

## Health

# The exercises you need to do to reach 100 in great shape

To be truly fit in older age, you need to work on specific aspects of your fitness – and research shows that it's never too late to reap the benefits

By [Caroline Williams](#)

📅 16 September 2025



▲ [Sam Peet](#)

「My secret is that I never get off the sofa,」 said no centenarian, ever. But it is worth noting that the world's oldest people rarely mention punishing fitness regimes, either. Instead, centenarians tend to report a [lifetime of regular, moderate exercise](#), such as walking, farming and gardening.

This exact prescription doesn't fit well into many modern lifestyles, but that hasn't stopped scientists from trying to identify the optimal dose

and type of exercise for a long, healthy life.

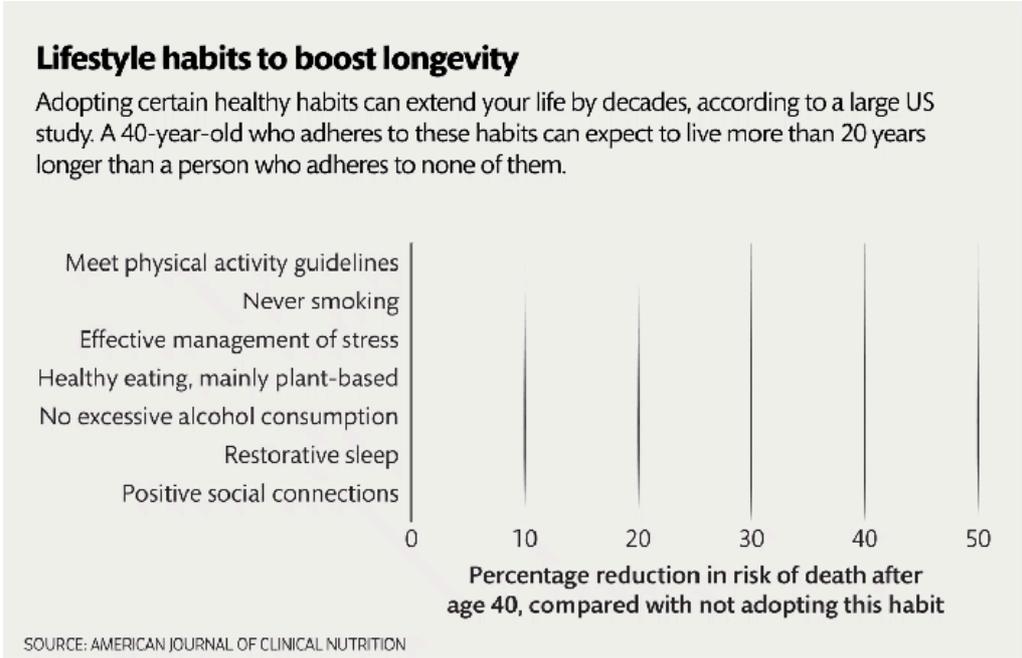
**This article is part of a special issue in which we explore how to make your latter years as healthy and happy as possible. [Read more here](#)**

What is clear is that doing nothing isn't an option. Lack of physical activity has been linked to at least [3.9 million premature deaths globally](#) per year, and it [significantly increases the risk of chronic illnesses](#), including heart disease, stroke and some cancers. On the flip side, getting enough exercise can [add up to seven years to your life](#), while also extending the time you spend in good health.

### The evolution of exercise

A rough guide to how much is enough can be [found in our evolutionary history](#). Modern hunter-gatherers, the closest we can get to how our ancestors lived, take around [11,000 to 20,000 steps per day](#), and get their resistance training from hunting, climbing, digging for tubers and carrying the resources they collect home.

They have lower rates of chronic diseases seen in Western nations, and the reason seems to lie in the body's response to all this work, which results in a surge in internal maintenance and repair. Harvard University evolutionary anthropologist [Daniel Lieberman](#) speculates that the [reason exercise and physiological upkeep are linked](#) is that evolution tied the two together, so that the genes involved in body repair and maintenance are activated only when we move. If we don't, the body saves energy by letting these functions slide.



Because of the «use it or lose it» aspect of this, a growing number of researchers see exercise not as an «anti-ageing» strategy, but as a way to reverse the life-shortening and illness-inducing effects of a chronic lack of movement, potentially adding healthy years to our lives.

«Exercise is one of those strategies that we can adopt in order to optimise the rate at which we decline,» says [Norman Lazarus](#), emeritus professor of exercise physiology at King's College London.

## How much?

So how much will do the trick? Lazarus says that the [World Health Organization's \(WHO\) guidelines](#) are a good place to start. Based on large epidemiological studies, these state that adults should do at least 150 to 300 minutes per week of moderate-intensity physical activity (exercise that leaves you able to talk, but not sing, such as brisk walking), or 75 to 150 minutes at vigorous intensity (running, or cycling in hilly terrain, which leaves you breathing hard and fast), plus strength training done at least two days per week. People aged 65 or over should do an extra strength session and add balance and mobility exercises.



