EPILEPSY WAIKATO CHARITABLE TRUST
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Fact Sheet 33
Epilepsy and diets

Celiac disease, epilepsy, and the gluten-free diet

Celiac disease, or gluten-sensitive enteropathy, is an immune response in the small intestine to eating gluten, a protein found in wheat, barley, and rye. When gluten is eaten the body overreacts and is unable to properly absorb nutrients in the food which leads to an immune response leading to malnourishment, loss of bone density, miscarriage, infertility, certain cancers, and even to neurological diseases including epilepsy. In fact, celiac disease appears at a significantly higher rate in people living with epilepsy than those of the general population and could therefore be considered as an underlying cause of cryptogenic epilepsy (i.e., where there is no known, or obvious, reason why seizures are occurring). Investigating links between celiac disease and epilepsy becomes especially important if there is a family history of autoimmune disease, gastrointestinal problems, or vitamin deficiency.

Research is being undertaken to understand the relationship between celiac disease and epilepsy and it has been shown that a gluten-free diet may effectively manage epilepsy by reducing seizure frequency, enabling the doses of anti-seizure medications to be reduced, or even stop seizures altogether, especially if the diet is adopted in early childhood.

Before embarking on a gluten-free diet it is essential to be diagnosed with celiac disease and to seek advice from a neurologist and a dietitian.

For more information on the celiac disease:
www.webmd.com/digestive-disorders/celiac-disease/celiac-disease
www.coeliac.org.uk/information-and-support/living-gluten-free/the-gluten-free-diet/

The ketogenic diet and epilepsy

This diet can be trialled on those people living with epilepsy who have tried a number of different anti-seizure medications but have failed to gain seizure control. It is a relatively safe and tolerable dietary treatment for both adults and children.

There are many forms of the ketogenic diet but it is essentially any diet with high fat, adequate protein, and low carbohydrate that forces the body to burn fats for energy instead of glucose, which is found in carbohydrates, such as in sugar, bread, and pasta. When the body uses fat for energy, the liver produces a chemical called ketones and these are able to have an anti-electrical effect on the brain.

Some of the many variants of the ketogenic diet are listed below.

Classical diet: This diet is very strictly measured with a fat to protein and carbohydrate ratio of 4: 1. Ninety percent of calories come from fat with very little protein (6%) and only 4% from carbohydrates. Most of the fats in this diet come from naturally fatty foods including butter, cream, and oils (such as olive and coconut oil).

Medium chain triglyceride (MCT) diet: The MCT diet allows for more carbohydrates and protein to be added in comparison with the classical ketogenic diet.

Modified Atkins diet (MAD) or modified ketogenic diet: This diet is more flexible and would suit older children and adults. The diet uses a high proportion of fats and a strict control of carbohydrates but more protein can be added.

Low glycaemic index treatment (LGIT): The LGIT diet focuses on glucose levels in the blood as well as the amount of carbohydrates eaten. Food is not weighed but approximate portion sizes are used.

To check if the ketogenic diet is producing enough ketones, ketone levels are regularly measured using a blood test or urine stick. Ask your neurologist if the ketogenic diet is suitable for you.

For more information visit:
intechopen.com/online-first/ketogenic-diet-therapies-in-children-and-adults-with-epilepsy
ewct.org.nz/ketogenic-diet-therapies-for-epilepsy/

Balanced diet and epilepsy

A good balanced diet from different food groups helps the body, and brain, to remain healthy. Most of our nutrition and daily calories should come from fresh fruits, fresh vegetables, whole grains, legumes, nuts and lean proteins and with ample sources of B6, B12, and folate.

There are no specific foods that generally trigger seizures but individuals may say that they cannot eat certain foods containing monosodium glutamate (MSG) or artificial sweeteners and colourings. Others will avoid certain foods if they believe them to trigger seizures. Grapefruit juice does not trigger seizures but it can interfere with medication levels associated with the Tegretol brand, and increase the side effects of certain ASMs. Ask your medical professional for advice if these concerns apply to you.

Drinks containing caffeine, such as coffee, tea, and energy drinks, have a stimulating effect on the central nervous system. How this stimulation affects people living with epilepsy and their anti-seizure medications is unclear. Some reports suggest that caffeine can increase the possibility of seizures occurring in some people.

Alcohol can make epilepsy medication less effective or make the side effects of medication worse. You could ask your GP or pharmacist if you are unsure.

Drink plenty of fresh water to avoid dehydration.

The kitchen, with its ovens, burners, and sharp knives is a potentially hazardous area. Adjustments in methods of food preparation, cooking, and clean-up will make the kitchen safer for people with seizures.

Please follow these links to see what food and drinks our bodies require during each of the main stages of life:

a) Infants and toddlers: nutritionfoundation.org.nz/healthy-eating/Infants-and-Toddlers

b) Children: nutritionfoundation.org.nz/healthy-eating/children

c) Teenagers: nutritionfoundation.org.nz/healthy-eating/Teenagers

d) Adults: nutritionfoundation.org.nz/healthy-eating/adults

e) Pregnancy and breastfeeding: nutritionfoundation.org.nz/healthy-eating/pregnancy-and-breastfeeding

f) Older adults: nutritionfoundation.org.nz/healthy-eating/older-adults