

Nutrition and Hydration Tips for Swimming

- Of all the sciences, nutrition may have more to offer the athletes than any of the others.
- Choosing the appropriate foods in suitable amounts at the correct time will not compensate for the lack of natural ability, a reluctance to undertake the require training, nor an absence of tactical awareness.
- However it is equally clear a poor diet can affect an athlete's potential to train and compete.
- A good diet will not turn a mediocre athlete into a champion, but a poor diet can turn a champion into a mediocre athlete.

Hydration During Training

Most swimmers only replace 30%-70% of fluids lost during training; 1-3 litres of sweat per hour can be lost in public pools.

A 1% loss in body weight through fluid brings about deteriorating performance - anything over a 3% loss and the participant's health is at risk.

It is therefore vital that swimmers have at least 500mls of fluid 1-2 hours before training or competition and another 250mls/500mls in the immediate 30 minutes prior to training/competition. Aim for swimmers to have at least 200-250mls every 20 minutes of high intensity training.

The best drinks pre and during training/competition are the Maxim type powdered drinks (huge tubs can be bought from swimshop.co.uk - follow the link on the website) - mixed with water to 65% of the suggested amount on the label - and add some blackcurrant squash to improve the taste. These drinks contain carbohydrates etc. Water is too thin, and Lucozade type drinks are too thick unless watered down. However after training Lucozade type drinks are good recovery drinks.

Can everyone please try to make sure that swimmers come to training with the right amount of fluid etc..No swimmer will be allowed to get out of the pool until they have drunk a minimum of 400mls per hour of training.

Nutrition

Preparation for Competition

An athlete's goal at a competition is to perform to an optimal level and a range of factors can impair performance and this includes NUTRITION.

Common nutritional factors, which are associated with a decline in performance, include: depletion of glycogen in active muscles, dehydration and gastro intestinal discomfort.

Athletes should set aside 24-36hrs from the last training session to the competition to normalise food stores, eating meals which are high in carbohydrate (low GI foods) and low in fat. Athletes should normally try to drink up to two litres of water a day; this is especially important during the week leading up to the competition, so the risk of dehydration is minimised.

Pre-Event Nutrition Guide

Pre-event meal (night before the competition): Aim to top up glycogen stores.

The pre-event meal should be high in carbohydrate and low in fat: Ideas include pasta with low fat sauce, rice, sandwiches or rolls or jacket potatoes and beans

Avoid foods, which are high in salt, fried food especially takeaways, and foods which the athlete is not used to.

Try to consume plenty of fluids the evening before the competition, maybe with the meal. Try to drink squashes, milk or fruit juices and avoid caffeine-containing drinks, which can lead to dehydration the evening before the competition

Pre-Event Meal (day of the competition)

After an eight hour fast breakfast is the most important meal before a competition. Cereals are high in carbohydrate, quick and easy, iron rich calcium rich and low in fat and cholesterol. Avoiding breakfast will lead to depleted glycogen stores and the increased risk of fatigue!

Other alternatives include: Bagels, English muffins, spread whole-wheat toast with jam and fresh fruits. And include with fresh fruit juice or squash to maintain adequate hydration

Pre-Event Meal (4hrs before the competition)

This should be eaten largely for comfort and for confidence!

Eat foods, which the athlete is used to and comfortable with, don't try anything new before a competition, practice first before a intense training session.

It should also aim to re-fuel and rehydrate -

- Carbohydrate Rich, low in fat and fibre
- Low GI- release energy slowly

Try to aim to drink 300-600ml with the pre-event meal and then 150-300ml of fluid up to the event, or try to take sips of fluid on a regular basis, but beware you can drink too much whilst waiting for the competition!

(Monitor urine colour and volume for hydration checks - should be pale in colour. Urine, which is dark yellow/brown colour and small in volume, is a sign of dehydration!)

