

Nutrition Made Easy

What is Nutrition?

Nutrition is the process of providing or consuming the food necessary for health, function and growth. Nutrition, and the nutrients consumed, is the building blocks of life. Making smart choices about the foods you eat can have a lasting impact not only on your sporting career but also on your overall health later as an adult. It can be a key to avoiding obesity, illness, and many of today's most widespread chronic diseases. Sport nutrition is the study of nutrition as it relates to athletic performance. Good sport nutrition means getting the right amount of nutrients from healthy foods in the right combinations at the right times. This includes the type and quality of all foods and liquids ingested by an athlete and is more critical for performance and recovery. Sport nutrition typically deals with more vital nutrients for athletes such as vitamins and minerals, fats, carbohydrates, and proteins.

Why are vitamins and minerals important?

Vitamins and minerals, also called micronutrients, play an important role in energy production, cardiorespiratory health, bone health, and immune function. They assist in the repair of injured muscles and the recovery from exercise. The higher demands of micronutrient are on an athlete's body, the greater the supply needs to be. Athletes must consume greater amounts of vitamins and minerals needed to build and repair lean muscle tissue and assist in the facilitation of the body's metabolic functions. The most common vitamins and minerals found to be necessary but limited in athletes' diets are vitamin B, C, D, E, calcium, potassium, iron, zinc, and magnesium. Restricted diets, weight loss diets, and unbalanced diets with little fruit and vegetable place greater risk for athletes to not get adequate nutrients. This can be a major factor in limiting an athlete's growth, recovery, and overall performance. Finding a good multivitamin will help most athletes deficiency but like all supplements should not be used as a replacement for natural food.

What is fat?

In terms of sport performance, fat is the body's fuel source for light to moderate intensity exercise and spares carbohydrate for longer bouts of exercise. The recommended fat intake is 20-30% of total calories or about .25-.50 grams per pound of body weight.

Example: A 200lb athlete would need from 50-100 grams of fat per day

Adequate fat in the diet is important for meeting increased needs of athletes. The type of fat is as important if not more important than the amount of fat in an athletes diet. Steer clear of saturated fats (bad fat) and consume unsaturated, monounsaturated, and polyunsaturated fats (good fats). We will cover options in a later section.

What is Carbohydrate?

Carbohydrates primary role in the body is to serve as an energy source. This is athletes primary source of fuel and energy throughout the day, during practice and in games. This is the most important of the macronutrients for any athlete. Without proper amount of carbs you will feel sluggish and lethargic and have trouble finishing practice and games. The recommended intake of carbohydrates is 2.5-3.5 grams per pound of bodyweight.

Example: A 200lb athlete would need 500-700 grams of carbohydrates per day.

Not all carbohydrates are created equal. Some carbs release sugar into the blood stream quicker than others. The ability of foods to quickly raise blood sugar levels is known as glycemic index (GI). When blood sugar rises rapidly the body produces the hormone insulin. The insulin rapidly lowers blood sugar to combat the spike and ultimately promotes fat storage. When blood sugar drops, energy levels drop and the ability to train and compete at optimal levels significantly decrease.

What is protein?

Protein is needed to build and maintain muscles, form blood cells, and maintain immunity. Protein will only be used to build muscle if enough carbohydrate calories are consumed during a weight resistance exercise program. Without adequate calories from carbohydrates protein is used as fuel. Athletes should consume .05-1.0 grams per pound of bodyweight. Example: A 200lb athlete would need 100-200 grams of protein per day. Approximately 30-60 grams of carbohydrates and 20-30 grams of protein should be consumed within 30 minutes to one-hour post exercise or practice. Consuming both will restore lost carbohydrates from your muscles and increase rebuilding broken down muscles.

How do I find the total calories I need?

In order to get your recommended caloric intake, follow the equations below:

LOWER TOTALS:

Fat: $(.25 \times \text{bodyweight}) \times 9 =$ _____ calories from fat

Carbohydrate: $(2.5 \times \text{bodyweight}) \times 4 =$ _____ calories from carbs

Protein: $(.50 \times \text{bodyweight}) \times 4 =$ _____ calories from protein

Total Calories: _____ calories

HIGHER TOTALS:

Fat: $(.50 \times \text{bodyweight}) \times 9 =$ _____ calories from fat

Carbohydrate: $(3.5 \times \text{bodyweight}) \times 4 =$ _____ calories from carbs

Protein: $(1.0 \times \text{bodyweight}) \times 4 =$ _____ calories from protein

Total Calories: _____ calories

So for our 200lb athlete the caloric needs would be between 2850-4500 calories. The lower of the two totals from above should be used on lighter training days or when you're out of season. The higher of the two totals should be used on heavier training days such as two a day practices or when offseason training is very intense.

