

## CARBOHYDRATES IN

### Pre-exercise

Try to avoid high fibre/ low GI choices to prevent discomfort

Intake of a low-mod GI carbohydrate meal at least 1 hour prior to exercise may delay fatigue by supplying large amounts of carbohydrate to the muscle late into the exercise. A carbohydrate intake of 1-4 g/kg body weight is recommended 1-4 hours prior to exercise. It is important to consider the fibre content as some athletes are prone to loose bowel motions with the extra fibre usually found in low GI foods.

- Examples**
- Pasta
  - Basmati or Doongara rice
  - Mixed grain bread
  - Porridge
  - Milk



### During exercise

Carbohydrate intake is recommended for intense 'stop n start' sports or prolonged exercise over 60 minutes. A high GI option will help to optimise performance and delay fatigue by rapidly supplying fuel to the working muscles. Aim to consume 30-60 g of carbohydrates every hour of exercise.



- Examples**
- Sports drinks
  - Sports gels
  - Jelly beans
  - Breakfast bar

### Post-exercise

To replenish glycogen stores, carbohydrate intake of 1 g/kg body weight (e.g. 70g CHO in a 70kg athlete) is recommended within the first 30-60 minutes after exercise, as glycogen storage is accelerated and therefore enhances recovery. A high GI food is best as it is absorbed more rapidly and will increase insulin level, which is responsible for the uptake of glucose into the muscle to be stored as glycogen. Some athletes prefer a high carbohydrate drink post-exercise as hard training may decrease appetite and ability to eat.



- Examples**
- Sports drinks
  - Sports gels
  - Rice cakes
  - White bread + honey

The consumption of food and fluids before and during exercise may not be as well tolerated in some athletes compared to others. Athletes may be sensitive to carbohydrate intake which may result in stomach discomfort and a reduction in performance. It is vital that you experiment with various food and fluid option in training to fine-tune your own individual competition strategies.



Information included in this document was obtained from Sports Dietitians Australia and the Australian Institute of Sport

## CARBOHYDRATES IN TRAINING

Carbohydrates (CHO) are the main source of fuel for the body and the brain. Excess carbohydrate is stored as glycogen in your liver and muscle tissues and is called upon during prolonged exercise. Inadequate carbohydrate intake may lead to early fatigue, lack of concentration, poor recovery and even headaches and nausea. Including nutritious carbohydrates within the diet will also supply many other essential vitamins and minerals, as well as fiber.



### Carbohydrate requirements

CHO g/kg/day	Activity level
5-7	General activity - up to 60 min mod-intensity or unlimited low-intensity
7-10	Endurance athletes - prolonged daily training (1-3 hrs mod-high intensity),
10-12	Extremely intense & prolonged exercise (5-6 hrs mod-high intensity), or

\* Carbohydrate loading is a strategy involving changes to training and nutrition that can maximise muscle glycogen stores prior to endurance competition.

### CARBOHYDRATE RICH FOODS

50-60g CHO	60-70g CHO	70-80g CHO
600mL Powerade™ (46) 1 x 15g Fruit bar (11g)	600mL Powerade™ (46g) 150g Tub Fruche™ (20g)	600mL Powerade™ (46g) 1 x Banana (25g)
30g Cornflakes™ (25g) 150mL Light milk (8g) 140g Diced fruit (18g)	30g/2 Weet Bix™ (20g) 150mL Light milk (8g) 1 x Banana (25g)	60g/4 Weet Bix™ (40g) 300mL Light milk (16g) 1/2 x Banana (12g)
1 x Banana sandwich - 2 slices white bread (30g) - 1 x banana (25g)	600mL Gatorade™ (36g) 1 x Coles muesli bar™ (21g) 1/2 x Banana (12g)	250mL Sustagen™ (35g) 1 x K-time muffin bar™ (30g) 1 x 15g Fruit bar (11g)

### GI and performance

The GI (glycaemic index) ranks carbohydrate foods on their effect on blood glucose levels. Ingestion of a high GI food causes a sharp rise and fall in blood glucose levels following consumption. Carbohydrate foods which cause a slower and more moderate rise and fall have a low GI, resulting in a sustained energy supply. See the next page for best strategies in training

Low GI = 55 and under  
Moderate GI = 56-69  
High GI = 70 and over