

# KETOGENIC & OTHER DIETARY THERAPIES FOR EPILEPSY

## FACT SHEET



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**While medications remain the mainstay of epilepsy treatment, dietary therapies can significantly reduce seizures for some children and adults. In a small number of people, seizures may even stop altogether.**

The ketogenic diet is a recognised and proven therapy for epilepsy. It is high in fat and low in carbohydrates, so the body uses fat as its primary source of fuel, instead of sugar. Along with the traditional ketogenic diet, other options like the modified Atkins diet (MAD) and the low glycemic index diet (LGID) have been introduced to make the diet easier to follow and more flexible.



## Why use dietary therapy?

Dietary therapies are most often considered when:

- Seizures are not controlled with anti-seizure medications.
- Medication side effects are difficult to manage.
- Epilepsy surgery is not suitable or has not worked.

## Who can use dietary therapies?

The ketogenic diet is predominantly used in children with poorly controlled seizures, but it can be used in adults.

Less-restrictive and more-palatable diets such as the Modified Atkins Diet or Low Glycemic Index Diet are usually better options for adults and adolescents.

Dietary therapies may not work for everyone, but they are suitable for some different seizure types and epilepsy syndromes.

These therapies are more than just diet. Nutritional supplements, electrolytes, hydration, and activity levels are also key to obtaining therapeutic levels of ketosis and good nutrition.

**Watch this video from [The Charlie Foundation](#) about the different dietary therapies for epilepsy**

## How does the diet work?

Our body usually uses glucose (a form of sugar) from carbohydrates, found in foods like grains, fruit and vegetables, dairy and legumes, for its energy source.

Chemicals called ketones are made when the body uses fat for energy. This is called ketosis. Following the ketogenic diet, the body mostly uses ketones instead of glucose for its energy source.

It is not exactly clear how the diet works to reduce seizures in some people. It is thought that the ketones somehow cause a change in metabolism, which stabilizes overactive neurons, leading to an antiseizure effect.

## How soon will it work?

It is difficult to predict. The diet may become effective very quickly or take several months. Each person is unique and has different seizure patterns.

However, there is usually some improvement within the first few weeks on the ketogenic diet.

It can also lead to other benefits such as improved mood and behaviour.

# THE KETOGENIC DIET

- The oldest and most researched dietary therapy.
- Very high in fat, very low in carbohydrate, and controlled protein.
- Foods are weighed and measured to ensure the right balance of nutrients.

This diet is effective, but also the most restrictive. It usually requires close supervision by a dietitian and strong commitment from families, as meals must be carefully planned and prepared.

## Are there any side effects?

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. Your dietitian or doctor will explain the potential side effects of this diet.

## Vitamin supplementation

The diet alone is lacking in many vitamins and minerals.

The ketogenic diet provides only small amounts of fruits, vegetables, grains, milk and cheese, so supplementation is essential. Low-carbohydrate multivitamin and mineral supplements should be taken daily. You will be advised what to take by your dietitian or doctor.

## Will medications be weaned?

Your 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.

## Stopping the diet

Children can stay on the diet for about two years. The diet may be discontinued if the side effects are not tolerated, the family does not feel that the diet is worth the effort, or it is too difficult to maintain.

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



**!** These therapies are not “diets” in the everyday sense of the word. They are medical treatments that must be carefully planned and monitored by health professionals.

# OTHER DIETARY THERAPIES FOR EPILEPSY

Regardless of whether the ketogenic diet is working, most people discontinue the diet because of its unpalatable and restrictive features, which make it difficult to follow and maintain.

More recently, new variants of the diet have emerged, including the Modified Atkins diet (MAD), a Low Glycemic Index Diet [LGID].

## Modified Atkins Diet (MAD)



- Less strict than the classic ketogenic diet.
- High in fat but allows more protein and some carbohydrates.
- Foods do not need to be weighed, making it easier to follow at home.

The MAD can be a good option for families who need more flexibility.

This diet aims to provide increased flexibility and palatability and does not require weighing food on a gram scale, or restriction of calories, protein or liquids.

MAD has shown to be effective in the treatment of drug-resistant epilepsy with some studies showing similar effectiveness as the classic ketogenic diet. It has also shown to reduce seizures in some adults with epilepsy as well.

The MAD has been shown to be better tolerated than the classic ketogenic diet, but some typical side effects such as gastrointestinal complaints, elevated blood lipids and weight loss are reported. Beneficial effects have also been reported, such as mood improvement.



## Low Glycaemic Index Treatment (LGIT) for adults and children

- Focuses on eating carbohydrates that have a low glycaemic index (GI)—meaning they release sugar into the blood slowly.
- Carbohydrate intake is higher than the ketogenic or modified Atkins diets
- Meals must include protein and fat to balance the carbohydrate intake.

This approach is less restrictive and can be easier to follow. The LGIT does not necessarily cause ketosis and may instead reduce seizures by lowering glucose levels in the blood and possibly in brain cells. *This diet has not been studied as extensively in people with epilepsy.*

Common side effects include gastrointestinal issues like constipation, nausea, and vomiting, as well as fatigue, lethargy, and headaches.



**While still restrictive, the MAD and LGIT are easier to follow and incorporate into daily life**

## Key points to remember

Some dietary therapies are proven medical treatments for epilepsy, they are not “diets.”

They can reduce seizures in some children and adults when medications have not worked.

Several types exist, ranging from strict (classic ketogenic diet) to more flexible (modified Atkins diet, low GI treatment).

They must always be done under medical supervision to ensure safety and effectiveness.

Commitment and planning are required.

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