How do I apply this to my sport and season?

Inseason and Post Season Play

Caloric demands are extremely high with practice, lifting, conditioning and playing games. Make sure your caloric intake is high enough to give you fuel and energy needed to compete at optimal levels. One good thing about in season is you are able to fall into a routine and plan a nutritional schedule around school, practice, weights, and studying. Be proactive in your planning taking snacks with you to school to eat between classes. In season is not the time to try losing or gaining weight. Coming into the season you should be at your optimal competing weight and should try to maintain that weight throughout the competitive months. On game days try to eat 3-4 hours before competition with some lean proteins and carbohydrate rich foods like wheat breads, pastas, potatoes, and rice. If you can, try to eat a high carbohydrate snack (banana and Gatorade) 20-30 minutes before game time and at half time to keep energy levels high and combat dehydration.

Recovery is a high priority during the season and post season. Consume .50 grams per pound of bodyweight in carbohydrates and at least 20 grams of protein immediately following your game. If you play an outdoor sport you must focus on hydrating before games and re-hydrating your body post game by drinking 32-64 oz. of water.

Offseason

The needs of each individual will change. Practices will not be as common (if at all) and strength and conditioning demands will be high so energy, protein, and nutritional recovery are demanding. The offseason is a great time to increase muscle mass and/or decrease body fat. Some make try to bulk up and gain weight, others may try to shed some pounds, while others are happy with their current weight and will try to monitor body composition. Have a plan and know how to get there in your offseason. Plan out your meals based on nutritional needs and caloric content. Stick with appropriately healthy foods listed in the sections below to ensure the proper weight management for your goals.

Preseason

Needs in preseason will differ from sport to sport. Outdoor sports are typically harder on the body in terms of keeping the body fueled and properly hydrated. Intense heat generally can make an athlete not feel hungry but eating and refueling is a must. During practice drink several ounces of water every 15-20 minutes. For each pound of bodyweight lost in practice requires 20-24oz of fluid and 1 gram of sodium to replenish what was lost. Choose options like fruits and vegetables that are high-fluid foods with pretzels, crackers, and nuts to add some sodium for snacks. Remember to consume recovery foods such as bagels, berries, or protein shakes within 30 minutes immediately following practice.

Maintaining lean mass and weight may be difficult for some so target calorically dense foods such as guacamole, cheeses, milk, and peanut butter – to name a few – to help increase your caloric intake. If gaining too much weight is a concern then focus on dark green leafy veggies, lean meats grilled or baked, with high fiber whole wheat breads, brown rice, or whole grain pasta.

We know you are all busy with the summer months approaching, but this is all the more reason to stay focused on your nutrition. To help you instill some good nutritional behavior we have mapped out your optimum 24 hour protocol for training and competing.

Pre Workout Meal (30-60 minutes):

Fruits, protein, and a high carbohydrate sports drink.

The Workout:

WATER, 4 to 8 ounces every 20 minutes

Post Workout Meal (30-60 minutes):

One gram of carbs per pound of body weigh (180 lbs=180 grams) and .25 grams of protein per pound of body weight (180 lbs=45 grams).

2 Cups of Water per pound lost.

Two to Three Hour Meal:

Get a healthy, well balanced and hearty meal
Take in fluids

Over next 18 hours:

Rest and Relax, take in protein (Entire Day = 4 meals, 2 Snacks)
Stretch
Eight hours of Sleep

The Training Diet

Soccer players require a high carbohydrate intake on a daily basis to replenish muscle stores after each training session. This requires making carbohydrate foods such as bread, breakfast cereal, fruit, pasta, rice, vegetables, yogurt and flavored low-fat milk the focus of meals and snacks. Players who fail to consume sufficient carbohydrate may suffer mid-week slumps and progressive fatigue over the season. Players in heavy training need to start recovery nutrition tactics immediately after each training session. Ideally, players should aim to have 800-1000 grams of carbohydrate within 30 minutes of finishing training. Recovery snacks should be combined with fluid to replace any fluid lost during the session.

50g Carbohydrate =

24-32 ounce sports drink
3 medium pieces fruit
2 cereal bars
2 x 200g cartons yogurt
bowl of cereal with low fat milk
bowl of fruit salad with 1/2 carton of
yogurt
24-32 ounce smoothie
3 slices toast

Match Preparation

Ideally, a light, high-carbohydrate meal should be eaten at least two hours before a match. Breakfast cereal plus fruit, pasta with tomato sauce, rolls or sandwiches, baked potatoes with low fat fillings and fruit salad with yogurt are all good options. You should experiment to find the best solution for you.

