2018 National Sports Festival (Fukui, JPN) *Joshi (2018) - research on athlete performance and technique- 2018 data book*

date	08-Oct-18	time	7.25	13.56	20.04	26.67	33.51	40.47	47.59	55.28	55.28	3 / 3							
reaction time	0.167	interval		6.31	6.48	6.63	6.84	6.96	7.12	7.69		# of strides	13.56	13.11	13.80	14.81	26.67	28.61	1.94
		velocity	6.90	7.92	7.72	7.54	7.31	7.18	7.02	6.50	7.24		7.37	7.63	7.25	6.75	7.50	6.99	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.21	13.40	19.87	26.49	33.39	40.65	48.18	55.98	55.98	5 / 6							
reaction time		interval		6.19	6.47	6.62	6.90	7.26	7.53	7.80		# of strides	13.40	13.09	14.16	15.33	26.49	29.49	3.00
		velocity	6.93	8.08	7.73	7.55	7.25	6.89	6.64	6.41	7.15		7.46	7.64	7.06	6.52	7.55	6.78	

Sugiura, Haruka (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																*(2017) - tfdata-store.com/2017/06/02/post-835/*	
date 26-May-17	time		13.13		26.10		40.75		56.41	56.41	3 / 5							
reaction time	interval				12.97		14.65		15.66		# of strides	13.13	12.97	14.65	15.66	26.10	30.31	4.21
	velocity		7.62		7.71		6.83		6.39	7.09	212.0	7.62	7.71	6.83	6.39	7.66	6.60	

FINAL - 2013 Japanese National High School Championships (Oita, JPN) *Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*

date	30-Jul-13	time		13.17		26.10		39.55		54.10	54.10	6 / 2							
reaction time		interval				12.93		13.45		14.55		# of strides	13.17	12.93	13.45	14.55	26.10	28.00	1.90
		velocity		7.59		7.73		7.43		6.87	7.39		7.59	7.73	7.43	6.87	7.66	7.14	

FINAL - 2013 Japanese National Championships (Chofu, JPN) *Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	08-Jun-13	time	7.00	12.94	19.09	25.31	31.60	38.22	45.18	52.52	52.52	5 / 1							
reaction time		interval		5.94	6.15	6.22	6.29	6.62	6.96	7.34	PB	# of strides	12.94	12.37	12.91	14.30	25.31	27.21	1.90
		velocity	7.14	8.42	8.13	8.04	7.95	7.55	7.18	6.81	7.62	211.0	7.73	8.08	7.75	6.99	7.90	7.35	

FINAL - 2012 Japanese National High School Championships (Niigata, JPN) *Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*

date	29-Jul-12	time		13.33		25.99		40.01		55.90	55.90	2 / 5							
reaction time		interval				12.66		14.02		15.89		# of strides	13.33	12.66	14.02	15.89	25.99	29.91	3.92
		velocity		7.50		7.90		7.13		6.29	7.16		7.50	7.90	7.13	6.29	7.70	6.69	

Sulastri (INA) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 East Java National Championships (Surabaya, INA)																*Saputri (2016) - analisis kecepatan lari 400m putri final kejuaraan nasional athletik jawa timur terbuka*	
date 15-Apr-16	time	7.04	13.58	19.50	26.08	33.89	41.48	47.98	57.51	57.51	/ 1							
reaction time	interval		6.54	5.92	6.58	7.81	7.59	6.50	9.53		# of strides	13.58	12.50	15.40	16.03	26.08	31.43	5.35
	velocity	7.10	7.65	8.45	7.60	6.40	6.59	7.69	5.25	6.96		7.36	8.00	6.49	6.24	7.67	6.36	

Święty-Ersetic, Justyna (POL) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Doha Diamond League (Doha, QAT)																*Omega Timing (2023) - diamond league race analysis*	
date 05-May-23	time	7.14	12.98	19.15	25.61	32.20	38.95	45.73	53.08	53.08	2 / 7							
reaction time 0.181	interval		5.84	6.17	6.46	6.59	6.75	6.78	7.35		# of strides	12.98	12.63	13.34	14.13	25.61	27.47	1.86
	velocity	7.00	8.56	8.10	7.74	7.59	7.41	7.37	6.80	7.54		7.70	7.92	7.50	7.08	7.81	7.28	

FINAL - 2022 Meeting de Paris (Paris, FRA) *Omega Timing (2022) - diamond league race analysis*

date	18-Jun-22	time	7.02	12.70	18.48	24.44	30.67	37.19	43.90	51.05	51.05	2 / 6							
reaction time	0.226	interval		5.68	5.78	5.96	6.23	6.52	6.71	7.15		# of strides	12.70	11.74	12.75	13.86	24.44	26.61	2.17
		velocity	7.12	8.80	8.65	8.39	8.03	7.67	7.45	6.99	7.84	212.0	7.87	8.52	7.84	7.22	8.18	7.52	

FINAL - 2020 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2020) - diamond league race analysis*

date	17-Sep-20	time	7.1	13.0	19.0	25.0	31.1	37.7	44.6	51.94	51.94	5 / 3							
reaction time	0.209	interval		5.90	6.00	6.00	6.10	6.60	6.90	7.34		# of strides	13.00	12.00	12.70	14.24	25.00	26.94	1.94
		velocity	7.04	8.47	8.33	8.33	8.20	7.58	7.25	6.81	7.70		7.69	8.33	7.87	7.02	8.00	7.42	

Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	01-Oct-19	time	6.91	12.65	18.45	24.41	30.58	36.99	43.71	50.96	50.96	5 / 2							
reaction time	0.213	interval		5.74	5.80	5.96	6.17	6.41	6.72	7.25		# of strides	12.65	11.76	12.58	13.97	24.41	26.55	2.14
		velocity	7.24	8.71	8.62	8.39	8.10	7.80	7.44	6.90	7.85	204.0	7.91	8.50	7.95	7.16	8.19	7.53	

FINAL - 2019 The Match - Europe v USA (Minsk, BLR) *European Athletics (2019) - race analysis*

date	09-Sep-19	time		12.82		24.68		37.58		52.35	52.35	5 / 6							
reaction time	0.301	interval				11.86		12.90		14.77		# of strides	12.82	11.86	12.90	14.77	24.68	27.67	2.99
		velocity		7.80		8.43		7.75		6.77	7.64	205.0	7.80	8.43	7.75	6.77	8.10	7.23	

FINAL - 2019 Weltklasse (Zürich, SUI) *Omega Timing (2019) - diamond league race analysis*

date	29-Aug-19	time	7.1	12.8	18.7	24.8	31.1	37.5	44.3	51.54	51.54	6 / 4							
reaction time	0.217	interval		5.7	5.9	6.1	6.3	6.4	6.8	7.2		# of strides	12.80	12.00	12.70	14.04	24.80	26.74	1.94
		velocity	7.04	8.77	8.47	8.20	7.94	7.81	7.35	6.91	7.76	207.7	7.81	8.33	7.87	7.12	8.06	7.48	

FINAL - 2019 Athletissima (Lausanne, SUI) *Omega Timing (2019) - diamond league race analysis*

date	05-Jul-19	time		12.8		24.9		37.7		51.73	51.73	2 / 6							
reaction time	0.204	interval				12.1		12.8		14.0		# of strides	12.80	12.10	12.80	14.03	24.90	26.83	1.93
		velocity		7.81		8.26		7.81		7.13	7.73		7.81	8.26	7.81	7.13	8.03	7.45	

FINAL - 2019 Golden Gala Pietro Mennea (Rome, ITA) *Omega Timing (2019) - diamond league race analysis*

date	06-Jun-19	time		12.8		24.9		37.8		52.04	52.04	7 / 5							
reaction time	0.184	interval				12.1		12.9		14.2		# of strides	12.80	12.10	12.90	14.24	24.90	27.14	2.24
		velocity		7.81		8.26		7.75		7.02	7.69	211.0	7.81	8.26	7.75	7.02	8.03	7.37	

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.9		25.0		37.8		51.85	51.85	8 / 7						
reaction time	0.172	interval				12.1		12.8		14.1		# of strides	12.90	12.10	12.80	14.05	25.00	26.85	1.85
		velocity		7.75		8.26		7.81		7.12	7.71		7.75	8.26	7.81	7.12	8.00	7.45	

FINAL - 2018 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2018) - diamond league race analysis*

date	10-Jun-18	time		12.8		24.8		37.6		51.34	51.34	2 / 7						
reaction time	0.208	interval				12.0		12.8		13.7		# of strides	12.80	12.00	12.80	13.74	24.80	26.54	1.74
		velocity		7.81		8.33		7.81		7.28	7.79	211.7	7.81	8.33	7.81	7.28	8.06	7.54	

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	7.01	12.72	18.55	24.67	30.92	37.44	44.12	51.05	51.05	6 / 1						
reaction time	0.216	interval		5.71	5.83	6.12	6.25	6.52	6.68	6.93	PB	# of strides	12.72	11.95	12.77	13.61	24.67	26.38	1.71
		velocity	7.13	8.76	8.58	8.17	8.00	7.67	7.49	7.22	7.84	211.5	7.86	8.37	7.83	7.35	8.11	7.58	

Szewinska, Irena (POL) (1946)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1976 Olympic Games (Montreal, CAN)																	*Lamare (1976) - les jeux de la XXI olympia, Montreal 1976*
date 29-Jul-76	time			23.12		35.58		49.29	49.29	4 / 1							
reaction time	interval					12.46		13.71	WR	# of strides			12.46	13.71	23.12	26.17	3.05
	velocity			8.65		8.03		7.29	8.12				8.03	7.29	8.65	7.64	

Semi-Final 1 - 1976 Olympic Games (Montreal, CAN) *Lamare (1976) - les jeux de la XXI olympia, Montreal 1976*

date	26-Jul-76	time	12.20		24.24		36.92		50.48	50.48	1 / 1						
reaction time		interval			12.04		12.68		13.56	OR	# of strides	12.20	12.04	12.68	13.56	24.24	26.24	2.00
		velocity	8.20		8.31		7.89		7.37	7.92		8.20	8.31	7.89	7.37	8.25	7.62	

FINAL - 1974 Kusocinski Memorial (Warsaw, POL) *Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)*

date	22-Jun-74	time		11.8		22.9		35.7		49.9	49.9	2 / 1						
reaction time		interval				11.1		12.8		14.2	WR	# of strides	11.80	11.10	12.80	14.20	22.90	27.00	4.10
		velocity		8.47		9.01		7.81		7.04	8.02	187.0	8.47	9.01	7.81	7.04	8.73	7.41	

Tærun, Frida Røe (NOR) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Bislett Games (Olso, NOR)																	*Omega Timing (2019) - diamond league race analysis*
date 13-Jun-19	time		13.2		26.0		40.6		56.23	56.23	3 / 5						
reaction time 0.182	interval				12.8		14.6		15.6		# of strides	13.20	12.80	14.60	15.63	26.00	30.23	4.23
	velocity		7.58		7.81		6.85		6.40	7.11		7.58	7.81	6.85	6.40	7.69	6.62	

Takagi, Rina (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17	time		13.57		26.85		41.00		60.91	60.91	2 / 8						
reaction time	interval				13.28		14.15		19.91		# of strides	13.57	13.28	14.15	19.91	26.85	34.06	7.21
	velocity		7.37		7.53		7.07		5.02	6.57	213.0	7.37	7.53	7.07	5.02	7.45	5.87	

FINAL - 2016 China Perfecture High School Championships (Okayama, JPN) *(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*

date	17-Jun-16	time		13.70		27.05		40.98		56.62	56.62	4 / 5						
reaction time		interval				13.35		13.93		15.64		# of strides	13.70	13.35	13.93	15.64	27.05	29.57	2.52
		velocity		7.30		7.49		7.18		6.39	7.06		7.30	7.49	7.18	6.39	7.39	6.76	

Takashima, Natsumi (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)																	*Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*
date 04-Aug-19	time	7.36	13.74	20.13	26.71	33.41	40.26	47.38	54.94	54.94	8 / 4							
reaction time	interval		6.38	6.39	6.58	6.70	6.85	7.12	7.56		# of strides	13.74	12.97	13.55	14.68	26.71	28.23	1.52
	velocity	6.79	7.84	7.82	7.60	7.46	7.30	7.02	6.61	7.28		7.28	7.71	7.38	6.81	7.49	7.08	

FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.40	13.58	20.07	26.87	33.98	41.22	48.58	56.28	56.28	8 / 6						
reaction time	0.239	interval		6.18	6.49	6.80	7.11	7.24	7.36	7.70		# of strides	13.58	13.29	14.35	15.06	26.87	29.41	2.54
		velocity	6.76	8.09	7.70	7.35	7.03	6.91	6.79	6.49	7.11		7.36	7.52	6.97	6.64	7.44	6.80	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.29	13.54	19.90	26.54	33.49	40.75	48.18	55.95	55.95	9 / 5						
reaction time		interval		6.25	6.36	6.64	6.95	7.26	7.43	7.77		# of strides	13.54	13.00	14.21	15.20	26.54	29.41	2.87
		velocity	6.86	8.00	7.86	7.53	7.19	6.89	6.73	6.44	7.15		7.39	7.69	7.04	6.58	7.54	6.80	

U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.60		26.48		40.75		55.57	55.57	3 / 6						
reaction time	0.226	interval				12.88		14.27		14.82		# of strides	13.60	12.88	14.27	14.82	26.48	29.09	2.61
		velocity		7.35		7.76		7.01		6.75	7.20	213.7	7.35	7.76	7.01	6.75	7.55	6.88	

U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.38		26.41		40.50		55.73	55.73	8 / 4						
reaction time	0.226	interval				13.03		14.09		15.23		# of strides	13.38	13.03	14.09	15.23	26.41	29.32	2.91
		velocity		7.47		7.67		7.10		6.57	7.18	217.7	7.47	7.67	7.10	6.57	7.57	6.82	

Takashima, Saki (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Japanese National Championships (Niigata, JPN)																	*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*
date 02-Oct-20	time	7.21	13.37	19.64	26.04	32.62	39.39	46.36	53.81	53.81	8 / 3							
reaction time 0.191	interval		6.16	6.27	6.40	6.58	6.77	6.97	7.45		# of strides	13.37	12.67	13.35	14.42	26.04	27.77	1.73
	velocity	6.93	8.12	7.97	7.81	7.60	7.39	7.17	6.71	7.43	204.0	7.48	7.89	7.49	6.93	7.68	7.20	

Heat 2 - 2020 Japanese National Championships (Niigata, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	01-Oct-20	time	7.25	13.60	20.02	26.53	33.21	40.10	47.13	54.49	54.49	5 / 2						
reaction time	0.217	interval		6.35	6.42	6.51	6.68	6.89	7.03	7.36		# of strides	13.60	12.93	13.57	14.39	26.53	27.96	1.43
		velocity	6.90	7.87	7.79	7.68	7.49	7.26	7.11	6.79	7.34	203.5	7.35	7.73	7.37	6.95	7.54	7.15	

FINAL - 2019 Japanese National High School Championships (Okinawa, JPN) *Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*

date	04-Aug-19	time	7.29	13.53	19.75	26.03	32.51	39.30	46.20	53.44	53.44	5 / 1						

reaction time		interval		6.24	6.22	6.28	6.48	6.79	6.90	7.24		# of strides	13.53	12.50	13.27	14.14	26.03	27.41	1.38
		velocity	6.86	8.01	8.04	7.96	7.72	7.36	7.25	6.91	7.49		7.39	8.00	7.54	7.07	7.68	7.30	

FINAL - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - research on athlete performance and technique- 2019 data book*

date	28-Jun-19	time	7.10	13.03	19.10	25.38	31.82	38.60	45.75	53.68	53.68	6 / 2							
reaction time	0.195	interval		5.93	6.07	6.28	6.44	6.78	7.15	7.93		# of strides	13.03	12.35	13.22	15.08	25.38	28.30	2.92
		velocity	7.04	8.43	8.24	7.96	7.76	7.37	6.99	6.31	7.45	207.7	7.67	8.10	7.56	6.63	7.88	7.07	

Heat 2 - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	27-Jun-19	time	7.11	13.07	19.29	25.72	32.32	39.18	46.38	54.19	54.19	4 / 1							
reaction time	0.239	interval		5.96	6.22	6.43	6.60	6.86	7.20	7.81		# of strides	13.07	12.65	13.46	15.01	25.72	28.47	2.75
		velocity	7.03	8.39	8.04	7.78	7.58	7.29	6.94	6.40	7.38		7.65	7.91	7.43	6.66	7.78	7.02	

U20 FINAL - 2018 National Sports Festival (Fukui, JPN) *Joshi (2018) - research on athlete performance and technique- 2018 data book*

date	08-Oct-18	time	7.35	13.78	20.39	27.07	33.78	40.50	47.30	54.61	54.61	6 / 1							
reaction time	0.240	interval		6.43	6.61	6.68	6.71	6.72	6.80	7.31		# of strides	13.78	13.29	13.43	14.11	27.07	27.54	0.47
		velocity	6.80	7.78	7.56	7.49	7.45	7.44	7.35	6.84	7.32		7.26	7.52	7.45	7.09	7.39	7.26	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	7.11	13.37	19.86	26.49	33.20	39.98	47.01	54.58	54.58	7 / 5							
reaction time	0.194	interval		6.26	6.49	6.63	6.71	6.78	7.03	7.57		# of strides	13.37	13.12	13.49	14.60	26.49	28.09	1.60
		velocity	7.03	7.99	7.70	7.54	7.45	7.37	7.11	6.61	7.33	209.2	7.48	7.62	7.41	6.85	7.55	7.12	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.09	13.26	19.52	25.91	32.44	39.18	46.18	53.78	53.78	8 / 1							
reaction time		interval		6.17	6.26	6.39	6.53	6.74	7.00	7.60		# of strides	13.26	12.65	13.27	14.60	25.91	27.87	1.96
		velocity	7.05	8.10	7.99	7.82	7.66	7.42	7.14	6.58	7.44		7.54	7.91	7.54	6.85	7.72	7.18	

