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| You Are What You Eat image |

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| **Good nutrition** is an important part of environmental health.  By having a healthy diet we increase our body's ability to maintain homeostasis.  **Homeostasis**refers to the ability of an organism to adjust its internal environment to compensate for changes in the external environment.   For example, when you are cold, your brain automatically tells your body to shiver and your skin's pores to close (goose bumps). Shivering helps generate heat and goose bumps help reduce heat loss.  Homeostasis can only adjust an organism's internal environment to a limited degree.   Thus, when we are very cold, we put on a coat or find shelter to compensate for the adjustments homeostasis cannot make.  An important part of maintaining homeostasis is the immune system.  The immune system helps us fight disease and the effects of toxicants   that enter the body.  The best way to help our immune system is by making sure we eat a diet containing a proper supply of vitamins, minerals, proteins, carbohydrates, fats and water. |

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| Vitamins  Vitamins are organic compounds needed in very small amounts in the diet to help regulate and support chemical reactions in the body.  They are essential for health and must be obtained from the diet as the body cannot manufacture them.   |  |  |  | | --- | --- | --- | | **Name** | **Major Sources** | **Signs of Deficiency** | | **Vitamin B1 (Thiamin)** | Beans, peanuts, meat, whole grains & eggs. | **Beriberi** - Decreased brain function or nerve function in the legs or impaired heart function. | | **Vitamin B2 (Riboflavin)** | Dairy products, eggs, & green leafy vegetables | Dry, cracked lips; inflamed tongue & lips.  Stunts growth in children. | | **Vitamin B3 (Niacin)** | Meat, poultry, fish & peanuts | **Pellagra** - Begins with poor appetite, weight loss & weakness; leading to dermatitis, dementia, diarrhea & eventual death | | **Vitamin B5 (Pantothenic acid)** | Broccoli, dairy products, eggs, fish, fruits, meat, potatoes & poultry | Nervous disorders, tiredness, weight loss and nausea. | | **Vitamin B6** | Meat, poultry, fish & sweet potatoes | Depression, convulsions, skin cracked at corners of the lips, smooth tongue & **anemia**. | | **Folacin (Folic Acid or Folate)** | Broccoli, whole grains, green leafy vegetables, legumes, nuts & orange juice | Causes spinal cord birth defects such as **spina bifida** if deficiencies occur in pregnant women during the first few months after conception. | | **Vitamin B12** | Meat, poultry, fish, eggs & dairy products | **Anemia** - Pale, tired, irritable & short attention span. | | **Biotin** | Cauliflower, cereals, dairy products, eggs, legumes, & nuts | Inflamed skin, depression and/or muscle pain. | | **Vitamin C** | Fruits & vegetables | **Scurvy** - weakness, bleeding gums, slow-healing wounds & tendency towards infection. | | **Vitamin A** | Dark yellow and green leafy vegetables, liver & eggs | Night blindness, dryness of the eyes & eventual blindness. | | **Vitamin D** | Sunlight, fish liver oil & Vitamin D milk | **Rickets** - malformation of the bones (especially bones of the legs, skull and chest). | | **Vitamin E** | Vegetable oils, seeds & whole grains | Lack of vitality, irritability & disinterest in physical activity. | | **Vitamin K** | Green leafy vegetables, cabbage, pork liver & intestinal bacteria | Increased blood clotting time & tendency towards bruising. | |

