



## FACT SHEET EATING & DRINKING BEFORE SPORT

### WHY SHOULD I EAT AND DRINK BEFORE SPORT?

So, you have set yourself a goal... A charity Fun Run? Perhaps your first Marathon? Looking to improve your training stamina a performance? The meal or snack eaten before training or your major event provides a chance to tweak your ability to meet the nutritional goals ahead. The importance of this meal can range from a crucial top up of fuel and fluid levels before a nutritionally challenging event, to a simple psychological boost from favourite menu choices or eating rituals. In all cases, your food and drink choices should leave you feeling comfortable and confident to start the event. You want to be able to perform at your best without experiencing either hunger or gut discomfort/upsets, and allow all of that hard work to pay off!

A major item on the checklist for many endurance sports is to have adequate fuel in the form of carbohydrate (glycogen) stores in the muscles and liver. Glycogen is a critical fuel in the muscle, but the smaller liver reserve is also important. Liver glycogen helps to maintain blood glucose levels, and becomes very important during prolonged workouts or endurance events. The normal overnight fast (during sleep) will lower liver glycogen stores, which in turn can reduce your endurance performance.

Carbohydrate requirements are specific to your activity levels and energy budget. If you are exercising a couple of times per week, it will be easy to stock up glycogen levels for each session. However, if you are training or competing each day, particularly if you do more than one session, it can be challenging to refuel from one bout to the next. Carbohydrate foods eaten in the last hours before training/event will play a significant role in continuing to top up muscle glycogen stores. Eating a carbohydrate rich meal or snack before sport also helps to maintain normal blood glucose levels, enhancing both physical and mental performance.

Dehydration in sport can reduce both your pleasure and performance, especially in hot conditions. (See Fact Sheets for more information on Fluids in Sports and Sports Drinks.) In most situations, sweat loss during exercise is much greater than the amount of fluid an athlete can replace during a session. It makes sense to start an exercise session well-hydrated to minimise the fluid deficit that will inevitably occur. However, there is no need to drink excessive amounts of fluid in the lead up to exercise – this can lead to hyponatraemia (low blood salt levels) during exercise.

### WHAT SHOULD I EAT BEFORE SPORT?

As a guide the choice of meal, snack and fluids should:

- Be easy to digest;
- Be rich in carbohydrates for fuel;
- Be low in fat;
- Provide adequate amounts of fluids; and
- Include foods and fluids that are familiar and enjoyable.

Your menu should be specific to your training or competition needs, and be based on foods and fluids you know will be well tolerated.

Experimenting with your competition plan during training is highly recommended. Trying new foods or fluids on the day of an important competition or event is unwise. A favourite pre-event meal can be a great confidence booster and will assist in getting you “in the zone” and ready to go!

### STOMACH UPSET

Individuals who are at risk of stomach upsets and runner’s diarrhoea may find it difficult to eat solid food before exercise. Reduced blood flow to the gut, dehydration and being nervous may all cause stomach upset. These individuals should try low fibre carbohydrate-rich foods and drinks as well as experiment with the timing of food intake such as allowing more time for digestion before beginning an exercise session. A reduced fibre intake can help prevent bloating, diarrhoea and stomach discomfort. Eating solid meals earlier or replacing meals with liquid nutrition may help to avoid problems. Commercially available liquid meals or homemade fruit smoothies can allow the athlete to fuel up without the full feeling. In some cases, legumes, spicy foods, excessive amounts of fruit and vegetables (especially if the skin is left on), and foods high in fat cause problems. See also our fact sheet on Runner’s Gut.

### IS GLYCAEMIC INDEX (GI) IMPORTANT?

High carbohydrate foods are great for topping up liver and muscle glycogen stores. It has been suggested that eating carbohydrate foods that are more slowly digested and absorbed (low GI) may provide a sustained energy release that may help endurance exercise performance. Examples of low GI foods are baked beans, pasta, oats and most fruit.

Glycaemic Index is discussed in a separate factsheet (Glycaemic Index and Sports Performance). Most studies have not shown performance differences between pre-event meals of low GI or high GI carbohydrates.

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The most important factor for prolonged events is to consume **adequate amounts** of carbohydrate fuel from familiar foods that you enjoy and know work well to maintain gut comfort. To maintain performance, you will then continue to refuel during the activity with appropriate fluid and carbohydrate sources e.g. a sports drink or carbohydrate gels with water.

### CAN I EAT SUGAR BEFORE EXERCISE?

Some individuals are concerned that eating sugar or sugary foods and drinks in the hour before exercise will affect performance. Eating carbohydrate foods including sugar raises blood glucose and insulin levels. When these levels are elevated just prior to exercise, there is potential for a rebound drop in blood glucose levels (hypoglycaemia) after the exercise has started, and an increased use of carbohydrate stores during exercise. This may not be advantageous for performance and endurance.

