

NUTRITION

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What Is Nutrition?

-The study of how your body uses the food that you eat.

What is a Nutrient

A **nutrient** is a chemical substance in food that helps maintain the body. Some provide energy.

All help **build** cells and tissues, regulate bodily processes such as breathing.

**No single food supplies all the nutrients the body needs to function.

Six Classifications of Nutrients

- ❖ Vitamins
- ❖ Minerals
- ❖ Water
- ❖ Protein
- ❖ Carbohydrates
- ❖ Fats

Sugars

Starches

Cellulose

Calories per gram:

Protein 1 Gram = 4 calories

Carbohydrates 1 Gram = 4 calories

Fat 1 Gram = 9 calories

Variables which affect nutrient needs:

1. **Age**



2. **Gender**



3. **Activity Level**



4. **Climate**



5. **Health**



6. **State of nutrition**

Ten U.S. Dietary Guidelines

1. Aim for a healthy weight

$$= \frac{\text{weight (kg)}}{(\text{height (m)})^2}$$

Body Mass Index (BMI) Chart for Adults

Obese (>30)
 Overweight (25-30)
 Normal (18.5-25)
 Underweight (<18.5)

HEIGHT in feet/inches and centimeters

WEIGHT	HEIGHT in feet/inches and centimeters																						
	4'8" 142cm	4'9" 147	4'10" 150	4'11" 152	5'0" 155	5'1" 157	5'2" 160	5'3" 163	5'4" 165	5'5" 168	5'6" 170	5'7" 173	5'8" 175	5'9" 178	5'10" 180	6'0" 183	6'1" 185	6'2" 188	6'3" 191	6'4" 193	6'5" 196		
260 (117.9)	58	56	54	53	51	49	48	46	45	43	42	41	40	38	37	36	35	34	33	32	32	31	
255 (115.7)		57	55	53	51	50	48	47	45	44	42	41	40	39	38	37	36	35	34	33	32	31	30
250 (113.4)	56	54	52	50	49	47	46	44	43	42	40	39	38	37	36	35	34	33	32	31	30	30	
245 (111.1)		55	53	51	49	48	46	45	43	42	41	40	38	37	36	35	34	33	32	31	31	30	29
240 (108.9)	54	52	50	48	47	45	44	43	41	40	39	38	36	35	34	33	33	32	31	30	29	28	
235 (106.6)		53	51	49	47	46	44	43	42	40	39	38	37	36	35	34	33	32	31	30	29	28	
230 (104.3)	52	50	48	46	45	43	42	41	39	38	37	36	35	34	33	32	31	30	30	29	28	27	
225 (102.1)		50	49	47	45	44	43	41	40	39	37	36	35	34	33	32	31	31	30	29	28	27	27
220 (99.8)	49	48	46	44	43	42	40	39	38	37	36	34	33	32	32	31	30	29	28	27	27	26	
215 (97.5)		48	47	45	43	42	41	39	38	37	36	35	34	33	32	31	30	29	28	28	27	26	25
210 (95.3)	47	45	44	42	41	40	38	37	36	35	34	33	32	31	30	29	28	28	27	26	26	25	
205 (93.0)		46	44	43	41	40	39	37	36	35	34	33	32	31	30	29	29	28	27	26	26	25	24
200 (90.7)	45	43	42	40	39	38	37	35	34	33	32	31	30	30	29	28	27	26	26	25	24	24	
195 (88.5)		44	42	41	39	38	37	36	35	33	32	31	31	30	29	28	27	26	26	25	24	24	23
190 (86.2)	43	41	40	38	37	36	35	34	33	32	31	30	29	28	27	26	26	25	24	24	23	23	
185 (83.9)		41	40	39	37	36	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	23	22
180 (81.6)	40	39	38	36	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21
175 (79.4)		39	38	37	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21
170 (77.1)	38	37	36	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20	
165 (74.8)		37	36	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20	20
160 (72.6)	36	35	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20	19	19	
155 (70.3)		35	34	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	20	20	19	18	
150 (68.0)	34	32	31	30	29	28	27	27	26	25	24	23	23	22	22	21	20	20	19	19	18	18	
145 (65.8)		33	31	30	29	28	27	27	26	25	24	23	23	22	21	21	20	19	19	18	18	17	
140 (63.5)	31	30	29	28	27	26	26	25	24	23	23	22	21	21	20	20	19	18	18	17	17	17	
135 (61.2)		30	29	28	27	26	26	25	24	23	22	22	21	21	20	19	19	18	18	17	17	16	16
130 (59.0)	29	28	27	26	25	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	16	15	
125 (56.7)		28	27	26	25	24	24	23	22	21	21	20	20	19	18	18	17	17	16	16	16	15	15
120 (54.4)	27	26	25	24	23	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	15	14	14
115 (52.2)		26	25	24	23	22	22	21	20	20	19	19	18	17	17	16	16	16	15	15	14	14	14
110 (49.9)	25	24	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	14	14	13	13	13	
105 (47.6)		24	23	22	21	21	20	19	19	18	17	17	16	16	15	15	14	14	13	13	13	12	12
100 (45.4)	22	22	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13	13	12	12	12	12
95 (43.1)		21	21	20	19	19	18	17	17	16	16	15	15	14	14	14	13	13	13	12	12	12	11
90 (40.8)	20	19	19	18	18	17	16	16	15	15	15	14	14	13	13	13	12	12	12	11	11	11	11
85 (38.6)		19	18	18	17	17	16	15	15	14	14	13	13	13	12	12	12	11	11	11	10	10	10
80 (36.3)	18	17	17	16	16	15	15	14	14	13	13	13	12	12	11	11	11	11	10	10	10	9	9