Include carbohydrate rich foods and drinks - Ideas:

- Plain breakfast cereal with low fat milk and fruit
- Porridge with low fat milk and fruit juice
- Toast, Muffins and crumpets with jam or honey
- Baked beans on toast
- Spaghetti and low fat tomato sauce
- Jacket potato and beans
- Low fat breakfast bar and a banana
- Roll or sandwich with a low fat filling
- Fresh fruit salad with low fat yoghurt

Nutrition and Hydration After Exercise

Immediate carbohydrate intake will help to increase the restoration of the glycogen stores after exercise (approx 1-1.5g of carbohydrate per kg of body weight should be aimed to be consumed immediately after exercise and then 7-10g per kg of body mass over the next 24hrs). This is especially important if competing the next day or training.

There is the '**open window**' effect: for 30min after training or competition, this is the time where the replacement of glycogen is at its maximum.

For glycogen replacement after exercise focus on foods, which are rich in carbohydrate especially high GI foods.

For hydration after the event, try not to rely on thirst as a sign of need: feeling thirsty is a sign of dehydration. Drinks, which 'you like the taste of', will more readily promote hydration. Try not to drink plain water, if so; include a pinch of salt, which will promote the uptake of water. Avoid caffeine-containing drinks.

After a competition, try to consume one of the following which provides approximately 50gms of carbohydrate:

- 2-3 medium pieces of fruit
- 1 round of honey or jam sandwiches
- 1 large mars bar
- 2 cereal bars
- Baked potato with beans
- Bowl of breakfast cereal with milk
- 150g thick crust pizza

EATING DURING COMPETITIONS – ASA SWIMMING

When preparing to compete at a swimming competition you need to pay careful attention to what you eat. Read on to find out what to eat the day before the event and during the day.

THE DAY BEFORE

When competition time comes round, you'll have plenty on your mind already. So the day before the event, keep exercise to a minimum – if anything at all – and eat meals and snacks high in complex carbohydrates. You need to keep those glycogen stores topped up.

- Drink fluids little and often to stay properly hydrated.
- Eat little and often – every two to four hours to keep your blood sugar levels steady and fuel your muscles in preparation for your event.
- Avoid big meals or over-eating in the evening – this will almost certainly make you feel uncomfortable and lethargic the next day.
- Try to stick to familiar foods. Curries, spicy foods, baked beans and pulses (unless you are used to eating them) can cause gas and bloating, so avoid eating anything that may cause stomach discomfort the next day. It's best to stick to foods that you are familiar and compatible with!

THE MORNING OF THE EVENT

- Don't swim on empty. Even if you feel nervous, make breakfast happen. Stick to easily digested foods – cereal with milk, porridge, banana with yoghurt, some fruit or toast with jam.
- If you're really struggling, try liquid meals such as milkshakes, yoghurt drinks or a smoothie.
- It's a good idea to rehearse your competition meal routine in training so you know exactly what agrees with you.

SNACKS BETWEEN HEATS

- Try to eat as soon as possible after your swim to give yourself as long as possible to recover if you have to swim again.
- High fat and simple sugar foods will do you no favours in competition – instead search out the complex carbohydrates again.
- If you can't stomach anything solid try sports drinks, flavoured milk or diluted juice that will help replenish your energy supplies and assist the recovery of aching muscles.

The list below offers great food options to be snacking on in and around training for a competition. Remember to keep eating healthy foods from your regular diet though, such as fresh vegetables, nuts and fruits.

Here are some more you can try

- Water, diluted fruit juice with a pinch of salt or a sports drink
- Pasta salad

- Plain sandwiches e.g. chicken, tuna, cheese with salad, banana, peanut butter
- Bananas, grapes, apples, plums, pears
- Dried fruit e.g. raisins, apricots, mango
- Smoothies
- Crackers and rice cakes with bananas and/or honey
- Mini-pancakes, fruit buns
- Cereal bars, fruit bars, sesame snaps
- Yoghurt and yoghurt drinks
- Small bags of unsalted nuts e.g. peanuts, cashews, almonds
- Prepared vegetable crudités e.g. carrots, peppers, cucumber and celery

Nutrient timing and dietary routines

By Alex Popple – EIS Performance Nutritionist for British Swimming

Often when athletes and coaches think about nutrition they tend to focus on the dilemma of making the best choices in foods and fluids to support health and performance. However, one other important factor that is frequently overlooked is the structure and routine of their daily diet. Timing nutrient intake appropriately before, during, and after training and throughout the rest of the day is nearly as important as consuming the right foods and fluids. Many nutrition goals can be achieved by simply changing when you choose to eat and drink around training and in between training sessions. Below are some guidelines to help you achieve your individual nutrition-related training goals.

