

## **NUTRITION FOR TAEKWONDO**

Taekwondo is characterised by high-intensity anaerobic activity interspersed with submaximal aerobic work. Taekwondo athletes need to rapidly generate muscular force in a quick series of powerful punches and kicks. Aerobic endurance is required to assist with recovery between bursts of high-intensity activity and to support performance through several bouts in a tournament.

### **Training**

Training for taekwondo primarily involves the development of technique and tactics. Athletes spend time practicing individual sequences as well as sparring. Taekwondo focuses on the development of the mind as well as the body and long hours of training are often required to develop concentration. Fitness work and gym sessions to develop strength and endurance may also be included in the training week.

### **Competition**

Taekwondo competition consists of 3 by 2 minute rounds with 1-minute rest between each round. The objective is to land as many kicks and punches on the opponent as possible, with points awarded for each punch or kick landed depending on the area the hit is scored. Competitors usually compete 3-5 times over a one-day period in order to reach the finals of tournaments. While carbohydrate and fluid stores are unlikely to be taxed in a single taekwondo bout, athletes competing in a series of bouts in a tournament situation have the potential to stress carbohydrate and fluid stores. Recovery of carbohydrate and fluid between bouts is therefore important for continued good performance.

### **Physical Characteristics**

Taekwondo is held in weight categories, aiming to match opponents of roughly equal ability. However, it is advantageous to be at the upper end of the weight range within a weight category, since this suggests that among the athletes in your pool, you may be the biggest and strongest, and have the greatest reach. Consequently, the typical tactic among competitors is to 'downsize' just before the event to qualify for the lightest weight category that can be achieved. Thus, like other weight division sports, 'making weight' strategies are a feature of taekwondo. Weight categories for males are <58 kg, 58-69 kg, 69-80 kg and >80 kg. Weight categories for females are <49 kg, 49-57 kg, 57-67 kg and >67 kg. Maintaining low body fat levels not only assists with achieving body mass requirements but also enhances an athlete's ability to move quickly and propel the body through space as quickly as possible.

## Common Nutrition Issues

### Body Fat Levels & Body Weight Issues

Like many athletes who compete in weight category sports, many taekwondo athletes become focused on achieving low body fat levels and weight loss before competition to allow them to qualify in their chosen (lower) weight category. This emphasis on weight control, usually for very targeted periods, often overshadows other nutrition goals. Nutrition patterns can easily fall into a cycle of severe food restriction leading up to a competition, followed by bingeing afterwards. This cycling can lead to swings in body mass (weight) and body fat levels, as well as failure to achieve nutritional needs in the long-term.

### The Training Diet - Week-Round Recovery

Athletes will get the most out of each training session if they are adequately fuelled and hydrated. The focus of the overall nutrition plan should be nutritious carbohydrate-rich foods such as pasta, rice, bread, fruit, starchy vegetables and dairy products which will provide the muscles with their training fuel. Moderate amounts of low-fat protein sources such as lean meat, lean poultry, fish, eggs, dairy and vegetarian sources should be added to these foods to balance the meal, as well as incorporating additional fruit and vegetables to provide vitamins and minerals. Overall, the athlete needs to have their training under-pinned by a nutrition plan that provides all their nutritional needs, while allowing them to gradually achieve and maintain a lean physique suited to their weight category.

Meals and snacks should be timed over the day to allow the athlete to fuel up before each training session, and refuel/ recover afterwards. Where there is a long gap between meals and a training session - for example, between lunch and a late afternoon training session, it is useful to have a carbohydrate-based snack 1-2 hours before training to 'top-up' fuel supplies and prevent hunger. Examples of practical snacks include fruit and yoghurt, a bowl of cereal with low fat milk, and toast with a milk smoothie or hot milk drink. Speedy intake of carbohydrate-based foods teamed with a protein source, will help to promote refuelling after training, as well as muscle repair and growth. If it isn't practical to have a main meal within 30-60 minutes after training, a snack providing 50-100 grams of carbohydrate and a source of protein, is a good choice as a recovery aid. Recovery snacks should be combined with fluid to replace any fluid lost during the session. (For further guidance see the fact sheet *Carbohydrate – How much?* on the AIS Sports Nutrition website)

### Making Weight in Taekwondo

It is advantageous for taekwondo competitors to compete at the upper limit of weight categories. Typically, a 72 kg male will be more competitive if he can drop a couple of kilograms and compete in the 69 kg division, rather than fight at a weigh that is towards the bottom of the 80 kg division against much heavier opponents. However, athletes need to choose their weight categories based on competition goals, growth stage, body composition

history and minimal weight for good health. In the long-term, the choice of weight category should be consistent with good health as well as good performance. In general, athletes should aim to keep body weight within 2-3 kg of the upper weight limit for their weight category. This means that the need to 'make weight' before competition will be kept within a practical and manageable target. Athletes should work with a dietitian to reduce body fat levels and maintain weight at a suitable level. Young athletes should also be prepared to move up into higher weight categories in accordance with their growth changes.

There are a number of tactics that can be undertaken in the last days before a competitive event to help to 'fine tune' body mass. In the 2-3 days prior to competition, athletes should avoid excessive salt intake, to prevent fluid retention. Adopting a low-residue diet for the last 24 hours before competing will help to reduce weight by a small amount, since it empties the gut of indigested food and fibre.

### **Low Residue Foods**

- low-fibre cereal (e.g. corn flakes, rice bubbles)
- white bread
- jam, honey
- Clear juice, low-fat milk, cordial, sports drink
- Pureed fruit
- jelly
- clear soup (e.g. chicken broth)
- white pasta
- white rice
- tomato based pasta sauce without extra veggies
- liquid meal (e.g. PowerBar Protein Plus powder)

Depending on their size and typical diet, most people carry about 0.5-1kg of such material in their gut during the day. Fasting will allow this food to be processed and eliminated, and cause a 'technical' weight loss. However, it will also prevent the athlete from fuelling up before their event. On the other hand, a low-residue diet composed of nutritious foods with minimal fibre or waste product will achieve nutritional goals while being 'light' to eat.

Traditionally, competitors use extensive dehydration to lower body weight prior to competition. Excessive dehydration can adversely affect performance and increase the risk of heat stress. It is smarter for competitors to manipulate food intake, then passively dehydrate over the day before competition. Passive dehydration involves limiting fluid intake while undertaking normal daily activities. Remember that approximately 500 g will be lost overnight as you sleep due to passive fluid losses. Use of saunas, sweat suits etc. should not be necessary if you have planned your preparation well.

### **After the Weigh-In**

Taekwondo events usually require competitors to weigh-in on the afternoon before the day of competition. This allows a reasonable amount of time to restore fuel and fluid levels after weigh-in for athletes who have had to make weight. Emphasis should be placed on carbohydrate rich foods like bread, pasta, rice, starchy vegetables, fruit in all of its forms and flavoured dairy foods to restore energy levels. Boosting intake of electrolytes (especially sodium) after weigh-in will help maximise fluid retention, and improve the rate of rehydration. While high salt foods like breads, cereals, sauces and some spreads are effective, some athletes prefer to add oral rehydration salts to their drinks. Given the importance of aggressive refuelling and rehydration to subsequent performance, the support of a sports dietitian to develop an effective recovery meal plan following weigh-in and throughout the following day of competition is strongly encouraged.

*This factsheet is based on National team athletes and is therefore specific to these athletes. Written by AIS Sports Nutrition, last updated December 2013. © Australian Sports Commission.*