

Nutrition Guide for the Athlete

Do athletes need to follow a special diet?
No, but they need to follow the basic guidelines for healthy eating with more discipline compared to a non-athlete. Proper nourishment everyday will

provide adequate energy (carbohydrate and fat), protein, vitamins, minerals, and water; all of which are essential for good health and athletic performance.



The following tips are useful.

- Avoid skipping meals, it ↓'s energy stores necessary for exercise.
- Plan ahead by bringing small, non-perishable snacks to school in case there is a long time between lunch and the event. For example eat fruits, crackers, bagels, or carbohydrate-based energy bars instead of soda pop and chips.
- Dairy products and meats can be eaten daily for valuable nutrients. Meats are excellent sources of protein, iron, and zinc while low-fat dairy foods like skim milk, yogurts and cheeses provide much needed calcium, vitamin D, and protein. It is very important to have a good daily supply of calcium and vitamin D for bone health. Don't like milk? Try soymilk or a calcium supplement.
- How much should you eat? It depends on gender (male or female), height, weight, and the demands of your sport. Energy intake can ↑ a little or a lot. For example, a female golfer may only require a few hundred extra calories to compete (daily total ~ 1850 to 2150). However, a growing male hockey player under heavy training may require nearly a thousand more calories per day (daily total ~ 3000 to 4000). Include a wide variety of foods in your meals and don't go hungry. Likewise, avoid bingeing on foods or constantly over-eating as this can lead to extra weight gain, which can hinder athletic performance.

How Many Calories Should You Have Everyday?

There are several ways to estimate this yet none are perfect or exact.

Try the following for a fun experiment ¹.

- Determine your weight in kilograms (kg) = divide your weight in pounds by 2.2.
Example: 175 pounds divided by 2.2 = 79.5 kg

Enter your weight in pounds _____ divide by 2.2 = _____ kilograms

- Next, multiply your answer (weight in kilograms) by the BMR (basal metabolic rate) factor to see how many calories you burn on one hour. Use 0.9 for females and 1.0 for males.

Example: $79.5 \times 1.0 = 79.5$ calories per hour.

Weight in kilograms _____ multiplied by 0.9 or 1.0 = _____ calories per hour

- Now multiply that answer by the number of hours in a day (24).
Example: $79.5 \times 24 = 1908$ calories per day.

Number of calories per hour _____ multiplied by 24 = _____ calories per day

The answer is a rough number of calories you need to perform the basic functions of life, such as sleeping, eating, and breathing.



Next question is how many more calories do you need for exercise?

For this part you'll need to select a factor that matches your activity level, which will be found on the next page.

Activity Level	Females	Males
<i>Sedentary</i>	0.30	0.325
<i>Light</i>	0.50	0.60
<i>Moderate</i>	0.60	0.725
<i>Heavy</i>	0.90	1.05
<i>Exceptional</i>	1.20	1.375

*The factors given above help to account for differences between people. Remember that some athletes have more muscle than others, which require more energy. Which factor did you choose? How do you know which factor is for you?

Sedentary = sitting down a lot with minimal activity like playing an instrument.

Light = move some, like cleaning house or playing table tennis.

Moderate = moving more, like bike riding, dancing, or fast walking.

Heavy = physical labor, fast running, or playing basketball.

Exceptional = hard exercise for several hours per day, pro athletes in training.

Let's finish the experiment!

- Select an activity factor and multiply it by your number of calories per day.
Example: a moderately active male $0.725 \times 1908 = 1383$ which is the number of extra calories you must have daily to meet the demands for exercise.

Calories per day _____ multiplied by your activity factor _____
= _____ number of extra calories needed.

- Lastly, add the number above (extra calories needed) to your first answer (calories per day), $1383 + 1908 = 3291$ calories per day.

Extra calories needed _____ + number of calories per day _____
= the total number of calories you should eat everyday to meet your energy demands.

*This experiment was adapted from a chapter on energy balance and healthy body weight in a textbook entitled, "Nutrition – Concepts and Controversies - Ninth Edition", bySizer and Whitney¹.

The next question is, how much food equals how many calories?

Counting calories can be exhausting and may take some fun out of eating, so don't feel that you have to do it. However, reading food labels is about the only way to know how much you really eat. Let's try and put this all

together. The following two menus are equivalent in calorie content yet are not the same regarding nutritional value. Look them over and see if you can tell which is better for you?



