Academy of Nutrition and Dietetics

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Fueling Track and Field Athletes

Track and field athletes compete in different events and require different energy (calorie) and nutrient needs. Some events are high intensity, short duration (100- and 200-meter sprints, hurdles, high jump, long jump, triple jump, pole vault, shot put, javelin, discus, and hammer throw), and some events are high intensity, short duration that require all-out maximum effort for several minutes (400-, 600-, and 800-meter runs). There is not as much research on the energy and nutrient needs of athletes competing in high-intensity sports compared with those competing in endurance events, such as distance running, but nutrition can support training adaptations to make any athlete perform at his or her peak.

Track and field athletes may compete in short-duration events, but they train several hours a day, sometimes several times a day, and can compete in more than one event in a meet. Also, athletes compete in heats and advance to final events on the same day.

USA Track and Field is the national governing body for track and field athletes (**www.usatf.org**).

Fueling Strategies

Track and field athletes require enough energy to support hard training, and energy needs vary based on age, gender, event, and hours spent in training and competition. A balanced nutrition plan is advised, although diet has less of an impact on success in these sports than genetics, training, and motivation. However, nutrition is a valuable part of helping to maximize muscle mass needed for power events.

The nutrients that provide energy are carbohydrate, protein, and fat. The amount of each nutrient you need to fuel your practice and competition is given below.

Carbohydrate

Carbohydrate should make up most of your diet. During intense training periods, eat 2.3 to 3.2 grams of carbohydrate per pound of body weight per day (5 to 7 grams per kilogram). For example, a 150-pound athlete would need 345 to 480 grams of carbohydrate a day. On less intense training days or when sidelined by injury, you only need 1.4 to 2.3 grams of carbohydrate per pound (3 to 5 grams per kilogram).

These foods have **15 grams** of **carbohydrate**:

- 1 slice bread
- 1 6-inch tortilla
- ½ cup corn
- ½ cup mashed potatoes
- ½ medium baked or sweet potato
- ⅓ cup rice
- 3 cups popcorn
- 1 small apple
- 15 grapes
- 2 tangerines
- 2 tablespoons raisins
- ½ cup orange juice
- 3 cups green beans
- 1¼ cups milk or yogurt

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Choose high-quality carbohydrate foods such as whole grain breads and cereals, rice, pasta, starchy vegetables, whole or dried fruit, and low-fat milk and yogurt. Eat fewer refined carbohydrates and sweets such as pastries, cookies, cakes, candy, sugar-sweetened soft drinks, fruit drinks, tea, and specialty coffee drinks.

These foods have **7 grams** of **protein**:

- 1 ounce cheese
- 1 ounce beef, pork, chicken, turkey, or fish
- ¼ cup cottage cheese
- ½ cup black beans or kidney beans
- 1 whole egg
- 2 tablespoons peanut butter
- 1 cup milk or plain yogurt

Protein

Protein provides the building blocks for muscle mass, growth and development, and repair after hard training. You need 0.6 to 0.8 grams per pound (1.3 to 1.8 grams per kilogram). For example, a 150-pound athlete would need 90 to 120 grams of protein a day. Eating more protein than the recommended amount will not build muscle faster or add extra muscle mass.

Choose lean protein foods such as lean beef and pork, chicken, turkey, fish, eggs, and low-fat dairy foods. Nuts are a good source of protein and contain healthy fats. Eat less high-fat protein foods such as regular burgers, brisket, ribs, sausage, and full-fat cheeses and dairy foods.

Fats

There is no specific recommendation for fat for track and field athletes, but healthy fats should be a part of every athlete's diet. Healthy fats include olives and olive oil, nuts and nut butters, avocado, and vegetable oils (such as canola oil). Fat has more calories than carbohydrate or protein so healthy fats can help add calories for athletes who want to gain weight, while reducing fat intake can help those who want to lose weight.

What Should Track and Field Athletes Eat Before and After a Workout?

When possible, eat 3 to 4 hours before a hard practice or competition. Aim for a low-fat meal with about 200 to 300 grams of carbohydrate and 30 grams of lean protein. This will ensure you have enough fuel on board but will leave time for your stomach to empty before you train or compete. A turkey sub sandwich with baked chips and a side of fruit or a grilled chicken wrap on a flour tortilla with pretzels and fruit juice or low-fat milk are examples of meals that will meet the energy demands of a long training session or competition.

If there is not enough time to eat 3 to 4 hours before practice or competition, eat a snack 1 to 2 hours before exercise. Good choices for snacks include a mini bagel with peanut butter, granola or cereal bars, cheese and crackers, cereal and milk with banana, or yogurt.

For practices longer than 1 hour, pack portable snacks. Try to eat 30 to 60 grams of carbohydrate every hour. Good choices for snacks include sports drinks, which provide carbohydrate, fluid,

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sodium, and potassium; peanut butter sandwiches; pretzels; string cheese; trail mix; dried fruit; orange slices; baked chips; smoothies; or 100% fruit juice.

