Nutrients – substances in food that your body needs to function properly to grow, to repair itself, and to supply you with energy.
Hunger – natural drive that protects you from starvation.
Appetite – a desire, rather than a need, to eat.
Nutrition – the process by which the body takes in and uses food.

- 1. Explain the difference between hunger and appetite.
- 2. What factors influence decisions that affect food choices?
- 3. Why is good nutrition so important during adolescence?
- 4. Give 3 examples of how your culture and family have influenced your eating habits?
MACRO-NUTRIENTS: CARBOHYDRATES, PROTEINS, AND FATS

Section 5.2
**VOCABULARY WORDS**

- **Carbohydrates** – starches and sugars found in foods.
- **Glucose** – a simple sugar and the body’s chief fuel.
- **Glycogen** – starch-like substance.
- **Proteins** – nutrients that help build and maintain body tissues.
- **Amino acids** – substances that make up body proteins.
- **Lipid** – fatty substance that does not dissolve in water.
- **Linoleic acid** – essential fatty acid not made in the body but which is essential for growth and healthy skin.
- **Cholesterol** – fatlike substance produced in the liver of all animals and, therefore, found only in foods of animal origin.
CARBOHYDRATES

- Made of carbon, oxygen, and hydrogen.

- **Carbohydrates** are the starches and sugars found in foods.
- The body’s preferred source of energy, providing four calories per gram.
- Health experts recommend that 55 to 65% of your daily calories come from carbohydrates, mainly complex carbohydrates.
- Examples: potatoes, pasta, grains, and bread.
- Complex Carbohydrates (aka starches)
  - Found in great supply in foods such as rice, grains, seeds, nuts, legumes (beans), and tubers (potatoes).
  - Formed by many sugars linked together.
  - During digestion, starches break down into sugars (slow).

- Simple Carbohydrates (aka sugars)
  - Present naturally in fruits (fructose), some vegetables, and milk (lactose).
  - Sugars are also added to many manufactured foods, such as candy, cookies, soft drinks, and other sweets.
  - Food manufacturers have also begun adding corn syrup (“high fructose corn syrup”) to soups, salad dressings, breads, and other foods you may not characterize as being sweet.
  - Digested quickly!

https://www.youtube.com/watch?v=6esFOqj_IaY
Before your body can use carbohydrates it must convert them to **glucose** (simple sugar and body’s chief fuel).

Glucose that is not used immediately is stored in the liver and muscles as **glycogen** (starch-like substance).

When the body needs more glucose, the stored glycogen is converted back to glucose and used.

When people consume more carbohydrates than their body needs for energy or can store as glycogen, the excess is stored as adipose, or body fat.
FIBER

- Special form of complex carbohydrate found in tough, stringy part of vegetables, fruits, and grains (particularly whole-grains).
- Cannot be digested. Cannot be used as energy.
- It helps waste move through your digestive system efficiently.
- Enough fiber helps prevent constipation, appendicitis, some cancers, heart disease, and lowers cholesterol.
- Losing weight: fiber rich foods are bulky and offer a feeling of fullness, lower in calories, and take longer to chew (slowing pace of meal).
- Recommended you eat 25g of fiber/day.

https://www.youtube.com/watch?v=k3ZUGxwyGfE
http://www.hulu.com/watch/10304
PROTEINS

- Vital part of every body cell, proteins are nutrients that help build and maintain body tissues.
- Muscle, bone, connective tissue, teeth, skin, blood, and vital organs all contain protein.
- 4 calories per gram.
- Excess protein calories are converted to fat.
- The building blocks of protein are amino acids (substances that make up body proteins).
- 20 amino acids (9 essential; 11 non-essential).
  - Essential – must come from diet (histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine).
  - Non-essential – your body can make these.
Complete vs Incomplete Proteins

- Complete proteins
  - Contain all the essential amino acids the body needs and in the proper amounts.
  - Fish, meat, poultry, eggs, milk, cheese, yogurt, and many soybean products.

- Incomplete Proteins
  - Lack some of the essential amino acids.
  - Legumes (beans), nuts, whole grains, and seeds.
  - Eating various incomplete protein sources yields the equivalent of a complete protein.
**ROLE OF PROTEINS**

- During every stage of life (infancy to death), amino acids build new body tissues. New proteins form constantly to replace damaged or worn-out body cells.

- Proteins in enzymes, hormones, and antibodies help regulate many bodily processes.
  - Enzymes – control the rate of thousands of biochemical reactions in cells.
  - Hormones – regulate reactions.
  - Antibodies – help identify and destroy bacteria and viruses that cause disease within the body.
FATS

- “Now with less fat” “Reduced fat” “low fat” “no fat”
- Consuming too much fat is unhealthful, the fact is you need some fat.
- Fat represents the most concentrated form of energy available.
  - At 9 calories per gram, fats deliver more than twice the energy of carbs or protein.
- Chemically, fats are a lipid (fatty substance that does not dissolve in water).
Saturated Fats (bad)
- Animal fats (beef, pork), palm oil, coconut oil, egg yolks, and dairy foods.
- High intake is associated with increased risk of heart disease.

Unsaturated Fats (good)
- Olive, canola, soybean, corn, and cottonseed oils.
- Avocados, fish, and nuts.
- Associated with reduced risk of heart disease.
- Avoid “partially hydrogenated oils.”
ROLE OF FATS

- Fats carry vitamins A, D, E, and K into your blood and serve as sources of linoleic acid (essential fatty acid not made in the body but which is essential for growth and healthy skin).
- Add flavor to foods
- Help satisfy hunger since they take longer to digest.
- Recommendations are less than 30% daily total calories come from fat.
Fatlike substance produced in the liver of all animals and, therefore, found only in foods of animal origin – meats, poultry, fish, eggs, and dairy products.

Cholesterol is instrumental in the production of sex hormones, vitamin D, and the protective sheath around nerve fibers.

Elevated cholesterol levels constitute a major risk factor for heart disease. Consumption of dietary fat, especially saturated fat, tends to raise cholesterol levels. Limiting these fats may reduce the risk.
American eat their own weight in sugar every single year.

Term protein comes from a Greek word meaning “of prime importance.” The name is fitting because without protein, life would not exist.

Professional bodybuilders consume more than 1 gram of protein per pound of body weight.

The average American is eating 300 more calories each day than he or she did in 1985. Added sweeteners account for 23 percent of those additional calories; added fats, 24 percent.

In real dollars, the price of fresh fruits and vegetables has risen nearly 40 percent since 1985. In real dollars, the price of soft drinks has dropped 23 percent. The reason unhealthy foods tend to be less expensive on average than foods such as fresh fruits and vegetables has much to do with American farm policy.
Homework

- Vocabulary words/health terms (page 101)
- Page 106: 1-5