Takeishi, Konomi (JPN) (1991)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	09-May-21	time	7.01	13.12	19.47	26.07	32.97	40.15	47.58	55.36	55.36	5 / 6							
reaction time	0.139	interval		6.11	6.35	6.60	6.90	7.18	7.43	7.78		# of strides	13.12	12.95	14.08	15.21	26.07	29.29	3.22
		velocity	7.13	8.18	7.87	7.58	7.25	6.96	6.73	6.43	7.23		7.62	7.72	7.10	6.57	7.67	6.83	

FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	03-May-21	time	7.12	13.35	20.00	27.00	34.18	41.58	49.16	57.13	57.13	6 / 6							
reaction time	0.171	interval		6.23	6.65	7.00	7.18	7.40	7.58	7.97		# of strides	13.35	13.65	14.58	15.55	27.00	30.13	3.13
		velocity	7.02	8.03	7.52	7.14	6.96	6.76	6.60	6.27	7.00		7.49	7.33	6.86	6.43	7.41	6.64	

FINAL - 2020 Japanese National Championships (Niigata, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	02-Oct-20	time	7.01	12.98	19.29	25.98	32.99	40.17	47.44	55.14	55.14	2 / 7							
reaction time	0.162	interval		5.97	6.31	6.69	7.01	7.18	7.27	7.70		# of strides	12.98	13.00	14.19	14.97	25.98	29.16	3.18
		velocity	7.13	8.38	7.92	7.47	7.13	6.96	6.88	6.49	7.25		7.70	7.69	7.05	6.68	7.70	6.86	

Heat 1 - 2020 Japanese National Championships (Niigata, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	01-Oct-20	time	6.89	12.74	18.84	25.23	31.89	38.95	46.31	54.19	54.19	5 / 3							
reaction time	0.157	interval		5.85	6.10	6.39	6.66	7.06	7.36	7.88		# of strides	12.74	12.49	13.72	15.24	25.23	28.96	3.73
		velocity	7.26	8.55	8.20	7.82	7.51	7.08	6.79	6.35	7.38		7.85	8.01	7.29	6.56	7.93	6.91	

FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	19-Sep-20	time	6.96	12.95	19.15	25.67	32.48	39.59	46.90	54.43	54.43	4 / 3							
reaction time	0.190	interval		5.99	6.20	6.52	6.81	7.11	7.31	7.53		# of strides	12.95	12.72	13.92	14.84	25.67	28.76	3.09
		velocity	7.18	8.35	8.06	7.67	7.34	7.03	6.84	6.64	7.35		7.72	7.86	7.18	6.74	7.79	6.95	

FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN) *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	23-Aug-20	time	7.05	13.03	19.19	25.80	32.64	39.78	47.04	54.63	54.63	8 / 5							
reaction time	0.144	interval		5.98	6.16	6.61	6.84	7.14	7.26	7.59		# of strides	13.03	12.77	13.98	14.85	25.80	28.83	3.03
		velocity	7.09	8.36	8.12	7.56	7.31	7.00	6.89	6.59	7.32		7.67	7.83	7.15	6.73	7.75	6.94	

FINAL - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - research on athlete performance and technique- 2019 data book*

date	28-Jun-19	time	6.85	12.71	18.92	25.48	32.22	39.28	46.56	54.19	54.19	8 / 4							
reaction time	0.160	interval		5.86	6.21	6.56	6.74	7.06	7.28	7.63		# of strides	12.71	12.77	13.80	14.91	25.48	28.71	3.23
		velocity	7.30	8.53	8.05	7.62	7.42	7.08	6.87	6.55	7.38		7.87	7.83	7.25	6.71	7.85	6.97	

Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN) *Yamanaka (2019) - race analysis of men and women 400m competition*

date	27-Jun-19	time	6.81	12.75	19.09	25.58	32.20	39.07	46.30	53.97	53.97	6 / 2							
reaction time	0.158	interval		5.94	6.34	6.49	6.62	6.87	7.23	7.67		# of strides	12.75	12.83	13.49	14.90	25.58	28.39	2.81
		velocity	7.34	8.42	7.89	7.70	7.55	7.28	6.92	6.52	7.41		7.84	7.79	7.41	6.71	7.82	7.04	

A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN) *Kobayashi (2019) - research on athlete performance and technique- 2019 data book*

date	03-May-19	time	6.94	12.84	18.88	25.39	32.30	39.45	46.86	54.77	54.77	/ 7							
reaction time		interval		5.90	6.04	6.51	6.91	7.15	7.41	7.91		# of strides	12.84	12.55	14.06	15.32	25.39	29.38	3.99
		velocity	7.20	8.47	8.28	7.68	7.24	6.99	6.75	6.32	7.30		7.79	7.97	7.11	6.53	7.88	6.81	

FINAL - 2018 National Sports Festival (Fukui, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	07-Oct-18	time	6.82	12.76	19.04	25.80	32.74	39.76	46.85	54.28	54.28	4 / 3							
reaction time	0.153	interval		5.94	6.28	6.76	6.94	7.02	7.09	7.43		# of strides	12.76	13.04	13.96	14.52	25.80	28.48	2.68
		velocity	7.33	8.42	7.96	7.40	7.20	7.12	7.05	6.73	7.37		7.84	7.67	7.16	6.89	7.75	7.02	

FINAL - 2018 Japanese Corporate Championships (Osaka, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Sep-18	time	7.00	12.99	19.10	25.63	32.52	39.58	46.80	54.24	54.24	4 / 1							
reaction time	0.145	interval		5.99	6.11	6.53	6.89	7.06	7.22	7.44		# of strides	12.99	12.64	13.95	14.66	25.63	28.61	2.98
		velocity	7.14	8.35	8.18	7.66	7.26	7.08	6.93	6.72	7.37		7.70	7.91	7.17	6.82	7.80	6.99	

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	23-Jun-18	time	6.88	12.88	19.17	25.72	32.52	39.49	46.65	54.32	54.32	6 / 4							

reaction time	0.161	interval		6.00	6.29	6.55	6.80	6.97	7.16	7.67		# of strides	12.88	12.84	13.77	14.83	25.72	28.60	2.88
		velocity	7.27	8.33	7.95	7.63	7.35	7.17	6.98	6.52	7.36	199.2	7.76	7.79	7.26	6.74	7.78	6.99	

Heat 2 - 2018 Japanese National Championships (Yamaguchi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	22-Jun-18	time	6.87	12.73	18.84	25.27	32.00	39.07	46.33	54.04	54.04	4 / 1							
reaction time	0.149	interval		5.86	6.11	6.43	6.73	7.07	7.26	7.71		# of strides	12.73	12.54	13.80	14.97	25.27	28.77	3.50
		velocity	7.28	8.53	8.18	7.78	7.43	7.07	6.89	6.49	7.40	200.7	7.86	7.97	7.25	6.68	7.91	6.95	

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	6.76	12.63	18.72	25.23	32.09	39.23	46.45	53.89	53.89	2 / 6							
reaction time	0.148	interval		5.87	6.09	6.51	6.86	7.14	7.22	7.44		# of strides	12.63	12.60	14.00	14.66	25.23	28.66	3.43
		velocity	7.40	8.52	8.21	7.68	7.29	7.00	6.93	6.72	7.42		7.92	7.94	7.14	6.82	7.93	6.98	

FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	03-May-18	time	6.97	13.01	19.22	25.65	32.34	39.31	46.51	54.15	54.15	5 / 3							
reaction time	0.169	interval		6.04	6.21	6.43	6.69	6.97	7.20	7.64		# of strides	13.01	12.64	13.66	14.84	25.65	28.50	2.85
		velocity	7.17	8.28	8.05	7.78	7.47	7.17	6.94	6.54	7.39	199.5	7.69	7.91	7.32	6.74	7.80	7.02	

FINAL - 2017 National Sports Festival (Matsuyama, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	08-Oct-17	time	6.83	12.67	18.79	25.31	32.14	39.27	46.62	54.46	54.46	4 / 3							
reaction time	0.168	interval		5.84	6.12	6.52	6.83	7.13	7.35	7.84		# of strides	12.67	12.64	13.96	15.19	25.31	29.15	3.84
		velocity	7.32	8.56	8.17	7.67	7.32	7.01	6.80	6.38	7.34	196.7	7.89	7.91	7.16	6.58	7.90	6.86	

FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/10/05/post-1097/*

date	24-Sep-17	time		12.80		25.65		39.57		54.54	54.54	5 / 2							
reaction time	0.165	interval				12.85		13.92		14.97		# of strides	12.80	12.85	13.92	14.97	25.65	28.89	3.24
		velocity		7.81		7.78		7.18		6.68	7.33	193.0	7.81	7.78	7.18	6.68	7.80	6.92	

FINAL - 2017 Japanese National Championships (Osaka, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	6.90	12.86	18.94	25.33	31.98	38.97	46.21	53.83	53.83	5 / 2							
reaction time	0.163	interval		5.96	6.08	6.39	6.65	6.99	7.24	7.62		# of strides	12.86	12.47	13.64	14.86	25.33	28.50	3.17
		velocity	7.25	8.39	8.22	7.82	7.52	7.15	6.91	6.56	7.43	194.7	7.78	8.02	7.33	6.73	7.90	7.02	

Heat 2 - 2017 Japanese National Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/07/10/post-978/*

date	23-Jun-17	time		12.74		25.00		38.65		53.47	53.47	5 / 1							
reaction time	0.165	interval				12.26		13.65		14.82	**PB**	# of strides	12.74	12.26	13.65	14.82	25.00	28.47	3.47
		velocity		7.85		8.16		7.33		6.75	7.48	194.2	7.85	8.16	7.33	6.75	8.00	7.02	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN) *Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	6.90	12.85	19.17	25.85	32.86	40.04	47.43	55.34	55.34	/ 5							
reaction time		interval		5.95	6.32	6.68	7.01	7.18	7.39	7.91		# of strides	12.85	13.00	14.19	15.30	25.85	29.49	3.64
		velocity	7.25	8.40	7.91	7.49	7.13	6.96	6.77	6.32	7.23		7.78	7.69	7.05	6.54	7.74	6.78	

FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m) *(2017) - tfdata-store.com/2017/05/17/post-537/*

date	23-Apr-17	time		12.42		24.87		38.96			38.96	3 / 4							***100m-300m***
reaction time		interval				12.45		14.09				# of strides	12.42	12.45	14.09		24.87		*26.54*
		velocity		8.05		8.03		7.10			7.70	149.5	8.05	8.03	7.10		8.04		*7.54*

FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	09-Oct-16	time	6.95	13.05	19.37	26.01	32.95	40.05	47.34	54.93	54.93	4 / 2							
reaction time	0.200	interval		6.10	6.32	6.64	6.94	7.10	7.29	7.59		# of strides	13.05	12.96	14.04	14.88	26.01	28.92	2.91
		velocity	7.19	8.20	7.91	7.53	7.20	7.04	6.86	6.59	7.28		7.66	7.72	7.12	6.72	7.69	6.92	

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	03-May-16	time	6.87	12.79	19.00	25.68	32.81	40.21	47.89	56.11	56.11	/ 6							
reaction time		interval		5.92	6.21	6.68	7.13	7.40	7.68	8.22		# of strides	12.79	12.89	14.53	15.90	25.68	30.43	4.75
		velocity	7.28	8.45	8.05	7.49	7.01	6.76	6.51	6.08	7.13		7.82	7.76	6.88	6.29	7.79	6.57	

FINAL - 2015 Japanese National Championships (Niigata, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	6.85	12.67	18.72	25.09	31.97	39.05	46.18	53.58	53.58	8 / 4							
reaction time	0.159	interval		5.82	6.05	6.37	6.88	7.08	7.13	7.40	**PB**	# of strides	12.67	12.42	13.96	14.53	25.09	28.49	3.40
		velocity	7.30	8.59	8.26	7.85	7.27	7.06	7.01	6.76	7.47	196.5	7.89	8.05	7.16	6.88	7.97	7.02	

Takeuchi, Masako (JPN) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)											*Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*						
date 24-Sep-06 time	6.9	12.9	18.9	25.2	31.8	38.8	46.1	54.04	54.04	4 / 4							
reaction time interval		6.00	6.00	6.30	6.60	7.00	7.30	7.94	**PB**	# of strides	12.90	12.30	13.60	15.24	25.20	28.84	3.64
velocity	7.25	8.33	8.33	7.94	7.58	7.14	6.85	6.30	7.40		7.75	8.13	7.35	6.56	7.94	6.93	

Takino, Miku (JPN) (2005)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)											*Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*						
date 23-Oct-21 time	7.00	12.87	18.91	25.23	31.81	38.63			38.63	5 / 1							
reaction time interval		5.87	6.04	6.32	6.58	6.82			**PB**	# of strides	12.87	12.36	13.40		25.23		
velocity	7.14	8.52	8.28	7.91	7.60	7.33			7.77	148.7	7.77	8.09	7.46		7.93		

Takisawa, Aya (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)											*Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*						
date 29-Jul-12 time		13.50		26.99		41.13		56.56	56.56	9 / 8							
reaction time interval				13.49		14.14		15.43		# of strides	13.50	13.49	14.14	15.43	26.99	29.57	2.58
velocity		7.41		7.41		7.07		6.48	7.07		7.41	7.41	7.07	6.48	7.41	6.76	

Tanaka, Chisato (JPN) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Race C - 2016 Shizuoka International Meeting (Fukuroi, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 03-May-16 time	7.13	13.29	19.65	26.19	33.01	40.11	47.67	55.97	55.97	/ 1							
reaction time interval		6.16	6.36	6.54	6.82	7.10	7.56	8.30		# of strides	13.29	12.90	13.92	15.86	26.19	29.78	3.59
velocity	7.01	8.12	7.86	7.65	7.33	7.04	6.61	6.02	7.15		7.52	7.75	7.18	6.31	7.64	6.72	

FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN) — *Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*

date	24-Sep-06	time	7.3	13.5	19.7	26.1	32.7	39.8	47.3	55.09	55.09	7 / 5						
reaction time		interval		6.20	6.20	6.40	6.60	7.10	7.50	7.79		# of strides	13.50	12.60	13.70	15.29	26.10	28.99	2.89
		velocity	6.85	8.06	8.06	7.81	7.58	7.04	6.67	6.42	7.26		7.41	7.94	7.30	6.54	7.66	6.90	

Taneru, Asuruhan Marino (JPN) (200

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2021 Japanese High School National Championships (Fukui, JPN) — *Shibayama (2021) - national high school and U20 national championhsips*

date	28-Jul-21	time	7.05	13.23	19.60	26.12	32.95	39.90	46.90	54.42	54.42	3 / 1						
reaction time	0.194	interval		6.18	6.37	6.52	6.83	6.95	7.00	7.52	PB	# of strides	13.23	12.89	13.78	14.52	26.12	28.30	2.18
		velocity	7.09	8.09	7.85	7.67	7.32	7.19	7.14	6.65	7.35		7.56	7.76	7.26	6.89	7.66	7.07	

FINAL - 2021 Japanese U20 National Championships (Osaka, JPN) — *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	25-Jun-21	time	7.19	13.50	19.90	26.60	33.45	40.38	47.50	55.08	55.08	6 / 2						
reaction time	0.281	interval		6.31	6.40	6.70	6.85	6.93	7.12	7.58		# of strides	13.50	13.10	13.78	14.70	26.60	28.48	1.88
		velocity	6.95	7.92	7.81	7.46	7.30	7.22	7.02	6.60	7.26	204.5	7.41	7.63	7.26	6.80	7.52	7.02	

Taniguchi, Rina (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2022 Japanese National High School Championships (Naruto, JPN) — *Kishima (2022) - national high school championships biomechanics data collection*

date	03-Aug-22	time		13.58		26.76		40.41		55.80	55.80	3 / 6						
reaction time	0.232	interval				13.18		13.65		15.39		# of strides	13.58	13.18	13.65	15.39	26.76	29.04	2.28
		velocity		7.36		7.59		7.33		6.50	7.17	207.7	7.36	7.59	7.33	6.50	7.47	6.89	

FINAL - 2021 Japanese High School National Championships (Fukui, JPN) — *Shibayama (2021) - national high school and U20 national championhsips*

date	28-Jul-21	time	7.16	13.48	20.09	26.83	33.87	40.96	48.19	55.90	55.90	7 / 5						
reaction time	0.184	interval		6.32	6.61	6.74	7.04	7.09	7.23	7.71		# of strides	13.48	13.35	14.13	14.94	26.83	29.07	2.24
		velocity	6.98	7.91	7.56	7.42	7.10	7.05	6.92	6.49	7.16		7.42	7.49	7.08	6.69	7.45	6.88	

Terrero, Indira (CUB) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.73		24.77		37.46		51.87	51.87	7 / 5						
reaction time	0.273	interval				12.04		12.69		14.41		# of strides	12.73	12.04	12.69	14.41	24.77	27.10	2.33
		velocity		7.86		8.31		7.88		6.94	7.71		7.86	8.31	7.88	6.94	8.07	7.38	

Heat 1 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.85		24.96		37.89		51.98	51.98	2 / 3						
reaction time	0.301	interval				12.11		12.93		14.09		# of strides	12.85	12.11	12.93	14.09	24.96	27.02	2.06
		velocity		7.78		8.26		7.73		7.10	7.70		7.78	8.26	7.73	7.10	8.01	7.40	

Thiam, Amy Mbacké (SEN) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.11		24.04		37.16		51.70	51.70	8 / 5						
reaction time	0.166	interval				11.93		13.12		14.54		# of strides	12.11	11.93	13.12	14.54	24.04	27.66	3.62
		velocity		8.26		8.38		7.62		6.88	7.74		8.26	8.38	7.62	6.88	8.32	7.23	

