# Nutrition for Swimmers

## For Junior and Age Group Swimmers

Gary Barclay and Megan McDonald

Content support by registered nutritionist Sarah Burkhart

Version 1.01

**Day to Day Nutrition**

**Sports Specific Nutrition**

**Daily Meal and Snack Ideas**

First Published in 2012



Version 1.01

ISBN: 978-0-9872614-2-7 (eBook)

**Limits of Liability & Disclaimer of Warranty**
The authors and publishers of this eBook have used their best efforts in preparing this material. They make no representations or warranties with respect to the accuracy, applicability, fitness, or completeness of the contents of this material. They disclaim any warranties expressed or implied, merchantability, or fitness for any particular purpose. The authors and publishers shall in no event be held liable for any loss or other damages, including but not limited to special, incidental, consequential, or other damages. If you have any doubts about anything, the advice of a competent professional should be sought.

This information is put together with good intentions. Your child's nutritional requirements will be unique and depend on the number of training sessions attended each week and the child's age and stage of development.

If you have specific concerns in regards to your child's nutrition requirements, tiredness, lack of energy, weight gain or weight loss then a visit to a dietician is recommended.

For more information on sports nutrition including personal detailed plans, consult a registered sports nutritionist or accredited dietician.

www.NutritionForSwimmers.com

# Table of Contents



# Introduction

All children who participate in the sport of swimming can greatly benefit from sports nutrition. As swimming is based on strength, power, endurance and agility, a swimmer can eat a tailored diet based on their training and competition requirements.

As well as the benefits an athlete will enjoy from improving their sports nutrition habits, adolescence is also a great time to introduce and reinforce good overall nutritional habits for future years. The promise of an effect on performance and encouragement from significant others, is usually enough for an adolescent to make a change and sustain this.

Sports nutrition is not restricted to the competition environment. Ensuring that an athlete consumes the right food and fluid before, during and after training will also help maximise their energy levels, provide them with the fuel that they require, and provide the essential nutrients for growth, development and performance on a day to day basis.

***Sports nutrition is the principle of tailoring specific food and fluid requirements to an athlete in order to maximise physical performance.***

It is not just the elite athlete who benefits from sports nutrition. The junior, age group and recreational athlete can improve their overall health and performance by adjusting both what they consume, and when they consume it.

Sports nutrition is a rapidly developing field with plenty of research produced every year.

While recommended guidelines are available, every athlete is an individual and these guidelines may need to be adjusted.

This book will introduce the baseline diet with information on what foods are important for the adolescent swimmer and what they should be consuming.

It then focuses on sport specific nutrition strategies for before, during and after training and competitions, including advice on the use of water and sports drinks for hydration.

There are a number of daily meal ideas including recommendations for breakfast, lunch and dinner as well as advice on snacks in between meals.

If there is one area that many parents like support, it is around the provision of snacks at all times of the day. Many different snack ideas including ones based on bread, biscuits, fruit and vegetables are provided.

The final chapter provides parents and swimmers with a fantastic visual reference for meals and snack ideas that will assist the whole family.

If you have specific concerns in regards to your child's nutrition requirements, tiredness, lack of energy, weight gain or weight loss then a visit to a dietician is recommended.

Chapter 1

# Day to Day Nutrition

The day to day nutrition that an athlete consumes is referred to as a baseline diet.

There is little point in introducing specific sports nutrition strategies if the basic diet of an athlete is poor.

***Sports nutrition strategies have the most benefit when they are teamed with a well balanced and designed baseline diet.***

To ensure the adolescent athlete has a balanced baseline diet it is important to understand the concept of:

- energy balance,
- the food components and how they contribute to the fuel supply, and
- the role of hydration.

Although all athletes have a requirement of energy (measured in kilojoules or calories) for their training and competition needs, adolescent athletes have an additional requirement for growth and development.

Adolescence is the period in which maturation occurs and the optimal amount of energy and nutrients must be provided to the adolescent athlete to ensure that their needs are met for growth, development and sporting performance. Without enough total energy, or a deficiency in any number of nutrients, the adolescent will not mature or develop to their maximum height or frame size.

Ensuring a balanced diet for the adolescent athlete can be difficult as adolescence is also a period where the individual is gaining more control over what they eat. Children can be very impressionable and may lack the detailed knowledge of nutrition, along with essential skills of cooking and choosing foods.

As parents, caregivers or other officials who work with the adolescent athlete you are in a position to educate and motivate the athlete to improve their nutritional habits.

## Energy Balance

The human body needs a supply of energy for daily functioning. This energy is measured in the form of calories or kilojoules. Every individual has a different requirement for energy intake. The amount of energy that an individual needs is based on age, gender, body composition, activity levels and genetics.

The balance of energy in the body determines whether the mass of the body changes at all. For example when the adolescent experiences a growth spurt they will need to consume more energy to compensate for additional growth. This is termed positive energy balance. Positive energy balance is also needed for those athletes who are wishing to gain muscle mass.

Without enough energy for daily needs the body is in negative energy balance. When negative balance occurs the body will lose weight, usually in the form of body fat. Over time, if the level of body fat decreases too low, the body will also burn protein (usually found in the muscle) as a fuel source, further decreasing strength.

