

Tracking Steps

By Michelle W. Martin

The kids at Beverly Elementary School have got moves. Lots of them. • In fact, they've been moving so much in the past few years that they've garnered national attention. Last year, they received a national *Let's Move!* Active Schools award, and in March, U.S. Acting Assistant Secretary for Health Karen DeSalvo visited the school to applaud their efforts to be healthier.

For the past three years, every fifth-grader at the Lynnwood, Washington, school has received a wearable watchlike activity tracker by the name of Sqord. The device records the kids' movement and awards points based on how long and vigorously they move. More than 13,000 students in Snohomish County have received the trackers as part of a county-wide public-health campaign.

This effort is just one example of a trend that has taken hold across the country: Portable activity trackers are gaining traction with people of all ages. At the same time, 10,000 steps a day has become a popular goal and discussion topic among friends and colleagues, and on social media. For most adults, it's a worthy goal—simply increasing moderate activity can lead to health benefits for head and heart.

The American College of Sports Medicine issued its annual worldwide trends report in November. The new No. 1 trend was wearable technology—that includes smart watches, and trackers such as the Fitbit, Jawbone, Misfit and Apple Watch as well as GPS tracking devices and heart-rate monitors.

A common standard for fitness-tracker wearers has been those 10,000 steps a day-the origins of which are unclear, but this target is akin to the U.S. surgeon general's recommendations, according to a 2006 research study. The study was authored by Catrine Tudor-Locke, who was then with Arizona State University and is now kinesiology professor and department chair at the University of Massachusetts Amherst. By looking at step counts and energy expenditures of 40 participants, the researchers determined that 30 minutes of moderate exercise equaled about 3,000 to 4,000 steps; when added to the daily average of 5,000 to 6,000 steps, the 10,000 steps rule was about right.

In a more recent study, Tudor-Locke found that those who averaged about 30 minutes a day of moderate-intensity exercise completed an average total of 7,500 steps per day, though "10,000 is laudable," Tudor-Locke adds.

Incidentally, the recommendation for children and adolescents is higher, at 60 minutes of exercise a day, per the U.S. surgeon general—or closer to 12,000 steps, according to another study Tudor-Locke co-authored.

Tracking devices have proved to be reliably accurate at measuring steps during walking and running, though they are less reliable when it comes to measuring other types of activity. But perhaps there's more to consider than just how accurate the data are, says Jim Chesnutt, medical director of Oregon Health & Science University's March Wellness & Fitness Center in Portland. Through competitions and social interactions, tracking devices can be a tool

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to inspire healthier choices.

"People can achieve goals better if they encourage each other in groups," Chesnutt says. Trackers and associated online apps can facilitate friendly competition and group accountability by letting you share your steps with a spouse or friend. "Trackers can keep you connected even when you're traveling for work and not in front of each other," he says.

Making the most of a tracker

Fitness is about more than a number of steps. In a 2013 study, Tudor-Locke and her colleagues found that though many participants at risk for knee osteoarthritis met their 10,000-steps goal, nearly a quarter of them failed to achieve 30 minutes of moderate-intensity exercise. It's not only the number of steps that matters, but also how vigorous the activity.

One way to gauge if you're hitting the moderate level of exercise is the "talk test." If you can talk, but not sing, it's moderate-level activity, where you can incur many of the health-related benefits. Once you can't even talk, you've moved to a vigorous level, which can cause health complications. With moderate-level exercise at the recommended frequency of 150 minutes a week, or up to 30 minutes almost every day, come myriad benefits, says Chesnutt. And as long as you can get the activity in at least 10-minute chunks, you can still reap the benefits, he adds.

These benefits include possibly lowering your risk of health problems, such as high blood pressure, heart disease and diabetes; strengthening bones and muscles; and helping to burn more calories, according to the National Institutes of Health.

