

# FUELLING ACTIVE KIDS



## Junior Swimmer

A GUIDE FOR PARENTS, COACHES AND TEAM MANAGERS

# JUNIOR SWIMMER



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## “Encourage junior Swimmers to eat and drink well to feel great and perform at their best”

This booklet offers guidance for meeting the nutritional needs of children aged 5 -11 who train regularly and swim competitively. Whilst most of the information in this booklet is also appropriate for older children, more specific nutrition information for adolescents is available at [www.sportsdietitians.com.au](http://www.sportsdietitians.com.au).

Parents and coaches frequently ask “What are the best foods and drinks for kids to have to boost their performance in the pool?” Just as often, in conversations between parents at sporting events, quite different opinions are expressed about what is best practice in feeding and hydrating the potential swimming stars of tomorrow.

Whilst the nutrition needs of children are individual and vary throughout their development, there are some important guidelines that are applicable to all juniors participating in Swimming.

The foods and fluids consumed by athletes of any age can have a big impact on their ability to train, compete and recover well. Food provides fuel for exercising muscles and nutrients for growth, recovery, cognition (ability to think well) and the immune system. It makes sense then that choosing foods and fluids that provide the optimal amounts of nutrients, can help ensure a fit, strong and healthy young athlete.

Sports Dietitians know how challenging it can be to juggle the demands of family, work and sport, and have aimed to provide information that not only helps optimise the performance of the junior participating in swimming, but is easily incorporated into the overall active family’s lifestyle.

Establishing high performance eating habits

early in life will help set junior Swimmers up for a long, healthy life in their chosen sports. It’s also an approach to eating that has health benefits the whole active family will benefit from.



This booklet provides information based on recent scientific research, and has been extensively reviewed by accredited sports dietitians working with Australian sports people and athletes.

Thanks to the following Accredited Sports Dietitians Ruth Logan, Lisa Middleton, Lorna Garden, Gary Slater, Kellie Hogan, Christine Dziedzic, Kate Pumpa and Sophy Foreman for their professional review of this publication.

# GETTING READY...

It is important for the junior Swimmer to eat well every day – not just on the day of a swimming carnival. The foods they eat on a day to day basis help develop the ability to store glycogen (carbohydrates) in their muscles, maximise their growth and development and prepare them for performing at their best on event day.

Active children need constant refuelling, hydrating and cooling. Their nutrition needs are particularly important as they must meet requirements for not only their physical activity, but also their growth and development as well as overall health and well-being.

The junior Swimmer will perform better, over more events and recover quicker from training and competition when they are well fuelled. An athlete who is not giving adequate consideration to their diet when choosing meals and snacks may become tired, irritable and lethargic, and may even struggle to maintain interest and enjoyment in sport.



## Carbohydrate for Energy

Ensure active children have frequent opportunities to eat foods rich in carbohydrate such as bread and other cereal products, pasta, rice, fruit, starchy vegetables and calcium rich dairy foods. Carbohydrate rich energy foods (see examples below for Carbohydrate rich foods), need to be eaten at regular intervals each day as they provide much of the fuel needed to keep kids active and happy.

Carbohydrates keep blood sugar levels consistent, helping concentration during the day and helping keep children alert at school. Because the body can only store a limited amount of carbohydrate it is important to have nutritious, carbohydrate rich foods at each meal and snack to top up fuel supplies. An increased intake around training times can help maximise the muscle's uptake of this fuel, and requirements will vary as training loads change over the season. Heavier training loads should be balanced with higher carbohydrate intakes. Many junior Swimmers will be training twice a day for up to as long as four hours in total for the day. This makes their recovery between sessions even more critical as they limited time to restore their muscle energy supplies each day.



The majority of carbohydrate should come from nutrient rich foods such as grains, wholegrain cereals and breads, legumes, fruit, vegetables and dairy products as these provide the fuel for exercise along with key nutrients for overall health.

