FITNESS & EXERCISE

What Your Fitness Tracker Gets Wrong

Your wrist can count movement, but its neat totals hide uncertainty-and some measurements deserve far less trust than others.

The authority on your wrist

You finish a walk feeling strong. Then you glance down. The step total looks disappointing, the distance seems short and the energy estimate suggests the whole effort barely counted. A good hour has been turned into three numbers, and somehow the numbers get the final word.

That is the seductive trick of a fitness tracker. It takes something sprawling-walking, gardening, lifting, swimming, dancing-and makes it look precise. The display does not hesitate. It rarely shows the uncertainty behind its answer. But the confidence of the number and the accuracy of the measurement are not the same thing.

The tracker is not useless. A pedometer, phone app or wearable can help you follow your progress, and regular activity is one of the best things you can do for your health. Even modest amounts help. The trouble begins when a tracking tool becomes a judge: of whether your walk mattered, whether you worked hard enough or whether today was a success.

A tracker sees only what its sensors and software can translate. Physical activity is broader: any movement that works your muscles and requires more energy than resting. Exercise includes planned, structured activity, but your health is not confined to what produces a satisfying total on a screen.

Steps are useful, not sacred

Of all the numbers on a tracker, steps have one of the clearest relationships with health. A 2022 meta-analysis of 15 international cohorts followed 47,471 adults for a median of 7.1 years. People who took more daily steps had progressively lower all-cause mortality risk than those in the lowest step group.

That does not make 10,000 a magic threshold. The same analysis said there was little evidence supporting that widely promoted target. Among adults aged 60 and older, mortality risk declined as steps increased until roughly 6,000 to 8,000 a day. Among younger adults, the curve continued until roughly 8,000 to 10,000. These were associations, not guarantees about what will happen to an individual.

Other reviews land on different thresholds. A 2024 umbrella review found substantial variation among previous estimates because researchers quantified activity differently. Its updated analysis identified a protective threshold around 3,000 daily steps, while a 2023 meta-analysis found lower mortality risk beginning at similarly modest totals. The precise starting point and optimal total remain unsettled.

The argument among these analyses is not about whether movement matters. It is about where a line should be drawn-and whether one line makes sense for everyone. The consistent message is less dramatic and more useful: additional steps are associated with lower mortality risk, including well below 10,000. Missing an arbitrary badge does not turn an active day into a failed one.

The hardest, most useful rule is simple: precision on a screen is not proof of accuracy.

The count can still be wrong

A relationship between steps and health does not prove that your wrist has counted every step correctly. A 2022 systematic review examined 65 articles on wrist-worn activity trackers. The studies varied so much in their settings, populations, devices and outcomes that the reviewers could not combine the accuracy results in a meta-analysis.

Step counts, heart rate and energy expenditure were the measurements studied most often. Some devices showed good step-count accuracy, but performance was not uniform across devices and measures. That means a daily total is best understood as an estimate produced by a particular device, not an independent record of everything your body did.

This distinction matters when you compare unlike situations. Your tracker may give you a clean sequence of totals, but physical activity comes in several forms. Aerobic activity raises breathing and heart rate. Strength work makes muscles stronger. Balance activity improves stability and coordination. Flexibility work helps joints move more easily. Most people benefit from a combination.

A step number cannot tell that whole story. A lower total does not establish that a day containing resistance, balance or flexibility work was less worthwhile than a long walk. The device has measured what it can readily express, then placed that figure beside activities it may represent poorly. The apparent comparison is tidier than the underlying reality.

Distrust the energy estimate

The weakest prominent number may be the one that looks most scientific. In the 2022 review,

none of the tested wrist-worn devices proved accurate at measuring energy expenditure. A tracker may still print an exact-looking estimate, but the evidence does not justify treating that display as an exact account.

The hardest, most useful rule is simple: precision on a screen is not proof of accuracy. An energy estimate should not be allowed to erase how you feel, define the value of a session or settle whether you did enough. It is an uncertain output from a device category that performed poorly on this particular measurement.

Heart-rate measurement did better for at least one tested watch, but that finding cannot be stretched into a promise about every device or every activity. The review's substantial clinical heterogeneity is the point: accuracy depends on what is being measured, how it is measured and which tracker is doing the measuring.

There is also a boundary no dashboard should blur. If activity causes pain, extreme shortness of breath, dizziness or a feeling that something is not right, stop and seek help right away. If you have trouble moving or balancing, have health concerns, or worry that exercise may not be safe for you, choosing an activity level belongs in a conversation with your healthcare provider-not an argument with your wrist.

Run a one-week reality check

Next week, give your tracker a smaller job. It takes the tracker you already own and one activity you enjoy. Use the device to notice the direction of your step count across comparable days, rather than treating any single total as a verdict. Do not turn its energy estimate into a target; the evidence does not support that confidence.

Keep the context attached to the number. A day of walking is not interchangeable with a day containing weights, resistance bands, balance work or stretching. Your tracker's cleanest metric may capture aerobic movement while missing much of what made another session useful. The display is one view of activity, not the activity itself.

If the number helps you show up regularly, notice progress or set a realistic goal, it is doing a reasonable job. Regular practice matters, small amounts of exercise can help and building activity gradually is safer than pushing too hard all at once. If the number makes an enjoyable activity feel worthless, you have learned something important about the metric-not about your body.

At the end of the week, keep the measure that helped you move and ignore the one that merely judged you. The object on your wrist should support the habit, not outrank it. Your practical test takes no new purchase: just your existing tracker, an activity you can repeat and

permission to treat its totals as estimates.

Where this comes from

- Exercise and Physical Fitness

  MedlinePlus, U.S. National Library of Medicine · https://medlineplus.gov/exerciseandphysicalfitness.html
- Exercise for Older Adults

  MedlinePlus, U.S. National Library of Medicine · https://medlineplus.gov/exerciseforolderadults.html
- Physical Activity and Your Heart - What Is Physical Activity? | NHLBI

  National Heart, Lung, and Blood Institute · https://www.nhlbi.nih.gov/health/heart/physical-activity
- Dose-response associations between accelerometry measured physical activity and sedentary time and all cause mortality: systematic review and harmonised meta-analysis.

  BMJ (Clinical research ed.), 2019 · https://pubmed.ncbi.nlm.nih.gov/31434697/
- Daily steps and all-cause mortality: a meta-analysis of 15 international cohorts.

  The Lancet. Public health, 2022 · https://pubmed.ncbi.nlm.nih.gov/35247352/
- Daily steps and all-cause mortality: An umbrella review and meta-analysis.

  Preventive medicine, 2024 · https://pubmed.ncbi.nlm.nih.gov/38901742/
- Accuracy and Acceptability of Wrist-Wearable Activity-Tracking Devices: Systematic Review of the Literature.

  Journal of medical Internet research, 2022 · https://pubmed.ncbi.nlm.nih.gov/35060915/
- The association between daily step count and all-cause and cardiovascular mortality: a meta-analysis.

  European journal of preventive cardiology, 2023 · https://pubmed.ncbi.nlm.nih.gov/37555441/