Sports Nutrition: Judo

The sport of Judo is an intensely physical and mental game. Unlike other sports, there is no ‘off season’, and competitors are expected to fight in top condition all year round. Another factor making Judo more difficult is that it is a ‘weight making’ sport, meaning that competitors are under pressure all year round to maintain a lower body weight, while training and competing at a high level. The most elite ranked players in Judo must make weight and compete over 15 times in the one year, and for those trying to become Olympians and world champions, the majority of these competitions are overseas. The life of the elite Judo player involves constant travel, constant dieting, and non-stop training and competition. As many Judo players sit at slightly above their weight for their weight division on a day to day basis, many Judo players worldwide resort to extreme calorie restricted diets, starvation and sauna usage to make weight. As athletes weigh in usually on the day of competition, this can result in many of these elite athletes competing at a substandard physical level, as many are dehydrated and glycogen depleted.

A ‘game’ or ‘fight’ of Judo lasts for roughly 5-10 minutes, unless there is a win by a throw, hold-down, choke, strangle or arm lock earlier in the fight. The match lasts for 5 minutes on the clock, but with stoppages this can really be between 5-10 minutes if it goes for the full amount of time. During this time, the competing Judo players are competing mostly in the anaerobic zone, going pretty much one hundred percent intensity from the very start. Depending on whether the athlete wins or loses, they can have up to 6 intense matches in the one day – especially in the bigger competitions, such as the world championships. This involves 6 X 20 minute warm-ups, 6 intense fights, 6 cool downs, and 6 lots of mental preparation. For any Judo player, this makes for a long, tough day. Nutrition has a huge part to play in Judo, and athletes who do not get access to a nutritionist suffer the consequences in making weight, training and competing.

In Judo there are 7 different weight divisions for women, the lightest being -48kg, and the heaviest being over 78kg. For men there are 7 different weight divisions, the lightest being -
60kg, and the heaviest being +100kg. For each weight division, there are very different physiological and logistical requirements, so for this paper, only the lightweight athletes will be reviewed. This is the -60kg and -66kg men’s divisions, and the -48kg and -52kg women’s divisions. Training for these divisions is involved around three components: weight training, anaerobic fitness training, and technical Judo training, so it is important to have a sound nutritional program which will support all of the different facets of Judo. Weight training involves building upper and lower body strength and power needed to implement the quick and powerful throws needed to win a match quickly, but without putting on any size. Muscle hypertrophy is unwanted in these lightweight divisions, as putting on weight through muscle building increases the difficulty when it comes to cutting weight. Therefore repetition ranges are low, with a long recovery period in order to solely build power and strength.

Cardiovascular training is an important aspect of Judo as extremely high levels of fitness are needed when competing. As previously stated, matches can last up to ten minutes, and most of this is spent in the anaerobic zone. Therefore a large component of cardio training for Judo player is interval training, usually quite specific to the intensity and duration of a standard match. This can include running, using elliptical machines at the gym, or a ‘cross fit’ style circuit utilizing large compound movements using bodyweight and weighted objects. The technical Judo training component is however the most important of all training. Although being strong and fit has a large advantage, technical Judo ability is vital in this sport. Athletes must be the strongest, fittest and most technical in their division in order to win – becoming advanced in just one area will not do. A famous quote from Jigoro Kano, the founder of Judo, states that ‘superior technique overcomes power’. These technical sessions are usually two hours long and involve one hour of technique drills or ‘uchikomi’, and one hour of ‘randori’, which is fighting or sparring.

Good nutrition practices are essential for all levels of Judo players, from recreational to the top elite. There are three facets of Judo we must consider when designing an appropriate nutritional plan. These are nutrition for training, competition day, and also in making weight strategies. Nutritional help for athletes cutting weight before a competition is the most needed in this area. As previously stated, many Judo players use unhealthy strategies to
reach the target weight for their division, including severe dehydration through the use of saunas, fasting from food and water and extreme calorie restriction. Athletes who use these strategies are putting their health at risk. Some of the reported health risks from extreme weight cutting in Judo are acute cardiovascular dysfunctions, immunosuppression, lowered bone density, impaired thermoregulation, impaired cognitive function, negative mood state, hormonal unbalance, temporary growth impairment, poor nutritional status, increased injury risk and increased risk of developing eating disorders (Arteoli et al, 2010).

There are many strategies that can be used to help Judo athletes ‘cut weight’ safely. In a case study of a lightweight boxer (boxing has identical weight making issues as Judo), Morton et al (2010), had a nutritional intervention which resulted in the boxer making weight without any dangerous weight loss strategies at all. Over a 12 week period, the already lean and conditioned boxer was on a restricted energy diet, with a goal of losing 0.5kg-1kg of fat and lean tissue per week. Achieving the target weight loss involved reduced fat content (consisting of little to no saturated or trans fat, only poly and monounsaturated), reduced carbohydrate content and a small increase in protein intake. The rationale for reduced CHO intake was to enhance lipid oxidation, stimulate gluconeogenesis, and result in protein oxidation to achieve lean-mass loss (Morton et al, 2010). CHO food sources were consumed from low- to moderate-glycaemic-index foods.

Strategies like the above, with a gradual decrease in body fat and lean muscle are a much better option than the severe methods which unfortunately have become commonplace in Judo. One issue with the boxers weight loss is that although his weight loss was done healthily, he also had a whole 12 weeks to prepare, which is much longer than Judo players get to make weight, as they compete so often. Nutritional programs for Judo should involve a constant calorie controlled diet, with the aim of losing body fat and lean mass. They should be monitored frequently with skinfold measurements, and other nutritional measuring strategies such as the weighed food inventory. Also, educating people on the dangers of cutting weight is of paramount importance. Arteoli et al (2010) suggest that international, national and regional Judo Federations should establish educational programs for coaches, trainers, parents and athletes in order to increase awareness regarding the risks of extreme weight loss and healthier ways to manage body weight (Arteoli et al, 2010).
Judo athletes who need to make weight should work closely with a nutritionist to ensure that the weight is lost, and then maintained safely.

Competition day nutritional strategies usually involve the rehydrating and refuelling from weigh in the morning of the competition. Many athletes start the day being 1-3 kg or more dehydrated, and a lot of them are in a state of glycogen depletion also. Although some studies have demonstrated that rapid weight loss impairs high-intensity performance, no negative effects have been observed if athletes are allowed to recover for at least 3-4 hours from weight loss (Arteoli et al, 2010). So it is vital that athletes refuel and rehydrate straight away. Carbohydrate is of course the main fuel used, but a study by Degout et al (2003) found that a Judo match induces both protein and lipid metabolism even if the anaerobic system is brought into action, with mean levels of plasma lactate of 12.3 mmol/l. Therefore glycogen in the muscle is not the only substrate used during a Judo match (Degout et al, 2003). So refuelling with a mixture of carbohydrate, fat and protein is necessary for complete recovery, especially for those athletes who have many fights in the one day.

Nutrition for everyday training purposes should be no different to what is recommended for the general population in the nutrient reference values (2011), but always taking care to replenish lost glycogen stores within 30 minutes of completing a training session. The AIS (2009) also recommends that drinking sports drinks straight away will help to replenish fluids, glycogen stores, and the salts in sports drinks help to hold on to the water, as well as help maintain electrolyte balance. If the Judo athlete is on a calorie restricted diet in preparation of an upcoming competition, the diet can be adjusted slightly to reduce the amount of saturated fat and overall energy consumed.
References:


Artioli et al., The need of a weight management control program in Judo: a proposal based on the successful case of wrestling Journal of the International Society of Sports Nutrition 2010, 7:15
