

Wearables: A healthcare fad or revolution?

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Adam Splaver, MD, has noticed a growing trend in his practice as a primary care physician and cardiologist. Each day, four to five patients come in equipped with technology such as Fitbit or the wristband app UP by Jawbone to help them stay on track with their fitness and diet goals.

“It’s a great addition to help them be more cognizant of their activity and what they are eating,” says Splaver, who practices with two other physicians at Nano Health Associates, in Hollywood, Florida. He finds that wearable devices and apps have helped non-exercisers develop exercise routines and record what they eat.

“Once you have to take notes and say ‘I had this, this and this for lunch and that brownie,’ it kind of hits home,” says Splaver. “A lot of people eat unconsciously. Once they track it, they’ll think twice about having that brownie.”

From consumer-based Fitbits to high-tech diabetes management tools, technology is playing a bigger role in patients’ daily lives. The challenge for physicians is to find ways to incorporate the resulting health data into their practices.

On the other hand, such devices can’t work miracles. “They really aren’t a substitute for motivation,” Splaver says. “It has to come from within.”

Healthline, a provider of health information and technology solutions, recently surveyed its readers and found that 52% used at least one mobile health app. About one-third had used their technology for three to six months, and another one-third had used it for less than three months. The most commonly-used app was MyFitnessPal. Juniper Research predicted in 2014 that the 19,000 wearable fitness devices in use globally will almost triple in number by 2020.

Tech as a care collaborator

Many factors are spurring the growth of personal health devices. Looking to reduce health costs, some employers are buying activity trackers for employees to encourage fitness-related activities. Offering added enticement to consumers are new programs such as one offered jointly by Walgreens and WebMD, which awards points to Walgreens customers that they can redeem at the pharmacies if they connect their fitness trackers to their rewards accounts. And with manufacturers introducing new products—such as the new Microsoft Band, an activity tracker—more consumers are becoming familiar with them.

In the near future, smaller, less obtrusive gadgets could pull in new consumers, too. Researchers in the field of “epidermal electronics” at the University of Texas at Austin announced recently that they had developed a wearable patch that can transmit data on vital signs, tracking a user’s heart rate, hydration, muscle movement, temperature, and brain activity.



New research could help fitness trackers catch on more in clinical settings as well. At Seattle Children's Hospital, the St. Baldrick's Foundation, a cancer charity, has provided a \$50,000 grant to fund a study of childhood cancer survivors now in their teens, to see if using Fitbit Flex devices and a private Facebook group for social support encourages them to take more steps every day. Many childhood cancer survivors have trouble staying fit because of interruptions in activities such as sports.

"We're trying to build upon their already large interest in digital technology and social media," says Jason Mendoza, MD, a pediatrician at Seattle Children's. The hospital completed a similar study recently of 40 students at a local public school who were not cancer survivors. "We had positive feedback, which is why we are expanding this to other groups," says Mendoza.

Can these devices actually help physicians and patients track their conditions and improve care? That depends on many variables, say physicians and experts.

One key factor is whether consumers continue to use them or stuff them in their sock drawer. A 2014 research study by Endeavor Partners, a consulting firm with expertise in digital technologies, found that patients tend to abandon fitness wearables meant to be worn all day—in contrast to those intended for use in a specific workout—at high rates. More than 33% ceased to use the all-day wearables after six months. And a July 2015 study by Argus Insights found that consumer interest in wearable fitness technology peaked in January 2015, then began to dip. The study suggests that as with most fitness regimens, a new year brings great intentions, but as the months pass, follow-through wanes.

Making the tech connect

Physicians' willingness to analyze the data the devices gather is also uncertain. Currently, only 15% of physicians say they have discussed wearables or health apps with patients, according to a 2015 survey by market research firm MedPanel, though physicians said 38% of patients not using an app and 42% not using a wearable could potentially see benefits from trying the devices.

For some physicians, a key hurdle is a lack of familiarity with how to incorporate the devices into their practices. "The training and education in school isn't quite there yet," says Florence Comite, MD, the sole physician in an endocrinology practice in New York City. "It's going to have to be sort of retrofitted into the medical world."

