

A drug that can extend your life by 25%? Don't hold your breath

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Every few weeks or months, the media reports on a new study that tantalizingly dangles the possibility of a new drug to give us longer, healthier lives.

The [latest study](#) centers around a drug involved in targeting interleukin-11, a protein involved in inflammation. Blocking this protein appeared to help mice stave off disease and extend their life by more than 20%.

If only defying the ravages of time could be achieved through such a simple and effort-free way—by taking a pill. But as is so often the case, the real-world significance of these findings falls a fair way short of the hype.

The role of inflammation in disease and aging

Chronic inflammation in the body plays a role in causing disease and accelerating aging. In fact, a relatively new label has [been coined](#) to represent this: "inflammaging."

While [acute inflammation](#) is an important response to infection or injury, if inflammation persists in the body, it can be very damaging.

A number of lifestyle, environmental and societal drivers contribute to [chronic inflammation](#) in the modern world. These are largely the factors we already know are associated with disease and aging, including [poor diet](#), lack of exercise, obesity, stress, lack of sleep, lack of social connection and pollution.

While addressing these issues directly is one of the keys to addressing chronic inflammation, disease and aging, there are a number of research groups also exploring how to treat chronic inflammation with pharmaceuticals. Their goal is to target and modify the molecular and chemical pathways involved in the inflammatory process itself.

What the latest research shows

This [new interleukin-11 research](#) was conducted in mice and involved a number of separate components.

In one component of this research, interleukin-11 was genetically knocked out in mice. This means the gene for this chemical mediator was removed from these mice, resulting in the mice no longer being able to produce this mediator at all.

In this part of the study, the mice's lives were extended by over 20%, on average.

Another component of this research involved treating older mice with a drug that blocks interleukin-11.

Injecting this drug into 75-week old mice (equivalent to 55-year-old humans) was found to extend the life of mice by 22%–25%.

These treated mice were less likely to get cancer and had lower cholesterol levels, lower body weight and improved muscle strength and metabolism.

From these combined results, the authors concluded, quite reasonably, that blocking interleukin-11 may potentially be a key to mitigating age-related health effects and improving lifespan in both mice and humans.

Why you shouldn't be getting excited just yet

There are several reasons to be cautious of these findings.

First and most importantly, this was a study in mice. It may be stating the obvious, but mice are very different to humans. As such, this finding in a [mouse model](#) is a long way down the evidence hierarchy in terms of its weight.

Research shows only about 5% of promising findings in animals carry over to humans. Put another way, approximately 95% of promising findings in animals may not be translated to specific therapies for humans.

Second, this is only one study. Ideally, we would be looking to have these findings confirmed by other researchers before even considering moving on to the next stage in the knowledge discovery process and examining whether these findings may be true for humans.

We generally require a larger body of evidence before we get too excited about any new research findings and even consider the possibility of [human](#) trials.

Third, even if everything remains positive and follow-up studies support the findings of this current study, it can take decades for a new finding like this to be translated to successful therapies in humans.

Until then, we can focus on doing the things we already know make a huge difference to health and longevity: eating well, exercising, maintaining a healthy weight, reducing stress and nurturing social relationships.

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