Florida Nutrition Training Guide

Basic Nutrition Module

Florida Department of Health
Bureau of WIC and Nutrition Services
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FLORIDA DEPARTMENT OF HEALTH

FLORIDA WIC
Good Nutrition for Women, Infants & Children

Basic Nutrition Module

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Introduction

The **Basic Nutrition Module** consists of the following 3 components:

1. the module itself
2. the workbook, to be completed by the staff member
3. the evaluation materials for the supervising nutritionist

Instructions

1. Read the **Knowledge Objectives** and **Performance Objectives** on pages 5-6.

2. Follow along with this presentation.

3. Stop and complete the **Self-Checks** as they appear and immediately correct any mistakes.

Instructions

4. Complete the **Practical Activity** found in your **Workbook.**

5. Arrange for a convenient time to take the **Posttest.**

Glossary

Review the **Glossary** (pages 7-10) and become familiar with *all* of the terms.

Example:

Absorption: After digestion of food, nutrients are taken into the intestinal cells so the nutrients can be used by the body.

Pages 7-10 in Module

Part 1: The Basics of Nutrition

Page 11 in Module

Factors Influencing Food Choices

- Tastes good
- Familiar, convenient, available, or affordable
- Culture
- Family background
- Religion
- Ethical reasons
- Moral beliefs
- Life experiences

Page 11 in Module

Factors Influencing Food Choices

- Income level
- Nutrition/health reasons
- Knowledge/beliefs about nutrition/health
- Advertising/marketing issues
- Foods provided by government or other assistance programs
- Availability of cooking equipment; ability to purchase, store, and prepare food

Page 11 in Module

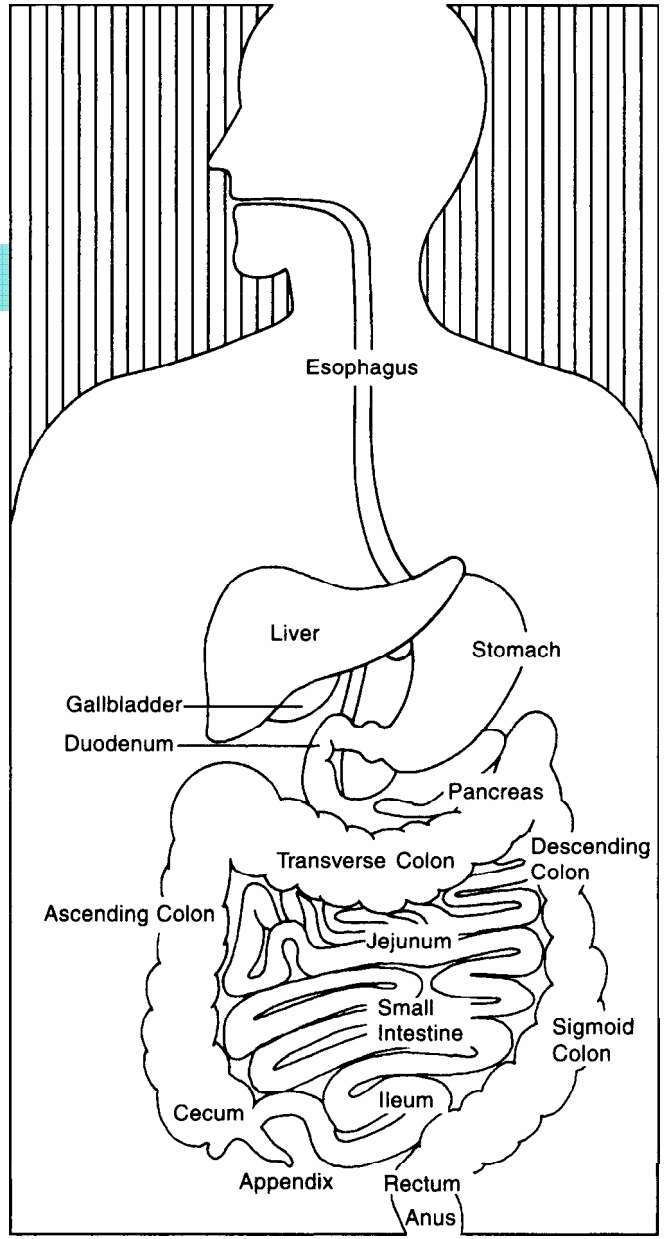
Nutrition in Health Promotion

- **Nutrition** is the study of food that a person eats and the way the body uses that food.
- Helping people practice healthy eating habits goes beyond telling them information about nutrition; it includes:
  1. "Translating" this knowledge into practice.
  2. Consideration of the person's physical conditions, environment, lifestyle, heredity, and mental conditions.

Page 11 in Module

The Digestive System

The digestive system is a series of hollow organs joined in a long, twisting tube from the mouth to the anus as shown in the figure.



Pages 12-13 in Module

Definition of Digestion

Digestion is the process by which food and drink are broken down into their smallest parts so the body can use them to build and nourish cells and provide energy.

