

## Frequently asked questions about Low Glycemic Index Treatment (LGIT)

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### **1. What is the Low Glycemic Index Treatment (LGIT)?**

The LGIT is a special high fat diet similar to the ketogenic diet that is used for difficult to treat seizures. It focuses on both the type of carbohydrate, low glycemic index, as well as the amount of carbohydrate based on portion sizes and household measurements. The glycemic index (GI) is a measure of the effect of carbohydrates on blood sugar levels. When carbohydrates are digested, they release glucose into the bloodstream. Carbohydrates that digest rapidly have a high GI. Carbohydrates that are digested slowly have a low GI. Foods are rated based on their GI values ranging from zero to 100. The LGIT includes foods that have a GI of 50 or lower. In addition to the GI, the digestion of a carbohydrate food is slowed by foods that are eaten at the same time that contain either fat or fiber. Therefore, meals are balanced with sources of fat, protein and a low glycemic index carbohydrate.

### **2. Who developed this diet?**

The LGIT was developed in 2002 by Dr. Elizabeth Thiele and dietitian Heidi Pfeifer at Massachusetts General Hospital in Boston, MA. They wanted to offer an option of a more liberal diet in addition to the classic ketogenic diet to their patients. The first publication of the treatment's efficacy was reported in 2005.

### **3. How effective is the diet at controlling or eliminating seizures?**

In the most recent publication looking at the efficacy, safety and tolerability of those patients treated with the LGIT, after 6 months, 34% had a >90% reduction, 20% had 50-90% reduction, 20% had <50 % reduction and 26% had no change or increase in seizures. Although the LGIT is less restrictive than the ketogenic diet, about ¼ of families who have used this treatment report that it is too difficult to follow long-term.

### **4. How is the LGIT diet designed?**

A calorie level is determined by a dietitian for each child based on their age, activity level and current calorie intake. The dietitian devises nutrition goals that meet the required fat, protein and carbohydrate for each meal. A typical meal includes a carbohydrate source such as small amount of fruit or vegetable, and/ or low glycemic carbohydrate bread or pasta, a protein rich food such as meat, fish, poultry or cheese, and a source of fat such as heavy cream and butter or vegetable oil. Since the LGIT limits the carbohydrates that are consumed vitamin and

mineral intake is decreased and therefore supplements are recommended based on individual needs to prevent a nutritional deficiency.

### **5. How do you begin the LGIT diet?**

The diet is started under the guidance of a dietitian and neurologist familiar with the use of dietary therapy of epilepsy. The education and initiation is done following an outpatient visit. Depending on the patient it can be gradually introduced or goals can be started on day one. Since the LGIT is not intended to place the individual into a metabolic state of ketosis, it is less likely to cause problems like low blood sugar or nausea.

### **6. Can the diet be used for children with feeding tubes?**

The LGIT is not used for children who receive 100% of their nutrition through tube feedings. They are initiated on the ketogenic diet as the special ketogenic formulas are designed for this purpose and are optimal for individuals with feeding tubes. These formulas are based on the ratio system (4:1, 3:1) and are considered low glycemic due to their low-carbohydrate, high-fat composition.

### **7. Are there any special tests that are needed before starting the diet?**

There are blood tests that may be needed to determine if the diet is safe for your child. These include metabolic tests to rule-out fatty acid disorders or a carnitine deficiency. Laboratory surveillance is recommended during LGIT similar to the ketogenic diet and are done at baseline and their follow up clinic visits at intervals of 1 month post diet initiation and then every three months.

To hear a personal experience of the use of the LGIT, copy and paste this link into your browser, then click on Rose. <http://www.massgeneral.org/childhoodepilepsy/>