



Sprinting

Characteristics of the Sport

At Olympic-level competition, sprint events include the 100 m, 200 m, 400 m, 4 x 100 m relay and 4 x 400 m relay. The 100 m, and 400 m hurdles can also be considered as sprint events. Sprint and hurdle events rely primarily on the development of power through anaerobic energy.

Training

Elite sprinters train all year round with the base or off-season involving around eleven sessions per week. Off-season training usually involves a considerable commitment to weight training, with about one-third of the total training load being carried out in the gym. In addition, off-season training focuses on refining technique with a combination of sessions on the track and drill work to improve aspects such as leg speed or knee lift. Stretching sessions, yoga, and pilates are often included to aid in recovery. As the competitive season approaches, track work increases to include more intervals and sprints, although technique work and weight training are still maintained. Junior and recreational sprinters spend less hours training and training is usually seasonal.

Competition

Major competitions for elite sprinters are the Olympic Games, World Championships and Grand Prix Circuit. Most Australian sprinters spend the winter months overseas returning to Australia to compete in key selection events during the Australian summer. At junior and recreational levels, competitions are usually held on a weekly basis during the summer months.

Physical Characteristics

Power-to-weight ratio is important for sprinters, therefore maximising muscle mass and maintaining low body fat levels is desirable.

Common Nutrition Issues

Training Nutrition

Sprinters need to consume sufficient carbohydrate to fuel training needs, however carbohydrate requirements do not reach the level of endurance-type athletes. Sprinters need to be mindful of maintaining low body fat levels but still need to eat a sufficient variety and quantity of food to meet nutritional requirements and allow for the development of muscle mass. Diets need to be nutrient-dense. This is best achieved by including a wide variety of nutrient-dense carbohydrate sources such as bread, cereal, fruit, vegetables and sweetened dairy products in the diet. Moderate portions of lean sources of protein such as lean meat, skin-free chicken, eggs, low-fat dairy foods, lentils and tofu should also be on the menu. Energy-dense foods such as cakes, pastries, lollies, soft drinks, chocolate, alcohol and takeaways should be used sparingly. Appropriate snacks need to be included before and after training to maximise performance during training and to promote recovery. Snack foods such as yoghurt, fresh fruit, low-fat flavoured milk and sandwiches are all nutritious fuel foods and make good snacks.

Low Body-Fat Levels

Sprinters require low body fat levels whilst being strong and muscular. Low body-fat levels usually occur naturally for male athletes, thanks to the cumulative effect of training on the right genetic stock. However, male sprinters often need to reduce total body mass leading into the competition phase. Some of the additional muscle mass gained in off-season weight training is not sport specific, therefore needs to be trimmed to achieve an ideal racing body composition. Female sprinters often need to

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manipulate their food intake and training to achieve their desired body fat levels. Sprinters needing to reduce their body fat level should target excess kilojoules in the diet. In particular, excess fat, sugary foods and alcohol can add unnecessary kilojoules and would be better replaced with more nutrient-dense foods.

Preparation for Competition

Sprint events do not deplete glycogen stores therefore strict carbohydrate loading before a competition is not necessary. The day of competition is best tackled with glycogen stores topped up to their usual resting level. With a high-carbohydrate diet already in place for training needs, glycogen levels can be restored before competition with 24-36 hours of rest or very light training.

Competition Day Food and Fluid

Although sprint events only last seconds or minutes, competition can be a drawn out affair. A typical competition day involves a number of heats and finals with variable amounts of waiting around in between. Your nutritional goals are to keep hydrated, to maintain blood glucose levels and to feel comfortable - avoiding hunger but not risking the discomfort of a full stomach. It makes sense to start the day with a carbohydrate-based meal. The type of meal will depend on the timing of your event and your personal preferences.

The following foods are suitable to eat 3-4 hours before exercise:

- crumpets with jam or honey + flavoured milk
- baked potato + cottage cheese filling + glass of milk
- baked beans on toast
- breakfast cereal with milk
- bread roll with cheese/meat filling + banana
- fruit salad with fruit-flavoured yoghurt
- pasta or rice with a sauce based on low-fat ingredients (e.g. tomato, vegetables, lean meat)

The following foods are suitable to eat 1-2 hours before exercise:

- liquid meal supplement
- milk shake or fruit smoothie
- sports bars (check labels for carbohydrate and protein content)
- breakfast cereal with milk
- cereal bars
- fruit-flavoured yoghurt
- fruit

The following foods are suitable to eat if there is less than 1 hour between events:

- sports drink
- carbohydrate gel
- cordial
- sports bars
- jelly lollies

Experiment in training if an important competition is coming up so that you can be confident of your routine on race day. Take care to drink plenty of fluid when you are competing in hot weather.

