

# Project Heart

## Activities for the Classroom

# NUTRITION: MY VITAMIN DICTIONARY

Vitamin	Why do I need it?	Where can I get it?	How much do I need daily?	What if I don't get enough?	My notes
Vitamin A Retinol  <b>Fat-soluble Antioxidant</b>	Important for maintaining healthy vision so we can react to changes in light and distinguish between different colors. It is also necessary for growth, a strong immune system, bone formation, and wound healing.	Your body can make it from beta-carotene found in brightly colored fruits and vegetables such as carrots, cantaloupe, and sweet potatoes.	<b>RDA –</b> Children 4-8 400 micrograms  Children 9-13 600 micrograms	Too little vitamin A may lead to night blindness, an inability to fight infection, or slow wound healing.	
B vitamins	All the B-complex vitamins help the body produce energy from carbohydrates and break down fats and proteins. They work as a team, but each one has its own unique characteristics.				
Vitamin B-1 Thiamine  <b>Water-soluble B-Complex</b>	Keeps the digestive system, nervous system, eyes, hair, and skin healthy.	<b>Enriched</b> cereals, enriched bread products, whole grains, and pork.	<b>RDA –</b> Children 4-8 0.6 milligram  Children 9-13 0.9 milligram	Too little Vitamin B-1 may lead to loss of mental alertness, decreased short-term memory, difficulty breathing, an enlarged heart, or the disease <b>Beriberi</b> .	
Vitamin B-2 Riboflavin  Water-soluble B-Complex	Keeps the digestive system, nervous system, eyes, hair, and skin healthy, and fights oxidative damage.	Almonds, enriched cereals, enriched bread products, whole grains, mushrooms, broccoli, spinach, milk (that has not been exposed to light), and yogurt.	<b>RDA –</b> Children 4-8 0.6 milligram  Children 9-13 0.9 milligram	Too little Vitamin B-2 can lead to slow growth, tiredness, dry cracked lips, inflammation and swelling in the mouth and throat, visual disturbances, or <b>Anemia</b> .	
Vitamin B-3 Niacin  Water-soluble B-Complex	Helps to rid the body of toxic chemicals.	Beets, meat, fish, poultry, sunflower seeds, peanuts, whole grains, enriched cereals, and enriched bread products.	<b>RDA –</b> Children 4-8 8 milligrams  Children 9-13 12 milligrams	Too little Vitamin B-3 can cause indigestion, tiredness, canker sores, or in extreme cases, the disease <b>Pellagra</b> .	

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Vitamin B-5 Pantothenic acid  Water-soluble B-Complex	Helps the body manufacture red blood cells, maintain a healthy digestive tract, and use other vitamins more effectively. Sometimes called the "anti-stress" vitamin because it helps us cope with stressful conditions.	Corn, cauliflower, broccoli, tomatoes, chicken, beef, enriched cereals, enriched bread products, and whole grains.	<b>AI</b> – Children 4-8 3 milligrams  Children 9-13 4 milligrams	It is very rare that someone doesn't get enough Vitamin B-5.	
Vitamin B-6 Pyridoxine  Water-soluble B-Complex	Helps maintain the nerve and muscle cells and is important in the production of <b>DNA</b> .	Poultry, fish, shellfish, lentils, nuts, bananas, avocados, carrots, enriched cereals, enriched bread products, and whole grains.	<b>RDA</b> – Children 4-8 0.6 milligram Children 9-13 1 milligram	Too little Vitamin B-6 can cause muscle weakness, depression, confusion, and irritability.	
Vitamin B-9 Folic acid  Water-soluble B-Complex	Crucial to help iron function properly in the body. Important for brain function, helping with both mental and emotional health. Vital to the production of DNA, especially during high growth.	Dark green leafy vegetables, beans, root vegetables, salmon, orange juice, avocado, milk, enriched cereal, enriched bread products, and whole grains.	<b>RDA</b> – Children 4-8 200 micrograms  Children 9-13 300 micrograms	Too little Vitamin B-9 can stunt growth and cause loss of appetite, irritability, forgetfulness, and digestive problems. Insufficient Folic acid during pregnancy can contribute to birth defects such as <b>cleft palate</b> and <b>spina bifida</b> .	
Vitamin B-12 Cobalamin or Cyanocobalamin  Water-soluble B-Complex	Especially important in maintaining healthy nerve cells. B-6, 9 and 12 work together to control blood levels of homocysteine (a substance thought to be linked with heart disease).	Fish, dairy products, eggs, beef, and pork.	<b>RDA</b> – Children 4-8 1.2 micrograms  Children 9-13 1.8 micrograms	Too little Vitamin B-12 is often caused by lack of a substance in the digestive system that helps absorb it. Too little may cause Anemia, pale skin, tiredness, shortness of breath, and memory loss.	