Peristalsis and the Esophagus

- **Peristalsis** is the movement of the organ walls that propel food and liquid and mix the contents within each organ.

- The **esophagus** is the organ into which the swallowed food is pushed (it connects the throat with the stomach).

Three Tasks of the Stomach

1. Store the swallowed food and liquid.

2. Mix the food, liquid, and digestive juices.

3. Empty the stomach contents into the **small intestine.**

Small and Large Intestines

- In the **small intestine**, the food is dissolved by juices from the pancreas, liver, and intestine.
- The contents are mixed and pushed forward and absorbed through the intestinal walls.
- The waste products are propelled into the **colon** or **large intestine**.

Pages 14-15 in Module

Glands that Produce Digestive Juices

- **Salivary glands:** in the mouth
- **Stomach lining:** stomach acid and enzymes to digest protein
- **Pancreas:** enzymes to break down carbohydrates, fats, and protein
- **Liver:** bile is stored in the liver

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Absorption and Transport of Nutrients

- Digested molecules of food, water, and minerals are absorbed from the upper small intestine.
- Most absorbed materials cross the mucosa into the blood and are carried off into the bloodstream to other parts of the body for storage or further chemical change.

Page 15-17 in Module

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 1-6.**

- **Check** your answers against the **Answer Key** in your **Workbook.**

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Nutrients

Nutrients are substances present in food. Nutrients in food are necessary to maintain and repair body tissues. There are 6 major categories of nutrients:

1. Water
2. Protein
3. Carbohydrates
4. Fats
5. Vitamins
6. Minerals

Page 18 in Module

Nutrients

- Each nutrient performs one or more specific functions in the body.
- Most healthy people can get enough of the required nutrients from eating a variety of foods. However, under some conditions it is necessary to take vitamin and mineral supplements.

Dietary Reference Intakes (DRIs)

- The Institute of Medicine of the National Academy of Sciences develops reference values for the intake of nutrients by Americans.
- DRIs can be used for planning and assessing diets for healthy populations.
- The DRIs include the Recommended Dietary Allowances (RDAs) and Adequate Intake (AI).
- See page 19 of the module for definitions of these terms.

Page 19 in Module

Energy/Calories

- When food is eaten it gives the body energy. The body “burns” foods much like gasoline is burned in a car engine.
- The unit used to measure the energy in food is a **kilocalorie.** We will use the word “calorie” to mean the same thing.
- 1 kilocalorie is the amount of heat energy needed to raise the temperature of a kilogram (a liter) of water 1 degree Celsius.
- **Grams** are a measure of weight. 1 gram is about the weight of 1 paper clip.

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Energy/Calories

1 gram of protein = 4 calories

1 gram of carbohydrate = 4 calories

1 gram of fat = 9 calories

1 gram of alcohol = 7 calories

- **Proteins, carbohydrates, and fats** are the only nutrients that provide energy to the body.
- **Alcohol** is not considered a nutrient, even though it contributes calories that can be used for energy or stored as fat.

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Empty Calorie Foods

- **Empty calorie foods** are foods that are **high** in calories and **low** in nutrients.

  Examples include: sodas/soft drinks, candy, honey, sugar, syrup, butter, margarine, oil, cream cheese, mayonnaise, chips, doughnuts, sweet rolls, pastries, pies, etc.

Water

- **Water** is the most abundant nutrient in the body, making up about 60% of an adult's weight.
- Water is the main component of body fluids, and is contained in every cell in the body.
- Without water to consume, a person can survive only a few days.

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Functions of Water

- Life supporting functions such as breathing, digestion, circulation
- Lubricates cells and organs and acts as a cushion for joints
- Cleansing agent
- Helps regulate body temperature
- Transports nutrients and oxygen to the cells

Page 21 in Module

Recommended Amount of Water Intake

- The majority of healthy people adequately meet their daily water needs by letting thirst be their guide.
- Adequate Intake (AI) for Water for persons of different life stage groups are shown in Figure 2, Page 22 of the module.
- Those who are physically active or who live in hot climates may need to consume more water.

Page 22 in Module

Recommended Amount of Water Intake

- **All dietary sources** can contribute to total water needs such as beverages (even caffeinated beverages) and moisture found in food.
- Moisture in food accounts for about 20% of total water intake.
- You only need to drink 80% of the AI for water for your life stage group.

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Dehydration

- **Dehydration** is the condition in which water is lost by the body and not replaced. Severe dehydration is dangerous—the symptoms can progress rapidly from exhaustion to delirium and end in death.
- People who work or play outdoors in hot weather or those who don't have air conditioning in their homes need to be extremely careful and drink plenty of fluids.

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☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 7-15.**

- **Check** your answers against the **Answer Key** in your **Workbook.**

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Protein

- Protein is the second most abundant substance in the body.

- Each type of cell in every animal and plant contains its own particular type of protein.

