

Sports nutrition for the adolescent athlete



Alison Patterson (Garth), Advanced Sports Dietitian unveils the newly released Sports Dietitians Australia position statement for athletes aged 12–18 years.

Most parents of teenagers have plenty of lively stories of what happens in the kitchen when their sons and daughters come home from a long day at school. Exclamations of ‘*I’m still hungry*’ (even after a hearty dinner has been devoured) or ‘*I’d finished everything in my lunchbox by recess*’ are not uncommon. Add to that the considerable training volume that many adolescents undertake as part of organised sport, including multiple sports and/or multiple teams across school, club and state rep squads, and you can see that it can be quite a job to fuel a teenager, let alone a teenage athlete.

While the Australian Dietary Guidelines provide suitable advice for adolescents who participate in general physical activity, adolescents who have a high-level of participation in sport have a unique set of nutrition requirements that require special attention. Not only do adolescent athletes need to meet the nutrition demands of their growth and development, they also have to meet the extra nutrition requirements associated with undertaking daily training and competition.

Although nutrition should be considered a key determinant of an athlete’s potential sporting success, it is often overlooked.

To address this, Sports Dietitians Australia (SDA), in conjunction with Griffith University and expert input from members of Sports Medicine Australia, has created a world-first position statement containing guidelines on sports nutrition for athletes aged 12–18 years who have involvement with organised training and competition (active adolescents) and those with higher training volumes (competitive adolescents). Adolescent athletes who are training and/or competing at an elite level are advised to seek individualised support from an Accredited Sports Dietitian.

Following is an executive summary of the information contained in the position statement, which was officially launched at a media event on July 14 and will be published in the *International Journal for Sports Nutrition and Exercise Metabolism* later this year. For further details please refer to the full article: Desbrow B, McCormack J, Burke LM, Cox GR, Fallon K, Hislop M, Logan R, Marino N, Sawyer SM, Shaw G, Star A, Vidgen H and Leveritt M. *Sports Dietitians Australia Position Statement: Sports Nutrition for the Adolescent Athlete. International Journal of Sports Nutrition and Exercise Metabolism*. 2014 (in press). DOI:10.1123/ijsnem.2014-0031

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Energy for adolescents

The energy intake of adolescents should be adequate for growth and development needs, while supporting the energy expenditure required for exercise and performance goals. Although no simple method exists to accurately determine the exact energy needs of adolescent athletes, markers of growth and health can help to determine if total energy intake is appropriate. Athletes should be encouraged to adjust eating patterns to reflect daily exercise demands. This typically means that larger meals and regular snacks are required to meet the increased energy demands on training days (although this can be a challenge with busy schedules).

Adolescents require the knowledge and support to develop a healthy lifelong relationship with food. Parents, guardians and coaches play a key role in this. Those responsible for adolescent athletes should be aware that body composition is only one contributor to athlete performance, and that dietary and training strategies exclusively designed to manipulate an adolescent's physique independent of performance should be avoided. It is important that eating patterns and food selection during adolescence reinforce long-term health, as well as developing a positive body image.

The Macronutrients: carbohydrate, protein and fat

Recommendations for carbohydrate, protein and fat intake for adolescent athletes are very similar to those set for athletic adult populations:

- Adolescents should be encouraged to adjust carbohydrate intakes to match daily energy demands. Considering the duration and intensity of the exercise sessions can help to guide intake.
- Protein requirements are likely between 1.3–1.8g per kg body mass per day. Athletes should adopt eating patterns that provide a regular spread of high quality protein sources over the day.
- Both protein and carbohydrate are important for recovery after training and competition. Nutritious food choices that provide both carbohydrates and protein to meet recovery goals include milk-based drinks, yoghurt with fruit, or a meat and salad roll. In some cases, sports foods such as Sustagen Sport may help to meet the high energy needs of the athlete in a convenient form.

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- Fat intake, in accordance with public health guidelines, should contribute 20–35 per cent of total energy intake, with no more than 10 per cent of total energy coming from saturated and trans fats (e.g. fat in meats, dairy, fried foods and processed products such as biscuits). If an athlete is finding it difficult to meet their energy needs, increasing the unsaturated fat content of the diet can help address this issue due to its energy density (e.g. olive oil, nuts, avocado, and salmon).



