

Competition nutrition

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Developing a nutritional plan for competition swimming can be challenging, there are often several goals that need to be achieved simultaneously and nutritional requirements can differ between athletes. An important consideration is that competition nutrition is only part of the “puzzle”, several other “puzzle pieces” of nutrition should be considered in order to achieve the best outcomes. It is also important to remember that tapering prior to competition can reduce a swimmers intake requirements, failure to do so may lead to weight gain, which may be an undesirable outcome for some athletes.

General Nutrition Guidelines: The Basics.

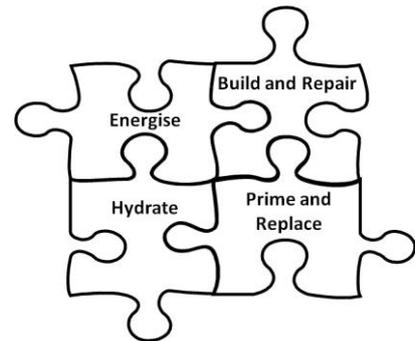
Aiming for dietary adequacy should always be in the back of athletes minds. Although a lot of emphasis is given on macronutrients used to fuel, recover and repair, various other nutrients such as vitamins and minerals not only have an effect of health and the prevention of chronic disease, but can also play a role in preventing oxidative damage, absorption of essential nutrients, transportation of nutrients and/or oxygen, muscle contraction and so on. The five food groups to include in the diet include:

- 1) Breads/cereals/rice and pasta
- 2) Vegetables and fruit
- 3) Dairy products
- 4) Lean meat, poultry, fish, eggs, nuts, legumes.
- 5) Healthy fats

The Role of Sports Nutrition

- ✓ Help to maintain optimal health – i.e. Prevent deficiencies such as iron deficiency, prevent physiological/hormonal disturbance.
- ✓ Prevent the development of “ under performance syndrome”
- ✓ Help to maintain optimal body weight (particularly on the background of changing energy requirements i.e. Training blocks vs. Taper).
- ✓ Manipulate body composition (i.e. Decrease and/or prevent gain of fat mass – particularly in off season, increase muscle mass).
- ✓ Improve performance.
- ✓ Optimise recovery i.e. Repair muscles, reduce soreness, increase muscle mass etc.
- ✓ Protect the immune system.

“The Nutrition Jigsaw” Developed by Greg Shaw.



Nutrition for Swimming

Carbohydrate : predominant fuel source – inadequate intake and/or stores can lead to an empty “tank” and reduce performance capacity, as well as have several other health outcomes such as an inability to focus/concentrate, compromise immune system, reduce skills/reaction time.

Protein: Has various roles including repairing muscle tissue and reducing soreness, building lean mass, immune function and assists in making key enzymes for various bodily processes.

Micronutrients/minerals: Several roles – referred to as the “energize” puzzle piece in the swimming nutrition jigsaw. Can help prevent oxidative damage, maintain blood PH, prevent the development of disease etc. It is important that various colours of fruits and vegetables be consumed in order to obtain various different micronutrients.

Fat: Although research does not currently confer performance benefits, small amounts of healthy fats (unsaturated) should be consumed in order to obtain/maintain optimal health and allow for absorption of fat soluble vitamins.

Using an Individualised Approach to Sports Nutrition

- Different athletes have different nutrition goals i.e. Some athletes require weight and/or fat loss, whilst other require weight, fat and/or muscle gain, whilst other athletes are simply looking to improve performance.
- Everyone is different behaviourally, socially and have different taste preferences – what some athletes will love, others will hate.
- There may be different cultural considerations.
- Athletes may have varying gut function – intolerances, allergies etc.
- There is no “one size fits all” approach when it comes to nutrition.
- Different factors may impact upon meeting goals.
- Different age groups and/ or sexes require vastly different nutritional considerations and education.
- There may be other conditions i.e. Deficiencies that need addressing.

