

Carbohydrate:

For peak athletic performance, it is crucial to feed your body both before *and* after strenuous exercise. The most important macronutrient in an athlete's diet is carbohydrate. Carbohydrate is the most efficient fuel source because less oxygen is used by the body to create energy; therefore carbohydrate is very important to athletes as the duration of high-intensity activity increases.

- Consume a high carbohydrate meal 3-4 hours before activity
- A snack may be needed 1-2 hours before activity; carbohydrate will be digested the fastest
- Consume 30-60 grams carbohydrate each hour during endurance events lasting over 1 hour
- Ensure a high carbohydrate recovery snack within 30 minutes post activity
- Consume carbohydrate-rich foods amounting to 50-100 grams within 2 hours post activity

Good Sources of Carbohydrate	Carb (grams)
1 Bagel	65
1 c. Pasta or Rice	43
1 English Muffin	38
1 Pancake	27
1 c. Raisin Bran	41
¾ c. Granola	38
1 Belgium Waffle	58
1 Medium Banana	29
1 slice Wheat Bread	18
12 in. Tortilla	47
12 oz. Fruit Juice	42
12 oz. Sports Drink	23
1 Medium Apple	22
1 c. Oatmeal	28
1 Small Baked Potato	23
½ c. Corn	17
½ c. Peas	13
¼ c. Dried Fruit	30
1 c. Flavored Yogurt	45

Make sure you get enough carbohydrate throughout the day! To calculate:

- 1) $\frac{\text{Body weight in pounds}}{2.2} = \text{Body weight in kg}$
- 2) $\text{Body weight in kg} \times \text{gm required for sport} = \text{gm CHO required each day}$

6 gm carbohydrate: Baseball, Softball, Golf, Sailing, Thrower (track), Football (K, P)

7-8 gm carbohydrate: Volleyball, Sprinter on Track, Football (QB, DE, DL, QB, OL, TE, LB)

8-9 gm carbohydrate: Crew, Football (DB, RB, WR, SLOT, LB, TE), Lacrosse, Soccer, Swimming, Field Hockey

9-10 gm carbohydrate: Tennis, Basketball, Middle Distance Runner

10-12 gm Carbohydrate: Cross Country Runner

★ During the off-season athletes need approximately 50-65 grams less carbohydrate daily

Fluid:

Fluid is the most important nutrition consideration for any athlete. Inadequate hydration can lead to impaired athletic performance and muscle cramping. Athletes exercising in warm, humid environments need to pay even more attention to fluid intake. Athletes should not wait until they feel thirsty to consume fluids. Use sports drinks or juice to replace carbohydrate, fluid and electrolytes during activity. Drink 100% fruit juice for more carbohydrate and electrolytes instead of sports drinks.

Fluid recommendations on practice & game days:

- 16-24 oz fluid, 2-3 hours before activity
- 5-10 oz fluid, 30 minutes before activity
- 5-10 oz fluid every 15 minutes during activity
- At least 20 oz fluid post activity for every pound of water weight lost

Protein:

The body will use protein as an energy source if insufficient calories and carbohydrate are consumed. During endurance events the body will use some protein as fuel (2%-6% of total energy), therefore activities with longer duration will require the athlete consume more protein. Remember, before endurance events protein-rich foods take longer to digest and may increase the need to urinate; therefore carbohydrate is the preferred snack pre-activity.

Animal sources such as meat, poultry, eggs, fish, milk, and cheese provide all of the essential amino acids (complete protein). Vegetarian and vegan athletes should consume a whole grain and legume combination daily to obtain a complete protein. Consuming a diet with greater than 2 gm protein/kg body weight, the body will not be able to use and will excrete excess.

- Consume 0.1 gm/kg complete protein source immediately before and after strength training
- Consume a recovery meal with 0.1 gm/kg 1-2 hours post strength training

Fat:

It is important athletes consume a diet with fat, especially healthy fats from fish and plant oils. These healthy fats contain omega 3 and omega 6 fatty acids, which aid numerous physiological processes such as blood pressure, blood flow regulation, blood clotting, inflammation and bronchiole air flow.

Foods high in Fat (fried food, peanut butter, burgers) stay the longest in the stomach and may feel heavy & uncomfortable. Athletes should try to consume higher fat foods 3-4 hours before intense practices or games. Athletes need to consume at least 15% of calories from fat, but ideally fat intake should be between 20-35% of total calories with less than 10% from saturated fat.

Sources of Protein	Protein (grams)
4 oz. Chicken	25
3 cubes Tofu	8
3 oz. Shrimp	18
3 oz. Seitan	18
3 oz. Beef	19
2 oz. Turkey	9
2 oz. Roast Beef	14
2 tbsp. Peanut Butter	7
½ c. Kidney Beans	7
2 oz. Deli Ham	7
4 oz. Pork Chop	28
1 Sausage Link	3
1 Egg	6
8 oz. Milk	9
8 oz. Soy Milk	7
4 oz. Salmon	20
4 oz. Tuna Steak	34

Find your protein needs, calculate:

- 1) $\frac{\text{Body weight in pounds}}{2.2} = \text{Body weight in kg}$
- 2) $\text{Body weight in kg} \times \text{gm required for sport} = \text{gm protein required each day}$

1.3-1.4 gm Protein: Golf, Sailing

1.5-1.6 gm Protein: Baseball, Softball, Volleyball, Middle Distance Runner, Football (K, P)

1.6-1.7 gm Protein: Football (DB, RB, WR, SLOT, LB, TE), Crew, Lacrosse, Soccer, Swimming, Field Hockey, Tennis, Basketball, Cross Country Runner, Sprinter on Track

1.7-1.8 gm Protein: Throwing, Football (QB, DE, DL, OL, TE, LB)

Healthy Sources of Fat	Fat (grams)
2 tbsp. Guacamole	4.5
¼ cup Olives	4
1 tbsp. Salad Oil	14
1 pkg. Promise Spread	2
2 tbsp. Peanut Butter	15
4 oz. Salmon	10
1 tbsp. Sunflower Seeds	5
1 tbsp. Mayonnaise	11