



About Swimming

Swimming requires a serious commitment to training, with elite swimmers training 6 to 12 times per week, covering distances of up to 10km in early training, and 1000 - 2000m of high-intensity sprints in the later phases of training. At this level, swimmers can swim up to 6 hours per day and may also complete other land-based forms of training such as cycling or weights. Commitment is usually smaller at a school or club level.

Olympic swimming competitions may last for 3 to 7 days with heats usually in the morning and finals staged in the night. Swims can last from 20 seconds to 15 minutes, which makes swimming a very anaerobic sport, and aerobic metabolism increases the longer the distance. In smaller carnivals, swimmers may compete 2 to 3 times in the day and have as little as 20 minutes to recover or as long as several hours.

Swimming requires the athlete to be tall and well-muscled especially in the upper body. Low body fat levels can be advantageous as the swimmer has less weight to pull through the water.

Many top swimmers are in their teens. Male swimmers undergo intense training through periods of heavy growth and muscular development, which can lead to high energy and nutritional requirements and a challenge to “get enough in”.

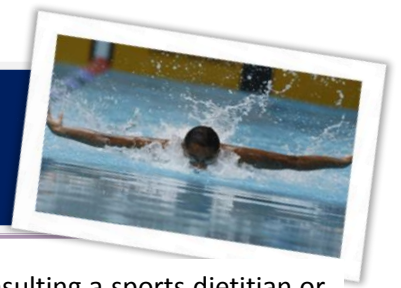
Female swimmers usually struggle to maintain low body fat levels despite heavy training loads, as adolescence brings hormonal changes which can increase body fat. Long training hours lead to very restricted lifestyles and some swimmers place an emphasis on food and eating for comfort and entertainment.

Training Diet

Some swimmers miss breakfast before early morning training sessions for stomach comfort. Liquid meal options (e.g. Sustagen® Sport) are ideal for fuel and stomach comfort. Busy schedules need to be catered for (work, school, uni, etc) and meals and snacks need to be organised for eating “on the run” (rather than relying on takeaway options). See example below.

Most swimmers will also train twice a day, so high-energy, nutritious snacks need to be included for daily recovery in between swims and for performance in the pool, as well as other commitments, e.g. school.

| MEAL | FOOD | DRINK |
|-----------------|--|--|
| Before training | Breakfast bar + piece fruit | Glass of juice; Sports drink during training |
| Breakfast | 1 large bowl cereal + low fat milk; 2 pieces toast with baked beans + piece fruit | Large glass juice |
| Snack | Cereal bar + low fat yoghurt | Water |
| Lunch | 1-2 salad and lean meat sandwiches + 1 glass low fat flavoured milk + piece fruit | Water or fruit juice |
| Snack | 2 pikelets with banana or liquid meal supplement | Water; Sports drink during training |
| Recovery Snack | Low fat muffin + banana | Sports drink/juice |
| Dinner | Stir fry with lean meat and plenty of vegetables + large serve of rice or noodles + bread roll | Water/juice |
| Snack | Low fat ice cream + fruit salad | Water |



Other foods to include: Water, sports drink, fruit, low fat muesli bars, breakfast bars, muffins and liquid meal replacements.

Note: Energy requirements can be very high, especially for male swimmers who are still developing and growing. Small regular meals are encouraged to ensure swimmers meet the high-energy demands of training.

Fluid Needs

A swimmer's training and competition environment in the pool and on the deck is often warm and humid, and can increase fluid loss from the body. At least 2-3 Litres of water should be consumed regularly during competition and pool training, as dehydration can be detrimental to a swimmer's performance as it affects concentration and skill level. Moreover, sweat losses are more difficult to determine as they are already wet from the pool. Swimmers can assess how much fluid they lose during a training session by weighing themselves pre and post training. **For every 1 kilogram lost: 1.5 litres of fluid needs to be replaced.**

Sports drinks are suitable fluids during long training sessions (more than 60 minutes) or if training for maximum performance and are ideal during competition as they provide electrolytes and carbohydrate along with the fluid in between swims. They can also help to achieve high fuel goals, especially in the case of adolescent male swimmers' growth and training needs.

Body Fat Levels

Low body fat levels can be advantageous in swimming, for agility, dynamic 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 a sports dietitian or trying some of these tips below:

- **Avoid extreme hunger** – a small, well-timed snack will prevent you from over-eating later on
- **Eat slowly:** give your body time to register fullness
- **Fill up on high- fibre foods** – enjoy these regularly in meals and snacks
- **Drink water** before and during your meal
- **Watch high-energy fluids** such as juice, cordial and soft drink: these can be an easy way to consuming extra (unnecessary) calories
- **Target sources of fat,** alcohol and sugar
- Find **non-food ways of rewarding yourself** for reaching training goals

The requirements of individual swimmers can be very different. [Click here](#) to consult a sports dietitian near you.

What should I eat pre-event?

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. Ensure that the meal is well planned and includes familiar foods and fluids. Examples include:

- Breakfast cereal + low fat milk
- Pancakes with syrup + glass juice
- Fruit salad + low fat yogurt
- English muffin or crumpet with jam/honey
- Sandwich/roll + salad + lean meat/cheese

If nervous pre-event and appetite is a problem, carbohydrate-rich fluids can be an alternative, such as a low fat milk or smoothie or liquid meal replacement.



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.

What should I eat during competition?

Swimmers need to ensure they eat enough food and take advantage of opportunities to eat and drink during 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: fluids, sports drinks, juices, glucose lollies and fruit are the best options (as they are rapidly digested from the gut)

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

If 1-2 hours between races: pasta, rice or noodle-based dishes with low fat sauce/toppings or sandwiches or rolls are good choices

If more than 2 hours between races: a more substantial meal or meal replacement can be eaten (with plenty of fluids, of course!)

Whether it is on the way to training or in between heats, swimmers need to go to swimming venues with snacks **prepared** – do not rely on the venues to provide appropriate food to fuel swimmers!! An esky packed with drinks and cool snacks/sandwiches can be a handy way of keeping food cool and safe by the pool.

What about recovery?

It is very important to refuel with carbohydrate-rich foods during recovery in order to begin replenishing muscle glycogen stores for training/competition. This is especially important during a competition that is held over a few days or during weeks of heavy training. It is also important to include a lean protein source in recovery for muscle tissue repair and growth.

Aim to consume a recovery snack **immediately within 30 minutes** of finishing a training session or competition. This snack should contain carbohydrates, protein and a source of fluid, e.g. a salad sandwich with a bottle of sports drink, or a bowl of cereal with fruit and milk. Other suitable snacks include cereal/muesli bars, fruit and fruit bars and sports drinks. A substantial meal should follow within 2-4 hours of finishing.

Other Nutrition Tips

- **Iron levels:** Some players may have problems with low iron levels, especially females with low iron intakes. Iron levels should be checked regularly during heavy training or if fatigue levels are unusual. See our fact sheet on [Iron Deficiency in Athletes](#) and speak to a Sports Dietitian on how to increase iron in your diet.
- **Energy requirements** when tapering training before a competition are usually less than during training so match your eating to your training to avoid weight gain.
- Although supplements may be tempting to some swimmers, it is important to speak to sports dietitian first before taking anything to ensure that it is safe to take. Go to www.sportsdietitians.com to find one near you.

Author: Sharon Rochester, Sports Dietitian (July 2009)