

NHM

CH 10

Solubility: B and C vitamins-water soluble

- Found a lot in blood and urine
- Kidneys filter

B vitamins serve as coenzymes

- Attaches to enzyme and allows it to continue with process/reaction
- Energy metabolism process

Thiamin-coenzyme (TTP) and plays role in nerve transmission

- Grains
- Pork
- Heat can destroy thiamin, can leech out while cooking (boiling water)
- Alcohol can impair thiamin absorption and gets rid of it

Riboflavin-coenzyme (FMN)

- Grains
- Milk-main source
- Greens
- Can be destroyed by UV light
- Deficiency -redness and inflammation of mouth, gums, tongue, skin, GI tract

Niacin-coenzyme, neurological

- Grains
- Deficiency- pellagra, 4 D's
 - Diaherra
 - Dermatitis
 - Dementia
 - Death
- Nacin for heart disease

Biotin-coenzyme and protects neurological degeneration

- Grains
- Egg yolks-contain protein that bind to biotin and keep them from getting absorbed...would need a lot of egg yolks
- Deficiency
 - Depression
 - Lethargy
 - Red, scaly rash
 - Hair loss

Pantothenic Acid- coenzyme A

- Deficiency is rare

- Widespread in foods

Vitamin B6- RDA 1.3 mg/day- key recommendations underlined in outline

- Coenzyme
- RBC's
- Neurotransmitters
- Found in non-citric fruits and animal products
- Without B6 the production of key neurotransmitters would decrease

Vitamin B12- coenzyme

- Nerve fibers
- Depends on folate for activation
- Milk, grains, many animal products
- Can be destroyed through microwave cooking
- Deficiency-anemia and impaired cognition

Folate- recommendation (400 mcg)

- Coenzyme
- Cell multiplication- main functions
- Depends of B12
- Deficiency- anemia and GI tract deterioration
- Grains, green veggies, oranges
- Lack during early pregnancy can cause birth defects
 - Spinabifida

Antioxidants, Phytochemicals, and Functional Foods

- Free radical
 - Created by metabolic reactions in body
 - Reaction produce unstable molecule
 - Unpaired electron
 - Damage fatty acids, DNA/RNA, proteins
 - Other causes-UV rays, air pollution, tobacco
 - Antioxidant- protect membranes and gets free radicals away
- Main minerals against oxidants
 - Selenium, manganese, and zinc
- Antioxidant Vitamins
 - Vitamin E-defends body lipids
 - Beta carotene-defends lipid membrane
 - Vitamin C-protects other tissues
- Found in fruit and veggies
- Choose fats high in vitamin E

Phytochemicals

- Found in plant derived foods

- Biological activity in body
- Defends against cancer
 - Protect DNA damage
- Soybeans
 - Phytoestrogens
- Tomatoes
 - Lycopene
- Defend against heart disease
 - Flavonoids
 - Protect LDL cholesterol from oxidation
- Lower blood pressure and reduce inflammation

Function Foods

- Foods that have beneficial effect of health
 - Whole
 - Medical
 - Modified
- Ex cranberry juice protect against UTI
- Consumption patterns for beneficial effect

Major Minerals

- Inorganic elements
- Cannot be destroyed
- Do not contain C
- Variable bioavailability
- Found in larger amount in the body calcium and phosphorus found the most

Sodium

- Functions
 - Fluid and acid base balance
 - Nerve transmission and muscle contraction
- Found in extracellular fluid
- 75% from processed foods
- 15% from added salt
- 10% found naturally in food
- AI-1500 mg
- UL-2300 mg
- Sodium deficiency is rare, toxicity is common
- Hypertension and salt sensitivity
 - How easy salt can affect BP

Chloride

- Maintains fluid and electrolyte balance
- Part of hydrochloric acid
- Abundant in foods