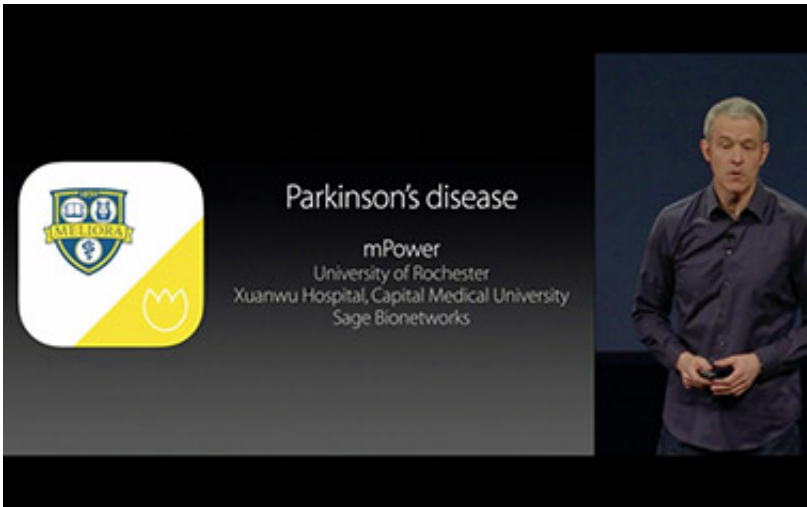# Apple highlights Parkinson's app

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A new iPhone mobile app which allows patients with Parkinson's disease to track their symptoms in real time and share this information with researchers was featured by Apple executives today during the company's semi-annual product launch event.

"There is unmet demand for tools by which individuals can measure the course of their disease and receive feedback on how they're doing," said University of Rochester neurologists Ray Dorsey, M.D., M.B.A. "To have a dedicated Parkinson's disease app backed by research that will allow patients to engage with their care and receive feedback on their condition is amazing. To make that data in the aggregate available for research is heartening. Five years ago this would have been

inconceivable."

The app, dubbed Parkinson mPower (Mobile Parkinson Observatory for Worldwide, Evidenced-based Research), was developed by Sage Bionetworks, non-profit research organization based in Seattle, in partnership with Dorsey and Karl Kieburtz, M.D., M.P.H. from the University of Rochester, and Max Little, Ph.D., a mathematician and lecturer at Aston University in the United Kingdom. mPower is [available](#) to download immediately at the Apple App Store.

The mPower app will be used as a part of an observational study that collects data from Parkinson's patients in an effort to more fully understand the disease and how it impacts daily life. The study is being funded by the Robert Wood Johnson Foundation.

Parkinson's disease is a progressive neurological disorder that erodes an individual's control over their movements and speech. Over time, individuals with Parkinson's disease experience stiffness or rigidity of the arms and legs, slowness or lack of movement, and walking difficulties, in addition to tremors in their hands, arms, legs, jaw or face. An estimated half a million Americans live with the disease.

The mPower study will gather real time data from volunteers who download the app and agree to participate in the study. The app will measure dexterity, balance and gait, voice, and memory at multiple times each day. For example, patients will use the app to record their voice. Subtle changes to the voice, including tremor and reduced amplitude have been shown to be an accurate way to measure the severity of symptoms. The app will can also measure dexterity by tracking how fast a person can tap the screen on their iPhone. The device's GPS and accelerometer can measure mobility and balance.

The data collected during the study will allow researchers to learn about

the variations of Parkinson's disease and enable patients to measure how their symptoms change over time and in response to exercise and medication. The data will help researchers learn more about the natural history of the disease and what factors influence its effects. The app will also include a dashboard that allows patients to track their progress.

The approach will enable researchers to collect information on scale – both in terms of data points and number of participants – that has previously been unachievable, thereby providing them greater insight on the disease.

"Researchers who have made the effort to work together in the kinds of communities enabled by Sage's platforms are becoming massively more productive," said Stephen Friend, MD, PhD, president of Sage Bionetworks and mPower principal investigator. "But we need more data. In a traditional clinical study, you'd be thrilled to find 500 research 'subjects.' But imagine what is possible when you can quickly and reliably activate 20,000 research 'partners.' Similarly, gathering data a few times per year is the traditional gold standard, so imagine the possibilities when we are able to gather data continuously, all the time."

Sage Bionetworks has announced plans to collaborate with the Michael J. Fox Foundation to expand awareness of the study within the Parkinson's community and use the application to contribute to the Foundation's own efforts – called Fox Insight – to collect data and provide researchers with a more holistic view of the lived experience of people with Parkinson's disease.

Ultimately, the approach used by the mPower app – harnessing mobile technologies and monitoring systems to track disease progression – could eventually be used to transform patient care. Currently, people with Parkinson's tend to interact specialists in a very episodic manner – usually in the context of a semi-annual appointment – and physicians

rely on subjective self-reporting to determine how the disease is progressing, how patients are responding to medications, and their quality of life.

"We know that Parkinson's disease symptoms fluctuate over the course of a day, or a week, but that has never been measured objectively," said Dorsey. "The mPower study will enable us to learn from patients, and we'll be able to give information back to patients so they can manage their conditions regardless of distance or disability."

mPower was one of a suite of disease-specific apps launched today that will help researchers better understand a number of conditions, including cardiovascular disease, breast cancer, diabetes, and asthma. The apps were unveiled during Apple's "Spring Forward" product launch event in San Francisco, which was followed live by a global audience.

mPower and the other apps were developed using ResearchKit, a software development framework designed by Apple that enables researchers to gather data more frequently and more accurately from study participants and allows volunteers to play a greater role in shaping research directions and outcomes.

Provided by University of Rochester Medical Center