Killer Chairs

Standing more, even at a desk job, could lower risk for obesity, illness and death, studies suggest

Sitting is bad for lean people, too. For instance, sitting in your chair after a meal leads to high blood sugar spikes, whereas getting up after you eat can cut those spikes in half.

The public usually associates these health problems with eating too much, not with sitting too much. My experience with people who struggle with their weight has led me to think that sitting habits might be just as pernicious. Still, a sedentary way of life might be easier to change than eating habits.

Peter (not his real name), a client in one of my programs in Minneapolis, told me, “I’m stuck.” He was 44 years old, 50 pounds overweight and had type 2 diabetes. His doctor wanted him to start insulin injections. I sent him to my lab at the Mayo Clinic. There he watched the data as we measured his metabolic rate: strolling at less than two miles per hour increased his energy expenditure by 200 calories an hour. Afterward, Peter and I walked and talked. “Just by conducting two of your daily meetings strolling like this,” I explained to him, “you’ll burn 400 extra calories a day.”

Peter took the advice to heart and began these easy walks. He did not diet, yet in the first year after his assessment, he lost 25 pounds. He dropped 10 more the next year. Peter never needed insulin and—as happens in many diabetics who lose weight—stopped taking diabetes medications altogether. He took this “get up” message home: he started going on bicycle rides and art gallery strolls with his family.

Peter is not alone in his success. Many studies support the view that simple movement has dramatic health effects. What is more, the effects do not require thrice-weekly visits to the gym or daily jogs that people soon abandon when the regimens become inconvenient. Nonexercise motion, done for several periods a day, can do the trick. And workers, companies and schools have already begun to institute an array of measures that encourage employees to get up out of their chairs.

MAGIC UNDERWEAR

Much of the evidence for the benefits of simple standing and walking during the day grew out of studies my group has conducted since 2001 to compare people in agricultural communities with those, like Peter, who live in industrial, urban settings. To measure sitting and moving, we took Spandex underwear and added tiny posture and motion sensors that captured body movement in 13 directions every half a second for 10 days. Jokingly, my colleagues and I call this apparel “magic underwear,” but it collects a serious amount of data. We asked villagers liv-
WE ARE NOT, however, prisoners of this environment. We can break free. Although technologies such as computers and video games have contributed to the allure of the chair, technology can also be a part of the solution. The cell phone, for instance, enables a seated conversation to become a walking talk. A host of popular activity-sensing gadgets enable people to measure how often they sit or stand or move. Newer video games, called Exergames, link computers to physical competitions; the Nintendo Wii, which encourages movement, was a game changer here.

Work can become more active as well. On behalf of some corporations, my lab has redesigned workplaces that release employees from their chair-based isolation. One company in St. Paul, Minn., encouraged walk-and-talk meetings by taping walking tracks to its carpets. A firm in Iowa discouraged workers from sending e-mail to their colleagues nearby by creating “e-mail-free work zones”; computer networks can block e-mail to close-by desks.

A decade ago I came up with the idea of a treadmill desk as a way to allow office workers to do their jobs while moving. The unit allows people to walk while conducting business. A computer is placed on a high table with a slow-speed (1 to 2 mph) treadmill underneath it. A person can stroll while typing, answering e-mails and taking phone calls. Naturally, as the inventor, I think the desk is a good idea, and I was pleased when a study, published in Health Services Management Research in 2011, demonstrated that it could be helpful. It reported that people who use the desks are slimmer, are less stressed, and have lower blood pressure and cholesterol levels. The desk, of course, is not the only way to incorporate more activity into your day.

As is true of offices, schools can become more active places. We helped to build a classroom in Rochester, Minn., where students practiced spelling while strolling and mathematics while throwing balls. In Idaho Falls a classroom was redesigned so that all the sit-down desks were replaced with standing desks that had a “fidget bar” for students to swing their legs on. Studies show that enrollees in schools that promote movement are twice as active as those attending traditional schools. Educational test scores also improve by about 10 percent, and their hormone levels were in healthier ranges.

Cities can be reimagined to encourage movement. Analyses conducted in San Francisco and the U.K. demonstrate that city districts can be rezoned to discourage car-based travel. Commute times increase by only a handful of minutes, air quality improves, and medical expenses drop. Chair-free living does not just promote health but also saves money.

We live amid a sea of killer chairs: adjustable, swivel, recliner, wing, club, chaise longue, sofa, arm, four-legged, three-legged, wood, leather, plastic, car, plane, train, dining and bar. That’s the bad news. The good news is that you do not have to use them. Put yourself on the back if you read this article standing up—and if you didn’t, get up!

SCIENTIFIC AMERICAN ONLINE

Comment on this article at ScientificAmerican.com/Nov2014

November 2014, ScientificAmerican.com 35