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| Minerals  Inorganic substances needed by the body for a range of functions.   For example calcium helps in the formation of the crystalline substance of bones.   Iron helps make the hemoglobin that carries oxygen in the blood.  Other minerals help generate electric currents that allow nerves and muscles to function properly.   |  |  |  | | --- | --- | --- | | **Name** | **Major Sources** | **Signs of Deficiency** | | **Calcium** | Citrus fruits, dairy products, dark green vegetables, legumes and some fish | **Rickets** - malformation of the bones in children. **Osteoporosis** - brittle bones and bone loss in adults.  *Overdose* *creates calcium deposits and decreases absorption of iron & zinc*. | | **Chloride** | Salt and most foods except fruits | Loss of appetite, muscle cramps & poor growth.  *Overdose causes vomiting*. | | **Chromium** | Dairy products, dark green leafy vegetables, legumes, meat, peanuts & whole grains | Impairs glucose (sugar) tolerance - mimics diabetes. | | **Copper** | Liver, seafood, legumes, raisins, cocoa, nuts, potatoes & whole grains | **Anemia** - Pale, tired, irritable & short attention span. | | **Fluoride** | Drinking water, rice, seafood, soybeans, spinach & tea | Increased tooth decay.*Overdose causes spotted teeth.  Large overdoses are fatal*. | | **Iodine** | Dairy products, iodized salt, seafood & vegetables | **Goiter** - enlarged thyroid gland. *Overdose causes goiter, heart problems & cretinism (mental & physical retardation)* . | | **Iron** | Dark leafy vegetables, eggs, legumes, meat, nuts & whole grains | **Anemia** - Pale, tired, irritable & short attention span.  *Overdose may cause heart, liver or pancreas damage.* | | **Magnesium** | Dairy products, fish, green leafy vegetables, legumes, nuts & whole grains | Weakness, irregular heartbeat & spasms. *Overdose may cause neurological problems & diarrhea*. | | **Manganese** | Cocoa, fruits, legumes, nuts, tea, vegetables & whole grains | No signs of deficiency known.*Overdose may cause neurological problems*. | | **Molybdenum** | Legumes, green leafy vegetables, liver & whole grains | No signs of deficiency known.*Overdose may cause stiff, swollen joints*. | | **Phosphorus** | Dairy products, eggs, fish, legumes, meat, nuts, poultry & whole grains | Weakness and bone loss.  *Overdose may cause a Calcium deficiency*. | | **Potassium** | Cocoa, fruits, legumes, meat, potatoes, vegetables & whole grains | Weakness, paralysis, abnormal heart rhythm, kidney & lung problems. *Overdose may cause paralysis or heart attack.* | | **Selenium** | Dairy products, eggs, garlic, meat, poultry, seafood & whole grains. | Heart and muscle damage.  *Overdose causes hair and nail loss and digestive disorders.* | | **Sulfur** | Clams, dairy products, eggs, fish, legumes, meat & nuts | No signs of deficiency known.*Overdose stunts growth and causes liver damage.* | | **Sodium** | Processed foods, table salt, smoked meats, bouillon, etc. | Decreased blood pressure leading to shock.  *Overdose may cause high blood pressure in some people.* | | **Zinc** | Beef, poultry & shellfish | Decreased appetite, decreased disease resistance & sores on the skin.   *Overdose causes dizziness and nausea.* | |

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| |  | | --- | | You Are What You Eat image |  |  | | --- | | Proteins  Proteins are the basic building blocks of the body.  Including protein as a part of daily nutrition is important since our bodies are constantly shedding old cells and using protein to build new ones to replace them.  The only cells that are not sloughed off and replenished are nerve cells.  That why protecting your brain and other parts of your nervous system is so important; they can't be replaced!  Meat and dairy products such as cheese and milk are important sources of protein.  Other sources of protein include legumes (like beans and peas), vegetables, whole grains, nuts, seeds, tofu and soy milk.  **Protein deficiency** can lead to symptoms of malnutrition including abnormal growth and development, lack of nail and hair growth and impaired healing of wounds. | |

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| Carbohydrates  Carbohydrates provide energy for the body to function.  Major sources of carbohydrates are sugars (table sugar, honey, fruit juices, sugar cane, beets, maple syrup, etc.) and starches (potatoes, corn, beans, rice, wheat flour, etc.)  When your body does not get enough carbohydrates it must convert stored body fat in to fatty acids that can then be used as energy sources. |

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| Fats  Fatsare highly concentrated with energy that can be stored in the body for future use.  Fats contain more than twice the energy contained by carbohydrates but must be broken down in fatty acids.  Although too much fat in the diet can lead to problems such as obesity and heart disease, a moderate amount of fat in your diet is good for you. |