The brain gets a boost from walking

"The brain is actually felt to be just like the heart in terms of the need for exercise," Chesnutt says. "Consider that



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the brain functions like any other major organ with blood flow," he says. He points to recent Framingham study results, which linked good cardiovascular fitness at middle age to maintaining normal brain size 20 years later, compared to participants with lower fitness levels

On the flip side, when blood flow is impaired to the brain, we can develop a type of dementia called vascular dementia that's related to hardening of arteries, which is a very similar process to what can happen with cardiovascular disease in the heart, he says.

Physical activity also provides the benefits of improved mood, decrease in diseases such as depression and cancers, as well as improved performance at work, he adds. The recommended 30 minutes of exercise a day benefits the whole body.

Chesnutt says 10,000 steps won't make sense for everyone. He suggests thinking in terms of increasing your activity—figure out your average, then attempt to increase it by 2,000 steps a day. The important thing is to improve. If, for example, you find that your normal average is 5,000 and you bump it up to 7,000—that's a success.

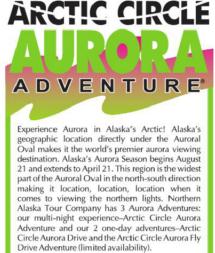
To track or not to track?

Of course, trackers are not for everyone, says Laurie Towey, an avid walker who regularly volunteers to lead walks around Seattle as a neighborhood walking ambassador with the nonprofit Feet First.

"When I turned 40 I lost a whole bunch of weight," says Towey. "I hadn't really been an exerciser before that, but realized that I needed to incorporate exercise to keep it off." She started with walking a little and built up slowly. Now, at 60, she typically walks 4 miles an hour, she says, laughing: "I'm known for walking fast."

"The walking clears my head; I love being outside," Towey says. "I'm very social, and as a walk leader, I get to meet





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so many different types of people." She says that about 80 percent of the people joining her organized walks are new to Seattle, coming to explore the city and to connect with others.

"Many years ago, I had one of those pedometers," Towey says, but after she got a feel for how many steps were typical for a fast hour of walking, she stopped using it. "In the end, if you're really serious about getting out there and walking, then you don't need one of those."

For people such as Towey who find their motivation in other ways, the trackers may seem like little more than a novelty, but for others, including the kids in Snohomish County, the trackers help users form healthy habits for the future.

"Activity really drops off starting around age 7, all the way to age 14," says Paul Sebastien, CEO of Sqord. "We intervene in a fun way that gets kids moving out of joy and pleasure."

A study to assess the Snohomish County initiative found that students who participated increased their activity over time. In fact, the group who started with the least amount of activity had the biggest increase-a whopping 55 percent. And students who participated as fifth-graders reported maintaining their higher activity level the next year. The assessment, which also found more student participation over time, was a collaboration between the University of Washington Northwest Center for Public Health Practice, the Snohomish Health District, the Snohomish County Health Leadership Coalition and the Group Health Center for Community Health and Evaluation.

Micaela Jones was working for Providence Health & Services in Anchorage when she first found out about Sqord. She gave each of her two kids a device, and they immediately wanted to compete with each other, she says. Jones studied what had been successful in Snohomish County and worked with the school administration and physical education instructors in Anchorage to get the devices onto the



Fitness trackers such as Jawbone's UP2 provide new ways to share, achieve and maintain exercise goals.

wrists of students there. She even got herself one to compete with her kids.

"They beat me every day," Jones says.
"I'm getting 45,000 points a day, and they easily get 100,000 a day." She says they love issuing challenges to their peers and, especially, to their teachers. Tyler, her 11-year-old son, agrees. He enjoys that the points he can earn make it feel like a video game, with options to customize his avatar and to post messages to friends.

One reason the benefits may last, Jones says, is that Tyler is beginning to understand how active he is every day. Before they sync the devices to their computer in the evening, they guess how many points they have earned. Jones says Tyler has developed an accurate sense of his activity level, which will benefit him with or without the device.

For Tom Davis, a PE teacher at Beverly Elementary School, one of the best things is how excited the kids are to get active. One of his students, 11-year-old Connor Owens, says he wears his device all day, every day.

"It's fun to go against your friends,"
Owens says. "It's kind of cool to see how
much you're moving."

Michelle W. Martin writes from Seattle.