

## VO<sub>2</sub>max: where my cardio fitness sits relative to my age — and what the crisis did to it

*Within-subject longitudinal analysis (N = 1) — an ordinary number, honestly placed, with the device held outside any attribution*

**Level of evidence** : Within-subject longitudinal analysis (N = 1, VO<sub>2</sub>max estimated by smartwatch, Dec 2025 → May 2026) — exploratory self-tracking; watch estimate (5–15% deviation, heavily smoothed); no device effect tested or claimed (firewall); conflict of interest declared; health data published by the subject

<b>Study type</b>	Within-subject longitudinal analysis (N = 1) — self-tracking, exploratory
<b>Subject</b>	The author himself — inventor of the technology (conflict of interest declared)
<b>Data</b>	Estimated VO <sub>2</sub> max (smartwatch, “Cardio Fitness”), Dec 2025 → May 2026
<b>Benchmark</b>	ACSM / Cooper norms, men 40–49
<b>Key result</b>	Median 37.8 ml/kg/min — just above the age median (~36), protective zone, not athletic
<b>Device</b>	Chronic wear, but NEITHER credited NOR blamed (firewall)
<b>Status</b>	Honest description + measurement caveat — no causality

### Summary

A study from the longitudinal self-tracking series, in the same honest vein: the device is held outside any attribution, and the aim is to place a number — VO<sub>2</sub>max, one of the best predictors of all-cause mortality — relative to age, and to see what the crisis did to it. Estimated by a smartwatch (56 measurements, Dec 2025 → May 2026) and compared with ACSM/Cooper norms for men 40–49: median 37.8 ml/kg/min, just above the age median (~36), within the cardio-protective zone (≥35–40) — but not athletic (“Good” starts at ~41). Trajectory: peak 40.6 in late January, trough 36.2 in February (which follows the travel, not the April crisis), recovery 38.7 in May. The central honesty point: if VO<sub>2</sub>max did not plunge during the crisis, that is not proof of resilience — it is partly a measurement artifact (the marker is heavily smoothed and only updates with outdoor walks, rare during a flare), whereas resting HR and HRV did capture the episode. Reading: an ordinary but protective fitness, modestly above what the catabolic profile (illness + sedentary + short sleep) would predict. No causal attribution; conflict of interest declared; consumer estimate, no medical claim.

## 1. Transparency — conflict of interest and device scope

**Conflict of interest declared.** The author is the subject, the inventor and the manufacturer of the technology. Personal health data, published voluntarily by the subject. Consumer estimate; no medical claim.

**The device is held outside any attribution (firewall).** We do not credit the technology with an average VO<sub>2</sub>max — it is explained by training and general condition — and we do not blame it for the February trough, which follows the travel. The device appears only as context (chronic wear).

## 2. Background and objective

If one were to track a single health number, VO<sub>2</sub>max — maximal oxygen consumption at effort — would be a serious candidate: it is one of the best predictors of all-cause mortality, ahead of many

classical risk factors. It declines about 10% per decade after age 25 (half that if one trains), and chronic illness erodes it.

For someone stacking an inflammatory illness, short sleep, heavy caffeine use and 80 hours a week of static standing work, the expectation would be a VO<sub>2</sub>max below the age median. The question: where does it actually sit, and what did the crisis do to it?

### 3. Method

Data and benchmarks:

- VO<sub>2</sub>max: watch estimate (“Cardio Fitness”), derived from heart rate and pace during outdoor walks / runs (56 measurements).
- Walking HR: ambulatory average (cardiac cost of walking, 161 measurements).
- Norms: ACSM / Cooper Institute, men 40–49 (median ~36; “Good” ≥41; “Excellent” ≥46).

**Method limits, to keep in mind.** A watch estimate typically deviates 5–15% from a lab test. Above all, this VO<sub>2</sub>max is heavily smoothed and only updates with outdoor walks / runs: it reacts with a lag and under-records acute shocks — decisive for reading the crisis.

