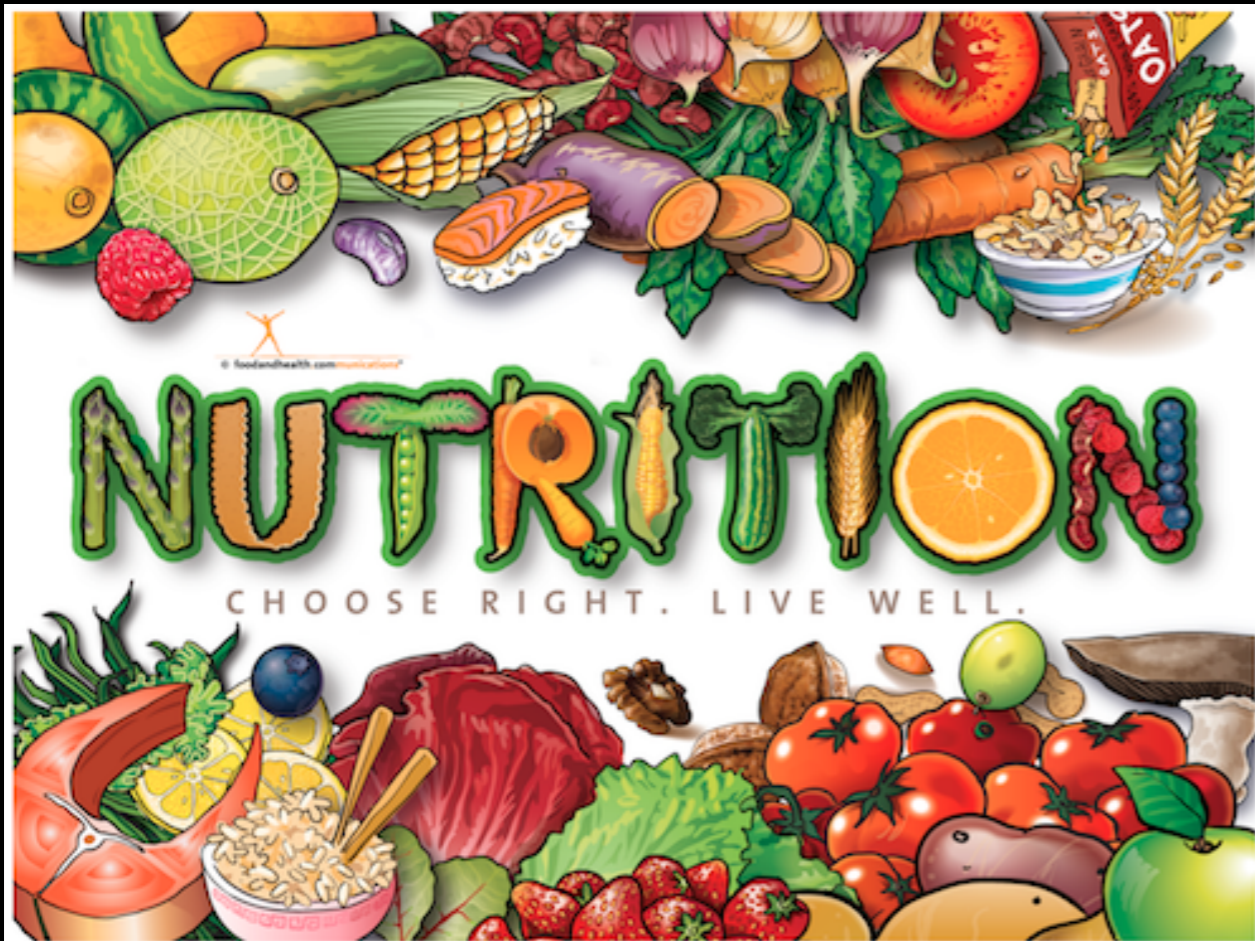


# The Importance of





# Why You Need Nutritious Food

When you drink a cool glass of milk or bite into a crisp apple, you probably are thinking about the taste and texture of the foods. Yet while you're enjoying the pleasures of eating, the foods you eat are influencing your overall health and wellness. When you make healthy choices about foods, you're more likely to look your best and perform at your peak.

