

Track day report

Movesense chest strap and phone, recorded with the Autonomic® mobile app

Collin Thomas, two races at Daytona

2026-10-17, two races on the 3.51 mi motorcycle road course, Daytona Beach, Florida

Each race began with a warm-up lap and a stop on the grid. Race 1 ran 5 laps (15:43:59 to about 15:55 EDT), race 2 ran 4 laps (17:23:40 to about 17:32).

9

race laps, two races

2:08.0

fastest timed lap

~140 mph

top speed, estimated

175 bpm

peak heart rate

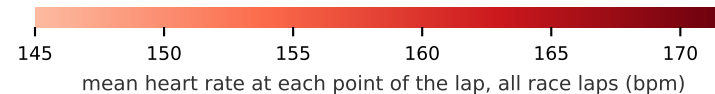
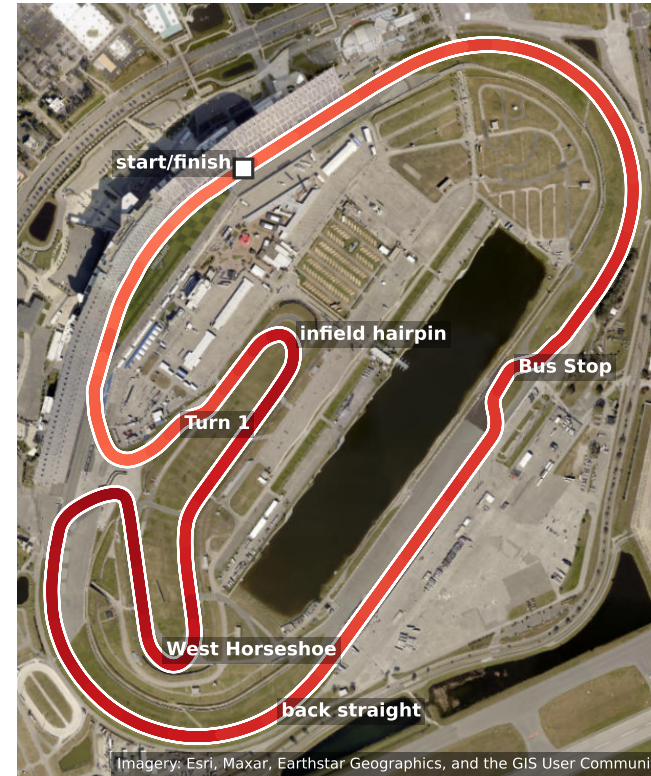
161 bpm

median while racing

3.4 ms

RMSSD racing (21 at rest)

