

Deconditioning, or an abnormal response — making sense of exercise intolerance when everything moves at once

Why complex conditions are so hard to tell apart, and what steady, everyday tracking can actually show.

If you live with a complex, energy-limiting condition, you may recognize this question from the inside. How do you tell ordinary loss of fitness — deconditioning — from an abnormal physiological response to exertion, especially when symptoms and capacity keep shifting from week to week. And whether everyday biometric data, followed over time, can hint at whether the limitation leans more cardiovascular, pulmonary, autonomic, or metabolic/muscular. It is one of the most reasonable questions to ask, and one of the hardest to answer cleanly.

PART 1

Why it is so hard to separate

In a complex chronic condition, it is rarely one system that is affected. The heart, the blood vessels, the autonomic nervous system, the way muscles take up oxygen — several can be involved at once, tangled together with sleep, pain, medications and hormones. Each one pulls on the others.

The clearest way to picture it is a sound desk with a dozen equalizer sliders. You nudge one, and two neighbours drift on their own. You try to bring those neighbours back, and the first slider moves again — along with a couple more, in unexpected places and unexpected directions.

That is what makes fluctuation so confusing. For instance: a new blood-pressure medication slows the heart directly; a stretch of broken sleep lifts the resting pulse and drops heart-rate variability; a hot spell with too little fluid makes standing harder; and a cold that has not yet declared itself is already nudging the numbers up. Four sliders move at once, in different directions — so trying to *measure and separate* the causes on your own becomes almost impossible.

The first thing worth saying, then, is that this is not a failure to read your own data. It is the nature of layered conditions — and it is exactly why trying to "increase activity" can produce such an unpredictable response.

PART 2

How medicine tries to separate the threads

One important note before the list. What follows is not a set of personal recommendations, and not a workup prescribed in response to any one person's situation. It is a picture of how medicine *generally* approaches conditions like these, so the landscape is easier to recognize.

There is no single test that settles it. Clinically, the work goes in steps, from simple to complex, ruling out the common and treatable before reaching for the elaborate.

- **The first layer — common, treatable causes.** A resting ECG, pulse oximetry, basic breathing tests (spirometry), and bloodwork (a full blood count for anaemia, a thyroid panel, iron/ferritin, sometimes NT-proBNP for early heart strain). These look for frequent, treatable conditions that can mimic exercise intolerance — anaemia, a thyroid problem, early heart strain — before anything more elaborate is considered.
- **The autonomic layer** — often the most relevant when blood pressure, heat sensitivity and standing are part of the picture. A simple active-stand or ten-minute standing test, or a fuller tilt-table test, can identify POTS and orthostatic drops in blood pressure and tell their types apart; broader autonomic testing adds deep-breathing, Valsalva and sweat responses. In ME/CFS, roughly a third show POTS or orthostatic hypotension on tilt. An honest caveat: symptoms can be entirely real even when these tests read "normal."

- **The structural layer** — an echocardiogram to see the heart as a pump; fuller lung testing, including diffusing capacity and oxygen levels during effort, for the pulmonary and gas-exchange side.
- **The integrative test** — cardiopulmonary exercise testing (CPET), which measures heart, breathing and gas exchange together under load and can separate a cardiovascular from a ventilatory, gas-exchange, muscular or deconditioning limit. A two-day CPET is used to probe post-exertional malaise; an invasive version adds pressures inside the circulation and how well the muscles extract oxygen.

And here is the hard part — the one that often matters most. In today's healthcare system, even when all of these tests exist and get done, people with complex, multi-component conditions tend to hit the same wall: there is rarely a single specialist whose role is to hold the whole picture together. Cardiology reads the heart, pulmonology the lungs, neurology the autonomic piece — each within its own lane. The integration, the part that would actually answer *how do these fit together in me*, too often falls to no one. If that has been your experience, it is not a personal failing or a lack of trying; it is a real gap in the way care is currently organized.

PART 3

What you can follow in your own data

None of this means your own data is powerless. It cannot name a cause — but it can do something a one-off clinic visit cannot: follow *you*, over time, against your own baseline rather than anyone else's.

A couple of things are quietly informative day to day — your resting heart rate, and how well you recover overnight, read as a trend rather than any single number.

Where it becomes genuinely useful is around activity itself.

- You can turn on **workout mode** on your watch for *any* activity — a walk, light chores, not only "exercise." That lets you watch your heart rate in real time, and keep it in the gentler range on days you are pacing.

- Afterwards, you can notice **how quickly your heart rate settles** once you stop. That recovery speed is one of the more honest signals of how well an effort was tolerated: a quick settle tends to mean it sat within your capacity; a long, slow tail suggests it was more than your body wanted.
- You can **tag how it felt** — easy, moderate, hard — and, separately, note how you are the next day and the day after.

Over weeks, those small marks build into something personal: a map of what kinds and amounts of activity your body absorbs calmly, and which ones tend to cost you a day or two later. That delayed pattern — effort today, how you feel in 24 to 72 hours — is the single most useful thing to watch. It is the fingerprint of an abnormal response, and it is far less easily fooled by any one day's noise than a single reading is.

You do not have to make sense of all of it alone. Once you have been tracking like this for a while, we can prepare a custom export of your data on request and look at the picture together.

To be clear about what this is: it does not diagnose anything, and it does not replace clinical testing. What it gives you is a clear, time-stamped account of your own body to bring to a clinician — and a way to protect your limits while the causes are being sorted out.

In closing

Multifactoriality is a feature of complex conditions, not a mistake in how you read your data. Causes get separated in the clinic, through a ladder of tests — and, ideally, someone to connect them. At home, your strength is steady observation over time, and a gentle habit of marking how your body answers each effort. The aim is not to diagnose yourself; it is to arrive with a clear picture, and to avoid harm along the way.