### Carbohydrate rich fuel foods

#### Cereals and Grains

Wholegrain breakfast cereals; rolled oats and other grains (barley, quinoa), served hot or cold

Bread & bread rolls: pita, Turkish and mountain breads, wraps, tortillas, tacos, lavash, crackers and crisp breads, rice cakes, corn thins, crumpets, fruit bread

Rice, pasta, noodles, couscous, quinoa

#### Dairy & alternatives

Plain and flavoured milks, yoghurt, custard, milk desserts

Non-dairy alternatives such as calcium fortified soy yoghurt and soy milk

#### Fruit

All fresh, canned or dried fruits, fruit and grain bars, fruit straps, 100% fruit juices

#### Vegetables & legumes (pulses)

Potato, sweet corn, sweet potato, baked beans, lentils, chickpeas, soy beans, bean mixes

#### Extras - carbohydrate snacks

Low fat fruit and grain bars, fruit buns, fruit loaf, fruit scones, pikelets, pancakes, frozen yoghurt, smoothies, fruit muffins, banana/carrot cake, oat biscuits

Many kids love sweet foods, however an excessive intake of high sugar foods can replace more nutritious carbohydrate foods that growing athletes need. After long, hard training sessions is the preferred time to offer an occasional small serve of a "sweet treat" to top up energy levels. These may include home prepared muffins and slices or an ice-cream or ice block in the warmer weather to cool and refuel.



## Protein for growth & development

As well as eating and enjoying a wide variety of carbohydrate rich foods, it is important to make sure that junior Swimmers have enough protein in their diet to optimise their growth and development.

There is probably no other nutrient that has captured the attention of athletes in recent years, more than protein. While junior Swimmers have protein needs higher than their sedentary counterparts, most will easily meet their needs each day by eating a well-balanced and varied diet. Junior swimmers should focus their attention on including a wider distribution of protein over the day, instead of large serves at 1-2 meals. Encourage your junior Swimmer to include a small serve of protein rich foods

for growth and repair (see examples below) at snacks and meals, throughout the day to provide essential amino acids to growing muscles.

Having a small amount of protein after strenuous exercise has been shown to be beneficial in adults, for faster muscle recovery. Whilst there has been little research done in this area, on active children, it makes sense to include foods rich in both protein and carbohydrate as recovery snacks after heavy training sessions or after carnivals.

### Growth foods

#### Meat, seafood and eggs

Lean beef, veal, lamb, pork, turkey, chicken  
Fish - fresh, canned or frozen; other seafood  
Eggs

#### Dairy & alternatives

Plain and flavoured milks, yoghurt, custard, milk desserts

Non-dairy alternatives such as calcium fortified soy yoghurt and soy milk

#### Legumes, nuts and seeds\*

Baked beans, meat analogues (vegetarian foods), tofu, seed beans, nuts e.g almonds, pecans, cashews, peanuts and peanut butter, seeds e.g. pumpkin, sunflower



## Some facts about fats

All children require a small amount of fat (3-4 teaspoons) in their daily food intake for normal growth and development. It is recommended that all Australians, including children, limit their intake of saturated fats (mainly from animal fats and processed foods). For proper growth and development however, children, should include small amounts of the healthier unsaturated fats found in foods like fish, nuts, seeds and avocados.

Children under the age of two should be eating full cream dairy foods to meet their nutritional and energy needs. However, children over two years of age can be offered reduced fat dairy products such as low fat milk, cheese and yoghurt. Some active growing children, who find it challenging to eat enough food each day, may benefit from having full cream dairy products to help meet their high energy needs.



## Staying hydrated

Managing fluid intake is just as important as food intake for the health and performance of junior Swimmers. Children can overheat and dehydrate quickly as they are not able to regulate their body temperature as well as adults. Getting young people into the habit of drinking fluid regularly can help them develop good skills in staying hydrated throughout their sporting career.

Individual fluid needs vary significantly and are largely dependent on the type and amount of exercise (including both structured activities like training but also general play during the day at school), and environmental conditions. Hot and humid conditions can lead to increased fluid losses through sweat, which in turn increases the amount of fluid a junior Swimmer needs to drink. Children are generally not very motivated to employ good hydration strategies; therefore it becomes the responsibility of parents, coaches and managers to help them stay well hydrated during training and at carnivals. Young athletes may need to be reminded often to drink, particularly when the weather is warm, or if they have a history of not taking in enough fluid before, during or after exercise. During the winter months, you might expect their fluid losses to lower but it is important to remind them to drink, as they often won't feel as thirsty as they may on a hot, dry day. School aged children should be reminded to take adequate water with them each day, to ensure they are well hydrated for afternoon training sessions

### Individual fluid needs

- Fluid loss will vary from one day to the next depending on many factors. Be prepared to compensate for extra losses if your child is sweating more than usual (due to a greater volume or intensity of exercise, or environmental conditions, or if they are naturally a heavy sweater).
- A quick guide to hydration is the colour of your child's urine. If they notice their urine is a darker colour than usual, it is a fair indicator of dehydration– extra fluids should be taken. (NOTE if a child is taking a

recommended vitamin/mineral supplement, this can sometimes alter urine colour)

- Be aware of the dehydrating effects of being in a hot, humid swimming pool, particularly when your child is outdoors during summer carnivals.

