



If you're a Competitive swimmer, you will already be aware of the importance that your diet plays on your performance in the pool. Assuming you're a healthy eater, read on for information on how you can tune your eating habits to boost your swimming performance.

Pre-Exercise Meals

If you're planning to go swimming or training later in the day, try to eat an exercise-friendly meal two and three hours before you go. This means keeping your carbohydrate and protein levels high on roughly a 60:40 ratio and eating a low-moderate level of fat.

2-3 hours before exercise:

- Sandwich/roll/bagel/wrap filled with chicken, fish, egg or peanut butter and salad
- Jacket potato with beans, tuna, coleslaw or chicken
- Pasta with tomato-based pasta sauce and cheese and vegetables
- Chicken with rice and salad
- Vegetable and prawn or tofu stir fry with noodles or rice
- Pilaff or rice salad
- Mixed bean hot pot with potatoes
- Chicken and vegetable casserole with potatoes
- Porridge made with milk
- Wholegrain cereal (e.g. bran or wheat flakes, muesli or Weetabix) with milk or yoghurt
- Fish and potato pie

Pre-Training Snacks

Don't train on an empty stomach, you'll be running on empty and your performance will be impaired. If there isn't time for a full meal, eat a small meal or snack before you start your training.

1-2 hours before exercise:

- Fresh fruit
- Dried apricots, dates or raisins
- Smoothie (home made or ready bought)
- Yoghurt
- Shake (home made or a meal replacement shake)
- Cereal bar or nutrition bar
- Fruit loaf or raisin bread



Early Morning Training

Simply stated, swimmers need to snack before an early morning swim and then eat breakfast once the workout is over. While it's not easy, once the swimmer gets into the swing of it, the habit becomes routine.

To make sure that swimmers eat a breakfast, have them pack breakfast foods the night before, then they can grab it and eat it in the car if they are pressed for time in the morning:

- Two pieces of toast with juice
- Small bowl of cereal with low-fat milk
- 1/2 banana and 1 tablespoon peanut butter
- Bagel with small amount of cream cheese
- Fig bars and low-fat milk or a sports drink

After training it is important to refuel before starting school. To recover from the workout, both fluid and fuel must be available to the body.

Some swimmers are unable to eat after practice due to time constraints, lack of appetite, or stomach discomfort. During these times, a liquid meal replacement, such as a nutrition shake or a high-carbohydrate drink, can be used. When the appetite returns, they should try to eat the suggestions listed below:

- One bagel with peanut butter and banana
- Bowl of oatmeal with raisins and nuts
- One cup of low-fat yogurt, banana, and orange juice
- Waffle with low-fat milk
- Three pancakes with syrup and low-fat milk
- One breakfast egg sandwich with ham and orange juice

Snacking during the day

Elite athletes keep their blood sugar level as constant as possible by snacking regularly (and healthily) during the day. Only do this if you're training enough not to add body weight from the increased food/calorie intake. Target the same snacks you would as a pre-training boost – complex carbohydrates, fruits or protein shakes.

Fluids

Remember to keep drinking fluids during the day, but avoid sugary and fizzy drinks. Plain or lightly-flavoured water will keep you hydrated and in peak condition.

A swimmer should keep taking fluid up to the start of training, and also during rest periods in a training session. Fluid loss will affect performance if the body does not have adequate levels of fluid in reserve. Therefore, fluid replacement during exercise is extremely important to the swimmer.

It is worth remembering that thirst is an extremely poor indicator that the body requires fluid. A sports performer should drink fluid long before thirst arises. A simple test to see if a competitor is not drinking enough fluid is to check the urine



when going to the toilet. If the urine colour is not clear, (for example, yellow) then not enough fluid is being consumed for the body's needs.

After-training Refueling

If you're putting in the metres in the pool, your body will need a boost when you finish your training. Always try to refuel within 30 minutes of finishing – your body immediately needs nutrients to repair muscles and replace energy.

Make sure you're refuelling with the 'right' foods though – something low in fat but high in carbohydrates and protein.

Within 2 hours after exercise:

- A meal replacement shake (or flavoured milk shake)
- 1-2 portions of fresh fruit with a drink of milk
- 1 or 2 cartons of yoghurt
- A smoothie (crushed fresh fruit whizzed in a blender)
- A homemade milkshake (milk with fresh fruit or yoghurt)
- A yoghurt drink
- Cereal bar (containing carbohydrate and protein)
- A sandwich/bagel/wrap/roll filled with lean protein- tuna, chicken, cottage cheese, peanut butter or egg
- A handful of dried fruit and nuts
- A few rice cakes with jam or peanut butter and cottage cheese
- A bowl of wholegrain cereal with milk
- A bowl of porridge made with milk
- Jacket potato with tuna, beans or cottage cheese



Competition Nutrition

When preparing to compete at a swimming competition you need to pay careful attention to what you eat.

The day before

When competition time comes round, you'll have plenty on your mind already. So the day before the event, 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 sets

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

Introducing a healthy diet

Carbohydrates

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 fuel for swimming. 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

Fats

Everyone knows fats are bad for you right? **WRONG!** **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.

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.



Fruit And Vegetables

The benefits of eating fruit and vegetables are hardly breaking news. The reason they are so good is that they are good healthy all-rounders.