Match Considerations - Fuel and Fluid

Soccer matches place reasonable demands on both fluid and carbohydrate stores of players. Studies have reported low muscle glycogen levels in players after a match -- sometimes with significant depletion occurring by half-time. Players with depleted muscle glycogen stores had a lower average speed and covered less ground than their team-mates in the second half of the

match. Studies show that strategies to increase carbohydrate supplies - both eating a high carbohydrate diet in the days before a match and drinking sports drink during the match, keep players running faster and further in the second half. In one study, high carbohydrate tactics helped the players to make fewer errors.

Sweat losses of 1-2.5 liters per 90-minute game in cool conditions and approximately 4 liters during hot conditions have been reported in some studies. However, the reported fluid intake of players is typically less than half of the sweat rate.

Tips for better drinking during soccer are:

- Drink sports drinks that encourage better fluid intake because of their taste, as well as supplying extra fuel for the match.
- Drink well during warm up and half time breaks.
- In hot weather especially, be creative in finding ways to grab a drink during halves. Some players leave their bottles around the side of the pitch and dash for a drink whenever there's a stoppage in play.
- Practice good drinking strategies in training sessions.

Pre-Match meal

The goals of the pre-match meal are to: 2 ½ hours prior to the match

- Achieve proper fluid levels
- Leave you feeling comfortable (neither too full or hungry)
- Leave you feeling confident and ready for action.

There are plenty of meal combinations which can achieve these goals but players need to experiment to find the best combination for them. Generally, the following is recommended:

- Have a normal size meal four hours before the match and a snack one to two hours before the match
- If your match is early in the morning, have a high carbohydrate meal the night before and a snack one to two hours before the match
- Choose high-carbohydrate, low-fat foods to ensure easy digestion and to fill carbohydrate fuel supplies
- Experiment with the type, timing and amount of food that works best for you
- Drink plenty of fluids leading up to the event
- If you suffer from pre-match nerves, try a liquid meal supplement such as a fruit smoothie as a pre-match meal.

Pre-match meal ideas include:

- breakfast cereal with skim milk and fruit + toast + juice
- fruit + yogurt + bagel
- pancakes + syrup + fruit
- baked potatoes with low fat filling + juice
- pasta with low fat sauce + juice
- rolls/sandwiches + fruit + yogurt
- liquid meal (supplements or homemade fruit smoothies)

Pre-match snack ideas include:

- cereal bars
- fruit
- yogurt
- toast
- sports drink

The psychological effect of the last meal can be as important as the nutritional effects for some players. However, for the majority of players, a high carbohydrate meal is the best option. All players need to experiment to find the best food choices and timing for them.

SAMPLE MEALS SELECTED FOR TIME FRAME

Morning Breakfasts:

Sample 1

Egg White Sandwich on Bagel or English muffin
Turkey bacon or turkey sausage
Non Fat yogurt
Apple
Skim Milk

Sample 2

2 Waffles, French toast, or Pancakes (No Butter)
Piece of Cantaloupe
Lean Ham
Apple Juice

Sample 3

Scrambled or Poached Egg
Oatmeal
Piece of Wheat Toast
Orange or Grapefruit
Milk

Sample 4

Bran Cereal w/ banana, strawberries, or blueberries
Bagel/ w light cream cheese or jelly (No Butter)
Apple
Orange Juice

Pre workout Meals (30-60 minutes prior)

HIGH PROTEIN:

Sample 1

Black beans
Cheddar cheese
Brown rice Burrito
Water or Protein Shake

Sample 2

Green and Red peppers
Sweet corn
Peas
Balsamic vinegar in a pita
Water or Protein Shake

Sample 3

Lean Ham Sandwich on Kaiser Roll
Lettuce
Tomato
Mustard
Non Fat Yogurt
Handful of jelly beans
Water or Protein Shake

Sample 4

Tossed Salad with tuna
Wheat crackers
Applesauce
Piece of fruit
Water or Protein Shake

Post Workout Meals (30-60 minutes post)

HIGH CARBS:

Sample 1

Potato gnocchi tossed with butter and sage
Handful of trail mix or jelly beans
Green beans
Sports drink, Water, or chocolate milk

Sample 2

Baked chicken with light butter and seasonings
Side of mixed vegetables
Mashed potatoes
Piece of angel food cake
Sports Drink, Water, chocolate milk