Where on the lap the heart worked hardest

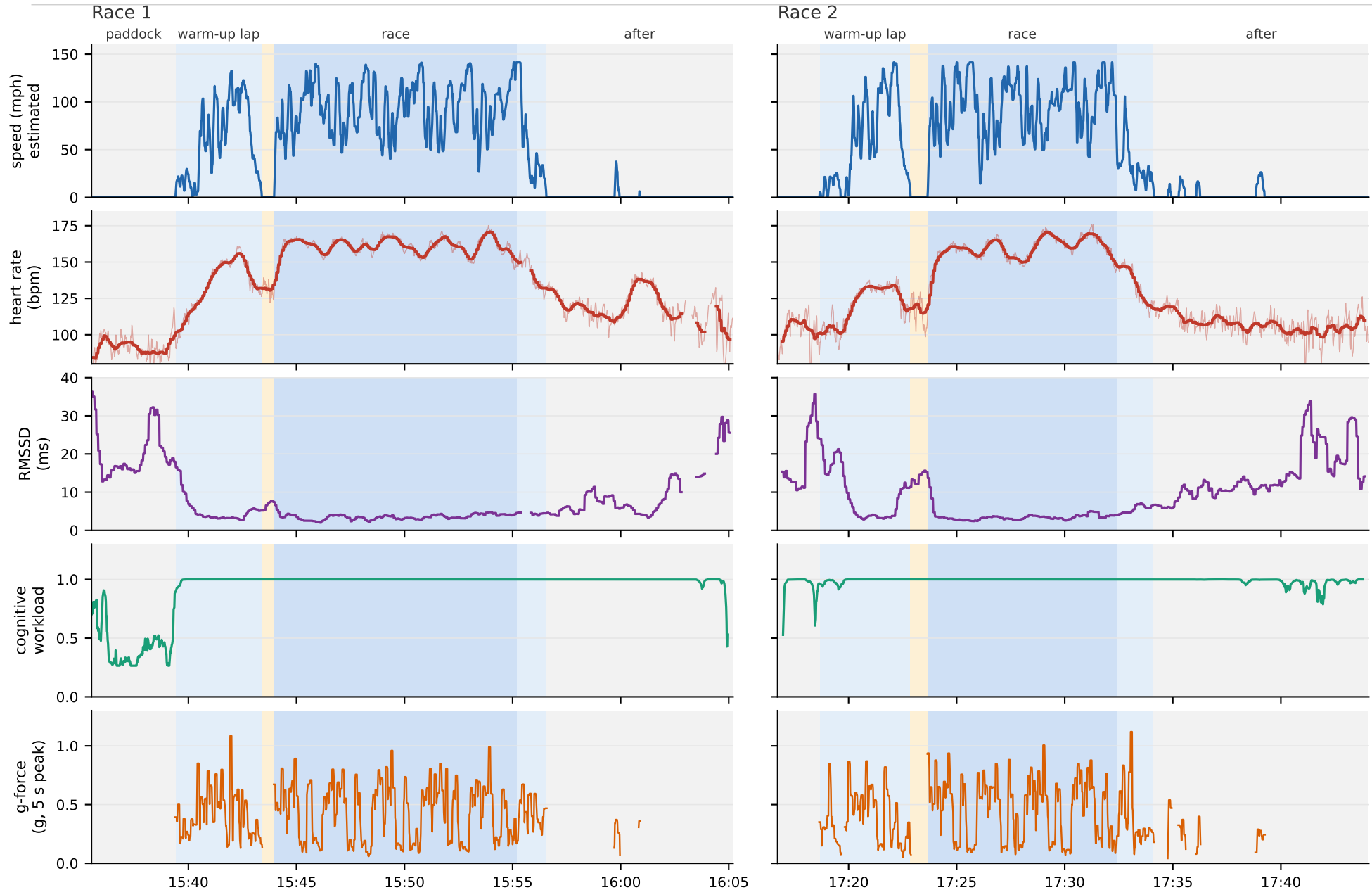


Highlights

- Heart rate: 95 bpm at rest in the morning and 94 bpm in the paddock before race 1. It rose to 135 and 126 bpm on the warm-up laps, sat at 130 and 119 bpm on the grid, and ran at 162 and 160 bpm through the races, peaking at 175 bpm.
- Against Collin's own warm-up lap on the same course, racing added 2 to 31 bpm section by section in race 1. Heart rate climbed through the infield and peaked between the West Horseshoe and the banking (page 3).
- Heart rate variability: RMSSD was about 21 ms at rest and fell to 3.3 to 3.5 ms in both races, the floor for a body working this hard. It came back within minutes of each finish (page 4).
- Laps: timed laps were 128 to 137 s (about 92 to 99 mph on average). Heart rate rose and fell once every lap, about 10 bpm, highest after the infield and lowest on the back straight.
- Cognitive workload (Autonomic® scoring, against the app's morning baseline): 0.46 at rest and 0.54 in the paddock; at the top of its scale, 1.00, from the warm-up laps through both races and cool-downs.
- Speed is estimated from the phone's GPS speed, scaled so every timed lap matches the length of the course, and agrees with the rear wheel's rotation seen by the chest strap on the fast sections.

The two races on one clock

Shaded bands are the phases found from the sensors; the hour between the races (paddock, no recording) is left out.



Heart rate: thin line beat to beat from the ECG, thick line 30 s mean. RMSSD: 30 s windows from the ECG. g-force: horizontal acceleration at the chest while moving, 5 s peak; on a motorcycle the rider leans with the bike, so it is the combined value, not braking and cornering separately.