Heat 6 - 2009 IAAF World Championships (Berlin, GER) — *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.68		25.40		38.56		52.79	52.79	6 / 3						
reaction time	0.159	interval				12.72		13.16		14.23		# of strides	12.68	12.72	13.16	14.23	25.40	27.39	1.99
		velocity		7.89		7.86		7.60		7.03	7.58		7.89	7.86	7.60	7.03	7.87	7.30	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) — *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time		12.10		23.87		36.63		50.33	50.33	1 / 4						
reaction time	0.159	interval				11.77		12.76		13.70		# of strides	12.10	11.77	12.76	13.70	23.87	26.46	2.59
		velocity		8.26		8.50		7.84		7.30	7.95		8.26	8.50	7.84	7.30	8.38	7.56	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-05	time						36.5		52.2	52.22	8 / 8						
reaction time	0.169	interval								15.72		# of strides				15.72			
		velocity						8.22		6.36	7.66					6.36			

FINAL - 2003 IAAF World Championships (Paris, FRA) — *Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*

date	27-Aug-03	time				23.1		35.7		49.95	49.95	6 / 3						
reaction time	0.175	interval						12.60		14.25		# of strides			12.60	14.25	23.10	26.85	3.75
		velocity				8.66		7.94		7.02	8.01				7.94	7.02	8.66	7.45	

Thimm, Ute (FRG) (1958)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR) — *Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988*

date	25-Sep-88	time		12.07		23.80		36.15		50.28	50.28	6 / 6						
reaction time		interval				11.73		12.35		14.13	PB	# of strides	12.07	11.73	12.35	14.13	23.80	26.48	2.68
		velocity		8.29		8.53		8.10		7.08	7.96		8.29	8.53	8.10	7.08	8.40	7.55	

FINAL - 1984 Olympic Games (Los Angeles, CA) — *Adams (1984) - 1984 olympic games - 200m & 400m*

date	06-Aug-84	time				24.9				50.37	50.37	1 / 6						
reaction time	0.215	interval								25.47		# of strides					24.90	25.47	0.57
		velocity				8.03				7.85	7.94						8.03	7.85	

Thomas, Kim (USA)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1980 USA Olympic Trials (Eugene, OR) — *Hymans (2008) - history of the US olympic trials - track and field*

date	25-Jun-80	time				25.7				52.8	52.75	/ 6						
reaction time		interval								27.10		# of strides					25.70	27.10	1.40
		velocity				7.78				7.38	7.58						7.78	7.38	

Thomas, Maureen (KEN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Jul-16	time	6.97	12.67	18.59	24.86	31.27	37.91	44.79	52.09	52.09	2 / 5						
reaction time	0.164	interval		5.70	5.92	6.27	6.41	6.64	6.88	7.30	PB	# of strides	12.67	12.19	13.05	14.18	24.86	27.23	2.37

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
		velocity	7.17	8.77	8.45	7.97	7.80	7.53	7.27	6.85	7.68		7.89	8.20	7.66	7.05	8.05	7.34	

Thornton, Jessica (AUS) (1998)

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL) — *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	21-Jul-16	time	6.69	12.21	18.15	24.43	30.87	37.57	44.54	52.05	52.05	6 / 4							
reaction time	0.159	interval		5.52	5.94	6.28	6.44	6.70	6.97	7.51	PB	# of strides	12.21	12.22	13.14	14.48	24.43	27.62	3.19
		velocity	7.47	9.06	8.42	7.96	7.76	7.46	7.17	6.66	7.68		8.19	8.18	7.61	6.91	8.19	7.24	

Tong Zenghuan (CHN) (1995)

FINAL - 2018 Asian Games (Jakarta, INA) — *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	26-Aug-18	time	7.26	13.37	19.61	26.04	32.66	39.44	46.44	53.95	53.95	7 / 6							
reaction time	0.296	interval		6.11	6.24	6.43	6.62	6.78	7.00	7.51		# of strides	13.37	12.67	13.40	14.51	26.04	27.91	1.87
		velocity	6.89	8.18	8.01	7.78	7.55	7.37	7.14	6.66	7.41		7.48	7.89	7.46	6.89	7.68	7.17	

FINAL - 2017 Chinese National Games (Tianjin, CHN) — *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	03-Sep-17	time		13.13		25.46		38.39		52.76	52.76	/ 3							
reaction time		interval				12.33		12.93		14.37		# of strides	13.13	12.33	12.93	14.37	25.46	27.30	1.84
		velocity		7.62		8.11		7.73		6.96	7.58	199.0	7.62	8.11	7.73	6.96	7.86	7.33	

Torihara, Saki (JPN) (1992)

FINAL - 2009 Japanese National High School Championships (Nara, JPN) — *Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	29-Jul-09	time		13.28		26.33		40.33		55.22	55.22	2 / 2							
reaction time		interval				13.05		14.00		14.89		# of strides	13.28	13.05	14.00	14.89	26.33	28.89	2.56
		velocity		7.53		7.66		7.14		6.72	7.24		7.53	7.66	7.14	6.72	7.60	6.92	

Totani, Nukumi (JPN) (1998)

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN) — *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	16-Oct-15	time	7.23	13.23	19.47	26.06	32.95	40.25	47.87	55.94	55.94	/ 5							
reaction time		interval		6.00	6.24	6.59	6.89	7.30	7.62	8.07		# of strides	13.23	12.83	14.19	15.69	26.06	29.88	3.82
		velocity	6.92	8.33	8.01	7.59	7.26	6.85	6.56	6.20	7.15		7.56	7.79	7.05	6.37	7.67	6.69	

Trent, Tia (USA) (1979)

Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA) — *USATF Women's Sprint Development (2003)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	20-Jun-03	time				24.64		38.37	45.89	54.24	54.24	9 / 7							
reaction time		interval						13.73	7.52	8.35		# of strides			13.73	15.87	24.64	29.60	4.96
		velocity				8.12		7.28	6.65	5.99	7.37				7.28	6.30	8.12	6.76	

Trotter, De'Hashia (Dee Dee) (USA) (1

FINAL - 2012 Olympic Games (London, GBR) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	05-Aug-12	time		12.1		23.7		35.9		49.7	49.72	4 / 3							
reaction time	0.167	interval				11.60		12.20		13.80		# of strides	12.10	11.60	12.20	13.80	23.70	26.00	2.30
		velocity		8.26		8.62		8.20		7.25	8.05	187.5	8.26	8.62	8.20	7.25	8.44	7.69	

FINAL - 2012 USA Olympic Trials (Eugene, OR) — *Hymans (2020) - history of the US olympic trials - track and field*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	24-Jun-12	time				24.3		36.5		50.02	50.02	7 / 2							
reaction time	0.269	interval						12.20		13.52		# of strides		24.30	12.20	13.52	24.30	25.72	1.42
		velocity				8.23		8.20		7.40	8.00			4.12	8.20	7.40	8.23	7.78	

FINAL - 2008 USA Olympic Trials (Eugene, OR) — *USATF Women's Sprint Development with HPC (2008)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	03-Jul-08	time		12.79	17.89	24.62	30.72	37.15	43.61	50.88	50.88	7 / 3							
reaction time		interval			5.10	6.73	6.10	6.43	6.46	7.27		# of strides	12.79	11.83	12.53	13.73	24.62	26.26	1.64
		velocity		7.82	9.80	7.43	8.20	7.78	7.74	6.88	7.86		7.82	8.45	7.98	7.28	8.12	7.62	

Quarter-Final 4 - 2008 USA Olympic Trials (Eugene, OR) — *USATF Women's Sprint Development with HPC (2008)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	29-Jun-08	time			19.53	25.72	31.92	38.43	44.83	51.97	51.97	8 / 1							
reaction time		interval				6.19	6.20	6.51	6.40	7.14		# of strides			12.71	13.54	25.72	26.25	0.53
		velocity			7.68	8.08	8.06	7.68	7.81	7.00	7.70				7.87	7.39	7.78	7.62	

FINAL - 2007 IAAF World Championships (Osaka, JPN) — *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	29-Aug-07	time	7.00	12.54	18.28	24.23	30.03	36.27	42.91	50.17	50.17	8 / 5							
reaction time	0.162	interval		5.54	5.74	5.95	5.80	6.24	6.64	7.26		# of strides	12.54	11.69	12.04	13.90	24.23	25.94	1.71
		velocity	7.14	9.03	8.71	8.40	8.62	8.01	7.53	6.89	7.97	187.7	7.97	8.55	8.31	7.19	8.25	7.71	

FINAL - 2006 USATF National Championship (Indianapolis, IN) — *USATF Women's Sprint Development (2006)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	24-Jun-06	time		12.12	17.58	24.07	30.01	36.24	43.01	50.40	50.40	6 / 2							
reaction time		interval			5.46	6.49	5.94	6.23	6.77	7.39		# of strides	12.12	11.95	12.17	14.16	24.07	26.33	2.26
		velocity		8.25	9.16	7.70	8.42	8.03	7.39	6.77	7.94	191.2	8.25	8.37	8.22	7.06	8.31	7.60	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) — *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	19-Sep-05	time		12.71		24.65		36.43	42.93	50.03	50.03	5 / 1							
reaction time		interval				11.94		11.78	6.50	7.10		# of strides	12.71	11.94	11.78	13.60	24.65	25.38	0.73
		velocity		7.87		8.38		8.49	7.69	7.04	8.00		7.87	8.38	8.49	7.35	8.11	7.88	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) — *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	10-Aug-05	time						36.5		51.1	51.14	7 / 5							
reaction time	0.176	interval								14.64		# of strides				14.64			
		velocity						8.22		6.83	7.82					6.83			

FINAL - 2005 USATF National Championship (Carson, CA) — *USATF Women's Sprint Development (2005)*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	25-Jun-05	time		12.45	18.28	24.46	30.50	36.60	43.04	49.88	49.88	5 / 2							
reaction time		interval			5.83	6.18	6.04	6.10	6.44	6.84	PB	# of strides	12.45	12.01	12.14	13.28	24.46	25.42	0.96
		velocity		8.03	8.58	8.09	8.28	8.20	7.76	7.31	8.02		8.03	8.33	8.24	7.53	8.18	7.87	

FINAL - 2004 Olympic Games (Athens, GRE) — *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
date	24-Aug-04	time		12.3		23.9		36.0		50.0	50.00	1 / 5							
reaction time	0.225	interval				11.6		12.1		14.0	PB	# of strides	12.30	11.60	12.10	14.00	23.90	26.10	2.20
		velocity																	

		velocity	8.13		8.62		8.26		7.14	8.00		8.13	8.62	8.26	7.14	8.37	7.66	

FINAL - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	17-Jul-04	time	12.43		24.19	30.45	36.77	43.06	50.28	50.28	4 / 3							
reaction time		interval			11.76	6.26	6.32	6.29	7.22	**PB**	# of strides	12.43	11.76	12.58	13.51	24.19	26.09	1.90
		velocity	8.05		8.50	7.99	7.91	7.95	6.93	7.96		8.05	8.50	7.95	7.40	8.27	7.67	

Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time	12.88		24.71	30.83	37.29	43.68	50.53	50.53	3 / 1							
reaction time		interval			11.83	6.12	6.46	6.39	6.85		# of strides	12.88	11.83	12.58	13.24	24.71	25.82	1.11
		velocity	7.76		8.45	8.17	7.74	7.82	7.30	7.92	188.0	7.76	8.45	7.95	7.55	8.09	7.75	

Heat 1 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time	12.51		24.10		36.80	43.44	50.52	50.52	4 / 1							
reaction time		interval			11.59		12.70	6.64	7.08		# of strides	12.51	11.59	12.70	13.72	24.10	26.42	2.32
		velocity	7.99		8.63		7.87	7.53	7.06	7.92		7.99	8.63	7.87	7.29	8.30	7.57	

FINAL - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	21-Jun-03	time			24.39		37.37	44.31	51.78	51.78	2 / 3							
reaction time		interval					12.98	6.94	7.47		# of strides			12.98	14.41	24.39	27.39	3.00
		velocity			8.20		7.70	7.20	6.69	7.72				7.70	6.94	8.20	7.30	

Semi-Final 2 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time			24.63		37.99	44.76	52.57	52.57	5 / 3							
reaction time		interval					13.36	6.77	7.81		# of strides			13.36	14.58	24.63	27.94	3.31
		velocity			8.12		7.49	7.39	6.40	7.61				7.49	6.86	8.12	7.16	

Tsuboura, Ryoko (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)										*Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*							
date 29-Jul-12 time		13.38		26.53		40.71		56.42	56.42	3 / 7							
reaction time interval				13.15		14.18		15.71		# of strides	13.38	13.15	14.18	15.71	26.53	29.89	3.36
velocity		7.47		7.60		7.05		6.37	7.09		7.47	7.60	7.05	6.37	7.54	6.69	

Tsugawa, Rui (JPN) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)										*Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*							
date 04-Aug-19 time	7.47	13.90	20.42	26.97	33.65	40.63	47.91	55.73	55.73	2 / 7							
reaction time interval		6.43	6.52	6.55	6.68	6.98	7.28	7.82		# of strides	13.90	13.07	13.66	15.10	26.97	28.76	1.79
velocity	6.69	7.78	7.67	7.63	7.49	7.16	6.87	6.39	7.18		7.19	7.65	7.32	6.62	7.42	6.95	
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)										*Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*							
date 02-Aug-18 time	7.35	13.60	20.19	27.02	33.93	41.17	48.64	56.75	56.75	3 / 8							
reaction time interval		6.25	6.59	6.83	6.91	7.24	7.47	8.11		# of strides	13.60	13.42	14.15	15.58	27.02	29.73	2.71
velocity	6.80	8.00	7.59	7.32	7.24	6.91	6.69	6.17	7.05		7.35	7.45	7.07	6.42	7.40	6.73	

Tsuji, Mio (JPN) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN)										*(2017) - tfdata-store.com/2017/04/07/post-249/*							
date 06-Apr-17 time		14.63		29.01				61.26	61.26	8 / 8							
reaction time interval				14.38				32.25		# of strides	14.63	14.38			29.01	32.25	3.24
velocity		6.84		6.95				6.20	6.53		6.84	6.95			6.89	6.20	

Tsumagari, Ako (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)										*(2017) - tfdata-store.com/2017/05/13/post-441/*							
date 11-May-17 time		14.15						55.79	55.79	9 / 7							
reaction time interval								41.64		# of strides	14.15						
velocity		7.07						7.20	7.17		7.07						

Tveit, June Sæbøe (NOR) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Bislett Games (Olso, NOR)										*Omega Timing (2019) - diamond league race analysis*							
date 13-Jun-19 time		13.5		26.9		41.1		56.56	56.56	2 / 6							
reaction time 0.182 interval				13.4		14.2		15.5	**=PB**	# of strides	13.50	13.40	14.20	15.46	26.90	29.66	2.76
velocity		7.41		7.46		7.04		6.47	7.07		7.41	7.46	7.04	6.47	7.43	6.74	

Uko, Imaobong Nse (NGR) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date 20-Aug-23 time		12.89		25.13		38.35		52.24	52.24	2 / 6							
reaction time 0.206 interval				12.24		13.22		13.89		# of strides	12.89	12.24	13.22	13.89	25.13	27.11	1.98
velocity		7.76		8.17		7.56		7.20	7.66	192.0	7.76	8.17	7.56	7.20	7.96	7.38	
Heat 4 - 2022 World Athletics Championships (Eugene, OR)										*Timing by Seiko (2022) - world athletics championships race analysis*							
date 17-Jul-22 time		12.76		25.22		38.50		52.80	52.80	8 / 7							
reaction time 0.203 interval				12.46		13.28		14.30		# of strides	12.76	12.46	13.28	14.30	25.22	27.58	2.36
velocity		7.84		8.03		7.53		6.99	7.58	194.0	7.84	8.03	7.53	6.99	7.93	7.25	

Uesugi, Haruna (JPN) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)										*(2017) - tfdata-store.com/2017/07/10/post-978/*							
date 23-Jun-17 time		13.01		25.52		39.85		56.07	56.07	2 / 6							
reaction time 0.175 interval				12.51		14.33		16.22		# of strides	13.01	12.51	14.33	16.22	25.52	30.55	5.03
velocity		7.69		7.99		6.98		6.17	7.13	208.7	7.69	7.99	6.98	6.17	7.84	6.55	
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)										*(2017) - tfdata-store.com/2017/05/13/post-441/*							
date 11-May-17 time		13.03		25.55		39.66		55.52	55.52	4 / 5							
reaction time interval				12.52		14.11		15.86		# of strides	13.03	12.52	14.11	15.86	25.55	29.97	4.42
velocity		7.67		7.99		7.09		6.31	7.20		7.67	7.99	7.09	6.31	7.83	6.67	
FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m)										*(2017) - tfdata-store.com/2017/05/17/post-537/*							
date 23-Apr-17 time		12.99		25.77		39.98			39.98	7 / 6							***100m-300m***

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

reaction time		interval			12.78		14.21			PB	# of strides	12.99	12.78	14.21		25.77		*26.99*
		velocity		7.70		7.82		7.04		7.50	156.5	7.70	7.82	7.04		7.76		*7.41*

FINAL - 2017 Osaka University Atheltics Championships (Osaka, JPN) *(2017) - tfdata-store.com/2017/04/07/post-249/*

date	06-Apr-17	time		13.15		25.86		40.24		56.78	56.78	7 / 1						
reaction time		interval				12.71		14.38		16.54		# of strides	13.15	12.71	14.38	16.54	25.86	30.92	5.06
		velocity		7.60		7.87		6.95		6.05	7.04	212.5	7.60	7.87	6.95	6.05	7.73	6.47	

