How Much of My Lifespan is Genetic? Landmark Study Has a New Answer

5 MIN READ

FEB. 10, 2026

BY JULIE STEWART

New research challenges the long-held consensus on how much our DNA determines our longevity.

We've all heard stories of centenarians who smoked and fit middle-aged folks who died unexpectedly. They leave us considering a long-debated question: How much do our habits influence our lifespan, and how much is determined by our genes?

New research published in the journal ***Science*** suggests that up to 55% of lifespan is explained by genetics, more than double previous estimates of around 20-25%.

This new math breathes life into the debate about how much of our life expectancy is within our control. The numbers are certainly compelling, based on a re-examination of data from thousands of sibling pairs that accounts for many of the modern advances that help people cheat death. However, one study is rarely the final verdict on a question this important — and it doesn't make healthy lifestyle choices less valuable than they were before.

What This Study Really Says

- About 50–55% of human lifespan is influenced by genetics
- The remaining 45–50% is shaped by lifestyle, environment, healthcare, and chance
- Genetics matter more now because fewer people die from infections or accidents
- Even with "long-life genes," daily habits can add or subtract 5–10 years

How Scientists Calculated That Genes Explain Half of Lifespan

Researchers analyzed longevity data from prior twin studies in Sweden and Denmark. Twin studies help scientists separate genetics from other factors that determine lifespan, since identical twins share the same genes and fraternal twins share about half of their genes. They also analyzed data from U.S. centenarians and their siblings.

For the new calculations, researchers:

- **Prioritized intrinsic mortality**: causes of death that start inside the body, such as age-related diseases.
- **Excluded deaths from extrinsic mortality**: external causes such as accidents and infections.

“The contribution of genes only shines out when you look at populations where extrinsic mortality is very low, like the modern world where extrinsic mortality is 10 times smaller than it was 100 years ago,” says study author **Uri Alon**, PhD, a professor of molecular cell biology at Weizmann Institute of Science in Israel.

For example, **tuberculosis** was a leading cause of death in the U.S. a century ago. Now, it’s rare.

Excluding external causes of death wasn’t simple, since early twin studies didn’t specify how people died. So, Alon’s team created mathematical models using cause-of-death data from the **Human Mortality Database** and applied them to the historical cohorts.

Because the researchers narrowed in on intrinsic mortality, they say their numbers more accurately capture the role of genes in survival: about half. The other half, they say, likely stems from environmental influences, such as lifestyle habits, socioeconomic factors, and healthcare access, as well as other factors that might be

beyond our control.

“The most important of these is biological randomness or intrinsic biological variability,” adds Alon.

In other words: longevity isn’t fully scripted. Even people with the same genes, living in similar conditions, experience tiny day-to-day biological differences that add up over a lifetime. How efficiently your immune system clears damaged cells, how often you’re stressed or sick, and how your body responds to those moments all help determine how long and how well you live.

THE MINDSET

Stay Up to Date

Get the latest articles in our flagship newsletter, delivered weekly.

SUBSCRIBE

It’s Not Just Genes or Habits

Even identical human twins can develop some physical differences as they grow up. The explanation might involve subtle differences in how proteins in our bodies read our genes and how those genes are then expressed to form tissues. Especially important are differences in how our immune systems remove damaged cells, he

points out.

“Day-to-day differences in our biological clocks, stress, and infections add up over a lifetime,” says Alon.

Alon predicts that these new estimates will motivate researchers to search for more genes that affect lifespan.

“Finding these genes is important because they could lead us to understanding how aging works and make pills that delay not just one disease, but many age-related diseases at once,” he notes.

The new numbers also help contextualize the “quite large, but not absolute” influence we have over our lifespan, he says.

“For example, if your genetics encode a lifespan of 85, you could add to that five to eight years or subtract from that five to eight years depending on unhealthy or unhealthy habits,” highlights Alon. “That’s a decade or more under our influence. And it’s not only lifespan. It’s also the quality of life because movement, rest, nourishment, and connection with friends, and meaning make life not only longer but more worth living.”

What Still Moves the Needle (Even If Genes Matter)

Genetics may set a range, but these habits influence where you land inside it. Alon reccommends: move, rest, nourish yourself, and connect with friends. Here are some research-backed strategies:

MOVE:

Aim for at least 150 minutes of moderate exercise per week, suggests a study review published in ***Current Opinion in Clinical Nutrition and Metabolic Care***. Or, try more **intense workouts** for faster results.

REST:

If you can check off four or more **healthy sleep habits** from the list below, you may gain an extra 1.5 to three years of life expectancy, according to a new study of 148,622 adults published in ***JACC: Advances***.

- slept seven to eight hours per day
- fell asleep with no trouble at least five nights per week
- had no trouble staying asleep through the night at least five nights per week
- woke up feeling rested five or more days per week
- avoided sleep medication

FUEL:

Research published in ***Nature Medicine*** links higher intakes of fruits, vegetables, whole grains, unsaturated fats, nuts, legumes, and low-fat dairy products with healthy aging. High intakes of trans fats, sodium, sugary beverages, and red or processed meats (or both) were linked with less healthy aging. **Learn more**.

CONNECT:

Friendships slow cellular aging, likely by buffering the effects of stress and reducing inflammation, according to research published in ***Brain, Behavior, & Immunity – Health***. **Embedding connection into your routine** is good for your health.

RESET:

Train your nervous system to recover from stress. Practices like **mindfulness**, **awe**, and time in nature help shift the body out of chronic fight-or-flight and into a restorative state. Research shows that better **nervous system regulation** is linked to lower inflammation, improved cardiovascular health, stronger immunity, and greater emotional resilience. Even a few minutes a day of deliberate downshifting can compound into meaningful longevity gains.

There’s a reason doctors emphasize these tried-and-true habits ad nauseum. They can help you live longer and, perhaps more importantly, feel better during each day you have.

*The information provided in this article is for educational and informational purposes only and is not intended as health, medical, or financial advice. Do not use this information to diagnose or treat any health condition. Always consult a qualified healthcare provider regarding any questions you may have about a medical condition or health objectives.**Read our disclaimers**.*

WRITTEN BY:



Julie Stewart