Gait, up close — the crisis, steadiness, and a contrast worth questioning

Within-subject longitudinal analysis (N = 1) — from a very heavy locomotor starting point to ordinary indicators, the device held outside any attribution

Level of evidence : Within-subject longitudinal analysis (N = 1, smartwatch gait metrics, 2020 → 2026) — exploratory self-tracking; wrist accelerometer (coarse functional trends, not a substitute for a clinical assessment); no device effect tested or claimed (firewall); conflict of interest declared; health data published by the subject

Study type	Within-subject longitudinal analysis (N = 1) — self-tracking, exploratory
Subject	The author himself — inventor of the technology (conflict of interest declared)
Data	Gait metrics (watch) — speed, double support, asymmetry, steadiness; 2020 → 2026
Benchmark	Gait norms, men ~40–50
Key result	The crisis is clearly visible; steadiness 100% in “OK” zone; current metrics in or near normal
Device	Chronic wear (~6 years), but NEITHER credited NOR blamed (firewall)
Status	Coarse functional trends — not a clinical assessment; no causality

Summary

A part of the longitudinal self-tracking series, and the one most loaded with personal history. For this subject, gait is no trivial marker: he starts from a very heavy locomotor past, and from a clinician who described his gait, in his thirties, as “the worst compensatory gait ever seen” (by his account). Three questions, from that starting point: does gait capture the crises? does steadiness tip toward fall risk? where does he sit relative to his age norms? Answers, measured at the wrist (with its limits). (1) The 2026 crisis is clearly visible: speed −25% (4.9-5.2 → 3.8 km/h), double support up, steadiness fallen to 71-73%, asymmetry peaks — the data objectifies the lived experience. (2) Over ~4.5 years (250 measurements), steadiness stays 100% of the time in the “OK” zone, never triggering a fall flag, with a dip during the crisis. (3) Current metrics are in or near normal ranges — a striking contrast with the starting point, to handle with caution: a wrist sensor does not see what a clinician sees. No attribution to the device; conflict of interest declared; consumer sensor, no medical claim.

1. Transparency — conflict of interest, scope and cardinal limit

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; no clinical photographs. Consumer sensor; no medical claim.

The device is held outside any attribution (firewall). Locomotor maintenance is explained by training, physical condition and long-term adaptation; the dips follow the crises (the illness). We neither credit nor blame the device — which appears only as context (chronic wear, ~6 years).

Cardinal limit, to state up front. A wrist accelerometer does not see what a clinician sees by eye and by hand: fine joint compensations, muscle recruitment, pelvic mechanics. Metrics “within normal” do not mean “gait repaired.” We read here coarse functional trends, not a podiatric assessment.

2. The starting point

The weight of this analysis lies in the history the subject carries: flat foot diagnosed at age 5, school sport becoming impossible at 12, patellofemoral syndrome at 17, then an autoimmune skeletal involvement.

In his thirties, a recognized applied-kinesiology clinician (Dr David Leaf) evaluated his gait at a conference and described it, by the subject's account, as "the worst compensatory gait ever seen." It is from this starting point — not from an ordinary gait — that the following data must be read.

3. Method

Data and windows:

- Gait metrics (smartwatch): speed, double support (%), asymmetry (%), step length, steadiness ("Walking Steadiness").
- Windows: monthly over 2020-2026; weekly around the crisis (Feb → Jun 2026); steadiness since late 2021 (250 measurements).

4. Gait captures the crisis

OBSERVATION Crisis window (March-April 2026), weekly gait — outside the crisis vs the heart of the crisis.

Metric	Outside crisis	2026 crisis	Reading
Speed	4.9-5.2 km/h	**3.8 km/h**	−25%, lowest sustained
Double support	29.6%	31.9%	more cautious gait
Steadiness	~89-95%	**71-73%**	lowest values
Asymmetry	baseline	peaks 3.6 → 8.8%	imbalance at recovery

Over the crisis window, gait is broadly disturbed: speed at its lowest sustained level, double support up (more time on both feet), steadiness at its lowest values, and asymmetry peaks during and after the flare — then everything recovers. The data objectifies the reported experience (pain phases, weight loss, hospitalization).

A precision: the data does not measure the pelvic floor. It shows a disturbed gait during the crisis, consistent with what the subject describes — not direct proof of the mechanism.

