

North Dorset Turbos Guidelines On Basic Nutrition and Hydration Principles



Version 1, September 2012

Introduction

Do you want to achieve your goal and reach your potential in swimming?

You cannot just rely on natural talent, fitness and the desire to win. No single factor can make you successful. However several factors such as supportive parents, the right training and the ability to perform under varying condition and pressures are critical. **Good pre- and post-training or competition nutrition is also part of this package.**

Good nutritional practices are absolutely essential for on-going performance improvement. There is no secret formula or magic plan that works for all swimmers – just as with all aspects of training and preparation, nutritional needs vary from person to person.

Some general pointers that should always be adhered to include:

- Enjoy a variety of nutritious foods daily
- Decrease your fat intake
- Maintain fluid balance before, during and after training and competition
- Focus on high carbohydrate foods and drinks

Do you know your five different nutritional food groups? If you are unsure about your diet read the information in [Appendix A - Food / Nutritional Groups](#).

Let's consider the importance of one of the body's most important nutrient... water!

Water is involved in every bodily function and makes up 70-75% of your body weight. In terms of the body, the function of water is to:

Help maintain body temperature

- Metabolize body fat
- Aid digestion
- Lubricate and cushion organs
- Help transport nutrients throughout the body
- Flush toxins from the body

Always drink enough water during the day before you attend your Turbo training session to ensure you are not dehydrated. Always remember to bring your water bottle onto poolside during your training session.

Principles of Good Nutrition for Sport Performance

Everyone needs a balanced diet to maintain a healthy lifestyle, but for sports performers who are training and competing on a regular basis this is even more important.

Depending on how active you are, you may need anything from 2,000 to 5,000 total calories per day to meet your energy needs. If this is not the case you may:

- Find it difficult to achieve peak performance
- Suffer weight loss and muscle wastage
- Lack the energy levels to train and compete

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Extreme calorie restriction could lead to growth problems and other serious health risks and therefore needs to be avoided at all costs.

You need to consider the intensity, type and time of exercise that you are taking part in, ensuring the type of food and calorie intake supports the expected expenditure levels.

One of the most important times for a swimmer is post training/competition – or your recovery time. In brief, you need to make sure your nutritional intake is sufficient to:

- Refuel carbohydrate levels
- Replace the fluid and electrolytes lost through sweating
- Manufacture new muscle protein to help with the repair and adaptation process
- Allow the immune system to handle the exertions caused by the training/competition.

You also need to consider your nutrition during times when you are recovering from injury. During this period you need to be mindful that your calorie usage will be less, therefore your food intake levels will need to reflect this (otherwise weight gain may occur).

It is important however that a balanced diet is followed – especially the intake of essential vitamins and minerals that will aid the recovery process.

Hydration

Ensuring you are sufficiently hydrated is key to optimizing performance. Did you know?

- Swimmers usually only replace 30-70% of fluid lost during training or competition.
- You can lose up to three litres of sweat per hour in hot conditions.
- A 2% decrease in body weight through fluid loss brings about approximately a 20% deterioration in performance.
- Limited fluid intake can have negative physiological consequences, for example if you lose just 3-5% of your bodyweight it can affect your reaction time, judgment, concentration and decision making – all of which will have a significant effect on your performance.

If performance levels are to be maintained it is important that you are well hydrated before, during and after training/competition. Some rules to follow are:

- Ensure you have at least 500mls of fluid pre training or competition (1-2 hours prior to your swim).
- Aim to have 200mls of fluid every 15 minutes during periods of high intensity swimming.

Certain sports drinks can help you maintain sufficient hydration levels and provide a replacement for electrolytes lost during sweating. There are three basic types: Isotonic drinks, Hypertonic drinks and Hypotonic drinks. For further information on these drinks read the information in [Appendix B - Hydration](#).

Weight Management and Optimal Nutrition

Eat a healthy diet and in turn you will manage your weight and have sufficient fuel in your body to train and compete to your potential. A good way to see how well you are eating is to keep a food and drink intake diary for three consecutive days. In this diary include ALL of the food and drink you consume over the 3-day period (breakfast, lunch, dinner and snacks). Include the size of the serving as accurately as possible.

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Analyse the results, (show it to your coach if you are in doubt) and it will give you a clear insight into your dietary habits!