Sample 3

Fish (Shrimp, Pollack, Tuna, Salmon, Flounder, or Swordfish)
Green beans
Baked potato (No butter)
Oatmeal raisin cookie
Piece of fruit
Sports drink, Water, or chocolate milk

Sample 4

Turkey Sandwich or Peanut Butter and Jelly Sandwich whole grain bread
Non fat yogurt
Wheat crackers
Fruit
Sports drink, Water, chocolate milk

Two to Three Hours Post Workout

WELL BALANCED:

Sample 1

Meat filled Ravioli with tomato sauce,
Tossed salad (light oil based or French dressing)
Piece of fruit
Water

Sample 2

Grilled chicken with sausage or ham
Broccoli, Green beans, Peas, or Carrots
Brown Rice
Tomato soup
Fruit salad
Water

Sample 3

Broiled Lamb, Lean Pork Chops, Veal, Sirloin or Flank Steak
Whole Wheat Roll
Cauliflower
Corn
Jello
Skim milk

Sample 4

Broiled Fish (Shrimp, Pollack, Flounder, Lobster, Tuna, Salmon, or Swordfish)
Piece Italian bread (No Butter)
Tossed salad
Broccoli
Applesauce
Water

Snacks: (2x a day)

Healthy Choice Popcorn

Sunflower seeds

Cherries

Honey and Oat bars

Granola Bars

Fig Newton

Piece of Any Fruit

Light Chocolate Pudding

Yogurt

protein shake/smoothie

We know you're busy, all the more reason to familiarize yourself with your body's recovery clock. To help you instill some good nutritional behavior, we have mapped out your optimum 24-hour protocol for intense training or racing.

- 0:00-2:00: **The Main Event** This is your race or workout. During activity lasting an hour or less, hydrate with water, drinking four to eight ounces every 15-20 minutes; more than an hour; hydrate with a sports drink that contains electrolytes.
- 02:00-03:00: **The glycogen window** Somewhere between 20 and 60 minutes after your activity, consume about one gram of carbohydrates for every pound of your body weight, and a fourth as much protein. A 180-pound male would eat 180 grams of carbs and 45 grams of protein; this might consist of a pre-packaged recovery beverage (Food in a Bottle) or whole foods with the proper recovery nutritional balance (The Performance Grocery Cart). The sooner you can ingest this, the better; your body's glycogen production and storage is peaking during this period.
- 03:00-05:00 **The follow-up meal** Two to four hours after your event, have another meal with the following ratio: 65 percent carbs, 20 percent fat, 15 percent protein. That's pasta with tuna or salmon; a roast turkey sandwich on whole wheat; or a burrito with chicken. Carbohydrates should rank high to moderate on the glycemic index, the scale that evaluates food according to how rapidly it stimulates a rise in blood glucose.
- 05:00-24:00: **Rest and relaxation:** Over the next 18 hours, follow the 65/20/15 ratio, taking in enough food to round out your total caloric needs, likely between 2,500 and 3,000 for an adult male. Also drink plenty of water, devote 15-20 minutes to stretching, and at least eight hours to sleep. Once a week, try—no, force yourself—to get a massage and a soak in a hot tub.
- 20:00-21:00: **The pre-race or pre-workout meal** Eat a 65/20/15 meal two hours before your next event or workout to allow time for adequate digestion.
- 23:00-24:00: **A final boost** Drink 6-10 ounces of a carbohydrate-rich sports drink 15-20 minutes before your activity to spike your blood glucose level.

Meals to Help You Deal

Some menus to fit around an early morning workout, a midday workout or an evening one—remember, it's low glycemic index foods before exercise, and high ones right after.

Breakfasts before a morning training session:

- Non- or low-fat yogurt with diced apple and slivered almonds; one slice of toast with Nutella spread.
- Any bran cereal with sliced peaches or sliced banana and skim or soy milk; half a grapefruit.

Pre-Workout lunches:

- Whole black beans, cheddar cheese, brown rice, and sunflower seeds on corn tortillas
- Veggie pocket: combine sliced red and green peppers, sweet corn, peas, plain non-fat yogurt, pepper and a dash of balsamic vinegar. Stuff a pita pocket with the mixture.

Dinners for the nocturnal sweaters:

- Meat-filled ravioli with tomato sauce (vegetarian option: butternut squash ravioli with pesto sauce); modified Waldorf salad—greens with sliced apple and walnuts..
- Grilled chicken apple sausage; tomato soup; fruit salad of sliced pears, apples, plums, grapefruit and grapes.

