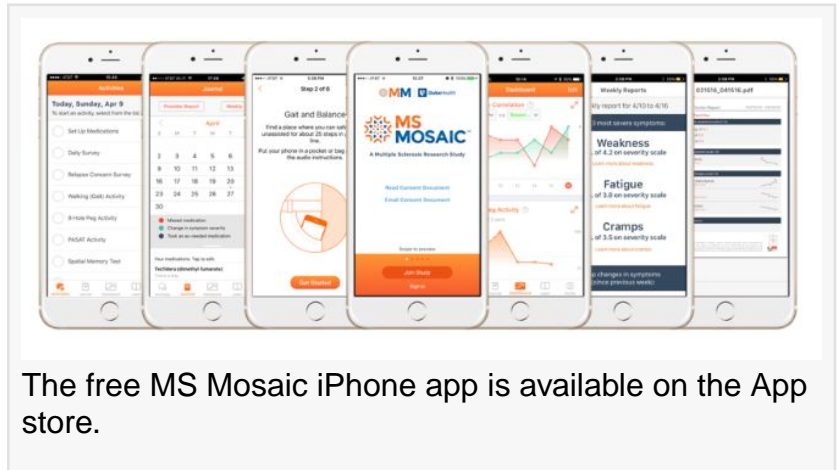# MS Mosaic iPhone app offers patients, clinicians a better way to understand MS

MS Mosaic, a new iPhone app and ongoing study offers MS patients a way to understand and manage their disease while advancing our understanding of MS.

DURHAM, NORTH CAROLINA , UNITED STATES, October 9, 2017 /EINPresswire.com/ -- MS Mosaic, a new iPhone app and ongoing study developed by Duke clinicians and researchers, offers patients with multiple sclerosis (MS) a new way to understand

The free MS Mosaic iPhone app is available on the App store.

and manage their disease while advancing our understanding of the condition.

"MS is a fragmented, constantly changing disease--or, likely, group of diseases," said F. Lee Hartsell, MD, MPH, a Duke neurologist and one of MS Mosaic's lead designers. "Symptoms and the course of disease vary from person to person, or even from the same person from day to day. MS Mosaic gives patients and their doctors a means to navigate through that chaos."

MS is an autoimmune disease that destroys myelin, the substance that acts as insulation for neurons. This slows how the brain communicates with itself and the rest of the body. While treatments can help with symptoms and improve the course of the disease, it has no cure.

The free MS Mosaic app uses a mix of surveys, tasks, and health data collected from the phone's sensors to collect and track a patient's health and symptoms of MS. Daily surveys, which take about a minute to complete, may ask a person to rate how well they are feeling, play a short pattern game to assess their memory, or have them walk a short distance while holding the phone to assess their gait. Participants' information will be shared with the Duke MS Mosaic research team anonymously. Participants who wish to can also choose to share their data with researchers at Duke, and eventually, other academic institutions.

The data MS Mosaic collects will allow patients and providers to better understand how to treat individual cases of MS. Factors from a person's genes, to stress, to infections, to even the outside temperature can all affect how long symptoms last, their severity, or whether they appear at all. MS Mosaic will allow patients and providers to examine what effects each of these factors may be having, as well as know how a person is responding to the more than one dozen currently FDA approved medications for MS.

Hartsell hopes that this data will help patients avoid relapses, find the medication that best fits their need, and predict whether symptoms such as fatigue are being caused by the disease, as a side effect of medication, or the result of not getting enough sleep.

For patients, the MS Mosaic app also contains a primer on MS, with detailed information on symptoms, treatment, disease progression, and other subjects.

But in addition to helping individuals manage their own cases, the aggregate data MS Mosaic collects will also help researchers learn more about multiple sclerosis.

"Machine learning methods will not only be used to make predictions about individuals' symptoms, but also about the disease as a whole," said Katherine Heller, PhD, a Duke assistant professor of statistical science who co-lead development of MS Mosaic with Hartsell. "App data can be understood in aggregate across the MS Mosaic population, and combined with other kinds of information, such as MRI scans, to help link reported symptoms with biological findings."

The MS Mosaic app is free and available on the iPhone's App Store. Development of the MS Mosaic app was supported by the Duke Department of Neurology and the Duke Office of the Provost.

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