

Nutritional & Lifestyle guidelines for Swimmers



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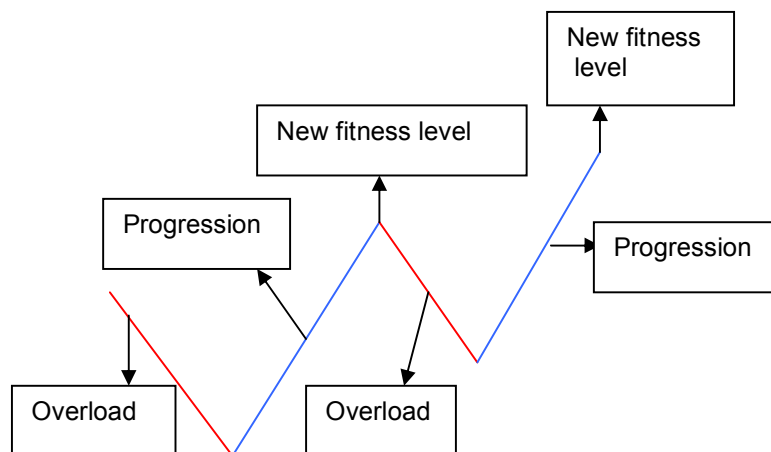
1.0 Introduction

In order for athletes to perform at their best it is important for them to eat a well balanced diet and to remain hydrated. Nutritional intake and the amount of rest and recovery an athlete gets after training is also very important as inadequate nutrition and poor amounts of sleep will restrict the benefits received from training.

The aims of this booklet are to provide information on the recommended nutritional intakes before, during and after training sessions and competitions.

2.0 How Training works

(Figure 1- Diagram of how fitness improves with training)



(Figure1)- Shows how overload and progression works during and after a training session and how it leads to an increased level of fitness.

(Red Line)= overload- this occurs during a training session.

(Blue Line)= Progression- This occurs during the rest and recovery after and between each training session. If recovery period is adequate the fitness level will increase. (Look at the second blue line on the graph and see how

progression has made it move above the first blue line i.e. progression has been achieved).

- Overload- Is what happens during training and it is when the body and its systems are worked harder than normal.
- Progression- Occurs as a result of training and it is when the body begins to adapt to the training and becomes fitter and more efficient. When this happens training intensity is increased again to allow further progression to occur.
- Recovery-The amount of progression an individual will achieve from training will depend on the quality of the recovery after the training session and before the next one. There are two main factors that will affect recovery and they are nutrition and the amount of sleep after training. (This will be discussed later in more detail).



3.0 Sleep

Poor sleep the night before a competition or a training session can cause fatigue which in turn can reduce energy levels and therefore affect performance in training and in races. Sleep is also important because it is the time when actual physical growth occurs and tissue recovery from daily activity takes place this is where the progression phase that was mentioned earlier occurs. The number of hours needed for rejuvenation is age-dependant.

AGE	HOURS OF SLEEP NEEDED
9 yrs	10 1/4
10-11 yrs	9 3/4
12 yrs	9 1/4
13+ yrs	9
16-20 yrs	8-9



4.0 Nutrition

Nutrition plays a key role in athletic performance. Failure to provide the calories and carbohydrates that young athletes need to fuel their bodies, the fluid to maintain hydration, and the vitamins and minerals to support metabolism and tissue growth and repair, will result in poor performance and an increased risk for injury and/or illness. The following nutritional guidelines will provide information on appropriate nutrition for before, during and after training and competition to ensure that every young athlete is fueled and hydrated for optimal health and performance.

4.1 Before Training

What swimmers eat before going training is very important as the calories contained within those foods will provide the energy required to do the training session. If a swimmer consumes inadequate calories before training they will have reduced levels of energy to use during the session thus restricting their performance. Due to the time morning sessions begin many people don't feel like or have time to eat anything before going training. However fluids can be used at this time as an alternative to solids and they will also provide fluid as well as fuel. Milkshakes, sports drinks; fruit salad and cereal bars are sufficient at this time.

For training sessions beginning in the afternoon or evening there is more time available for eating. The following is a list of typically foods that are suitable to eat before training.

2-3 hours before exercise

- A pasta or rice based meal or salad with tomato based sauce, meat, chicken, fish and vegetables
- Sandwich (bread or rolls with meat / chicken / cheese filling with salad
- Baked beans on toast
- Baked potato with grated cheese

1-2 hours before exercise

- Fruit smoothies
- Sports and cereal bars
- Fruit
- Milk or milk shakes
- Breakfast cereal and milk (not high fibre varieties)

Less than 1 hour before exercise

- Sports drinks
- Sports gels
- Dilute squash and water
- Jelly sweets or fruit flavor ice-lollies.