### Can you drink too much?

It is possible to drink too much fluid and develop a condition called hyponatremia. However this condition is generally seen only in sports where excessive fluid is consumed over several hours (e.g. ultra-endurance events), and is extremely rare in junior Swimmers. If your child is continually going to the toilet and has clear urine they may need to reduce their fluid intake, particularly close to bedtime to avoid interrupted sleep.





# Hydration Guidelines

## Before

- It is important that active children start drinking well before they get to training or their competition. Preparation needs to begin in the hours prior, by sipping 'mouthfuls often' throughout the day at school and home. School aged children should be reminded to take adequate water with them each day to ensure they are well hydrated for before or after school training sessions or competition.
- Junior Swimmers should be encouraged to drink fluid with meals and snacks on training days and before competition. This takes advantage of the electrolytes in food to ensure the water is better retained by the body, promoting optimal hydration.
- The volume of fluid a child needs to drink is very individual. As a rough guide the child should drink periodically until not thirsty and their urine output is regular and light straw in colour.

## During

- Children should always have their own water bottle handy on the pool deck, and take drink breaks as required during training and competition. Most children will maintain their hydration if allowed to drink according to their thirst.
- Practicing regular intake of small volumes frequently during training assists children to feel more comfortable drinking during competition.
- However, junior Swimmers can sometimes be reluctant to drink while training and competing. Persistent encouragement and regular access to fluids during training, is probably the best way to overcome this problem until they get into the habit of keeping themselves adequately hydrated. Encourage junior Swimmers to start

drinking before they start to feel very thirsty as by then they will already be starting to dehydrate and may experience a decline in performance

- Remind them that the elite Swimmers also need to drink frequently during training and competition and will always have their drink bottle handy.
- Fluids should be kept cool to encourage greater intake and can actually help the body to stay cooler. In summer, aim to have drink bottles in a cooler bag or try freezing a bottle overnight as it will thaw quickly on a hot day!
- A big concern for some Swimmers is getting a 'stitch'. Sports scientists are still unclear as to why this happens but it is thought that it may be due to the stomach wall becoming distended from food or fluid consumption immediately before or during exercise and this irritating nerves and muscles in the abdominal area during exercise. Current advice is to drink small amounts frequently, in advance of competition time, and avoid highly concentrated sugary or carbonated fluids pre event, to reduce distension of the stomach.

## After

- After exercise, encourage Swimmers to rest and have a larger drink, followed by fluid intake as desired during the hours post-exercise, along with appropriate food intake.
- Suitable fluids for recovery include water, and flavoured milk, liquid meal supplements or soup (in the cooler months) to provide fluid with electrolytes, carbohydrate and protein.
- Discourage junior athletes from having carbonated drinks (including soft drinks) before, during and immediately after exercise as they can upset the stomach and reduce their desire to drink. It is also not suitable for active children to be drinking cola, coffee, tea and "energy drinks" as these contain large amounts of caffeine.

## Sodium

Sodium is found in many of the foods we eat and is the main electrolyte added to sports drinks. It contributes to hydration in a number of ways:

- Stimulates thirst, promoting increased fluid intake
- Enhances fluid absorption and retention
- Replaces sodium lost in sweat

However most children consume more than enough sodium as part of salt in foods, and when combined with adequate fluid, this is usually enough to assist with hydration.

## Sports drinks

Water is the fluid of choice for most training sessions and during carnivals for this age group of Swimmers. Sports drinks may be useful for young Swimmers who have very large carbohydrate requirements and are unable to meet these needs by eating a sufficient intake of nutrient dense foods.

Sports drinks are not needed during a normal school day.

## Signs of heat exposure

Know the warning signs for dehydration. If a child shows any of the following signs it is recommended that they are taken away from the competition area and encouraged to rest in the shade and sip cool fluids:

- Dizziness and light-headedness
- Muscle cramps
- Nausea and headache.

After exercise you will know a child has not drunk enough if any of these signs are noticed:

- Dark urine and infrequent urination
- Dry mouth and throat
- A feeling of extreme heat which remains after a cool down time.



