

# It's The *Little* Things

NEW SCIENCE SHOWS THAT THESE DAILY CHOICES CAN HELP YOU LIVE BETTER—AND LONGER **BY ALEXANDRA SIFFERLIN**

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OU DON'T HAVE TO GO vegan, pledge allegiance to an exercise cult or become a full-time meditator to get the longevity benefits of healthy habits. The latest science is showing quite the opposite, in fact: that extending healthy life is attainable for many of us with just a few small changes that aren't especially hard to do—and won't make you miserable. Research-

ers have learned that logging hours at the gym cannot counteract the negative effects of sitting for long periods, for instance—but something as simple as fidgeting can. They've also discovered that cutting down on how much you eat doesn't have to be excruciating—and it can improve your chance for a longer life. Finally, they are convinced that your inner life has an important impact on how well the body ages on a biological level. Here's how to put science's latest lessons to work.



LONGEVITY  
PRO TIPS

'In general, I follow my body. It really tells me lots of stories. If I eat something and my body doesn't like it, it basically lets me know. A lot of people don't really know how to listen to their own body. I learned to listen a long time ago.'

S. JAY OLSHANSKY,  
School of Public  
Health at the  
University of Illinois  
at Chicago

**Every scientist, no matter what they're working on, will always say, "Try to exercise just a little bit more and eat as many plant-based foods as possible." So that's what I do. Do I like a cheeseburger? Yes. But I also eat lots of salad. You don't have to cut out, just put more in.'**

STEPHANIE LEDERMAN,  
American Federation  
for Aging Research

### Calories matter, but not for the reason you think

Thankfully, the days of deciding what to eat purely on the basis of calorie counts are over. The quality of the calories, whether they come from good sources like healthy fats or bad ones like added sugar, can determine how they are stored and how they help or hurt the body. But now calories are back in the scientific spotlight. Cutting back on them can be good for your health—for a different reason altogether.

In July 2015, results from a two-year trial that put some people on a strict calorie-slashing diet were published in the *Journals of Gerontology*. In the trial, called CALERIE, the researchers assigned diets to 218 people ages 21 to 50 who were of normal weight or moderately overweight. Half of them ate however they liked, and half were told to cut their calories by 25%.

By the end of the trial, the low-calorie group managed to eliminate about 12% of its dietary calories and lost an average of 10% of body weight, keeping the pounds off for the full two years. Just as impressive was the finding that calorie restriction didn't make the people in the study miserable. "That was a big question hanging over this," says Susan Roberts, one of the principal investigators and a nutrition professor at Tufts University. "Is this going to be such an awful thing that people are not going to be willing to do it or that it ruins their life?"

But the people in the study didn't experience the downsides many of us assume will accompany caloric deprivation, such as feeling tired or irritable and dreading any meal that doesn't end with dessert. Meanwhile, the researchers found that the average blood pressure for this group dropped by 4%, total cholesterol dropped 6% and levels of an inflammatory marker linked to heart disease, called C-reactive protein, were lowered by 47%. The results—that eating a little less is an effective but also practical strategy—add to the evidence that diet is a key to living well longer. "Especially for people who are overweight or obese, nothing is going to keep them healthier for longer than losing weight and keeping it off," Roberts adds.

In other new research, Valter Longo, director of the University of Southern California's Longevity Institute, showed that when people occasionally fasted, they lowered their risk factors for age-related diseases. In the trial, which was published in the journal *Cell Metabolism*, Longo did a series of modified fasting experiments on mice and humans. Mice that were fed an extremely low-calorie and low-protein fasting diet improved their metabolism, decreased bone loss, improved cognitive function, got cancer at a lower rate and even lengthened their lives. Longo then tried a similar diet strategy on 19 people for five days a week. The

menu was full of healthy foods but contained 34% to 54% fewer calories than what the people in the study usually consumed. After following the diet for three months, the people in the study had notable drops in risk factors related to aging, diabetes, heart disease and cancer, including lower blood sugar and reduced levels of the growth hormone IGF-1, which accelerates aging. While that hormone is important for normal development earlier in life, some people get too much of it from high-protein foods. Longo's research has also shown that cancer risk can increase about 400% among Americans who get 20% or more of their calories from protein, compared with people who clock in only about 10%.

