

The GI lowdown



In the first of a two-part series, **Wendy Martinson** looks at the glycaemic index and how it applies to rowing

The amount of carbohydrate in a rower's diet obviously needs to be sufficient to fuel training. But consideration should also be given to the types of carbohydrate consumed as the choices made can have implications for overall health as well as rowing performance.

Here, the concept of glycaemic index can be applied but it is important that it is not taken to the extreme as in some situations any type of carbohydrate is better than too little or no carbohydrate.

What is the glycaemic index?

When we eat carbohydrate rich foods they are broken down into smaller units and ultimately converted to, and absorbed into, the bloodstream as glucose. As blood glucose levels rise, insulin is produced by the pancreas which increases the uptake of

test food that provides 10-50g of available carbohydrate to 10 subjects, and then measuring its effect on blood glucose levels over two hours. All foods are compared to a reference food, glucose, which has a figure of 100. A GI of 70 will mean that the food tested raised the blood glucose levels to around 70% of pure glucose.

$$GI = \frac{\text{Blood glucose after test food}}{\text{Blood glucose after reference food}} \times 100$$

For example to test boiled potatoes, the subjects would be given 250g potatoes, which supplies 50g carbohydrate.

The measurement of the GI of a food is not related to portion size. For example parsnips have a high GI but 400g parsnips (to provide 50g carbohydrate) would have been used for the measurement. The

“Eating foods that cause a slower rise in blood glucose can help maintain energy and concentration levels”

glucose by the cells of the body. The rate at which a carbohydrate food increases blood glucose levels can be measured, and this is called the glycaemic index.

The glycaemic index (GI) classification is described as a ranking of foods based on their effect on blood glucose levels compared to a reference food – glucose. In short, it reflects the digestion and absorption of a carbohydrate rich food and how quickly they raise blood glucose levels after eating. Various factors affect the GI value of a food including the type of processing, cooking and type of starch present. The presence of fat or protein will reduce the GI value of a food as it empties more slowly from the stomach. Foods such as chocolate therefore have a low GI value due to the fat content.

The GI is measured by giving a portion of

average portion size of parsnips is 65g, which will contain about 8g carbohydrate, and so this amount will not have a large glycaemic effect. Thus a useful extension of the GI is the glycaemic load (GL) as it takes into consideration carbohydrate content and portion sizes of foods.

GI ranges

- **Low GI foods – below 55**
- **Intermediate GI foods – 56-69**
- **High GI foods – more than 70**

Potential health benefits of eating lower GI foods

Eating a diet containing a higher proportion of lower GI foods may offer positive health benefits such as reducing the risk of type 2 diabetes and coronary heart disease, and may also assist in weight management and



Cereal and fruit are a low GI food that are also lower in fat

body fat reduction. However some low GI foods are high in fat and so these potential health benefits are mainly related to foods rich in dietary fibre such as wholegrain cereals, pulses, fruits and vegetables that are naturally lower in fat.

One common myth is that eating sugar can cause diabetes. This is not the case, however becoming overweight by eating a diet rich in fatty foods, many of which may also contain sugar, can increase the risk of developing type 2 diabetes (Diabetes UK). Clearly most rowers are not overweight so this risk is reduced. However, eating a healthy diet containing some of the low GI foods mentioned above will ensure a good intake of dietary fibre, vitamins and minerals that are vital to health as well as performance.

Eating foods that cause a slower rise in blood glucose can help delay hunger pangs and help maintain energy and concentration levels. The effect of a low GI food can be carried over to the next meal, but it is sensible to try to eat one low GI food per meal. The beneficial effects of lower GI foods on weight management may be useful for those rowers trying to reduce weight and body fat levels ready for the competition season. ■

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