Improve fuelling for training

1. Consume a high carbohydrate meal before training sessions, but this depends on how much time you have before to digest the meal;
 - **2-4 hours** – medium-large serving of carbohydrates e.g. pasta, rice, potato based meals
 - **1-2 hours** – small-medium serving of carbohydrates e.g. toast, cereals, bananas
 - **Less than 1 hours** – high carbohydrate drinks e.g. milk, sports drinks, non-acidic fruit juices
2. During training consuming fast absorbed carbohydrates is a great way to refuel tiring muscles and help replenish muscle glycogen stores. This is especially important during high intensity / high volume training sessions, great choices include;
 - **Sports drinks** e.g. Lucozade Body Fuel, Powerade Isotonic, SIS Go Electrolyte
 - **Carbohydrate gels** e.g. Lucozade Carbo Gel, SIS Go Gel, PowerBar Gel
 - **Sugary fruit cordials or non-acidic fruit juices** e.g. apple or grape
 - **Bananas or cereal bars**

Speed up recovery between training sessions

1. Immediately after training you should consume a snack or meal that is high in both good quality protein and fast absorbed carbohydrates. Straight after training (**within 30 minutes**) is the best time to eat because hormones and enzymes that promote rapid recovery are most active within this period. The best options to consume are;
 - Recovery drinks e.g. Lucozade Recovery, PowerBar Recovery, SIS Rego Rapid
 - Sandwiches e.g. white bread with either egg, ham, chicken, fish,
 - Milkshakes e.g. ForGoodnessShakes, Frijjs, yazoos
2. Throughout the rest of the day aim to consume a serving of carbohydrate every **2-3 hours**. It is also advantageous to vary the type consumed as different types of carbohydrates are absorbed at different rates and this helps maximise glycogen restoration. Choose from the different options below;
 - **Breads** e.g. bagels, wraps, pittas etc
 - **Potatoes** e.g. white, sweet, yams
 - **Pastas** e.g. penne, fusilli, spaghetti
 - **Fruits** e.g. bananas, apples, pears, grapes etc
 - **Dairy** e.g. low-fat milk, yogurt,

Maximise training adaptations

1. As the most important timing for promoting training adaptations is covered by consuming a recovery feeding immediately after training, the next important point is to consume regular servings of varied and high quality protein throughout the rest of the day. Training adaptations required specific amino acids from different proteins to provide the building blocks to become faster, stronger, and fitter. Consume a serving of varied protein option every **2-3 hours** (ideally eat this with your carbohydrate servings), choose from the following options;
 - **Poultry** – chicken, turkey
 - **Meat** – beef, lamb, pork
 - **Fish/shellfish** – tuna, mackerel, salmon, cod, prawns
 - **Dairy** – low-fat milk, yogurt, whey, casein
 - **Eggs**
 - **Pulses, nuts, & legumes** e.g. soya, beans, peas, lentils, brazils etc

Maintain hydration

1. Thirst is probably the best indicator of the body's requirement to consume fluids. However, it is good practice to consume fluids regularly throughout the day to help maintain hydration status. It is also important to understand that consuming too much fluid is as dangerous for health and performances and not drinking enough. Aim to consume approximately **200-400 ml** of fluid every hour to keep hydrated suitable options include;
 - **Water**
 - **Fruit cordials and juices**
 - **Teas** e.g. black, green, and fruit
 - **Coffee** (not in excessive amounts or use decaffeinated)
 - **Low-calorie sports drinks** e.g. Lucozade Lite, Powerade Zero
2. It is also important to understand it can take the kidneys 30-45 minutes to regulate fluid levels in the body, so increasing fluid intake to approximately 500 ml per hour for about 2 hours before a training session will help to avoid dehydration during training, especially sessions where sweat losses are high.

Nutrition

Carbohydrate

(carbs) are key; however there are two types;

Simple = cakes, buns, chocolate, fruit, sweets...

Quick fix therefore takes 2-1hours before swim for energy burst but it doesn't last

Complex = pasta, rice, potatoes, cereals, veg...

