

LifeStyle Skills

▶ *Vitamins and Minerals*

For New Direction and OutLook Weight Control Programs

When you complete this module, you will be able to . . .

- Understand the role vitamins and minerals play in maintaining health
- Identify good food sources of vitamins and minerals

A well balanced diet not only supplies your body with the energy it needs to keep running, it also supplies the vitamins and minerals the body needs for good health.

Why Are Vitamins and Minerals Important?

Unlike carbohydrate, protein, and fat, vitamins and minerals don't contribute energy, or calories, to your diet. Nevertheless, they're vital for life. Just as spark plugs ignite the gasoline in your car's engine, giving it the energy to run, vitamins and minerals ignite chemical reactions in your body, helping it to run. They're catalysts that trigger the building of body cells and the conversion of food energy to body energy, and they promote the maintenance of skin, nerves, eyes-and more!

While earlier research on vitamins and minerals looked at their role in preventing deficiencies, current research is more focused on how these nutrients can promote health and protect against diseases, such as heart disease, cancer, and osteoporosis. The table on the back page lists some of the vitamins and minerals required by the body and how they help the body to function at its best.

Two Classes of Vitamins

Vitamins are divided into two categories that are distinguished by how the body handles them. The water-soluble vitamins, which includes the B-complex vitamins and vitamin C, dissolve in water. They circulate freely throughout the body, and excesses are excreted in the urine. Since your body doesn't store water-soluble vitamins, overdosing is not much of a problem. However, moderation is still best since, in some instances, taking large doses from supplements may be harmful.

The fat-soluble vitamins, A, D, E, and K, are absorbed with dietary fat. Your body stores excesses of these vitamins in body fat instead of excreting them. Accumulating too much fat-soluble vitamins, especially vitamins A and D, could be dangerous.

Minerals

Minerals are divided into two categories depending on how much your body needs. Major minerals, which are needed in greater amounts--more than 250 milligrams (mg) daily--include calcium, phosphorus, magnesium, and the electrolytes sodium, chloride and potassium. Trace minerals, needed in smaller amounts--less than 20 milligrams daily--include iron, zinc, iodine, selenium and others.

Minerals help regulate the body's chemical reactions, such as muscle contraction, nerve impulses, and fluid balance. They also help give structure to bones and teeth, blood cells, muscles, and other body tissues. Some minerals are harmful if taken in excess.

Do I Need Supplements?

There are over 40 nutrients found in foods. The best way to get the nutrients your body needs is to eat a variety of nutritious foods. In some instances, however, vitamin and/or mineral supplements are recommended. For example, people on reduced calorie diets may not be eating enough food to meet their nutrient needs, and so may need a multivitamin/mineral supplement. People taking certain medications or who have certain illnesses may also benefit from taking specific supplements.

But dietary supplements are just that--supplements, not replacements, for eating healthfully. With supplements, it is possible to get too much of specific vitamins and minerals, and this could be dangerous. On the other hand, the likelihood of overdosing on vitamins or minerals in food is small. Plus, in foods, you'll find a good mix of health-promoting substances that you may not find in pills. If you're going to take supplements, remember to focus on food first.

How Can I Be Sure I'm Getting Enough?

Plan a variety of meals rich in vitamins and minerals by focusing on whole-grain breads and grains, fresh fruits and vegetables, nonfat or low fat dairy products and lean meats, poultry, and fish. If you're concerned whether your diet is meeting your nutritional needs, speak with your doctor or a registered dietitian. If necessary, they can help you select an appropriate dietary supplement(s). Some vitamins and minerals, with their recommended amounts, functions and food sources are listed below.

Nutrient/ Amount*	What It Does	Where It's Found
Vitamin A 5,000 IU**	Important for normal growth in children. Necessary for good vision, especially in the dark. Essential for health of the skin and mucous membranes. Carotenoids (e.g., beta-carotene), which are converted to vitamin A, act as antioxidants, offering protection from some diseases of aging.	Liver, eggs, fortified milk. Carotenoids found in sweet potatoes, carrots, kale, spinach, apricots, cantaloupe
Vitamin D 400 IU	Necessary for strong bones and teeth. Helps the body absorb calcium and phosphorus.	Fortified milk and cereal, liver, eggs, sunshine
Vitamin E 30 IU	Protects essential fatty acids. Acts as an antioxidant, protecting cells from damage that may lead to disease, like heart disease and some cancers.	Vegetables oils, salad dressing, margarine, wheat germ, nuts, seeds
Thiamine (Vitamin B1) 1.5 mg+	Helps produce energy from carbohydrates in all body cells. Needed by brain, heart, and nervous system.	Pork, liver, wheat germ, whole grains, enriched breads and cereals
Riboflavin (Vitamin B2) 1.7 mg	Helps produce energy in all body cells. Helps build and maintain body tissues and protects the skin.	Milk, yogurt, cheese, liver, eggs, spinach, enriched breads and cereals
Niacin 20 mg	Helps produce energy in all body cells. Helps body use fatty acids and sugars. Needed for healthy nervous system and digestive tract.	Lean meats, poultry, fish, peanuts, legumes, enriched breads and cereals
Vitamin B6 (Pyridoxine) 2.0 mg	Helps make protein for body cells. Involved in producing red blood cells, insulin, and antibodies. Important for the nervous system.	Chicken, pork, liver, oatmeal, banana, potatoes, legumes, nuts
Vitamin B12 6.0 mcg**	Helps make red blood cells. Important for metabolism in all cells, including nervous system.	Meat, fish, eggs, poultry, milk
Folate (Folic Acid or Folacin) 400 mcg	Essential for making new blood cells. Helps prevent certain type of anemia. In pregnant women, protects against type of birth defect.	Spinach, broccoli, legumes, wheat germ, orange juice, enriched grain products
Vitamin C (Ascorbic Acid) 60 mg	Essential for healthy teeth, gums and bones. Helps heal wounds and protect from infection. Builds strong body cells and blood vessels. Helps absorb iron from plant sources. Acts as an antioxidant.	Oranges, grapefruit, fruit juice, melon, berries, potatoes, broccoli, tomatoes
Calcium 1,000 mg	Builds bones and teeth. Needed for blood clotting, muscle contraction, and proper nerve function.	Milk, yogurt, kale, broccoli, canned fish with edible bones, tofu made with calcium sulfate
Phosphorus 1,000 mg	Builds bones and teeth. Helps produce energy in body cells and regulates energy metabolism. Needed for cell growth.	Milk, meat, poultry, fish, eggs, legumes
Magnesium 400 mg	Part of many enzymes that regulate body functions. Important for nerve and muscle function.	Spinach, legumes, whole grains
Iron 18 mg	Helps make hemoglobin, the red substance in blood carrying oxygen from the lungs to all body cells.	Liver, meat, legumes, spinach, fortified cereals, enriched grains
Zinc 15mg	Helps body use carbohydrate, protein and fat. Part of many enzymes. Important for cell reproduction and tissue repair. Essential for growth.	Meat, seafood, liver, milk, eggs, wheat germ

* Recommended amounts are based on the RDI, or Reference Daily Intake, a term that replaces U.S. RDA, and is used for nutritional labeling. **IU - International Units; +mg - milligrams; ++mcg - micrograms