4.2 During Training (Hydration)

When people perform physical activity they produce increased levels of body heat which causes the body's core temperature to rise. In order to control this increase in body heat an individual begins to sweat. However as children are still developing they are less efficient at sweating as adults are so are less efficient at cooling their bodies. If an individual's body temperature rises to high the person will become dehydrated or in sever cases will suffer from heat exhaustion. As a result of this it is very important that young athletes consume enough fluids to remain hydrated. This is even more important for swimmers due to the hot environment training takes place in. When training the temperature of the pool is usually **29-30°C** or higher. Remember back to the last time you were on holiday and how hot and sweaty you found it compared to back home. The temperature their, would have been around **29-30°C**. So if you combine the temperature of the pool and the increase in body heat that will occur when you actually begin training you see why it is so important to continually drink during training.

4.3 During Training (Hydration) (Cont)

As we mentioned earlier if a persons body temperature rises to high they will become dehydrated.

(2% dehydration can lead to a 10-20% decrease in performance).

A 10% never mind a 20% decrease in performance can be the difference between a bad swim and a good PB. So don't wait until you feel thirsty before you start drinking. Because if you feel thirsty that is your brain sending a message to you body telling you that you are dehydrated.

Below is a graph explaining the amount of fluid required to remain hydrated.

(Remember that most water bottles hold 750 ml and the big Speedo and Lucozade ones hold 1000ml or 1liter).

Hyration Tips

- Before activity: Athletes should drink 400 – 600 ml of fluid to be fully hydrated.
- During activity: Athletes should drink 150 – 350 ml of fluid every 15 – 20 minutes.
- After activity: Athletes should drink plenty of fluid to replace water lost from sweating.

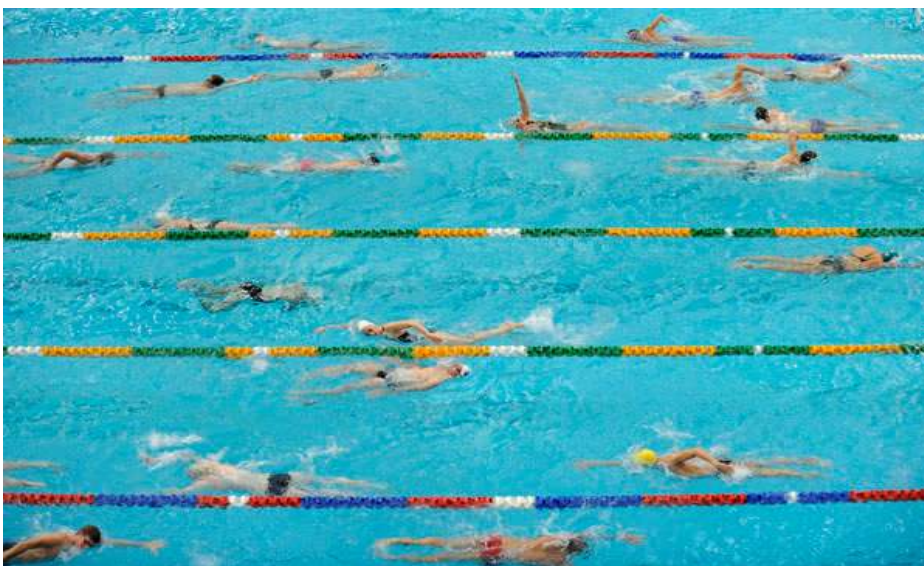


4.4 After Training

As I mentioned earlier the fitness gains received from training occur during the recovery period between the end of the training session and the beginning of the next one. So as a result of this the recovery process begins as soon as the previous session finishes. During this time it is vital athletes consume the right type and quantity of food to allow this recovery to take place. After training a swimmers diet should mainly be made up of carbohydrates and protein.

Carbohydrates (CHO) - are one of the major food groups and are one of the main suppliers of energy to the body during exercise. The stores of CHO in the body are limited and when they run out the muscles in the body are deprived of their main energy source therefore are unable to continue to perform at their previous level. So it is essential that these stores are refilled after every training session to ensure the body has the energy required for the next.

Protein- is another of the main food groups and are mainly responsible for the growth and repair of muscles after exercise. So an adequate intake of protein after training is essential to help the growth and repairment of muscle tissue to take place.



