

## **Nutritional advice for Swimmers and Parents/Guardians**

With good nutrition the swimmer can expect a 20% improvement in their performance; minor changes will make a huge difference.

### **The 30 minute window**

After training/racing the swimmer needs to replenish their energy stores as quickly as possible. There is a 30 minute window which is the best time to start this process, the window remains open for two hours then closes. If energy stores are not replaced, this has a detrimental effect on their performance later. This could explain why swimmers competing all day perform better at the beginning of the day and produce poor results at the end of the day.

The swimmer should be able to have access to a quick carbohydrate snack as soon as possible after training. It is important to know what to eat on poolside, good examples include fruit; bars e.g. elevenses, fruit and fibre bars, nutri-grain bars; malt loaf (without butter or margarine); fig rolls; rice cakes; pancakes. All these are good sources of carbohydrate without having a high fat content (chocolate has a high fat content).

It is important to remember that 20% of supplemental powders and drinks are contaminated with banned substances.

The snack should then be followed by more food to replenish the energy stores. Foods rich in carbohydrate such as wholemeal bread, pasta, rice and potatoes are excellent. This should be combined with a source of protein but should be low in fat content. An ideal meal combination could be a jacket potato without fat, filled with tuna or baked beans or pasta without creamy sauces.

Protein is important to repair muscles. It is absorbed through the small intestine and goes straight to repair damaged muscles. Swimmers need 2g/kg/day of protein, which is double the normal amount. Protein is found in meat, fish, pulses and dairy products.

Iron Deficiency decreases cardio vascular performance in swimming. Between 1 in 3, to 1 in 7 women are found to be deficient in iron, therefore it is important for female swimmers to ensure that they have an adequate intake of iron rich foods. Examples include red meat, raisins, dried apricots and green leafy vegetables.

As a rough guide to the amount of different types of food that should be eaten per day it may be useful to think of portions in handfuls. Carbohydrates, the main fuel of performance, should be in the region of 5-6 level handfuls each day. Fruit should be about 3-4 handfuls and vegetables 4-5 handfuls. It is recommended that the swimmer should eat 1-2 handfuls of dairy products and 3-4 palm sized handfuls of meat, fish or poultry.

### **The low fat rule**

The message is to think about the fat intake and the fat content of foods. Only 10% of fat eaten goes into the muscles, the other 90% is stored in the fat cells. The fat cells are like balloons, when you blow into them they become bigger. Women store fat more readily than men because oestrogen is connected to fat storage.

Naughty foods high in fats include chocolate, cakes, pastry, Pringles. The intake of these foods should be reduced as much as possible. Although dairy products are a good source of calcium, swimmers should only drink skimmed milk which has a fat content of 20% compared with full fat milk which contains 60% fat. The intake of cheese should not be excessive because of the fat content and eggs should not exceed 4 per week. There are other good sources of calcium such as oily fish, green vegetables and low fat yogurts.

Butter and margarine should be avoided as much as possible. If it is used in sandwiches, the rule is to scrape on and scrape off and avoid on jacket potatoes.

Any food/meal should not contain any more than 30% fat. A cooked breakfast consisting of 2 sausages, fried egg, 2 slices of bacon and fried bread contain 70% fat. Two croissants contain 50% fat.

A healthy breakfast for swimmers of 2 weetabix, low fat milk, a sprinkling of sugar and 1 banana contain only 8% fat. A healthy cooked breakfast of beans on toast also only contains 8% fat. With their breakfast the swimmer should drink 1 litre of fluid (includes milk on cereal). Good choices of cereal are shredded wheat, Weetabix, porridge, bran flakes and low sugar muesli. Cereals with a high sugar content e.g. Frosties or Sugar Puffs should be avoided. If the swimmer finds it impossible to eat before early morning training they could be encouraged to have a milkshake made with ½ pint of milk mixed with liquidised fruit.

Examples of healthy fats include oily fish, some nuts, avocados and olive oil. Pasta can be mixed with olive oil instead of a creamy sauce. It is better to grill, boil or bake foods instead of frying.

### **Hydration**

Most swimmers are dehydrated. 90% of the water in the body comes from liquid intake, 30% from food and 10% from other sources. During training it is important to stay hydrated and in order to do this, it is recommended to drink 1-2 litres of fluid per hour as you can lose 90% of the water in the body by sweating. Caffeinated drinks e.g. coke should be avoided as caffeine is a diuretic and it is important to watch the sugar intake. Ideal drinks include squash, fruit juice, water or sports drinks. Sports drinks are good to use when training but they should be avoided when inactive.

It is advisable to fill a 2 litre bottle with fluid at the beginning of the day to drink throughout the day, every ½ hour is ideal. This is in addition to drinks for training.

### **Self checks for Swimmers**

Breakfast, have I:

Had a litre of fluid?  
Had enough carbohydrate?  
Made sure my cereal was not high in sugar?  
Remembered to keep animal fats low?

During the Day, have I:

Eaten at regular intervals?  
Consumed liquid at regular intervals?  
Avoided getting too hungry?  
Snacked on high carbohydrate foods?

Evening, have I:

Included pasta, rice or potatoes in my meal?  
Had enough protein?  
Cooked these foods appropriately?  
Included a small sweet?  
Had brought food or home made food?

This information was collected from a talk on Nutrition for Swimmers given by Bob Smith, a nutritionist working with British Swimming advising the top British swimmers. He also recommended a book called Survival of the Fittest from the Australian Institute of Sport; it can be purchased through the British Swimming website.