***It is important that adolescent athletes consume appropriate food and drinks to ensure they have enough energy for training and competitions as well as daily growth and development.***

## The Difference between Fat and Weight

Body composition is very important for swimmers—they need muscle mass and strength with a little body fat. They do not however want or need to be overweight.

There is a difference between fat and weight. Simply weighing an adolescent athlete is not an accurate way of determining body composition or health. For example two young swimmers may both weigh 58kg but they may have very different levels of body fat. One may have a body fat percentage of 12% and more muscle mass, whereas the other athlete may have less muscle but a higher body fat percentage of 20%. Even though they both weigh 58kg the athlete who has the lower body fat percentage and more muscle is likely to be more successful as a swimmer.

One of the most accurate and easiest ways to measure body fat percentage is to find an ISAK trained anthropometrist who can measure the body fat at numerous places on the body and determine the percentage.

## The Food Components and Food Groups

Foods are generally made up of three components that provide energy; the fats, carbohydrate and protein. Each source of energy works in a different way and is found in a range of food sources. Different food sources also provide nutrients in the form of vitamins and minerals. Two minerals that are essential for adolescent athletes are calcium and iron.

### *Fat*

Fat has a reputation of being 'bad' when in fact some fats are essential for health and wellbeing. Fats can be divided into two main groups based on the structure of the fat. The first of these is the saturated fat.

Saturated fat has a 'saturated' bond in its chemical makeup. This type of fat is deemed to be harmful to health when consumed in large quantities. It has been linked to heart disease and some cancers. It plays a significant role in high 'bad' cholesterol levels.

Foods which are high in saturated fat are mainly from animal sources. The following foods are high in saturated fat:

- cream
- butter
- fat found on or in meat products (think about the fat you often see on chops or steaks)
- copha
- lard
- yoghurt
- milk
- hard cheese
- deep fried foods and takeaways
- commercially made biscuits, cakes and pastries.

It is not essential to cut out completely all foods containing fat as most provide other valuable nutrients. For example meat is a high source of iron and there is calcium in dairy products. It is however important to be aware of the sources of saturated fat and limit the intake of this fat while focusing on healthier fats.

There is more awareness now of trans fat and the role this can play on the body. Trans fat is technically an unsaturated fat but it works in the same way as saturated fats do in the body. Trans fats are found in commercially made products like biscuits, cakes and pastries as well as occurring naturally in dairy products and meats (although it is hard to over consume from these two food groups as the levels are not high). These trans fats can play a large role in contributing to heart disease and other nutrition related diseases.

Unsaturated fats have an 'unsaturated' bond in their chemical structure which ensures that they have a different effect on the body.

***Unsaturated fats are known as the 'good fats'.***

These unsaturated fats are mainly found in plant based products and can be further separated into two sub groups—the monounsaturated fats and the polyunsaturated fats.

Monounsaturated fats are found in olive oil, avocado, canola oil, nuts, seeds and lean meats. This type of fat has appeared in many research papers which show beneficial effects to health.

Polyunsaturated fats are found in nuts, seeds, oily fish (like sardines, tuna, salmon—known as omega 3's), lean meats, and some oils. These fats are also very important to health. A number of these fats are termed essential fatty acids, which means that the body cannot make these fats from other products, they must be consumed.

Fat (whether it is saturated or unsaturated) is a dense source of energy. For every gram that is consumed it provides 9 calories (or 38 kilojoules) of energy. In comparison one gram of carbohydrate will provide 4 calories (16.8 kilojoules) of energy, as will protein. For this reason fat can be an issue with overweight individuals. If too many calories (or kilojoules) are eaten they will be stored as body fat if they are not needed as a source of fuel. As fat has more energy per gram it can be easy to over consume the right amount of energy and have problems with overall weight.

It is important to eat foods containing fats in moderation. Aim to choose unsaturated fats over saturated or trans fats whenever possible.

Examples of "good" fats found in food include nuts, seeds, oily fish (like sardines, tuna, salmon—known as omega 3's), lean meats, and some oils.

### *Carbohydrate*

Carbohydrates are a main source of fuel for the body and the brain.

> ***Carbohydrates are vital for muscle movement as they provide a source of energy for contracting and extending muscle. They are also vital for the brain and mental performance.***

Although the rest of the body can switch to using other sources of fuel if need be, the brain will only use carbohydrate as a source of energy. If the supply of carbohydrate runs out this limits the energy needed for mental tasks and performance is compromised through decreased reaction times, an inability to concentrate and an overall feeling of lethargy.

Carbohydrates quite simply are sugars. This is where confusion can occur—it is presumed by many that sugar is bad and should be avoided. In a practical sense carbohydrates should not be avoided but there are better options for different times.

In a baseline diet an athlete should be looking to consume lower glycaemic index carbohydrates. A low glycaemic index carbohydrate is one which takes longer to

go through the digestive process and as a result leads to a trickle of carbohydrate entering the bloodstream from the small intestine.