Functions of Protein

- Builds, maintains, and repairs body cells.
- Important part of red and white blood cells.
- Aids in the clotting of blood.
- Enzymes (protein-containing substances) start chemical reactions in the body.
- Antibodies are proteins produced by the body to fight infections.
- Hormones (many are made of proteins) serve as messengers.
- Serves as a source of energy.

Pages 24 in Module

Amino Acids

- Proteins are made up of **amino acids**, the building blocks of all proteins.

- The human body needs 20 amino acids; but can make only 11; the other 9 come from food and are called **essential amino acids**.

Animal Proteins

Animal proteins contain all of the essential amino acids in amounts the body can easily use. The sources of animal protein are:

beef, veal

pork, ham

lamb, goat

fish, shellfish

poultry (chicken and turkey)

milk, cheese, and yogurt

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Plant Proteins

- **Plant proteins** contain all the essential amino acids, but generally have one or more of the essential amino acids in limited amounts.
- The **soybean** is a plant protein that provides a high quality protein with a balance of amino acid patterns similar to animal products.

Page 25 in Module

Sources of Plant Proteins

- **Legumes** such as dry beans, soybeans, peas, lentils, peanuts, and peanut butter
- **Grains** such as wheat, oats, rice, corn, barley
- **Cereal, pasta, and bread** products
- **Seeds** such as pumpkin, sesame, sunflower
- **Nuts** such as almonds, cashews, pecans, walnuts

Pages 25-26 in Module

Complementary Proteins

Complementary proteins are two foods which each supply the amino acids which are in limited amounts in the other. Sources include:

Black beans & rice

Pinto beans & corn tortillas

Peanut butter & bread

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Protein Needs of Athletes

- Adequate protein is needed for building and protecting muscles.
- Growing teenage athletes may need somewhat more protein than the sedentary person of the same height and weight.
- Consuming **extra** protein (above what your body needs) either as animal protein, protein drinks, or protein supplements will not build extra muscles and may be dangerous.

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☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 16-18.**

- **Check** your answers against the **Answer Key** in your **Workbook.**

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Carbohydrates

- **Carbohydrates** are an energy nutrient and supply a major source of energy in the American diet.

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Functions of Carbohydrates

- Ideal energy source.
- Body uses carbohydrates **first** for its energy needs.
- Brain and other tissues of central nervous system can only use **glucose** for their energy source; glucose primarily comes from carbohydrates.
- Health care providers/nutritionists **strongly discourage** a “low carbohydrate diet” because of these important functions of carbohydrates.

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Types of Carbohydrates

Two major types of carbohydrates are:

- Sugars
- Complex carbohydrates (starch & fiber)

Carbohydrates are stored in the body in the form of **glycogen.**

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Categories of Sugars

Simple sugars

- glucose
- fructose
- galactose

Double sugars

- *sucrose* (fructose + glucose or table sugar)
- *lactose* (galactose + glucose or milk sugar)
- *maltose* (glucose + glucose or malt sugar)

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Natural Sugars

Naturally occurring sugar is found in:

Fruits - such as apples, oranges, peaches, pears, pineapples, grapes, strawberries, melon, and bananas

Vegetables - such as peas, corn, and tomatoes

Concentrated sugars include:

table sugar	fruit juice concentrate
brown sugar	molasses
corn syrup	honey

Concentrated sugars contain few, if any vitamins & minerals.

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Complex Carbohydrates

- **Complex carbohydrates** include *starch and fiber.*
- **Starch** is a number of glucose units linked together, that is more complex than that of sugars.

  Whole grains (wheat, rice, corn, and oats) are the richest sources of starch and fiber. Other sources include legumes (dry beans, peas, lentils) and starchy vegetables (potatoes, green peas).

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Dietary Fiber

- **Fiber** cannot be broken down by human digestive enzymes and is not absorbed by the body; fiber acts like a sponge, absorbing water as it travels through the digestive tract; this adds bulk to the stool, which forces the colon to work harder to push the stool through.
- Extra bulk may help reduce some diseases such as: colon and rectal cancer, diverticulosis, diseases of the heart and arteries by lowering blood cholesterol.

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Kinds of Fiber

Type	Function	Source
Soluble	**May lower cholesterol. Promotes fullness.**	**Fruits (apples & citrus) Vegetables Oatmeal**
	fullness.	
Insoluble	**Provides bulk .**	**Whole grains**
	Absorbs water. Softens stool.	**Dry beans & peas Fruits and vegetables**
	Promotes fullness.	

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Recommendations for Fiber

- For adults and children ages 1 year and older:

  14 grams of fiber per day for every 1,000 calories per day that are consumed.

  Therefore, an individual consuming 2,000 calories per day should consume 28 grams of fiber per day.

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☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 19-28**.

- Check your answers against the **Answer Key** in your **Workbook**.

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Fat

- **Fat** is an important and essential component of the diet. It is the most concentrated source of energy in the diet.

