

Wrist-worn step trackers accurate in predicting patient health outcomes

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Researchers at Intermountain Healthcare in Salt Lake City found that steps measured through a step tracker worn on the wrist can be used to estimate exercise capacity and determine the health status of patients, rather than the standardized six-minute walk distance test, which is usually conducted in a clinical setting. Credit: Intermountain Healthcare

Determining how far patients with pulmonary disease can walk in six minutes has long been an effective clinical tool to help physicians determine their exercise capacity, as well as to aid in predicting health outcomes and mortality.

Now, in a new study, researchers at Intermountain Healthcare in Salt Lake City found that steps measured through a step tracker worn on the wrist can be used to estimate exercise capacity and determine the health status of patients, rather than the standardized six-minute walk distance test, which is usually conducted in a [clinical setting](#).

Using the wrist-worn step trackers, researcher found data may be used in [clinical care](#) at higher intervals to effectively monitor patient progress and [disease](#) management. Researchers say the results are another example in how wearable and monitoring devices like Fitbits and Apple Watches can be used in [patient care](#) to improve outcomes.

"For patients, this means we can track their progress more frequently in a manner that's less expensive and more convenient than current standardized testing," said Denitza Blagev, MD, lead investigator of the study and pulmonary and critical care physician at Intermountain Healthcare.

The six-minute walk distance (6WMD) is an important, objective standard used to assess exercise capacity. Patients walk for six minutes and, then based on how many meters they cover in that time, physicians can predict outcomes and mortality for patients with chronic obstructive [pulmonary disease](#) (COPD) and cardiovascular diseases.

"Normally, the 6WMD test is done every few months or once a year. Now, we may be able to measure patients on a regular basis and know if we need to intervene if their estimated 6WMD by step count changes," said Dr. Blagev.

Findings from the study were presented at the European Respiratory Society International Congress meetings in Madrid, Spain, on Sept. 29.

In the study, researchers conducted a 12-week, blinded, randomized, cross-over trial with 52 patients, a group that included adults with a history of respiratory problems during periods of elevated air pollution. Wrist step counters tracked patient steps for those 12 weeks; and patients also filled out respiratory symptom questionnaires.

Researchers found they could effectively estimate a patient's 6MWD results by using step counters, instead of having patients come in a clinical setting to do the 6MWD test.

"Instead of having one measurement every few months, you could have weekly measurements, and have information at disease progression at more frequent intervals. This is a significant improvement and enhanced convenience for our patients," said Dr. Blagev.

The implications? Using wrist step counters will allow physicians to track how their patients are doing, the progression of the disease, and whether a patient requires an immediate intervention.

"Being able to distill step counts into this clinically important metric is a first step in being able to think about how to use step counters in order to better manage health and detect deterioration earlier," Dr. Blagev added.

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