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Fueling Football Players

American football is a sport of short bursts of high-intensity exercise, coupled with a serious weight-training program to build muscle mass. Good nutrition can help build muscle mass, increase speed, and decrease body fat. Preseason football can be very intense, with two-a-day practices held in the summer in hot, humid conditions. Nutrition needs depend on the position played and body composition, but general principles of good nutrition and hydration are beneficial for all football players.

There is not a national governing body for football, but the National Collegiate Athletic Association (NCAA) has a Sport Science Institute with a nutrition section that has useful information on fueling and hydration (www.ncaa.org/health-and-safety/nutrition-and-performance).

Fueling Strategies

Football players spend several hours each day in training and conditioning (including weight training) and practice for about 2 hours a day during the preseason. The competitive season usually lasts 3 to 4 months, culminating in playoffs and championship games. Football players who are trying to gain weight should eat 5 to 6 times each day and be sure to eat after weight-training sessions and practice to aid recovery. Football players who are trying to improve body composition by losing body fat should use the off-season to reduce calories for weight loss.

The nutrients that provide energy (calories) are carbohydrate, protein, and fat. The amounts of each nutrient you need to fuel your practice and competition are 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 200-pound football player would need to eat 460 to 640 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).

Choose high-quality carbohydrate foods such as whole grain breads and cereals, rice, pasta, starchy vegetables, whole or dried fruit, and

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

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.

Protein

Protein provides the building blocks for muscle mass and for healthy growth and development.

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

You need 0.6 to 0.8 grams per pound (1.4 to 1.7 grams per kilogram). For example, a 200-pound football player would need 120 to 160 grams of protein a day.

Timing of protein intake is important for building muscle. Eat 20 to 25 grams of protein within the first hour after weight training to provide needed amino acids (the building blocks of protein) to your muscles for repair and growth. 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, 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 football 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 football players who want to gain weight.

What Should Football 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 a game or practice. 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 a workout. 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. Football players should not train hungry. Always eat something before a long workout.

For practices longer than 1 hour, pack snacks. Try to eat 30 to 60 grams of carbohydrate every hour. 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 (carbohydrate stored in muscles) that was lost during a long practice or competition, and protein stimulates muscle protein repair and growth. 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 again the same day or competing or practicing 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

Football 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.

Hydration Strategies: What Should Football Players Drink?

Pads, helmet, and the uniform make a football player a human sweatbox. Sweat rates vary among players, but some athletes can lose more than a gallon of sweat on a hot, humid day. Sports performance suffers when football players lose 2% body weight or more through sweating. For a 200-pound athlete, a 4-pound weight loss is equal to 2% body weight. Weigh yourself before and after practice to determine how much fluid you lose, and drink 2 cups (16 ounces) of fluid for every pound lost.

Water is best for most athletes. Plan to drink about 2 cups of water 2 to 3 hours before a practice or game. Then drink 1 cup (8 ounces) of water 10 to 20 minutes before hitting the gym or field. Most workouts are long and strenuous, so drink about 1 cup of fluid every 10 to 20 minutes during your workout. Keep a sports bottle filled with water on the bench so it is easy to reach. Take a few sips of fluid every time the athletic trainer hands you your water bottle.

Sports drinks are a good choice when you have long, hard practices or during a game when the heat and humidity are high. 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

What should I eat at halftime?

Halftime is a good time to refuel and rehydrate. A sports drink will provide carbohydrate and electrolytes, such as sodium and potassium. Carbohydrate snacks will provide energy for the second half, so try orange slices, bananas, trail mix with dried fruit, or a low-fat energy or granola bar.

There are a lot of protein shakes on the market that promise to build muscle. Should I try one?

Protein is important for building muscle, but there is nothing magic about protein shakes. Food provides all the protein needed to build muscle. Low-fat chocolate milk is a popular muscle-building and recovery drink. Milk contains 2 types of protein, whey and casein, along with carbohydrate, vitamins, and minerals, making it a good substitute for more expensive protein drinks. Some protein shakes that promise to build muscle have been contaminated with substances that are banned by both college and professional teams, including pro-hormones or amphetamines. Stick to real food to avoid the risk. Dietary supplements, including protein shakes, are taken at your own risk.

What are some good resources for nutrition and football?

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.