Travelling

Elite sprinters are required to travel interstate and overseas regularly to find quality competition opportunities. While this can be exciting, it can also be stressful. It is often hard to meet nutritional needs in unfamiliar surroundings, especially when time and





finances are limited. Unusual foods, different standards of food hygiene, limited food availability and interference with usual routines can see athletes either gaining weight or failing to meet their nutritional requirements. The following tips may help:

- Be clear about your nutritional goals and stay committed while travelling.
- Do some investigation to find out what to expect at your destination.
- Plan your accommodation with meals in mind. Organising an apartment with cooking facilities gives you more control over your meals and can keep food costs down. If you choose not to cook, make sure your accommodation is conveniently located near shops and restaurants.
- Take a supply of snacks with you so you always have access to something suitable. Cereal bars, low fat 2 minute noodles, sports drinks, breakfast cereal and rice cakes are good options to pack.
- Make good choices in restaurants. Beware of hidden fat in restaurant meals. Don't be afraid to ask the waiter about cooking methods and ingredients and request changes if necessary. Add carbohydrate to meals with plain bread, plain rice, fruit or juice if necessary.

Iron

Sprinters who adopt restricted eating habits to maintain low body fat levels can be at risk of a poor iron status. If in doubt, have your iron levels checked by a sports physician. In addition, a sports dietitian will be able to help athletes to increase their intake of iron-rich foods that are well absorbed by the body. Plant-based iron foods such as green vegetables are poorly absorbed compared to animal-based iron foods such as meat.

Supplements

Some runners try to replace sound nutritional practices with vitamin pills, protein powders and liquid formulas. Popping a pill is not a quick fix to feeling flat and run down. Rather, it is necessary to address the issue of taking time to eat well and organising an appropriate training program with adequate rest. Addressing lifestyle habits and putting good healthy eating in place will be more useful than expensive pills. Some supplements can help in certain situations, but this is best assessed by a sports physician and sports dietitian.

Case Study

Despite being the most promising sprinter in the region at last year's interschool athletics carnival, Bernadette could only manage one bronze medal. Her program had been busy - heats of the 100 m at 9:15 am, semi-final at 12:30 pm, final at 3:00 pm and the 4 x 100 m relay at 4:15 pm. On the morning of the meet, Bernadette managed to grab only a couple of mouthfuls of toast as she rushed out the door. She consoled herself that she was too nervous to eat anyway.

By mid-morning, with the 100 m heats out of the way, Bernadette was ravenous. The pies, hot dogs and chips at the sports ground kiosk didn't appeal so Bernadette chose some chocolate "for energy". There was a delay in the start of the semis as the officials sorted out a timing problem. Bernadette felt herself becoming hot, dehydrated and hungry as she waited to race. She managed to make it through the semi but didn't run well. There wasn't enough time between the semi and final to make it across to the other side of the track for some water. Bernadette ran the final feeling tired from a dull headache and finished fourth. She also timed the baton change poorly in the relay and finished the day with third place in the relay - small comfort for the hours of training she had completed over the last three months.

This year the story was quite different, although her training program was unchanged and the meet program was almost the same as the previous year. The difference was a





careful plan for competition day, organised in collaboration with her coach. Bernadette rose earlier than usual to allow herself time for a breakfast of cereal and fruit juice. She also packed a cooler of provisions for the day - foods and fluids that she had tested out in training over the previous month. After the 100 m heats, Bernadette had a sandwich, banana and fruit juice. She also took a bottle of cool sports drink to sip on leading up to the semis and final. After coming down from the excitement of winning the 100 m final, Bernadette was feeling too excited to eat and drink. However with an hour to go until the relay she knew it was important to have something. Bernadette was glad she had packed a 'ready-to-go' liquid meal supplement in her cooler. Refreshed and revitalised, she prepared for the last event and helped her team win a silver medal in a closely contested relay.

While Bernadette knows that her medals were not just the result of particular food or drinks, her careful organisation did allow her to do justice to her talent and training, rather than see it wasted with careless race-day mistakes.

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