Note: BMI values rounded to the nearest whole number. BMI categories based on CDC (Centers for Disease Control and Prevention) criteria.

www.vertex42.com

BMI = Weight[kg] / (Height[m] x Height[m]) = 703 x Weight[lb] / (Height[in] x Height[in])

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Ten U.S. Dietary Guidelines

2. Be physically active each

day

▶ The average high school student burns about

- ▶ Girls ages 14 through 18 need 1,800 to 2,400 calories a day, again depending on physical activity.
- ▶ Between ages 14 and 18, boys need 2,000 to 3,200 calories a day, depending on activity levels.

▶ The average runner will burn **about 100kcal per mile.**

<http://www.runnersworld.com/fitness-calculators/calories-burned-calculator>

http://www.mapmyrun.com/improve/calorie_calculator/

Ten U.S. Dietary Guidelines

Build a Healthy Base

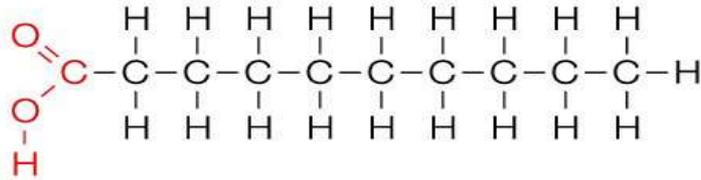
3. Let the pyramid guide your choices
4. Choose a variety of grains daily, especially whole grains
5. Choose a variety of fruits and vegetables daily.
6. Keep food safe to eat.



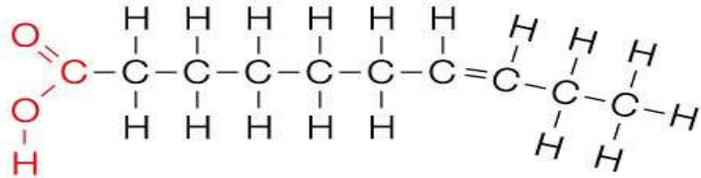
Ten U.S. Dietary Guidelines

7. Choose a diet that is low in saturated fat and cholesterol and moderate in total fat

Saturated



Unsaturated



GOOD FATS

VS.

BAD FATS



Ten U.S. Dietary Guidelines

8. Choose beverages and foods to moderate your intake of sugars



Ten U.S. Dietary Guidelines

9. Choose and prepare food with less salt

Fresh fruits and vegetables
Breads cereals and Grains
Meats, Nuts, and Beans

- Fish or shellfish.
- Chicken or turkey breast without skin.
- Lean cuts of beef or pork.
- Unsalted nuts and seeds.
- Dried peas and beans.
- Canned beans labeled “no salt added” or “low sodium”
- Eggs

THE SALTY SIX

DID YOU KNOW? American Heart Association. *It's why.*

THESE SIX POPULAR FOODS CAN ADD HIGH LEVELS OF SODIUM TO YOUR DIET*
The American Heart Association recommends that you aim to eat less than 1,500 mg of sodium per day.

*When you see the Heart Check mark on a product, you know the food has been certified to meet nutritional criteria for heart-healthy foods, including sodium.

- 1 BREADS & ROLLS**
Some foods that you no longer think a big deal at (bread) add up to a lot of sodium over time. Check labels on bread, rolls, and other baked goods.
- 2 COLD CUTS & CURED MEATS**
One 2-oz. serving of 8 thin slices of cold meat can contain as much as half of your daily recommended dietary sodium. Look for lower-sodium varieties of your favorite lunch meats.
- 3 SANDWICHES**
A sandwich or burger from a fast-food restaurant can contain more than 100 percent of your daily suggested dietary sodium. Try half a sandwich with a side salad instead.
- 4 PIZZA**
A slice of pizza, with several toppings on yours, may have more than half of your daily recommended dietary sodium. Limit the cheese and add more veggies to your next slice.
- 5 SOUP**
Sodium in one cup of canned soup can range from 100 to as much as 940 milligrams—more than half of your daily recommended dietary sodium. Check the labels to find lower sodium varieties.
- 6 CHICKEN**
Sodium levels in poultry can vary based on preparation methods. You will find a wide range of sodium in poultry products, so it is important to choose wisely.

*Source: © The American Heart Association. 2015. All rights reserved. For more information, visit www.heart.org.