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Specific nutrients of importance

Iron

Depleted iron stores without clinical symptoms occur more frequently in female athletes. Despite the potential for increased iron turnover in adolescent athletes, there is little evidence that adolescent athletes have requirements beyond the recommended dietary intake (RDI) values. Adolescent athletes (particularly females) should ensure dietary iron intake is consistent with the RDI and iron supplementation should be considered only if medically warranted. Nutritious food sources of iron include lean red meat, chicken, pork, eggs, fish, Milo and baked beans.

Adolescent athletes should ensure dietary iron intake is consistent with the RDI:

- Boys: 8mg/d (9–13 years), and 11mg/d (14–18 years).
- Girls: 8mg/d (9–13 years), and 15mg/d (14–18 years) – higher increase due to menstrual losses.

Calcium and Vitamin D

Calcium and Vitamin D are important nutrients for good bone health. Calcium requirements for adolescent athletes are no different from that of non-active adolescents; however, requirements are greater than that of adults due to growth. Many adolescents fail to meet these recommendations, so it is important to try to include calcium-rich foods regularly into the diet (e.g. milk, cheese, yoghurt, and calcium-fortified soy products and breakfast cereals).

- RDI (adolescents) = 1300mg per day (boys and girls).

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Most vitamin D is obtained through exposure to sunlight rather than through dietary sources. Athletes should monitor vitamin D status, and correction through supplementation may be necessary to ensure optimal performance and the maintenance of bone health.

Fluids for adolescents

Adolescent athletes should be encouraged to be well-hydrated prior to commencing exercise, particularly in hot environments, and to adopt drinking practices that limit fluid deficits.

Fluids should be supplied in sufficient quantities to adolescent athletes before, during and after physical activity. Due to the large variability in sweat rates amongst adolescents, it is important that athletes monitor changes in body mass over a session to provide a guide to the net fluid deficit incurred during exercise. If losses seem excessive (>2 per cent of body weight) or if fluids are over-consumed (i.e. weight-gain), the athlete should be guided to adjust drinking rates.

“... sports drinks are NOT the same as caffeinated energy drinks, and adolescent athletes should NOT be encouraged to consume energy drinks around sporting activities.”

What to drink?

For the active adolescent, the use of sports drinks in place of water on the sports field or as a general beverage is not necessary and may lead to excessive energy/caloric consumption. For competitive adolescent athletes, consuming sports drinks during prolonged vigorous exercise, or milk during recovery or between events, can be beneficial by providing carbohydrate, fluid, electrolytes and protein (in the case of milk). It is important to note that sports drinks are NOT the same as caffeinated energy drinks, and adolescent athletes should NOT be encouraged to consume energy drinks around sporting activities.

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Do adolescents need to consume supplements?

To put this simply – the answer is no! The use of dietary supplements* with the exclusive intention to enhance exercise performance in active and competitive adolescent athletes is unwarranted and hazardous. This recommendation excludes the clinical use of dietary supplements (e.g. calcium or iron) when taken under appropriate guidance from a suitably qualified health professional such as a medical practitioner or an accredited sports dietitian.

The use of supplements in developing athletes over-emphasises their ability to manipulate performance. Younger athletes have the potential for greater performance enhancement through maturation and experience in their sport, along with adherence to proper training, recovery and nutrition regimes.

Adolescent athletes and their support personnel should be aware of the risks associated with taking supplements, and organisations should develop guidelines to regulate supplement use.

* Note: the definition of dietary supplements *excludes* sports foods and drinks such as Sustagen Sport or sports drinks.

As with all athletes, teaming up with an Accredited Sports Dietitian can help your adolescent athlete fulfil their sporting, growth and developmental potential. To find an Accredited Sports Dietitian near you go to www.sportsdietitians.com.au/findasportsdietitian.

SDA would like to express its sincere thanks to the expert panel members and the broader SDA membership for their insights, expertise and input into developing this position statement.

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