After training (Cont)

Below is a list of typical foods that should be consumed after training to help replenish energy stores and begin the recovery phase.

Do's

- Eat pasta dishes. Spaghetti Bolognese is a good all round meal as it contains carbohydrates, proteins and fats.
- Eat rice dishes.
- Try making your own pizza. Start with a plain pizza base, add some tomato puree and a little cheese, and then experiment with your topping!
- A little fish is high in protein. Boiled fish is best with some vegetables.
- Have soups, with some bread to dip in.
- Have a baked potato with a low-fat topping.
- Have fresh fruit, yogurt, or jelly for dessert.

Don'ts

- Choose deep fried meals like sausages, chips and beans.
- Eat a microwave meal. Most of them contain poor sources of energy.
- Eat high fat meals like hot dogs or burgers.
- Ruin a baked potato or bread with too much butter and cheese.
- Have cakes, ice cream and pies.



4.5 Morning of the competition

By the time the morning of the gala comes around it is too late to increase the stores of muscle glycogen provided by carbohydrates. So that is why it is important to stock them up in the days before the gala. The breakfast on the morning of the gala is vitally important as it helps to top up blood sugar levels after the nights rest.

Below is a list of suitable foods for breakfast on the morning of a gala.

- Cereals like oatmeal or oat bran.
- Wholegrain or high fiber cereals.
- Breads such as toast or bagels.
- Milk, skimmed or low fat is best.
- Fruit, including fresh fruit and fruit juices.
- One egg with some toast.
- Fat free toppings like syrups and jams as an alternative to butter.
- Drink 500-1000ml of water about 1 hour before warm up

(What ever you eat make sure you eat something as swimming on an empty stomach will make you feel like you have no energy).



4.6 After warm up

After completing the warm up it is important that swimmers quickly recovery physically and get ready for their swim.

Below is a list of guidelines which will help to ensure that swimmers are ready for the start of their race.

- Replace fluids immediately after the warm-up
- Fill your drinks bottle with water (approximately 500ml) and drink all of it!
- Sports drinks like Lucozade are also good as they replace fluids and carbohydrate simultaneously.
- If there is more than 1 hour between the warm-up and your first race, try to eat a little. Something like a banana will stop you feeling hungry and give you more energy.
- **The best approach is to eat a little and often during the day in between events.**
- Eating too much at once can make you feel heavy and lethargic.



4.7 In between races/Lunch

In between races and sessions it is again important to consume carbohydrates as they provide the energy for your other races. Carbohydrates are also useful as they are easy to digest and empty from the stomach quickly.

Below is a list of foods which should be eaten during breaks.

Snacks to have between events (1-2 hours breaks)

- Fruits or fruit salads are good and store easy in your bag.
- Bananas are the best fruit. They are high in carbohydrate.
- A small sandwich with a light filling. Try a banana sandwich.
- Fruit buns (e.g., hot cross buns) or raisin bread.
- Rice cakes (you can top them with honey, jam, or banana)
- Jam or honey sandwiches.
- Plain crackers with jam.
- Jelly.
- Low-fat yogurts.

Meal to eat during longer breaks

- Whole-grain bread
- Lean meats like turkey and chicken.
- Baked potato with light toppings
- Pasta with a tomato 'stir-in' sauce
- Good quality soups and stews.

4.8 Drinking during Competitions

As we all know the pool side can be a hot place to be all day so again it is vital to continually drink through out the whole day. However it is best not to eat or drink right before a race as you do not want to swim with a full stomach.

- Its best to have a drink 15 minutes prior to your race or just before going to marshalling this will allow enough time for it to settle.
- In longer breaks have something to eat as well as some fluids.
- Use a mixture of sports drinks (Lucozade or powerade) and water.

(It is recommended that swimmers should drink at least 500ml each hour In order to prevent dehydration occurring).

Because remember-

2% dehydration can lead to a 10-20% decrease in performance.

That could be the difference between

This

or

This



5.0 Recovery after competition

Once again it is important to eat and drink as soon as you can after your last swim of the day in order to help your body to start recovering for the next day of the competition or the next training session.

- Have something to eat and drink (water or sports drink) right after your last swim.
- Have a meal containing a high carbohydrate and protein content within 1-2 hours as this will help the body repair and refill the energy stores ready for the next day.

Typical meals could be

- Spaghetti Bolognese
 - Chilli Con Carne
 - Chicken with Potatoes
 - Jacket Potato with Tuna
 - Fish with vegetables
 - Soup
- **Avoid fast food as they provide little energy and will delay recovery**



