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Fueling Soccer Players

Soccer requires individual athletes to work together for the benefit of the team. Soccer is a high-calorie-burning, demanding sport. On average, a soccer player covers 5½ miles in a match. Midfielders cover a bit more distance, averaging 6½ miles. Research on soccer matches shows that players change speed or direction every 4 to 5 seconds. About 30% of goals are scored in the last 15 minutes of a game, so proper fueling to stay strong for the entire match is important for success in the sport. Good nutrition may not make an average player a great player, but poor nutrition can make a great player average.

Playing soccer uses up a lot of the body's glycogen (carbohydrate stored in muscle). Without enough carbohydrate, fatigue can set in, limiting the athlete's ability to maintain high-intensity effort, especially in the later stages of the match.

The United States Soccer Federation is the national governing body for elite US soccer players (www.ussoccer.com). The Federation Internationale de Football Association (FIFA) has a consensus statement on nutrition for football (soccer) and it can be found at www.fifa.com/aboutfifa/footballdevelopment/medical/news/newsid=101493/index.html.

Fueling Strategies

Soccer players face intense practice sessions. On average, elite female players burn 1,000 calories and elite male players burn 1,500 calories during a game.

The nutrients that provide energy (calories) are carbohydrate, protein, and fat. Eating a wide variety of foods with enough carbohydrate, protein, and fat will help fuel your training and competition and support training adaptations and recovery. The amounts of each nutrient you need are given below.

Carbohydrate

Carbohydrate should make up most of your diet. During intense training periods, eat 2.3 to 3.6 grams of carbohydrate per pound of body weight per day (5 to 8 grams per kilogram). For example, a 160-pound soccer player would need 368 to 576 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). Active

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

young children need less carbohydrate than older children, so the lower end of the range is recommended.

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, or turkey
- 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 and for healthy growth and development. You need 0.6 to 0.8 grams per pound (1.4 to 1.7 grams per kilogram). For example, a 160-pound soccer player would need 96 to 128 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 fewer 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 soccer players, 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.

What Should Soccer Players 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 take the field. 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 practice 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 you begin. Good choices include juice, fruit, milk, granola or cereal bars, a small bagel with peanut butter, cheese and crackers, a bowl of cereal, or yogurt. If there is less than 1

hour before exercise, liquids, such as a sports drink or a low-fat liquid meal replacement, may be the best choice.

For practices longer than 1 hour or for all-day tournaments, pack portable snacks. Try to eat 30 to 60 grams of carbohydrate when you have the opportunity, such as at half-time or between matches. Good choices for snacks include sports drinks, which provide carbohydrate, fluid, 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 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 on the same day or 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

Soccer players 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 fruits and vegetables will help you get all the nutrients you need.

Female soccer players 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 Soccer Players Drink?

Soccer players should be well hydrated prior to kickoff. There are limited opportunities to drink during a match, so take advantage of every chance you get to drink fluids. Even exercising in cool weather can lead to sweat loss and dehydration if fluids and electrolytes are not replaced.

Water is best for most athletes. Plan to drink about 2 cups (16 ounces) of water 2 to 3 hours before a workout or match. Then drink 1 cup (8 ounces) of water 10 to 20 minutes before exercise. Keep a sports bottle filled with water at the bench so it is easy to reach when you do get a break. If you don't like the taste of plain water, slice up lemons or limes to drop into your water bottle for a refreshing taste.

Sports drinks are a good choice when you have long, hard workouts or for all-day tournaments. 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 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:

Frequently Asked Questions

Can nutrition help improve performance in soccer?

Research has demonstrated that soccer players who begin a match with low muscle glycogen stores benefit from eating a snack or drinking a sports drink before exercise. Improved kicking accuracy and sprinting speed were noted when compared with athletes who did not eat or drink before a match. And there was an additional benefit: soccer players who maximized their glycogen stores by eating or drinking before a match reported exercise didn't seem as hard, so the perceived level of exertion was less.

I get dizzy and light-headed during morning practice but I don't like to eat a traditional breakfast. Any suggestions?

Starting practice with low glycogen stores and/or low blood glucose (sugar), as can happen after an overnight fast, can set you up for dizziness and low energy during a hard practice. Eat and drink something before a match even if it is not "traditional" breakfast food. Try a liquid breakfast (a smoothie or commercially prepared meal replacement) to sip on as you head to practice or an energy bar that provides about 100 to 250 calories, 10 grams of protein, and 15 to 30 grams of total carbohydrate per bar, along with water or 16 ounces of a sports drink.

What are some good resources for nutrition and soccer?

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

To find a qualified sports dietitian, 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.