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Body Language

How old are you really? Biological-age tests purport to give you the answer.

By Becky Bright *The Wall Street Journal Online*

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The "Real Age" fad has spawned a host of Web sites, best-selling books and pricey spa treatments. But is it the real deal?

The idea behind real age -- also known as biological age -- is simple: We may be created equal, but we don't age that way. Biological-age tests aim to figure out how old you "really" are by measuring a host of physical and lifestyle criteria and comparing them with statistical norms. In other words, if you live healthy or have good genes, your body may resemble that of someone younger -- and if you don't, you may be creaking along with an older body than you think.

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But before you place too much faith in these tests, you should know: For all the enthusiastic proponents of the method, most experts in the field of aging science take a dim view of real age.

Many scientists argue that there are no reliable measures of how fast a person ages. While they agree that biological age exists, they say that pinning it down for an individual -- as opposed to a group -- is slippery, and that tests claiming to do so lack scientific rigor. Most scientists do allow that the tests can be useful motivators for getting people to live healthier -- but some researchers also warn that the tests can also make people feel "smug" and ignore less-obvious warning signs of health trouble.

What's missing from real-age theory is "an agreed-upon, valid and validated standard for measuring biological age," says Robert S. Baratz, assistant clinical professor of medicine at Boston University and president of the National Council Against Health Fraud, a private nonprofit group in Peabody, Mass. "We don't

understand what drives those clocks." He adds that claims about biological age by companies selling products and services based on them constitute health fraud, which he defines as "the promotion of things that are unproven, without saying so."

Proponents of biological age say they stand by the science in the tests, arguing that the calculations are based on reams of data about factors proved to relate to aging. The tests are a good way to determine how well someone is aging, they say. And their success in getting people to lower their biological age, and thereby improve their health, illustrates the value of the tests, they say.

In response to critics who say it isn't exact science, Terry Grossman, director of Frontier Medical Institute in Denver, says, "They're right." But he adds that the concept of biological age has been around only for a few years and is still a young, emerging science. And he says biological-age testing is at least approaching the ability to withstand scientific scrutiny, and people around the world are working on it. "What we do have," he says, "is some information we can modulate and use instead of waiting around and doing nothing."

Inside the Tests

How do the real-age tests work? The calculations for individuals typically are based on some specific risk factors proven to affect longevity and disease risk, like family history, blood pressure, weight and bad habits. But they can also include a range of other issues, such as the impact of having a pet or being married or how often you visit the dentist. These biological and behavioral variables are combined using a complex set of equations and comparisons to the rest of the population to arrive at a person's biological age.

For the average person in the population, biological age equals chronological age, says Michael F. Roizen, a professor of medicine at SUNY Upstate Medical University in Syracuse, N.Y., who has helped popularize the notion of real age with a series of books on the subject. He also has a Web site, RealAge.com, which offers an online calculator that figures your biological age based on your answers to 137 questions.

Dr. Roizen says Real Age uses data collected from peer-reviewed studies that look at a range of biological variables -- things like blood pressure, lung function and

bone mass -- as well as behaviors, such as smoking, wearing a seat belt, amount of exercise, that have been shown to affect health and longevity. The Real Age calculation measures each factor and compares it with the average impact of that factor on the health and mortality of people your age and gender. For lifestyle factors such as being married, he says, "if at least four studies show that at age 42, being married reduced your risk of dying or disability to that of someone who is a year and a half younger, then that impact is calculated into your Real Age."

RealAge's online calculator is free, as are some basic strategies to make yourself younger. The site also sells memberships (\$3 a month for one year, \$4 a month for two years) that get you a detailed "age-reduction plan" and related health reports.

Similar calculators are available on a variety of Web sites -- some sponsored by medical groups, others by vitamin, diet or other companies. The questionnaires are fairly easy to complete, but the length of the tests can vary, along with the types of questions. It helps to know your current cholesterol and blood-pressure readings -- these are asked on virtually every test.

Spas take a more hands-on approach to the calculations. At Canyon Ranch in Tucson, Ariz., a weeklong program on aging includes assessments of heart and lung function, metabolic rate and other physical factors usually excluded from the online tests. The program on aging, including the week's stay at the spa, starts at \$4,670; the biological-age test costs an additional \$300. As part of the program, the spa will also create a "personal longevity plan" that includes exercise, stress-reduction and nutrition strategies.

"Our goal is not to give someone a number, although it's fun and it's entertaining and it can be quite motivating," says Michael Hewitt, the spa's research director for exercise science. "So we usually say something like, 'Your data suggests you are about average for this age.' That gives them something to work from."

'No Validity'

But many doctors and scientists say that however intriguing the notion of biological age may be, it is an idea whose time hasn't come. Robert N. Butler, a professor of geriatrics at Mount Sinai Medical Center and the Pulitzer Prize-winning author of "Why Survive? Being Old in America," says that because scientists and physicians still lack a consensus theory of aging, clear-cut ways to

measure it aren't yet possible.

In a workshop paper presented in 2001 by the International Longevity Center, an affiliate of Mount Sinai School of Medicine in New York that he heads, Dr. Butler wrote, "There is no validity to claims that a person's 'real age' can be measured, and it is emphasized that such services should not be marketed to the unwitting public."