Functions of Fat

- Main source of stored energy for the body.
- An important component of the membranes surrounding all of the body's cells.
- Protects organs such as the heart, kidneys, and liver from shock.
- Provides insulation for temperature changes.
- Needed to transport nutrients.
- Adds flavor and aroma to foods.
- Helps us to feel full, or the sense of "satiety."
- Converted to hormones as needed.

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Types of Fatty Acids

- **Saturated fats** tend to raise blood cholesterol; foods include high-fat dairy products like cheese, whole milk, cream, butter, and ice cream.
- **Unsaturated fats** do not raise blood cholesterol; found in vegetable oils, most nuts, olives, avocados, and fatty fish like salmon.

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Types of Fatty Acids

- **Trans fatty acids** tend to raise blood cholesterol; these fats are found in partially hydrogenated vegetable oils, such as hard margarines and shortenings.

- **Dietary cholesterol** tends to raise blood cholesterol; found in animal products such as meats, poultry, dairy products, seafood, liver, other organ meats, and egg yolks.

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Fat Matters, But Calories Count

A calorie is a calorie, whether it comes from fat or carbohydrate. Because a product is “fat free” or “low in fat” does not mean that it is “calorie free.”

- **Reduced fat peanut butter**

  2 tablespoons = 187 calories

  Regular peanut butter
  2 tablespoons = 191 calories
- **Low fat blueberry muffin = 131 calories**

  Regular blueberry muffin = 138 calories

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☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 29-33**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Overview of Vitamins and Minerals

- **Vitamins and minerals are micronutrients**, so the body only needs them in small amounts.
- Vitamins and minerals *do not* provide calories.
- Vitamins and minerals are widely distributed in foods.
- The best way to get enough vitamins and minerals is to eat a wide variety of foods.

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Vitamin & Mineral Supplements

- A balanced and varied diet provides all the vitamins and minerals most people need.
- Those with extra nutrient needs may need supplements, for example:
  1. Women who could become pregnant are advised to eat foods fortified with folic acid or take a folic acid supplement.
  2. Pregnant women are prescribed a multivitamin/mineral supplement high in iron and folic acid.

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Vitamin & Mineral Supplements

3. Older adults; people with little exposure to sunlight; infants/children/teens who do not drink at least 16 fluid oz milk (or formula) per day may need vitamin D supplement.

4. People who seldom eat dairy products or other rich sources of calcium need calcium supplements.

5. Individuals who eat no animal foods need to take a vitamin B_{12} supplement.

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Vitamin & Mineral Supplements

- It is safe to take a supplement that provides no more than **100 percent** of the recommended levels like a daily vitamin/mineral supplement.

- Taking excessive amounts of nutrients without medical supervision is **dangerous**.

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Vitamins

- There are **13 vitamins** that are known to be needed by humans. They fall into 2 groups:

  Water-soluble vitamins: vitamin C and the B-vitamins, thiamin, riboflavin, vitamin B_6 ,vitamin B_{12}, niacin, biotin, folic acid, and panotothenic acid.

  Fat-soluble vitamins: A, D, E, and K.

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Vitamins

Water-soluble	Food source	Major functions
Vitamin C	**citrus fruits and juices**	**Increases resistance to infections; necessary for collagen formation; helps heal wounds; develops healthy gums and teeth; strengthens blood vessels**

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Vitamins

Water-soluble	Food source	Major functions
Riboflavin (B_2)	**milk, yogurt, cottage cheese, eggs, liver, enriched cereals, and breads**	**aids in utilization of energy; promotes healthy skin, eyes and clear vision**

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Vitamins

Water-soluble	Food source	Major functions
Niacin	**liver, meat, poultry, fish, whole grains, fortified cereal products, eggs**	**aids in utilization of energy, promotes healthy skin, nerves, and digestive tract, fosters normal appetite**

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Vitamins

Water-soluble	Food source	Major functions
Vitamin B_6	**liver, meats, fish, eggs, whole grains, green leafy vegetables bananas**	**necessary for metabolism of amino acids; helps form hemoglobin**

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Vitamins

Water-soluble	Food source	Major functions
Vitamin B_{12}	**animal protein foods (meats, fish, poultry, eggs, milk, and milk products)**	**necessary for development of healthy red and white blood cells; maintains healthy nervous system**

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Vitamins

Fat-soluble	Food source	Major Functions
Vitamin A	**liver, carrots, sweet potatoes, winter squash, pumpkin apricots, mango, plantain, cantaloupe, dark green leafy vegetables, broccoli, tangerine, tomatoes**	**promotes healthy eye tissues & adaptation to dim light, maintains healthy external skin and mucous membranes**

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Vitamins

Water-soluble	Food source	Major functions
Thiamin (B_1)	**whole grain cereals, enriched breads and cereals, lean pork, nuts**	**aids in utilization of energy, promotes normal appetite**

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Vitamins

Water-soluble	Food source	Major functions
Riboflavin (B_2)	**milk, yogurt, cottage cheese, liver, enriched breads and cereals**	**aids in utilization of energy, promotes healthy skin, eyes, and vision**