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	10-Oct-16	time	6.98	12.93	19.24	26.00	33.13	40.48	48.04	56.00	56.00	5 / 5						
reaction time	0.202	interval		5.95	6.31	6.76	7.13	7.35	7.56	7.96		# of strides	12.93	13.07	14.48	15.52	26.00	30.00	4.00
		velocity	7.16	8.40	7.92	7.40	7.01	6.80	6.61	6.28	7.14		7.73	7.65	6.91	6.44	7.69	6.67	

FINAL - 2015 Japanese National High School Championships (Wakayama, CHN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	29-Jul-15	time	7.12	13.27	19.50	26.12	33.09	40.38	47.88	55.74	55.74	/ 6						
reaction time		interval		6.15	6.23	6.62	6.97	7.29	7.50	7.86		# of strides	13.27	12.85	14.26	15.36	26.12	29.62	3.50
		velocity	7.02	8.13	8.03	7.55	7.17	6.86	6.67	6.36	7.18		7.54	7.78	7.01	6.51	7.66	6.75	

Ueyama, Misaki (JPN) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2010 Japanese National High School Championships (Okinawa, JPN)										*Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data*							
date 29-Jul-10	time	7.20	13.30	19.57	25.98	32.69	39.84	47.33	55.52	55.52	/ 2							
reaction time	interval		6.10	6.27	6.41	6.71	7.15	7.49	8.19		# of strides	13.30	12.68	13.86	15.68	25.98	29.54	3.56
	velocity	6.94	8.20	7.97	7.80	7.45	6.99	6.68	6.11	7.20		7.52	7.89	7.22	6.38	7.70	6.77	

Umehara, Satsuki (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Izumo Athletics Games (Izuma, JPN) (300m)																*(2017) - tfdata-store.com/2017/05/17/post-537/*	
date 23-Apr-17	time		13.35		26.28		40.52			40.52	1 / 9							***100m-300m***
reaction time	interval				12.93		14.24				# of strides	13.35	12.93	14.24		26.28		*27.17*
	velocity		7.49		7.73		7.02			7.40	157.0	7.49	7.73	7.02		7.61		*7.36*

Usovich, Ilona (BLR) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER)																*Graubner (2007) - http://www.fgs.uni-halle.de*	
date 23-Sep-07	time		12.59		24.27		37.21		51.31	51.38	8 / 8							
reaction time 0.196	interval				11.68		12.94		14.10		# of strides	12.59	11.68	12.94	14.10	24.27	27.04	2.77
	velocity		7.94		8.56		7.73		7.09	7.79		7.94	8.56	7.73	7.09	8.24	7.40	

FINAL - 2007 IAAF World Championships (Osaka, JPN) *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

date	29-Aug-07	time	6.90	12.54	18.35	24.45	30.62	36.97	43.53	50.54	50.54	3 / 7						
reaction time	0.192	interval		5.64	5.81	6.10	6.17	6.35	6.56	7.01		# of strides	12.54	11.91	12.52	13.57	24.45	26.09	1.64
		velocity	7.25	8.87	8.61	8.20	8.10	7.87	7.62	7.13	7.91	194.0	7.97	8.40	7.99	7.37	8.18	7.67	

FINAL - 2006 European Championships (Göteborg, SWE) *Behm (2006) - Championnats d'Europe Göteborg 2006… Le 400m avec ou sans obstacles*

date	10-Aug-06	time				23.8		36.4		50.69	50.69	/ 5						
reaction time		interval						12.60		14.29	NR	# of strides		23.80	12.60	14.29	23.80	26.89	3.09
		velocity				8.40		15.87		7.00	7.89			4.20	7.94	7.00	8.40	7.44	

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN) *Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time		12.73		24.89		37.53	44.32	51.45	51.45	3 / 3						
reaction time		interval				12.16		12.64	6.79	7.13		# of strides	12.73	12.16	12.64	13.92	24.89	26.56	1.67
		velocity		7.86		8.22		7.91	7.36	7.01	7.77		7.86	8.22	7.91	7.18	8.04	7.53	

Usovich, Sviatlana (BLR) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2002 European Championships (Munich, GER)																*Graubner (2009) - http://www.fgs.uni-halle.de*	
date 08-Aug-02	time		12.91		24.96		38.19		52.10	52.10	/ 7							
reaction time 0.164	interval				12.05		13.23		13.91		# of strides	12.91	12.05	13.23	13.91	24.96	27.14	2.18
	velocity		7.75		8.30		7.56		7.19	7.68		7.75	8.30	7.56	7.19	8.01	7.37	

Vaičule, Gunta (LAT) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																*Seiko Timing (2023) - world championship race analysis*	
date 20-Aug-23	time		12.69		24.29		37.06		51.36	51.36	6 / 5							
reaction time 0.192	interval				11.60		12.77		14.30		# of strides	12.69	11.60	12.77	14.30	24.29	27.07	2.78
	velocity		7.88		8.62		7.83		6.99	7.79		7.88	8.62	7.83	6.99	8.23	7.39	

Heat 4 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.85		25.10		38.18		52.21	52.21	3 / 4						
reaction time	0.176	interval				12.25		13.08		14.03		# of strides	12.85	12.25	13.08	14.03	25.10	27.11	2.01
		velocity		7.78		8.16		7.65		7.13	7.66	192.0	7.78	8.16	7.65	7.13	7.97	7.38	

Vallabouy, Shereen (MAS) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																*Timing by Seiko (2022) - world athletics championships race analysis*	
date 17-Jul-22	time		12.56		25.14		38.67		53.57	53.57	2 / 7							
reaction time 0.190	interval				12.58		13.53		14.90		# of strides	12.56	12.58	13.53	14.90	25.14	28.43	3.29
	velocity		7.96		7.95		7.39		6.71	7.47		7.96	7.95	7.39	6.71	7.96	7.03	

van den Broeck, Naomi (BEL) (1996)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2022 World Athletics Championships (Eugene, OR)																*Timing by Seiko (2022) - world athletics championships race analysis*	
date 17-Jul-22	time		12.77		25.57		38.88		53.16	53.16	2 / 7							
reaction time 0.111	interval				12.80		13.31		14.28		# of strides	12.77	12.80	13.31	14.28	25.57	27.59	2.02
	velocity		7.83		7.81		7.51		7.00	7.52		7.83	7.81	7.51	7.00	7.82	7.25	

National FINAL - 2019 Bislett Games (Olso, NOR) *Omega Timing (2019) - diamond league race analysis*

date	13-Jun-19	time		12.7		25.3		39.4		54.48	54.48	5 / 1						
reaction time	0.134	interval				12.6		14.1		15.1	PB	# of strides	12.70	12.60	14.10	15.08	25.30	29.18	3.88
		velocity		7.87		7.94		7.09		6.63	7.34		7.87	7.94	7.09	6.63	7.91	6.85	

van der Walt, Zenéy (RSA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time	12.61	24.39	37.42	51.54	51.54	4 / 8								
reaction time	0.202	interval		11.78	13.03	14.12		# of strides	12.61	11.78	13.03	14.12	24.39	27.15	2.76	
		velocity	7.93	8.49	7.67	7.08	7.76		7.93	8.49	7.67	7.08	8.20	7.37		

Heat 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	12.49	24.14	37.20	51.76	51.76	4 / 3								
reaction time	0.215	interval		11.65	13.06	14.56		# of strides	12.49	11.65	13.06	14.56	24.14	27.62	3.48	
		velocity	8.01	8.58	7.66	6.87	7.73	184.2	8.01	8.58	7.66	6.87	8.29	7.24		

FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2023) - diamond league race analysis*

date	21-Jul-23	time	6.84	12.53	18.39	24.36	30.60	37.19	43.98	51.20	51.20	1 / 7						
reaction time	0.178	interval		5.69	5.86	5.97	6.24	6.59	6.79	7.22		# of strides	12.53	11.83	12.83	14.01	24.36	26.84	2.48
		velocity	7.31	8.79	8.53	8.38	8.01	7.59	7.36	6.93	7.81		7.98	8.45	7.79	7.14	8.21	7.45	

van der Zwaard, Tilly (NED) (1938)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)										*Müller (1965) - die leichtathletik-wettkampfe der XVIII olympiischen sommerspielen Tokio 1964 - 400m lauf*							
date	17-Oct-64	time		25.8				55.2	55.2	4 / 6							
reaction time		interval						29.40		# of strides					25.80	29.40	3.60
		velocity		7.75				6.80	7.25						7.75	6.80	

van Puyvelde, Margo (BEL) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Memorial Van Damme (Brussels, BEL)										*Omega Timing (2020) - diamond league race analysis*							
date	04-Sep-20	time	7.2	13.2	19.4	25.9	32.6	39.5	46.6	54.32	54.32	8 / 8							
reaction time	0.182	interval		6.00	6.20	6.50	6.70	6.90	7.10	7.72		# of strides	13.20	12.70	13.60	14.82	25.90	28.42	2.52
		velocity	6.94	8.33	8.06	7.69	7.46	7.25	7.04	6.48	7.36		7.58	7.87	7.35	6.75	7.72	7.04	

Vandi, Elisabetta (ITA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2019 Memorial van Damme (Brussels, BEL)										*Omega Timing (2019) - diamond league race analysis*							
date	06-Sep-19	time	7.0	12.8	18.9	25.4	32.2	39.1	46.4	54.20	54.20	2 / 6							
reaction time	0.214	interval		5.8	6.1	6.5	6.8	6.9	7.3	7.8		# of strides	12.80	12.60	13.70	15.10	25.40	28.80	3.40
		velocity	7.14	8.62	8.20	7.69	7.35	7.25	6.85	6.41	7.38		7.81	7.94	7.30	6.62	7.87	6.94	

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN) *Koyama (2018) - research on athlete performance and technique- 2018 data book*

date	12-Jul-18	time	6.93	13.00	19.23	25.73	32.32	39.07	45.96	53.40	53.40	2 / 7						
reaction time	0.181	interval		6.07	6.23	6.50	6.59	6.75	6.89	7.44		# of strides	13.00	12.73	13.34	14.33	25.73	27.67	1.94
		velocity	7.22	8.24	8.03	7.69	7.59	7.41	7.26	6.72	7.49	190.2	7.69	7.86	7.50	6.98	7.77	7.23	

Vasilíou, Iríni (GRE) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)										*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m*							
date	07-Aug-17	time		12.43		24.51		37.56	44.91	53.08	53.27	6 / ~~8~~ 7							
reaction time	0.190	interval				12.08		13.05	7.35	8.17		# of strides	12.43	12.08	13.05	15.52	24.51	28.57	4.06
		velocity		8.05		8.28		7.66	6.80	6.12	7.51	190.4	8.05	8.28	7.66	6.44	8.16	7.00	

Veitía, Lisneidy (CUB) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date	24-Aug-15	time	7.04	12.78	18.75	25.04	31.46	37.96	44.79	52.25	52.25	7 / 6							
reaction time	0.364	interval		5.74	5.97	6.29	6.42	6.50	6.83	7.46		# of strides	12.78	12.26	12.92	14.29	25.04	27.21	2.17
		velocity	7.10	8.71	8.38	7.95	7.79	7.69	7.32	6.70	7.66		7.82	8.16	7.74	7.00	7.99	7.35	

Vervaet, Imke (BEL) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)										*Seiko Timing (2023) - world championship race analysis*							
date	08-Sep-23	time	6.76	12.39	18.21	24.34	30.84	37.62	44.64	52.00	52.00	6 / 2							
reaction time	0.157	interval		5.63	5.82	6.13	6.50	6.78	7.02	7.36		# of strides	12.39	11.95	13.28	14.38	24.34	27.66	3.32
		velocity	7.40	8.88	8.59	8.16	7.69	7.37	7.12	6.79	7.69		8.07	8.37	7.53	6.95	8.22	7.23	

National FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.84	12.53	18.54	24.88	31.53	38.50	45.69	53.00	53.00	4 / 6						
reaction time	0.160	interval		5.69	6.01	6.34	6.65	6.97	7.19	7.31		# of strides	12.53	12.35	13.62	14.50	24.88	28.12	3.24
		velocity	7.31	8.79	8.32	7.89	7.52	7.17	6.95	6.84	7.55		7.98	8.10	7.34	6.90	8.04	7.11	

National FINAL - 2019 Memorial van Damme (Brussels, BEL) *Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	6.8	12.6	18.6	24.9	31.5	38.5	45.7	53.22	53.22	7 / 2						
reaction time	0.143	interval		5.8	6.0	6.3	6.6	7.0	7.2	7.5	**PB**	# of strides	12.60	12.30	13.60	14.72	24.90	28.32	3.42
		velocity	7.35	8.62	8.33	7.94	7.58	7.14	6.94	6.65	7.52		7.94	8.13	7.35	6.79	8.03	7.06	

Veshkurova, Tatyana (RUS) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE)										*Behm (2006) - Championnats d'Europe Göteborg 2006… Le 400m avec ou sans obstacles*							
date	10-Aug-06	time				23.9		36.5		50.15	50.15	/ 2							
reaction time		interval						12.60		13.65		# of strides		23.90	12.60	13.65	23.90	26.25	2.35
		velocity				8.37		15.87		7.33	7.98			4.18	7.94	7.33	8.37	7.62	

Viljoen, Marlie (RSA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 6 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date	20-Aug-23	time		12.70		24.99		38.40		53.73	53.73	4 / 8							
reaction time	0.189	interval				12.29		13.41		15.33		# of strides	12.70	12.29	13.41	15.33	24.99	28.74	3.75
		velocity		7.87		8.14		7.46		6.52	7.44		7.87	8.14	7.46	6.52	8.00	6.96	

Vondrová, Lada (CZE) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)										*Seiko Timing (2023) - world championship race analysis*							
date	21-Aug-23	time		12.39		24.02		37.07		51.50	51.50	3 / 7							
reaction time	0.196	interval				11.63		13.05		14.43		# of strides	12.39	11.63	13.05	14.43	24.02	27.48	3.46
		velocity		8.07		8.60		7.66		6.93	7.77		8.07	8.60	7.66	6.93	8.33	7.28	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.57		24.57		37.23		50.92	50.92	3 / 4							

reaction time	0.232	interval			12.00		12.66		13.69	PB	# of strides	12.57	12.00	12.66	13.69	24.57	26.35	1.78
		velocity		7.96		8.33		7.90		7.30	7.86	194.0	7.96	8.33	7.90	7.30	8.14	7.59	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.23		24.12		36.85		51.47	51.47	1 / 6						
reaction time	0.199	interval				11.89		12.73		14.62		# of strides	12.23	11.89	12.73	14.62	24.12	27.35	3.23
		velocity		8.18		8.41		7.86		6.84	7.77	197.0	8.18	8.41	7.86	6.84	8.29	7.31	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.74	12.46	18.49	24.76	31.13	37.84	44.65	52.07	52.07	2 / 5						
reaction time	0.205	interval		5.72	6.03	6.27	6.37	6.71	6.81	7.42		# of strides	12.46	12.30	13.08	14.23	24.76	27.31	2.55
		velocity	7.42	8.74	8.29	7.97	7.85	7.45	7.34	6.74	7.68		8.03	8.13	7.65	7.03	8.08	7.32	

FINAL - 2020 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2020) - diamond league race analysis*

date	23-Aug-20	time	6.9	12.7	18.9	25.2	31.5	38.1	45.0	52.44	52.44	5 / 5						
reaction time	0.251	interval		5.80	6.20	6.30	6.30	6.60	6.90	7.44		# of strides	12.70	12.50	12.90	14.34	25.20	27.24	2.04
		velocity	7.25	8.62	8.06	7.94	7.94	7.58	7.25	6.72	7.63		7.87	8.00	7.75	6.97	7.94	7.34	

Waithera, Ruth (KEN) (1958)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1984 Olympic Games (Los Angeles, CA)																	*Adams (1984) - 1984 olympic games - 200m & 400m*
date	06-Aug-84	time				25.1				51.56	51.56	4 / 8							
reaction time	0.334	interval								26.46		# of strides					25.10	26.46	1.36
		velocity				7.97				7.56	7.76						7.97	7.56	

Warren, Youlanda (USA) (1972)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																	*USATF Women's Sprint Development (1996)*
date	19-Jun-96	time		12.38		24.26		37.26	44.30	52.10	52.10	3 / 8							
reaction time		interval				11.88		13.00	7.04	7.80		# of strides	12.38	11.88	13.00	14.84	24.26	27.84	3.58
		velocity		8.08		8.42		7.69	7.10	6.41	7.68		8.08	8.42	7.69	6.74	8.24	7.18	

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.08		23.70		36.44	43.44	50.90	50.90	1 / 2						
reaction time		interval				11.62		12.74	7.00	7.46	PB	# of strides	12.08	11.62	12.74	14.46	23.70	27.20	3.50
		velocity		8.28		8.61		7.85	7.14	6.70	7.86		8.28	8.61	7.85	6.92	8.44	7.35	

Washington, Demetria (USA) (1979)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
Semi-Final 2 - 2004 USA Olympic Trials (Sacramento, CA)																	*USATF Women's Sprint Development (2004)*
date	15-Jul-04	time		12.15		24.11	30.73	37.39	44.44	52.27	52.27	4 / 5							
reaction time		interval				11.96	6.62	6.66	7.05	7.83		# of strides	12.15	11.96	13.28	14.88	24.11	28.16	4.05
		velocity		8.23		8.36	7.55	7.51	7.09	6.39	7.65	192.7	8.23	8.36	7.53	6.72	8.30	7.10	

Heat 3 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.08		23.79		37.07	44.24	52.13	52.13	7 / 1						
reaction time		interval				11.71		13.28	7.17	7.89		# of strides	12.08	11.71	13.28	15.06	23.79	28.34	4.55
		velocity		8.28		8.54		7.53	6.97	6.34	7.67	192.7	8.28	8.54	7.53	6.64	8.41	7.06	

