

Ketogenic Diet and Epilepsy

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Epilepsy is a neurological disorder that causes recurring seizures. Seizures happen when there's a sudden burst of electrical activity in the brain, leading to symptoms like muscle spasms, convulsions, and loss of consciousness. While medication is the main way to treat epilepsy, it doesn't work for everyone, and some people have side effects.

The ketogenic diet was first used as a therapy in the 1920s. It's believed to work by reducing the number and severity of seizures. Many studies have shown that it can be effective for both children and adults with epilepsy. Below is some of the relevant research.

1. **The ketogenic diet for the treatment of childhood epilepsy: A randomised controlled trial.** The trial included 145 children aged 2 to 16 years who experienced at least daily seizures (or more than seven seizures per week), had not responded to at least two antiepileptic drugs, and had not previously tried the ketogenic diet. Participants were randomly assigned to either immediately start a ketogenic diet or begin it after a 3-month delay (control group). Early withdrawals were documented, and seizure frequency on the diet was compared to that of the control group after 3 months.

Data from 103 children were included in the analysis: 54 on the ketogenic diet and 49 controls. After 3 months, the diet group showed a significantly lower mean percentage of baseline seizures compared to the control group (62.0% vs. 136.9%, a 75% decrease, 95% CI

42.4–107.4%; $p < 0.0001$). In the diet group, 28 children (38%) experienced more than 50% reduction in seizures compared to four (6%) in the control group ($p < 0.0001$), and five children (7%) in the diet group had more than 90% seizure reduction compared to none in the control group ($p = 0.0582$). The most common side effects reported at the 3-month review were constipation, vomiting, lack of energy, and hunger.

2. **Cognitive and behavioral impact of the ketogenic diet in children and adolescents with refractory epilepsy: A randomized controlled trial.** The ketogenic diet (KD) has become increasingly popular for treating refractory epilepsy in children. It is known to have a positive effect on reducing seizures. This study aimed to objectively evaluate the impact of the KD on cognition and behavior in children and adolescents over the first 4 months of a randomized controlled trial.

Participants were recruited from a specialized epilepsy center and randomly assigned to either the Ketogenic diet group (intervention) or the care-as-usual (CAU) group (control). Follow-up assessments on cognition and behavior were conducted approximately 4 months after the initiation of the KD. These assessments included a combination of parent-reported questionnaires and individual psychological tests for the children.

A total of 50 patients participated in the study, with 28 in the KD group and 22 in the CAU group. The KD group exhibited lower levels of anxious and mood-disturbed behavior and were reported to be more productive. Additionally, cognitive test results indicated an improvement in activation among the KD group.

This study demonstrated that the ketogenic diet had a positive impact on the behavioral and cognitive functioning of children and adolescents with refractory epilepsy. Specifically, individuals in the KD group displayed improved mood and cognitive activation.

Even though we don't fully understand how the ketogenic diet reduces seizures, experts think it might help stabilize the brain's electrical activity, boost the production of calming chemicals in the brain, and lower inflammation.

Following a ketogenic diet can provide many benefits and it is important to check with your healthcare practitioner prior to initiating any new health care regime or practice.

Practitioners trained by the Metabolic Terrain Institute of Health take a scientific approach to working with patients who wish to implement the ketogenic diet as a treatment option. It is essential to consult with a MATC Certified™ Practitioner to properly test, assess and address each patient before and during implementing a ketogenic diet intervention, or at the very least consult with a practitioner or health care provider familiar with your specific state of metabolic health.

References

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2. IJff DM, Postulart D, Lambrechts DAJE, Majoie MHJM, de Kinderen RJA, Hendriksen JGM, Evers SMAA, Aldenkamp AP. Cognitive and behavioral impact of the ketogenic diet in children and adolescents with refractory epilepsy: A randomized controlled trial. *Epilepsy Behav.* 2016 Jul;60:153-157. doi: 10.1016/j.yebeh.2016.04.033. Epub 2016 May 18.