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Vitamins

Water-soluble	Food source	Major functions
Niacin	**liver, meat, fish poultry, whole grains, fortified cereal products, eggs**	**aids in utilization of energy; promotes healthy skin, nerves, and digestion; fosters normal appetite**

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Vitamins

Water-soluble	Food sources	Major functions
Vitamin B_6	**liver, meats, fish, eggs, whole grains, green leafy vegetables, bananas**	**necessary for metabolism of amino acids; helps form hemoglobin**

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Vitamins

Water-soluble	Food sources	Major functions
Vitamin B_{12}	**animal proteins (meats, fish, eggs, milk and milk products)**	**necessary for development of healthy red and white blood cells, maintains healthy skin; proper fetal brain and spinal cord development**

Page 42 in Module

Vitamins

Water-soluble	Food sources	Major functions
Folic acid *(folate)*	**green leafy vegetables, liver, dry beans and peas lentils, nuts, seeds, bread, flours, pasta, corn meal, rice, wheat germ, citrus fruits and citrus juices**	**Necessary for the development of healthy red & white blood cells; maintains healthy skin; proper fetal brain and spinal cord development**

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Vitamins

Fat-soluble	Food source	Major functions
Vitamin A	liver, carrots, sweet potatoes, winter squash, pumpkin apricots, mango, plantain, cantaloupe, dark green leafy vegetables, broccoli, tangerine, mandarin oranges, papaya, red peppers, tomatoes, milk, eggs, and cheese	promotes healthy eye tissues & adaptation to dim light; and maintains healthy external skin and mucous membranes of nose, mouth, and intestinal tract

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Vitamins

Fat-soluble	Food source	Major functions
Vitamin D	**fortified milk, fish oils, liver**	**helps maintain proper levels of calcium and phosphorus in the blood for healthy bones**

Note: The skin produces vitamin D when exposed to sunlight.

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Vitamins

Fat-soluble	Food source	Major functions
Vitamin E	**Whole grains, vegetable oils, liver, nuts**	**Helps preserve body cells**

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Vitamins

Fat-soluble	Food source	Major functions
Vitamin K	**pork, liver, dark green leafy vegetables**	**needed for normal blood clotting**

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Vitamin A

- Vitamin A is needed by the body to resist infection and keep the eyes, skin, and internal organs moist. Vitamin A helps people see in dim light. It is needed for proper bone growth, tooth development, and reproduction.

- Intakes of excess vitamin A supplements have been found to cause birth defects.

Forms of Vitamin A

- **Retinol**—is found in animal products and is the form the body uses to store and use vitamin A.

- **Carotenoids**—such as beta-carotene, exist in some fruits and vegetables. The body converts the carotenoids to retinol.

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Vitamin C

- **Vitamin C is also called ascorbic acid or ascorbate.** Vitamin C produces and maintains collagen; it helps heal wounds, gives structure to blood vessels, and helps mend broken bones.

- A severe vitamin C deficiency causes a disease known as **scurvy.** Symptoms of vitamin C deficiency include: slow wound healing, poor appetite, slow growth, loose teeth, bleeding gums, bruises, and swollen, painful joints.

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Vitamin C

Groups of people at risk for vitamin C deficiency include:

- Infants who drink fresh cow's milk, evaporated milk, or milk beverages. (Infants who are breastfed or who receive infant formula are not at risk.)
- Groups with poor eating habits.
- People who smoke.
- People who drink large amounts of alcohol.

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Tips for including Vitamin C in the Diet

- When washing fresh produce, avoid soaking for a long time.
- Steam vegetables or cook them in a small amount of water for a short time.
- Cook potatoes in their skins.
- Cover and refrigerate juices.
- When choosing fresh produce, choose items that *look* fresh and are not wilted.

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Folic Acid

- Folic acid is also called **folate or folacin**.
- The body uses folic acid to make new cells, including red blood cells. It is needed for protein synthesis and growth.
- Folic acid is especially important for women to help prevent **neural tube defects (NTDs).**

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Too Little Folic Acid

- Interferes with normal cell division
- Protein synthesis
- Growth
- May lead to **megaloblastic anemia**—a type of anemia where blood cells are malformed and cannot carry enough oxygen.

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Too Much Folic Acid

- Folic acid is a water-soluble vitamin, so the body excretes excess amounts.
- Megadoses of folic acid could interfere with medication and could also mask a vitamin B_{12} deficiency.
- Women of child-bearing age should consume a daily vitamin supplement that contains 400 micrograms of folic acid, in addition to the folic acid in foods consumed.

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☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 34-46**.

- Check your answers against the **Answer Key** in your **Workbook**.

Minerals

Major Minerals:

calcium

chloride

magnesium

phosphorus

potassium

sodium

sulfur

Trace Minerals

Iron	Manganese
Zinc	Fluoride
Iodine	Chromium
Selenium	Molybdenum
Copper	Cobalt

Functions of Minerals

- Help maintain proper chemical balance for the functioning of the respiratory, circulatory, digestive, and nervous systems.

