

Working out how much exercise to do takes more than gadgets

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Credit: AI-generated image ([disclaimer](#))

Ancient Greek scholars realised long ago that physical activity was a requirement for good health. Hippocrates proposed that "eating alone will not keep a man well – he must also take exercise", while Galen [later noted]([www.thelancet.com/journals/lan...cle/PIIS0140-6736\(12\)](http://www.thelancet.com/journals/lan...cle/PIIS0140-6736(12))) that "the body is in need of motion, exercise is healthy and rest morbid."

Roughly 2,000 years on, the [empirical evidence](#) for [physical activity](#) as an essential part of a [healthy lifestyle](#) is overwhelming. Across many different types of [studies](#) and for various health-related outcomes the message is clear and consistent. Physical activity has a demonstrably important effect on the risk of disease and [mortality outcomes](#).

So you might expect that by now we would also be able to give people clear advice on exactly how much physical [exercise](#) is "enough". Sadly, it is not that simple. Scientists [recently claimed](#) that World Health Organisation recommendations on the amount of exercise we should do are [too low to beat chronic diseases](#).

Most countries have attempted to develop public health guidelines [advocating a minimum amount of physical activity](#), usually along the lines of doing at least 150 minutes of moderate-to-vigorous exercise per week. So surely it should be easy for people to self-assess the effectiveness of their activity levels? And surely that task is made easier by using the latest wearable monitors?

Numerous devices available from dozens of different manufacturers mean that more than [100m of these instruments](#) are predicted to be sold in 2016 alone.

But a [recent study](#) showed that feedback from physical activity monitors is incompatible with current physical activity guidance. The study showed that most people will erroneously form the view that they are exceeding recommendations several times over.

In practice, it is difficult to combine official guidance with these kinds of technologies. For example, [based on a sophisticated assessment](#) of their physical activity against these guidelines 90% of men would receive the confusing message that they are both "active" and "insufficiently active". By doing the same amount of exercise, a person

might be considered active according to the guidance from the British [Department of Health](#), yet inactive in the view of the American [Centers for Disease Control and Prevention](#). So even with advanced measurement tools we lack an unambiguous understanding of whether a certain level of physical activity will deliver the health benefits required.

One reason for this discrepancy is that the 150-minute target was [originally proposed](#) to be on top of "baseline" physical activity, or "normal lifestyle activities". It is a prescription over and above background activity, a factor usually omitted from [national guidelines](#) that use the 150-minute target.

A guideline that specifies an amount of activity above "normal lifestyle activities" is fine until people start using devices that capture all physical activity. Current standards were not formulated with these kinds of sophisticated measurement technologies in mind. A monitor will measure the effort involved in everything from running up the stairs to walking to the kitchen to switching the kettle on, and will not differentiate between the two, giving us the sense that we are doing more effective exercise than we are.

A more appropriate target when using these self-monitoring technologies, and specifically to account for normal lifestyle activities, is probably around 1,000 minutes per week of moderate-to-vigorous intensity activity, [according to a recent study](#). This is another estimation, but clearly, there is a huge difference between aiming for 150 instead of 1,000 minutes. And those keen to do the right amount of exercise for good health need to be aware of this discrepancy if they are using sophisticated technologies to assess their physical activity.

However this does not mean people need to do 1,000 minutes of "new" physical activity. It just means there is a lot of incidental activity that will be inevitably captured with these devices that needs to be taken into

account.

A measured approach

A separate but equally important issue is that current recommendations focus on only moderate-to-vigorous intensity physical activity. But there are many other kinds of physical activity, such as sedentary time and overall energy expenditure. These other dimensions are [demonstrably important](#) for health, meaning there is a smorgasbord of physical activity options and choices rather than a one-size-fits-all prescription.

Feedback on any one of these dimensions alone, however they are measured, might be misleading if taken in isolation from the others. In the future, it will be important to ensure that people are provided with a more holistic picture of their physical activity across multiple dimensions. In this way they can form a more accurate view of the appropriateness of their behaviour and capitalise on all the different ways they can benefit from physical activity.

Hippocrates and Galen would no doubt be surprised that we are still grappling with basic issues around the amount of physical activity required for [good health](#). For most people, it is probably safe to say that some kind of increase in physical activity will bring health benefits. Monitoring devices provide good and very useful information, but as far as using that information to work out exactly how much exercise we need and whether we are doing enough, we're not at the finish line yet.

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