

# NUTRITION FOR TRIATHLON

## Training

As triathletes range from full-time professionals to age group competitors, the time spent training varies considerably. Since there are three disciplines to master, most triathletes train twice daily to make sure all disciplines are trained regularly. Athletes will routinely combine disciplines into the one session to ensure their bodies are well adapted for the stresses of competition. These sessions are commonly called "brick sessions" and usually involve two or more of the disciplines. For professional triathletes, it is not uncommon to train two to three times daily, with some professional ironman triathletes clocking up as many as 40 hours of training a week.

## Physical characteristics

In most triathlons, drafting (riding directly behind or beside a fellow competitor) during the cycle leg is prohibited as this provides a 10-15% advantage to the athlete drafting. Professional Olympic distance races held by the International Triathlon Union (ITU) follow a draft legal format. This "drafting permitted" ruling tends to impact heavily on the physique of the athletes who are successful at this style of racing. As much of the advantage of being a strong cyclist is lost in draft-legal Olympic distance races, many successful triathletes at these distances have physiques characteristic of runners, that is light and lean, which enables them to run quickly. Ironman triathletes where drafting is illegal, tend to be more strongly built as the cycle plays a crucial role in determining the outcome of the race.

## Common Nutrition Issues

### Daily Recovery

Routine training loads for elite level triathletes increase daily energy (kilojoule), carbohydrate and protein requirements. Many triathletes in the past have focused exclusively on replacing carbohydrate at the expense of other nutrients such as protein. It is important for triathletes to ensure meals and snacks are based around nutritious carbohydrate foods to meet daily fuel and nutrient demands. Persistent fatigue, poor recovery, illness, and unwanted weight loss are common symptoms amongst triathletes who fail to adequately meet daily energy and nutrient requirements.

### Timing of Meals and Snacks Around Training Sessions

As triathletes are required to train 2-3 times daily, recovery from one training session to the next is crucial. Triathletes need to plan their daily food intake to ensure regular snacks and meals are consumed around training sessions. It's important to have nutritious carbohydrate snacks on hand immediately after training to initiate the refuelling process. Many nutritious carbohydrate foods contain a small amount of protein which aides in the repair of

regenerating proteins used in fuel metabolism and muscle damage incurred during exercise. Refer to the Recovery Nutrition Factsheet for suitable snack suggestions.

## **Carbohydrate Loading**

The concept of carbohydrate loading is popular amongst triathletes prior to competition. Carbohydrate loading is more than simply eating pasta for dinner the night before competition and certainly doesn't mean gorging yourself with food for the entire week leading into a race. As training decreases leading into a race, energy (kilojoule) and carbohydrate requirements also decrease. During an easy week prior to competition it is important for athletes to taper food intake accordingly to avoid unwanted weight gain immediately prior to racing. To adequately fill muscle glycogen stores (carbohydrate stored in the muscle), athletes need to consume between 7-12g of carbohydrate per kilogram body weight for 24-48 hours prior to competition. The total amount of carbohydrate consumed by an athlete in the days leading into a race will depend largely on the length of the triathlon to be contested.

For sprint and Olympic distance competitors the taper in training leading into the race in conjunction with 7-8 g of carbohydrate per kilogram body weight for 24 hours before competition is adequate to increase muscle glycogen stores. However, athletes competing in half ironman, long course and ironman races should increase their carbohydrate intake to 10-12 g of carbohydrate per kilogram body weight for 48-72 hours before race start. For further details refer to the Carbohydrate Loading fact sheet under the 'Competition and Training' section.

## **Pre-Race Eating**

The majority of triathlons start early in the morning so there is the temptation to miss breakfast before race start. It's crucial to eat a pre-race meal in order to top up muscle and liver glycogen stores. A pre-race meal containing roughly 1-2 g of carbohydrate per kilogram body weight should be consumed about 1-4 hours before racing. The meal should contain familiar carbohydrate-rich foods and fluids that are low in fat and fibre. For instance two English muffins, 1½ tablespoons jam, 1 teaspoon Vegemite and 750 ml sports drink provides 2500 kJ, 125 g carbohydrate, 2 g fat, 14 g protein and only 4 g fibre. Foods like liquid meal supplements, sports bars, bananas and juice are also popular pre-race meal choices.