One important reason you eat is to take in calories. **Calories** are *units of heat that measure the energy used by the body and the energy that foods supply to the body*. You need this energy for everything you do—from running laps to doing your homework. Food also provides **nutrients**, *substances in food that your body needs*. Nutrients have many important roles, including

- giving you energy.
- building new tissues and repairing cells.
- helping your body's processes and systems run smoothly.



Different foods contain different types and amounts of nutrients. You need a wide variety of healthful foods to get all the nutrients your body needs.

**Nutrition** is *the process of using food and its substances to help your body have energy, grow, develop, and work properly.* Good nutrition is one of the main factors in building and maintaining good health.

Write down 6 items that you've eaten recently - and list the factors that influenced your decision to eat each food. Determine the strongest influences on your food choices.



## Factors

## Description

### Family and friends

You may prefer certain foods, like burritos or vegetable stir-fry, because you have grown up eating them at home. At the same time, your friends may persuade you to try new and different foods.

### Cultural background

Different cultures have different traditions about what they eat, and perhaps where, how, and with whom they eat. For example, Mexican American families may eat beans, corn, and tortillas, while Italian American families may favor pasta dishes. Many Americans enjoy trying a variety of ethnic foods. What cultural foods are part of your eating pattern?

### Food availability

Some foods are regional, growing only in certain areas. Some are seasonal and available only in certain months. Fresh blueberries, for example, are plentiful in summer but hard to find in the winter months. Still, modern transportation and growing methods have expanded the food supply. Many foods that were once regional or seasonal are now available in many areas year-round.

### Time and money resources

Schedules and budgets affect a family's food choices. Eating fast foods or convenience foods often takes less time. Some families may look for bulk foods that provide more for the dollar.

### Advertising

Have you ever tried a food because you heard about it from a television or magazine ad? Ads can influence our choices of certain brands and products and may persuade us to try new foods.

### Knowledge of nutrition

The more you know about the nutrients in different foods, the better able you are to choose foods that supply the health benefits that you need.

### Personal preferences

Your personal likes and dislikes and overall health goals contribute to your food choices. Some people have allergies or medical conditions that affect their food choices. Among the foods that most often cause allergic reactions are milk, peanuts, wheat, and shellfish.



# What Influences Your Food Choices?

What are your favorite foods? Do you know why you make these food choices? Chances are that you eat a variety of foods and that your food choices are influenced by many different factors. **Figure 8.1** describes some of these factors.

## Appetite and Hunger

When you smell popcorn, do you want to try some? Does the sight of fresh strawberries make your mouth water? Do you love to crunch on fresh carrots? These are signs of your appetite at work. Your **appetite** is *the psychological desire for food*. It may be stimulated by the smell, sight, or texture of food.





Appetite is different from hunger. **Hunger** is *the physical need for food*. When you are hungry, your brain sends a signal to find food. You may hear your stomach growl, or feel it contract. You may also feel tired or light-headed. These signs indicate that your body's supply of food energy and nutrients is running low.

When you eat, the hunger gradually goes away. Your stomach needs about 20 minutes to send a message back to the brain to turn off the hunger switch. Eating slowly allows time for your brain to receive the message. Many people overeat when they eat too fast.





## Food and Emotions

Food can meet emotional needs too. Do certain foods that you associate with special events bring you happy memories? Perhaps you have favorite foods that comfort you when you are feeling ill or sad. Using food as a way of dealing with negative emotions is not a healthy way to respond to these feelings. People who eat to relieve stress or boredom need to develop more appropriate coping skills.

## Getting the Nutrients You Need

Everyone needs the same nutrients to maintain good health, but the amount of nutrients needed depends on a person's age, gender, state of health, and level of activity. When you do not get enough of

a particular nutrient, you could have a **nutrient deficiency**, a *shortage of a nutrient*.



As a teen, you need more calcium than you did before for building strong and growing bones. However, suppose you don't eat enough foods that supply calcium. Over time, the calcium deficiency could affect the strength of your teeth and bones. A food plan that includes calcium-rich foods helps prevent osteoporosis, a disease in which bones become brittle and more liable to break. You also need more iron because your body makes more red blood cells as you grow. A shortage of iron can lead to a blood disease called anemia. In general, teens need more of most nutrients to support growth and satisfy energy needs.