Meal	Menu A	Calories	Menu B	Calories
Breakfast	20 oz Cola	270	8 oz skim Milk	90
			1 cup Oatmeal	145
			Med Banana	70
			8 oz Orange Juice	110
Lunch	20 oz Cola	270	Turkey Sandwich	375
	French fries	515	Apple	80
	½ c Ketchup	100	2 oz Pretzels	210
			8 oz Skim Milk	90
			8 oz Yogurt	240
Snack	2 oz Doritos	280	Power Bar	240
Dinner	3 slices Pizza	685	3 oz Chicken Brst	150
	20 oz Cola	270	1 c Brown Rice	215
			½ c Vegetable	45
			Roll w/marg	130
		1 c Lite Ice Cr.	200	
Total		2390		2390

Which menu is better for you? What did you look for? The qualities of a healthy diet should include variety, balance, and adequacy. Which menu has more nutritious carbohydrates, fruits and vegetables, lean meats, and low-fat dairy products? Menu B is clearly of a higher

nutritional value. Menu A has plenty of food-energy yet lacks the total nutrient value of menu B. Menu A has a lot of sugar and fat and is low in iron, protein, vitamin C, and other nutrients. The above menus will remind you of what a healthy food intake should look like.

A Special Note for Female Athletes

Iron, calcium, and vitamin D are especially important for you!

Athletic training can decrease an important part of your blood called hemoglobin, which helps carry oxygen to muscles. Iron is needed to bind oxygen to hemoglobin for transport to muscles. Some iron is lost during your menstrual cycle each month, so it is crucial to eat iron-rich foods everyday to avoid iron deficiency anemia. Meat, fish, and poultry are good sources of iron. If you don't care for those foods eat iron-fortified cereals like cream of wheat or malt-o-meal and eat lots of green-leafy vegetables, dried fruits, and legumes. Do not take an iron supplement without asking a physician or dietitian. The recommended dietary allowance for females aged 14-18 years is 15 milligrams per day. Eat foods rich in vitamin C like citrus fruits and juices, broccoli, and green peppers with your iron-containing foods to aid absorption. Weakness, fatigue, and poor physical performance can result if iron is lacking in the diet.



Physical training puts added stress on your bones, which is good for developing bone density. However, if you are calcium deficient your bones may begin to weaken from strenuous exercise. Calcium and vitamin D are essential for bone health and to delay or possibly prevent osteoporosis (a disease where bones break easily). Consume 3-4 servings everyday of calcium-rich foods like milk, low-fat yogurt, and cheese. Aim for 1300 milligrams per day of calcium and 5 micrograms per day of vitamin D. Even though we make vitamin D from sunshine, the Midwest climate prevents many of us from meeting our needs. If you do not like dairy foods try others that are fortified with calcium and vitamin D like certain fruit juices and soymilks. If you cannot get enough through your diet consider taking a vitamin and mineral supplement.

More eating tips for athletes.

- For those who must “make-weight” like wrestlers, select a weight-class near your natural body weight and try to maintain that weight all-season. Gaining and losing weight repeatedly creates extra stress on the body and usually requires food-deprivation that ultimately results in poor performance.
- Athletes need plenty of carbohydrates for energy. In fact 50 to 70% of total food calories should come from carbohydrate to provide energy for working muscles. Contrary to popular opinion, these foods should comprise the bulk of the diet.
- Proteins are essential for growth and repair. Athletes require a little more protein than non-athletes, however excessive protein is not needed. A level of 0.9 to 1.0 grams of protein per pound of bodyweight is suggested². For example multiply your weight in pounds by 0.95 to = the number of protein grams you need every day for exercise and growth. Weight (lbs) ____ X 0.95 = ____
Meats, dairy foods, eggs, nuts, and vegetable proteins like wheat and soy are all good sources. Protein foods should provide 10 to 20% of total food calories per day. Extra protein will not make your muscles bigger, so avoid supplements.
- Eat a fruit or vegetable with every meal for important vitamins, minerals, and dietary fiber. These foods are naturally low in fat, convenient for snacks, and can provide carbohydrates for energy.
- Fat provides useful energy as well (especially for endurance athletes), though a little goes a long way. Forty to 70 grams per day is enough. Select mono and polyunsaturated fats like canola and olive oils. Saturated fat is a known risk factor for heart disease and should be minimized. Fat intake should not exceed 30% of your total caloric intake for the day

In summary

It’s important that athletes eat healthy, regular meals daily to maximize their training and competitive performance, and also to improve recovery. There are no special foods or diets to follow, just be consistent with the basics of nutrition and plan ahead.

