Digestive System
Nutrition-Related Diseases

5.1
The Digestive System

- **Digestion** is the process of breaking down food into its simplest parts so that it can be absorbed:
  - Digestion begins in the mouth.
  - The teeth grind food into smaller pieces and mix it with saliva.
  - After you swallow food, the stomach breaks it down with the aid of enzymes and acids, turning it into a fluid called **chyme**.
  - The chyme moves to the small intestine, where the majority of digestion and absorption of nutrients occurs.
  - As the digestive system sends the nutrients to parts of the body to be used, the wastes of digestion are sent to the large intestine.
  - The large intestine absorbs water and stores feces for elimination through the colon and anus.
Food Additives

A **food additive** is a chemical substance or combination of substances present in food as a result of processing, production, or packaging.

- Many additives occur naturally or are extracted from food. Others are synthetic but chemically identical to natural substances.
- All food additives are carefully regulated by the Food and Drug Administration.
- Additives help keep food wholesome and appealing during transport to markets.
- Without additives, many food items would be less attractive, less flavorful, less nutritious, more likely to spoil, and more costly.
Dietary Reference Intakes (DRIs) are recommended daily nutrient and energy intake amounts for healthy people of a particular age range and gender.

Recommended Dietary Allowances are daily nutrient standards established by the U.S. government.

Adequate intakes are similar to RDAs. They also identify daily intake levels for healthy people.

A vegetarian is a person who consumes no meat, fish, or poultry products:
- Lacto-vegetarians consume vegetarian items plus dairy products
- Lacto-ovo-vegetarians consume vegetarian items plus dairy products and eggs.
- A vegan follows the strictest diet of all and will consume no dairy, eggs, meat, poultry, fish, or anything containing an animal product or byproduct.
The Dietary Guidelines for Americans 2005 offers science-based advice about food choices to promote health and reduce risk for major chronic diseases:

- Malnutrition is a condition that occurs when a body does not get enough nutrients.
- A person who is overweight or obese has a weight that is greater than what is generally considered healthy.
- Osteoporosis is a condition in which the bones gradually lose their minerals and become weak and fragile.
- Iron-deficiency anemia is a lack of iron in a person’s blood.
- Cardiovascular diseases affect the heart and blood vessels.
- Diabetes mellitus is a condition in which the body cannot regulate blood sugar properly.
- To reduce the risk of cancer, eat a diet rich in fruits and vegetables, limit red meat, and exercise.
Nutrition is the study of nutrients in food and how they nourish the body.

The six basic nutrients found in food are carbohydrates, proteins, lipids, vitamins, minerals, and water.

Food additives improve flavor, color, and texture; retain nutritional value; prevent spoilage; and extend shelf life.

Digestion breaks down food into its simplest parts.

A healthy diet emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products. It includes lean meats, poultry, fish, beans, eggs, and nuts. It is low in saturated fats, trans fats, cholesterol, salt, and added sugars.

Malnutrition is the condition that occurs when your body does not get enough nutrients.
**Nutrition-Related Diseases Project**

- **Nutrition-Related Diseases**
  - In order to educate our class on the different diseases/illnesses affected by food, you will create a media-based presentation that describes nutrition-related illness or disease
  - Individually or in partners

- **Possible Diseases/Illnesses:**
  - Diabetes
  - Heart disease
  - Obesity
  - Osteoporosis
  - Kidney disease
  - Celiac disease
  - Cancer
  - Other disease as approved by your instructor