

Preventing sports injuries

Many injuries caused by participation in a sport happen at the start of the season. This is often the result of doing “too much, too soon” or not being properly prepared. The following guidelines can help prevent injuries throughout the year.

The three keys

1. Practice “prehabilitation” Instead of rehabilitating injuries—restoring injured parts to normal function—prevent injuries by strengthening at-risk muscle groups. If you participate in a sport that demands the same movement over and over (such as swimming, tennis, or pitching a ball), contact a certified athletic trainer or physical therapist several months before your sports season to devise a strengthening program.

2. Follow the 10% rule Slowly increase your training load at the start of the season. Inflammation of the tendons, stress fractures, and other injuries may result from a sudden increase in training load. Do not increase the intensity or volume of your training by more than 10% per week. For example, runners who run an average of 20 miles a week should increase that to no more than 22 miles the following week, then to about 24.2 miles the following week. And so on.

3. Stay active Even if you participate in only one sport, you should stay physically active throughout the year. Running, biking, swimming, basketball, and other activities are excellent ways to maintain conditioning and avoid the need to play “catch-up” when your sport season begins.

Warm up, cool down

Prevent pulled muscles by jogging for 5 minutes and then stretching for 10 to 15 minutes before practices and games. Following the same jogging and stretching routine after activity can decrease muscle soreness.

Prevent dehydration

Dehydration—loss of water from the body—can result from sweating during athletic activities, especially in hot weather. It can lead to dangerous

heat illness. To prevent dehydration, drink water before, during, and after all practices and games. Cool water (50°F to 70°F) is preferred to warm water (like that in a bottle that sits outside while you work out) because it is more rapidly absorbed from the stomach. A good guide is as follows:

- Drink 16 oz of water 30 to 60 minutes before activity.
- Drink 4 to 8 oz of water every 15 to 30 minutes during activity.
- Drink 16 oz of water for every 1 lb of weight lost after activity.

Sports drinks such as Gatorade and Powerade are only really needed for very intense activity lasting longer than 90 minutes.

Nutrition tips

A good diet is essential to peak athletic performance. It helps maintain strong bones, avoid anemia, and build muscle.

Vitamins If you are eating a good variety of foods, vitamin supplements are usually unnecessary.

Calcium Adolescents require between 1200 and 1500 mg/d. Foods high in calcium include dairy products, fortified juices, broccoli, shrimp, and spinach. Soda (caffeine and phosphorous), alcohol, cigarette smoking, and low-estrogen levels (absent periods) can interfere with calcium absorption.

Iron Females 11 to 24 years old need 15 to 18 mg/d; males 11 to 18 years old need 12 mg/d, and males 19 to 24 years old need 10 mg/d. Foods high in iron include all meats, especially beef and liver; refried beans; spinach; and most cereals.

Protein About 1.5 gram per kilogram (g/kg) of body weight per day is a good guideline for adolescent athletes. The recommended daily allowance for nonathletes is 0.8 g/kg/d. All athletes need protein in their diets; those trying to build muscle through weight training require even more (up to 2 g/kg/d). Adequate protein intake can be easily obtained through the diet, without resorting to expensive protein powders and shakes. Foods high in protein include meat, fish, poultry, eggs, dairy products, grains, breads, beans, and peanut butter.

Patient Care

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