Most people in the United States get plenty of food, yet many still do not get the nutrients they need. This is partly the result of lifestyles that tend to encourage fast foods and promote foods that are high in fat and sugar. Eating low-nutrient, high-fat foods, along with overeating, can lead to long-term health problems such as heart disease, cancer, and diabetes. Your nutritional knowledge and healthy eating habits are your best defense against poor nutrition.



# Nutrients for Wellness

## The Six Types of Nutrients

Food nourishes you with more than 40 different nutrients. These nutrients are grouped into six categories: carbohydrates, proteins, fats, vitamins, minerals, and water. Eating a variety of foods to provide these nutrients is essential to good health.

### Carbohydrates

Carbohydrates are *the sugars and starches that provide your body with most of its energy*. Carbohydrates can be either simple or complex. Simple carbohydrates, or sugars, are found in fruit, milk, and honey. Sugar is also added to candy, cookies, and other foods. Complex carbohydrates, or starches, are found in breads, cereals, pasta, rice, potatoes, dry beans, corn, and other starchy vegetables. As your body digests complex carbohydrates, it breaks them down into simple sugars, which are absorbed into the bloodstream to provide energy. Nutritionists recommend that 50 to 60 percent of your daily calories come from carbohydrates.

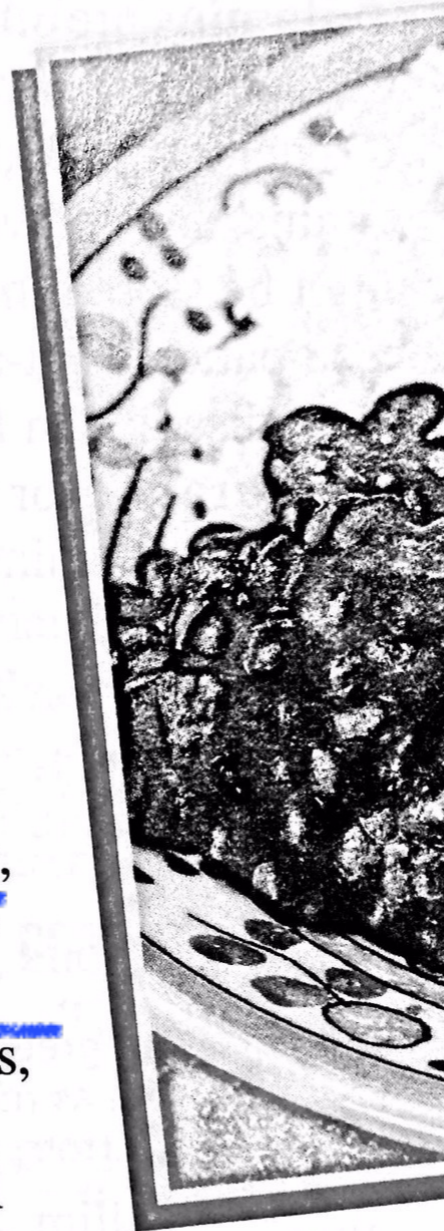


# Proteins

**Proteins** are *nutrients your body uses to build, repair, and maintain cells and tissues.* They also help your body fight disease, and they provide energy when your body doesn't get enough from other sources.

**Amino acids** are *small units that make up protein.* Your body can produce most amino acids on its own. The remaining ones, called essential amino acids, must come from food you eat.

Foods from animal sources, such as meat, fish, poultry, eggs, milk, and yogurt, contain complete proteins. They provide all the essential amino acids. Foods from plant sources, such as soybeans, nuts, peas, and dry beans contain incomplete proteins. They lack one or more of the essential amino acids. Vegetarians can combine foods from plant sources to make complete proteins. Consuming a variety of plant foods, such as beans, rice, nuts, and peas, gives you complete protein and provides the essential amino acids. You don't need to eat these foods at the same meal to get the benefit. Just have a good variety throughout the whole day.





## Fats

Fats are nutrients that provide energy and perform many functions for your body. They carry fat-soluble vitamins and promote healthy skin and normal growth. Foods that are high in fats tend to be high in calories. For this reason, health experts generally recommend that your eating plan include only moderate amounts of fat.

**Saturated fats** are *fats that are solid at room temperature.* They are found mostly in animal and dairy products such as butter, red meat, cheese, and whole milk. An eating pattern that includes too many saturated fats can increase a person's risk of heart disease.

