

What is the difference between glycemic index and glycemic load

Understanding the **difference between glycemic index and glycemic load** is important for those who need to lose weight. But first we need to understand the definition of the two terms.

Definition of Glycemic Index: The glycemic index, referred to as the 'GI' is a calculation of how specific carbohydrate rich foods affect blood sugar levels over a period of 2 hours. Foods containing simple carbohydrates that the digestive system is able to break down faster have the highest glycemic index. Complex carbohydrates burn slower and therefore have a lower GI.

Definition of Glycemic load: The glycemic load (GL) is a ranking system for carbohydrate content in food portions based on their glycemic index (GI) and portion size. It can be calculated from an average portion, meal, or even a day's worth of that particular food.

Scientists calculate glycemic index by providing 10 individuals a 50 gram serve of the food to be tested then measuring their blood glucose response over the next two hours. This response is compared to the blood sugar response to glucose and averaged across the 10 test subjects to calculate a relative index value.

The problem with this approach is that in real life, portion size varies from person to person. Not everyone will consume a 50 gram portion! So glycemic index doesn't provide an accurate measure of the effect of any given food on blood sugar levels.

For this reason, the glycemic load is considered to provide a more accurate measure than the glycemic index alone since it takes portion size into account.

Calculating the glycemic load of a food is fairly straightforward if you know the glycemic index of that food. You can find the glycemic index for a wide range of foods at [The glycemic index](#). Note that this is an Australian website connected with the University of NSW so some foods may be listed under unfamiliar names. However, the website does provide the most comprehensive listing of GI values along with GL values. Sometimes you can find the GI value of a food listed in the nutritional data table. I believe that over time this will become more common.

The metric formula to calculate the glycemic load of food is: GI value x usable carb content (in grams), divided by 100.

The imperial (UK and US) formula to calculate the glycemic load of food is: GI value x usable carb content (in oz), divided by 100 x 28.4. Note that this figure isn't exact since the original formula was created in metric but it certainly provides a reasonably accurate indication.

Say for example you have two slices of white bread made from wheat flour. The glycemic index of a 30 gram slice of bread is 69. Nobody eats a single slice of bread so we need to calculate it according to two slices. The usable carbohydrate content of one slice of white bread is 14 grams (15 grams minus 1 gram of dietary fiber). Therefore, to calculate the glycemic load for two slices of bread the sum is:

Metric: $(GI)69 \times (Carbs)28 / 100 = 19.32$

Imperial: $(GI)69 \times (Carbs)0.99 / 100 \times 28.4 = 19.40$

The ranges for glycemic index are

Low GI = 55 or less

Medium GI = 56-69

High GI = 70 or more

The ranges for glycemic load are

Low GL = 10 or less

Medium GL = 11-19

High GL = 20 or more

Okay, lets compare the glycemic load of different types of bread:

Two slices of white bread have a GL of 19

Two slices of whole wheat bread have a GL of 15

Two slices of multi grain bread have a GL of 10

As you can see from this, the glycemic load of two slices of white bread squeezes into the medium glycemic load range. If you consume four slices per meal the figure increases to 38 which makes it high GL. On the other hand, the glycemic load of multi grain bread is barely half that of white bread so four slices still has an acceptable glycemic load. Remember, the higher the dietary fiber content the lower the glycemic load.

But why should we consume low GL foods? Foods with a high GL tend to cause a surge in blood sugar levels followed by an equally rapid drop which triggers appetite. If the energy generated is not required it can be converted to fat storage. In diabetics this can cause dangerous fluctuations in blood sugar levels. Low GL foods do not cause this surge, take longer to digest, provide lasting energy and satisfy the hunger for longer which assists with weight loss.

Understanding this concept is particularly important for individuals who suffer from diabetes. But those who are trying to lose weight should also understand the difference between glycemic index and glycemic load since low GI foods satisfy hunger for longer which fights food cravings while dieting.

You can also find this article published on [What is the difference between glycemic index and glycemic load](#), and on the tag pages [Nutrition For Weight Loss](#).