

CBD oil may reduce frequency and severity of epileptic seizures

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Leslie Perry, M.D., Jerzy Szaflarski, M.D., Ph.D., and Tyler Gaston, M.D., are among the UAB researchers presenting findings of the CBD oil studies.

Cannabidiol oil, also known as CBD oil, reduces the frequency and severity of seizures in children and adults with severe, intractable epilepsy, according to findings presented by researchers from the University of Alabama at Birmingham at the American Epilepsy Society 70th Annual Meeting.

UAB researchers presented eleven abstracts, or research findings, at the meeting. A key finding was that CBD provided a significant reduction in frequency of seizures for a majority of the [patients](#) in the study, and that approximately two-thirds of patients saw a greater than 50 percent reduction in severity.

"It is encouraging that both frequency and severity of seizures appear to improve in the majority of patients in our study, patients who have limited treatment options," said Jerzy P. Szaflarski, M.D., Ph.D., professor in the Department of Neurology and director of the UAB Epilepsy Center. "Our research adds to the evidence that CBD may

reduce frequency of seizures, but we also found that it appears to decrease the severity of seizures, which is a new finding."

The results were based on an open-label study of 81 patients—42 children and 39 adults—who experienced four or more seizures per month. UAB launched the studies of CBD oil as a treatment for severe, intractable seizures in April 2015. The studies, an adult study at UAB and a pediatric study at Children's of Alabama, were authorized by the Alabama Legislature in 2014 by legislation known as Carly's Law.

After one month of beginning CBD therapy, 68 percent of the patients had experienced a greater than 25 percent reduction in seizure frequency; 58 percent had a greater than 50 percent reduction; 36 percent had a greater than 75 percent reduction and 9 percent were seizure-free. Those results were maintained at three and six months.

To assess seizure severity, researchers led by Jenifer DeWolfe, M.D., associate professor of neurology, used the Chalfont Seizure Severity Scale, a questionnaire given prior to therapy and re-administered at intervals throughout treatment. Fifty-seven patients were followed for three months: 67 percent experienced a more than 50 percent decrease in seizure severity, while 33 percent did not. Of 47 patients followed for six months, 64 percent had a greater than 50 percent decrease in seizure severity and 36 percent did not.

"These are encouraging results, but it is important to note that each patient may respond differently to CBD, and the dose for optimal seizures control varies," said Martina Bebin, M.D., professor of neurology and co-primary investigator of the CBD studies. "There appears to be an optimal CBD dose range where the patient achieves maximum benefit. If outside this CBD dosing range, the [seizure frequency](#) may not improve and may even increase. More research is needed, including

determining why and how CBD helps some people with epilepsy but not others."

Among the related abstracts presented at the AES meetings:

- CBD oil was associated with an improvement in mood, an effect independent of the extent of seizure reduction. Lead author Pongkiat Kankirawatana, M.D., professor of pediatrics, says CBD oil may have overall positive effects on mood, which should be further investigated in patients with epilepsy and other chronic conditions in controlled studies.
- A study led by Szaflarski and Bebin found that the optimum dose in both children and adults was between 20 and 25 mg/kg/day.
- Jane Allendorfer, M.D., assistant professor of neurology, found that CBD, in a selected group of patients with epilepsy who experienced overall improved seizure control, has the potential for positive cognitive effects that are associated with corresponding fMRI signal changes.
- One abstract reports on an interaction between warfarin, a drug used as an anticoagulant, and CBD. This underscores the importance of monitoring appropriate laboratory work in patients receiving CBD oil along with other medications, according to study lead Brannon Vines, M.D., a clinical neurophysiology fellow.
- Significant drug interactions were identified between CBD and commonly-used medications for epilepsy, including clobazam, rufinamide, topiramate, zonisamide and eslicarbazepine. This study, led by neurology fellow Tyler Gaston, M.D., emphasizes the importance of monitoring anti-epilepsy drug levels during treatment with CBD.
- Electrical discharges measured by EEG decreased significantly after initiation and maintenance of CBD, particularly in pediatric patients, according to a study led by Leslie Grayson, M.D., a neurology fellow.
- Using fMRI imaging, Amber Gregory, a graduate student in psychology, showed

that persons with epilepsy showed gains in working memory that were associated with a shift in neural recruitment as examined with functional MRI.

- An abstract aimed at examining associations between social determinants of health, such as age, gender and socioeconomic factors against health status, quality of life and mood states showed that higher age and low income were associated with lower health ratings among epilepsy patients, according to study led Magdalena Szaflarski, Ph.D., assistant professor of sociology.

The studies are designed to test the safety and tolerability of CBD oil in patients with intractable [seizures](#). CBD oil, a derivative of the cannabis plant, is delivered orally as an oily liquid.

The oil used in the studies is produced under stringent requirements of the United States Food and Drug Administration by a licensed pharmaceutical company. It contains only traces of THC, the psychoactive component of marijuana. The process developed by GW Pharmaceuticals guarantees the consistency of the product that is provided to study participants.

Provided by University of Alabama at Birmingham

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