

People with epilepsy can benefit from smartphone apps to manage their condition

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Generalized 3 Hz spike and wave discharges in a child with childhood absence epilepsy. Credit: Wikipedia.

While many people with epilepsy can control their seizures with medication, those unpredictable and involuntary changes in behavior and consciousness can be limiting for others. Neurologists writing in the *International Journal of Epilepsy* evaluated the application of smartphones in epilepsy care.

The paper by Lakshmi Narasimhan Ranganathan and colleagues at the Madras Medical College Institute of Neurology in India has been selected for an Elsevier Atlas Award.

Ranganathan's team evaluated the mobile applications available for the everyday care of [patients](#) with [epilepsy](#). Those apps include seizure diaries as well as medication trackers with

reminders to take the next dose of medication. In addition, apps are available to answer any questions patients with epilepsy might have, to detect potential drug interactions and to detect seizures. The latter type of apps senses the irregular motions characteristic of an epileptic seizure and automatically set off an alarm to alert caregivers and doctors.

"Almost all smartphones have a built-in GPS," Ranganathan said. "They have motion detectors and/or accelerometers. All of those gadgets, if properly integrated into a program, support epilepsy management."

Ranganathan is already encouraging his patients to take advantage of these technologies. He predicts smartphones will be capable of much more. Already, researchers have shown it is possible to monitor electrical activity in the brain with a headset that sends the electroencephalography (EEG) signal directly to a [smartphone](#). Continuous EEG monitoring could detect the spikes in activity that typically precedes seizures, to alert patients in advance..

The authors say that special sensors integrated into smartphones might allow continuous drug monitoring too. Rather than taking anti-epileptic drugs continuously and suffering from their cognitive side effects, people might take those drugs only when a seizure is coming on.

With almost one percent of people below the age of 20 and three percent of the total population suffering from epilepsy, and 30 percent of those patients refractory to medication, the development and adoption of these apps is of indisputable benefit.

More information: "Application of mobile phones in epilepsy care" *International Journal of Epilepsy*, published by Elsevier. [DOI: 10.1016/j.ijep.2015.02.002](#)

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