- Help keep the right amount of fluid between each body cell and within each cell in the body.

Functions of Minerals

- **Sodium** plays a role in water balance and muscle action.
- **Zinc** is involved in the transfer of carbon dioxide, taste process, and protein synthesis.
- **Iron** plays a role in the formation of healthy red blood cells.
- **Iodine** is part of the hormone **thyroxin**, which is important in energy metabolism.

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Functions of Minerals

- In iodine deficiency, the thyroid gland enlarges and creates a condition known as **goiter**. In pregnant women, severe iodine deficiency causes **cretinism** which is extreme and irreversible mental and physical retardation of the infant.

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Calcium

- **Calcium** is a mineral important for the formation and maintenance of bones.

- Maintaining a steady supply of calcium in the bloodstream is important for forming teeth, blood clotting, muscle contraction and relaxation, heart action, and nerve transmission.

Recommended Intakes of Calcium

Life Stage Group	Adequate Intake (AI) milligrams (mg)/day
1-3 years	**500 mg**
4-8 years	**800 mg**
9-18 years	**1,300 mg**
19-50 years	**1,000 mg**
Over 50 years	**1,200 mg**
Pregnant & lactating (≤ 18 yrs)	**1,300 mg**
Pregnant & lactating (≥ 19+ yrs)	**1,000 mg**

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Calcium

- After age 19 or so, the bones stop growing, but bone mass still continues to be built throughout the twenties.
- After age 30 or 35, the bones start to lose more calcium than they gain, a natural part of the aging process.
- After menopause, bone loss seems to speed up due to hormonal changes.

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Osteoporosis

- Occurs when the bones actually become porous or full of holes
- **Osteo** means bones
- **Porosis** means porous

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Osteoporosis

Risk factors for developing osteoporosis include:

- Being a woman
- Advanced age
- Early menopause
- Family history of osteoporosis
- Being Caucasian or Asian race
- Having a thin and/or small frame
- Cigarette smoking
- Excessive use of alcohol
- Sedentary lifestyle
- Anorexia nervosa or bulimia
- Low intake of calcium and vitamin D
- Use of certain medications such as corticosteroids and anticonvulsants

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Sources of Calcium

- Milk and milk products such as cheese, yogurt, and pudding are the richest sources.

- Fair sources include dark green leafy vegetables, dry beans, canned sardines (with bones), canned salmon (with bones).

Not Getting Enough Calcium

Those groups of people in danger of not getting enough calcium include:

- Women and girls (age 10 years and older): They are concerned with getting too much fat and too many calories so they avoid many foods including dairy products.
- Vegans who do not consume any dairy products.
- Persons with lactose intolerance.
- Don’t forget vitamin D—The body needs this vitamin to make calcium available to the bloodstream.

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Fluoride

Fluoride is a mineral found naturally at varying concentrations in all drinking water, as well as in soil. It is important for preventing and controlling dental caries by:

- Inhibiting the demineralization of sound enamel;
- Enhancing the re-mineralization of demineralized enamel; and
- Affecting the metabolism of cariogenic bacteria (bacteria that can cause tooth decay).

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Fluoride

- The use of fluoride supplements may be recommended for children in non-fluoridated areas.
- Fluoride supplements should not be given to children when the water supply is optimally fluoridated. Too much fluoride can cause fluorosis.

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Iron

- **Iron** is a trace mineral that the body needs for normal growth, to prevent infections, and to promote learning.
- Iron's main job is to help form **hemoglobin,** a protein in red blood cells.
- Hemoglobin travels to all of the body's cells, taking oxygen to the tissues for energy production.

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Iron

- **Iron deficiency anemia** is the condition created if there is not enough oxygen going to the body's cells, so they can't produce as much energy and the person feels tired, weak, and irritable.

- This deficiency is a widespread health problem for growing children and women due to poor food intake, rapid growth, major blood loss, menstruation, or a combination of these factors.

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Iron

- Young children who drink too much milk and do not eat enough foods high in iron are at risk for developing iron-deficiency anemia.

- Some people have low-iron blood because they eat too many foods high in sugar and fat.

Iron Sources

- **Heme iron**—most of the iron found in ***animal sources*** is heme iron; beef, pork, poultry, and fish.

- **Non-heme iron**—is iron found in ***plant sources****;* dry beans, tofu, blackstrap molasses, baked potatoes with the skin, dried fruit, and fortified cereals.

Iron Absorption

To increase iron absorption:

- Include vitamin C-rich foods when planning meals.
- Avoid drinking tea and coffee with meals, including decaffeinated coffee and tea.
- Cook foods in iron pots or skillets.
- Include meat in the diet.

☑ Self Check

- **Go to** the **Workbook** and complete **Self-Check Questions 47-60**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Part 2: Dietary Guidelines

Chapter 1. Background and Purpose of the Dietary Guidelines for Americans

- Provides science-based advice to promote health and to reduce risk for chronic diseases through diet and physical activity.
- Recommendations are for general public over 2 years of age who are living in the United States.