**Unsaturated fats** are *fats that remain liquid at room temperature.* They come mainly from plant sources. Foods containing mostly unsaturated fats include vegetable oils, nuts, avocados, and olives. Unsaturated fats lower cholesterol levels and are considered healthier than saturated fats.



## Vitamins

Vitamins are substances needed in small quantities to help regulate body functions. Vitamins help your body fight infections, use other nutrients, and perform other tasks. Water-soluble vitamins, such as vitamin C and B vitamins, dissolve in water, cannot be stored in your body, and should be part of your daily eating pattern. Fat-soluble vitamins, including vitamins A, D, E, and K, dissolve in fat and can be stored in body fat until needed. See **Figure 8.2** for more information about functions and sources of selected vitamins.





FIGURE 8.2

## VITAMINS AND MINERALS: FUNCTIONS AND SOURCES

### Functions

#### Vitamin A

Promotes healthy skin and normal vision

#### B Vitamins

Needed for a healthy nervous system; help in energy production

#### Vitamin C

Needed for healthy teeth, gums, and bones; helps heal wounds and fight infection

#### Vitamin D

Promotes strong bones and teeth and the absorption of calcium

#### Vitamin K

Helps blood clot

#### Calcium

Needed to build and maintain strong bones and teeth

#### Fluoride

Promotes strong bones and teeth; prevents tooth decay

#### Iron

Needed for hemoglobin in red blood cells

#### Potassium

Helps regulate fluid balance in tissues; promotes proper nerve function

#### Zinc

Helps heal wounds; needed for cell reproduction

### Sources

Dark green leafy vegetables (such as spinach); dairy products (such as milk); deep yellow-orange fruits and vegetables (such as carrots, winter squash, apricots); eggs; liver

Poultry; eggs; meat; fish; whole grain breads and cereals

Citrus fruits (such as oranges and grapefruit); cantaloupe, strawberries, mangoes; tomatoes; cabbage and broccoli; potatoes

Fortified milk; fatty fish (such as salmon and mackerel); egg yolks; liver

Dark green leafy vegetables (such as spinach); egg yolks; liver; some cereals

Dairy products (such as milk, yogurt, cheese); dark green leafy vegetables (such as spinach); canned fish with edible bones (such as sardines)

Fluoridated water; fish with edible bones

Red meat; poultry; dry beans (legumes); fortified breakfast cereal; nuts; eggs; dried fruits; dark green leafy vegetables

