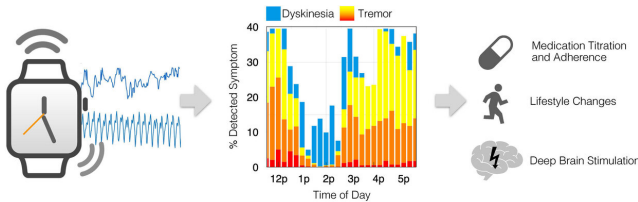


Using a smartwatch to help detect the progression of Parkinson's disease

4 February 2021, by Bob Yirka



The smartwatch system is based on sensors that can capture changes in movement patterns and tremors, which can help clinicians tailor treatments such as medications and lifestyle changes. Credit: R. Powers et al., *Science Translational Medicine* (2021)

A team of engineers from Apple Inc. working with researchers from several institutions in the U.S. has found that smartwatches could provide a valuable resource in helping to track the progression of Parkinson's disease in patients. In their paper published in the journal *Science Translational Medicine*, the group describes a pilot trial of an app created for the Apple smartwatch and an informal experiment with 225 Parkinson's patients using the smartwatch and app for six months.

Parkinson's [disease](#) is a progressive disease impacting the nervous system. As [basal ganglia](#) in the brain degenerate, people with the disease begin to experience tremors, muscle problems and difficulty moving about. There is no cure for the disease, but there are several medications that slow its progression and reduce symptoms. Medical researchers have noted that one more data regarding the degree of symptoms a patient is experiencing could improve treatments, offering guidance to alter medication doses to meet individual needs. Currently, doctors must rely on tests and accounts from the patient that are conducted when patients come to the office for updates. These visits are often spaced many

months apart. In this new effort, Apple and the team working with them looked into the possibility of using smartwatches to monitor movements characteristic of tremors around the clock, using data from the smartwatch gyroscope and accelerometer. The team created an app for Apple's smartwatch called Motor Fluctuations Monitor for Parkinson's Diseases.

The team began with a [pilot study](#) to determine whether their app worked as desired along with 118 volunteers and several clinicians trained to track Parkinson's symptoms. Emboldened by their results in the pilot, the researchers conducted a larger study with 225 Parkinson's patients who agreed to wear the smartwatch for six months. The researchers found that the smartwatches were able to spot some symptoms missed by their caregivers. They suggest that the smartwatch and app could be used as a tool to help doctors plot out medication dosages that align with symptoms as the disease progresses.

Apple has not announced whether it will proceed with testing of the device or attempt to conduct [clinical trials](#). If they do, the company will likely need to seek approval of their system by the FDA.

More information: Rob Powers et al. Smartwatch inertial sensors continuously monitor real-world motor fluctuations in Parkinson's disease, *Science Translational Medicine* (2021). [DOI: 10.1126/scitranslmed.abd7865](https://doi.org/10.1126/scitranslmed.abd7865)

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