

There's money in your wearable fitness tracker

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Your wearable fitness tracker is great at counting the number of steps you took today, but it could also provide a new source of currency for the emerging health data economy, according to a new study in the journal *Computer*.

The wearable device industry is estimated to grow to more than \$30 billion by 2020. These sensors, often worn as bracelets or clips, count the number of steps we take each day; the number of hours we sleep; and monitor our blood pressure, heart rate, pulse and blood sugar levels.

The list of biophysical functions these devices can measure is growing rapidly.

"But nobody has yet figured out a way to translate the information gathered by these devices into measures of [health](#) and longevity, let alone monetize this information - until now," says S. Jay Olshansky, professor of epidemiology and biostatistics at the University of Illinois at Chicago School of Public Health and chief scientist at Lapetus Solutions, who is lead author on the paper.

The researchers report that for the first time, the trillions of data points collected by wearable sensors can now be translated into empirically-verified measures of health risks and longevity—measures that have significant financial value to third parties like mortgage lenders, life insurance companies, marketers and researchers.

In the study, Olshansky and colleagues use the number of steps taken daily - a measure collected by almost all [wearable sensors](#) - and show how, using scientifically verified formulas, the step data can be translated into measures of health risk. By combining step count with age, sex, height, weight, walking speed, stride length, steps per mile and calories burned per step, they can derive the reduction in risk of death and expected gain in life expectancy and healthy-life expectancy if that same level of physical activity - in this case walking - is continued.

"In effect, we can take the data collected by your Fitbit and translate that into scientifically verified measures of health risk," Olshansky said.

"For example, we know that a 65-year-old, 5-foot-6-inch male weighing 175 pounds will reduce his risk of death by 33 percent if he regularly walks at a pace of 4 miles per hour," Olshansky said. "The fact that it significantly reduces this man's risk of death is valuable to the person walking, and also valuable to companies interested in interacting with someone with his level of daily physical activity."

In the new [health-data](#) economy, your health information, once processed into longevity and health risk, will have a market.

"Imagine getting paid to upload your wearable sensor information to a new health data cloud," Olshansky said. "Not only would researchers and companies be interested, but your own physician could access the data at your next physical to see, in effect, how you'd 'driven' your body since your last visit.

"That information would provide a much better, more accurate picture of your overall health than the snapshot you get from blood and urine collected on the day of your once-a-year checkup."

The same value-added information would also be of interest to

researchers, Olshansky said. If users were paid to upload their fitness data to a database, along with demographic information in their profiles, public health researchers would be able to custom-build health research surveys to answer all sorts of questions. The data would be especially of value to scientists studying distinct subpopulations with unique [health risks](#). For example, researchers could look at how exercise mitigates cardiovascular disease among older Hispanic men, who are at higher risk for heart disease.

According to Karl Ricanek, an author on the paper and professor of computer science at University of North Carolina at Wilmington, selfies could provide additional information on the health and wellness of the user. Ricanek, who is a leader in facial analytics and chief information officer at Lapetus Solutions, says that a selfie provides a host of health and behavior information like body mass index, smoking status, level of sun exposure, stress and depression, to name a few. "Some clinicians use the face as a barometer of health along with other visual clues of a patient," said Ricanek. "This additional data, in the form of a selfie, will add to the health-data economy in ways we cannot imagine today."

The researchers even combined fitness and health data with personal financial information like savings rate, readiness for retirement, income, as well as education, age, gender, and family history to develop a single score for overall health and financial risk. They call it the Better Life and Income Scoring System, or BLISS score.

"The BLISS score would become far more valuable than a FICO score," Olshansky said. Insurance companies, mortgage brokers and marketers would be particularly interested in a person's BLISS score because it combines both health and wealth metrics. And people would be informed on what they need to do to raise their BLISS score.

"The BLISS score would travel with people across their life history and

have intrinsic value that can be used to lower premiums on health and life insurance, obtain more favorable mortgage interest rates, and which can be monetized."

Provided by University of Illinois at Chicago

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