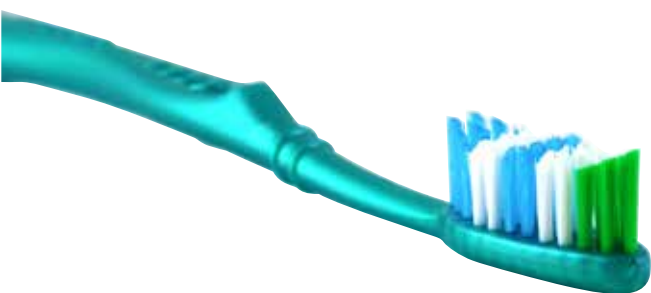


## Oral Hygiene

- Harmful bacteria are readily transferred through sharing drink bottles so it is recommended that children get into the habit of taking their own bottle to training and competition. If they are required to share at any time remind them not to allow their lips to touch any part of a shared bottle, and teach them how to squirt or use a chin sipper bottle to get the water into their mouth.
- Ensure water bottles are thoroughly cleaned in soapy hot water, and if they are used over a long period of time they should be sterilised at regular intervals.

## Dental hygiene

- Remember to encourage healthy dental hygiene habits to minimise the risk of tooth decay when consuming carbohydrate rich foods or fluids.
- Rinsing the mouth with water after consuming sports drink is advisable, so encourage athletes to bring two drink bottles if having sports drink, including one with plain water.
- Dental products such as tooth mousse can help to protect teeth and foods rich in calcium and phosphate (like milk, cheese and yoghurt) can help to remineralise the tooth surface.
- Regular brushing and flossing is critical, however brushing teeth should be delayed for at least 30 minutes after consuming a sports drink or post-exercise recovery to enable the tooth surface to re-harden.



# GETTING SET...

## The day before a carnival

The day before a big sporting event requires extra effort to ensure adequate carbohydrate is eaten and fluid intake has been sufficient to ensure a good state of hydration. The focus for meals and snacks over the day should be 'fuel foods' and fluids, with a reduction in filling high fat/protein foods during this period. The meal eaten in the evening should have a carbohydrate base such as pasta, rice, noodles or quinoa. Often carnivals are on a weekend, and the pre-competition meal is on a Friday night when busy families are tired and pushed for time. This meal can be kept simple and may be a good time for a family favourite pasta dish, (preferably with a non-creamy sauce) or a casserole with rice or a simple stir fry with noodles. Lean burgers with wholemeal buns and salad are also a quick, simple yet nutritious choice. Remember to provide plenty of water to drink at this time, and encourage the kids to find out what healthy foods their favourite sports stars eat the night before a big competition.

## High performance meals

**LASAGNE** - include lots of pasta sheets with lean beef, pork or chicken, tomatoes, spinach and reduced fat cheese and a crunchy side salad or vegetables.

**PASTA** - your favourite pasta shape with tomato based sauce, vegetables and cheese (chicken, tuna or lean beef is another great addition to this dish).

**MEATBALLS** - lean beef with grated carrot and zucchini, tasty sauce, served with steamed rice.

**CURRY** - lean chicken or vegetarian with chickpeas, extra veggies and steamed rice.

**HOMEMADE STEAK BURGERS** - grill, small quick steaks and top with sauce, beetroot, and lots of salad on a multigrain roll.

## Dessert and Extras

Pancakes or waffles  
 Creamed rice with fruit  
 Fruit Platter  
 Canned or poached fruit

## Drinks

Water, mineral water  
 Fresh fruit and yoghurt smoothies  
 Milk, hot chocolate

**CHICKEN WRAPS** - tortillas filled with roast chicken, salad and light sour cream or a dollop of low fat natural yoghurt.

**HEARTY MINESTRONE SOUP** - a meal in a bowl rich with vegetables, beans and rice. Serve with a crusty bread roll.

**PIZZA** - uses a pre prepared thick base topped with cherry tomatoes, basil, lean ham and mozzarella.

**STIR-FRY** - toss lean chicken or pork with plenty of vegetables in a sweet chilli and soy sauce, and serve with thick noodles or rice.





