

## FACT SHEET

### NUTRITION FOR THE ADOLESCENT ATHLETE

#### ABOUT ADOLESCENT HEALTH

Ask any parent of a teenager and they probably have a colourful story of just what happens to the fridge when their sons and daughters arrive home from a hard day at school. Perhaps they have been asked to pack more into the lunchbox, or they notice the sly bowl of cereal consumed after dinner. Add to that the considerable load that many adolescents are put under in organised sport, 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, special issues of sports nutrition begin to emerge for those who have a high-level of participation in sport. The adolescent athlete is in a unique situation. They must meet the nutritional requirement associated with undertaking daily training and competition while ensuring they have a diet that caters to the added demands of their growth and development. To ensure that the adolescent athlete fulfils his or her potential, eating patterns should consider the needs for sporting success with the nutritional considerations for healthy growth and development.

This fact sheet is targeted at athletes aged 12-18 years who have involvement with organised training and competition (active adolescents) and those with higher training volumes (competitive adolescents). Elite adolescent athletes are advised to receive individualised support from accredited sports dietitians (see <http://www.sportsdietitians.com.au/findasportsdietitian> to find a dietitian near you).

#### ENERGY FOR ADOLESCENTS

Energy intake of adolescents should provide adequate support for growth and development needs, while maintaining the desired energy expenditure for exercise and performance goals. No simple method exists that can accurately determine the exact energy needs of adolescent athletes. Therefore, markers of growth and health will help to determine if total energy intake is appropriate.

Athletes should be encouraged to moderate eating patterns to reflect daily exercise demands. This will often mean that larger meals and regular snacking are required to meet the increased energy demands on training days.

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.

#### CARBOHYDRATE, PROTEIN & 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. Consider the duration and intensity of the exercise sessions to help guide intake.
- Protein requirements are between 1.3-1.8g per kg per day, and 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 provide a great recovery option, such as 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, at the same time as providing a source of protein and carbohydrate. Please see 'Recovery Nutrition' fact sheet for more information.
- Fat intake should be in accordance with public health guidelines, which suggest that fat should contribute 20-35% of total energy intake, with no more than 10% 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

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)

Good sources of iron include red meat, pork, chicken, eggs, fish, some fortified breakfast cereals and some fortified beverages and baked beans. Please read 'Iron depletion in athletes' fact sheet for more information.

Note: Iron supplementation should only be considered if medically warranted.

##### 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 & girls)
- RDI (adults) = 1000mg per day

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. See "Vitamin D" fact sheet for further information.

#### FLUID 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% of body weight) or if fluids are over-consumed (i.e. weight-gain), the athlete should be guided to adjust drinking rates. For further reading, please see 'Fluids in Sport' fact sheet.

#### 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 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.

#### DO ADOLESCENTS NEED SUPPLEMENTS?

To put this simply – no is the answer! 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 a 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 Gatorade sports drink.

#### BODY IMAGE

Despite sport often playing an important role in developing a healthy self-esteem in adolescents, it is important to recognize that in sports emphasizing leanness for optimal performance or aesthetic purposes, there is an increased rate of disturbed eating attitudes and behaviors.

Parents, guardians and coaches have an important role in advocating for the development of a positive image in adolescents. Professional advice should be utilized if athletes display obsessive or irrational body image attitudes or behaviors. Nutrition education for adolescent athletes should be focused on long-term health, and it is important that athletes understand that body composition is only one contributor to sports performance. Dietary and training strategies exclusively designed to manipulate physique independent of performance should be avoided.