Foods which have a high glycaemic index digest quicker and tend to cause an influx of carbohydrate into the bloodstream. This quicker release may cause the individual to feel like they have more energy but this is temporary as the body reacts to bring this large amount of carbohydrate in the bloodstream back to a healthy level. This leads then to a lull in energy levels.

Consider the last time you ate candy or lollies—these are high glycaemic index foods. You probably felt like you had a sugar rush soon after eating them. But, soon after that, you probably felt a bit down, like you needed a sugar rush again. These high glycaemic index foods are best left as recovery foods and not consumed as much during the day to day baseline diet.

Carbohydrate is found in the breads, cereals and grains food group and in the fruits and vegetables food group. Yoghurt and milk also contain small amounts of carbohydrate.

***As carbohydrates are so important for athletes, each meal should contain a source of carbohydrate in the form of breads, cereals or grains, and fruit or vegetables.***

Many carbohydrate foods also contain fibre which is important for a healthy digestive system. Wholegrain products are higher in fibre and have more nutrients as they are less processed.

Snacks for adolescents should also be based around carbohydrate rich foods. Whenever possible the adolescent should be encouraged to consume wholegrain products to ensure they gain more nutrients and fibre.

Examples of carbohydrate foods are Bread, pasta, rice, potato, noodles, breakfast cereal, fruit, dairy products (not cheese), sports drinks, lollies, honey.

### *Protein*

Protein is well known for its role in muscle development and recovery. This role in development is especially important for the adolescent athlete who is still growing and maturing.

Protein is found in meats, meat alternatives and dairy products. Good sources of protein include beef, lamb, goat, pork, duck, turkey, fish, tofu, egg, nuts, seeds, legumes (beans, lentils), soy products, milk, yoghurt, cheese and ice cream.

As mentioned earlier, protein provides 4 calories (16.8 kilojoules) of energy per gram. Protein is not usually used as an energy source for the muscles, although when there is not enough fuel provided for the body it can use protein as a backup store. This is often what happens during a diet with very low energy intake and is often seen with a reduction of muscle mass on the body, which directly affects strength, endurance and performance.

The protein foods are also good sources of two minerals which are vital for growing athletes. They are calcium and iron.

Calcium plays a role in determining the strength of bones, teeth and in many other processes throughout the body.

***Calcium is vital for the growing adolescent to ensure strong bones.***

A lack of calcium may weaken bones and may increase the risk of osteoporosis later in life.

Good sources of calcium include the dairy products. Many of these dairy products can be purchased as a calcium enriched product which is worth considering. If your adolescent uses rice or soy products you should look for calcium enriched versions of these.

Calcium is also found in leafy green vegetables, tinned fish with edible bones and nuts and seeds but these are not as high in calcium as dairy products so would have to be consumed in very high amounts.

Examples of Protein—meat, chicken, fish, eggs, dairy products, tofu, seeds, nuts, lentils and beans.

## Vegetarian or Vegan Athletes

For adolescent athletes who choose to be vegetarian or vegan, extra care must be taken to ensure that they consume enough protein. In addition, as meat products are a good source of iron, these athletes need to consume adequate amounts of iron from other sources. This group also needs to ensure they consume enough vitamin B12. It is important to be aware that the iron which is found in animal based products (like red meat) is heam iron which is absorbed much easier than the non-heam form of iron found in plant based products (like silver beet).

***Iron is important for both health and performance.***

Iron plays a role in the transport of oxygen around the body. As oxygen is essential for life, a deficiency in iron can cause tiredness, lethargy, pale skin, breathlessness and headaches. For athletes, as the body needs more oxygen when it exercises, a

deficiency of iron can greatly reduce physical performance through breathlessness and premature fatigue.

Females are more at risk of iron deficiency because of menstruation but vegetarians, or those who limit their red meat intake, may also be at risk. If your child chooses not to eat, or limits their red meat intake, you should ask for assistance from a practicing dietician or registered nutritionist on how you can tailor their diet to maximise iron from other sources.

## Basic Fluid Needs

The body is made up of fluid with approximately 60—70% of the body being water. Water is not only essential for life it plays an important role in performance. The body uses water for temperature regulation, and in the composition of blood, plasma and urine.

Dehydration in the worst case will kill an individual. In a light case of dehydration, health and performance can still be compromised.

***The symptoms of dehydration include dizziness, blurry vision, headaches, thirst, an inability to concentrate and a decreased reaction time.***

A decrease of just 2% of body fluid can decrease performance by up to 20%! It is not only in competitions that a swimmer needs to be aware of their hydration status. Dehydration will affect day to day activities and training so it is important that adolescents maintain an adequate fluid balance every day.

Children can have a higher risk of dehydration as they do not have a thermoregulatory system which is as effective as an adult system. Children have a less efficient sweating mechanism and they have less ability to transfer heat to the skins surface for transfer. They also tend to produce more heat per kilogram than adults do and as they have a larger surface area (compared to body mass) than an adult, they can absorb more heat than an adult would.

So, how much fluid should an adolescent be consuming each day?

The adolescent needs to consume enough fluid to stay hydrated for their individual needs. If the adolescent is urinating five to six times a day (and this urine is clear and plentiful) they are likely to be staying hydrated.