### 4. Where I sit relative to my age

**OBSERVATION** Positioning of the measured median among the age categories (ACSM/Cooper, men 40–49).

Benchmark (men 40–49)	VO <sub>2</sub> max (ml/kg/min)	Reading
Population median	~36	age reference
Cardio-protective zone	≥ 35–40	lower cardiovascular risk
<b>Measured median</b>	<b>37.8 (35.3–40.6)</b>	just above the median
“Good” threshold	≥ 41	not reached
“Excellent” threshold	≥ 46	not reached

Median 37.8 ml/kg/min: just above the population median (~36), around the 50–60th percentile, and at or above the zone associated with lower cardiovascular risk (≥35–40). But to be clear: it is not athletic — “Good” starts at ~41, “Excellent” at ~46.

### 5. The trajectory — and what the crisis did (or didn’t)

**OBSERVATION** Trajectory from December 2025 to May 2026.

Period	VO <sub>2</sub> max	Anchor
Late Jan 2026	40.6	peak
<b>February (travel)</b>	<b>36.2</b>	trough — follows the travel, not the crisis
April (crisis)	~stable	smoothed marker — under-records the acute
<b>May 2026</b>	<b>38.7</b>	recovery

**Honest caution on the crisis.** That VO<sub>2</sub>max did not plunge in April is not proof of resilience: it is partly a measurement artifact. The estimate is smoothed and requires outdoor walks to update — rare in mid-flare. The marker therefore under-recorded the acute episode, whereas resting HR and HRV captured it clearly.

On the cardiac-cost side, mean walking HR stays at ~90–95 bpm, with a slight rise in May (90 → 95) — consistent with an added post-crisis cardiac cost: after the catabolic crash, the same movement costs a few more beats.

## 6. Interpretation

Honest verdict: an ordinary cardio fitness for the age — neither weak nor athletic — but above the median and within the protective zone. The interesting point is not the raw level, it is that it modestly exceeds what the catabolic profile predicts: illness, sedentariness and short sleep normally pull  $VO_2\text{max}$  below the median. As with walking and muscle mass in the other parts of the series, cardio fitness holds a notch above expectation — intriguing, proving nothing.

**Doubt cuts both ways.** We do not credit the device with an average  $VO_2\text{max}$  (training, general condition, a coarse estimate); we do not blame it for the February trough (travel, detraining). The data describes, and attributes nothing — neither for nor against.

**A confounder to name: caffeine.** A consumption of 300–400 mg/day (near the usual ceiling), largely to offset sleep debt, stimulates the autonomic axis: it tends to raise HR and modify HRV (effects attenuated by tolerance, but real). All cardiac markers therefore carry a caffeine + sleep-debt imprint, not disentangle-able in tracking without a control condition.

## 7. Limitations

- Watch estimate (5–15% deviation vs lab); heavy smoothing → lag and under-recording of acute shocks.
- Caffeine 300–400 mg/day + sleep debt: cardiac / autonomic confounder not isolable (HR, HRV).
- Short window (~5 months); depends on the frequency of outdoor walks.
- $N = 1$ , continuous wear, no comparator → no causal inference; full conflict of interest.

## 8. Conclusion

The measured  $VO_2\text{max}$  places cardio fitness just above the age median, within the cardio-protective zone — ordinary, but a notch above what the profile would lead one to expect. The crisis left little mark on this marker, mainly because it sees it poorly (smoothing, lag). The value of this note lies as much in what it refuses as in what it shows: it does not sell a measurement artifact as resilience, and attributes nothing to the device. Measurement over belief, including when the number is “average.” Only a lab test would calibrate the estimate, and only a controlled trial would settle causality. Framing: an exploratory  $N = 1$  analysis, a consumer estimate, with no medical claim; no device effect tested or claimed.

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*Source:  $VO_2\text{max}$  estimated by smartwatch (“Cardio Fitness,” 56 measurements) and mean walking HR (161 measurements), December 2025 → May 2026, compared with ACSM/Cooper norms (men 40–49). Within-subject longitudinal analysis  $N = 1$ ; heavily smoothed watch estimate; conflict of interest declared; health data published by the subject. No device effect is tested or claimed. Unaudited internal data. Not a medical claim.*