

**Topic/Objectives:** 14-5 Nutrition; (1) List the major sources of carbohydrates, lipids, and proteins and how cells utilize them; (2) identify the functions of vitamins, minerals and trace elements, (3) describe an adequate diet.

**Name:**

**Date:**

**Period:**

**Essential Question:** What is the importance of an adequate diet?

**Questions:**

**Notes:**

\_\_\_\_\_ is the process by which the body takes in and uses nutrients.

- \_\_\_\_\_ are those that cannot be synthesized by human cells
- An \_\_\_\_\_ provides sufficient energy as well as adequate supplies of essential nutrients to support growth, repair, and maintenance of tissues.
- \_\_\_\_\_ is poor nutrition that results either from a lack of essential nutrients or a failure to utilize them; malnutrition may result from under-nutrition or over-nutrition.

\_\_\_\_\_ provide a source of energy in our diet.

Carbohydrates are ingested in a variety of forms: starch (grains), glycogen (meat), and sugars (fruits and vegetables).

- Complex carbs are broken down into \_\_\_\_\_, which the small intestine absorb fructose, galactose, and glucose.
  - Excess glucose is stored as \_\_\_\_\_ in the liver or is converted into fat and stored in adipose tissue.
  - Certain cells (neurons) need continuous supply of glucose; when scarce, \_\_\_\_\_ may be converted to glucose.
- \_\_\_\_\_ is not broken down, but provides bulk (fiber) to assist in movement of food through the intestine.

An estimated intake of \_\_\_\_\_ to \_\_\_\_\_ of carbohydrates is needed daily to avoid protein breakdown.

Lipids are organic substances that supply energy for cellular processes and to build structures, the most common being are \_\_\_\_\_.

Lipids – including fats, phospholipids and cholesterol – are found in both plant and animal-based foods.

Lipid Utilization

- Triglycerides are broken down into \_\_\_\_\_ and \_\_\_\_\_ during digestion.
- The liver can convert fatty acids from one form to another, but it cannot synthesize the \_\_\_\_\_ that must be obtained from the diet.
- The \_\_\_\_\_ controls circulating lipids and cholesterol.
- Excessive lipids are stored in \_\_\_\_\_ tissue.

A typical diet consisting of a variety of foods usually provides adequate fats.

Proteins are polymers of \_\_\_\_\_ with a wide variety of functions in cells and in the body (enzymes, hormones, antibodies, clotting factors, and so forth).

- Amino acids are also potential sources of \_\_\_\_\_.