## High performance snacks

- Bread, crumpets or English muffins with jam, honey or vegemite
- Fresh fruit or a snack pack of canned fruit
- Sandwich with cheese, peanut butter, honey or jam
- Vegetable pieces or crackers with low fat dip
- Breakfast cereal with milk
- Yoghurt, custard, rice pudding, creamed rice
- Fruit and grain bars
- Pita chips, pretzels or crackers
- Fruit bun or raisin toast with jam
- Corn and rice crackers, corn thins or rice cakes
- Scones, pikelets, pancakes
- Milk based smoothie with fruit
- Quick cook noodles
- Milkshakes
- Fresh Sushi rolls
- Home made popcorn (minus the salt and the butter)
- Trail mix with nuts, seeds, dried fruit
- Canned spaghetti or baked beans



## On carnival day

The aim of breakfast on the day of competition is to provide some carbohydrate and fluid to top up stores, after what is often 12 hours without food, and to prevent hunger before and during events. For mid-morning starts, breakfast should be eaten around two hours prior to keep your child feeling satisfied and well fuelled. However, if they become hungry again up to one hour before starting exercise, provide a small low-fat snack to top up.

For afternoon competition, include a larger breakfast and a 'pre-event' lunch around two hours before competition begins. Evening training sessions and competitions can be a particular challenge as they are often scheduled over dinner time. Depending on the timing, a larger afternoon snack could provide the pre-exercise meal, or if later in the evening, a snack or small carbohydrate-rich dinner may be suitable a couple of hours before the event (don't forget recovery foods and fluids afterwards too, even if it is a late finish).

There will be times where the exact start time for events may not be known ahead of time. In this case it is important to ensure a nutritious breakfast, plus a range of carbohydrate rich snacks to be consumed throughout the day. Small portions consumed frequently may be the best option if you don't know the exact time of competition, for example a sandwich could be eaten a quarter at a time, spread over the day and combined with other small snacks, rather than eating a big sandwich all at once.

If you have to travel long distances or need

to make an early start before a carnival, pack some breakfast-on-the-run foods including flavoured milk drinks; low fat, high fibre cereal bars; bread rolls with spread; flavoured yoghurt or creamed rice; fruit bars; fresh fruit or a plain fruit bun or a liquid meal supplement.

The best foods to serve pre-race are those your child is used to eating and are quick and easy to prepare and eat– this will minimise fuss and ensure maximum stomach comfort. Low fibre foods can be a good choice if your child gets an upset tummy due to "nerves" before a race. Otherwise, foods that are rich sources of carbohydrate, yet low in fat, are best eaten at the pre-competition meal.

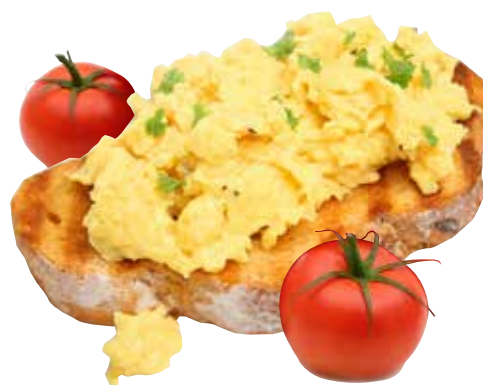
Remember to encourage your child to drink fluids at this time. The best pre-competition drink is water but small amounts of milk or juice may be okay, particularly if your child's food intake is limited. Your junior Swimmer should be well hydrated from the previous day's drinking, so the aim at this time is to simply top up fluid levels, according to thirst.





## Pre exercise meal ideas

- Porridge (oats or quinoa) with apple and cinnamon
- Spaghetti on toast with a fruit smoothie
- Cereal with milk, fruit and yoghurt with a small glass of juice or piece of fresh fruit
- Toast with avocado, tomato and cheese (or a little fetta), with a glass of milk
- Fruit salad with yoghurt and chopped nuts
- Scrambled egg with cheese and tomato, toast and a piece of fruit
- Peanut butter on toast, topped with sliced banana and a glass of milk
- Baked beans on toast with fruit and a glass of milk
- Fruit toast or English muffins with honey or jam and a fruit smoothie
- Pancakes with fresh fruit and yoghurt
- Crumpets with honey and a tub of yoghurt
- Creamed rice with stewed apples and cinnamon



Otherwise foods that are rich sources of carbohydrate, yet low in fat, are best eaten before swimming.

Remember to encourage your child to drink fluids at this time. The best pre-exercise drink is water but small amounts of milk or juice may be okay, particularly if your child's food intake is low on

competition.

Your junior swimmer should be well hydrated from the previous day's drinking, so the aim before the match is to simply top up fluid levels, according to thirst.