Breakfasts for the early birds who have already been up and out:

- Cornflakes with raisins, skim or soy milk; wedge of honeydew melon
- Waffles topped with diced pineapple; glass of orange juice

Lunches for the exercised:

- Lean ham sandwich on a Kaiser roll, French fries, handful of jelly beans
- Black bean soup and corn chips, orange soda, fruit leather

Post-workout dinners:

- Potato gnocchi tossed with butter and sage; roasted beet salad—slice beets and put in oven for 40 minutes, toss with olive oil, balsamic vinegar, and a little feta cheese. Handful of GORP (dates, raisins, chocolate chips, peanuts, and almonds)
- Chicken Marbella—bake chicken breasts with prunes, brown sugar and white wine; serve with couscous. Angel-food cake.

The Performance Grocery Cart

When it comes to the bulk of your daily caloric intake, real food rules. Hence, the following tips for effective grocery shopping, grappling with the glycemic index, and grabbing fast food on the go.

Recovery Foods: Snacks we like after a good butt-kicking

- turkey sandwich on whole grain bread
- bagel with cream cheese
- graham crackers cottage cheese
- 16 oz. skim milk with 5 tbsp. sugar
- soy milk
- Natural peanut butter and jelly on sourdough
- non-fat yogurt with Grape-Nuts
- water crackers and bean dip
- Cheerios with skim milk and raisins

Supermarket Surprises: Processed foods that work

- Pop-Tarts
- Nabisco Air Crisps
- Chex Mix
- Nutri-grain Cereal Bars
- Quaker Fruit and oatmeal Cereal Bars
- Toaster Bagel Shoppe bagels • Gina Italian Village Cheese Ravioli
- Carnation Instant Breakfast
- Healthy Choice microwave Popcorn
- Nilla Wafers (reduced fat)

From the Drive-up Window: Fast, but still food

- Wendy's baked potato (light on the cheese)
- Arby's Light Roast Chicken Sandwich
- Wendy's Chili • McDonald's Vanilla Shake
- Taco Bell Chicken Soft Tacos
- Taco Bell Beans and Rice

GI Favorites:

How blood sugar can help you selecting foods based on their glycemic-index rating isn't as hard as it may seem. (remember, you're eating high on the GI scale right after your workout and then tapering to low-GI foods later in the day and before your next workout.)

Below, a few suggestions, according to general GI category.

High:

- baked potato
- watermelon
- pineapple
- rice cakes
- raisins
- waffles
- baguette
- Rice Chex
- Beets
- Black bean soup
- Couscous
- Angel-food cake
- Gnocchi
- Croissants
- Grapenuts
- Stoned wheat thins
- Orange soda
- Taco shells
- Melba toast
- Cream of Wheat
- Life Savers
- Fruit leather
- Bagels
- Kaiser rolls
- Corn chips
- Bread stuffing
- Cheerios
- Graham crackers
- French fries
- Donuts
- Waffles
- Vanilla wafers
- Rice cakes
- Jelly beans
- Pretzels
- Rice Krispies
- Cornflakes
- Dates
- Tofu frozen dessert Moderate:

High Glycemic Index Foods - AFTER WORKOUT ONLY!

- bananas
- orange juice
- oatmeal cookies
- cheese tortellini
- sweet corn
- popcorn
- pita bread
- Sweet potatoes
- Sponge cake
- Grapes
- Instant noodles
- Peas
- Mixed grain bread
- Baked beans
- Oatmeal
- Carrots
- Jams and marmalades
- Kiwifruit
- Pound cake
- Special K
- Potato chips
- Oat bran
- Rice (brown, wild and white)
- Muesli
- Mango
- Fresh apricots
- Mini-Wheats
- Honey
- Cheese pizza
- Ice cream
- Split pea soup
- Hamburger bun Low:
- apples
- grapefruit
- black beans
- chocolate milk (low-fat)
- pasta
- nuts and seeds
- Sweetened low fat yogurt
- Rice Bran
- Cherries
- Grapefruits
- Sausages
- Kidney beans
- Green lentils
- Black beans
- Soy milk
- Dried apricots
- Milk (skim, 4% and chocolate)
- Peanut M&Ms
- Nutella spread
- Pears
- Apples

High Glycemic INDEX FOODS

- Tomato soup
- Corn tortillas
- Fish sticks
- Plums
- Pinto beans
- All Bran Cereal
- Meat-filled ravioli, durum, meat filled
- Snickers Bar
- Apple juice
- Peaches

post-workout only!