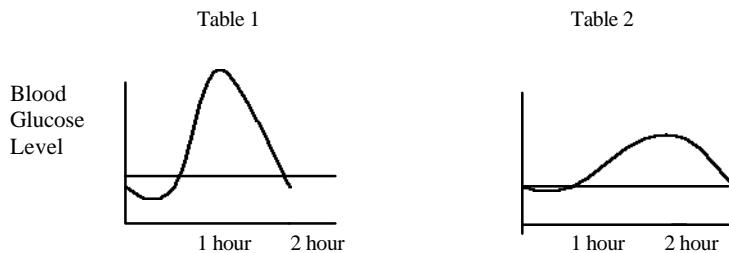


## GI (Glycaemic Index)

### What is GI?

The G.I. of a food is a measure of how quickly the carbohydrate in the food is digested and absorbed into the bloodstream. The carbohydrate foods that break down and are absorbed quickly after eating have a high GI factor (see table 1), and those that break down and digested slowly have a low GI factor (see table 2).



The “GI” factor has turned some widely held beliefs upside down.

It was once thought that “starchy foods” such as bread and potato were digested slowly, while sugar and sweet foods such as ice cream and cakes should be avoided as they are digested quickly, causing a fast rise in blood glucose. However, research into the effect of different carbohydrate foods on blood glucose levels has shown that the opposite is true. In fact, research has found that subjects who ate muffins and cakes with sugar added had a lower blood glucose response than those who ate muffins and cakes without sugar.

It is not just the sugar content in food that determines the GI value, but other factors, such as: 1) the fat content, 2) processing method, 3) the type of fibre and, 4) the other foods eaten with it, that can slow down or speed up digestion and absorption of glucose into the blood stream. Usually we eat a combination of carbohydrate foods, like baked beans on toast, sandwiches, cereal and toast, potato and corn etc. Studies show that when a food with a high GI factor is combined with a food with a low GI factor, the complete meal has an intermediate GI factor.

In summary, people with diabetes do not have to eliminate sugar from their diet completely, but need to take into account the overall quality of their diet to ensure that their meals are well balanced, low in fat (particularly saturated fats) and high in fibre. Foods containing some added sugar can be included as part of a healthy eating plan.

But, it should be noted that a food is not good or bad on the basis of its GI. All high carbohydrate – low fat foods are good, some are better and some are best (the low GI choices).

### Why is the “GI” factor so important?

The slow digestion and gradual rise and fall in blood glucose levels after a low “GI” food helps control blood glucose levels in people with diabetes by reducing the secretion of the hormone insulin over the course of the day. Insulin, in excess, is associated with: 1) weight gain, 2) elevated blood fat profiles, 3) high blood pressure and, 4) increased risk of heart attack. Slower digestion and absorption using low GI foods also delays hunger pangs and in this way promotes weight loss.

In summary, low “GI” foods produce not only lower blood glucose levels in people with diabetes but also lower insulin levels, thereby reducing the risk of heart disease and promoting weight loss, if overweight.

For endurance sports, lower “GI” foods are recommended before a prolonged, strenuous event as they are more sustaining. After the race however, foods with a high “GI” have been shown to replenish energy stores faster.

### **How to switch to low “GI foods”?**

USE:-

- Breakfast cereals based on wheat bran, barley and oats;
- “Grainy” breads made with whole seeds;
- Pasta and rice in place of potatoes
- Vinegar and lemon juice dressings.

Eating a low GI diet still means eating a variety of foods. Possibly a wider variety than you are already eating.

### **Suggestions for planning your meals**

#### *Breakfast*

- Fruit or fruit juice
- High fibre breakfast cereal + low fat milk or yoghurt
- Soy or multigrain or wholemeal toast + thin polyunsaturated margarine

#### *Lunch*

- Base your light meal on carbohydrate foods such as:  
Wholemeal or grain breads (sandwiches) or pasta or basmati rice, sweet corn, or legumes (eg: baked beans).
- You might add a little meat, cheese, egg or fish in small quantities.
- Fill it out with vegetables
- Fruit

#### *Dinner*

- Team a spaghetti Bolognese with a green salad.
- Wrap a fish fillet dressed with herbs, tomato, onion in foil and bake. Serve with mixed vegetables or salad and herbed Basmati rice,
- Make lasagna – vegetable or beef with salad.
- Grill a steak and serve with a trio of low GI vegetables – new potatoes, sweet corn and peas.
- Spicy lentils and Basmati rice.
- Stir-fry chicken, meat or fish with mixed green vegetables. Serve with Basmati rice or Chinese noodles.

- Chicken casserole cooked with vegetables and butter beans.
- Cook with spinach and ricotta tortellini with garden salad vegetables.
- Barbeque chicken, steam sweet corn cobs and toss salad together.
- Taco mix of half mince and half red beans served in a soft tortilla bread.

#### *Desserts*

- Fruit based with low fat dairy foods such as: custard, ice creams and yoghurt.

#### **References**

Bran Miller J. and Foster-Powell K. Brochure produced by Juvenile Diabetes Foundation and Kellogg's: "The Glycaemic Index".

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