

Nutrients Activity

<p>Nutrient</p> <p>Biotin</p>	<p>Functions</p> <p>Essential component of enzymes; important in reactions involving the lengthening of carbon chains; coenzyme carrier of carbon dioxide; plays an important role in the metabolism of fatty acids and amino acids</p>	<p>Food Sources</p> <p>Liver, meat, egg yolk, yeast, bananas, most vegetables, strawberries, grapefruit, watermelon</p>
<p>Nutrient</p> <p>Calcium</p>	<p>Functions</p> <p>Builds and maintains bones and teeth; essential in clotting of blood; influences transmission of ions across cell membranes; required in nerve transmission</p>	<p>Food Sources</p> <p>Yogurt, cheese, fortified or enriched grain products, some green leafy vegetables (such as collards, kale mustard greens, and turnip greens), tofu (if made with calcium sulfate), sardines, salmon</p>
<p>Nutrient</p> <p>Carbohydrate</p>	<p>Functions</p> <p>Major energy source; protein sparing; necessary for normal fat metabolism; glucose is the sole source of energy for the brain; many sources also provide dietary fiber</p>	<p>Food Sources</p> <p>Whole-grain breads, cereals, and other fortified or enriched grain products; potatoes; corn; legumes; fruits; vegetables</p>

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<p>Nutrient</p> <p>Chromium</p>	<p>Functions</p> <p>Required for normal glucose metabolism; insulin cofactor</p>	<p>Food Sources</p> <p>Meat; whole-grain breads, cereals, and other fortified or enriched grain products; brewer's yeast; corn oil</p>
<p>Nutrient</p> <p>Copper</p>	<p>Functions</p> <p>Facilitates the function of many enzymes and iron; may be an integral part of RNA (Ribonucleic acid), DNA (deoxyribonucleic acid) molecules</p>	<p>Food Sources</p> <p>Liver; kidney; poultry; shellfish; legumes; whole-grain breads, cereals, and other grain products</p>
<p>Nutrient</p> <p>Fat</p>	<p>Functions</p> <p>Concentrated energy source; protein sparing; insulation for temperature maintenance; supplies essential fatty acids; carries fat-soluble vitamins A, D, E, K</p>	<p>Food Sources</p> <p>Protein-rich foods (meats, dairy products, egg yolk, nuts), butter, margarine, cream, salad oils and dressings, cooking and meat fats</p>

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<p>Nutrient</p> <p>Fluoride</p>	<p>Functions</p> <p>Helps protect teeth against tooth decay; may minimize bone loss</p>	<p>Food Sources</p> <p>Fluoridated water</p>
<p>Nutrient</p> <p>Carbohydrate</p>	<p>Functions</p> <p>Major energy source; protein sparing; necessary for normal fat metabolism; glucose is the sole source of energy for the brain; many sources also provide dietary fiber</p>	<p>Food Sources</p> <p>Whole-grain breads, cereals, and other fortified or enriched grain products; potatoes; corn; legumes; fruits; vegetables</p>
<p>Nutrient</p> <p>Folacin (Folate)</p>	<p>Functions</p> <p>Essential in the biosynthesis of nucleic acids; necessary for the normal maturation of red blood cells</p>	<p>Food Sources</p> <p>Legumes; whole-grain breads, cereals, and fortified or enriched grain products; legumes; oranges; cantaloupe; lean beef</p>

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<p>Nutrient</p> <p>Iodine</p>	<p>Functions</p> <p>Helps regulate thyroid hormones; important in regulation of cellular oxidation and growth</p>	<p>Food Sources</p> <p>seafood, iodized salt</p>
<p>Nutrient</p> <p>Iron</p>	<p>Functions</p> <p>Essential for the formation of hemoglobin and oxygen transport; increases resistance to infection; functions as part of enzymes involved in tissue respiration</p>	<p>Food Sources</p> <p>Meat; liver; legumes; wholegrain breads, cereals, or fortified or enriched grain products; and dark green vegetables</p>
<p>Nutrient</p> <p>Magnesium</p>	<p>Functions</p> <p>Required for many coenzyme oxidation-phosphorylation reactions, nerve impulse transmissions, and for muscle contraction</p>	<p>Food Sources</p> <p>Whole-grain breads, cereals, and other grain products; tofu; legumes; green vegetables</p>

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Nutrient	Functions	Food Sources
Manganese	Essential part of several enzyme systems involved in protein and energy metabolism	Whole-grain breads, cereals, and other grain products; legumes; fruits; vegetables (leafy)
Molybdenum	Part of the enzymes xanthine oxidase and aldehyde oxidase, possibly helps reduce incidence of dental caries	Organ meats; breads, cereals, and other grain products; dark green leafy vegetables; legumes
Niacin	Part of the enzyme system for oxidation, energy release; necessary for synthesis of glycogen and the synthesis and breakdown of fatty acids	Meat; poultry; fish; whole-grain breads, cereals, and fortified or enriched grain products; egg yolk

