Competition & Training

Eating Before Training & Competition

When preparing for any competitions it is important to plan your nutritional strategies. It is the day-to-day nutrition that supports your training and will ultimately improve your performance on race day. However, there are some additional factors to consider for your race day nutrition.

The energy you need to fuel your race predominantly comes from the carbohydrate that you store (as glycogen in the muscles and liver and as glucose in your blood). Consuming food and fluid before exercise is an opportunity to fine-tune carbohydrate and fluid levels to ensure you can perform at your best. Your food and drink choices should leave you feeling comfortable and confident to start your event. The psychological value of consuming foods that are familiar and tried and tested should not be underestimated. Competition is definitely not the time to try new food and drinks!

When should I eat?

A general guide is to have a meal about **3-4 hours** before exercise or a lighter snack about **1-2 hours** before exercise. This will vary depending on your individual needs and how well you tolerate food before exercise, so you will need to experiment with the timing, amount and type of food prior to competition.

Pre-event meal

The emphasis for the pre-event meal is on carbohydrate rich food and drinks to top up the body's carbohydrate stores, especially if the competition is in the morning or if stores are depleted from a previous training session. It also helps maintain blood sugar levels which can help improve performance. A carbohydrate rich meal (1-4g per kg of body mass) consumed in the 4 hours before exercise is recommended[1]. To avoid any possible stomach discomfort pre-event meals or snacks should be low in fat and fibre and contain a moderate amount of protein to make digestion easier. See table below for examples of suitable foods.

3-4 hours before exercise	1-2 hours before exercise	Less than an hour before exercise
• Plain breakfast cereal with low-fat milk and fruit • Crumpets/toast/muffins with jam/honey/syrup • Baked potato with cottage cheese • Baked beans on toast • Bread roll or sandwich with cheese/meat filling and a banana • Pasta or rice with low-fat tomato based sauce	• Milkshake or fruit smoothie based on low-fat yoghurt and mango/banana/berries • Cereal bars • Fruit • Fruit flavoured yoghurt	• Sports drinks • Sports bars • Jelly babies • Carbohydrate gel • Cordial

[1] Based on recommendations in Burke LM, Hawley JA, Wong SH & Jeukendrup AE (2011) Carbohydrates for training and competition, Journal of Sports Sciences, 29 (1): 17-27.

What if I am exercising early in morning?

- For a swimmer, being up early for training or competitions is the norm. It is not always practical to eat a meal 3-4 hours before exercise.
- Opt for some fruit, such as a banana, or a cereal bar on the way to training along with some fluid.
- During training sessions top up your carbohydrate intake by drinking a carbohydrate sports drink.
- In competition, try and consume more carbohydrate in between warm up and your race.

What if I am too nervous to eat?

- Experiment with liquid meal supplements, such as homemade smoothies or commercially available drinks, as an alternative if you have trouble tolerating solid foods before an event.
- Foods such as cereal bars and sports bars are a good option if you eat them slowly over the hours leading up to competition.

Should I avoid carbohydrate in the hour before exercise?

There has been a lot of confusion about consuming carbohydrate in the hour before exercise. Eating carbohydrate foods raises blood glucose and the levels of the hormone, insulin, which is responsible for the use and uptake of blood glucose by the liver and muscles. This may cause a small dip in blood glucose levels (hypoglycaemia) after exercise has started. It has been suggested that this may hinder performance.

Recent research[2] indicates that for most people, this drop in blood glucose is short-lived and quickly corrected by the body without any side effects. Instead the athlete is likely to benefit from the extra fuel boost the carbohydrate snack will provide.

However, in a few individuals this drop in blood glucose is much greater, which may result in increased fatigue. If you are one of these people, there are a few things you can consider to minimise these symptoms, even though they do not appear to relate to performance [2].

- Experiment to find the best timing and size of your pre-exercise meal. It may be that you need a longer period between eating and exercising, or you need to completely avoid carbohydrate 90 minutes before exercise.
- Eat a carbohydrate snack just before exercise or during the warm-up (<10min) so that exercise will start before the insulin concentration increases.
- Include some low Glycaemic Index foods, such as yoghurt, pasta, oranges, in your pre-exercise meal as these cause a slower blood glucose response.

Pre-exercise hydration

Dehydration poses one of the most common nutritional problems during sport. Starting exercise dehydrated can impair performance but by taking a few simple steps you can avoid this. Special attention is needed to ensure full restoration of fluid balance after each training session leading up to an important competition. Develop an individualised hydration plan for daily training and leading up to and during a competition to ensure you enter all your events well-hydrated. For more information on this please refer to the *Hydration* fact sheet.

Further reading

Burke LM. Preparation for competition. In Burke LM & Deakin V. Clinical Sports Nutrition. Australia, The McGrae-Hill Companies, 2010:304-329.

[2] Jeukendrup, AE & Killer SC (2010) The Myths Surrounding Pre-Exercise Carbohydrate Feeding. Ann Nutrition & Metabolism, 57 (suppl 2)