Not the entire fluid intake needs to come from plain water. Foods also contribute water. Fruit and vegetables contribute fluid, as does milk, juice, tea, cooked meats, breads and dairy products.

Water and milk should be the drink of choice for the adolescent athlete. Occasional glasses of juice are fine to include as part of a balanced diet as they contain carbohydrate and some vitamins but it is best to avoid soft drinks, energy drinks and other caffeinated drinks as these are devoid of nutrients.

In a hotter environment the adolescent will need to consume more fluid to aid in thermoregulation. In colder environments an athlete may find they have a lower fluid intake because the body does not produce as much sweat.

Chapter 2

# Sports Specific Nutrition

Once a swimmer and their family members have put in place a solid baseline nutrition strategy, it is time to consider the swimmer's sport specific nutrition needs.

Every swimmer is different and the following information provides a general outline on what to eat and when to eat it.

With some swimmers training twice a day and competing in multiple events in a day, nutrition for optimal performance is very important.

Swimmers can benefit significantly from applying a balanced diet and ensuring they are fuelled and hydrated for their sport.

## Training

### *Before Training*

The ideal time to top-up the muscles with carbohydrate and ensure that the swimmer is hydrated is 30-60 minutes before the start of a training session. The foods eaten should be familiar and enjoyable.

Examples of snacks to eat before training are fruit, low- fat milk (add some milk flavouring and heat up in microwave), low-fat yoghurt, breakfast or muesli bar, white bread or toast with jam or honey, crumpets, raisin toast, English muffins, and low fat fruit muffins.

### *During Training*

In general, for a training session less than one hour duration, drinking water is fine. The athlete will not need extra carbohydrate food sources for a session of this length.

For any training session over an hour in duration a sports drink may help maximise performance, as it will provide extra fuel for the muscles which will help to delay fatigue. If the athlete chooses not to consume sports drinks they can have a small carbohydrate based snack and water.

Fluid intake during training sessions is important. Swimmers tend to forget that they sweat because the sweat is passed into the surrounding water before being noticed on the skin. This can lead to the false impression that because the sweat on their body is not noticeable, they do not have to drink as much fluid.

If there is a gym session before or after the pool session a quick snack like a breakfast bar or honey sandwich may be eaten.

### *After Training*

Recovery nutrition is a vital part of every swimmers overall recovery following a training session or competition.

***Within 30 minutes of a session finishing, or earlier if possible, it is important to refuel, repair and rehydrate.***

A snack that is high in carbohydrates, and contains protein is a great choice, and combined with some fluid is an ideal way to aid recovery. Swimmers should aim to eat and drink while getting changed, or on the way home from the pool.

The muscles use fuel to move and this fuel must be replaced. The muscles of the body can be likened to a cars fuel tank. If the muscles are fully stocked with carbohydrate this is the equivalent to having a full tank of fuel in the car. If the car is driven it will continue to go until the fuel tank runs out. If the fuel tank is filled the car (barring mechanical failure) will continue to go. This is what occurs in the muscles.

If the muscles are fully stocked with carbohydrate, an athlete will have enough fuel for approximately 90—120 minutes. Once these stores start to run out they can simply be refilled by taking in more carbohydrate. If the muscles are allowed to run out, fatigue will occur. If however the muscles are refilled throughout longer bouts of exercise, fatigue (and running out of fuel) can be prevented.

This is also important over time as if the muscles are not restocked fully after each session; the fuel tank is already low for the next one.

***After an exercise session it is important to consume a recovery snack or meal within 30 minutes to one hour at the latest.***

***This is because at the completion of exercise the blood flow around the body is still high providing the ideal time to send out more carbohydrate to the muscles to replace what has been lost.***

If the athlete waits longer than this to have their recovery snack or meal, they risk not replacing the fuel supply, which then limits the supply available for the next training session or competition.

Examples of snacks include a fruit smoothie, liquid meal supplement (in a tetra box), flavoured milk (in a tetra box), sports bar, low fat yoghurt, dried fruit and rice cakes.

## Competitions

Being prepared is the key to making sure appropriate food is available at a competition.

Competing requires quick releases of energy and the way to achieve this is to ensure appropriate snacks are consumed on a regular basis throughout the day.

A cooler bag packed with a variety of food and drinks to choose from should be prepared on the day of the competition.

### *Before a Competition*

The night before a competition it is important to eat a meal that is high in starchy carbohydrates, low in fat and has a bit of protein.

Examples include pasta with a low fat bolognaise sauce, chicken or beef stir-fry with rice or noodles, or a risotto. This can be followed by a dessert of fruit salad, banana and low fat custard, apple crumble and low fat ice-cream, jelly and fruit, or creamed rice.

Two to four hours before a competition is the ideal time to top up the muscles with carbohydrates and ensure that the athlete is hydrated. This is made much easier if the athlete has been eating a balanced diet on a day to day basis. The snack or meal should be high in carbohydrate, low in fat and something that is enjoyable.

Food needs at least two hours to digest and to provide usable energy so the pre-event meal should be consumed at least two hours beforehand. Some athletes will choose to have this meal or snack earlier than this to give the food more time to settle and prevent exercising on a full stomach.

