

What is the Ketogenic Diet?

The ketogenic diet is a recognised and proven therapy for epilepsy. It is essentially a strict diet high in fats and low in carbohydrates. It makes the body burn fat for energy instead of glucose.

When carefully monitored and controlled, the diet can help reduce seizures in two out of three children and may prevent seizures completely in one out of three.

It is a very strict diet and needs to be closely monitored by a dietician and takes a strong commitment from the whole family. It is a serious form of treatment that, like other therapies for epilepsy, has side effects that have to be watched for.

No single mechanism is likely to explain the antiepileptic effects of the ketogenic diet, but they are mostly related to complex metabolic changes in the body associated with the diet.

Following the ketogenic diet requires a team approach – including doctors, nurses, and especially dietitians specifically trained in the management of people on this diet.

How the diet affects the body

Our bodies usually run on energy which we get from glucose in food. Our body can't store large amounts of glucose, and we only have about one day's supply.

Sometimes the diet is commenced by a period of fasting, so our body uses up any stored glucose. What happens then is the body begins to run on energy from our fat supplies. When our body burns fat, it creates molecules called ketones. Scientists have understood that these molecules somehow cause a change in metabolism leading to a strong anticonvulsant effect.

The ketogenic diet keeps this process going. It forces the body to burn fat 24 hours a day by making fat products the primary food that the child is getting.

The diet provides most (80 percent) of its energy from fat. The rest comes from carbohydrates and protein. Each meal has about four times as much fat as protein or carbohydrate.

Who is the diet for?

The ketogenic diet is predominantly used in children with poorly controlled seizures. The diet may help to reduce the number or severity of seizures and can often have positive effects on behaviour.

Starting the diet

This process may differ in various institutions. The diet is started under close medical supervision in hospital. It begins gradually and is increased to the full amount over a 3 to 4-day period. During this time blood sugar and ketone levels are monitored. Some hospitals may use a fasting period. More specific information can be found at the Children's Epilepsy Programme http://www.rch.org.au/neurology/patient_information/ketogenic_diet_-_disclaimer/



How soon does it to work?

It is difficult to predict. The diet may become effective immediately or can take several months. Each child is unique and has different seizure patterns and frequency. However, there is usually some improvement within the first few weeks on the ketogenic diet. Improvement in behaviour will be also seen in some children.

Will medications be stopped?

Medications will continue as normal unless changed by the neurologist. There may be a review of the medications if the diet is successful in controlling the seizures.

Are there any side-effects?

Any beliefs that the diet is "holistic" or "all-natural" are incorrect. The diet is not without side effects. Gastrointestinal complaints are most common and include constipation and worsening of reflux, diarrhoea and abdominal cramps. Weight loss or gain may also occur. Speak to the doctor about various side effects of this diet.

Vitamin supplementation

The diet alone is inadequate in many vitamins and minerals. Supplements will be prescribed for your child while on the ketogenic diet.

Discontinuing the diet

Children, for whom the diet has been effective, usually stay on the diet for about two years. The diet may also be discontinued if the side effects are intolerable, the family does not feel that the diet is worth the effort, or it is difficult to maintain.

Like discontinuing medications, the diet must be gradually weaned with the supervision of your doctor and dietician. Some children remain seizure free after transitioning back to a regular diet.

Other diets

The ketogenic diet can be difficult to follow, or you may want to transition your child to a less structured diet as they get older. Dietary options for epilepsy have expanded in recent years to include the modified Atkins diet and the low-glycemic index treatment diet. The low GI diet does not necessarily cause ketosis and may instead reduce seizures by lowering glucose levels in the blood and possibly in brain cells.

While still restrictive compared to a "normal" diet, these diets are easier to incorporate into normal life and easier to follow when eating out. The scientific evidence for their effectiveness is still in early stages.

Further information:

- EAA Videos - Dr Andrew Bleasel - Diet Therapies for Epilepsy <https://www.epilepsy.org.au/videos/>
- The Charlie Foundation - Set up by Charlies parents whose seizures were successfully controlled by the diet. <http://www.charliefoundation.org/>
- Hans Van der Wiel has developed a CDRom of tasty and palatable recipes to use. It also has a program to assist with the equations of measuring foods. Recommended by other parents. Email Hans jjvanderwiel@ketosoft.com for details.
- Diet therapies for epilepsy <https://www.epilepsy.org.au/wp-content/uploads/2017/06/E360-September-2012-Diet-Therapies3.pdf>
- Ketogenic Diet Resource, includes recipes <http://www.ketogenic-diet-resource.com/epilepsy-diet.html>