## GO! At the Pool

It is a good idea not to rely on the canteen at the venue or nearest shops to supply foods and drinks over the day, as healthy choices are not always available. Be prepared by packing your own supplies of food and drinks in an esky or cooler bag.

At carnivals, a drink or small snack between meals will help boost energy levels and prevent your Swimmer from getting hungry. If your Swimmer trains in the afternoon or has an evening competition/club meet, provide a nourishing snack prior to the start of their activity and have a quick and easy meal ready for when they get home.

The timing of carnival events is variable so it is important to learn how to time your child's food and fluid intake according to their particular events. This might take time and experimentation to find what suits each individual, but try the following suggestions as a guide:

## Coping with Carnivals

No time between events

Water or a few sips of sports drink only.

Limited time – less than 1 hour between events.

Take fluids – water or small amount of sports drink are important to include for hydration and an energy top up.

Plenty of time – 1–2 hours between events

Include fluids – water, sports drink, fruit juice, smoothie, or a liquid meal. Avoid soft drinks or any fluids with gaseous bubbles. Choose snacks such as fruit and grain bar, a sandwich or wrap, rice or pasta dish, scone, low fat muffin or pikelets.

Longer than 2 hours between events

Include a more substantial snack or a light meal – (see Energy Boosters)

Between the morning heats and evening finals



is a good time to include the main meal for the day. Often the night meal will be late and a lighter snack with plenty of nourishing fluids will be best at that time.

## Energy boosters

- A snack pack of canned fruit with fruit yoghurt
- Bread roll with banana
- Jam or honey sandwich with a juice popper
- Rice crackers with vegetable dip
- Frozen yoghurt
- Sushi hand rolls
- Wholegrain fruit bar with a flavoured milk
- Watermelon slices
- Fruit bun with honey/jam
- A small box of sultanas
- Pikelets with jam or honey plus a snack pack canned fruit
- Flavoured milk or liquid meal tetrapak



## After the event

Recovery after each day's competition or training session is essential to maintain your child's fuel stores, and therefore perform at their best. This is particularly true when they are required to train or compete over consecutive days.

Combinations of foods that provide valuable amounts of carbohydrate and protein include yoghurt with fruit, smoothies, cheese sandwich or cheese on toast, baked beans on toast with a glass of milk, cereal with milk, or fruit & grain bars with a milk drink. If you have a long drive home after training or a competition, make sure that you pack a healthy recovery snack as it can be difficult to find appropriate options in transit.

Recovery snacks and fluids should be:

- Started within 30 minutes of finishing exercise
- High in carbohydrate with a little protein
- Quick and easy to prepare and eat
- Available at the venue if it takes a long time to get home.

### Recovery snacks

- Low fat fruit smoothies
- Low fat fruit yoghurt and a handful of dried fruit/nuts
- Soup with a cheese sandwich
- Sushi handrolls
- Sandwich, roll or wrap with protein filling eg. chicken, tuna, cheese or egg with salad
- Glass of milk and a piece of fruit
- Liquid meal supplement
- Small tin of tuna with dry biscuits
- Chicken and pasta salad





## The night after a swimming carnival

Coping with tired, hungry junior Swimmers at the end of a long day can be challenging for any parent. The temptation to line up at a fast food outlet can be great and pressure from the children can make it even harder to resist.

Of course, takeaway foods can be enjoyed as an occasional treat but generally try to limit to the occasional time rather than every weekend! If you do eat out, choose a venue where your child can have a carbohydrate rich meal such as pasta, pizza with a low fat topping, or a noodle/rice dish.

Being prepared with a casserole or easy pasta dish at home will save the family time and money and improve the nutritional value of the meal.

One solution is to have food already prepared in the fridge or freezer that only needs reheating while showers happen.

Spaghetti bolognaise, risotto, burritos, baked potatoes with tuna/salmon, noodles with stir fry chicken & vegetables, quinoa & roast vegetables all make good recovery meals.

Ensure your young swim champion keeps drinking fluid until they are hydrated again, and then off to bed for a good sleep to allow tired muscles to recover (and parents/coaches to relax!).



# OTHER THINGS YOU SHOULD KNOW

## A healthy weight

Just like adults, children come in many shapes and sizes, and very often grow and develop at different rates to each other. There are always going to be some junior Swimmers who are prone to problems with weight (or body fat) control while in contrast, there are also lightly built athletes who struggle to eat enough food and require constant encouragement with food and fluid intake to maintain adequate energy for their sport.