***The athlete should experiment with different time frames and use what seems to work best and feel most comfortable for them.***

As the aim of this pre event snack is to top up the levels of carbohydrate in the muscles it must be a predominantly carbohydrate based food. This can be a main meal or snack depending on the time of the event. The examples suggested later in this book are ideal for a pre event meal. The athlete should also consume fluid at this stage to ensure they are well hydrated.

### *Dealing with Pre-Event Nervousness*

Nervousness is common amongst young athletes before an event or significant training session. The feeling of nervousness may not affect the athlete's appetite but in some cases the athlete may not be able to tolerate any food or fluid. This is a matter which needs addressing as the pre event meal or snack provides an important top up of fuel for the upcoming performance.

Those athletes who are nervous may benefit from liquid based meals. These tend to sit more comfortably in the stomach and are easier to consume. Athletes may also benefit from very bland foods at this time. Good examples are plain toast, or a light cereal with a little milk.

About an hour before the race a small snack can be eaten to top up energy levels.

### *During a Competition*

The body needs fuel to drive performance and as mentioned earlier, if that fuel runs out, then fatigue will set in. This is important to consider in the competition environment.

There are issues associated with eating and drinking during competitions including:

- swimmers not feeling hungry,
- the idea that eating will cause a stitch or discomfort,
- friends or peers do not eat or drink so it is not considered normal behaviour, and
- a lack of availability of suitable foods and fluids.

For these reasons the swimmer needs to have a plan for competitions.

For competitions where there is time between events the swimmer should base their food and fluid choice on the time available.

If there is less than one hour between events the athlete will feel more comfortable if they consider just fluids (sports drinks, smoothies and water).

For events that are one hour to two hours apart the athlete should practice having fluid and a small snack or two.

When events are further apart the athlete can usually comfortably consume a meal, and fluids.

As individuals differ, there may be cases where swimmers feel like eating more (or less) in the time periods and so long as the swimmer is trying to maintain hydration and take some carbohydrate in, they should be encouraged to do what feels comfortable.

### *After a Competition*

Eating a meal following a competition is essential to assisting optimal recovery. These meals, similar to the ones suggested for the day-to-day diet, should be based on carbohydrate and have moderate protein content.

Athletes should ensure that they replace any fluid that they have lost during a competition. They can do this either through the use of sports drinks, water, milk or juice in the hours following a competition.

## Hydration

There are general guidelines for fluid intake for athletes however these need to be adjusted for each individual. It is recommended that a swimmer should consume approximately 600-750mL (20-25 fl.oz.) of fluid per hour. This is a significant amount for some swimmers and not all will need to consume this much.

To ensure that the swimmer stays hydrated they should regularly monitor the colour of their urine. If the urine is pale this indicates a good hydration status. If the urine is yellow or brown coloured this indicates a need for more fluid. This is a very easy way for the adolescent athlete to monitor their own hydration status. It is important to be aware however that if the athlete is consuming multivitamins that these will change the colour of urine and will mask the hydration status.

Listed below are some practical tips to ensure that the adolescent swimmers drink enough fluid during training and competition:

1. Provide a drink that the adolescent swimmer enjoys (this could be water or a sports drink).
2. Keep the drink at an appropriate temperature (you may need to take it in a chilly bag).
3. Ensure that the swimmer knows how to check their hydration status by urine colour.
4. Ensure that the swimmer knows how dehydration may affect their performance.
5. Continue to gently encourage the adolescent swimmer to consume fluid throughout the session or day.

There are a number of dehydration warning signs that you need to be aware of.

***The key signs of dehydration are dizziness, feeling light headed, muscle cramps, nausea and/or headaches.***

If your child has any of the above symptoms they need to sit down and drink some fluids.

### *Sports Drinks*

Sports drinks are very popular and while there is a use for them in sports training and competition, the following guidelines should be used for selecting and using a sports drink:

- Check that the carbohydrate content is between 4 and 8%. On the label this translates to between 4 and 8 grams of carbohydrate per 100mL (3 fl.oz.).
- Look for a sodium content of 500-700mg/L. This is also on the label.
- Ensure that the swimmer likes the taste of the sports drink. If the swimmer does not enjoy the taste they will not drink it.
- Check what temperature the swimmer prefers their fluid to be at—warmer fluids may not be well accepted, just as very cold fluids may not be.

- Ensure that the athlete maintains a good dental hygiene routine. Sports drinks contain sugar which may increase the risk of dental cavities if these sugars are allowed to 'sit' on the teeth. Swimmers should be encouraged to brush and floss regularly, and to wash the sports drink down with a mouthful of plain water after each drink.

### *Supplements*

If you are considering taking supplements ensure you base the use of any supplement on the advice of a medical professional, nutritionist or sports dietician.

It is important to ensure that supplements are used correctly to deliver maximum benefits, not only for performance and recovery but also to assist the immune system to operate at its optimum.

Chapter 3

# Daily Meal Ideas

The adolescent athlete needs a balanced diet to ensure that they consume the food, nutrients and fluid that they require.

