

TECHNIQUE & RACE DATA OBSERVATIONS



RUSSELL MARK
NATIONAL TEAM HIGH PERFORMANCE MANAGER

2019 Worlds Men's 10K avg 100m pace

** Based on 1,667m laps*

		Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Lap 6
1	Florian Wellbrock	1:06.4	1:06.0	1:05.8	1:04.3	1:04.6	1:01.3
2	Marc-Antoine Olivier	1:06.6	1:06.1	1:05.6	1:04.3	1:04.6	1:01.2
3	Rob Muffels	1:06.4	1:06.3	1:05.6	1:04.2	1:04.8	1:01.3
4	Kristof Rasovszky	1:06.4	1:06.3	1:05.9	1:04.2	1:04.6	1:01.4
5	Jordan Wilimovsky	1:06.7	1:06.1	1:06.0	1:04.0	1:04.6	1:01.4
6	Gregorio Paltrinieri	1:06.5	1:06.0	1:05.4	1:04.5	1:05.1	1:01.2
7	Ferry Weertman	1:08.0	1:05.9	1:05.2	1:04.1	1:04.4	1:01.3
8	Alberto Martinez	1:07.6	1:05.5	1:06.4	1:03.9	1:04.2	1:01.3
9	Mario Sanzullo	1:06.8	1:06.1	1:05.6	1:04.4	1:04.7	1:01.4
10	David Aubry	1:06.5	1:06.1	1:05.4	1:04.7	1:04.7	1:01.6
	AVG	1:06.8	1:06.0	1:05.7	1:04.3	1:04.6	1:01.3



2019 Worlds Women's 10K avg 100m pace

** Based on 1,667m laps*

		Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Lap 6
1	Xin Xin	1:12.2	1:10.0	1:11.1	1:08.7	1:07.7	1:03.3
2	Haley Anderson	1:10.9	1:10.1	1:11.5	1:09.2	1:08.4	1:03.1
3	Rachele Bruni	1:11.3	1:10.6	1:11.0	1:09.0	1:08.1	1:03.3
4	Lara Grangeon	1:10.4	1:10.7	1:11.2	1:09.0	1:08.3	1:03.7
5	Ana Marcela Cunha	1:10.3	1:10.8	1:11.3	1:09.2	1:08.0	1:03.6
6	Ashley Twichell	1:10.4	1:11.4	1:10.9	1:08.8	1:08.3	1:03.5
7	Kareena Lee	1:10.7	1:10.7	1:11.1	1:09.3	1:08.2	1:03.4
8	Finnia Wunram	1:10.5	1:10.5	1:11.5	1:09.1	1:08.0	1:03.7
9	Leonie Beck	1:11.1	1:10.3	1:11.3	1:09.0	1:08.5	1:03.2
10	Sharon Van Rouwendaal	1:10.7	1:10.7	1:11.2	1:09.1	1:08.6	1:03.0
	AVG	1:10.9	1:10.6	1:11.2	1:09.0	1:08.2	1:03.4



2019 Worlds Men's 10K best 400/800/1500

		400 FR		800 FR		1500 FR	
1	Florian Wellbrock	3:45.59	2019	7:43.03	2019	14:36.15	2018
2	Marc-Antoine Olivier	3:51.71	2017	7:53.12	2019	15:04.84	2017
3	Rob Muffels	3:55.31	2012	7:59.43	2012	15:18.82	2012
4	Kristof Rasovszky	3:52.74	2018	7:54.63	2019	15:08.86	2019
5	Jordan Wilimovsky	3:50.33	2015	7:45.19	2018	14:45.03	2016
6	Gregorio Paltrinieri	3:46.29	2018	7:39.27	2019	14:33.10	2020
7	Ferry Weertman	3:48.48	2014	7:53.38	2015	15:09.03	2017
8	Alberto Martinez	--	--	--	--	--	--
9	Mario Sanzullo	3:58.12	2013	8:11.21	2018	15:18.89	2018
10	David Aubry	3:47.06	2019	7:42.08	2019	14:44.72	2019
	AVG	3:50.63		7:51.26		14:50.06	



2019 Worlds Women's 10K best 400/800/1500

		400 FR		800 FR		1500 FR	
1	Xin Xin	4:05.93	2012	8:19.43	2013	16:13.57	2012
2	Haley Anderson	4:07.21	2018	8:24.13	2018	16:04.26	2018
3	Rachele Bruni	4:16.65	2011	8:35.01	2011	16:22.37	2011
4	Lara Grangeon	4:12.68	2019	8:42.62	2015	16:18.63	2019
5	Ana Marcela Cunha	4:15.60	2013	8:40.98	2013	16:38.05	2019
6	Ashley Twichell	4:07.77	2019	8:25.31	2016	15:54.19	2019
7	Kareena Lee	4:10.52	2018	8:31.06	2016	16:00.14	2018
8	Finnia Wunram	4:20.32	2013	8:56.00	2016	16:47.70	2014
9	Leonie Beck	4:07.06	2019	8:25.99	2019	16:07.70	2015
10	Sharon Van Rouwendaal	4:03.02	2015	8:24.12	2015	16:03.37	2015
	AVG	4:10.68		8:32.47		16:15.00	



2019 Worlds Men's 10K tempo/cycle data

	Jordan Wilimovsky			Gregorio Paltrinieri		
	Duration	Avg. Tempo	Cycles	Duration	Avg. Tempo	Cycles
End of Lap 1	4:00	1.79	131	5:00	1.46	210
End of Lap 2	3:30	1.74	116	5:00	1.48	204
End of Lap 3	4:20	1.69	154	4:00	1.44	167
End of Lap 4	5:00	1.57	191	4:00	1.41	171
End of Lap 5	5:00	1.52	199	4:00	1.46	192
End of Lap 6	4:30	1.43	194	4:45	1.39	204
Best 1500	14:45.03	1.38	589	14:33.10	1.33	610

In the range of 1500 tempo on the final lap

For 10K, Jordan around 3,900 cycles & Gregorio around 4,400 cycles



2019 Worlds Women's 10K tempo/cycle data

	Haley Anderson			Ashley Twichell		
	Duration	Avg. Tempo	Cycles	Duration	Avg. Tempo	Cycles
End of Lap 1	4:00	1.49	158	5:30	1.27	257
End of Lap 2	5:00	1.41	207	6:00	1.31	270
End of Lap 3	5:00	1.37	223	5:00	1.28	237
End of Lap 4	5:00	1.38	216	5:00	1.24	236
End of Lap 5	5:00	1.36	221	4:50	1.22	235
End of Lap 6	5:00	1.26	239	5:00	1.16	258
Best 1500	16:04.26	1.31	674.5	15:54.19	1.18	752

FASTER than 1500 tempo on the final stretch

For 10K, Haley around 5,100 cycles & Ashley around 5,400 cycles





Open Water vs. Pool Technique

- It's the same!!
- With slower tempos in OW early race, head/body/hip position in OW likely needs to be **better** and is **more** important than pool





Distance Free Technique Qualities

- Sustainable arm mechanics
- Good constant rhythm
- High hips + body position
- Minimal rotation / Rotate forward
- Not a long finish out the back
- Focus on the front part of the stroke
- A breath that fits well