### Why strength training may be the best thing you can do for your health

Building muscle reduces the risk of cancer and stroke, boosts brainpower, burns through calories and more – it might even be better for you than cardio

Importantly, none of this has to be in the form of structured exercise. Anything that uses physical strength or raises the heart rate will do the job (see «[Longevity hacks](#)» for one suggestion, plus some other lesser-known things you can try). And it doesn't all have to come in one session – there is some evidence that multiple workouts are [just as effective as longer, more structured ones](#).

## // From middle age onwards everyone should get serious about working on their muscle strength

[Mikel Izquierdo](#) at the Public University of Navarra in Spain and lead author on a «global consensus» on [exercise recommendations for healthy longevity](#), which was published in January, agrees that the WHO guidelines are a good guide to lowering disease risk and extending lifespan. But, he adds, they may not be enough to guarantee a sprightly

old age. 'The majority of studies supporting the WHO recommendations focus on reducing disease risk and mortality, rather than functional independence,' he says. 'The reality is that meeting the basic guidelines doesn't automatically translate into preserved autonomy, especially in populations over 65.'

## Give me strength

From middle age onwards, says Izquierdo, everyone should get serious about working on their muscle strength. From our 30s on, muscle mass starts to decline, with fast-twitch muscle fibres, those needed to stand up from a chair, for example, taking the biggest hit. If left unchecked, this loss of strength and endurance can lead to problems with walking, standing and an increased risk of falls and dying of any cause for older people.



▲ Exercises to work on strength, balance and mobility are particularly important for people over the age of 65

Andrii Iemelianenko/Alamy

Multiple studies, for instance, have shown a link between weaker [hand grip strength](#) and a [shorter lifespan](#). However, this doesn't mean you necessarily need to beef up your hands. Grip strength is a proxy for overall muscle strength because it is easy to measure and has been shown to correlate with strength in the major muscle groups, [particularly the legs](#).

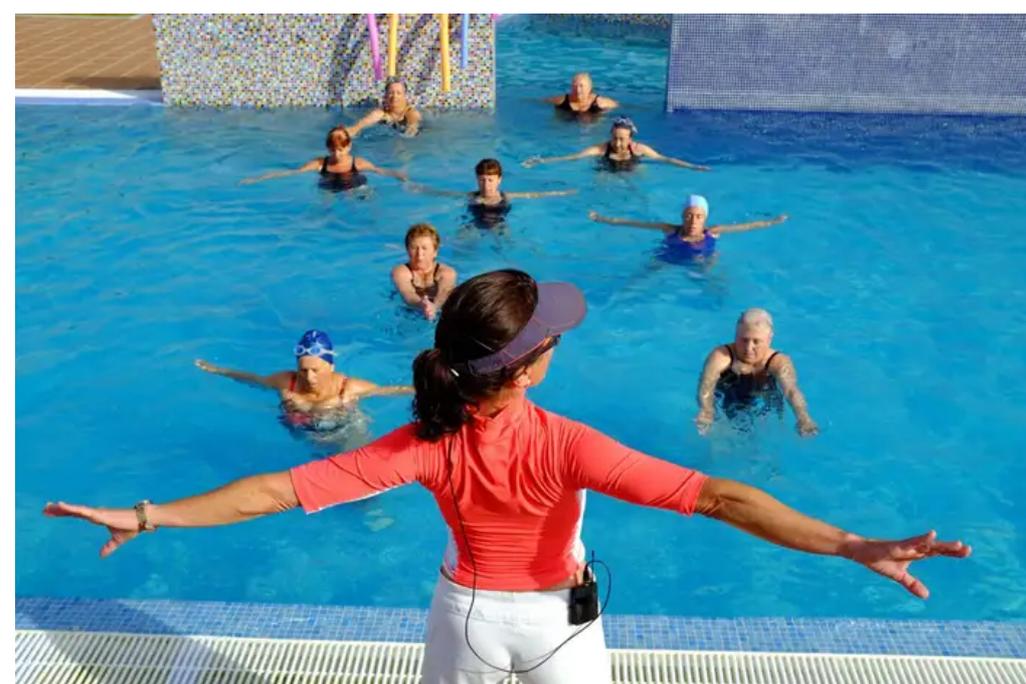
## The balancing act

It is also a good idea to work on balance from middle age onwards. According to a 2022 study, people aged 51 to 75 who [couldn't balance on one leg for 10 seconds](#) were twice as likely to die within the following 10 years.