Time is a factor as well. Physicians in many small, independent practices are already stretched thin. "It's very hard for doctors who don't have staff to find care management to pick up these technologies and make them part of their work flow," says Joseph Kvedar, MD, vice president of Connected Health at Partners Healthcare in Boston, Massachusetts

Partners hopes to bypass this challenge via a system-wide initiative to make every primary care practice a patient-centered medical home, equipped for team-based care, Kvedar says. Medicare's new chronic care management code, 99490, enables physicians to get reimbursed for care that is not face-to-face, he says. That includes time spent monitoring medical devices. The reimbursement is about \$40 per month per patient.

So far, independent physicians don't seem to be working with a great many patients using Fitbits and other wearable devices. Doug Hansen, MD, a primary care physician with Altitude Family Health and Internal Medicine in Littleton and Lakewood, Colorado, has noticed a handful of patients using wearable fitness-related devices such as Fitbit in the past year or two, and sometimes using apps on Apple or Android watches.

When patients use wearable fitness devices, Hansen finds that the data they gather can aid in providing more-informed treatment. "I'm data driven," says Hansen. "I like information. The more I know about patients, the better. When I am able to gain insights into what they are doing when not in front of me, that can be exceptionally helpful. The patient interview and exam room only take you so far." His practice is exploring ways to transfer the data gathered into its patient portal.

Do the devices actually help patients reach their fitness goals? "I don't know that we're able to measure that yet," he says. One challenge with wearable devices is that the patients most engaged in their health tend to use them, while others don't, says Ernest Brown, MD, a primary care physician in Washington, D.C. Finances can also be a barrier, since a device such as Fitbit retails for about \$80 or more.

Many patients aren't getting financial incentives to use fitness devices from insurers or anyone else. "There is no straight and narrow path yet," says David Collins, MHA, a senior director at the Healthcare Information and Management Systems Society. "There's no, 'OK, if you buy this device and wear it for this amount of time per day, you get reimbursed.'"

But for patients who are dedicated users, wearable devices can help their physician track information such as adherence to medications, says Brown. For a patient with diabetes, for example, a wearable device could provide information such as, "Are they reporting their glucometer reading? Are they doing it consistently before or after meals?" Brown notes. "That data is missing in the real world. When you have these devices that work well, that data is invaluable."

While such data may be useful, many physicians are not actively encouraging their patients to use the devices. Heathline's survey found that in general patients are discovering the devices and apps for themselves. Only 4% of respondents said their doctor recommended an app and another 2% said their doctor formally prescribed one. The apps physicians most commonly recommended were food logs and calorie counters (34%), followed by pedometers and fitness trackers (24%), blood sugar monitors (20%), and medication reminders (17%).

The role of traditional devices

When physicians do recommend wearables, often they prescribe more traditional medical devices. Pierre Rigaux, MD, a neurologist and CEO of CEFALY Technology, which has its U.S. office in Wilton, Connecticut, uses a headband-like device he invented to prevent migraines among patients who are repeat sufferers. It stimulates the nerve endings of the trigeminal nerve, which is involved in most headaches, through electrodes. The prescription-only device sells for \$349.

"For patients with more frequent or even chronic migraines, they tend to take more and more medication," he says. "We know that increasing the use of the medication is the main cause of having more migraines. It pushes the patient into a chronic migraine situation."

For the past five years Ali Tabrizchi, DO, FACC, an interventional cardiologist at LifeBridge Health in Bel Air, Maryland, has had patients with weakened heart muscles wear an external defibrillator, while administering drugs designed to strengthen the heart muscle over a six-month period. The vest, which costs \$3,000, is available by prescription. If the vest detects a malignant arrhythmia, it secretes a gel that protects the skin from burns and provides a shock that can save the patient's life. Six months after the patient has begun using it, Tabrizchi determines if the medications have strengthened the patient's heart. If not, he recommends an internal defibrillator.

That's a far different scenario than in the past. "We used to look at our patients, tell them you have a weakened heart muscle and keep our fingers crossed," he says.

Wearables use to increase

With technology marching forward, both fitness and nutrition devices and medical ones are certain to become more prevalent. Some physicians are trying the health apps themselves. **Splaver**, for one, uses the app UP by Jawbone to monitor his own sleep patterns and a heart rate monitor when he is doing high-intensity training or using the elliptical trainer.

Brown is testing out a Fitbit. "I'm in a new exercise program and want to make sure I keep track of my heart rate," he says. "I evaluated a few different products." So far, the watch has been the easiest to use but he adds, "I'm still evaluating it."

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