Medical Xpress

Wearable activity trackers show promise in detecting early signals of disease

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Wearable technology is in high demand among the health conscious. But beyond measuring heart rates and blood pressure, could fitness trackers be used to test for and effectively screen for disease?

A new University of South Australia study reveals that wearable activity trackers show promise in detecting early signals of disease—particularly atrial fibrillation associated with stroke, and COVID-19. The research is published in the journal *JMIR mHealth and uHealth*.

Assessing the reliability and accuracy of consumer-grade wearable activity trackers to detect and monitor a wide range of medical conditions and events, researchers conducted a systematic review and meta-analysis of 28 studies with 1.2 million participants.

The study found that wearable technology could correctly identify:

- COVID-19 status (positive or negative) in 88 out of 100 people, similar to rapid screening tests.
- Atrial fibrillation in 87 out of 100 people, akin to tests undertaken by doctors.
- Falls in 82 of 100 people.

Originally designed to track fitness and exercise performance, wearable technology has advanced beyond activity metrics, and is now able to deliver accurate and timely measures of blood pressure, heart rate, oxygen levels, sleep quality, skin temperature, hydration, stress levels and more.

Lead researcher, UniSA's Dr. Ben Singh, says that wearable activity trackers could revolutionize the detection of medical conditions and disease.

"As health care budgets continue to soar, the need for cost-effective interventions that reduce health care costs and improve patient outcomes has never been more urgent," Dr. Singh says.

"Our systematic review shows that wearable activity trackers like Fitbits

and Apple Watches have significant promise in detecting COVID-19 and heart conditions in real-world settings, which has the potential to improve personal health monitoring.

"Wearable trackers not only empower people to proactively manage their health, but they enable them to detect health issues in real-time. This means that they can respond to any concern quickly, and hopefully avoid any serious health issues."

While wearable activity trackers present opportunities for improved personal heath monitoring, co-researcher UniSA's Professor Carol Maher says there is scope for expansion and improvement.

"The beauty of wearable activity trackers is that they provide an easy and convenient way for people to monitor real-time aspects of their health and well-being; but their full potential is yet to be realized," Prof Maher says.

"Wearable trackers are providing some excellent health data, but their application must encompass a greater number of health conditions and demonstrate greater results across diverse populations before they can be considered for clinical practice."

More information: Ben Singh et al, Real-World Accuracy of Wearable Activity Trackers for Detecting Medical Conditions: Systematic Review and Meta-Analysis, *JMIR mHealth and uHealth* (2024). DOI: 10.2196/56972

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