FINAL - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	21-Jun-03	time				24.12		37.25	44.11	51.54	51.54	5 / 2						
reaction time		interval						13.13	6.86	7.43		# of strides			13.13	14.29	24.12	27.42	3.30
		velocity				8.29		7.62	7.29	6.73	7.76				7.62	7.00	8.29	7.29	

Semi-Final 1 - 2003 USATF National Championship (Palo Alto, CA) *USATF Women's Sprint Development (2003)*

date	20-Jun-03	time				24.54		37.56	44.39	51.91	51.91	5 / 1						
reaction time		interval						13.02	6.83	7.52		# of strides			13.02	14.35	24.54	27.37	2.83
		velocity				8.15		7.68	7.32	6.65	7.71				7.68	6.97	8.15	7.31	

Weil, Martina (CHI) (1999)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)																	*Omega Timing (2023) - diamond league race analysis*
date	02-Sep-23	time	6.72	12.29	18.24	24.37	30.73	37.35	44.10	51.30	51.30	1 / 7							
reaction time	0.160	interval		5.57	5.95	6.13	6.36	6.62	6.75	7.20		# of strides	12.29	12.08	12.98	13.95	24.37	26.93	2.56
		velocity	7.44	8.98	8.40	8.16	7.86	7.55	7.41	6.94	7.80		8.14	8.28	7.70	7.17	8.21	7.43	

Heat 4 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.50		24.30		37.42		51.35	51.35	3 / 4						
reaction time	0.159	interval				11.80		13.12		13.93		# of strides	12.50	11.80	13.12	13.93	24.30	27.05	2.75
		velocity		8.00		8.47		7.62		7.18	7.79	187.2	8.00	8.47	7.62	7.18	8.23	7.39	

Wernli, Lena (SUI) (2001)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
B Race - 2021 Athletissima (Lausanne, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date	26-Aug-21	time	7.1	13.0	19.6	26.2	32.9	40.1	47.5	55.49	55.49	2 / 7							
reaction time	0.151	interval		5.90	6.60	6.60	6.70	7.20	7.40	7.99		# of strides	13.00	13.20	13.90	15.39	26.20	29.29	3.09
		velocity	7.04	8.47	7.58	7.58	7.46	6.94	6.76	6.26	7.21		7.69	7.58	7.19	6.50	7.63	6.83	

Werro, Audrey (SUI) (2004)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
B FINAL - 2021 Weltklasse (Zürich, SUI)																	*Omega Timing (2021) - diamond league race analysis*
date	09-Sep-21	time	7.2	12.9	18.8	25.2	32.0	39.1	46.4	53.88	53.88	8 / 8							
reaction time	0.160	interval		5.70	5.90	6.40	6.80	7.10	7.30	7.48		# of strides	12.90	12.30	13.90	14.78	25.20	28.68	3.48
		velocity	6.94	8.77	8.47	7.81	7.35	7.04	6.85	6.68	7.42		7.75	8.13	7.19	6.77	7.94	6.97	

Whitney, Kaylin (USA) (1998)	**50m**	**100m**	**150m**	**200m**	**250m**	**300m**	**350m**	**400m**	**Official Time**	**Lane / Place**	**0-100m**	**100-200m**	**200-300m**	**300-400m**	**0-200m**	**200m-400m**	**Differential**
B Race - 2023 Memorial van Damme (Brussels, BEL)																	*Seiko Timing (2023) - world championship race analysis*
date	08-Sep-23	time	7.03	12.87	18.86	25.06	31.56	38.20	44.99	52.11	52.11	3 / 3							
reaction time	0.215	interval		5.84	5.99	6.20	6.50	6.64	6.79	7.12		# of strides	12.87	12.19	13.14	13.91	25.06	27.05	1.99
		velocity	7.11	8.56	8.35	8.06	7.69	7.53	7.36	7.02	7.68		7.77	8.20	7.61	7.19	7.98	7.39	

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	6.86	12.52	18.35	24.30	30.43	36.89	43.67	51.02	51.02	8 / 7						
reaction time	0.222	interval		5.66	5.83	5.95	6.13	6.46	6.78	7.35		# of strides	12.52	11.78	12.59	14.13	24.30	26.72	2.42
		velocity	7.29	8.83	8.58	8.40	8.16	7.74	7.37	6.80	7.84	185.2	7.99	8.49	7.94	7.08	8.23	7.49	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.8	12.4	18.2	24.1	30.3	36.9	43.8	51.19	51.19	2 / 8						
reaction time	0.198	interval		5.60	5.80	5.90	6.20	6.60	6.90	7.39		# of strides	12.40	11.70	12.80	14.29	24.10	27.09	2.99
		velocity	7.35	8.93	8.62	8.47	8.06	7.58	7.25	6.77	7.81		8.06	8.55	7.81	7.00	8.30	7.38	

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.2	12.9	18.7	24.8	31.1	38.0	45.3	52.84	52.84	7 / 4						
reaction time	0.162	interval		5.70	5.80	6.10	6.30	6.90	7.30	7.54		# of strides	12.90	11.90	13.20	14.84	24.80	28.04	3.24
		velocity	6.94	8.77	8.62	8.20	7.94	7.25	6.85	6.63	7.57		7.75	8.40	7.58	6.74	8.06	7.13	

Whyte, Rosemarie (JAM) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 Olympic Games (London, GBR)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date 05-Aug-12	time		12.1		23.9		36.9		50.8	50.79	3 / ~~8~~ 7							
reaction time 0.184	interval				11.80		13.00		13.90		# of strides	12.10	11.80	13.00	13.90	23.90	26.90	3.00
	velocity		8.26		8.47		7.69		7.19	7.88	187.0	8.26	8.47	7.69	7.19	8.37	7.43	

FINAL - 2008 Olympic Games (Beijing, CHN) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	19-Aug-08	time		12.4		24.2		36.6		50.7	50.68	2 / 7						
reaction time	0.181	interval				11.80		12.40		14.10		# of strides	12.40	11.80	12.40	14.10	24.20	26.50	2.30
		velocity		8.06		8.47		8.06		7.09	7.89	180.7	8.06	8.47	8.06	7.09	8.26	7.55	

Wilkins, Bobby-Gaye (JAM) (1988)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)										*Graubner (2009) - http://www.fgs.uni-halle.de*							
date 14-Jun-09	time		12.74		24.75		37.63		52.23	52.23	/ 5							
reaction time 0.380	interval				12.01		12.88		14.60		# of strides	12.74	12.01	12.88	14.60	24.75	27.48	2.73
	velocity		7.85		8.33		7.76		6.85	7.66		7.85	8.33	7.76	6.85	8.08	7.28	

Williams, Alycia (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2003 USATF National Junior Championship (Palo Alto, CA)										*USATF Women's Sprint Development (2003)*							
date 22-Jun-03	time				25.18		39.07	46.53	54.73	54.73	1 / 9							
reaction time	interval						13.89	7.46	8.20		# of strides			13.89	15.66	25.18	29.55	4.37
	velocity				7.94		7.20	6.70	6.10	7.31				7.20	6.39	7.94	6.77	

Williams, Hannah (GBR) (1998)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)										*Omega Timing (2022) - diamond league race analysis*							
date 21-May-22	time	6.6	12.2	18.3	24.7	31.4	38.4	45.7	53.72	53.72	6 / 5							
reaction time 0.152	interval		5.60	6.10	6.40	6.70	7.00	7.30	8.02	PB	# of strides	12.20	12.50	13.70	15.32	24.70	29.02	4.32
	velocity	7.58	8.93	8.20	7.81	7.46	7.14	6.85	6.23	7.45		8.20	8.00	7.30	6.53	8.10	6.89	

B Race - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.9	12.7	18.8	25.3	31.8	38.5	45.5	52.98	52.98	4 / 3						
reaction time	0.171	interval		5.80	6.10	6.50	6.50	6.70	7.00	7.48		# of strides	12.70	12.60	13.20	14.48	25.30	27.68	2.38
		velocity	7.25	8.62	8.20	7.69	7.69	7.46	7.14	6.68	7.55		7.87	7.94	7.58	6.91	7.91	7.23	

FINAL - 2021 Müller Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	23-May-21	time	7.2	12.7	18.5	24.6	31.0	37.9	45.5	53.35	53.35	8 / 5						
reaction time	0.163	interval		5.50	5.80	6.10	6.40	6.90	7.60	7.85		# of strides	12.70	11.90	13.30	15.45	24.60	28.75	4.15
		velocity	6.94	9.09	8.62	8.20	7.81	7.25	6.58	6.37	7.50		7.87	8.40	7.52	6.47	8.13	6.96	

Williams, Jodie (GBR) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Athletissima (Lausanne, SUI)										*Omega Timing (2022) - diamond league race analysis*							
date 26-Aug-22	time	6.57	12.10	17.90	23.99	30.46	37.32	44.52	52.31	52.31	1 / 8							
reaction time 0.148	interval		5.53	5.80	6.09	6.47	6.86	7.20	7.79		# of strides	12.10	11.89	13.33	14.99	23.99	28.32	4.33
	velocity	7.61	9.04	8.62	8.21	7.73	7.29	6.94	6.42	7.65		8.26	8.41	7.50	6.67	8.34	7.06	

FINAL - 2022 Commonwealth Games (Birmingham, GBR) *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.6	12.3	18.3	24.5	30.7	37.0	43.8	51.26	51.26	9 / 3						
reaction time	0.130	interval		5.70	6.00	6.20	6.20	6.30	6.80	7.46		# of strides	12.30	12.20	12.50	14.26	24.50	26.76	2.26
		velocity	7.58	8.77	8.33	8.06	8.06	7.94	7.35	6.70	7.80	192.0	8.13	8.20	8.00	7.01	8.16	7.47	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.8	12.5	18.4	24.6	30.9	37.5	44.5	52.12	52.12	3 / 7						
reaction time	0.165	interval		5.70	5.90	6.20	6.30	6.60	7.00	7.62		# of strides	12.50	12.10	12.90	14.62	24.60	27.52	2.92
		velocity	7.35	8.77	8.47	8.06	7.94	7.58	7.14	6.56	7.67		8.00	8.26	7.75	6.84	8.13	7.27	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.8	12.4	18.4	24.5	30.7	37.3	44.0	50.94	50.94	7 / 2						
reaction time	0.136	interval		5.60	6.00	6.10	6.20	6.60	6.70	6.94	PB	# of strides	12.40	12.10	12.80	13.64	24.50	26.44	1.94
		velocity	7.35	8.93	8.33	8.20	8.06	7.58	7.46	7.20	7.85	186.7	8.06	8.26	7.81	7.33	8.16	7.56	

FINAL - 2019 The Match - Europe v USA (Minsk, BLR) *European Athletics (2019) - race analysis*

date	09-Sep-19	time		12.31		24.28		37.36		51.83	51.83	9 / 4						
reaction time	0.174	interval				11.97		13.08		14.47		# of strides	12.31	11.97	13.08	14.47	24.28	27.55	3.27
		velocity		8.12		8.35		7.65		6.91	7.72	188.0	8.12	8.35	7.65	6.91	8.24	7.26	

Williams, Sa'de (USA) (1989)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 USATF National Junior Championship (Indianapolis, IN)										*USATF Women's Sprint Development (2006)*							
date 24-Jun-06	time		12.76	18.67	23.87	31.29	37.82	44.82	52.54	52.54	3 / 3							
reaction time	interval			5.91	5.20	7.42	6.53	7.00	7.72		# of strides	12.76	11.11	13.95	14.72	23.87	28.67	4.80
	velocity		7.84	8.46	9.62	6.74	7.66	7.14	6.48	7.61		7.84	9.00	7.17	6.79	8.38	6.98	

Williams, Sada (BAR) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2023 Prefontaine Classic (Eugene, OR) *Omega Timing (2023) - diamond league race analysis*

date	17-Sep-23	time	6.69	12.35	18.16	24.25	30.41	36.86	43.67	51.07	51.07	7 / 5						
reaction time	0.190	interval		5.66	5.81	6.09	6.16	6.45	6.81	7.40		# of strides	12.35	11.90	12.61	14.21	24.25	26.82	2.57
		velocity	7.47	8.83	8.61	8.21	8.12	7.75	7.34	6.76	7.83		8.10	8.40	7.93	7.04	8.25	7.46	

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) *Omega Timing (2023) - diamond league race analysis*

date	02-Sep-23	time	6.65	12.27	18.07	24.07	30.22	36.68	43.44	50.95	50.95	4 / 4						
reaction time	0.198	interval		5.62	5.80	6.00	6.15	6.46	6.76	7.51		# of strides	12.27	11.80	12.61	14.27	24.07	26.88	2.81
		velocity	7.52	8.90	8.62	8.33	8.13	7.74	7.40	6.66	7.85		8.15	8.47	7.93	7.01	8.31	7.44	

FINAL - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	23-Aug-23	time		12.08		23.49		35.90		49.60	49.60	8 / 3						
reaction time	0.183	interval				11.41		12.41		13.70		# of strides	12.08	11.41	12.41	13.70	23.49	26.11	2.62
		velocity		8.28		8.76		8.06		7.30	8.06	190.5	8.28	8.76	8.06	7.30	8.51	7.66	

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.21		23.90		36.19		49.58	49.58	7 / 2						
reaction time	0.191	interval				11.69		12.29		13.39	**NR PB**	# of strides	12.21	11.69	12.29	13.39	23.90	25.68	1.78
		velocity		8.19		8.55		8.14		7.47	8.07	190.0	8.19	8.55	8.14	7.47	8.37	7.79	

Heat 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.00		23.30		35.97		50.78	50.78	9 / 1						
reaction time	0.172	interval				11.30		12.67		14.81		# of strides	12.00	11.30	12.67	14.81	23.30	27.48	4.18
		velocity		8.33		8.85		7.89		6.75	7.88	189.5	8.33	8.85	7.89	6.75	8.58	7.28	

FINAL - 2023 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2023) - diamond league race analysis*

date	21-Jul-23	time	6.52	11.89	17.41	23.18	29.26	35.70	42.53	50.00	50.00	7 / 5						
reaction time	0.185	interval		5.37	5.52	5.77	6.08	6.44	6.83	7.47		# of strides	11.89	11.29	12.52	14.30	23.18	26.82	3.64
		velocity	7.67	9.31	9.06	8.67	8.22	7.76	7.32	6.69	8.00		8.41	8.86	7.99	6.99	8.63	7.46	

FINAL - 2023 Doha Diamond League (Doha, QAT) *Omega Timing (2023) - diamond league race analysis*

date	05-May-23	time	6.74	12.40	18.40	24.63	30.95	37.58	44.52	52.05	52.05	4 / 4						
reaction time	0.184	interval		5.66	6.00	6.23	6.32	6.63	6.94	7.53		# of strides	12.40	12.23	12.95	14.47	24.63	27.42	2.79
		velocity	7.42	8.83	8.33	8.03	7.91	7.54	7.20	6.64	7.68	193.5	8.06	8.18	7.72	6.91	8.12	7.29	

FINAL - 2022 Weltklasse (Zürich, SUI) *Omega Timing (2022) - diamond league race analysis*

date	08-Sep-22	time	6.60	12.18	17.88	23.70	29.66	35.99	42.75	49.98	49.98	5 / 3						
reaction time	0.133	interval		5.58	5.70	5.82	5.96	6.33	6.76	7.23		# of strides	12.18	11.52	12.29	13.99	23.70	26.28	2.58
		velocity	7.58	8.96	8.77	8.59	8.39	7.90	7.40	6.92	8.00		8.21	8.68	8.14	7.15	8.44	7.61	

FINAL - 2022 Memorial van Damme (Brussels, BEL) *Omega Timing (2022) - diamond league race analysis*

date	02-Sep-22	time	6.65	12.17	17.72	23.51	29.53	35.99	42.83	50.15	50.15	4 / 2						
reaction time	0.169	interval		5.52	5.55	5.79	6.02	6.46	6.84	7.32		# of strides	12.17	11.34	12.48	14.16	23.51	26.64	3.13
		velocity	7.52	9.06	9.01	8.64	8.31	7.74	7.31	6.83	7.98		8.22	8.82	8.01	7.06	8.51	7.51	

FINAL - 2022 Athletissima (Lausanne, SUI) *Omega Timing (2022) - diamond league race analysis*

date	26-Aug-22	time	6.64	12.14	17.78	23.59	29.56	35.95	42.67	49.94	49.94	5 / 2						
reaction time	0.168	interval		5.50	5.64	5.81	5.97	6.39	6.72	7.27		# of strides	12.14	11.45	12.36	13.99	23.59	26.35	2.76
		velocity	7.53	9.09	8.87	8.61	8.38	7.82	7.44	6.88	8.01	197.0	8.24	8.73	8.09	7.15	8.48	7.59	

FINAL - 2022 Herculis Meeting International d'Athlétisme (Monaco, MON) *Omega Timing (2022) - diamond league race analysis*

date	10-Aug-22	time	6.79	12.37	18.05	23.90	29.90	36.22	42.93	50.10	50.10	5 / 3						
reaction time	0.189	interval		5.58	5.68	5.85	6.00	6.32	6.71	7.17		# of strides	12.37	11.53	12.32	13.88	23.90	26.20	2.30
		velocity	7.36	8.96	8.80	8.55	8.33	7.91	7.45	6.97	7.98	192.0	8.08	8.67	8.12	7.20	8.37	7.63	

FINAL - 2022 Commonwealth Games (Birmingham, GBR) *Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.6	12.3	18.2	24.1	30.0	36.2	42.8	49.90	49.90	6 / 1						
reaction time	0.169	interval		5.70	5.90	5.90	5.90	6.20	6.60	7.10		# of strides	12.30	11.80	12.10	13.70	24.10	25.80	1.70
		velocity	7.58	8.77	8.47	8.47	8.47	8.06	7.58	7.04	8.02	194.0	8.13	8.47	8.26	7.30	8.30	7.75	

