

What is the Glycemic Index?

Not all carbohydrate foods are created equal, in fact they behave quite differently in our bodies. The glycemic index or GI describes this difference by ranking carbohydrates according to their effect on our blood glucose levels. Choosing low GI carbs - the ones that produce only small fluctuations in our blood glucose and insulin levels - is the secret to long-term health reducing your risk of heart disease and diabetes and is the key to sustainable weight loss.

What are the Benefits of the Glycemic Index?

Eating a lot of high GI foods can be detrimental to your health because it pushes your body to extremes. This is especially true if you are overweight and sedentary. Switching to eating mainly low GI carbs that slowly trickle glucose into your blood stream keeps your energy levels balanced and means you will feel fuller for longer between meals.

- Low GI diets help people lose and control weight
- Low GI diets increase the body's sensitivity to insulin
- Low GI carbs improve diabetes control
- Low GI carbs reduce the risk of heart disease
- Low GI carbs reduce blood cholesterol levels
- Low GI carbs can help you manage the symptoms of PCOS
- Low GI carbs reduce hunger and keep you fuller for longer
- Low GI carbs prolong physical endurance
- High GI carbs help re-fuel carbohydrate stores after exercise

How to Switch to a Low GI Diet

The basic technique for eating the low GI way is simply a "this for that" approach - ie, swapping high GI carbs for low GI carbs. You don't need to count numbers or do any sort of mental arithmetic to make sure you are eating a healthy, low GI diet.

- Use breakfast cereals based on oats, barley and bran
- Use breads with whole grains, stone-ground flour, sour dough
- Reduce the amount of potatoes you eat
- Enjoy all other types of fruit and vegetables
- Use Basmati or Doongara rice
- Enjoy pasta, noodles, quinoa
- Eat plenty of salad vegetables with a vinaigrette dressing

How is the GI measured?

The glycemic index (GI) is a measure of the power of foods (or specifically the carbohydrate in a food) to raise blood sugar (glucose) levels after being eaten. The GI values of foods must be measured using valid scientific methods. It cannot be guessed by looking at the composition of

the food. Currently, only a few nutrition research groups around the world provide a legitimate testing service. Professor Jennie Brand-Miller at the Human Nutrition Unit, Sydney University has been at the forefront of glycemic index research for over a decade, and her research group has determined the GI values of more than 400 foods.

The GI value of a food is determined by feeding 10 or more healthy people a portion of the food containing 50 grams of digestible (available) carbohydrate and then measuring the effect on their blood glucose levels over the next two hours. For each person, the area under their two-hour blood glucose response (glucose AUC) for this food is then measured. On another occasion, the same 10 people consume an equal-carbohydrate portion of glucose sugar (the reference food) and their two-hour blood glucose response is also measured. A GI value for the test food is then calculated for each person by dividing their glucose AUC for the test food by their glucose AUC for the reference food. The final GI value for the test food is the average GI value for the 10 people.

Foods with a high GI score contain rapidly digested carbohydrate, which produces a large rapid rise and fall in the level of blood glucose. In contrast, foods with a low GI score contain slowly digested carbohydrate, which produces a gradual, relatively low rise in the level of blood glucose.

How much food is required to measure GI values?

SUGiRS requires enough of each product to feed 10 people each a portion of the product containing 50 grams of digestible carbohydrate. An additional 15% is also required to cover any potential wastage or repeated test sessions. If you provide us with the nutrient composition of your products, we can tell you exactly how much we would require for GI testing. For liquid foods and beverages, we also need to know how many grams = 100 mL of the product. For many products, the total carbohydrate content listed on the product's label includes both the digestible carbohydrate and the dietary fibre content of the product. If this is the case, the digestible carbohydrate content of the product can be estimated by deducting the dietary fibre content from the total carbohydrate content. If required, SUGiRS can measure the digestible carbohydrate content of any product for an additional \$250.

How long does it take to measure GI values of foods?

On average, it takes approximately one week to recruit 10 healthy people to participate in a study and then one week to test each product and up to another week to complete a detailed report of the study. However, as soon as GI values are finalized, they can be emailed or faxed to clients. For larger studies and those involving the measurement of insulin values, an additional one or two weeks may be required to complete all of the biochemical analyses. However, we try to complete each project at the fastest rate possible and usually complete a study earlier than expected. Determining the GI values of foods involves the collection of blood samples from the study participants, so we have to allow time for the participants to recover from the sampling between sessions.