Chapter 1. Background and Purpose of Dietary Guidelines for Americans

- Some specific diseases linked to poor diet and physical inactivity include:

  Cardiovascular Disease
  Hypertension
  Certain Cancers
  Type 2 Diabetes
  Osteoporosis

- Poor diet and physical inactivity, resulting in energy imbalance are the most important factors contributing to the increase in overweight and obesity in the United States.

Page 63 in Module

Chapter 2. Adequate Nutrients Within Calorie Needs

Recommendations of Dietary Guidelines

- Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and *trans* fats, cholesterol, added sugars, salt, and alcohol.
- Meet recommended intakes within energy needs by adopting a balanced eating pattern, such as the MyPyramid food guidance system. Part 3 of the module goes into detail about MyPyramid.

Page 63 in Module

Chapter 2. Adequate Nutrients Within Calorie Needs

Meeting Recommended Intakes Within Energy Needs

- Diets should provide all the nutrients needed for growth and health.
- Nutrients consumed should come primarily from foods.

Page 64 in Module

Chapter 2. Adequate Nutrients Within Calorie Needs

Nutrient-Dense Foods

- Nutrient-dense foods are those foods that provide substantial amounts of vitamins and minerals along with relatively few calories.
- Foods that are low in nutrient density are foods that have calories but little or no vitamins and minerals.
- Americans generally do not eat nutrient dense foods.

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 61-65**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Page 66 in Module

Chapter 3. Weight Management

Recommendations of Dietary Guidelines

- To maintain body weight in a healthy range, balance calories from foods and beverages with calories expended.
- To prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity.

Chapter 3. Weight Management

Recommendations of Dietary Guidelines

- **Those who need to lose weight**. Aim for a slow, steady weight loss by decreasing calorie intake while maintaining an adequate nutrient intake and increasing physical activity.
- **Overweight children.** Reduce the rate of body weight gain while allowing growth and development. Consult a health care provider before placing a child on a weight-reduction diet.

Chapter 3. Weight Management

Recommendations of Dietary Guidelines

- **Pregnant women.** Ensure appropriate weight gain as specified by a health care provider.
- **Breastfeeding women.** Moderate weight reduction is safe and does not compromise weight gain of the nursing infant.
- **Overweight adults and overweight children with chronic diseases and/or on medication.** Consult a health care provider about weight loss strategies prior to starting a weight-reduction program to ensure appropriate management of other health conditions.

Page 67 in Module

Overweight and Obesity in the U.S.

- Overweight and obesity in the U.S. among adults and children has increased significantly over the last 20 years.
- An individual following a typical American eating pattern and activity pattern are likely to be consuming a daily calorie intake that is greater than calorie needs.
- To reverse the trend toward obesity, most Americans need to eat fewer calories, be more active, and make wiser food choices.

Page 67 in Module

Overweight and Obesity in U.S.

- The prevention of excess weight gain is critical because prevention is easier to accomplish than what is required to be done to lose weight.
- Monitoring body fat regularly can be helpful. One measure used to approximate body fat is body mass index (BMI).
- Special attention should be given to portion sizes, which have increased significantly over the past 20 years.

Page 67-68 in Module

Overweight and Obesity in U.S.

When individuals are losing weight, they should follow a diet that is within these acceptable ranges:

- 20 to 35% of calories from fat
- 45 to 65% of calories from carbohydrate
- 10 to 35% of calories from protein

Diets that provide very low or very high amounts of protein, carbohydrates, or fat are likely to provide low amounts of some nutrients and are not advisable for long-term use.

Page 69 in Module

☑ Self Check

- **Go to** the **Workbook** and complete **Self-Check Questions 66-69**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Chapter 4. Physical Activity

Recommendations of Dietary Guidelines

- Engage in regular physical activity and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
- **To reduce the risk of chronic disease, adults should engage in at least 30 minutes of moderate-intensity physical activity on most days of the week.** This can be done at home or at work and should be above usual activity.

Page 72 in Module

Chapter 4. Physical Activity

Recommendations of Dietary Guidelines

- For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or longer duration.
- **To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood,** an individual should engage in about 60 minutes of moderate-intensity to vigorous-intensity activity on most days of the week while not exceeding calorie intake requirements.

Chapter 4. Physical Activity

Recommendations of Dietary Guidelines

- **To sustain weight loss in adulthood:** Participate in at least 60 to 90 minutes of daily moderate-intensity physical activity while not exceeding calorie intake requirements.
- Some people may need to consult with a health care provider before participating in this level of activity.

Chapter 4. Physical Activity

Recommendations of Dietary Guidelines

- Achieve physical fitness through various types of physical activities including cardiovascular conditioning, stretching exercises for flexibility, and resistance exercises or calisthenics for muscle strength and endurance.