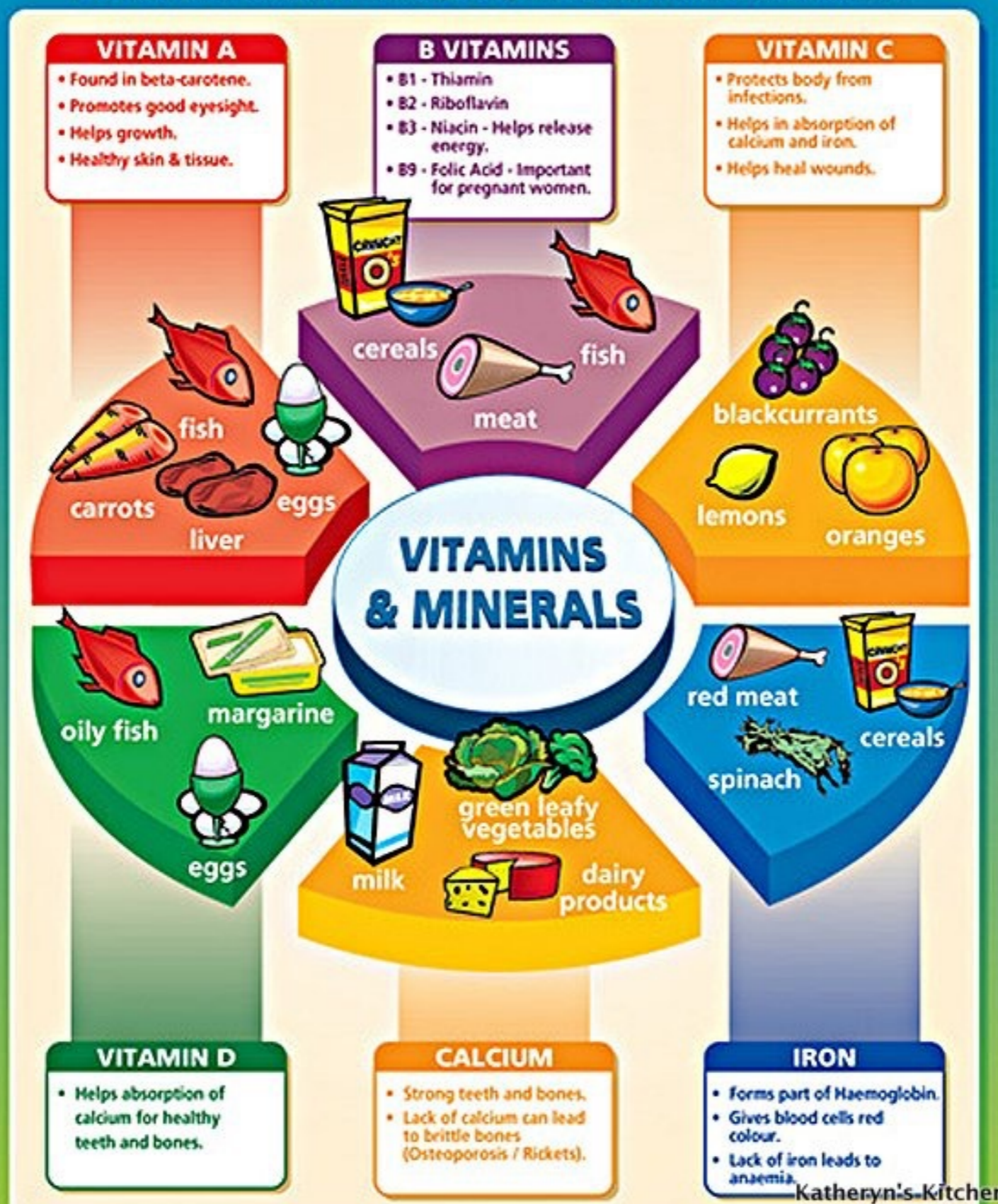
Fruits (such as bananas and oranges); dry beans and peas; dried fruits

Meat; poultry; eggs; dry beans and peas; whole-grain breads and cereals



# VITAMINS AND MINERALS

Both are essential for a healthy body and to prevent certain diseases.





# Periodic Table of Vitamins

With new gimmicky health products hitting the shelf daily, it can sometimes be difficult to distinguish those that are beneficial from those that are not. As an essential source of nutrients, vitamins do play an important role in our health. Below is a guide of the important vitamins, minerals and antioxidants, and some tips on where they can be found.

