



The Ketogenic Diet

Introduction

The ketogenic diet is more than its title suggests - it is NOT a fad diet like many others. It is a medical therapeutic diet that is high in fat, adequate in protein and low in carbohydrate with calorie control. It MUST be managed under the care of a qualified dietitian in partnership with neurologists/medical doctors. It has proven to be a highly effective diet in managing difficult to control epilepsy, as well as metabolic disorders such as GLUT1 deficiency.

History

The diet was initiated in the USA in the 1920's but with the advent of antiseizure medication in the 1930's-1970's, interest in the diet waned. The 1990's, however, saw a resurgence of interest in the diet. In the 1970's the Mean Chain Triglyceride (MCT) version of the diet was also introduced.

Forms of the Diet

- Classical - uses "normal" foodstuff - fat sources of butter/oil/cream, meat/fish/eggs for protein and low carbohydrate vegetables and fruit.
- MCT - Uses medium chain triglyceride oil (e.g. refined coconut oil) which enhances ketosis and allows for higher carbohydrate intake. The MCT diet has some tolerance issues at times and a modified MCT format is available.
- Modified Ketogenic Diet (or Modified Atkins) - uses a set amount of carbohydrates per day with liberal unrestricted amounts of fatty foods, protein & calories.
- Low Glycaemic Index Treatment –uses a restricted amount *and type* of carbohydrates eaten and once again liberal in fatty foods.

Ketogenic dietary therapies can be administered as an oral diet, as a bottle feed, or tube fed and specific ketogenic formulas and products are available.



How the Diet Works

There is much debate in this area! The diet appears to "mimic starvation" by using fat as an alternative fuel source for the body, producing ketones. These ketones may then have an anti-seizure effect.

Following ketogenic diet initiation, the hope is for a patient to become seizure free and reduce/remove any anti-seizure medication. This DOES happen for some, but there are also other degrees of success on the diet:

- Reduction in number of and intensity of seizures
- Reduction in medication use and their subsequent side effects
- Increased alertness
- Improvement in behavioural problems
- Improvement in learning ability
- QUALITY OF LIFE!

Common Concerns and Fears

Arguments against using the diet usually consist of the following:

- ***"The diet is difficult"***

It depends what is meant by "difficult" – It is difficult to watch your child or loved one experience seizures, suffer the side effects of medication, or you may feel hopeless in the fight against epilepsy. Spending extra time in the kitchen on ketogenic diet meal preparation and diet administration may seem daunting. Being actively involved in treatment while seeing benefits of the diet may not be as difficult once put into action.

For adults suffering reduced quality of life as a result of seizure and medication side effects, the ketogenic diet may offer increased social opportunities, and freedom to work or drive a vehicle. It may be difficult as an adult to change dietary habits, but giving the ketogenic diet a trial of 3 to 6 months helps ease the transition, provides time for adjusting the diet and seeing benefits.

- ***"It is unpalatable"***

ALL forms of ketogenic dietary therapies are high fat, adequate protein and low in carbohydrate. As much as possible we work from the usual meals



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made at home using seasonings and ingredients that work with the ketogenic diet prescribed. In some instances, we do have to change some of the home meal ingredients to make it more 'ketogenic'. There many good ketogenic recipes and cookbooks available in addition to the Matthew's Friends website (*please make sure you work with your dietitian to adapt the recipes for your own dietetic prescription*).

- ***“It Won't Work for Everyone”***

Unfortunately, the ketogenic diet doesn't work for everyone, but it does have a good success rate for drug resistant epilepsies, as good as any new anti-epileptic drug that is currently on the market. Medications, surgery, or Vagus Nerve Stimulation will also not work for everyone. When 2 medications have failed, the chance of a 3rd working is reduced to 12% and a 4th is then reduced to 5%. We can usually tell within 3 months whether a ketogenic dietary therapy is going to be helpful or not.

- ***“The positive effects may not last”***

Often this is not the case. If the diet's positive effects suddenly change or are reduced, the diet prescription may need fine tuning and your dietitian will offer expert advice on this as you go along. *Breakthrough seizures can be treated* by changing the ratio, the calories, the timing/size of meals/snacks, changing the diet format as well as drug weaning.

- ***“The diet won't work for adults”***

There is published evidence stretching back to the 1930's and recent international experience showing that diet manipulation can have an impact on seizures and associated symptoms in adults. It is suggested that approximately 40-50% of adults on supervised ketogenic diet therapy will achieve a 50% reduction in seizures; some benefiting more or less than this.

Other less quantifiable benefits commonly reported are:

- An improvement in energy levels and general 'zest for life'
- A shorter hangover time after seizures
- An improved clarity of thought and ability to make decisions
- A feeling of gaining some control over life that, in time, leads to improved mental health

Please note that any type of Ketogenic Dietary Therapy should only be undertaken with strict medical supervision by an experienced team.

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Please note:

As development of these dietary therapies are continuously being updated and new information and research being carried out, please visit our website or contact our office to receive further and more detailed information on these types of therapies. This booklet offers a brief guide to Ketogenic Dietary Therapies and the work that Matthew's Friends carries out.

If you have any questions please connect with your ketogenic diet team or Matthew's Friends Canada. Other publications are available to support you. Feel free to contact us:

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