***Adolescents should be eating breakfast, lunch and dinner meals and be encouraged to consume snacks between meals if they need to. They should also be encouraged to eat to their appetite and keep up their fluids.***

To ensure that an adolescent is consuming a balanced diet a good rule to work off is the plate model. This means that a plate (meal) should be around half fruit and vegetables, a quarter protein based products and a quarter breads, cereals and grains.

This model gives the adolescent food from each of the food groups and ensures that they eat a diet high in carbohydrate (fruits, vegetables, breads, cereals and grains) and moderate in protein (from the meat, meat alternatives or diary products).

Good examples of easy meals that meet this model are:

- A stir fry made with rice or noodles, mixed vegetables and a lean meat (e.g. beef, chicken or lamb strips) or tofu.
- Tortillas or pita breads filled with salad and lean beef mince or chilli beans.
- Spaghetti bolognaise with lean mince, pasta, tomato based sauce and vegetables or salad on the side.
- A sandwich filled with salad and lean meat or egg or cheese (or a bread roll with the same fillings).
- Rice with a tin of tuna (or other canned fish) with mixed vegetables.
- Homemade burger with a grilled meat or vegetable patty and salad ingredients.
- A vegetable risotto with lean chicken and vegetables/salad on the side.
- Homemade burger with a grilled meat or vegetable patty and salad ingredients.

The following page provides you with breakfast, lunch and dinner meal ideas. It can be printed off in colour and laminated as an easy reference sheet for you.

> **NOTE:** Portion size required will vary depending on the age and activity levels of the individual swimmer. If you need to know exact quantities of how much food the athlete should be eating throughout the day then a registered nutritionist will be able to help you with your specific needs.

# DAILY MEAL IDEAS

## *Breakfast*

- Yoghurt with fresh fruit
- Baked Beans on toast
- Pancakes with blueberries
- Fresh fruit bowl and cereal
- Breakfast cereal with strawberries & blueberries
- Muesli with fresh fruit
- Porridge with banana
- Omelettes with toast
- Poached or Scrambled Eggs on toast
- Low Fat flavoured milk and toast
- Fruit smoothie and toast

## *Lunch*

- Vegetable wrap sandwich
- Ham & salad sandwich, apple & milk
- Roast beef slices and salad sandwich
- Chicken and salad sandwich
- Toasted Sandwiches
- Baked Potato (with baked beans or light sour cream)
- Tossed salad with Chicken (cooked drumstick without skin, or breast)
- Low fat noodles with chilli tuna stirred through
- Sushi rolls with mixed fillings
- Fruit Smoothie

## *Dinner*

- Pasta—Spaghetti with tomato sauce and basil, Penne with vegetables
- Lasagne—add pumpkin, spinach, mushrooms to lean beef sauce.
- Grilled salmon steak with asparagus and green salad
- Grilled chicken fillet with vegetables
- Grilled fish, potato with salad
- Grilled chicken and vegetables wrapped in a tortilla
- Grilled steak with herbs and salad
- Burger with a grilled meat and salad ingredients
- Vegetable patty and salad ingredients
- Low fat fried rice
- Soup (Pumpkin, Chicken Noodle, Tomato, Minestrone) with crusty bread
- Pizza—home made—on pita bread, low fat cheese and favourite toppings

Chapter 4

# Swimmer Snack Ideas

There are many opportunities for swimmers to eat snacks around their three meals each day.

Choosing the right snacks can be very important as the sustenance gained from them will provide critical energy for training and competition performance.

Provided below are general snack ideas which are then broken down further into bread and dry biscuit snacks, fruit snacks and vegetables snacks to assist the adolescent athlete.

These are followed by some quick snack ideas for when you are at home or out, and need a snack.

## General Snacks

Great snacks for the adolescent athlete include:

- Fruit and yoghurt
- Yoghurt
- Milk
- Flavoured milk
- Smoothies—fruit , skim milk, frozen yoghurt
- Breakfast cereal with milk or yoghurt
- Baked beans or spaghetti on toast
- Bread Rolls and Sandwiches
- Fruit bread
- Creamed rice
- Pancakes with syrup
- English muffin with jam
- Crumpet with honey
- Pikelets—banana, berries
- Baked Potato—baked beans, low fat cheese

- Egg—boiled
- Corn—small cob
- Pumpkin Soup—bowl
- Vegetable Soup—bowl
- Celery and Carrot Sticks—Hommus dip, Tzatziki Dip
- Home-made popcorn
- Low fat fruit muffins
- Rice Cakes

## Bread and Dry Biscuit Snacks

Bread and dry biscuits are popular and easily sourced snacks for athletes. It is strongly recommended that you vary the type of bread you buy and where you buy it from.

The best bread and dry biscuit snacks include:

- Bread Rolls
- Sandwiches using multigrain or wholemeal bread
- Raisin Toast
- Wraps
- Crumpet (with honey)
- Mountain Bread
- Multigrain or Wholemeal Toast
- English Muffin—thin peanut butter / jam / slice low fat cheese
- Pita Bread Toasted—low fat Tzatziki dip or hummus dip
- Rice Crackers, Rice Cakes
- Pretzels
- Crispbread
- Fruit Bread
- Toasted sandwiches (filled with creamed corn, spaghetti, lean ham, pineapple)
- A pita bread pizza (pita bread topped with pizza sauce, lean meat and vegetables like tomato, pineapple, mushrooms, capsicum)

## Fruit Snacks

Fruit is a key snack for swimmers. At least one to two pieces of fruit should be eaten every day. By eating fruit, swimmers will be provided with many of the vitamins and minerals necessary to avoid fatigue and illness.