FINAL - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time		12.13		23.55		35.80		49.75	49.75	7 / 3						
reaction time	0.181	interval				11.42		12.25		13.95	**NR PB**	# of strides	12.13	11.42	12.25	13.95	23.55	26.20	2.65
		velocity		8.24		8.76		8.16		7.17	8.04	192.0	8.24	8.76	8.16	7.17	8.49	7.63	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.37		24.28		36.37		50.12	50.12	5 / 2						
reaction time	0.168	interval				11.91		12.09		13.75		# of strides	12.37	11.91	12.09	13.75	24.28	25.84	1.56
		velocity		8.08		8.40		8.27		7.27	7.98	193.0	8.08	8.40	8.27	7.27	8.24	7.74	

Heat 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.54		24.46		36.84		51.05	51.05	6 / 1						
reaction time	0.169	interval				11.92		12.38		14.21		# of strides	12.54	11.92	12.38	14.21	24.46	26.59	2.13
		velocity		7.97		8.39		8.08		7.04	7.84	194.7	7.97	8.39	8.08	7.04	8.18	7.52	

FINAL - 2022 Meeting International Mohammed VI d'Athlétime (Rabat, MAR) *Omega Timing (2022) - diamond league race analysis*

date	05-Jun-22	time	6.73	12.44	18.26	24.27	30.40	36.89	43.56	50.74	50.74	7 / 2						
reaction time	0.182	interval		5.71	5.82	6.01	6.13	6.49	6.67	7.18		# of strides	12.44	11.83	12.62	13.85	24.27	26.47	2.20
		velocity	7.43	8.76	8.59	8.32	8.16	7.70	7.50	6.96	7.88	193.5	8.04	8.45	7.92	7.22	8.24	7.56	

FINAL - 2022 Doha Diamond League (Doha, QAT) *Omega Timing (2022) - diamond league race analysis*

date	13-May-22	time	6.6	12.6	18.8	25.1	31.5	38.0	44.7	52.09	52.09	7 / 4						
reaction time	0.186	interval		6.00	6.20	6.30	6.40	6.50	6.70	7.39		# of strides	12.60	12.50	12.90	14.09	25.10	26.99	1.89
		velocity	7.58	8.33	8.06	7.94	7.81	7.69	7.46	6.77	7.68	196.2	7.94	8.00	7.75	7.10	7.97	7.41	

FINAL - 2021 Weltklasse (Zürich, SUI) *Omega Timing (2021) - diamond league race analysis*

date	09-Sep-21	time	6.8	12.5	18.4	24.4	30.4	36.7	43.2	50.24	50.24	6 / 3						
reaction time	0.164	interval		5.70	5.90	6.00	6.00	6.30	6.50	7.04		# of strides	12.50	11.90	12.30	13.54	24.40	25.84	1.44
		velocity	7.35	8.77	8.47	8.33	8.33	7.94	7.69	7.10	7.96	188.5	8.00	8.40	8.13	7.39	8.20	7.74	

FINAL - 2021 Meeting de Paris (Paris, FRA) *Omega Timing (2021) - diamond league race analysis*

date	28-Aug-21	time	6.7	12.4	18.3	24.3	30.3	36.5	43.2	50.30	50.30	8 / 2						
reaction time	0.162	interval		5.70	5.90	6.00	6.00	6.20	6.70	7.10		# of strides	12.40	11.90	12.20	13.80	24.30	26.00	1.70
		velocity	7.46	8.77	8.47	8.33	8.33	8.06	7.46	7.04	7.95	190.2	8.06	8.40	8.20	7.25	8.23	7.69	

FINAL - 2021 Athletissima (Lausanne, SUI) *Omega Timing (2021) - diamond league race analysis*

date	26-Aug-21	time	6.7	12.4	18.2	24.2	30.3	36.8	43.6	50.77	50.77	7 / 2						
reaction time	0.162	interval		5.70	5.80	6.00	6.10	6.50	6.80	7.17		# of strides	12.40	11.80	12.60	13.97	24.20	26.57	2.37
		velocity	7.46	8.77	8.62	8.33	8.20	7.69	7.35	6.97	7.88		8.06	8.47	7.94	7.16	8.26	7.53	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.8	12.5	18.4	24.5	30.8	37.4	44.6	52.34	52.34	2 / 6						
reaction time	0.160	interval		5.70	5.90	6.10	6.30	6.60	7.20	7.74		# of strides	12.50	12.00	12.90	14.94	24.50	27.84	3.34
		velocity	7.35	8.77	8.47	8.20	7.94	7.58	6.94	6.46	7.64	197.2	8.00	8.33	7.75	6.69	8.16	7.18	

Williams, Shericka (JAM) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	29-Aug-11	time				24.3		36.7		50.79	50.79	7 / 6						
reaction time	0.241	interval						12.40		14.09		# of strides					24.30	26.49	2.19
		velocity				8.23		8.06		7.10	7.88						8.23	7.55	

FINAL - 2009 IAAF World Championships (Berlin, GER) Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics

date	18-Aug-09	time	6.59	12.07	17.77	23.76	29.82	36.00	42.38	49.32	49.32	4 / 2						
reaction time	0.194	interval		5.48	5.70	5.99	6.06	6.18	6.38	6.94	PB	# of strides	12.07	11.69	12.24	13.32	23.76	25.56	1.80
		velocity	7.59	9.12	8.77	8.35	8.25	8.09	7.84	7.20	8.11	197.5	8.29	8.55	8.17	7.51	8.42	7.82	

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.30		24.05		36.20		49.51	49.51	4 / 1						
reaction time	0.208	interval				11.75		12.15		13.31	PB	# of strides	12.30	11.75	12.15	13.31	24.05	25.46	1.41
		velocity		8.13		8.51		8.23		7.51	8.08		8.13	8.51	8.23	7.51	8.32	7.86	

Heat 3 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	15-Aug-09	time		12.94		25.01		37.79		51.23	51.23	3 / 2						
reaction time	0.182	interval				12.07		12.78		13.44		# of strides	12.94	12.07	12.78	13.44	25.01	26.22	1.21
		velocity		7.73		8.29		7.82		7.44	7.81		7.73	8.29	7.82	7.44	8.00	7.63	

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time		12.72		24.91		37.75		51.55	51.55	6 / 5						
reaction time	0.231	interval				12.19		12.84		13.80		# of strides	12.72	12.19	12.84	13.80	24.91	26.64	1.73
		velocity		7.86		8.20		7.79		7.25	7.76		7.86	8.20	7.79	7.25	8.03	7.51	

FINAL - 2008 Olympic Games (Beijing, CHN) *(TV Analysis)* *Graubner (2008) - http://www.fgs.uni-halle.de*

date	19-Aug-08	time		12.30		23.59		36.38		49.69	49.69	6 / 2						
reaction time	0.207	interval				11.29		12.79		13.31	PB	# of strides	12.30	11.29	12.79	13.31	23.59	26.10	2.51
		velocity		8.13		8.86		7.82		7.51	8.05	192.2	8.13	8.86	7.82	7.51	8.48	7.66	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time		12.67		24.51		36.73		50.64	50.64	7 / 6						
reaction time	0.201	interval				11.84		12.22		13.91		# of strides	12.67	11.84	12.22	13.91	24.51	26.13	1.62
		velocity		7.89		8.45		8.18		7.19	7.90		7.89	8.45	8.18	7.19	8.16	7.65	

Williams, Stacey-Ann (JAM) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN) *Koyama (2018) - research on athlete performance and technique- 2018 data book*

date	12-Jul-18	time	6.94	12.76	18.90	25.31	31.86	38.53	45.47	53.23	53.23	1 / 6						
reaction time	0.163	interval		5.82	6.14	6.41	6.55	6.67	6.94	7.76		# of strides	12.76	12.55	13.22	14.70	25.31	27.92	2.61
		velocity	7.20	8.59	8.14	7.80	7.63	7.50	7.20	6.44	7.51	196.2	7.84	7.97	7.56	6.80	7.90	7.16	

Wiliams-Darling, Tonique (BAH) (197

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2005 Weltklasse (Zurich, SUI) *ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)*

date	19-Aug-05	time		12.0		23.3		35.5		49.30	49.30	/ 2						
reaction time	0.275	interval				11.30		12.20		13.80		# of strides	12.00	11.30	12.20	13.80	23.30	26.00	2.70
		velocity		8.33		8.85		8.20		7.25	8.11		8.33	8.85	8.20	7.25	8.58	7.69	

FINAL - 2005 IAAF World Championships (Helsinki, FIN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	10-Aug-05	time						35.7		49.55	49.55	6 / 1						
reaction time	0.162	interval								13.85		# of strides				13.85			
		velocity						8.40		7.22	8.07	192.7				7.22			

Semi-Final 3 - 2005 IAAF World Championships (Helsinki, FIN) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	08-Aug-05	time						35.5		49.69	49.69	4 / 1						
reaction time	0.176	interval								14.19		# of strides				14.19			
		velocity						8.45		7.05	8.05					7.05			

FINAL - 2004 Olympic Games (Athens, GRE) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	24-Aug-04	time		12.0		23.4		35.5		49.4	49.41	4 / 1						
reaction time	0.268	interval				11.4		12.1		13.9		# of strides	12.00	11.40	12.10	13.90	23.40	26.00	2.60
		velocity		8.33		8.77		8.26		7.19	8.10		8.33	8.77	8.26	7.19	8.55	7.69	

FINAL - 2003 IAAF World Championships (Paris, FRA) *Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*

date	27-Aug-03	time				23.5		36.2		50.38	50.38	4 / 5						
reaction time	0.151	interval						12.70		14.18		# of strides			12.70	14.18	23.50	26.88	3.38
		velocity				8.51		7.87		7.05	7.94				7.87	7.05	8.51	7.44	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Williams-Mills, Novlene (JAM) (1982)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Memorial van Damme (Brussels, BEL)																	
Omega Timing (2017) - diamond league race analysis																	
date 01-Sep-17 time		12.4	18.2	24.2	30.5	37.1	44.0	51.27	51.27	8 / 6							
reaction time 0.238 interval			5.80	6.00	6.30	6.60	6.90	7.27		# of strides	12.40	11.80	12.90	14.17	24.20	27.07	2.87
velocity		8.06	8.62	8.33	7.94	7.58	7.25	6.88	7.80	202.0	8.06	8.47	7.75	7.06	8.26	7.39	
FINAL - 2017 IAAF World Championships (London, GBR)																	
Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m																	
date 09-Aug-17 time		12.16		23.75		36.54	43.51	51.21	51.48	3 / ~~8~~ 7							
reaction time 0.272 interval				11.59		12.79	6.97	7.70		# of strides	12.16	11.59	12.79	14.67	23.75	27.46	3.71
velocity		8.22		8.63		7.82	7.17	6.49	7.77	202.2	8.22	8.63	7.82	6.82	8.42	7.28	
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																	
Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Women's 400m																	
date 07-Aug-17 time		12.12		23.75		36.43	43.11	50.40	50.67	9 / 3							
reaction time 0.266 interval				11.63		12.68	6.68	7.29		# of strides	12.12	11.63	12.68	13.97	23.75	26.65	2.90
velocity		8.25		8.60		7.89	7.49	6.86	7.89	201.0	8.25	8.60	7.89	7.16	8.42	7.50	
FINAL - 2017 Meeting de Paris (Paris, FRA)																	
Omega Timing (2017) - diamond league race analysis																	
date 01-Jul-17 time		12.6	18.4	24.4	30.7	37.3	44.0	51.03	51.03	4 / 1							
reaction time 0.236 interval			5.8	6.0	6.3	6.6	6.7	7.0		# of strides	12.60	11.80	12.90	13.73	24.40	26.63	2.23
velocity		7.94	8.62	8.33	7.94	7.58	7.46	7.11	7.84	200.2	7.94	8.47	7.75	7.28	8.20	7.51	
FINAL - 2015 IAAF World Championships (Beijing, CHN)																	
Kohei (2015) - 400m race analysis of male & female at major 2015 competitions																	
date 27-Aug-15 time	6.79	12.37	18.02	23.96	30.13	36.57	43.37	50.47	50.47	2 / 6							
reaction time 0.313 interval		5.58	5.65	5.94	6.17	6.44	6.80	7.10		# of strides	12.37	11.59	12.61	13.90	23.96	26.51	2.55
velocity	7.36	8.96	8.85	8.42	8.10	7.76	7.35	7.04	7.93		8.08	8.63	7.93	7.19	8.35	7.54	
Heat 6 - 2015 IAAF World Championships (Beijing, CHN)																	
Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims																	
date 24-Aug-15 time	6.86	12.34	18.07	24.02	30.26	36.75	43.61	51.07	51.07	3 / 2							
reaction time 0.306 interval		5.48	5.73	5.95	6.24	6.49	6.86	7.46		# of strides	12.34	11.68	12.73	14.32	24.02	27.05	3.03
velocity	7.29	9.12	8.73	8.40	8.01	7.70	7.29	6.70	7.83		8.10	8.56	7.86	6.98	8.33	7.39	
FINAL - 2013 IAAF World Championships (Moscow, RUS)																	
(2013) - http://speedendurance.com/2013/10/07/racing-400-meters-differences-in-elite-men-and-women/																	
date 12-Aug-13 time				24.3		37.1		51.5	51.49	1 / 8							
reaction time 0.276 interval						12.80		14.40		# of strides			12.80	14.40	24.30	27.20	2.90
velocity				8.23		7.81		6.94	7.77				7.81	6.94	8.23	7.35	
FINAL - 2012 Olympic Games (London, GBR)																	
Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016																	
date 05-Aug-12 time		12.2		24.1		36.6		50.1	50.11	2 / 5							
reaction time 0.258 interval				11.90		12.50		13.50		# of strides	12.20	11.90	12.50	13.50	24.10	26.00	1.90
velocity		8.20		8.40		8.00		7.41	7.98	192.0	8.20	8.40	8.00	7.41	8.30	7.69	
FINAL - 2011 IAAF World Championships (Daegu, KOR)																	
Butler (2013) - IAAF world athletic results 2008-2011 full results																	
date 29-Aug-11 time				23.5		36.3		52.89	52.89	8 / 8							
reaction time 0.276 interval						12.80		16.59		# of strides					23.50	29.39	5.89
velocity				8.51		7.81		6.03	7.56						8.51	6.81	
FINAL - 2009 IAAF World Championships (Berlin, GER)																	
Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics																	
date 18-Aug-09 time	6.72	12.36	18.11	24.00	29.97	36.18	42.67	49.77	49.77	6 / 4							
reaction time 0.214 interval		5.64	5.75	5.89	5.97	6.21	6.49	7.10		# of strides	12.36	11.64	12.18	13.59	24.00	25.77	1.77
velocity	7.44	8.87	8.70	8.49	8.38	8.05	7.70	7.04	8.04	197.0	8.09	8.59	8.21	7.36	8.33	7.76	
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)																	
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																	
date 16-Aug-09 time		12.33		23.96		36.25		49.88	49.88	5 / 1							
reaction time 0.226 interval				11.63		12.29		13.63		# of strides	12.33	11.63	12.29	13.63	23.96	25.92	1.96
velocity		8.11		8.60		8.14		7.34	8.02		8.11	8.60	8.14	7.34	8.35	7.72	
Heat 2 - 2009 IAAF World Championships (Berlin, GER)																	
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																	
date 15-Aug-09 time		12.59		24.24		37.00		51.55	51.55	4 / 1							
reaction time 0.222 interval				11.65		12.76		14.55		# of strides	12.59	11.65	12.76	14.55	24.24	27.31	3.07
velocity		7.94		8.58		7.84		6.87	7.76		7.94	8.58	7.84	6.87	8.25	7.32	

Williams, Novlene (JAM) (1982)

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER)																	
Graubner (2009) - http://www.fgs.uni-halle.de																	
date 14-Sep-08 time		12.94		24.88		37.62		51.30	51.30	8 / 3							
reaction time 0.231 interval				11.94		12.74		13.68		# of strides	12.94	11.94	12.74	13.68	24.88	26.42	1.54
velocity		7.73		8.38		7.85		7.31	7.80		7.73	8.38	7.85	7.31	8.04	7.57	
FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER)																	
Graubner (2007) - http://www.fgs.uni-halle.de																	
date 23-Sep-07 time		12.37		24.23		36.69		50.12	50.12	6 / 2							
reaction time 0.186 interval				11.86		12.46		13.43		# of strides	12.37	11.86	12.46	13.43	24.23	25.89	1.66
velocity		8.08		8.43		8.03		7.45	7.98		8.08	8.43	8.03	7.45	8.25	7.72	
FINAL - 2007 IAAF World Championships (Osaka, JPN)																	
Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics																	
date 29-Aug-07 time	6.63	12.07	17.65	23.47	29.46	35.77	42.44	49.66	49.66	7 / 3							
reaction time 0.206 interval		5.44	5.58	5.82	5.99	6.31	6.67	7.22		# of strides	12.07	11.40	12.30	13.89	23.47	26.19	2.72
velocity	7.54	9.19	8.96	8.59	8.35	7.92	7.50	6.93	8.05	197.5	8.29	8.77	8.13	7.20	8.52	7.64	

Wilson, Britton (USA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																	
Seiko Timing (2023) - world championship race analysis																	
date 20-Aug-23 time		12.74		24.37		37.54		53.87	53.87	4 / 8							
reaction time 0.190 interval				11.63		13.17		16.33		# of strides	12.74	11.63	13.17	16.33	24.37	29.50	5.13
velocity		7.85		8.60		7.59		6.12	7.43		7.85	8.60	7.59	6.12	8.21	6.78	