Nutrition Strategies for Competition

Main Aims of Competition Nutrition

- ✓ Adequate nutrition/fuel and hydration prior to the race
- ✓ Reduce the risk of gastro-intestinal upset
- ✓ Adequate recovery
- ✓ Rapid replenishment of fuel sources for ensuing race
- ✓ Repair of muscle tissue – reduced soreness

The Night Before the Competition

It is important to have a nutritious high carbohydrate meal the night prior to competition. Fluid should also be an area of focus on the day prior to competition: starting a race dehydrated means that you are essentially starting “behind the 8-ball”. A moderate – high carbohydrate, low fat dessert or supper may also assist in “topping up” glycogen (carbohydrate) stores.

A good meal option is a rice/pasta/quinoa etc based dish with a low fat meat source and plenty of vegetables.

The Pre- event Meal

A high carbohydrate, low- moderate protein meal should be consumed the morning of the competition (2 to 4 hours prior to swimming). High fibre foods may need to be avoided as these can cause stomach upset.

A good meal option is cereal with a banana, honey and a glass of milk.

Pre-event Snack

As a means to “top up” glycogen (carbohydrate) stores, a carbohydrate based snack may be consumed 1 – 1 and ½ hours prior to racing. This may not be necessary if the race is <2 hours after breakfast. It is important if you are going to consume a snack prior to training that a low fibre, simple carbohydrate (such as glucose) be consumed.

A good option is a white bread, honey sandwich.

During Competition

During competition requirements of carbohydrates vary dependant on how many races are undertaken on that day, and how much time there is between races. It is unlikely due to the length of most swimming events that adequate glycogen stores will be depleted. Fat should be avoided as it slows down gastric emptying and can cause stomach upset, and will also slow the rate at which the carbohydrate (fuel) is available.

- ▶ IF < 30 mins between races: Rapidly digested carbohydrates i.e. Sports drinks, juices, glucose lollies and/or fruit.
- ▶ IF 30 – 60 mins between races: White bread sandwiches w/ jam, honey, banana, cereal bars (low fibre).
- ▶ IF 60 – 120 mins between races: Pasta, rice or noodles dishes with low fat topping.
- ▶ IF > 120 mins between races: More substantial meal i.e. Pasta/sandwiches/rice with meat, flavoured milk, fruit PLUS plenty of water to hydrate.

BE PREPARED – DO NOT RELY ON VENDING MACHINE OPTIONS

Post Competition (Recovery)

Athletes should aim to consume a recovery snack within ~ 30 minutes of finishing. If the athlete is due to have a meal close to finishing the race (i.e. at the end of the day or if there is a few hours prior to the next race), a

nutritious meal containing a good amount of carbohydrates and protein should be consumed. Aim for around 20 – 30 grams of protein, and at least 50 grams of carbohydrates. If speedy refuelling is required the recommendations are for 1 – 1.2grams/kg BM every hour for the first 4 hours.

A good post competition snack is chocolate milk

Recipe: Post Training/Competition Choccy Milk

1 - 2 tablespoons Nesquik
2 tbsp skimmed milk powder
500ml skimmed milk

Contains:

Approximately 40g carbohydrate
Approximately 21g protein



A Quick Word on Supplements

-  There are only a handful proven to have an effect. Refer to <http://www.ausport.gov.au/ais/nutrition/supplements> for further details.
-  Are really only useful when all other avenues to improve performance have been exhausted i.e. Optimal training, rest, nutrition etc.
-  Should be considered as the “sprinkles on the cake”.
-  Are not well policed in Australia and can contain forbidden substances – not knowing is not deemed as a legitimate excuse.
-  Safest bet is to educate yourself or DON'T TAKE THE RISK in the first place – it is 100% your responsibility.
-  Also refer to (<https://www.asada.gov.au/substances/supplements>)
-  Look for “Informed Sport” logo.
-  <https://www.asada.gov.au/substances/supplements>



References and Further Reading

<http://www.ausport.gov.au/ais/nutrition/factsheets/basics>
<http://www.ausport.gov.au/ais/nutrition/supplements>
<https://www.sportsdietitians.com.au/>
<https://www.asada.gov.au/substances/supplements>
<http://informed-sport.com/>

Recipes:

<http://www.ausport.gov.au/ais/nutrition/recipes>
<https://www.sportsdietitians.com.au/recipes/>

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