While fresh fruit is often best, fruit can also be eaten in the form of:

- Frozen fruit
- Dried fruit
- Tinned fruit
- Fruit smoothies
- Fruit slushies

The best fruits to eat include:

**Apple**—good source of vitamin C, lots of antioxidants which help protect your body against disease, good source of dietary fibre

**Apricots**—good source of vitamins A and C as well as dietary fibre

**Avocado**—good source of vitamin E which keeps your red blood cells healthy, lots of dietary fibre

**Banana**—excellent source of vitamin B6 and C, good source of dietary fibre. Can be frozen for a great snack.

**Blueberries**—good source of vitamin C and natural sugars for energy

**Cherries**—good source of vitamin C and also supply dietary fibre

**Grapes**—have carbohydrates which digest slowly for long term energy. Can be frozen for a great snack

**Kiwi Fruit**—is a good source of potassium, vitamins C, A and E

**Mandarin**—high in vitamin C, good source of dietary fibre

**Oranges**—excellent source of vitamin C, low GI so that its carbohydrate is released slowly into the bloodstream

**Pear**—low GI so carbohydrates are digested slowly and provides prolonged source of energy, good source of dietary fibre

**Pineapple**—good source of vitamin C, provides dietary fibre

**Plum**—excellent source of vitamin A, calcium, iron, potassium, magnesium and fibre

**Raspberries**—great source of dietary fibre, excellent source of vitamin C, source of vitamin E and folate

**Rockmelon**—excellent source of vitamin C, good source of potassium

**Strawberries**—excellent source of vitamin C, good source of dietary fibre, good source of folate

**Watermelon**—high in vitamin A, vitamin B6 and vitamin C

### *Fruit Smoothies*

Mix a selection of fruit with reduced fat milk and yoghurt or ice-cream yoghurt. Some great flavours include:

- Banana and strawberries
- Strawberries and blueberries
- Mango and berries

### *Fruit Slushies*

Blend chopped fresh fruit with crushed ice and unsweetened apple juice. Some great flavours include:

- Pineapple
- Pineapple and mango
- Watermelon
- Watermelon and strawberries
- Rockmelon and strawberries
- Strawberries and blueberries

## Vegetable Snacks

There are many different vegetable snack ideas that you can prepare for the adolescent athlete.

Vegetables cut into appealing sticks for dipping are always a winner.

Home made vegetable soup dishes are also delicious and can be made in advance, frozen in small airtight containers and then re-heated in a microwave when a snack is required.

Below are a few vegetable based nourishing snacks that will assist you to include the 3 or 4 serves of bright coloured vegetables that we all need each day:

- Carrot, celery or capsicum—with a reduced fat dip like hummus
- Celery—spread with peanut butter, vegemite, cream cheese or sultanas
- Capsicum—dipped in cream cheese
- Baked potato with low fat toppings
- Variety of soups served with wholegrain toast—vegetable soup, pumpkin soup, creamy carrot and red lentil soup or hearty vegetable soup

## Quick Snacks

There are many ideas for a quick snack—whether you are at home or out and about

### *Snacks at the Shops*

- California roll or Sushi
- Salad sandwich or salad roll
- Low fat ice-cream
- Banana and Fruit smoothie—low fat skim milk
- Frozen yoghurt
- Fruit slushie

### *Snacks from the Cupboard*

- Baked beans
- Tuna—low fat, small tin
- Dried apricots or sultanas
- Dates or prunes
- Muesli bar
- Creamed rice
- Nuts

### *Snacks from the Freezer*

- Yoghurt—frozen
- Sorbet
- Ice-Cream—low fat
- Blueberries
- Raspberries
- Frozen Grapes or banana pieces

### *Snacks from the Fridge*

- Yoghurt—low fat tub
- Milk—skim milk with flavouring
- Custard—low fat
- Cheese slices

### *Snacks to keep in your Handbag / Glove box of car*

- Muesli bars
- Dried fruit bars
- Box of sultanas
- Nuts
- Dried apricots

Chapter 5

# Visual Reference Meal and Snack Ideas

If you are stuck for meal or snack ideas use the following pages as a visual reference. You can print off the pages, laminate them and put on your fridge.

Use your own favourite recipe or find one on the internet that suits the ingredients you have already.

You will find some great recipe books written by expert nutritionists from around the world to buy on www.NutritionForSwimmers.com/resources.

***Healthy Cooking Tips:***

- Keep a low fat approach to your cooking and use minimal fat wherever possible.
- Use cooking methods that require little fat or oil such as microwaving, grilling, or steaming.
- When buying meat, fish, and poultry choose lean cuts and remove the skin and fat.
- Avoid high fat dressings on salads.
- Make sandwiches without margarine or butter.