Best source of energy and give you lasting energy which you store

Protein and Calcium for development

Males are growing and developing till ~21

Females are growing and developing till ~18

With training there is an increased need for protein and calcium.

Aim for a pint of milk a day, or ½ pint and 2 yoghurts

All swimmers should follow a low fat diet. Low fat levels help us move through water faster.

Tips to reduce Saturated Fat

Choose low fat milk, cheese, yoghurt.

Avoid fried foods and takeaways.

Grill meats; don't eat fat & chicken skin.

Use margarine thinly.

Choose low fat biscuits and snacks.

Read & use food labels to eat low fat

Recovery advice

The sooner after training/competition the better

Eat or drink

If you know it's a while before tea, be prepared; milkshakes, sports drinks, cereal bars, fruit (Kit bags)

Nutrition for Competition

What we eat 1-2 days before the comp that counts

Increase portion size slightly

High carb meal the night before

High carb breakfast

Increase fluid

Plenty of sleep (9-10 hours)

INTRODUCING A HEALTHY DIET: CARBOHYDRATES AND FATS



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A healthy diet is vital to make the most of your time in the pool and improve your figure. Read on to learn more about how carbohydrates and fats should fit into your meal times.

COMPLEX AND FIBROUS CARBOHYDRATES

Carbohydrates are your body's primary source of energy, your Swimfit fuel. They are converted by the body into glycogen and stored in muscles, liver and bloodstream.

There are three types of carbohydrates – **fibrous**, **complex** and **simple**.

- **Fibrous carbohydrates** contain high levels of fibre which slow down the process of conversion into glycogen, thus sustaining your energy supply over the day and maintaining a constant level of blood sugar.
- **Simple carbohydrates** are rapidly converted by your body and used quickly as energy. This means your blood sugar level rises and falls quickly. The fall in blood sugar levels is typified by the mid-afternoon slump when your body craves more sugars to keep you ticking over.
- **Complex carbohydrates** are starchy foods such as white pasta, rice, potatoes and bread. They also raise your blood sugar level so are less beneficial than the fibrous types.

The rise in blood sugar levels causes a sharp rise in insulin which promotes glycogen storage. However, high levels of insulin production also promote the storage of fat, so while you will enjoy a surge of energy, you will also suffer an increased storage of fat.

Foods high in simple carbohydrates

- Sugar (white/brown)
- Jam, honey, marmalade
- Most boxed cereals
- Tinned fruits
- Yoghurt
- Fromage frais
- Ice cream
- Jelly
- Sweets/chocolates
- Biscuits
- Cakes

High in complex carbohydrates

- Bread (brown/whole wheat)
- Pasta (brown if possible)
- Rice (brown if possible)
- Noodles
- Oats/porridge
- Breakfast cereals (whole wheat only)

High in fibrous carbohydrates

- Cauliflower
- Broccoli
- Green Beans
- Cabbage
- Brussels Sprouts
- Peas
- Carrots
- Courgettes

MONO-UNSATURATED FATS

Everyone knows fats are bad for you right? WRONG! The secret is out – fats are good for you...well SOME fats are good for you.

Mono-unsaturated fats contain essential fatty acids. These are vital for circulation, metabolism, boosting your immune system, energy and muscular strength.

- Cold-pressed olive oil, flaxseed oil, nuts and organic peanut butter are four classic sources of mono-unsaturated fats.

There's nothing wrong with saturated fats and they are actually essential for life but only in limited amounts. Too much can raise the level of cholesterol in your body, leading to circulation problems such as narrow arteries and heart disease as well as increasing your body weight. These types of fat are usually solid when at room temperature. Lard is an example.

Chances are you're already taking steps to reduce your saturated fat intake -- low fat yoghurt, low fat milk, low fat cheeses etc. **Simply put, try and do more of this.**

In line with your increased protein intake, choose lean meats (beef/turkey, for example) rather than fatty meats (pork/bacon). Also, grill or steam your meat rather than fry it in its own fat, and always trim the excess fat off the meat before you cook it

Finally, limit your intake of crisps, chips, cookies, cakes, chocolates and sweets.