5. Steadiness — never in a fall-risk zone

OBSERVATION Walking steadiness ("Walking Steadiness," a fall-risk score OK / Low / Very Low), 250 measurements since late 2021.

Median 89.3%, and 100% of the time in the "OK" zone — never "Low" or "Very Low." During the crisis, it dips to 71-73%, but stays well above the 50% threshold. For this locomotor profile, never triggering a fall flag over ~4.5 years is not trivial.

6. Positioning vs age norms

OBSERVATION Positioning vs gait norms (men ~40-50, healthy subjects).

Metric	Norm ~40-50	Me (current)	Me (capacity)
Walking speed	~5.4-5.6 km/h (comfort)	~4.2-4.4 km/h (daily)	~4.9-5.2 km/h (peaks)
Double support	↑ with age	~29-30% (normal)	—

Metric	Norm ~40-50	Me (current)	Me (capacity)
Asymmetry	↑ with age	med. 0%, mean ~1.8%	—
Steadiness (fall)	—	89% med., 100% “OK”	—

Honest reading of the speed. Daily speed reads below the lab norm, for two reasons that are not a deficit. First, it is not the same measure: the watch speed is ambient walking (indoors, crowds, casual pace), not a controlled straight-line test at a comfortable pace. Second, the subject most often walks alongside someone shorter, and slows his stride: it is a companion pace, not a capacity. His peaks (~4.9-5.2 km/h) nearly reach the norm.

On double support, asymmetry and steadiness, the positioning is within normal ranges, sometimes better than the age average.

7. The contrast, and its guardrail

Put end to end: a starting point described as “the worst compensatory gait ever seen,” and consumer gait metrics, today, in or near normal ranges, never triggering a fall flag. The gap between the expected gait — given that past (flat foot, patellofemoral, skeletal involvement, massive compensations) — and the measured gait is striking.

Indispensable guardrail. This does NOT mean “the gait is repaired.” The clinician saw, by hand, compensations a wrist sensor does not measure; normal numbers on a wristband are not a clinical verdict. What is documentable is that the coarse functional indicators are, today, surprisingly ordinary for the age — against a starting point that was anything but.

8. Doubt cuts both ways

Gut and skeleton, without a diagnosis. No diagnosis is made here (the subject is not a physician). But it is documented that inflammatory bowel diseases are frequently accompanied by musculoskeletal manifestations — so-called enteropathic spondyloarthritis (axial involvement, sacroiliitis, enthesitis). The subject’s skeletal experience fits this recognized association, which makes sense of the fact that gait and digestive illness move together (the gait dip follows the flare).

Doubt, both ways. We cannot credit the device with locomotor maintenance (training, condition, adaptation, coarse measure, no comparator); we cannot blame it for the dips (they follow the crises). Going from such a starting point to ordinary indicators is rare and intriguing — but this tracking will not prove it: it would take a gait lab, blinded, with a comparator. Neither for nor against.

9. Limitations

- Wrist sensor: does not capture the fine compensations a clinician observes; noisy estimates.
- Watch speed = ambient daily walking, not directly comparable to lab tests at a comfortable pace.
- Asymmetry often floored at 0 (algorithm), read as a mean — a coarse metric.
- N = 1, continuous wear, no comparator → no causal inference; full conflict of interest.

10. Conclusion

Gait tells an honest story: it visibly absorbs the crises (and corroborates the painful, pelvic experience), it never triggers a fall risk, and it stays in or near the age norms — which, given the starting point, is anything but trivial. Without over-interpreting: a wrist sensor does not replace a clinician’s eye. But what it measures traces a functional trajectory that this past did not lead one to

expect. The value of this note is to describe and frame, not to attribute: causality awaits the controlled trial — here, a gait lab, blinded, with a comparator. Framing: an exploratory N = 1 analysis, coarse functional trends, with no medical claim; no device effect tested or claimed.

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Source: gait metrics from a smartwatch (speed, double support, asymmetry, step length, steadiness "Walking Steadiness"), 2020 → 2026; weekly window around the 2026 crisis; steadiness over 250 measurements since late 2021. Within-subject longitudinal analysis N = 1; wrist accelerometer (coarse trends, not a substitute for a clinical assessment); conflict of interest declared; health data published by the subject; the reported clinician's remark is the subject's account. No device effect is tested or claimed. Unaudited internal data. Not a medical claim.