After practice, recover with a carbohydrate- and protein-rich snack. Carbohydrate replaces muscle glycogen (carbohydrate stored in muscles) that was lost during a long practice or competition, and protein stimulates muscle protein repair. Good choices include a turkey or grilled chicken sandwich, a slice of vegetable-cheese pizza, low-fat chocolate milk, cottage cheese and fruit, or cheese and crackers. If you are practicing or competing the next day, start your recovery within 30 minutes after training. If the following day will be a rest day, add recovery foods to your next meal.

Vitamins and Minerals

Track and field athletes can get all the vitamins and minerals they need by making healthy food choices and eating a variety of foods. Have at least 5 servings of fruits and vegetables each day. Adding berries to breakfast cereal, dried fruit to trail mix, frozen fruit to plain or vanilla yogurt, side salads with meals, vegetables on sandwiches, and salsa on baked potatoes and snacking on fresh fruit and vegetables will help you get all the nutrients you need.

Female track and field athletes should pay extra attention to choosing iron-rich and calcium-rich foods. These nutrients are needed in larger amounts, especially during teen years. Lean beef in a stir-fry, dark-meat chicken or turkey, kidney beans and black beans, and breakfast cereals fortified with iron are good choices. For calcium, choose low-fat milk (cow's milk or soy, rice, or almond milk), low-fat cheese, yogurt, almonds, leafy green vegetables, orange juice with added calcium, or smoothies made with milk or yogurt.

Hydration Strategies: What Should Track and Field Athletes Drink?

Track and field athletes need to maintain a high power output, and hydration can contribute to power. Mild dehydration (2% of body weight) can limit performance. Track and field athletes compete indoors, where air temperature can be high, and outdoors in sunny, hot, and humid conditions. Weigh yourself before and after practice to determine how much fluid you lose to establish a hydration schedule.

Water is best for most athletes. Plan to drink about 2 cups (16 ounces) of water 2 to 3 hours before a workout or competition. Then drink 1 cup (8 ounces) of water 10 to 20 minutes before exercise. Try to drink about 1 cup of fluid every 10 to 20 minutes during your workout, when possible. During practice, keep a sports bottle filled with water on the field or track so it is easy to reach and drink when you have the opportunity.

Sports drinks are a good choice when you have long, hard workouts or have to compete many times during competition. Stick to the basic tried-and-true sports drinks such as Gatorade or PowerAde, because they provide a good balance of carbohydrate, sodium, and potassium to

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replace losses. Follow the same drinking schedule as for water, but also listen to your body. Drink when you are thirsty and monitor how much you urinate and the color of your urine. If you are urinating frequently throughout the day and your urine is a light-straw color, you are probably drinking enough fluids.

Notes:

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Frequently Asked Questions

Are supplements that claim to buffer lactic acid helpful for track and field athletes?

Very high-intensity events use the anaerobic energy system. Lactic acid (acid that forms in muscle) can build up. The body has systems to help buffer the excess acid, but supplements such as bicarbonate have been used to provide extra buffering. Research shows that bicarbonate does help some athletes buffer acid and reduce fatigue. The dose used is about 0.13 grams (3 grams per kilogram) of bicarbonate citrate per pound of body weight 1 to 2 hours before high-intensity events. However, many athletes report gastrointestinal upset. If you want to experiment with bicarbonate do so during training. Collegiate and elite athletes are drug tested for banned substances, and some dietary supplements have been contaminated with banned substances. A list of prohibited substances for track and field athletes can be found at **www.wada-ama.org**.

We practice in the morning and I need some suggestions for healthy, easy breakfasts.

A healthy breakfast for a track and field athlete has quality carbohydrate and protein. Here are some breakfast ideas:

- 2 whole grain toaster waffles topped with real maple syrup with a glass of low-fat milk
- 2 scrambled eggs with a slice of whole grain toast and 100% fruit juice
- Bowl of instant oatmeal with 2 tablespoons peanut butter stirred in and 100% fruit juice
- 6 ounces low-fat Greek plain or vanilla yogurt with ½ cup granola and 100% fruit juice
- 1½ cups whole grain cereal (such as Cheerios or Wheaties) with low-fat milk and banana
- Peanut butter and jelly sandwich on toasted whole grain bread with low-fat milk
- Toasted English muffin sandwich with 1 slice lean ham or Canadian bacon and a scrambled or fried egg with glass of milk
- Yogurt smoothie
- Whole wheat tortilla stuffed with scrambled eggs and turkey bacon with 100% fruit juice

What are some good resources for nutrition?

The best resource is a registered dietitian nutritionist, especially one who specializes in sports nutrition.

To find a qualified sports nutritionist, connect to the website of Sports, Cardiovascular, and Wellness Nutrition (SCAN) (**www.scandpg.org**) and use the "Find a SCAN RD" search box. SCAN also has free sports nutrition fact sheets on a wide range of topics at **www.scandpg.org/sports-nutrition/sports-nutrition-fact-sheets**.

For online resources check out the United States Olympic Committee's sports nutrition resources at **www.teamusa.org/About-the-USOC/Athlete-Development/Sport-Performance/Nutrition**. You will find many resources there, including videos, recipes, and eating guidelines for athletes.

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