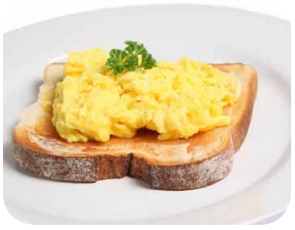
# Nutrition for Swimmers—Breakfast Ideas

*Banana Bread*

*Muesli and Berries*

*Low fat breakfast Bar*

*Waffles and Strawberries*



*Scrambled Egg—On Toast*

*Fresh Fruit Salad*

*Toast with Jam*

*Poached Egg—On English Muffin*

*Fruit Smoothie—Low fat milk, yoghurt and fruit*

*Pancakes & Berries*

*Omelette—Ham, Cheese*

*Porridge—Honey and Sultanas*

*French Toast with Berries*

*Yoghurt and berries*

*Low Fat Muffins*

# Nutrition for Swimmers—Lunch Ideas

*Sandwich—Chicken and Salad*

*Wraps—Salad and Ham*

*Sandwich—Egg, Mayo, Lettuce*

*Toasted Sandwich*

*Pizza—Pita bread, tomato, olives, Basil with low fat cheese*

*Baked Potato & Baked Beans*

*Baked Potato Low Fat Sour Cream & Low Fat Cheese*

*Noodles—Stir through your favourite flavoured tinned tuna*

*Chicken Noodle Soup*

*Minestrone Soup*

*Rice Paper Rolls*

*Penne Salad*

# Nutrition for Swimmers—Dinner Ideas

*Spaghetti Bolognaise*

*Lasagne—Add Cooked Pumpkin, Baby Spinach Leaves or Mushrooms*

*Penne—Roasted Vegetables*

*Grilled Steak and Vegetables*

*Grilled Chicken and Salad*

*Grilled Salmon and Vegetables*

*Fish Cakes and Salad*

*Stir Fry—with steamed rice or noodles*

*Kebabs—with rice or in a wrap*

*Hamburger—Lean, Grilled*

*Tacos—add beans and salad*

*Stir Fry—with rice or noodles*

*Tossed Salad With Sliced Meat*

*Lightly Fried Rice*

*Noodles*

# Nutrition for Swimmers—Snacks

*Banana Sandwich*

*Baked Beans*

*Dips and Vegetables*

*Californian Rolls*

*Fresh Fruit*

*Low Fat Muffin with Blueberries*

*Frozen Yoghurt*

*Frozen Fruit Poles*

*Dried Fruit*

*Yoghurt*

*Milk—Low Fat Flavoured*

*Frozen Fruit*

*Fruit Juice Icy Poles*

*Popcorn Home made no butter*

*Yoghurt and Fruit*

# Nutrition for Swimmers—Desserts

*Fresh Fruit Platter*

*Rice Pudding/ Creamed Rice*

*Yoghurt and Fruit*

*Apple Crumble*

*Berry Crumble*

*Crepes with lemon and sugar, berries or maple syrup*

*Frozen Yoghurt*

*Pancakes & Berries*

*Banana and low fat custard*

*Baked Apple*

*Low Fat Chocolate Pudding*

*Low Fat Date muffin*

*Grilled Pear*

*Poached Pears*

*Low Fat Bread Pudding*

# Useful Links

### *Nutrition for Swimmers*

**www.NutritionForSwimmers.com/resources**

The Nutrition for Swimmers resource section provides a variety of cooking recipes, books written by top nutritionists and eating hints.

### *The Swimming Expert*

**www.TheSwimmingExpert.com**

The Swimming Expert provides useful tips, resources, videos and information to help swimmers of all ages to improve their swimming.

### *Swimming for Parents*

**www.SwimmingForParents.com**

Swimming for Parents is an excellent resource for all swimming parents. The book 'Swimming for Parents' has been written for an international audience and is the number one selling book on this topic in the world.

### *Swim Freestyle Fast*

**www.SwimFreestyleFast.com**

The Swim Freestyle Fast website provides information on freestyle technique including tips and drills to swim better freestyle.

There are also a range of DVDs available that look solely at freestyle and provide drills and skills for swimmers of all ages.

### *Swim Backstroke Fast*

**www.SwimBackstrokeFast.com**

The Swim Backstroke Fast website provides information on backstroke technique including tips and drills to swim better backstroke.

There are also a range of DVDs available that look solely at backstroke and provide drills and skills for swimmers of all ages.

### *Swim Breaststroke Fast*

**www.SwimBreaststrokeFast.com**

The Swim Breaststroke Fast website provides information on breaststroke technique including tips and drills to swim better breaststroke.

There are also a range of DVDs available that look solely at breaststroke and provide drills and skills for swimmers of all ages.

### *Swim Butterfly Fast*

**www.SwimButterflyFast.com**

The Swim Butterfly Fast website provides information on butterfly technique including tips and drills to swim better butterfly.

There are also a range of DVDs available that look solely at butterfly and provide drills and skills for swimmers of all ages.

### *Australian Swimming Clubs*

**www.swimclub.com.au**

SwimClub.com.au provides information on where to find a swimming club in Australia and articles for swimmers of all ages.

www.NutritionForSwimmers.com