Assessing weight (both over and underweight) in active children is quite complicated and it is a good idea to seek professional advice if you have concerns about your child. You can find a Sports Dietitian in your area by visiting Sports Dietitians Australia's website at [www.sportsdietitians.com.au](http://www.sportsdietitians.com.au).

### If your child is overweight, a healthy diet and activity plan will help

Research suggests that overweight children have a much higher chance of becoming overweight adults, so it is recommended that parents implement positive strategies early, to help overweight children develop long term healthy eating and exercise habits. It is interesting to note that owing to the high risk of overweight adolescents becoming obese adults, the engagement of children and adolescents in physical activity and sport is now considered a fundamental goal of obesity prevention.

Management of overweight children often requires expert help from a Sports Dietitian. Rapid weight loss is never the goal for children; instead aim for a slowing of expected weight gain over time, or maintaining weight steady while height increases. Studies have shown that the best way to help children successfully change behaviours is for the whole family to be



involved.

Parents can help by reducing the child's overall energy intake and encouraging more physical activity. Choose lower fat alternatives for meals and snacks, avoid the use of fatty take away and convenience foods and replace high sugar snacks and drinks with water and more nutritious choices like fruit and yoghurt. Eating more fruit and vegetables not only helps appetite control but provides important nutrients for active bodies.

During swimming carnivals, overeating can be an issue for some children if there are large breaks between events. A canteen stocked with high sugar/high fat foods can also prove tempting. Packing nutritious options and keeping children engaged in supporting team mates, or assisting coaches can help alleviate boredom eating.

Healthy eating is the same for overweight and normal weight active children, although the amounts consumed might need to be different. Fatty, salty snacks should be minimised for everyone and replaced by healthier snack options.

## Planning and preparation helps children meet high energy demands

Equally important is managing the child who struggles to eat enough for the energy demands of sport, school, play and growing. It is important to help these children plan their food and fluid intake to maximise daily energy intake. At those times when they feel too tired or busy to eat, nutritious drinks including smoothies and milk drinks can help boost intake.

Smoothies and liquid meal supplements are particularly useful for those who can't eat before competition and also after heavy training sessions to help recovery. Eating frequently and including healthy snacks like dried fruit and nuts, yoghurt, fruit bread, and cereal is also important. Some growing junior Swimmers can have voracious appetites and preparation is the key, packing snacks and fluids to have after school and after training sessions.

## Promoting a healthy body image in active children is vital

Sport is a unique environment that places the physical body on centre stage. Increasingly in the western world, however, we are becoming more concerned with how our bodies' look rather than what they can do. Junior Swimmers are not exempt from this, and they (and their parents or coaches) may become concerned about their body weight, particularly during growth phases. Children grow in 'spurts' – usually going out first, followed by an upward growth phase. During this 'out' phase, children often become very aware of their body shape and dislike the associated feeling or appearance of fatness. Coaches and parents need to be aware of their sensitivity to weight

related comments and always encourage positive discussions regarding body shape, food and healthy eating behaviours. Pressure from a young age to conform to unrealistic body 'ideals' can lead to deprivation of food intake resulting in nutritional insufficiency, poor growth and long term problems with disordered eating habits.

Parents, coaches and teachers are important role models for fostering a healthy body image in children and can help in a number of ways including understanding their own body image issues and aiming to develop positive self-talk so these healthy messages are sent to children. Celebrating body diversity helps children understand that everyone is beautiful and acceptable, regardless of their shape, weight or size. There will be obvious differences between the size and shape of Swimmers at training and carnivals due to ranges in age and development. Encourage your Swimmer to feel confident about their body and help them understand their potential and build self-confidence and self-worth.

Organising shared meals between junior Swimmers when travelling to competition or before or after training, provides an opportunity to promote a positive association with healthy food. Encouraging children to become actively involved with the purchase and preparation of healthy meals and snacks early in life helps to develop a healthy relationship between the athlete, their food and their bodies.

Sometimes, despite everyone's best efforts, things do not go to plan and it is important to know the early warning signs of when a child may be experiencing issues with their self-esteem and body image. Picking up on these cues can help your child prevent developing a serious illness such as depression, anxiety or an eating disorder. For more information visit <http://thebutterflyfoundation.org.au> or speak to an Accredited Sports Dietitian.