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<p>Nutrient</p> <p>Pantothenic Acid</p>	<p>Functions</p> <p>Functions in the synthesis and breakdown of many vital body compounds; essential in the intermediary metabolism of carbohydrate, fat, and protein</p>	<p>Food Sources</p> <p>Meat; fish; poultry; liver; egg yolk; yeast; whole-grain breads, cereals, and other grain products; legumes; vegetables</p>
<p>Nutrient</p> <p>Phosphorus</p>	<p>Functions</p> <p>Builds and maintains bones and teeth; component of nucleic acids, phospholipids; as coenzyme functions in energy metabolism; buffers intracellular fluid</p>	<p>Food Sources</p> <p>Fish; whole-grain breads, cereals, and other grain products; legumes</p>
<p>Nutrient</p> <p>Potassium</p>	<p>Functions</p> <p>Helps regulate acid-base equilibrium and osmotic pressure of body fluids; influences muscle activity, especially cardiac muscle</p>	<p>Food Sources</p> <p>Fruits especially orange juice, bananas, and dried fruits; yogurt; potatoes; meat; fish; poultry; soy products; vegetables</p>

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<p>Nutrient</p> <p>Protein</p>	<p>Functions</p> <p>Anabolism of tissue proteins; helps maintain fluid balance; energy source; formation of immunoglobulins; maintenance of acid-base balance; important part of enzymes and hormones</p>	<p>Food Sources</p> <p>Meat, fish, poultry, egg yolk, cheese, yogurt, legumes</p>
<p>Nutrient</p> <p>Pyridoxine (Vitamin B6)</p>	<p>Functions</p> <p>Aids in the synthesis and breakdown of amino acids and unsaturated fatty acids from essential fatty acids; essential for conversion of tryptophan to niacin; essential for normal growth</p>	<p>Food Sources</p> <p>Liver; meat; whole-grain breads, cereals, or other grain products; legumes; potatoes</p>
<p>Nutrient</p> <p>Riboflavin (Vitamin B2)</p>	<p>Functions</p> <p>Essential for growth; plays enzymatic role in tissue respiration and acts as a transporter of hydrogen ions</p>	<p>Food Sources</p> <p>Meat; dairy products; egg yolk; legumes; green vegetables; whole-grain breads, cereals, and fortified or enriched grain products</p>

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<p>Nutrient</p> <p>Selenium</p>	<p>Functions</p> <p>May be essential to tissue respiration; associated with fat metabolism and vitamin E; acts as an antioxidant</p>	<p>Food Sources</p> <p>Whole-grain breads, cereals, and other fortified or enriched grain products; onions; meats; seafood; dependent on soil content– vegetables</p>
<p>Nutrient</p> <p>Sodium</p>	<p>Functions</p> <p>Helps regulate acid-base equilibrium and osmotic pressure of body fluids; plays a role in normal muscle irritability and contractility; influences cell permeability</p>	<p>Food Sources</p> <p>Sodium chloride (table salt), abundant in most foods except fruit</p>
<p>Nutrient</p> <p>Thiamin (Vitamin B1)</p>	<p>Functions</p> <p>Combines with phosphorus to form thiamin pyrophosphate (TPP) necessary for metabolism of protein, carbohydrate, and fat; essential for growth, normal appetite, digestion, and healthy nerves</p>	<p>Food Sources</p> <p>Lean pork; wheat germ; whole-grain and enriched breads, cereals, and other grain products; legumes; potatoes</p>

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Vitamin A	Preserves integrity of epithelial cells; formation of rhodopsin for vision in dim light; necessary for wound healing, growth, and normal immune function	Liver, egg yolk, dark green and deep yellow vegetables and fruits
Vitamin C (Ascorbic Acid)	Essential in the synthesis of collagen (thus, strengthens tissues and improves wound healing and resistance to infection); iron absorption and transport; watersoluble antioxidant; functions in folacin metabolism	Fruits (especially citrus fruits, papaya, cantaloupe, strawberries), vegetables (potatoes, cabbage)
Vitamin D	Necessary for the formation of normal bone; promotes the absorption of calcium and phosphorus in the intestines	Egg yolk, liver, fatty fish, sunlight (activation of 7-dehydrocholesterol in the skin)

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<p>Nutrient</p> <p>Vitamin E</p>	<p>Functions</p> <p>May function as an antioxidant in the tissues; may also have a role as a coenzyme; neuromuscular function</p>	<p>Food Sources</p> <p>Vegetable oils; liver; egg yolk; butter; green leafy vegetables; whole-grain breads, cereals, and other fortified or enriched grain products; wheat germ</p>
<p>Nutrient</p> <p>Vitamin K</p>	<p>Functions</p> <p>Catalyzes prothrombin synthesis; required in the synthesis of other blood clotting factors; synthesis by intestinal bacteria</p>	<p>Food Sources</p> <p>Vegetable oils, green leafy vegetables, pork, liver</p>
<p>Nutrient</p> <p>Vitamin B12 (Cobalamin, Cyanocobalamin)</p>	<p>Functions</p> <p>Essential for biosynthesis of nucleic acids and nucleoproteins; red blood cell maturation; involved with folate metabolism; central nervous system metabolism</p>	<p>Food Sources</p> <p>Meat, fish, poultry, cheese, egg yolk, liver</p>

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Nutrient	Functions	Food Sources
Zinc	Component of many enzyme systems and insulin	meat; liver; egg yolk; oysters and other seafood; whole-grain breads, cereals, and other fortified or enriched grain products; legumes

Source: Appendix C: Nutrient Chart - Function, Deficiency and Toxicity Symptoms, and Major Food Sources
http://www.nal.usda.gov/wicworks/Topics/FG/AppendixC_NutrientChart.pdf