Dr. Baratz, of the National Council Against Health Fraud, strongly echoes that, saying: "If they're selling something, then they're not reliable. Once they have you in the door, they begin to assess how thick your wallet is."

Some major studies support the idea that you can combine a handful of proven risk factors -- like smoking, blood pressure and cholesterol levels -- to determine a person's short-term risk for health problems. But there's no evidence showing you can combine the various markers used by real-age proponents into a meaningful measure of how long a person will live.

"We can identify many age-related traits that change, and clearly reflect the age of an individual," says Huber R. Warner, associate director of the Biology of Aging program at the National Institute on Aging, a department of the National Institutes of Health in Maryland. These markers for disease, risk factors and functional measures strongly correlate with longevity and quality of life. But whether they are caused by aging or only correlated with it, researchers haven't been able to determine, he and other scientists say.

Wide Range of Results

Another problem with the notion of real age: Because there's no standard way of measuring it, the same person can get wildly divergent results from different tests. At preventdisease.com, this reporter, in her mid-30s, tested a spry 17 years

old, while at wellnessguru.com, she was more than twice that age, 46. Such wide ranges are a function of differences in the number and type of questions.

There's also the risk that you'll think you're healthier than you really are, based on either a test result or lifestyle changes you make in the wake of a test. Saul Green, a biochemist and former researcher at the Sloan-Kettering Institute, the basic-research arm of Memorial Sloan-Kettering Cancer Center in New York, stresses that nothing can substitute for quality time with a good physician. He says people who assume changes in one's diet or a special diet will cure their symptoms -- especially if the symptoms are being caused by something serious -- "are basically allowing themselves to die."

"If it promotes more smugness, then that's a downside," says Bryant Stamford, director of the Health Promotion and Wellness Center at the University of Louisville. While probably any biological-age test would indicate if you have a big problem, it may not always, Dr. Stamford cautions, citing President Clinton's recent heart bypass surgery. "He's a poster child for, 'Hey, I thought I had it all. I thought I could get away with eating Big Macs whenever I want because I run four miles a day.' "

Some aging specialists sum up the state of biological-age calculators by saying they offer more entertainment value than science. In a 2002 report on aging in *Scientific American* in 2002, Jay Olshansky, professor in the School of Public Health at the University of Illinois at Chicago, and other researchers specifically addressed biological age, writing: "Any claim that a person's biological or 'real age' can currently be measured, let alone modified, by any means must be regarded as entertainment, not science."

Proponents of the tests say they have more science behind them than the critics acknowledge. Dr. Roizen at Real Age points to his using lifestyle factors only when they're supported by at least four studies.

John Rahaim, of Jacksonville, Fla., who has his own formula for calculating biological age at antiagingmedicinemd.com, says the factors in his test are well-documented in medical literature to change with age. "I began to realize I could isolate certain factors that correspond to aging and measure them in people," he

says. Now 70 years old, Dr. Rahaim first took his own test a decade ago -- and at the time he tested at 74. Two years later, he checked out at 54.

Supporters also say the tests are valuable because they can have a strong positive impact on patients. Dr. Rahaim says that because he has been able to reverse signs of aging in himself and some of his patients, he considers his test an excellent motivator and an important tool for public health.

Dr. Grossman in Denver uses a device called an H-Scan, distributed by [MyHealthSpan.com](https://www.myhealthspan.com), that uses software to measure a range of criteria to calculate biological age. While "it's just one piece of data that someone can use to assess how well they're aging," he says, "even if it's depressing...it's a call to action."

Clarifying Choices

If you test above or below your chronological age, Dr. Roizen says, it's usually due to environmental or lifestyle choices. The benefit of the testing, he says, is that it translates how behaviors affect people not 20 years down the road, but in the here and now. "Real Age is like money," he says, "It tells you how much your choices are worth."

Cynthia Gillett, age 46, considered herself in pretty good shape, but she credits Real Age with getting her to live healthier. In her first test about a year and a half ago, she says, she got a biological age of 36, and thought, "OK, this is neat. I'm doing a lot of good things."

But the Real Age books also inspired Ms. Gillett, who is assistant director of medical records at Huntington Hospital in Pasadena, Calif., to make small changes in her life, like flossing more, taking more Vitamin C and eating less red meat. "It prompts you to say, 'OK, I can do these things and make a difference,' " she says.

If you decide to see how you measure up, what should you look for? The depth of the tests are an easy measure of how valuable they can be. In general, the more detailed the information a test asks for, the better.

But there are also alternatives to biological-age testing -- scientifically proven resources available to consumers free of charge. Web sites from credible groups like the American Heart Association allow you to calculate your risk for heart attack (www.americanheart.org; click on "Healthy Lifestyle" and then on "Health

Tools” to find the Cardiovascular Disease Risk Assessment Tool). Harvard Medical School offers a site (www.yourdiseaserisk.harvard.edu/) that allows you to calculate your risk for several diseases, including cancer and diabetes, based on several proven risk factors.

For most people, not smoking, exercising regularly and maintaining their weight with a healthful diet may be just as beneficial for their long-term health as learning about their biological age.

“The simplicity [of real-age tests] belies the complexity of biology,” says Dr. Baratz at Boston University. “We don’t know many of these things that the public thinks we know, or should know. And until we do, we can’t make tests, measurements, to do so.”

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