Weight loss likely explains many of the positive changes, such as lower blood pressure and better blood-sugar levels. But some experts speculate that fasting also makes the body more resistant to stress, which can have beneficial effects at



**'Diet is by far the most powerful intervention to delay aging and age-related diseases.'**

## A NEW FRONTIER

Holistic-medicine devotees have been talking for decades about how chronic inflammation ages the body, but concrete proof of that has been elusive. Now, however, the longest-running human-aging study, the BLSA, has inched closer to proof. The BLSA has shown that having more than one disease, which doctors call “comorbidity,” is a good indicator of how rapidly a person is aging, and it seems to be driven by chronic inflammation. That happens when the immune system’s natural reaction to insult gets stuck in the “on” position. “Chronic inflammation seems to be the strongest predictor of comorbidity,” says Dr. Luigi Ferrucci, scientific director of the National Institute on Aging and former director of the BLSA. The researchers aren’t sure yet if that inflammation is a primary cause of aging, “but certainly it’s an accelerator,” Ferrucci says. Habits that have been linked to lower inflammation include a diet rich in plants and omega-3 fatty acids, mindfulness meditation and regular exercise.

—Mandy Oaklander

the cellular level. Longo’s suspicion, based on his research, is that fasting kills a variety of organ and blood cells while spurring the generation of stem cells. These new cells appear to regenerate the lost cells and rejuvenate the body. Inspired by the findings, Longo follows a modified fasting diet twice a year and limits himself to two meals every day, plus a snack.

“Diet is by far the most powerful intervention to delay aging and age-related diseases,” Longo says. “If you look at all the interventions that have ever been tried, diet has proven superior to anything else.”

### Moving a little matters more than exercising a lot

The latest research suggests you don’t have to join a gym to reap the benefits. A body that’s moving is what matters.

In the past couple of years, scientists have shown that sedentary behavior, like sitting all day, is a risk factor for earlier death. Several studies published in 2015 found that hours spent sitting are linked to increased risks of Type 2 diabetes and nonalcoholic fatty liver disease—even if people exercised regularly. In other words, you can’t exercise away all the bad effects of sitting too much. But the good news is that doing anything but sitting still—even fidgeting counts—can add up.

In a 2015 study published in the *Journal of the American Heart Association*, researchers put fitness trackers on more than 1,000 adults in their 70s and 80s who were limited in how much they could move around. People who logged the least physical activity had the highest risk of a heart event in the next 10 years, which isn’t shocking. But to the researchers’ surprise, moving just a little bit more during the day—like doing chores around the house—was enough to lower the risk of a heart event.

Other research shows that moving more in old age helps people keep their mobility. The *Journal of the American Medical Association* reported in 2014 on the Lifestyle Interventions and Independence for Elders study, which enrolled more than 1,600 sedentary men and women ages 70 to 89. For about three years, one group did moderate exercise like walking, while another group attended a health-education class. By the end, those in the physical-activity program could walk about 104 minutes more per week than the other group, and they also had significantly less major mobility disability.

“Now I look forward to walking, and I feel antsy when I have to miss a couple of days,” says 79-year-old Brian Ainsworth, who entered the study to exercise more and see if he could ease his depression symptoms naturally. Since he walked in the study, his depression has been under control—and he hasn’t stopped moving since the research ended.

### Your mind-set can affect how you age

By now it’s clear to scientists that our emotions affect our biology. Studies have shown for years that anger and stress can release stress hormones like adrenaline into our blood, which trigger the heart to beat faster and harder. The new research suggests the stakes are even higher than that: stress may even have an effect on how well our brains hold up against Alzheimer’s disease.