100-200 mg <b>a</b> Carnosine <b>Cr</b> 	1000 mg <b>a</b> Superoxide Dismutase <b>Sd</b> 	8-11 mg <b>m</b> Zinc <b>Zn</b> 	90.0 mg <b>V</b> Vitamin C <b>C</b> 
N/A <b>V</b> Alpha Carotene <b>Ac</b> 	500 mg <b>a</b> Taurine <b>Ta</b> 	5.0-10 mcd <b>V</b> Vitamin D <b>D</b> 	1800 mg <b>a</b> Acetylcysteine <b>Ay</b> 
N/A <b>V</b> PABA <b>Pb</b> 	N/A <b>a</b> Glutathione <b>Gt</b> 	1-2 mg <b>a</b> Lutein <b>Lu</b> 	30-60 mg <b>a</b> Pycnogenol <b>Py</b> 
900 mcd <b>V</b> Vitamin A <b>A</b> 	2-15 mg <b>a</b> Glutamine <b>Gu</b> 	200 mg <b>m</b> Magnesium <b>Mg</b> 	6.5 mg <b>a</b> Lycopene <b>Ly</b> 
30.0 mcd <b>V</b> Vitamin B7 <b>B7</b> 	1-10 mg <b>a</b> Zeaxanthin <b>Ze</b> 	900 mcd <b>m</b> Copper <b>Cu</b> 	200 mg <b>a</b> Genistein <b>Ge</b> 
25 mg <b>a</b> DHEA <b>Dh</b> 	N/A <b>m</b> Boron <b>Bo</b> 	120 mcd <b>m</b> Iron <b>Fe</b> 	N/A <b>a</b> Germanium <b>Gm</b> 
500 mg <b>a</b> Curcumin <b>Cc</b> 	120-240 mg <b>V</b> Ginkgo Biloba <b>GB</b> 	425-550 mg <b>V</b> Choline <b>Ch</b> 	1.3 mg <b>V</b> Vitamin B2 <b>B2</b> 
1000 mg <b>m</b> Calcium <b>Ca</b> 	500 mg <b>a</b> Resveratrol <b>Re</b> 	1.2 mg <b>V</b> Vitamin B1 <b>B1</b> 	N/A <b>a</b> Quercetin <b>Qc</b> 
13-17 mg <b>V</b> Vitamin B6 <b>B6</b> 	N/A <b>a</b> Coenzyme Q10 <b>Q10</b> 	120 mcd <b>V</b> Vitamin K <b>K</b> 	500 mg <b>a</b> Quercetin <b>Qc</b> 
2.4 mcd <b>V</b> Vitamin B12 <b>B12</b> 	5.0 mg <b>V</b> Vitamin B5 <b>B5</b> 	6 mg <b>V</b> Beta Carotene <b>Bc</b> 	16.0 mg <b>V</b> Vitamin B3 <b>B3</b> 
200 mcg <b>m</b> Chromium <b>Cr</b> 	100-300 mg <b>a</b> DMAE <b>Dm</b> 	100-300 mg <b>a</b> DMAE <b>Dm</b> 	N/A <b>a</b> Cryptoxanthin <b>Cy</b> 
N/A <b>a</b> Catalase <b>Ct</b> 	200 mg <b>a</b> Alpha-lipoic Acid <b>Ap</b> 	100-300 mg <b>a</b> DMAE <b>Dm</b> 	N/A <b>a</b> Cryptoxanthin <b>Cy</b> 
200 mcg <b>m</b> Chromium <b>Cr</b> 	310-400 mg <b>m</b> Manganese <b>Mn</b> 	55 mcg <b>m</b> Selenium <b>Se</b> 	400 mcd <b>V</b> Vitamin B9 <b>B9</b> 



Found In:



\* RDA (Recommended Dietary Allowance) Daily.



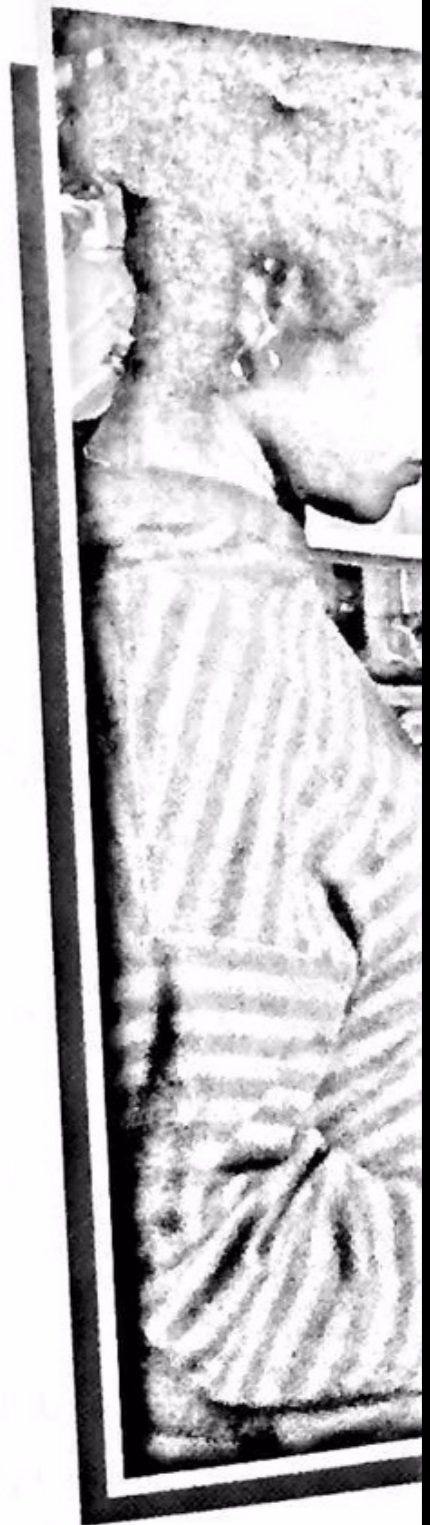
## Minerals

**Minerals** are elements needed in small quantities for forming healthy bones and teeth, and for regulating certain body processes. Calcium, phosphorus, and magnesium help build strong bones and teeth. Iron plays a vital role in making red blood cells. See **Figure 8.2** for more information about functions and sources of selected minerals.

