

Low-carb, high-fat diets may reduce seizures in tough-to-treat epilepsy

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

Diets high in fat and low in carbohydrates, such as the ketogenic or modified Atkins diet, may reduce seizures in adults with tough-to-treat epilepsy, according to a review of the research published in the October 29, 2014, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

Epilepsy is a nervous system disorder in which the nerve cells in the brain work abnormally, causing seizures. About 50 million people have epilepsy worldwide, according to the World Health Organization.

"We need new treatments for the 35 percent of people with epilepsy whose seizures are not stopped by medications," said study author Pavel Klein, M.B.,B. Chir., of the Mid-Atlantic Epilepsy and Sleep Center in Bethesda, Md., and a member of the American Academy of Neurology. "The [ketogenic diet](#) is often used in children, but little research has been done on how effective it is in adults."

The ketogenic and modified Atkins diets include items such as bacon, eggs, heavy cream, butter, [leafy green vegetables](#) and fish. The ketogenic [diet](#) consists of a ratio of fat to protein/carbohydrates of three or four to one by weight. The modified Atkins diet has a one-to-one fat to carbohydrate/protein ratio by weight.

Scientists reviewed five studies on the ketogenic diet with a total of 47 people included in the analysis and five studies on the modified Atkins diet with 85 people included.

Researchers found that across all studies, 32 percent of people treated with the ketogenic diet and 29 percent of those treated with the modified Atkins diet experienced a 50 percent or better reduction in their seizures. Nine percent in the ketogenic treatment group and 5 percent in the modified Atkins group had a greater than 90 percent reduction in [seizures](#).

The positive results occurred quickly with both diets, within days to weeks. The effect persisted long-term, but, unlike in children, the results did not continue after participants stopped following the diet. Side effects of both diets were similar and not serious, with weight loss the most common side effect.

Fifty-one percent of the ketogenic diet group and 42 percent of the modified Atkins group stopped the diet before the study was completed.

"Unfortunately, long-term use of these diets is low because they are so limited and complicated. Most people eventually stop the diet because of the culinary and social restrictions," said Klein. "However, these studies show the diets are moderately to very effective as another option for people with [epilepsy](#)."

Provided by American Academy of Neurology

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