

Nutritional Guidelines for Female Athletes

CARBOHYDRATES = 4 calories per gram (55 - 65% of daily calories)

An athlete's Body Weight (BW), total energy needs, the specific metabolic demands of their sport, and their stage of training or game schedule will all determine the quantity of carbohydrates needed. Carbohydrates are the primary source of energy. They fuel your muscles and brain activity. Carbohydrate rich foods, such as fruits, vegetables, breads and grains should make up 55- to 65% of your daily caloric intake.

Determining Carbohydrate Needs

Based on a 3,000cal/day diet
 $3,000 \times .60$ (60% of cal from CHO) = 1,800
That is 1,800cal/day from Carbohydrates
 $1,800\text{cal/day} / 4\text{cal/gram} = 450\text{g/day}$

Based on Body Weight in Kilograms
6-10g of CHO per kilogram of body weight
Pound-Kilogram Conversion
 $130\text{lbs} / 2.2 = 59\text{kg}$
 $6\text{- to }10\text{g} \times 59\text{kg} = 354\text{-}590\text{g/day}$

PROTEINS = 4 calories per gram (15 - 20% of daily calories)

The maintenance, repair and growth of muscle after intense physical activity is the primary function of protein. A proper balance of plant and animal protein will also help your body maintain proper enzymes and hormones necessary for intense training programs. Maintaining a positive nitrogen balance is very important to athletes trying to build muscle. Athletes taking part in Strength and Conditioning should be diligent in ensuring they are getting enough protein to maintain that positive nitrogen balance. For team sport athletes 1.2- to 1.7-grams of protein per kilogram of body weight will put you in a range to reach a positive nitrogen balance.

Nutrition is a very important part of a balanced strength and conditioning program. It is very important for you to maintain a balanced diet in order to reach your full potential.

FATS = 9 calories per gram (< 25% of daily calories)

Vegetable fats such as corn oil, olive oil, peanut oil and nuts are unsaturated and should be your primary source of fat intake. Fat intake should be less than 25% of your total calorie intake. The primary function of fat is to produce hormones, healthy skin and cell membranes. Fat is important in cushioning and protecting the body's internal organs.

VITAMINS

Vitamins are micronutrients serving vital functions in the body and are essential for the general population and athletes alike. The two groups of vitamins are water-soluble (B-complex, vitamin C and choline) and fat-soluble vitamins (A, D, E and K). You should be eating a wide variety of fruits and vegetables to ensure adequate intake.

MINERALS

Minerals are inorganic nutrients vital for normal body function. You will typically consume the necessary minerals needed in your daily diet, provided you are consuming a wide variety of foods.

WATER

Water is the most essential of all the nutrients! 55-60% of your body weight is water. Approximately 70% of your muscle tissue is made up of water. You should drink 3.7 liters (13 cups) of water each day, not including that water consumed during exercise. Proper hydration prior to your strength and conditioning sessions will set the stage for optimal performance. Drink 2 cups of water 2 hours prior to a strength and conditioning session and 1 cup of water approximately 20 minutes prior to a session or practice. Following these simple guidelines will ensure you are properly hydrated.

Estimate Hydration Needs:
 $\text{Total Calories} / 240 = \text{number of cups of fluid needed each day.}$

What Do the Numbers Mean?

Step 1: Determine your weight in kilograms (kg) = Divide your weight in pounds by 2.2
Example: 130 pounds divided by 2.2 = 59kg

Enter your weight in pounds _____ divided by 2.2 = _____ kg

Step 2: Calculate your Resting Energy Expenditure (REE) & Activity factor for females 18-30 years of age. We will be using the activity factor of 1.6 during the Off-Season and the activity factor of 2.2 during the In-Season.

The formula during Off-Season is as follows: $(12.2 \times \text{BW in kg}) + 749 \times 1.6(\text{Off-Season})$

The formula during In-Season is as follows: $(12.2 \times \text{BW in kg}) + 749 \times 2.2(\text{In-Season})$

Example: $12.2 \times 59\text{kg} = 719.8 + 749 = 1468.8 \times 1.6 = 2350$

Estimated amount of calories I should be consuming during the Off-Season

$12.2 \times \frac{\text{_____}}{\text{BW in kg}} = \text{_____} + 749 = \text{_____} = \text{_____} \times 1.6 = \text{_____}$

Estimated amount of calories I should be consuming during the In-Season

$12.2 \times \frac{\text{_____}}{\text{BW in kg}} = \text{_____} + 749 = \text{_____} = \text{_____} \times 2.2 = \text{_____}$

Step 3: Estimate carbohydrate needs based on grams per kilogram of bodyweight. Always compare your grams of carbohydrate range to your total estimated calories. Carbohydrates should make up 55 to 65 percent of your daily calories. Team sport athletes should consume 6 to 8 grams of carbohydrates per kg of bodyweight. Consult your Strength and Conditioning coach for clarification of these numbers.

Example: $59\text{kg} \times (6 \text{ to } 8 \text{ g/carbs/kg}) = 354 \text{ to } 472$

Estimated grams of carbs I should be consuming

$\frac{\text{_____}}{\text{BW in kg}} \times (6 \text{ to } 8 \text{ g/carbs/kg}) = \text{_____} \text{ to } \text{_____}$

Step 4: Estimate your daily protein needs based on grams per kilogram of bodyweight. You should consume between 1.2 and 1.7 grams of protein per kilogram of bodyweight. Consult your Strength and Conditioning coach to verify these numbers. You may need to increase the amount of protein in your diet in order to gain weight.

Example: $59\text{kg} \times (1.2 \text{ to } 1.7\text{g/protein/kg}) = 70 \text{ to } 100$

Estimated grams of proteins I should be consuming

$\frac{\text{_____}}{\text{BW in kg}} \times (1.2 \text{ to } 1.7 \text{ g/protein/kg}) = \text{_____} \text{ to } \text{_____}$

*Consult your personal physician prior to changing your diet. These are simply nutritional guidelines to assist you in your goal of becoming a better athlete.

Sample Meal

Menu Item	Serving Size	Carbohydrates (g)	Calories
Breakfast			
Raisin Bran Cereal	1 cup	46	187
1% milk	1 cup	12	103
Raisins	¼ cup	31	130
Grapefruit Juice	1 cup	28	115
Fruited low-fat yogurt	8oz	40	210
Subtotal		157	745
		84% of calories	
Lunch			
Black bean soup	2 cups	40	240
Whole grain bread	2 slices	24	142
Green salad w/ vegetables	2 cups	20	112
Lite salad dressing	2 tablespoons	3	138
1% milk	1 cup	12	103
Peanut butter cookies	2 small	14	120
Subtotal		113	855
		53% of calories	
Dinner			
Grilled tuna steak	6oz	0	240
Rice pilaf	1 cup	22	115
Broccoli spears	3 large	15	80
Low-fat frozen yogurt	1 cup	36	230
1% milk	1 cup	12	103
Subtotal		85	768
		44% of calories	
Snacks			
Banana	1 medium	28	109
Fig bars	2	22	110
Whole grain crackers	8	20	126
Subtotal		70	345
		81% of calories	
Total		425 g	2,713 calories
		63% of Total Calories	