Lap by lap, and around the lap

Warm-up laps are Collin's own steady reference on the same course.

race	lap	time	avg	top	HR	HR peak	RMSSD	g	workload
1	warm-up		60	120	135	160	3.8	0.50	1.00
1	timed 1	2:12.8	96	137	163	166	3.0	0.60	1.00
1	timed 2	2:17.2	92	135	162	168	3.4	0.56	1.00
1	timed 3	2:12.8	96	139	162	169	3.2	0.61	1.00
1	timed 4	2:15.9	93	138	162	171	3.6	0.58	1.00
2	warm-up		59	135	126	136	7.1	0.53	1.00
2	timed 1	2:08.0	99	141	158	163	2.8	0.59	1.00
2	timed 2	2:16.3	93	132	155	168	3.3	0.58	1.00
2	timed 3	2:10.0	97	136	166	173	3.3	0.62	1.00

Laps are timed from one pass of a line in the infield to the next, where the phone's position is strong (to about 1 s); start/finish crossings on the tri-oval are only good to about 10 s, so they count the race laps (5 and 4) but are not used for times. avg and top: mph, estimated (top is the lap's 95th percentile). HR: median, bpm. RMSSD: ms. g: 95th percentile.



Section by section: heart rate (bpm, mean) on the warm-up lap and on the timed race laps

section	race 1: warm-up	timed laps	gain	race 2: warm-up	timed laps	gain
tri-oval	122	153	+31	110	154	+44
Turn 1 and the infield lefts	131	157	+26	127	156	+29
infield hairpin	141	165	+24	129	163	+34
infield to the Dogleg	143	165	+21	131	163	+31
West Horseshoe	148	166	+18	134	164	+30
onto the banking	150	167	+16	131	167	+35
banking and back straight	151	162	+11	132	162	+29
Bus Stop	160	162	+2	135	158	+24
banking to the tri-oval	135	159	+24	122	157	+36