For the first time, two studies published late last year in the journal *Psychology and Aging* linked a person’s negative stereotypes about aging, of all things, to the development of brain changes associated with Alzheimer’s disease. In the first study, researchers looked at 158 people without dementia who were part of the Baltimore Longitudinal Study of Aging (BLSA). The researchers asked the men and women, who were in their 40s at the time, to rate how they felt about different aging-related stereotypes, like “Older people have trouble learning new things” and “Older people are absentminded.”

About 25 years later, the researchers gave some of those same people yearly brain scans. They found that the men and women who held more negative views of aging earlier in life had greater loss in the volume of their hippocampus, a region of the brain whose loss is linked to Alzheimer’s disease. People who years earlier had held more unpleasant views

**Scientists have shown that sedentary behavior, like sitting all day, is a risk factor for earlier death**

LONGEVITY  
PRO TIPS

**'The most important thing is finding what works for you to manage your stress. I smile when I'm stuck in traffic. It is unbelievable how much it works. Now, when I go to the doctor's office, I even smile when I get a shot.'**

SARAH PRESSMAN,  
University of  
California, Irvine

'Do some service, because that's when you'll truly not only feel connected, but you'll have a sense of purpose and you'll thrive. You'll feel a happiness that doesn't just come as a burst of pleasure that leaves you hungry for more. It lasts.'

EMMA SEPPÄLÄ,  
Stanford University,  
author of *The  
Happiness Track*

of growing older had the same amount of hippocampus decline in three years as their more positive peers showed in nine.

The researchers also looked at brain autopsies of people in the study to investigate other markers of Alzheimer's disease. They looked specifically for buildup of amyloid plaques and neurofibrillary tangles, twisted strands of protein that accumulate in brain cells. Once again, they found that the people who had held more negative stereotypes about aging had significantly higher levels of both plaques and tangles.

It's not yet understood how negative stereotypes may have such a notable impact on the brain, but the researchers speculate that holding these stereotypes is linked to stress, a known trigger of pathological brain changes. A February 2015 study published in the *European Heart Journal: Acute Cardiovascular Care* found that an episode of severe anger was associated with a significantly higher risk of heart attack in the following two hours. Even at the cellular level, stress seems to affect health; chronic stress has also been shown to harm DNA by shortening telomeres, the protective caps on the ends of chromosomes.

This is not the first time research has suggested that how we feel about aging can affect how we age. Other research has shown that people who hold more negative aging stereotypes have a higher risk of heart problems about 40 years later, compared with people who have more positive feelings about age. But by changing our minds, we may also be able to change our health. "Positive age stereotypes seem protective of not experiencing these biomarkers," says Becca Levy, lead author of the study and an associate professor of epidemiology and psychology at the Yale School of Public Health.

Levy's study adds to the evidence that a more positive mind-set could make us more resilient in measurable ways. Eric Loucks, an assistant professor of epidemiology at Brown University, has shown that people with more "mindful dispositions"—which might be best defined as having an awareness of what you're thinking and feeling in the moment—have significantly less body fat and also score higher on markers of heart health, compared with their peers. In another 2015 study, he discovered that people with high mindfulness scores were 86% more likely to have good cardiovascular health. Loucks' team also plans to study whether mindfulness interventions will help people stick to doctor-recommended health regimens, like taking blood-pressure medication.

But if stress clearly accelerates biological aging, the opposite may also be true. Studies by Elissa Epel, a professor in the department of psychiatry at the University of California, San Francisco, have shown that mindfulness meditation can re-



## Mindfulness meditation can reduce stress and may slow biological aging by stabilizing telomeres

duce stress and prevent people from ruminating in negative emotions, and some forms of meditation practice may even slow the biological signs of aging by stabilizing telomeres. Turns out your parents were right when they told you not to sweat the small stuff.

If meditation continues to be a practice that eludes you, it may be more valuable to incorporate the lessons of the practice—like trying one's best to focus on the present moment—into daily life as opposed to spending hours in lonely meditation. "What matters most is probably social connections, viewing stressful events as ephemeral, rather than reflecting weaknesses and failures in us, and having the ability to recover quickly from stressful things when they happen," Epel says.

A little mindfulness can go a long way indeed. □