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Biotin (Vitamin H) Water-soluble B-Complex	Helps the body metabolize amino acids. It is sometimes recommended for cosmetic problems such as weak hair and nails.	Found in a lot of foods and is produced by bacteria in the intestine.	AI – Children 4-8 12 micrograms Children 9-13 20 micrograms	Too little Vitamin H is usually only seen in people who eat a lot of raw eggs. They may have thinning hair, depression, and dry skin around the eyes.	
Vitamin C Ascorbic Acid Water-soluble Antioxidant	Important for growth and repair of many tissues in the body. It helps to develop <b>collagen</b> , helps in wound healing, prevents bruises, and helps maintain bones and teeth. Enhances the immune system, prevents infection, and helps with the absorption of iron	Citrus fruits, potatoes, strawberries, tomatoes, kiwi fruit, broccoli, spinach, and other leafy greens.	RDA – Children 4-8 25 milligrams Children 9-13 45 milligrams	Too little Vitamin C can cause bruising, weak collagen, scaly skin, poor wound-healing, dry hair, a decreased ability to fight infection, and even <b>Scurvy</b> in severe cases.	
Vitamin D Calciferol, or Cholecalciferol Fat-soluble	Helps the body maintain calcium and phosphorous (minerals) at healthy levels. Also keeps the nervous and immune systems healthy. Calcium cannot be absorbed without Vitamin D.	Fortified foods such as milk and cereal, or from cod liver oil, eggs, or salmon (and from the sun when your skin is exposed to ultraviolet rays).	AI – Children 4-13 5 micrograms	Too little Vitamin D can cause bone weakness and deformities, loss of bone density, joint inflammation, and in extreme cases, <b>Rickets</b> . (Be careful not to get a sunburn!)	
Vitamin E Alpha-tocopherol Fat-soluble Antioxidant	Protects the body from damage caused by toxins developed when food is converted to energy or when the body fights off an infection.	Vegetable oils, nuts, seeds, green leafy vegetables, sweet potatoes, avocado and asparagus.	RDA – Children 4-8 7 milligrams Children 9-13 11 milligrams	Too little Vitamin E can cause Anemia, muscle weakness, leg cramps, an unsteady gait, abnormal eye movements, and the inability to absorb fat properly.	
Vitamin K Menaphthone Fat-soluble	Helps with blood clotting because it is responsible for making the blood clotting factors in the liver. It also helps keep the bones healthy.	Green leafy vegetables, vegetable oils such as soybean and canola, and green tea.	AI – Children 7-10 30 micrograms	Too little Vitamin K can lead to a decreased ability to form blood clots when you are injured, leading to excessive bleeding.	

