

Name _____ Hour _____ Date _____

Chapter 8, Section 2: Vitamins & Minerals & Water

Vitamins

- Vitamins are one class of _____ that are found in _____ and _____ sources.
- They are required in _____ amounts and needed for the body to function properly.
- There are _____ classes of vitamins:
 1. _____ vitamins
 - Stored in fatty materials
 2. Water-soluble vitamins
 - Stored in _____
 - Excess _____ be stored in the body

Fat-Soluble Vitamins

Vitamin A

- Function: maintains healthy _____, prevents eye problems
- Sources: eggs, cheese, milk, orange and dark green vegetables, and fruit
- Deficiency: Night blindness

Vitamin D

- Function: maintains _____; helps in the _____ of calcium
- Sources: eggs, mil, exposure to sunlight
- Deficiency: Osteoporosis & depression

Vitamin E

- Functions: helps the body use Vitamin A and prevents _____ of body tissues
- Sources: whole grains (oatmeal), sweet corn, carrots, margarine, and vegetable oils
- Deficiency: not very common, but could cause muscular dystrophy

Vitamin K

- Function: helps with _____
- Sources: leafy green vegetables (spinach, broccoli, lettuce), potatoes
- Deficiency: bruising easily or nosebleeds

Water-Soluble Vitamins

Vitamin B-1: Thiamin

- Function: helps in the _____ of carbohydrates and nervous system function
- Sources: pork products and whole grains
- Deficiency: fatigue, irritability, loss of appetite; severe deficiency can lead to beriberi (Asia-white rice)

Vitamin B-2: Riboflavin

- Function: needed for metabolism of _____, assists in the functioning of Niacin & B6
- Sources: milk, spinach, meat, and whole grains
- Deficiency: painful tongue and fissures to the corners of the mouth, chapped lips

Vitamin B-3: Niacin

- Function: helps with metabolism, helps maintain a healthy _____
- Sources: poultry, beef, fish, and whole grains
- Deficiency: not very common, but extreme cases cause Pellagra in undeveloped countries

Vitamin B-6: Pyridoxine

- Function: helps with protein and carbohydrate metabolism; helps form _____
- Sources: animal products, spinach, broccoli, and bananas
- Deficiency: Anemia, irritability, patches of itchy skin

Vitamin B-12: Cobalamin

- Function: makes red blood cells; nerve cell function
- Sources: animal products
- Deficiency: rare (pernicious anemia in vegetarians - does not make enough red blood cells)

Folate: Folic Acid

- Function: builds red blood cells
 - Pregnant women – brain and spinal cord development in fetus
- Sources: leafy green vegetables, fortified cereals
- Deficiency: Anemia, gastrointestinal problems
 - Infants – Spina Bifida

Biotin

- Function: metabolism of _____
- Sources: cheese, egg yolk, cauliflower, and peanut butter
- Deficiency: rare in adults, but could lead to dermatitis in infants

Vitamin C: Ascorbic Acid

- Function: boosts _____, healthy bones and teeth, helps absorb iron and calcium in the body
- Sources: oranges, broccoli, tomatoes, red and green bell peppers, and kiwi
- Deficiency: Scurvy (sailors and soldiers)

Antioxidants

- Vitamins called _____ help protect healthy cells from the damage caused by the normal aging process as well as reduce the risk from certain types of cancer
- Vitamins _____ are two of the most powerful antioxidants

Minerals

- Minerals are one class of nutrients that are found in _____ and _____; they cannot be created by living things
- However, plants _____ minerals from the soil and animals get minerals from the _____ they eat
- This allows humans to get minerals in the foods they eat

Calcium

- Function: helps build and maintain _____, blood clotting, functioning of nervous system
- Sources: milk and dairy products, dark green vegetables
- Deficiency: _____ (brittle bones)

Iron

- Function: making _____ (red blood cells carry oxygen throughout the body)
- Sources: _____, red meat, strawberries, grapes, peas, carrots, mushrooms, corn, broccoli, fortified cereals
- Deficiency: _____ (weakness, paleness, shortness of breath)

Phosphorous

- Function: works with _____ to build strong bones and teeth, nerve and muscle function
- Sources: chicken breast, milk, cheese, _____
- Deficiency: very rare, but weakness may occur

Potassium

- Function: maintain regular water balance, nerve and muscle function
- Sources: _____, peanuts, oranges, broccoli, green beans, mushrooms
- Deficiency: muscle _____, nausea, irritability

Magnesium

- Function: assists in the _____ of calcium, Vitamin C, and potassium
- Sources: bananas, potatoes, corn, cashews, almonds, pumpkin seeds, broccoli, tomatoes
- Deficiency: fatigue, _____ weakness and cramps, osteoporosis

Sodium

- Function: regulate _____ (water levels & blood volume), proper functioning of muscles and nerves
- Sources: table salt, processed foods, almost all fresh fruits and vegetables, peanuts, cashews
- Deficiency: _____ (athletes in hot weather = sweating too much = loss of sodium)
 - Most people get more than enough sodium which can lead to _____.
(high blood pressure)

Water

- About _____ of your body weight is water.
- Nearly all of the body's chemical reactions, including those that produce energy and build new tissues take place in a water solution.

Water and Homeostasis

- _____ is the process of maintaining a steady state inside your body.
- When you become overheated, your body excretes perspiration, which cools your body.
 - Thus, water regulates body temperature.
- Water contains dissolved substances called _____ that regulate many processes in your cells.

Preventing Dehydration

- _____ is a serious reduction in the body's water content.
- Symptoms of dehydration can include weakness, rapid breathing, and a weak heartbeat.

How much Water?

- Females 14-18: _____ (8 ounce cups)
- Males 14-18: _____ (8 ounce cups)

Water vs. Sport Drinks

- A sports drink is not necessary if you exercise for _____ minutes or less.
- If you exercise longer, a sports drink that contains carbohydrates may be beneficial.
- Sports drinks with electrolytes are not necessary unless you exercise for _____ or more.