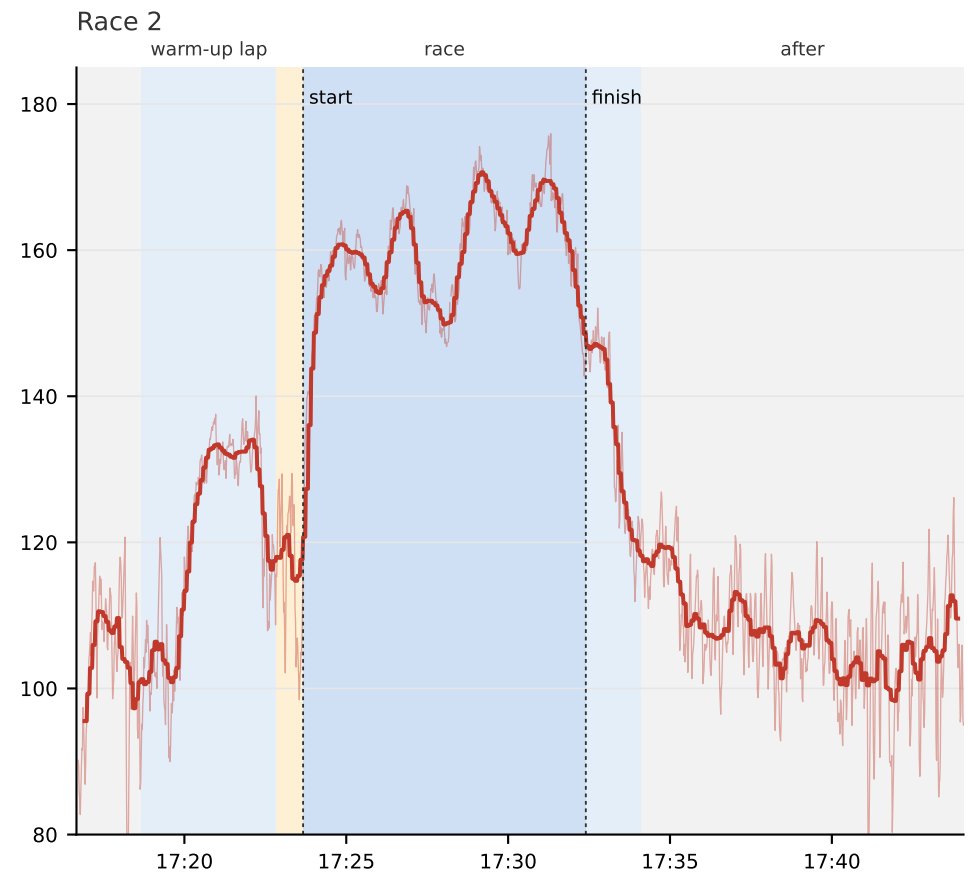
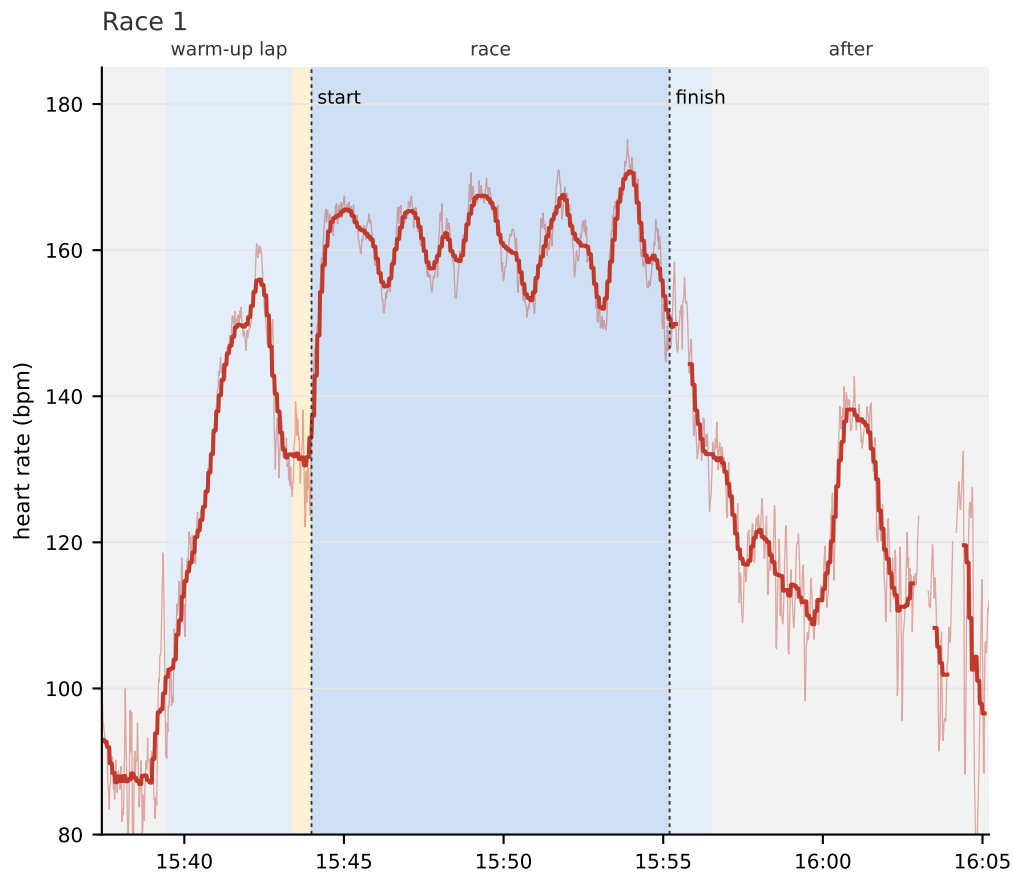
Heart rate was still climbing through each warm-up lap (from about 120 bpm at pit-out), so the gain is largest early in the lap partly for that reason; the warm-up's tri-oval includes rolling to the grid. Speed by section is not shown: the phone places the bike to within about 150 m, too coarse for sections this short.

Before, between and after

Heart rate around the start and after the finish of each race.

Heart rate, 30 s mean (bpm)

