

Low testosterone in men associated with an early death

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Credit: Alena Darmel from Pexels

It has long been thought that testosterone shortens men's lives. Studies in [neutered animals and Korean eunuchs](#) seem to confirm this. However, a [new study](#), published in the *Annals of Internal Medicine*, draws these

findings into question.

In this study, led by a team at the University of Western Australia, the researchers combined the results of 11 high-quality studies (known as a [meta-analysis](#)) investigating the effect of [testosterone levels](#) on lifespan. The studies followed men for at least five years and found that participants with the lowest testosterone levels were more likely to die.

Death in this study was from any cause, but digging deeper into the analysis reveals that this is mostly due to [heart disease](#)—still the [leading](#) cause of death in men globally.

What is interesting is that the same process underlying heart disease might also contribute to [erectile dysfunction](#)—the inability to get and keep an erection firm enough for sex.

Erectile dysfunction often occurs much earlier than symptoms of heart disease and can act as an early warning sign of existing or future heart problems. Testosterone is known to have a [large effect](#) on erectile function, again linking levels of this hormone to heart disease.

Testosterone levels typically decline as men age, dropping by about 1% per year from the age of 30. This is sometimes referred to as the male menopause or andropause.

This decrease over time is at least partly due to a [slow waning](#) of the ability of the testicles to produce testosterone and a reduction in the signals that tell them to. However, other factors can accelerate this decline, including chronic disease.

Chicken or egg?

So is low testosterone causing disease or is it caused by it?

A limitation of the new study is that it is not able to figure out if low testosterone directly causes an increased risk of death. Testosterone is [lowered by illness](#), so it could be a marker for an underlying disease that results in an increased chance of dying. This is especially true for diseases that have long-term inflammation, of which obesity is one.

Helping unravel this relationship is the situation found in [prostate cancer patients](#). When the cancer spreads, the patient is given drugs that drastically lower testosterone levels. Despite improving prostate cancer, this treatment increases the risk of [heart attack and stroke](#) in the patients.

So while low testosterone may be a marker of disease, to some extent it is clearly also a contributing factor in the development of future disease and possibly death.

Figuring out what a "low" level of testosterone is, is complicated. Measuring testosterone on its own might not give the full picture of what's the right level for someone. What is low for one man may not be low for another.

Researchers use average levels of testosterone from lots of people from different populations to establish normal ranges to help identify people outside of this range with a related disease. This helps doctors to identify and treat patients who might need help.

However, making these generalizations across populations is tricky and often requires larger effects to show these trends. The new meta-analysis suggests that the increased risk of death in men is apparent mostly when testosterone levels are very low.

What is important to note from this is that regardless of the levels defining what is considered normal for any individual, lowered levels for that person seem to increase the risk of dying.

Keeping healthy T levels

Given the risks associated with low testosterone, you might wonder if there is any way to prevent them.

First, men should certainly try to avoid things that reduce it by adopting a healthy lifestyle and avoiding putting on weight. But when levels are low, treatment to replace the missing testosterone could be an option.

There is growing evidence that [testosterone replacement therapy](#) may help [reduce](#) some of those risks, including death from any cause and from heart attack, in some men. Yet controversy still exists as long-standing—and largely outdated—concerns regarding testosterone therapy causing heart attacks endure.

While most [evidence now suggests](#) there is at least no risk of heart disease associated with testosterone replacement therapy, more research is needed to determine if it can improve heart health in men.

While there may be hope on the horizon in the form of testosterone for reducing the risk of men dying from heart attack, it looks as though it will be a long road until treatment becomes a common option. In the meantime, it would be wise to maintain your testosterone levels through a healthy lifestyle.

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