Bodyweight exercises such as squats and planks are a good place to start, says Izquierdo, but as muscle loss accelerates, the only way to stay one step ahead of this decline is to gradually increase the load by adding weights or using resistance bands.

[Maria Fiatarone Singh](#), a geriatrician at the University of Sydney, also advises power training: jumping up stairs for those who are more agile, or doing fast leg presses in the gym at 80 per cent of the maximum weight a person can lift. This is because more explosive strength training builds up fast-twitch 「type II」 muscle fibres, which are the first to be lost during ageing.

It is never too late to start. Power and strength training have helped even [frail people in their 90s build muscle](#), which in turn improved their ability to stand and walk independently. Intriguingly, even the intention to get stronger has some benefit, says Fiatarone Singh. Even if the weight doesn't move much at first, 「it is the 'intent' to move fast which sends the message from the brain to the type II fibres to contract which optimally recruits them」, she says.



▲ **There are health benefits even if you only start exercising in older age**

Panther Media Global/Alamy

So, all in all, there are many ways that we can fight against the physical decline of ageing. But we should also be realistic, says Lazarus, a keen cyclist who is approaching his 90th birthday.

There is only so much that exercise – or any other intervention – can do. 「There are things happening to us over which we've got no control,」 says Lazarus. Maximal heart rate, for example – an estimate of the fastest rate that should be possible during exercise – is 220 minus age. 「The formula doesn't say 220 minus age plus exercise, it says 220 minus time passing,」 says Lazarus. 「You can exercise until

the cows come home, you're not going to change that.」 Even elite athletes [lose muscle mass, strength and cardiovascular efficiency with age](#), no matter how much they train.

「We are all going to die,」 says Lazarus. 「You want to keep functioning as long as possible and die in a year. Not slowly over 40 or 50 years.」

Or, as Izquierdo puts it, we should aim to 「die young, as late as possible」.

## Longevity hacks

Here are five simple but lesser-known things you can do now for a healthier older age.

### Sit on the floor

Sitting on the ground isn't just for children. Getting up and down from the floor strengthens leg and core muscles and keeps joints flexible. What's more, the ability to do this as an adult is [linked to a significantly longer life](#). If possible, try getting up without using your hands for an extra challenge.

### Floss your teeth

Let your oral hygiene slip, and harmful microbes from your mouth can travel all over the body, triggering problems – from cardiovascular disease and cancer to Alzheimer's disease and arthritis. Keeping your oral microbiome in balance, however, [staves off decline](#).

### Train your nose

A declining ability to detect aromas is linked to conditions such as Parkinson's and Alzheimer's. [Restoring this neglected sense](#) might not only reduce cognitive decline, but studies also show it could reverse it – and the ability to smell is something that can be trained.

### Have sex

「A fulfilling sex life is an essential part of subjective well-being」 was the conclusion of one [review of research](#) into the link between the sex lives of people aged 40 to 90-plus and how positively they felt about themselves.

### Mix with younger people

Aside from any psychological benefits, your microbiome will get a boost from mixing with younger people. Our [gut microbiomes are shaped](#) by those of the people around us, and a shift to a more youthful profile is linked to better health.

**More from New Scientist**

Explore the latest news, articles and features





**Health**  
**One blood sample could reveal the age of 11 of your organs and systems**



**Health**  
**Three simple rules for a great post-workout meal**  
 Regulars



**Health**  
**In the race to reach 100, the wealthy have a head start**



**Health**  
**The science revealing how the right diet can add a decade to your life**

## Popular articles

Trending *New Scientist* articles

- 1** **Quantum computers have finally achieved unconditional supremacy**
- 2** **Starting HRT in early menopause may reduce women's risk of Alzheimer's**
- 3** **The exercises you need to do to reach 100 in great shape**
- 4** **Vitamin D supplements may lower your level of one type of vitamin D**
- 5** **Quantum computers are finally on the verge of being useful**
- 6** **Why caring for your microbiome is crucial if you want to live to 100**
- 7** **The real scientific insights from Bryan Johnson's immortality quest**
- 8** **Dead Sea Scrolls analysis may force rethink of ancient Jewish history**
- 9** **What's the secret to living well beyond the average life expectancy?**
- 10** **Just one dose of psilocybin seems to be enough to rewire the brain**

### Download the app



### Find us on social media

- Instagram
- Facebook
- X / Twitter
- Tiktok
- LinkedIn
- BlueSky

### Subscriptions

- Subscriber benefits
- Gift
- Student & graduate
- Educational
- Corporate

### Support

- Contact us
- FAQs
- About us
- Press room
- Advertise
- Write for us

### Tools

- Events
- Science Jobs
- CoLab
- Syndication
- RSS feeds

### Legal and privacy

- Complaint policy
- Privacy policy
- Cookie policy
- Terms & conditions
- Cookie Settings

