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## Modified Atkins Diet Effectively Treats Childhood Seizures- Two-thirds Of Children Benefited

Main Category: [Epilepsy News](#)

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A modified version of a popular low-carbohydrate, high-fat diet is nearly as effective at controlling seizures as the highly restrictive ketogenic diet, Johns Hopkins Children's Center researchers report.

"Our findings suggest relatively good efficacy compared to the ketogenic diet," said Eric Kossoff, M.D., a pediatric neurologist at Johns Hopkins Children's Center. "With 20 patients, our study wasn't large enough to say patients and physicians should replace the proven, but highly restricted ketogenic diet, but the results are encouraging and intriguing."

The common elements in both the ketogenic and Atkins diets are relatively high fat and low carbohydrate foods that alter the body's chemistry. The ketogenic diet mimics some of the effects of starvation, in which the body first uses up glucose and glycogen before burning stored body fat. In the absence of glucose, the body produces ketones, a chemical by-product of fat that can inhibit seizures. Children who remain seizure-free for two years on the ketogenic diet often can resume normal eating without the return of seizures.

The modified Atkins diet is better tolerated by children and may be easier for parents and children to follow, said Kossoff, who presented the study's findings today in Washington, D.C. at a meeting of the American Epilepsy Society.

While the ketogenic diet has proven effective in controlling pediatric epilepsy since its introduction in 1921, it has several drawbacks and side effects. The highly restrictive regimen requires accurate measurement of all foods and liquids to ensure consumption of the proper ratio of fats, carbohydrates and protein necessary to produce ketones. The diet starts with a brief fast and hospital stay during which time families are trained in the rigors of the diet. Side effects can include kidney stones, constipation and slowed growth.

The modified Atkins diet also produces ketones, but requires no restrictions on calories, fluids and protein, and does not require a hospital admission and fast to begin. It also does not require the accurate weighing and measuring of

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foods, which may translate to better compliance with the regimen, researchers concluded.

"The key here is ketosis - the production of ketones - which both diets create," Kossoff said. "This study suggests that for some children, we need not be so restrictive in allowing protein, weighing foods and counting calories. That should make it a little easier for parents and children to do."

The Hopkins study examined 20 children (ages 3 to 18) who were having between 4 and 470 seizures a week and whose illness was unresponsive to drug therapy. The children were put on a regimen that included fewer carbohydrates than the standard Atkins diet, for six months. Of the 16 who completed the study, 13 had a greater than 50 percent improvement in seizures, seven had a greater than 90 percent improvement and four were seizure-free. A third of patients did not benefit from the diet. Side effects overall were low, with one child developing a complication that did not warrant stopping the diet, despite a brief hospitalization. The majority of children gained weight in the study.

Kossoff cautions that parents should not try any diet regimen for epilepsy without supervision and careful medical management by a specialized health care team. He and his colleagues also warn that the newly tested regimen should be seen only as a first step in acquainting families with the rigors of the ketogenic diet. It may also be an option for adolescents and adults, not typically offered the ketogenic diet.

The study was supported by a grant from the Dr. Robert C. Atkins Foundation. Co-investigators include Jane R. McGrogan, RD; Renee M. Bluml, RD; Diana J. Pillas; James E. Rubenstein, M.D.; and Eileen P. Vining, M.D., all of the John M. Freeman Pediatric [Epilepsy](#) Center at Johns Hopkins Children's Center.

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