NUTRITION FOR RACE WALKING

Race walking can be considered unique among endurance events in that the outcome of race is influenced by external assessment of the athlete's technique. The walker's technique is assessed by judges located on the course. A walker who receives a red card from three separate judges for technical violations will be disqualified by the chief judge. Judges may also issue a caution to athletes they feel are at risk of incurring a violation.

Training

Walkers at the AIS typically train 6-7 days a week, once or twice a day. While most of their training is race walk specific, in a typical week they will also incorporate some other aerobic conditioning work e.g. running, stationary bike, to decrease the load on muscle groups heavily recruited while walking. They will also do some strength and conditioning work in the gym. Total volume of training can range from 160-220km a week, and depending on the time of year, may include 1-2 long walks (90 minutes – 2 ½ hours), as well as interval, speed (including on the track) and hill sessions. Walkers will also spend some time either training at altitude (in the US or Europe) or undertake a 3-4 week block of "live high, train low" at the AIS in the lead up to their main races during the season.

Competition

At the World Championships and Olympic Games, men compete over 20km and 50km, while the women compete over 20km. Races predominately take place over a 2km loop, allowing judges to better assess technique.

During the Australian season (November-February), athletes compete in series of walks on both the track (3-5km) and road (10, 20 and 50km). The National Championships are held in late February/early March over 20km for women and 20km and 50km for the men. While some male athletes specialise in either the 20km or 50km event, it's not uncommon for some to compete in both events at major championship level. In addition to the Olympic Games and World Championships, the walkers have a biennial team's event – The World Walking Cup and their own circuit annually – The IAAF World Walking Challenge.

The World Walking Cup is a five per nation teams event with points allocated to place finished by the best three athletes at each distance, and the winning team being the team with least amount of points. The IAAF Walking Challenge is a series of races in Asia, South America and Europe held from March to June. Eligible athletes (based on points scored at previous Challenge races and gained at the Major Championships for the year) will be invited to compete in the IAAF Race Walking Challenge Final at the end of the season. Walking is also a sport at the Commonwealth Games.

While most of the major events are in hot and/or humid conditions, athletes are also just as likely to have to compete in races in more temperate and cool conditions.

Physical Characteristics

As they have to carry their weight, race walkers are typically small in stature and lightly framed (especially in the upper body), with low total mass and body fat levels. This not only allows for faster and more economical movement, but also affords the athletes thermoregulatory advantages.

Common Nutrition Issues

Manipulating carbohydrate intake

The training schedule undertaken by race walkers puts a significant drain on carbohydrate (fuel) reserves. Therefore, one of the key tenets of their diet is to ensure adequate carbohydrate intake to support the demands of training. To that end, they are encouraged to establish a meal plan based around nutrient dense, carbohydrate rich foods to meet their requirements on easy training/rest days, while orientating additional carbohydrate rich foods in and around sessions on heavier loading days. This may include a light snack before an early morning training session, sports drink or gel during and a nutrient dense carbohydrate rich snack immediately after training (e.g. fruit, cereal, yoghurt).

Interestingly, recent research suggests that a number of physiological adaptations typically seen with endurance training may be further augmented by having athletes undertaking these sessions in a low versus a glycogen replete state. Therefore, walkers may benefit from manipulating carbohydrate intake and/or the timing of their training so that they do their lower intensity sessions with low glycogen stores, while incorporating strategies to maximise carbohydrate availability for 'quality sessions. Practical examples may include undertaking morning training in a fasted state, withholding carbohydrate during the session or limiting the amount of time between the first and second training session of the day. It should be noted that given their heavy training load, many walkers may already be completing some sessions with low glycogen levels without any strategic intent.

While these strategies may enhance specific physiological adaptations, it's important to keep in mind that research into this area has yet to show that they lead to improved performance. Further, potential drawbacks include increased risk of illness (increased carbohydrate availability reduces markers of immunosuppression) and the increased objective and subjective markers of effort during training (which may in turn reduce self-chosen pace/duration of a training session).

