Food and Nutrition Lecture

MMHS Anatomy
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_____ = nutritive substances taken in for growth, repair, and maintenance of life processes.

Two Types of Nutrition

Organic = those compounds composed of carbon and hydrogen

- _____ **-Proteins**
- **Vitamins** -_____

Inorganic = those compounds **NOT** composed of carbon and hydrogen

- _____, _____, _____

[Organic Nutrients]

1. **Carbohydrates**
   a. Primary use is to supply energy for _____ processes.
   b. Sources include _____from grains and vegetables, _____ from meats, disachs and monosachs.
   c. _____ converts these to _____ and excess carbs stored as lipids.
   d. Too many carbs = excess _____ (fat tissue), hyperactivity, nervousness, and tooth decay.
   e. Too few carbs = _____may break down proteins to maintain cell processes.
   f. Depending on weight: 125g-175g of _____ required per day.
2. **Lipids**
   a. Primary use is to supply energy for cellular processses and for building structures like _____ membranes and _____ sheath of neurons.
   b. Sources include oil, _____, nuts, _____, and meat.
   c. Lipids broken down into _____ acids and glycerol (=metabolism of fats controlled by the liver)
   d. Provides _____x as much energy as carbs, so no more than 10% should make up your diet.
3. **Proteins**
   a. Primary uses are as energy from amino acids, _____ and repair of cell parts, _____ for chemical reactions, muscle components, and_____ building.
   b. Sources include: _____, legumes (_____), milk, _____.
   c. Digestive _____ break them down into_____ different amino acids.
   d. Protein synthesis cannot occur if even one amino acid is _____from diet.
   e. 0.8 grams_____ per Kilogram of body weight.
      a. 80 kg man x 0.8g = <u>64g of protein / day</u>
   f. Pregnant (+7.1g) or nursing women (+18.9g) require _____daily protein.
4. **Vitamins**
   a. Substances in _____ amounts necessary for cell processes but which the body cells can't _____ in adequate amounts.
      a. *<u>Exceptions</u>: Vitamin D, B6 and Folic Acid.

b. _____, but not an energy source.
c. Necessary to prevent deficiency syndromes:
- Vitamin C deficiency: creates _____ → lose teeth, wounds won't heal, fragile blood vessels.
- Vitamin D deficiency: creates _____ → brittle bone disease.
- Vitamin B deficiency: creates _____ → paralysis of smooth muscle in the GI tract and skeletal muscle.

d. Water _____ Vitamins = include B complex vitamins, C, Folic Acid, Niacin, and Biotin.
   - Water soluble vitamins enter the body _____ in water.
   - _____ and unused vitamins exit the body through _____.

e. Fat Soluble Vitamins = include _____. (Remember adek)
   - Enter the body and are stored in _____ tissues.
   - Can _____ on these (=Hypervitaminosis)

[Inorganic Nutrients] = Compounds _____ composed of carbon and hydrogen.

1. **Water**
   a. No energy but absolutely _____.
   b. Body is 70% water and blood _____ made up of 92% water.
   c. Primary use is for cytoplasm, interstitial spaces, fluid for _____ of food from blood to cytoplasm, and _____ of waste.
   d. Water from _____ regulates body _____.
   e. Water is the great _____ of substances.
   f. Water is temperature _____.
   g. Loss of water from _____ spaces = _____.

2. **Minerals and Electrolytes**
   a. Salt (NaCl) = retains water _____through sweat and _____.
   b. Calcium (Ca)= component of _____, bones, and muscle and _____ action.
   c. Phosphorous (P)= component of _____, teeth and bones, and _____.
   d. Iron (Fe)= needed for _____ formation and part of hemoglobin (gas transport protein).
   e. Potassium (K) = needed for _____ and nerve _____.
   f. Iodine (I) = necessary for proper _____ gland secretion. Poisonous if pure, so must be obtained in a_____ like iodized salt.