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Special Terms	Definitions	My notes
AI	Adequate Intake. This is a guideline for how much of a particular nutrient healthy people should have when a specific amount has not been defined. AI is part of a new, broader term: Dietary Reference Intake (DRI).	
Anemia	A deficiency of red blood cells and/or hemoglobin. Affects the transfer of oxygen to the body's cells. Symptoms include weakness or fatigue, shortness of breath, and (in severe cases) heart palpitations.	
Antioxidants	Compounds that protect cells from damage that can be caused by oxidation (part of the breakdown of molecules that occurs continuously in the body).	
Beriberi	A disease caused by a lack of Thiamine. Affects the nerves, digestive system and heart. Symptoms include weight loss, emotional disturbances, impaired senses, weakness, and irregular heartbeat.	
Cleft palate	An incomplete closing of the bone structure, particularly the palate (roof of the mouth). Although considered primarily a birth defect (congenital), clefts can be caused or made worse by insufficient Folic acid during development and growth of the fetus.	
Collagen	A protein found in all connective tissues in the body such as bone, teeth, skin, tendons, and blood vessels. Vitamin C is important to help the body make collagen.	
DNA	Deoxyribonucleic acid (DNA) is a molecule in the nucleus of the cell. The DNA contains the instructions that the cell uses to make certain proteins.	
Enriched	Foods to which one or more ingredients (usually vitamins) are added to make the essential nutrients more available for public consumption. Common foods like cereals and breads are enriched to restore nutrients that might have been lost in processing.	
Fat-soluble	Fat-soluble vitamins are absorbed along with the food (fats) we eat. They can be used right away or stored by the body for later use.	
Gram (g or gm)	A gram is a metric unit of measure equal to the mass of water contained in a cube one centimeter (cm) on each side. 1 cubic centimeter (cc or cm <sup>3</sup> ) of water weighs 1 gram (0.0036 of an ounce).	
Microgram (µg)	A metric unit of measure: one millionth (10 <sup>-6</sup> ) of a gram.	
Milligram (mg)	A metric unit of measure: one thousandth (10 <sup>-3</sup> ) of a gram.	
Pellagra	A disease caused by a lack of Niacin. Affects the nervous system and skin. Symptoms include sensitivity to sunlight, aggressive or confused behavior, problems sleeping, and rashes.	

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Special Terms	Definitions	My notes
RDA	Recommended Dietary Allowance. This is a guideline for how much of a particular nutrient healthy people should have. RDA is now part of a new, broader term: Dietary Reference Intake (DRI).	
Rickets	A disease in children caused by a lack of Vitamin D. Affects the body's ability to absorb calcium into the bones. Symptoms include bone pain, stunted growth, dental problems, and risk of fractures.	
Scurvy	A disease caused by lack of Vitamin C. Affects the parts of the body that rely on collagen (skin, gums, hair, joints). Symptoms include joint pain, gum disease, thin hair, poor healing of bruises.	
Spina bifida	A condition in which the spinal cord, surrounding nerves and/or spinal column fail to develop normally very early in the development of the fetus. Symptoms include paralysis, lack of skin sensations, improper limb and joint formation, and other problems. Insufficient Folic acid, especially in the very early weeks of development, is thought to cause or contribute to spina bifida.	
Water-soluble	Water-soluble vitamins dissolve in water and are absorbed right away by the body. Since they are not stored by the body, we need to get enough in our daily or weekly diet.	

**References:**

Texas Heart Institute Heart Information Center: Vitamins: What They Do and Where to Get Them. Available at [www.texasheart.org/HIC/Topics/HSmart/Vitamin1.cfm](http://www.texasheart.org/HIC/Topics/HSmart/Vitamin1.cfm) . Last accessed November 20, 2006.

National Agricultural Library: Food and Nutrition Information Center: Dietary Guidance. Available at <http://fnic.nal.usda.gov> . Last accessed November 20, 2006.

University of Maryland Medical Center. *Supplements by Name*. Available at: [www.umm.edu/altmed/ConsLookups/Supplements.html](http://www.umm.edu/altmed/ConsLookups/Supplements.html) Last accessed November 20, 2006.

*Nutrition: An Applied Approach*. Janice Thompson and Melinda Manore. Pearson Education, Inc., publishing at Benjamin Cummings. San Francisco. 2005.