Fruit and vegetables deliver slower burning calories rich in vitamins and minerals that boost your immune system, help to maintain your digestive and respiratory systems, and improve your circulation. Here are few tips about choosing the right ones.

Try to pick as wide a range of colours as possible for your fruit and vegetables. This will ensure they contain a wider range of nutrients and antioxidants

But, green is ALWAYS a winner (think lettuce, cucumber, beans, sprouts, cabbage, broccoli...)

Red is also a winner too as they tend to be very high in antioxidants, such as red peppers, red leaf salad leaves, beetroot, red cabbage etc.

Protein

Proteins are broken down by the body and converted into amino acids, which have multiple uses in cell function. This includes boosting the immune system and helping to rebuild muscle after exercise.

Your protein demand when you are exercising regularly tends to be high as there is a greater need for muscle repair and replenishing energy stores. So where do we find proteins?

Proteins are not hard to find in the supermarket – they come in the form of meats, dairy, eggs, beans and nuts. You just have to be careful what else you're eating along side it as well.

For example, a steak gives you loads of protein but packs a fair punch of saturated fat to boot. Try to search out the leaner protein sources such as chicken, turkey, lean mince and fish. Eat about 30–40 grams per meal. This equates to a piece of meat about the size of the palm of your hand.

- Fish such as cod, plaice, haddock, bass etc
- Oily fish such as tuna, mackerel, salmon, sardines, and trout
- Game meats, such as venison, pheasant, and partridge
- Sea and shellfish such as mussels, prawns, crab, lobster, squid, snapper, tuna, sea bass, monkfish, sole, and snapper
- Whey Protein shakes
- Milk
- Low fat cheeses, such as cottage cheese



Vegetarian Options

Both meat eaters and vegetarians need to think carefully about diet if they want to maximise the benefits of swimming. If you are a vegetarian read on for some advice on getting the balance right and for pointers on potential vitamin and mineral deficiencies to look out for.

You'll know from our protein information that lean meat is a great way of boosting muscle recovery and immune system function. However, it doesn't have to be meat.

If the thought of a juicy steak turns your stomach, don't worry. There is no shortage of options for vegetarians and vegans to acquire the same level of protein as meat eaters.

Many people who abstain from meat will continue to eat fish, which is an excellent source of protein. Also, *did you know that eggs contain the highest biological value protein levels?*

The following protein sources will also work well for vegetarians:

- Pulses e.g. chick peas, kidney beans, mung beans, black eyed peas, lentils etc
- Low fat milk, low fat cheese, low fat yoghurt
- Whey protein
- Tofu
- Soya
- Quorn
- Quark
- Nuts and seeds
- Peanut butter
- Oatmeal

Vitamins and Minerals

But while you may have no problem with protein, take care not to ignore the rest of the vitamins and minerals found abundantly in many meats. Deficiencies in calcium, riboflavin, zinc, iron, vitamin D and vitamin B12 are all common in vegetarians and can affect everyday life functions and more specifically your workouts and recovery processes. Here are some more tips for maintaining a balanced vegetarian diet.

Calcium Calcium is found in many dairy products, such as milk, and *the lower fat milks actually contain higher calcium levels*. If you don't include dairy in your diet try to include protein rich soya milk, yoghurts and cheeses. Other good calcium sources include nuts, seeds, figs, rhubarb and a range of beans.

Iron

Iron is vital for healthy blood.

'Haeme iron' from sources such as meat, poultry and fish is more easily absorbed than non-haeme iron (from vegetables and dairy) because it's derived from blood tissues.



Good non-haeme iron sources include tofu, soy beans, salad greens, green vegetables (e.g. spinach, lentils, beans), beans (e.g. kidney, black, pinto), black eyed peas and oatmeal.

Try to include vitamin C sources in your meals, which will help iron absorption. Also remember some produce such as caffeine can inhibit iron absorption. So try and delay that after after-dinner coffee for at least 30 minutes.

Zinc

Zinc is very important in maintaining our immune function, skin colour, protein absorption, sense of smell and much more.

The recommended daily amount is between 10 and 15 milligrams per day. Vegetarian-friendly foods that can provide zinc are; pulses, eggs, shellfish and crustaceans, nuts/seeds, wheat germ and whole wheat bread.

Riboflavin (Vitamin B2)

Riboflavin is responsible for a range of bodily functions such as maintaining healthy eyes, skin, and nervous system.

It is also vital for iron absorption and the development of red blood cells and anabolic reactions in the body. Riboflavin can be easily broken down by direct UV light so keep them away from these environments.

Vegetarian-friendly foods that contain riboflavin include; eggs, most cereals, mushrooms, milk, pumpkin, sesame seeds, and wheat germ.

Vitamin B12

Vitamin B12 plays a role in boosting immune function. You only need to find a few micrograms on a daily basis in order to get sufficient vitamin B12.

It is recommended that you eat eggs, soya milk, cheeses, yeast extract, vegetable stock and yoghurts.

Vitamin D

Vitamin D helps to maintain healthy eyes, teeth and bones and is important to maintain our body's energy levels.

The recommended daily amount is approximately 10 micrograms and can be found in: soya milk, butter, eggs, soya cheeses, yoghurt, oily fish (e.g. mackerel, sardines and tuna) and also cod liver oil.

It is also well-known that we can absorb vitamin D from the rays of the sun. Gain sufficient 'lux' from natural light on a daily basis and this will limit the amount of vitamin D required to be consumed!