Recovery nutrition

Given their heavy training load, walkers need to be proactive in ensuring intake of appropriate foods and fluids to re-fuel carbohydrate (glycogen) stores, re-hydrate, and promote a net gain (i.e. synthesis > breakdown) in proteins responsible for the physiological adaptations they desire. This is especially important when the time period before the next training session is less than 8 hours. To meet these goals, walkers are encouraged to consume foods/fluids that

provide a rich source of carbohydrate and 10-20g of protein within the first 30 minutes of finishing training. This not only takes advantage of the enhanced rate of glycogen and amino acid uptake into the muscle during this period, but also increases the likelihood they will consume the required amount of carbohydrate before their next session.

Unless restricted by limited access or availability to suitable options, walkers are encouraged to meet these carbohydrate and protein targets through real food options e.g. bowl of cereal, yoghurt, that also contribute to other dietary goals. Reliance on specialised sports foods e.g. liquid meal supplements, can lead to walkers falling into the trap of "doubling up" on their recovery, having a specialised sports food/drink soon after finishing training, then having a meal soon afterwards that would meet the same recovery goals.

Achieving the ideal physique

While many race walkers will achieve the physical characteristics that afford competitive advantage through a combination of favourable genetics and a heavy training schedule, many may struggle to attain the physique they desire. Those walkers looking to decrease body mass need to implement strategies to create a negative energy balance, while at the same time ensuring adequate macro- and micronutrient intake to support the demands of training. Strategies that these athletes may find useful include undertaking additional training/cross training sessions, completing aerobic/lower intensity sessions in a fasted state, limiting intake of carbohydrate during sessions, as well as ensuring recovery snacks contribute towards other dietary goals. The 'Weight Loss' fact sheet under the Body Size and Shape section of the website has some other useful tips for decreasing body mass.

Altitude training

Training at altitude results in a transient increase in resting energy expenditure, a heavier reliance of blood glucose as a fuel source, increased fluid losses and augmented production of free radicals beyond that seen when training at sea level. Coupled with the decrease in appetite often seen at high altitude, failure to increase carbohydrate and fluid intake during this period is likely to result in reduced training performance. Therefore, when undertaking a period of altitude training, strategic use of products such as sports drink and liquid meal supplements in and around sessions provide an effective means of meeting the athletes increased fluid and carbohydrate requirements. A brief period of antioxidant supplementation (1-2 weeks), to cope with the increased training stress, may also be warranted.

Meeting fuel and fluid demands during events

The goal of walkers in the lead up to and during races are to maximise carbohydrate availability, counter the potential negative impact of dehydration on performance and limit the likelihood of gastrointestinal (GI) upset.

The days leading into the race

For those athletes competing in the 20km event, an exercise taper combined with their typical carbohydrate rich training diet should ensure adequate fuel stores for the race. Those competing in the 50km would benefit from a carbohydrate load, given glycogen (fuel) availability will be a limiting factor on performance (See 'Carbohydrate loading' fact sheet for tips). In both instances, limiting high fibre and fat rich foods is a useful strategy to ensure the required amount of carbohydrate is consumed, as well as decrease the likelihood of GI upset during the race. To promote optimal hydration, on the day before competition athletes should aim to have an extra glass of low sodium fluids e.g. water, juice, at each main meal and consume some sodium containing fluids e.g. electrolyte supplement, sports drink, in between meals. The latter is especially important if they are likely to be competing in hot/humid conditions.

Race day

Race day nutrition centre's around topping up fuel stores and optimising hydration. Walkers should aim to consume carbohydrate rich foods and fluids that provide 1-3g of carbohydrate per kg of body mass (BM) in the 2-3 hours before the race. Choosing familiar food options that are also low in fat and fibre will help to minimise the chance of GI distress. If it's an early start, walkers may choose to have a smaller pre-race meal (~1g/Carbohydrate/kgBM) and ensure adequate intake of carbohydrate during the race.

As they generally compete on a 2km loop, athletes can be very proactive in meeting their fuel and fluid needs. Suitable options include water, sports drink and gels. Athletes are encouraged to trial different options during longer training sessions to assess tolerance. As flavour fatigue can be an issue for those competing over 50km, these athletes are advised to choose a variety of options that differ in taste and/or consistency.