2015 American Heart Association. 3/15/2015

Symptoms of Malnutrition:

1. Overall Training Fatigue-Lack of calories

- <https://www.runnersworld.com/ask-coach-jenny/how-to-overcome-marathon-training-fatigue>

2. Muscle Cramps - Lack of Potassium

- <http://scienceline.ucsb.edu/getkey.php?key=2204>

3. Fatigue-Lack of Iron, Vit B

- <https://universityhealthnews.com/daily/energy/vitamin-b12-deficiency-symptoms-much-more-than-fatigue/>

•High-Potassium Foods

- Apricots
- Artichokes
- Avocados
- Bananas
- Beets
- Brussels sprouts
- Cantaloupe
- Dates
- Greens (beet)
- Nectarines
- Oranges/orange juice
- Parsnips
- Potatoes
- Prunes/prune juice
- Pumpkin
- Spinach
- Sweet potatoes
- Swiss chard
- Tomatoes/tomato juice
- Vegetable juice

<http://www.eatright.org/resource/health/diseases-and-conditions/kidney-disease/kidney-disease-high-and-low-potassium-foods>

•Moderate-Potassium Foods

- Apples/apple juice
- Applesauce
- Blackberries
- Blueberries
- Cabbage
- Carrots (1/2 cup)
- Cauliflower
- Corn
- Cucumber (1/2 cup)
- Eggplant
- Fruit cocktail
- Grapes/grape juice
- Green beans
- Lemon
- Lettuce (1 cup)
- Lime
- Mushrooms (fresh, white)
- Onions (fresh)
- Peach (canned)
- Pear (canned)
- Pineapple
- Plums
- Radishes
- Raspberries
- Strawberries
- Tangerines
- Watermelon (1 cup)

Healthy Breakfast Options

- 1) 1-2 C Oatmeal made with milk and fruit
Post – toast with 1-2 eggs, fruit, glass of milk
- 2) 1-2C of Total cereal with orange juice
Post – Toast, scrambled eggs with veggies and cheese, 1 C chocolate milk
- 3) 2-4 pieces of toast with jelly on half and margarine on $\frac{1}{2}$, 1 C grapes
Post – 2 hard boiled eggs, 1 piece of fruit, 1 string cheese
- 4) $\frac{1}{2}$ - 1 bagel with peanut butter on $\frac{1}{2}$ and jelly on the other
Post – protein bar, fruit, milk

Healthy Snack Options

1. 8 ounces of low-fat chocolate milk
2. Trail mix with dried fruit, soybeans, cereal or pretzels
3. A peanut butter and jelly sandwich or wrap
4. An energy bar with a mix of carbohydrates and protein
5. A handful of salted nuts with pretzels
6. Pita bread with hummus

Healthy Lunch Options

- 1) Turkey Sandwich on whole wheat bread, fruit, carrots and hummus
- 2) Pasta Salad – made with Italian dressing, veggies, cheese, and chicken, side salad, piece of fruit
- 3) Tuna and crackers, fruit salad with yogurt
- 4) Peanut butter and jelly with fruit and a cheese stick

<http://www.runnersworld.com/nutrition/the-best-foods-for-runners/slide/6>

<http://www.bbcgoodfood.com/howto/guide/running-nutrition-typical-training-plan>

Citations

1. <http://idahoptv.org/sciencetrek/topics/nutrition/facts.cfm>
2. Nutrition PowerPoint. Utah Education Network. Retrieved Aug. 8, 2016.
<http://www.uen.org/Lessonplan/preview.cgi?LPid=13350>
3. SFGATE. What Is the Average Number of Calories a Teenager Should Burn?.
<http://healthyating.sfgate.com/average-number-calories-teenager-should-burn-11676.html>. Retrieved Aug. 2, 2017.
4. Hadfield, Jenny. Five Reasons for Training Fatigue. July, 24, 2013.
<https://www.runnersworld.com/ask-coach-jenny/how-to-overcome-marathon-training-fatigue>. Retrieved Aug, 2, 2017.
5. <https://media.licdn.com/mpr/mpr/AAEAAQAAAAAAAAARSAAAJDVvKNDQyZTZhLTM2MDYtNGQxNy05OTNmLWY5NGU5NmNiNDZjOQ.jpg>. Retrieved Aug 2, 2017.
6. The Salty Six Infographic. <https://healthyforgood.heart.org/eat-smart/infographics/salty-six-infographic>. Retrieved Aug 2, 2017.
7. Low Sodium Foods: Shopping List. January 23, 2017.
<https://healthfinder.gov/HealthTopics/Category/health-conditions-and-diseases/heart-health/low-sodium-foods-shopping-list>. Retrieved Aug 2, 2017.
8. The Runner's World Editors, 25 Great Snacks for Runners. August 25, 2016.
<http://www.runnersworld.com/nutrition/25-great-snacks-for-runners>. Retrieved Aug 2, 2017.
9. Ryan, Monique, MS, RD, CSSD, LDN. Top Snacks for Runners. July 10, 2015.
<http://www.eatright.org/resource/fitness/sports-and-performance/fueling-your-workout/top-snacks-for-runners>. Retrieved Aug 2, 2017.