

## Glycemic Index for Athletes

For an athlete there are times when high GI foods are desirable and times when low GI foods are desirable. For optimal performance an athlete needs to know which foods have high and low GI factors and when it is best to eat them.

Every day food patterns are more important than what you eat the night before a major sporting event. Eating a high carbohydrate (CHO) meal the night before an event will NOT compensate for poor eating habits in the previous days.

### **Pre Competition Carbohydrates**

- Pre – Competition meals need to be high in CHO, low in fats with moderate protein. Eg baked beans
- It can take 2-3 hours for the digestive tract to process food into fuel.
- Low GI foods are best before competition or training. This is 2-3 hours before the activity.
- Always select foods that don't cause gastrointestinal discomfort ie don't introduce new foods, keep fibre down to a minimum and avoid fatty, spicy or high sugar foods.
- Aim at between 1-2 grams of CHO per kilo of body weight.

### **CHO During the Competition**

- This depends on the length of the event. Generally events lasting longer than 90mins need extra CHO intake.
- If there is more than one event over several hours ie heats, semis and finals then CHO consumption can be critical.
- Taking CHO on the run cannot fully compensate for low levels of muscle glycogen at the beginning of an event therefore you must start off with full glycogen stores.
- At this stage high GI foods should be used to rapidly release glucose into the bloodstream so that muscles have glucose available for oxidation ie towards the end when fatigue sets in.
- Liquid foods are best as they generally cause less discomfort. Sports drinks are good as they also replace water and electrolytes as well.
- Most sports drinks have a GI of between 70-80 so sip a 4-10% CHO drink at a rate of 600mls –1000mls per hour of exercise. Alternatives to sports drinks are white bread sandwiches, jelly beans or honey.

### **Post Exercise CHO**

- This is the most important time to consume CHO for **glycogen storage**. It's the level of glycogen in the muscles before you start exercise that determines how well you perform.
- The goal is to reach the highest level of glycogen between finishing one session of training/competition and the start of another.
- Glycogen synthesis after exercise occurs in two phases: **stage one** is a very rapid rate for the first two hours. **Stage two** is a much slower rate for the next 24 hours. Therefore its important to begin consuming

CHO the first 30mins after finishing exercise. **If CHO intake is delayed, so is full recovery.**

- High GI foods are best straight after exercise ie white bread, sports drink, potatoes, jelly beans. Aim to consume 1 gram CHO per 1kg of body weight of high GI foods during the first two hours after activity.
- After the first two hours you need to switch to low/intermediate GI foods. Aim for 1gm of CHO per kg every two hours for the next 22 hours.

## **SPORTS DRINKS**

A CHO replacement drink is an ideal way to begin glycogen recovery. Choose one which has 5-10% CHO as drinks with higher amounts will slow down absorption. Most drinks have a mixture of CHO. The most important are **Glucose** – which is used to replace muscle glycogen, and **Fructose** – which will help to replace liver glycogen. A good eg is endura.

## **RECOVERY NUTRITION**

Glycogen replacement can take up to one week for some individuals after a lengthy event i.e. a marathon. Others may deplete fuel stores over several days of intense training or competition.

The recovery diet must replace glycogen used in training and competition. It can take as little as 24 hours or up to 2 days.

To maintain glycogen synthesis athletes have to maintain a steady flow of CHO'S across the intestinal wall. Glycogen flow is reduced if this flow is interrupted.

It's a good idea to eat 5-6 meals throughout the day to maintain glycogen storage!