However, recent research indicates that for most people, the drop in blood glucose levels is short lived. In most cases, any metabolic changes are corrected within 15-20 minutes of exercise. Furthermore, the athlete may actually benefit from the fuel boost from this extra carbohydrate from the pre event snack/meal. It helps to have adequate carbohydrate in pre-exercise meals to compensate for its increased use as an exercise fuel – at least 50g seems a reasonable target.

Nevertheless, a small group of individuals seem to suffer a pronounced reaction when they consume carbohydrate in the hour prior to exercise. These individuals should experiment with food intake before training to find a plan that works for them. For some, this may mean avoiding carbohydrate containing foods and drinks in the hour before exercise. For others, low GI carbohydrates in the hour before exercise might minimise unwanted side effects. Consuming carbohydrate during prolonged exercise will also help to reduce the impact of excessive fluctuations in blood sugar levels.

### WHEN SHOULD I EAT AND DRINK BEFORE EXERCISE?

Typically, we recommend that the pre-event meal is consumed 2-4 hours before competition. The decision will vary according to the type and timing of the event, and individual responses. You need to allow enough time for the meal to be emptied from the stomach, including extra time for the delayed emptying that might accompany pre-event nerves. It is important to get the right balance of gut comfort – neither being too full at the start of exercise nor hungry late in the session.

Some individuals can tolerate food closer to training or competition, especially if there is only a limited recovery time from a previous event. In this case, carbohydrate containing fluids such as sports drink or liquid meal supplements can also be used effectively to meet pre-competition eating goals.

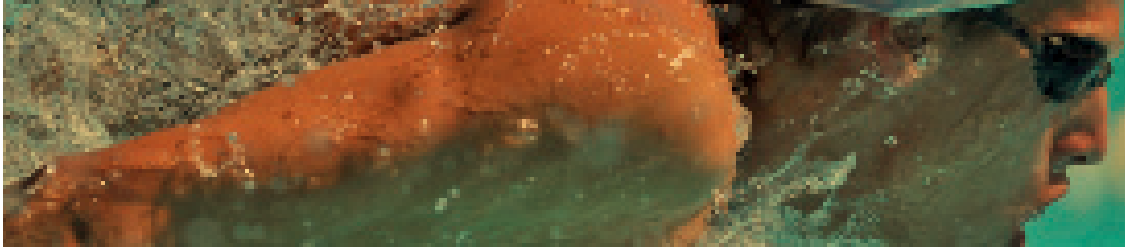
For events in the morning, an individual might schedule their breakfast 2-3 hours beforehand. In the case of a very early start, another option is to have a larger supper the night before and a lighter snack or fluids only 1-2 hours before the event. Those competing later in the day may choose to eat their normal meals in the earlier part of the day and then have a light snack 1-2 hours prior to the event.

### SHOULD I EAT BEFORE EXERCISE IF I AM TRYING TO LOSE WEIGHT?

Many individuals believe that if they want to lose weight, they will burn more fuel from body fat by not eating before an exercise session. However the basis of a good weight loss plan is to modify daily energy balance while maintaining quality training outputs. In many cases, an appropriate sized meal or snack eaten before training will support better training outputs or intensities, and can prevent the individual from becoming so hungry that the exercise session becomes excessively uncomfortable, tiring and/or drives the person to overeat after the session. Decisions about eating before training eating should be made as part of the bigger picture of your nutrition goals. For example, a healthy breakfast will provide the immediate nutrients needed for exercise as well as for other purposes e.g. appetite control, fibre intake, muscle repair and rebuilding and other body adaptations to exercise. An Accredited Sports Dietitian can advise you on a plan that achieves weight loss within your total nutrition goals. For more information see the SDA Fact Sheet on Body Fat Control and Making Weight.

### SUMMARY

- Choose high carbohydrate, low fat foods that are familiar and well tolerated.
- Experiment in training with the timing and type of meals and snacks to suit individual preferences and your sport.
- Practice different pre-exercise eating ideas in training, not during competition.
- Develop a good pre-exercise drinking strategy to start exercise well hydrated.
- Try a liquid or low fibre meal if pre-competition nerves or other factors cause GIT upset.
- Monitor the effects of food and drink choices on your performance



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- For information on maintaining good dental health, see our Dental Health fact sheet
- Go to <http://www.sportsdietitians.com.au/findasportsdietitian/> to find an Accredited Sports Dietitian near you for individual advice or visit for more fact sheets and resources.

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