



HOW OLD ARE YOU Really?

For years, health researchers and entrepreneurs have been studying aging down to the cellular level to see if it's possible to slow, stop or even reverse the factors that influence how getting older affects us. Now their findings have the potential to shake up everything we thought we knew about aging—but the burning question remains: Can we actually change how we age?

By NICOLE SAPORITA

IN OUR CULTURE, WE'VE ALWAYS NOTED MAJOR MILESTONES BY AGE—voting at 18, being legally allowed to drink at 21 and retiring at 65 (or so). All these are based on how long you've been alive, and of course that can't be changed. But our **chronological age** doesn't account for how we interpret or feel about that number. For many, 40 is the new 30 and 60 is the new 40. Much of this shift in mindset can be attributed to the ever-expanding field of aging research and its perceived infinite potential. "There's a hypothesis that if you can manipulate the aging process, you could possibly forestall the development of chronic disease and get people living longer and healthier," says Marie A. Bernard, M.D., deputy director of the National Institute on Aging at the National Institutes of

Health. "That's an exciting development since I began my medical career in the 1980s," she adds.

The other development is that some scientists today are less interested in the date on your birth certificate than they are in a different marker: your **biological age**. Biological age is a measurement that, instead of tracking years, looks at chemical marks on DNA that show how our biological systems are *actually* aging. "People are very diverse in terms of their aging rates. The level one person hits by 50, another may not hit until 60," explains Morgan Levine, Ph.D., assistant professor of pathology at Yale School of Medicine. She's also head of bioinformatics at Elysium Health, a life sciences company recognized with our GH Innovation Emblem for its commitment to scientific rigor and research. So the real question is, how can we change our biological age?

NEW RESEARCH AREAS

The rise of epigenetics (a complex field of study that examines specific changes in gene activity) and the identification of biological age have been regarded by some as the holy grail in understanding how we grow older. "Previously we assumed that the genome, our entire DNA library, didn't change throughout a person's life. That's been proven wrong—it can be modified by the environment," says Elaine Chin, M.D., founder and chief medical officer at Executive Health Centre and author of *Lifelines: Unlock the Secrets of Your Telomeres for a Longer, Healthier Life*.

Scientists have now identified biomarkers (chemical changes) in an individual's DNA that correspond with aging. These changes can help predict how well you're going to age, how long you're going to live and even if you're at increased risk for chronic disease.

ROBUST HEALTH TOOLS

Over the past decade, people everywhere have benefited from tech's influence on health—from wearable trackers and smartwatches that monitor activity, heart rate and sleep to testing kits that provide info about ancestry, gut microbiome and fertility.

A new category of at-home tests is now emerging that goes beyond ancestry to assessing aging and more. For about a year, Levine has been working with Elysium Health to create Index, an at-home test that evaluates over 100,000 epigenetic biomarkers on a person's DNA. As with other kits, all you do is provide a saliva sample. Four to six weeks later, you receive your report, in which you'll learn your cumulative rate of aging and find out whether your biological age is older or younger than the number on your driver's license. "About 68% of people will have a biological age within five years of their chronological age, but you can also find individuals who are a decade or more older or younger," she explains. The most important thing to keep in mind is that if your rate of biological aging is less than one, you're aging more slowly than your actual years.

DEFY YOUR AGE

So what does one do with that information? According to the researchers, take charge. "More than 90% of our longevity in terms of life span and health span—the healthy years of life—is determined by our environment, not genetics," stresses Eric Verdin, M.D., president and CEO of the Buck Institute for Research on Aging.

“What you eat, what you drink, how well you sleep and the quality of your relationships all have a real impact.” If you see room for improvement in your biological age, think of it as a chance to reevaluate your choices. That is especially true for people whose biological age is much older than their chronological age. On the other hand, a lower biological age could serve as validation and reinforcement of your current practices.

While aging researchers are still identifying proven adjustments that can move the needle, a number of behaviors are often linked with a lower biological age. These include eating well, getting enough sleep, exercising, not smoking and avoiding too much alcohol.

“We don’t have a definitive intervention for aging yet,” says Dr. Bernard. But people can turn to actionable lifestyle choices. And

while getting into good habits at a younger chronological age is best, she stresses that it’s never too late to start. We have also reported on new science-backed supplements that move beyond standard nutrition, like Elysium’s Basis, which is designed to increase levels of NAD+ (a critical coenzyme that declines as we age).

Dr. Verdin says that one of the biggest positive changes to reduce deterioration is doing more physical activity. Even as little as 20 minutes of exercise a day (walking counts!) can dramatically improve your health.

PRIORITIZE TRUSTED CARE

Knowing your biological age can be a great resource for taking control, but it shouldn’t replace medical care. The same goes for all at-home kits. “A false sense of security can be a widespread issue with these products,” cautions Matthew J. Ferber, Ph.D., director of the Mayo Clinic GeneGuide laboratory. Whether you’re screening for the BRCA gene or assessing heart health, even good news does not mean you have zero risk. Also, it’s vital to remember that results from these tools

shouldn’t negate age-based medical recommendations or doctor-administered tests. Even if your biological age is younger than your chronological age, you should get a Pap smear every three years from age 21 on, annual mammograms starting as soon as age 40 (depending on your risk factors) and colorectal screenings starting at 45.

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WHAT’S NEXT?

Dr. Verdin imagines a future when biomarker-based tests will become part of your regular doctor visits and create a sense of empowerment. “Aging by itself is a risk factor for a whole range of conditions like heart attack, stroke, certain cancers, Alzheimer’s disease and Parkinson’s disease,” he says. If we could identify our risk before a major event occurred, could we prevent it? That’s the next question researchers are working to answer.

4 WAYS YOU CAN WORK TO PUT TIME ON YOUR SIDE

Spend 20 minutes outside.

Stress can impact all aspects of life, including cellular health. New research suggests that spending time in nature each day can lower stress hormones by over 20% per hour. Whether you stroll in the park or sit in your backyard, you’ll get the benefits of a daily “nature pill.”

Turn down the temp at night.

Over one-third of us aren’t getting enough shut-eye, and the effects go beyond feeling tired—a study found that just one night of sleep deprivation could negatively impact biological aging. Aim to snooze for seven to eight hours a night by keeping your bedroom in the mid- to high 60s. Cooler temps can help you doze off and sleep soundly.

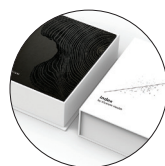
Pencil in a brisk walk.

Moving for 30 minutes daily may help you shave nearly a decade off your biological age. One study found that highly active adults had a nine-year aging advantage over people who were sedentary and a seven-year one over those who were moderately active.

Eat fish twice a week.

A Mediterranean diet, rich in omega-3s, has been linked to lower aging rates. Not a fan of seafood? Focus on limiting sodium, saturated fat and added sugar and go heavy on 100% whole grains as well as fruits and veggies. You can also get plant-based omega-3s from walnuts, chia seeds and flaxseeds.

3 AT-HOME TESTS TO TRY



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