If athletes have the early morning jitters liquid meal supplements such as PowerBar Protein Plus™ powder provide an easily digested alternative to foods. It is also worthwhile to sip on water or a sports drink during the hour before race start to top up fluid levels. The advantage of competing in triathlons is that you can always urinate during the swim if you drink too much beforehand.

## **Eating During Training and Competition**

Eating food during long training rides is essential for triathletes to help provide carbohydrate to the working muscles, meet daily energy and nutrient requirements and keep hunger at bay. Most ironman triathletes complete "brick" sessions during their preparation for an ironman triathlon. Brick sessions may consist of a 5-6 hour cycle immediately followed by 1-2 hours of running. Eating during brick sessions is not only beneficial, but essential.

During sprint and Olympic distance triathlons it is not necessary and certainly not practical to eat foods while racing. Due to the high intensity of racing, athletes competing in these events usually rely exclusively on sports drinks and sports gels to meet fuel and fluid losses. However, during ironman races where athletes are competing over several hours and consequently miss regular meals, eating food plays an important role in meeting their hourly carbohydrate requirements. The amount of carbohydrate required will vary depending on the distance of the triathlon contested. For shorter triathlon events, athletes should aim to consume 30-60g of carbohydrate an hour, whereas athletes contesting Ironman events should aim to consume 1-1½ grams of carbohydrate per kg body weight per hour. For example, a 70kg male athlete contesting an Ironman event, should aim to consume roughly 70-100g of carbohydrate an hour. The athlete's tolerance will ultimately dictate how much carbohydrate is consumed and should be considered when deciding on a race nutrition plan.

The cycle leg 'rolling buffet' provides greatest opportunity to consume adequate food and fluid, compared to the run and swim. Athletes are better able to tolerate food and fluid during the cycle compared to the run. Athletes should take a variety of food on the bike to ensure they maintain interest in what they are eating. Sandwiches (white bread, no margarine, with crusts cut-off), fruit bars, sports bars, bananas, sweet biscuits, dried fruit and sports gels are all examples of foods commonly eaten by triathletes while cycling. It is good practice to have a combination of regular food items and sports foods.

The run presents many more challenges than the bike in meeting carbohydrate requirements. Most triathletes use fluids such as sports drinks and coca cola to simultaneously meet fluid and carbohydrate requirements during the run. During ironman events athletes will also use sports gels as these are far more practical to consume than food while running.

## **Meeting Fluid Requirements during Competition**

During competition, it's not as simple as drinking as much as tolerated or possible. Recent reports in the scientific literature have shown that some Ironman triathletes may drink in excess of hourly fluid requirements during an event. Drinking in excess of hourly sweat losses may result in hyponatremia or low plasma sodium. Slower athletes, particularly females contesting events in cooler conditions are most at risk of drinking in excess of hourly fluid requirements. So how do you know how much to drink? You need to monitor your individual fluid balance during training and competition sessions to develop a plan for subsequent exercise sessions. Please refer to the Sweat fact sheet for more information.

## **Weight Management**

As with most endurance-based athletes, triathletes commonly strive to achieve a low body fat level in order to improve their power-to-weight ratio. This fascination with weight loss amongst triathletes has led to the popularity of so-called high-protein, low-carbohydrate diets. These diets are low energy (kilojoule) diets and decrease body weight not because of the combination of nutrients but because they are low in energy. Athletes following such diets to lose weight run the risk of failing to recover adequately from training.

## **Travel to Overseas Countries**

Professional triathletes are required to spend several months each year competing in Europe, Asia and the United States of America. This can create numerous problems for the unsuspecting triathlete. Most triathletes travel alone so they don't have the support of a team Dietitian to arrange meals ahead of time. Some carbohydrate-rich foods readily available in Australia such as breakfast cereals, sports bars, sports gels, and sports drinks, along with fruit and vegetables are scarce and/or expensive throughout Europe and Asia. Prior to departure, it is a good idea for athletes to pack a small supply of favourite foods such as breakfast cereals and cereal bars, along with specialised foods items such as liquid meal supplements, sports bars, sports gels and sports drinks.

*This fact sheet is based on AIS / National team athletes and is therefore specific to these athletes. Written by AIS Sports Nutrition, last updated April 2009. © Australian Sports Commission.*