Pre-Training or Competition

Make sure you eat high carbohydrate, low fat foods such as those identified below:

- Breakfast whole wheat cereal and milk and fresh fruit
- Muffins or crumpets and jam or honey
- Pancakes
- Toast and baked beans or tinned spaghetti
- Rolls or sandwiches with banana filling
- Fruit and Yoghurt
- Pasta with tomato based sauce
- Baked potatoes with low fat filling
- Fruit smoothie (made with semi-skimmed milk)

Post-Training or Competition

Compare your weight pre and post exercise to ensure you return to your optimum weight as soon as possible. Some other tips include:

- Drinking more than you lose – to assist recovery
- Make sure your fluids are always available at the end of the pool
- Avoid caffeine due to dehydrating effects

It is always a good idea to try the fluid replacement methods during training first and then use them during competition – to ensure you are comfortable with them. Eat carbohydrate rich foods immediately after high intensity exercise (within 15 minutes) to assist recovery of glycogen stores, as a relatively small intake of carbohydrates (50-100g) will start the refuelling process. Some examples to help you do this are:

- 800-1000 ml of sports drink
- 500 ml of fruit juice
- 250-300 ml of fruit smoothie (fruit with milk)
- 60g of jelly beans or lollies
- 3 x muesli bars
- 3 x medium-large pieces of fruit

If you do not feel like eating immediately before or straight after training or competition, then drink meal replacement fluids, sports drinks or light snacks containing carbohydrate.

Key Points

- Eat a balanced diet that follows basic food guidelines and includes the correct percentage of the five recognized food groups.
- Maintain good levels of hydration – pre, post and during activity.
- Ensure your nutritional intake matches the requirements of the intensity, type and duration of the exercise in which you are participating.
- Think about when you should eat and/or drink, taking into account the requirements of your body pre, during and post training and competition.

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Appendix A - Food / Nutritional Groups

There are basically five different food groups that are required for a healthy, balanced diet. They are:

Carbohydrates

Carbohydrates are the body's main energy source and act as a protein sparer. This means that available carbohydrates will be used as the fuel instead of muscle protein (if protein is used, muscle wastage or atrophy occurs).

Complex carbohydrates (breads, cereals, pasta, fruit and vegetables). Complex carbohydrates provide sustained energy over long periods of time.

Simple carbohydrates (sugar rich, processed foods). Simple carbohydrates provide fast spurts of energy only. Once these sources are used, a feeling of tiredness may set in.

Fats/dairy

- Used as an energy source for low intensity training
- Used for hormone production
- Provides fat soluble vitamin A, D, E and K
- Most sporting participants should have 20-25% dietary intake in fat only
- Good sources of essential fatty acids include fish, nuts and whole grains.

Proteins

- Build and maintain body tissues
- Excessive protein does not increase muscle size (as is commonly believed).
- Animal products and nuts, legumes, beans and lentils are all rich sources of protein.
- Important for growth and for recovery of body systems between exercise bouts.

Vitamins and minerals

Vitamins perform a range of functions, including:

- Supporting growth
- Aiding digestion
- Helping the body absorb protein and carbohydrates
- Supporting the production of red blood cells
- Helping fight infection and illness

Additionally, minerals are necessary for three main reasons:

- Build strong bones and teeth
- Controlling body fluids inside and outside cells
- Turning the food you eat into energy

Water

[Discussed earlier in this document.](#)

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Appendix B – Hydration

The drinks that can help participants maintain sufficient hydration levels and provide a replacement for electrolytes lost during sweating are:

Isotonic Drinks

They are designed to quickly replace the fluids, which are lost by sweating. They also provide a boost of carbohydrates.

The body prefers to use glucose as its source of energy. Sometimes it is better to consume isotonic drinks where the carbohydrate source is a concentrated form of glucose.

Hypertonic Drinks

Hypertonic drinks are used to supplement your daily carbohydrate intake. They contain even higher levels of carbohydrates than isotonic and hypotonic drinks.

The best time to drink them is after exercise as they help your body to top up on muscle glycogen stores. These are valuable energy stores.

In very long distance events such as marathons, high levels of energy are required.

Hypertonic drinks can also be taken during exercise to meet the energy requirements.

However, it is advisable to only use them during exercise alongside isotonic drinks to replace fluids.

Hypotonic Drinks

Hypotonic drinks are designed to quickly replace fluids lost through sweating. Unlike isotonic and hypertonic drinks they are low in carbohydrates.

They are very popular with athletes who need fluid without the boost of carbohydrate.

The best time to drink them is after a tough exercise work out as hypotonic drinks directly target the main cause of fatigue in sport – dehydration – by replacing water and energy fast. If you do become dehydrated there are various signs and symptoms you need to be aware of. Some of the most common signs are:

- Dry skin
- Dark coloured urine
- Skin flushing

Some of the symptoms of dehydration are:

- Excessive thirst
- Loss of appetite and excessive fatigue
- A dry mouth