## Vitamins and minerals

Adequate intake of vitamins and minerals is essential for good health, energy levels and performance for all children, but particularly for those who participate in regular exercise.

Eating a wide variety of foods, including wholegrains, vegetables, fruit, dairy foods and alternatives, lean protein sources and healthy fats will help to ensure that vitamin and mineral needs are met.

Generally, if a child is meeting their energy needs through a healthy diet, they will also meet their vitamin needs. Vitamin D is one possible exception to this. Diet only provides a small amount of daily vitamin D requirements with short and regular periods of exposure to the sun being required for the body to produce its own vitamin D. See Sports Dietitians Australia website [www.sportsdietitians.com](http://www.sportsdietitians.com) for more information on vitamin D for active people.

Vitamins with antioxidant activity, such as vitamins A, C and E, play an important role in helping the body's immune system. Including fresh fruit and vegetables, grains, nuts and seeds, each day will help ensure active children meet their requirements of these.

Dietary intakes of some minerals, in particular iron, zinc and calcium, have been reported to be sub optimal in a number of children and adolescents. These nutrients are particularly important for active, growing children.

### Iron

This mineral is responsible for carrying oxygen around the body and is essential for maximising energy levels in active children and adults. Low iron levels can cause tiredness and will affect performance at training and during competition.

The best sources of dietary iron include lean red meats, liver and kidney. You should aim to include a small amount of lean red meat in active children's diet around 3-4 times a week.



Other sources of iron are green leafy vegetables, legumes such as lentils and baked beans, eggs and breakfast cereals. It is more difficult for the body to absorb the iron from these sources, so encourage children to eat complementary foods that supply Vitamin C. Adding Vitamin C increases the body's ability to absorb the iron from non-meat sources. For example, put strawberries on their iron-fortified cereal or offer a glass of orange juice with baked beans.



## Zinc

Zinc is a mineral involved in many aspects of metabolism, and is important for immune function, wound healing, taste and smell, and normal growth and development during childhood and adolescence. A wide variety of foods contain zinc, and although oysters contain more zinc per serving than any other food, lean red meat and poultry are the main sources in most people's diets. Other good food sources include beans, nuts, certain types of seafood (such as crab and lobster), whole grains, fortified breakfast cereals, and dairy products.

## Calcium

Calcium is the mineral responsible for healthy growth and development of bones. It also helps to keep the muscles working properly. A lack of calcium can lead to poor bone development during puberty and a possible increased risk of fractures in later life.

Active children should be encouraged to consume at least 2-3 serves of dairy foods or fortified soy alternatives each day. Examples of one serve include: 1 cup of milk; 1 tub of yoghurt; 2 slices of reduced fat cheese; 1 cup of a calcium enriched soy beverage.

Other good sources of calcium include canned



fish with edible bones (such as salmon), green leafy vegetables, nuts and seeds. Children, however, would need to eat quite large amounts of these choices to obtain a sufficient daily intake.

## Supplements

Despite what the growing number of supplement manufacturers will try and convince you, there is no magic pill or potion that will substitute for a great training program, well planned eating strategies, and positive sports psychology.

For junior Swimmers, there are few supplements that are recommended (or have been tested) in children under 16 years of age, and some have the potential to be detrimental to growth and development. Coaches, parents or junior Swimmers wanting to know more about sports nutrition supplements are encouraged to discuss their individual needs with a Sports Dietitian who can provide information on the usefulness and safety of different products.

## And remember....

- The whole family may need to get organised for healthy eating – this can offer a great opportunity to encourage good food and fluid intakes for everyone. Remember that the age and activity level of family members will determine the amount of food they need to eat each day.
- Encourage children to recognise treats as occasional, rather than every day. Discourage excess indulgences by explaining that these foods are replacing the high performance foods that they need to train and play at their best.
- Where appropriate, use favourite Swimmers as a good example of health and fitness. Professional athletes have access to a Sports Dietitian to help them develop high performance eating strategies.



## Further information:

Sports Dietitians Australia – [www.sportsdietitians.com.au](http://www.sportsdietitians.com.au) – to find:

- Fact sheets
- Survival of the Fittest Cookbooks
- Position Statement – Nutrition for Health & Performance – Adolescent Athlete
- Locate an Accredited Sports Dietitian in your local area

The Butterfly Foundation – [www.thebutterflyfoundation.org.au](http://www.thebutterflyfoundation.org.au)