Wilson, Linetta (USA) (1967)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																	
USATF Women's Sprint Development (1996)																	
date 19-Jun-96 time		12.62		24.38		37.02	43.93	51.49	51.49	7 / 5							

reaction time		interval			11.76		12.64	6.91	7.56		# of strides	12.62	11.76	12.64	14.47	24.38	27.11	2.73
		velocity	7.92		8.50		7.91	7.24	6.61	7.77		7.92	8.50	7.91	6.91	8.20	7.38	

Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA) *USATF Women's Sprint Development (1996)*

date	17-Jun-96	time		12.63		24.35		36.84	43.62	51.02	51.02	6 / 3						
reaction time		interval			11.72		12.49	6.78	7.40	PB	# of strides	12.63	11.72	12.49	14.18	24.35	26.67	2.32
		velocity	7.92		8.53		8.01	7.37	6.76	7.84		7.92	8.53	8.01	7.05	8.21	7.50	

Wimbley, Shakima (USA) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

National FINAL - 2019 Memorial van Damme (Brussels, BEL) *Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	6.6	12.2	18.0	24.1					dnf	4 / --						
reaction time	0.152	interval		5.6	5.8	6.1						# of strides	12.20	11.90			24.10		
		velocity	7.58	8.93	8.62	8.20							8.20	8.40			8.30		

FINAL - 2019 Weltklasse (Zürich, SUI) *Omega Timing (2019) - diamond league race analysis*

date	29-Aug-19	time	6.7	12.3	18.1	24.2	30.6	37.2	44.0	51.21	51.21	3 / 2						
reaction time	0.145	interval		5.6	5.8	6.1	6.4	6.6	6.8	7.2		# of strides	12.30	11.90	13.00	14.01	24.20	27.01	2.81
		velocity	7.46	8.93	8.62	8.20	7.81	7.58	7.35	6.93	7.81	182.0	8.13	8.40	7.69	7.14	8.26	7.40	

FINAL - 2019 Meeting de Paris (Paris, FRA) *Omega Timing (2019) - diamond league race analysis*

date	24-Aug-19	time		12.3		24.2		37.0		51.50	51.50	5 / 3						
reaction time	0.164	interval				11.9		12.8		14.5		# of strides	12.30	11.90	12.80	14.50	24.20	27.30	3.10
		velocity		8.13		8.40		7.81		6.90	7.77	180.2	8.13	8.40	7.81	6.90	8.26	7.33	

FINAL - 2019 Shanghai (Shanghai, CHN) *Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		12.5		24.6		37.9		52.69	52.69	5 / 8						
reaction time	0.130	interval				12.1		13.3		14.8		# of strides	12.50	12.10	13.30	14.79	24.60	28.09	3.49
		velocity		8.00		8.26		7.52		6.76	7.59		8.00	8.26	7.52	6.76	8.13	7.12	

FINAL - 2018 Meeting de Paris (Paris, FRA) *Omega Timing (2018) - diamond league race analysis*

date	30-Jun-18	time		12.3		24.1		36.9		50.81	50.81	4 / 4						
reaction time	0.142	interval				11.8		12.8		13.9		# of strides	12.30	11.80	12.80	13.91	24.10	26.71	2.61
		velocity		8.13		8.47		7.81		7.19	7.87	183.7	8.13	8.47	7.81	7.19	8.30	7.49	

FINAL - 2018 Bislett Games (Oslo, NOR) *Omega Timing (2018) - diamond league race analysis*

date	07-Jun-18	time		12.2		23.8		36.6		50.53	50.53	6 / 3						
reaction time	0.219	interval				11.6		12.8		13.9		# of strides	12.20	11.60	12.80	13.93	23.80	26.73	2.93
		velocity		8.20		8.62		7.81		7.18	7.92	180.2	8.20	8.62	7.81	7.18	8.40	7.48	

FINAL - 2017 USATF National Championship (Sacramento, CA) *Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time		12.36		23.82		36.64		50.36	50.36	5 / 5						
reaction time		interval				11.46		12.82		13.72	PB	# of strides	12.36	11.46	12.82	13.72	23.82	26.54	2.72
		velocity		8.24		8.73		8.12		7.24	7.94		8.09	8.73	7.80	7.29	8.40	7.54	

FINAL - 2017 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	10-Jun-17	time				24.0		36.7		50.7	50.68	5 / 2						
reaction time		interval						12.70		14.00		# of strides			12.70	14.00	24.00	26.70	2.70
		velocity				8.33		7.87		7.14	7.89	179.2			7.87	7.14	8.33	7.49	

FINAL - 2016 NCAA Championships (Eugene, OR) *USTFCCCA (2017) - NCAA DI outdoor championship history*

date	11-Jun-16	time				24.8		37.8		51.4	51.43	6 / 3						
reaction time		interval						13.00		13.60		# of strides			13.00	13.60	24.80	26.60	1.80
		velocity				8.06		7.69		7.35	7.78				7.69	7.35	8.06	7.52	

Wineberg, Mary (USA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2008 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	14-Sep-08	time		12.31		24.12		37.22		51.65	51.65	1 / 6						
reaction time	0.263	interval				11.81		13.10		14.43		# of strides	12.31	11.81	13.10	14.43	24.12	27.53	3.41
		velocity		8.12		8.47		7.63		6.93	7.74		8.12	8.47	7.63	6.93	8.29	7.26	

FINAL - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	03-Jul-08	time		11.96	17.08	23.69	29.96	36.50	43.22	50.85	50.85	4 / 2						
reaction time		interval			5.12	6.61	6.27	6.54	6.72	7.63		# of strides	11.96	11.73	12.81	14.35	23.69	27.16	3.47
		velocity		8.36	9.77	7.56	7.97	7.65	7.44	6.55	7.87		8.36	8.53	7.81	6.97	8.44	7.36	

Quarter-Final 1 - 2008 USA Olympic Trials (Eugene, OR) *USATF Women's Sprint Development with HPC (2008)*

date	29-Jun-08	time			19.03	25.55	31.45	37.96	44.29	51.46	51.46	8 / 1						
reaction time		interval				6.52	5.90	6.51	6.33	7.17		# of strides			12.41	13.50	25.55	25.91	0.36
		velocity			7.88	7.67	8.47	7.68	7.90	6.97	7.77				8.06	7.41	7.83	7.72	

FINAL - 2007 IAAF World Athletics Final (Stuttgart, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Sep-07	time		12.43		24.19		36.90		50.73	50.73	2 / 7						
reaction time	0.146	interval				11.76		12.71		13.83		# of strides	12.43	11.76	12.71	13.83	24.19	26.54	2.35
		velocity		8.05		8.50		7.87		7.23	7.88		8.05	8.50	7.87	7.23	8.27	7.54	

FINAL - 2007 IAAF World Championships (Osaka, JPN) *Mochida (2008) - biomechancial analysis of the 400m final race at ehe 2007 world championships in athletics*

date	29-Aug-07	time	6.60	12.20	18.03	24.22	30.42	36.94	43.69	50.96	50.96	2 / 8						
reaction time	0.159	interval		5.60	5.83	6.19	6.20	6.52	6.75	7.27		# of strides	12.20	12.02	12.72	14.02	24.22	26.74	2.52
		velocity	7.58	8.93	8.58	8.08	8.06	7.67	7.41	6.88	7.85	185.0	8.20	8.32	7.86	7.13	8.26	7.48	

Danner, Mary (USA) (1980)

FINAL - 2006 USATF National Championship (Indianapolis, IN) *USATF Women's Sprint Development (2006)*

date	24-Jun-06	time		12.02	18.32	24.39	30.73	37.37	44.26	51.27	51.27	2 / 5						
reaction time		interval			6.30	6.07	6.34	6.64	6.89	7.01	PB	# of strides	12.02	12.37	12.98	13.90	24.39	26.88	2.49
		velocity		8.32	7.94	8.24	7.89	7.53	7.26	7.13	7.80		8.32	8.08	7.70	7.19	8.20	7.44	

Semi-Final 1 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	15-Jul-04	time		12.36		24.11	30.58	37.30	44.65	52.85	52.85	8 / 8						
reaction time		interval				11.75	6.47	6.72	7.35	8.20		# of strides	12.36	11.75	13.19	15.55	24.11	28.74	4.63
		velocity		8.09		8.51	7.73	7.44	6.80	6.10	7.57		8.09	8.51	7.58	6.43	8.30	6.96	

Heat 2 - 2004 USA Olympic Trials (Sacramento, CA) *USATF Women's Sprint Development (2004)*

date	12-Jul-04	time		12.19		23.92		37.15	44.06	51.88	51.88	5 / 3						
reaction time		interval				11.73		13.23	6.91	7.82		# of strides	12.19	11.73	13.23	14.73	23.92	27.96	4.04
		velocity		8.20		8.53		7.56	7.24	6.39	7.71	181.2	8.20	8.53	7.56	6.79	8.36	7.15	

Wittstock, Estie (RSA) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2009 ISTAF (Berlin, GER)																	*Graubner (2009) - http://www.fgs.uni-halle.de*
date 14-Jun-09	time			12.72		25.08		38.47		53.39	53.39	/ 8						
reaction time 0.199	interval					12.36		13.39		14.92		# of strides	12.72	12.36	13.39	14.92	25.08	28.31	3.23
	velocity			7.86		8.09		7.47		6.70	7.49		7.86	8.09	7.47	6.70	7.97	7.06	

Woods, Shareese (USA) (1985)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Quarter-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																	*USATF Women's Sprint Development with HPC (2008)*
date 29-Jun-08	time		12.94	19.21	25.55	31.77	38.08	44.60	51.60	51.60	8 / 2							
reaction time	interval			6.27	6.34	6.22	6.31	6.52	7.00	**PB**	# of strides	12.94	12.61	12.53	13.52	25.55	26.05	0.50
	velocity		7.73	7.97	7.89	8.04	7.92	7.67	7.14	7.75		7.73	7.93	7.98	7.40	7.83	7.68	

Wyciszkiewicz, Patrycja (POL) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Memorial Van Damme (Brussels, BEL)																	*Omega Timing (2020) - diamond league race analysis*
date 04-Sep-20	time	7.1	13.1	19.1	25.3	31.7	38.4	45.3	52.78	52.78	2 / 3							
reaction time 0.161	interval		6.00	6.00	6.20	6.40	6.70	6.90	7.48		# of strides	13.10	12.20	13.10	14.38	25.30	27.48	2.18
	velocity	7.04	8.33	8.33	8.06	7.81	7.46	7.25	6.68	7.58	194.7	7.63	8.20	7.63	6.95	7.91	7.28	

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) *Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition*

date	20-May-18	time	6.96	12.74	18.67	24.81	31.14	37.80	44.73	52.06	52.06	7 / 5						
reaction time	0.190	interval		5.78	5.93	6.14	6.33	6.66	6.93	7.33		# of strides	12.74	12.07	12.99	14.26	24.81	27.25	2.44
		velocity	7.18	8.65	8.43	8.14	7.90	7.51	7.22	6.82	7.68	197.0	7.85	8.29	7.70	7.01	8.06	7.34	

Heat 1 - 2015 IAAF World Championships (Beijing, CHN) *Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.82	12.50	18.25	24.32	30.66	37.17	44.01	51.31	51.31	9 / 4						
reaction time	0.190	interval		5.68	5.75	6.07	6.34	6.51	6.84	7.30	**NUR / PB**	# of strides	12.50	11.82	12.85	14.14	24.32	26.99	2.67
		velocity	7.33	8.80	8.70	8.24	7.89	7.68	7.31	6.85	7.80		8.00	8.46	7.78	7.07	8.22	7.41	

Yada, Shizuka (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)																	*(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en*
date 17-Jun-16	time		13.63		26.65		40.60			55.91	55.91	5 / 3						
reaction time	interval				13.02		13.95			15.31		# of strides	13.63	13.02	13.95	15.31	26.65	29.26	2.61
	velocity		7.34		7.68		7.17			6.53	7.15		7.34	7.68	7.17	6.53	7.50	6.84	

Yakushiji, Mana (JPN) (1995)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																	*(2017) - tfdata-store.com/2017/06/02/post-835/*
date 26-May-17	time		13.16		26.31		40.91			56.50	56.50	8 / 5						
reaction time	interval				13.15		14.60			15.59		# of strides	13.16	13.15	14.60	15.59	26.31	30.19	3.88
	velocity		7.60		7.60		6.85			6.41	7.08	209.5	7.60	7.60	6.85	6.41	7.60	6.62	

Yamada, Hana (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)																	*(2017) - tfdata-store.com/2017/10/05/post-1097/*
date 24-Sep-17	time					41.85		57.29	57.29	2 / 7								
reaction time 0.194	interval							15.44		# of strides				15.44				
	velocity					7.17		6.48	6.98					6.48				

Yamada, Miki (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																	*(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17	time		13.54		26.19		40.32			55.46	55.46	6 / 5						
reaction time 0.274	interval				12.65		14.13			15.14		# of strides	13.54	12.65	14.13	15.14	26.19	29.27	3.08
	velocity		7.39		7.91		7.08			6.61	7.21	204.2	7.39	7.91	7.08	6.61	7.64	6.83	

U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time		13.02		25.53		39.30			55.00	55.00	6 / 2						
reaction time	0.210	interval				12.51		13.77			15.70		# of strides	13.02	12.51	13.77	15.70	25.53	29.47	3.94
		velocity		7.68		7.99		7.26			6.37	7.27	211.5	7.68	7.99	7.26	6.37	7.83	6.79	

Yamamoto, Mizuki (JPN) (1993)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2011 Japanese National High School Championships (Okinawa, JPN)																	*Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
date 03-Aug-11	time		13.69		27.20		40.70			55.42	55.42	7 / 4						
reaction time	interval				13.51		13.50			14.72	**PB**	# of strides	13.69	13.51	13.50	14.72	27.20	28.22	1.02
	velocity		7.30		7.40		7.41			6.79	7.22		7.30	7.40	7.41	6.79	7.35	7.09	

Yamauchi, Soyo (JPN) (2004)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																	*Kishima (2022) - national high school championships biomechanics data collection*
date 03-Aug-22	time		13.28		26.16		40.01			55.26	55.26	9 / 3						
reaction time 0.224	interval				12.88		13.85			15.25		# of strides	13.28	12.88	13.85	15.25	26.16	29.10	2.94
	velocity		7.53		7.76		7.22			6.56	7.24	201.0	7.53	7.76	7.22	6.56	7.65	6.87	

FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*

date	23-Oct-21	time	7.16	13.05	19.17	25.60	32.28	39.35			39.35	7 / 4						
reaction time	0.225	interval		5.89	6.12	6.43	6.68	7.07				# of strides	13.05	12.55	13.75		25.60		
		velocity	6.98	8.49	8.17	7.78	7.49	7.07			7.62	152.7	7.66	7.97	7.27		7.81		

Yang Huizhen (CHN) (1992)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Chinese National Games (Tianjin, CHN)																	*Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*
date 03-Sep-17	time			12.80		24.86		37.76		51.80	51.80	/ 1						

reaction time	interval			12.06		12.90		14.04	PB	# of strides	12.80	12.06	12.90	14.04	24.86	26.94	2.08
	velocity	7.81		8.29		7.75		7.12	7.72	196.0	7.81	8.29	7.75	7.12	8.05	7.42	

FINAL - 2016 Chinese National Championships (Tianjin, CHN) *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	15-Sep-16	time		25.36		38.52		52.57	52.57	/ 1							
reaction time		interval				13.16		14.05		# of strides			13.16	14.05	25.36	27.21	1.85
		velocity		7.89		7.60		7.12	7.61	189.0			7.60	7.12	7.89	7.35	

FINAL - 2016 Chinese National Grand Prix Final (Chongqing, CHN) *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	19-Jun-16	time		25.24		38.64		52.90	52.90	/ 1							
reaction time		interval				13.40		14.26		# of strides			13.40	14.26	25.24	27.66	2.42
		velocity		7.92		7.46		7.01	7.56	195.0			7.46	7.01	7.92	7.23	

FINAL - 2016 Chinese National Grand Prix (Shaoxing, CHN) *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	16-Apr-16	time		25.52		38.72		52.77	52.77	/ 1							
reaction time		interval				13.20		14.05		# of strides			13.20	14.05	25.52	27.25	1.73
		velocity		7.84		7.58		7.12	7.58	197.0			7.58	7.12	7.84	7.34	

FINAL - 2015 Asian Championships (Wuhan, CHN) *Yang (2019) - analysis of the characteristics of Yang Huizhen's running speed in 400m*

date	04-Jun-15	time		25.08		38.09		52.37	52.37	/ 1							
reaction time		interval				13.01		14.28	PB	# of strides			13.01	14.28	25.08	27.29	2.21
		velocity		7.97		7.69		7.00	7.64	191.0			7.69	7.00	7.97	7.33	

Yeargin, Nicole (GBR) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)											*Timing by Seiko (2022) - world athletics championships race analysis*						
date 20-Jul-22 time		12.65		24.89		37.57		51.22	51.22	2 / 4							
reaction time 0.156 interval				12.24		12.68		13.65		# of strides	12.65	12.24	12.68	13.65	24.89	26.33	1.44
velocity		7.91		8.17		7.89		7.33	7.81		7.91	8.17	7.89	7.33	8.04	7.60	

Heat 2 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.48		24.32		37.22		51.17	51.17	7 / 4						
reaction time	0.150	interval				11.84		12.90		13.95		# of strides	12.48	11.84	12.90	13.95	24.32	26.85	2.53
		velocity		8.01		8.45		7.75		7.17	7.82	195.7	8.01	8.45	7.75	7.17	8.22	7.45	