## Water

Water is a nutrient that is vital to your life and health. It makes up over half of your body and serves many important functions. Water transports nutrients through your body, helps you digest food, lubricates your joints, removes wastes, and helps regulate body temperature.

You lose water every day in urine and sweat, and you need to replace it continually. Nutritionists generally recommend that you consume at least eight 8-ounce cups of fluids a day, and even more during hot weather. Choose liquids such as plain drinking water, fruit juices, milk, and soup. Beverages with caffeine or added sugar are not the best choices.



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# Other Substances in Food

Food contains many substances in addition to the major nutrients. Some of these substances, such as fiber, are important to your health and should be part of your everyday food choices. For good health, try to limit fats, cholesterol, added sugars, and salt. Go easy on drinks with caffeine, too.

## Fiber

Fiber is the part of fruits, vegetables, grains, and beans that your body cannot digest. It helps move food particles through your digestive system. Including high-fiber foods in your eating plan may help lower your risk of certain types of cancer and reduce your risk of heart disease. Foods high in fiber include whole-grain breads and cereals, fruits and vegetables, and dry beans and peas.

## Hidden Fats

Health experts recommend that no more than 30 percent of your daily calories come from fat. It's easy to cut down on the fats you can see. For example, put a smaller amount of butter on your baked potato, or trim fat from meat. Fats are often hidden in processed and prepared foods. It's harder to cut down on hidden fats, but it can be done. Go easy on fried foods and switch from whole to low-fat milk. Read the labels on packaged foods to check for fats and oils.



## Cholesterol

Cholesterol is a waxy substance used by the body to build cells and hormones and to protect nerve fibers. Most cholesterol is produced in your liver and circulates in the blood. Cholesterol is also found in foods of animal origin, including meats, chicken, egg yolks, and dairy products. Eating high-cholesterol foods can affect the levels of cholesterol in your blood. There are two types of cholesterol in your blood. Low-density cholesterol, or LDL, is a "bad" form that can leave deposits on the walls of your blood vessels. This buildup raises the risk of heart attack or stroke. High-density cholesterol, or HDL, is a "good" form that can help lower LDL levels. To help reduce LDL levels in your blood, limit your intake of foods that are high in fat and cholesterol. Regular physical activity also helps prevent LDL buildup.

## Added Sugar

You may be surprised to learn that the average American eats about 100 pounds of sugar a year! Sugar occurs naturally in fruit



and milk, and it provides food energy. It is also added to many prepared foods such as soft drinks, cookies, candy, breakfast cereal, and even spaghetti sauce. Sugar is not harmful in moderate amounts. However, you might develop health problems if you eat too many foods high in added sugar.

## Sodium

Sodium is a necessary nutrient that helps control the balance of fluids in the body. It occurs naturally in salt, in various foods, and in many prepared sauces. It is also used extensively in processed foods to flavor or preserve the food.

Most Americans eat much more sodium than they need. For some people, too much sodium may contribute to high blood pressure and fluid retention. You can lower your sodium intake by using spices instead of salt, and by using food labels as a guide.

## Caffeine

Caffeine is a substance that stimulates the nervous system and can become habit-forming. It is an ingredient in “power drinks,” cola, some other soft drinks, coffee, tea, and chocolate. Caffeine stimulates the heart rate and the appetite. It can perk you up, but then it makes you feel drowsy so that you want more. For this reason it’s best to limit your intake of products containing caffeine.



Why do you think people tend to eat too much fat and too much sugar?

What can we do to change this situation?



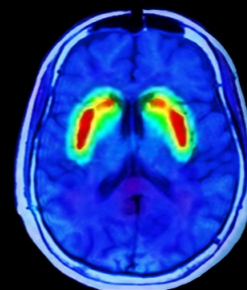
HOW DOES SUGAR  
AFFECT THE BRAIN ?



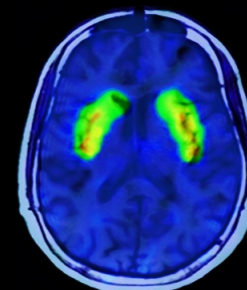
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Normal



Cocaine



Obese