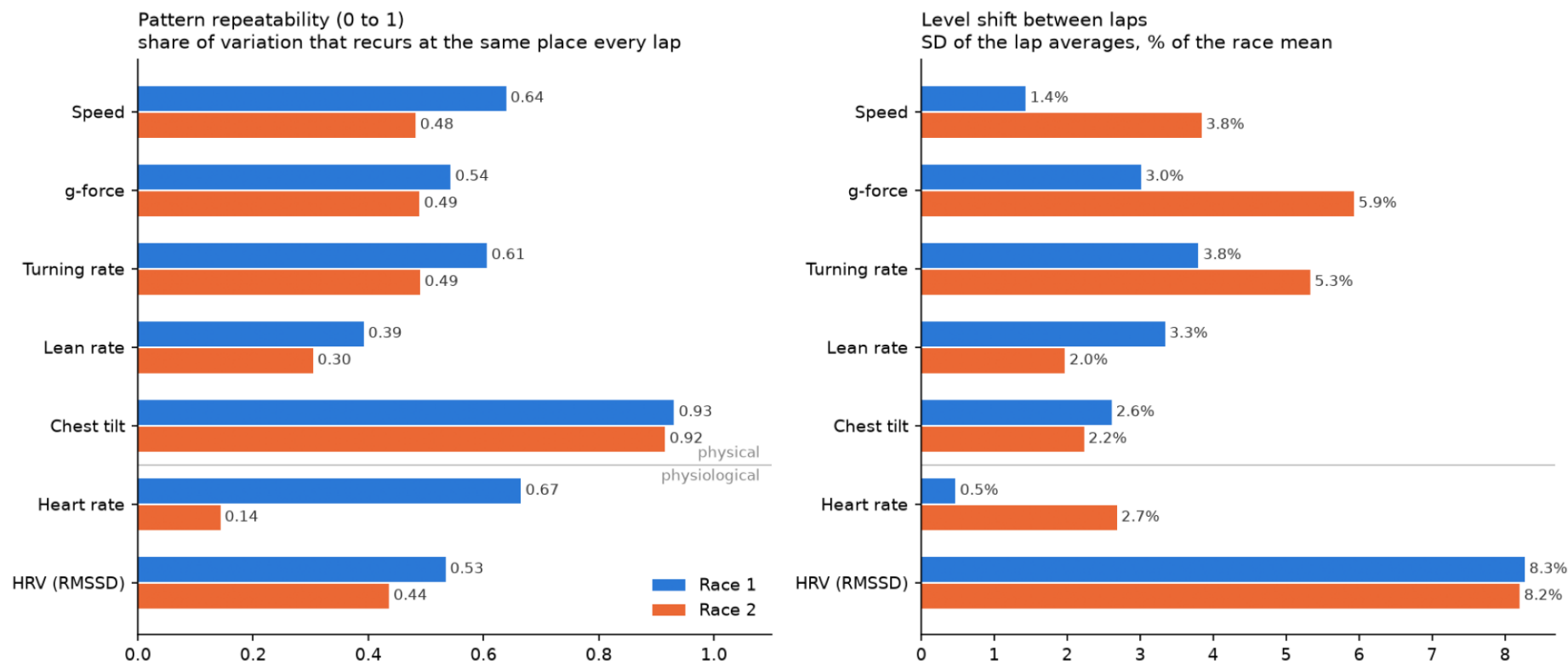
	paddock	warm-up	grid	1 min in	finish	+1 min	+2 min	+5 min	RMSSD after (ms)
race 1	94	135	130	165	151	134	124	117	6.7
race 2	106	126	119	160	149	133	117	110	11.9



Morning rest (strap on at 09:17:51, before the app's 5 min baseline at 09:24): 95 bpm median, RMSSD 21 ms. The cool-down after the finish is still riding (the rest of the lap and the way to the paddock), so the first minutes of recovery are on the bike.

Riding versus the body

How closely each lap repeated the one before: what the bike did, and what the heart did.



- Physical: the track set the riding pattern in both races. Speed, g-force and turning rate repeated 0.64, 0.54 and 0.61 in race 1 and about 18% less in race 2; the lap averages of speed spread 3 mph in race 1 and 7 mph in race 2. Body position (chest tilt) was almost identical every lap (0.93 and 0.92).
- Physiological: in race 1 heart rate repeated as well as the riding (0.67), its lap averages within 1.5 bpm. In race 2 it fell to 0.14: the shape around the lap partly held (laps correlate 0.55), but each lap ran at its own level, 8.1 bpm apart.
- So in race 2 the body changed far more than the riding did: the lap-to-lap spread of heart rate grew 5-fold, the spread of lap speed 2.4-fold. HRV sat at its floor (about 3.5 ms) in both races and does not separate them.

Race 1 has 4 timed laps, race 2 3. g-force, turning, lean and tilt come from the chest strap's motion sensor; speed is estimated from the phone. Each lap is aligned on its physical pattern (up to 150 m) before scoring, so the phone's position error does not count against the riding.