FINAL - 2022 FBK Games (Hengelo, NED) *Omega Timing (2022) - continental tour race analysis*

date	06-Jun-22	time	6.8	12.4	18.3	24.4	30.7	37.2	44.1	51.56	51.56	7 / 3							
reaction time	0.183	interval		5.60	5.90	6.10	6.30	6.50	6.90	7.46		# of strides	12.40	12.00	12.80	14.36	24.40	27.16	2.76
		velocity	7.35	8.93	8.47	8.20	7.94	7.69	7.25	6.70	7.76		8.06	8.33	7.81	6.96	8.20	7.36	

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jun-21	time	6.9	12.5	18.3	24.4	30.7	37.4	44.3	51.77	51.77	3 / 5							
reaction time	0.162	interval		5.60	5.80	6.10	6.30	6.70	6.90	7.47		# of strides	12.50	11.90	13.00	14.37	24.40	27.37	2.97
		velocity	7.25	8.93	8.62	8.20	7.94	7.46	7.25	6.69	7.73		8.00	8.40	7.69	6.96	8.20	7.31	

Yefremova, Antonina (UKR) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2002 European Championships (Munich, GER)											*Graubner (2009) - http://www.fgs.uni-halle.de*						
date 08-Aug-02 time		13.00		24.97		37.75		52.02	52.02	/ 6							
reaction time 0.162 interval				11.97		12.78		14.27		# of strides	13.00	11.97	12.78	14.27	24.97	27.05	2.08
velocity		7.69		8.35		7.82		7.01	7.69		7.69	8.35	7.82	7.01	8.01	7.39	

Heat 2 - 2002 European Championships (Munich, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date	07-Aug-02	time		13.12		24.94		37.72		51.96	51.96	/ 1						
reaction time	0.175	interval				11.82		12.78		14.24		# of strides	13.12	11.82	12.78	14.24	24.94	27.02	2.08
		velocity		7.62		8.46		7.82		7.02	7.70		7.62	8.46	7.82	7.02	8.02	7.40	

Yoshida, Kasumi (JPN) (1999)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)											*Ryutaro (2018) - research on athlete performance and technique- 2018 data book*						
date 19-Oct-18 time	7.08	13.09	19.44	26.10	33.06	40.35	47.87	55.94	55.94	6 / 5							
reaction time 0.437 interval		6.01	6.35	6.66	6.96	7.29	7.52	8.07		# of strides	13.09	13.01	14.25	15.59	26.10	29.84	3.74
velocity	7.06	8.32	7.87	7.51	7.18	6.86	6.65	6.20	7.15		7.64	7.69	7.02	6.41	7.66	6.70	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

date	26-May-17	time		13.41		26.70		41.73		58.39	58.39	9 / 8						
reaction time		interval				13.29		15.03		16.66		# of strides	13.41	13.29	15.03	16.66	26.70	31.69	4.99
		velocity		7.46		7.52		6.65		6.00	6.85	223.7	7.46	7.52	6.65	6.00	7.49	6.31	

Yoshida, Makiko (JPN) (1976)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)											*Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*						
date 19-Sep-05 time		12.74		25.22		38.22	45.49	53.42	53.42	7 / 5							
reaction time		interval				12.48		13.00	7.27	7.93		# of strides	12.74	12.48	13.00	15.20	25.22	28.20	2.98
		velocity		7.85		8.01		7.69	6.88	6.31	7.49		7.85	8.01	7.69	6.58	7.93	7.09	

Yoshida, Sayumi (JPN) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2015 Japanese National High School Championships (Wakayama, CHN)											*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*						
date 29-Jul-15 time	7.34	13.44	19.72	26.35	33.26	40.39	47.94	55.97	55.97	/ 8							
reaction time	interval		6.10	6.28	6.63	6.91	7.13	7.55	8.03		# of strides	13.44	12.91	14.04	15.58	26.35	29.62	3.27
velocity	6.81	8.20	7.96	7.54	7.24	7.01	6.62	6.23	7.15		7.44	7.75	7.12	6.42	7.59	6.75	

Yoshimi, Misaki (JPN) (1994)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Race B - 2016 Shizuoka International Meeting (Fukuroi, JPN)											*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*						
date 03-May-16 time	7.14	13.25	19.65	26.26	33.12	40.26	47.72	55.77	55.77	/ 1							
reaction time	interval		6.11	6.40	6.61	6.86	7.14	7.46	8.05		# of strides	13.25	13.01	14.00	15.51	26.26	29.51	3.25
velocity	7.00	8.18	7.81	7.56	7.29	7.00	6.70	6.21	7.17		7.55	7.69	7.14	6.45	7.62	6.78	

Yoshinaka, Hinako (JPN) (2002)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2020 Japanese U20 National Championships (Hiroshima, JPN)											*Kobayashi (2002) - national high school and U20 national championhsips*						

date	23-Oct-20	time	7.27	13.44	19.79	26.45	33.31	40.36	47.81	56.08	56.08	3 / 2						
reaction time	0.182	interval		6.17	6.35	6.66	6.86	7.05	7.45	8.27		# of strides	13.44	13.01	13.91	15.72	26.45	29.63	3.18
		velocity	6.88	8.10	7.87	7.51	7.29	7.09	6.71	6.05	7.13	226.6	7.44	7.69	7.19	6.36	7.56	6.75	

FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.46	13.69	20.04	26.57	33.31	40.50	48.09	56.16	56.16	5 / 5						
reaction time	0.201	interval		6.23	6.35	6.53	6.74	7.19	7.59	8.07		# of strides	13.69	12.88	13.93	15.66	26.57	29.59	3.02
		velocity	6.70	8.03	7.87	7.66	7.42	6.95	6.59	6.20	7.12		7.30	7.76	7.18	6.39	7.53	6.76	

Yoshioka, Nana (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) *Kijima (2019) - research on athlete performance and technique- 2019 data book*

date	18-Oct-19	time	7.41	14.02	20.67	27.43	34.24	41.05	47.94	55.14	55.14	3 / 3						
reaction time	0.197	interval		6.61	6.65	6.76	6.81	6.81	6.89	7.20		# of strides	14.02	13.41	13.62	14.09	27.43	27.71	0.28
		velocity	6.75	7.56	7.52	7.40	7.34	7.34	7.26	6.94	7.25		7.13	7.46	7.34	7.10	7.29	7.22	

Yoshioka, Rina (JPN) (2001)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2019 Japanese National High School Championships (Okinawa, JPN) *Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*

date	04-Aug-19	time	7.39	13.82	20.23	26.73	33.31	40.04	47.02	54.41	54.41	7 / 2						
reaction time		interval		6.43	6.41	6.50	6.58	6.73	6.98	7.39	PB	# of strides	13.82	12.91	13.31	14.37	26.73	27.68	0.95
		velocity	6.77	7.78	7.80	7.69	7.60	7.43	7.16	6.77	7.35		7.24	7.75	7.51	6.96	7.48	7.23	

FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	7.09	13.41	19.91	26.56	33.26	40.22	47.55	55.42	55.42	6 / 2						
reaction time	0.177	interval		6.32	6.50	6.65	6.70	6.96	7.33	7.87		# of strides	13.41	13.15	13.66	15.20	26.56	28.86	2.30
		velocity	7.05	7.91	7.69	7.52	7.46	7.18	6.82	6.35	7.22		7.46	7.60	7.32	6.58	7.53	6.93	

U20 FINAL - 2018 National Sports Festival (Fukui, JPN) *Joshi (2018) - research on athlete performance and technique- 2018 data book*

date	08-Oct-18	time	6.96	13.32	19.95	26.71	33.49	40.32	47.27	54.70	54.70	4 / 2						
reaction time	0.183	interval		6.36	6.63	6.76	6.78	6.83	6.95	7.43		# of strides	13.32	13.39	13.61	14.38	26.71	27.99	1.28
		velocity	7.18	7.86	7.54	7.40	7.37	7.32	7.19	6.73	7.31		7.51	7.47	7.35	6.95	7.49	7.15	

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN) *Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	7.11	13.30	19.84	26.35	32.93	39.83	47.09	54.99	54.99	4 / 2						
reaction time		interval		6.19	6.54	6.51	6.58	6.90	7.26	7.90		# of strides	13.30	13.05	13.48	15.16	26.35	28.64	2.29
		velocity	7.03	8.08	7.65	7.68	7.60	7.25	6.89	6.33	7.27		7.52	7.66	7.42	6.60	7.59	6.98	

Young, Charokee (JAM) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	21-Aug-23	time		12.62		24.34		37.49		51.40	51.40	3 / 6						
reaction time	0.207	interval				11.72		13.15		13.91		# of strides	12.62	11.72	13.15	13.91	24.34	27.06	2.72
		velocity		7.92		8.53		7.60		7.19	7.78		7.92	8.53	7.60	7.19	8.22	7.39	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time		12.49		24.11		36.87		51.24	51.24	8 / 6						
reaction time	0.222	interval				11.62		12.76		14.37		# of strides	12.49	11.62	12.76	14.37	24.11	27.13	3.02
		velocity		8.01		8.61		7.84		6.96	7.81	194.7	8.01	8.61	7.84	6.96	8.30	7.37	

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time		12.49		24.22		36.96		51.41	51.41	2 / 5						
reaction time	0.175	interval				11.73		12.74		14.45		# of strides	12.49	11.73	12.74	14.45	24.22	27.19	2.97
		velocity		8.01		8.53		7.85		6.92	7.78	196.0	8.01	8.53	7.85	6.92	8.26	7.36	

Heat 3 - 2022 World Athletics Championships (Eugene, OR) *Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time		12.70		24.80		37.57		51.84	51.84	4 / 4						
reaction time	0.199	interval				12.10		12.77		14.27		# of strides	12.70	12.10	12.77	14.27	24.80	27.04	2.24
		velocity		7.87		8.26		7.83		7.01	7.72	197.7	7.87	8.26	7.83	7.01	8.06	7.40	

Young, Jessica (USA) (1987)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2006 USATF National Junior Championship (Indianapolis, IN) *USATF Women's Sprint Development (2006)*

date	24-Jun-06	time		12.71	18.82	25.22	31.65	38.41	45.61	53.39	53.39	5 / 4						
reaction time		interval			6.11	6.40	6.43	6.76	7.20	7.78	PB	# of strides	12.71	12.51	13.19	14.98	25.22	28.17	2.95
		velocity		7.87	8.18	7.81	7.78	7.40	6.94	6.43	7.49		7.87	7.99	7.58	6.68	7.93	7.10	

Yukina, Murakami (JPN)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2007 Japanese National High School Championships (Saga, JPN) *Hitorara (2007) - 60st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-07	time	7.32	14.43	22.02	29.35	36.45	43.71	51.08	58.69	58.69	/ 3						
reaction time		interval		7.11	7.59	7.33	7.10	7.26	7.37	7.61		# of strides	14.43	14.92	14.36	14.98	29.35	29.34	-0.01
		velocity	6.83	7.03	6.59	6.82	7.04	6.89	6.78	6.57	6.82		6.93	6.70	6.96	6.68	6.81	6.82	

Yushchanka, Yulianna (BLR) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 2007 European Cup (Munich, GER) *Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Jun-07	time		12.66		24.55		37.38		52.09	52.09	/ 3						
reaction time	0.217	interval				11.89		12.83		14.71		# of strides	12.66	11.89	12.83	14.71	24.55	27.54	2.99
		velocity		7.90		8.41		7.79		6.80	7.68		7.90	8.41	7.79	6.80	8.15	7.26	

Yusuf-Olukoju, Fatima (NGR) (1971)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

FINAL - 1996 Olympic Games (Atlanta, GA) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	29-Jul-96	time				23.30		35.7		49.77	49.77	6 / 6						
reaction time	0.319	interval						12.40		14.07		# of strides			12.40	14.07	23.30	26.47	3.17
		velocity				8.58		8.06		7.11	8.04				8.06	7.11	8.58	7.56	

Zakari, Joy Nakhumicha (KEN) (1986)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER) *Graubner (2009) - biomechanical analyses at the 12th IAAF world championships*

date	16-Aug-09	time		12.58		24.66		37.90		52.69	52.69	2 / 7						
reaction time	0.183	interval				12.08		13.24		14.79		# of strides	12.58	12.08	13.24	14.79	24.66	28.03	3.37
		velocity		7.95		8.28		7.55		6.76	7.59		7.95	8.28	7.55	6.76	8.11	7.14	

Zaytseva, Olga (RUS) (1984)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE)										*Behm (2006) - Championnats d'Europe Göteborg 2006… Le 400m avec ou sans obstacles*							
date 10-Aug-06 time				23.3		35.6		50.28	50.28	/ 3							
reaction time interval						12.30		14.68		# of strides		23.30	12.30	14.68	23.30	26.98	3.68
velocity				8.58		16.26		6.81	7.96			4.29	8.13	6.81	8.58	7.41	

Zehrt, Monika (GDR) (1952)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1972 Olympic Games (Munich, FRG)										*Track & Field News (1979) - olympic track & field: complete results*							
date 07-Sep-72 time				24.2		36.8		51.08	51.08	7 / 1							
reaction time interval						12.60		14.28	**OR**	# of strides			12.60	14.28	24.20	26.88	2.68
velocity				8.26		7.94		7.00	7.83				7.94	7.00	8.26	7.44	
FINAL - 1972 FRA vs. GDR (Colombes, FRA)										*Hymans (2015) - progression of IAAF world records - 2015 edition*							
date 04-Jul-72 time				23.8				51.0	51.0	/ 1							
reaction time interval								27.2	**=WR**	# of strides					23.80	27.20	3.40
velocity				8.40				7.35	7.84	(51.08)					8.40	7.35	

Zemlyak, Olha (UKR) (1990)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 Meeting de Paris (Paris, FRA)										*Omega Timing (2017) - diamond league race analysis*							
date 01-Jul-17 time		12.5	18.2	24.2	30.7	37.6	44.9	52.93	52.93	2 / ~~6~~							
reaction time 0.196 interval			5.7	6.0	6.5	6.9	7.3	8.0	**DV**	# of strides	12.50	11.70	13.40	15.33	24.20	28.73	4.53
velocity		8.00	8.77	8.33	7.69	7.25	6.85	6.23	7.56	200.0	8.00	8.55	7.46	6.52	8.26	6.96	
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)										*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*							
date 15-Aug-16 time	6.89	12.67	18.44	24.51	30.87	37.42	44.13	51.24	51.24	1 / 7							
reaction time 0.183 interval		5.78	5.77	6.07	6.36	6.55	6.71	7.11		# of strides	12.67	11.84	12.91	13.82	24.51	26.73	2.22
velocity	7.26	8.65	8.67	8.24	7.86	7.63	7.45	7.03	7.81	192.0	7.89	8.45	7.75	7.24	8.16	7.48	
Heat 6 - 2015 IAAF World Championships (Beijing, CHN)										*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*							
date 24-Aug-15 time	6.89	12.59	18.44	24.56	30.90	37.51	44.46	52.00	52.00	9 / 5							
reaction time 0.197 interval		5.70	5.85	6.12	6.34	6.61	6.95	7.54		# of strides	12.59	11.97	12.95	14.49	24.56	27.44	2.88
velocity	7.26	8.77	8.55	8.17	7.89	7.56	7.19	6.63	7.69		7.94	8.35	7.72	6.90	8.14	7.29	

Žižalová, Tereza (CZE) (1981)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2001 European Cup (Bremen, GER)										*Graubner (2007) - http://www.fgs.uni-halle.de*							
date 23-Jun-01 time		13.28		25.84		39.42		54.06	54.06	/ 8							
reaction time interval				12.56		13.58		14.64	**PB**	# of strides	13.28	12.56	13.58	14.64	25.84	28.22	2.38
velocity		7.53		7.96		7.36		6.83	7.40		7.53	7.96	7.36	6.83	7.74	7.09	

Zykina, Olesya (RUS) (1980)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2005 IAAF World Championships (Helsinki, FIN)										*Butler (2013) - IAAF world championships statistics handbook- moscow 2013*							
date 10-Aug-05 time						36.7		51.24	51.24	2 / 6							
reaction time 0.199 interval								14.54		# of strides				14.54			
velocity						8.17		6.88	7.81					6.88			
FINAL - 2003 IAAF World Championships (Paris, FRA)										*Bonvin (2003) - Compte-rendu 400m et relais 4x 400m*							
date 27-Aug-03 time				23.9		36.3		50.59	50.59	8 / 6							
reaction time 0.107 interval						12.40		14.29		# of strides			12.40	14.29	23.90	26.69	2.79
velocity				8.37		8.06		7.00	7.91				8.06	7.00	8.37	7.49	
FINAL - 2002 European Championships (Munich, GER)										*Graubner (2009) - http://www.fgs.uni-halle.de*							
date 08-Aug-02 time		12.20		23.84		36.62		50.45	50.45	/ 1							
reaction time 0.131 interval				11.64		12.78		13.83		# of strides	12.20	11.64	12.78	13.83	23.84	26.61	2.77
velocity		8.20		8.59		7.82		7.23	7.93		8.20	8.59	7.82	7.23	8.39	7.52	
Heat 1 - 2002 European Championships (Munich, GER)										*Graubner (2009) - http://www.fgs.uni-halle.de*							
date 07-Aug-02 time		12.24		23.74		36.38		50.47	50.47	/ 1							
reaction time 0.134 interval				11.50		12.64		14.09		# of strides	12.24	11.50	12.64	14.09	23.74	26.73	2.99
velocity		8.17		8.70		7.91		7.10	7.93		8.17	8.70	7.91	7.10	8.42	7.48	

Zyuskova, Nina (URS) (1952)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1980 Olympic Games (Moscow, URS)										*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*							
date 28-Jul-80 time						36.9		50.17	50.17	3 / 5							
reaction time interval								13.27	**PB**	# of strides				13.27			
velocity						8.13		7.54	7.97					7.54			