

I. Carbohydrates: Sugars, Starches, and Fibers

A. simple carbohydrates are made of either monosaccharides or disaccharides (one or two sugars linked together).

1. glucose
2. fructose
3. lactose

B. complex carbohydrates are polysaccharides (many sugars linked together).

C. polysaccharides are broken down into monosaccharides when digested.

II. Proteins

A. Proteins are polymers of amino acids – large chains of amino acids joined together.

B. When digested, proteins are broken down into amino acids.

C. They control the chemicals that regulate body processes that govern the body's physical structure.

III. Fats, Oils, and Cholesterol

- A. Fats are broken down by the digestive tract into fatty acids, glycerol, and triglycerides.
- B. Triglycerides are a combination of three fatty acids and glycerol.
 - 1. Saturated means there are no double bonds between carbon atoms/there is not much branching of the structure.
 - 2. Unsaturated means there are many double bonds/little branching of structure and therefore easier to break down.
- C. Cholesterol is important in producing hormones, but because it does not dissolve in blood well, it can deposit on the walls of blood vessels.

IV. Caloric Intake and Food

- A. Since calories are a measure of heat/energy, the more calories you intake, the more energy your body has to use.
- B. Since energy cannot be destroyed, unused energy is converted to body fat for later use.
 - 1. every 3500 Calories of excess energy is equivalent to a pound of body fat.

2. Weight loss occurs when the energy expended by a person exceeds what is taken in.

V. Vitamins

- A. Vitamin A – soluble in fat and important for vision, immune defense, and the skin.
- B. Vitamin D – helps calcium be absorbed through the intestines, making it important for bone growth.
- C. Vitamin E – is an antioxidant, which prevents damage to cell membranes.
- D. Vitamin K – needed for synthesizing the proteins needed for blood clotting.
- E. Vitamin C – antioxidant, and is used to produce connective tissue between organs and tissue, also protects against infection.
- F. B complex vitamins – important in metabolism, or the rate your body digests food, producing new cells, and synthesizing protein.

VI. Minerals

- A. Phosphorous – with calcium it is important in teeth and bones, helps metabolize energy.

- B. Sodium – helps regulate the level of body fluids.
- C. Potassium and magnesium – help maintain electrolyte (water soluble salts) levels in and around cells.

VII. Food Additives

- A. Antimicrobial agents are added to prevent the growth and spread of molds/bacteria that could lead to an outbreak of disease.
- B. Antioxidants are compounds used to minimize the reaction of the food with oxygen.
- C. Artificial colors, flavors, and stabilizers are all added to improve the appearance, taste, and texture of food.

Problems: 1, 8, 12, 14, 17, 22, 25, 34, 35