

## FACT SHEET SWIMMING

### ABOUT SWIMMING

Swimming requires a dedicated commitment to training, with elite swimmers training 6 to 12 times per week. Depending on the race distance, training sessions can cover up to 10km and include 1-2km of high-intensity sprints. As well as water based session, weight training sessions are completed several times a week by elite swimmers. Training commitments are usually lower at a school or club level. Swimming competitions may last for 3 to 7 days with heats usually swum in the morning with finals at night. Races can last from 20 seconds to 15 minutes, which makes swimming a very anaerobic sport although aerobic metabolism increases the longer the distance. In some competitions, swimmers may race 2 to 3 times in a day and have anywhere from 20 minutes to long as several hours between events.

Many top swimmers are in their teens. This means that swimmers they are often completing high volumes of training during periods of growth and muscular development. This can result in high energy and nutritional requirements and make eating sufficient amounts a challenge.

### TRAINING DIET

Typically, training sessions are held early in the morning and, as a result, some swimmers not eat beforehand for stomach comfort, lack of appetite or to sneak in an extra 10 minutes in bed! Ideally, swimmers should aim to eat breakfast or a light snack prior to training to maximise performance. Liquid meals (e.g. Sustagen® Sport) or low fat milk tetra packs can be useful for fuelling and maintaining stomach comfort, especially when appetite is poor.

Many swimmers will train twice a day, so carbohydrate based, nutritious snacks should be included over the day to ensure energy needs are met for training, recovery and growth.

Athletes may also have busy schedules outside of training (e.g. work, school, university, social lives, family commitments, etc) so meals and snacks may need to be eaten "on the run". This requires a good planning to avoid rather than relying on takeaway options. See example below.

MEAL	FOOD
Before training	1-2 toasted English muffin/s with jam
Breakfast (also recovery from morning session)	1 bowl cereal + low fat milk + sliced strawberries Or 2 poached eggs on wholegrain toast + glass milk
Snack	Low fat yoghurt + small fruit tub in natural juice
Lunch	1-2 salad and lean meat sandwiches + piece fruit

MEAL	FOOD
Before training	2 crumpets with banana and honey
Recovery Snack	Tetra pack low fat flavoured milk
Dinner (also completing recovery from afternoon session)	Stir fry with lean meat and plenty of vegetables + large serve of rice or noodles + bread roll
Snack	Low fat custard or creamed rice + frozen berries
Don't forget to include a glass of water at meals and sip on water over the day. Sports drink might be useful during long training sessions not only to help hydration but to also help top up fuel supply.	

Note, this is an example only and requirements will depend on individual training loads, age and body weight and height.

### FLUID NEEDS

Although it can be difficult to sense sweat losses because of the water-based environment, pool areas (especially indoor) are often warm and humid increasing fluid loss from the body. Water bottles should be taken to training and competition and placed in an accessible location to ensure fluids are consumed regularly during exercise. Swimmers can estimate how much fluid they lose during a training session by weighing themselves pre and post training. For more details see the Fluids in Sport factsheet.

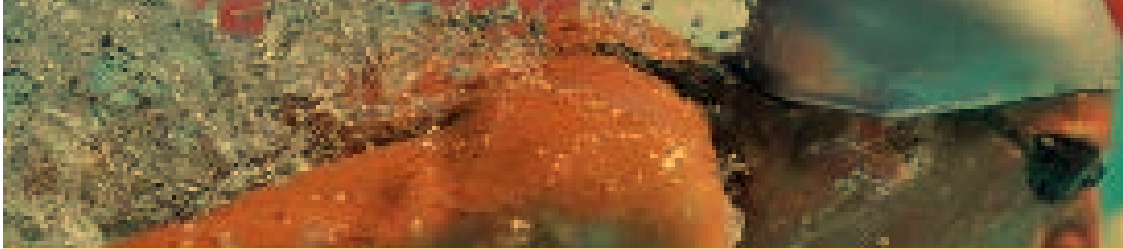
Sports drinks can be useful during long training sessions (more than 90 minutes) if training for maximum performance or during competition as they provide electrolytes and carbohydrate along with the fluid in between swims. They can also help to meet fuel goals, especially in the case of adolescent swimmers' growth and training needs.

### EATING BEFORE COMPETITION

Swimmers should have a high-carbohydrate meal 2 to 4 hours prior to competition, and include a drink of water or sports drink. To avoid stomach discomfort, foods low in fibre and fat can be preferred. The competition meal should be well planned, and include familiar foods and fluids. Examples include:

- Breakfast cereal + low fat milk
- Pikelets with banana and honey + glass of juice
- Fruit salad + low fat yoghurt
- English muffin or crumpet with jam/honey
- Sandwich/roll + salad + lean meat/cheese

If athletes are nervous pre-event and appetite is a problem, carbohydrate-rich fluids can be a good option as they are easy to digest (e.g. low fat milk or smoothie or liquid meal replacement).



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### EATING AND DRINKING DURING COMPETITION?

Swimmers need to ensure they take advantage of opportunities to eat and drink between events. Swimmers should develop an eating plan that fits in with their competition schedule and that includes foods that are familiar with them that will not affect their performance.

Practising competition eating during training sessions will help to identify food choices that will suit them best. Examples below:

If less than 30 minutes between races: carbohydrate containing fluids (e.g. sports drinks, juices) or chopped fruit are good options (as they are rapidly digested from the gut).

If 30-60 minutes between races: sandwiches with honey/jam/banana, cereal bars or muesli bars are good choices.

If more than 1-2 hours between races: a more substantial meal such as a small serve of pasta, rice or noodle-based dishes with low fat sauce/toppings or sandwiches or rolls are good choices.

Competition and training venues do not always have suitable food and fluid options available so swimmers need to arrive at venues with snacks prepared!! A cooler bag with cool drinks and snacks should be packed and kept in an easily accessible area for topping up fuel and fluid over the day.

A small snack such as a muesli bar, fruit or dried fruit can be eaten about an hour prior to the race as a final effort to top up energy levels.

### RECOVERY

It is important to recover with a meal or snack containing carbohydrate to replace muscle glycogen stores; protein to speed up muscle repair and fluid to replace sweat losses. Ideally a recovery meal or snack should be consumed within 30-60 minutes of finishing training or competition. This is especially important during competitions that are held over a several days or during weeks of heavy training.

Examples of recovery snacks that include carbohydrate, protein and fluid are:

- Low fat yoghurt + 600ml sports drink
- Low fat fruit smoothie
- Ham sandwich + banana + water
- 600ml reduced fat flavoured milk

### OTHER NUTRITION TIPS

- **Body Fat Levels:** Low body fat levels can be advantageous in swimming, for agility, power and technique. Body fat levels can creep up due to injury or time off from training, or if dietary intake is not in line with training requirements. This can be managed by consulting an Accredited Sports Dietitian or trying some of these tips below:
- Avoid extreme hunger – a small snack can prevent you from over-eating later on
- Eat slowly to give your body time to register fullness
- Include high-fibre foods in meals and snacks to help manage appetite
- Limit high-energy fluids (e.g. juice, cordial and soft drink)
- Limit saturated fat, alcohol and sugar
- Tapering pre-competition energy requirements are usually less than during training so it is important to match your eating to your training to avoid weight gain.

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