Chapter 5. Food Groups to Encourage

Recommendations of Dietary Guidelines

- **Fruits**, **vegetables**, **whole grains**, and **fat free or low fat milk products** are the foods that most people should be encouraged to eat.
- These foods are all important for a healthful diet and can be good sources of needed nutrients.

Chapter 5. Food Groups to Encourage

Recommendations of Dietary Guidelines

- Consume a sufficient amount of fruits and vegetables while staying within energy or calorie needs. **2 cups of fruit** and **2½ cups of vegetables** per day are recommended for a reference 2,000-calorie intake, with higher or lower amounts depending on the calorie level.
- Choose a variety of fruits and vegetables each day. In particular, select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week.

Chapter 5. Food Groups to Encourage

Recommendations of Dietary Guidelines

- Consume 3 or more ounce-equivalents of **whole-grain products** per day, with the rest of the recommended grains coming from enriched or whole-grain products. In general, at least half the grains should come from whole grains.
- Consume 3 cups per day of **fat free or lowfat milk or equivalent milk products** for adults and children 9 years of age and older.

☑ Self Check

- **Go to** the **Workbook** and complete **Self-Check Questions 70-75**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Chapter 6. Fats

Recommendations of Dietary Guidelines

- Consume less than 10 percent of calories from **saturated fatty acids** and less than 300 mg/day of **cholesterol**, and keep ***trans* fatty acid** consumption as low as possible.
- Keep **total fat intake** between 20 to 35 percent of total daily calories, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as **fish, nuts, and vegetable oils.**

Page 81 in Module

Chapter 6. Fats

Recommendations of Dietary Guidelines

- When selecting and preparing meat, poultry, dry beans, and milk or milk products, make choices that are lean, lowfat, or fat free.
- Limit intake of fats and oils high in saturated and/or *trans* fatty acids, and choose products low in such fats and oils.

Chapter 6. Fats

Recommendations of Dietary Guidelines

- **Children and adolescents.** Keep total fat intake between 30 to 35 percent of calories for children 2 to 3 years of age and between 25 to 35 percent of calories for children and adolescents 4 to 18 years of age, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils.

Chapter 7. Carbohydrates

Recommendations of Dietary Guidelines

- **Choose fiber-rich fruits, vegetables, and whole grains often**. (Note: Refined grains such as white bread and white rice are usually low in fiber.)
- **Choose and prepare foods and beverages with little added sugars or caloric sweeteners**, such as amounts suggested by the MyPyramid food guidance system.

Page 85 in Module

Chapter 7. Carbohydrates

Recommendations of Dietary Guidelines

- Reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently.

Chapter 7. Carbohydrates

- The majority of food consumed from the fruit group should com from whole fruit (fresh, frozen, canned, dried) rather than juice.
- Inclusion of some juice, such as orange juice, can help meet recommended levels of potassium intake.

Chapter 7. Carbohydrates

- Legumes—such as dry beans and peas—are especially rich in fiber and should be consumed several times per week.
- They are considered part of both the vegetable group and the meat and beans group because they contain nutrients found in each of these food groups.

Chapter 7. Carbohydrates

- Individuals who consume food or beverages **high in added sugars** tend to consume more calories than those who consume food or beverages **low in added sugars.** They also tend to consume lower amounts of micronutrients such as vitamins and minerals.
- Available studies show that people who drink sweetened beverages tend to gain weight. For this reason, it is recommended that people should decrease beverages with caloric sweeteners. Regular soft drinks are the major source of added sugars in the American diet.

Pages 85-86 in Module

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 76-82.**

- **Check** your answers against the **Answer Key** in your **Workbook**.

Chapter 8. Sodium and Potassium

Recommendations of Dietary Guidelines

- Consume less than 2,300 mg of sodium (approximately 1 teaspoon of salt) per day.
- Choose and prepare foods with little salt. At the same time, consume potassium-rich foods, such as fruits and vegetables.

Page 88 in Module

Chapter 8. Sodium and Potassium

- **Individuals with hypertension, blacks, and middle-aged and older adults.** Aim to consume no more than 1,500 mg of sodium per day, and meet the potassium recommendation of 4,700 mg/day with food.

Chapter 8. Sodium and Potassium

- Natural salt content of food accounts for only about 10% of total dietary sodium intake.
- Salt added at the table or while cooking accounts for about 5 to 10% of total dietary sodium intake.
- Approximately 75% of total dietary sodium intake is derived from salt added by food manufacturers.
- Also, foods served by food establishments may be high in sodium.

Chapter 8. Sodium and Potassium

- Reducing salt intake is one of several ways that people may lower their blood pressure. On average, the higher a person's salt intake, the higher the blood pressure.
- Another dietary measure to lower blood pressure is to consume a diet rich in potassium.

Chapter 8. Sodium and Potassium

- Potassium-rich fruits and vegetables include leafy green vegetables, fruit from vines, and root vegetables. While meat, milk, and cereal products also contain potassium, the form of potassium in these foods is not as readily available for absorption.

Chapter 8. Sodium and Potassium

Here are some fruits and vegetables that are good sources of potassium:

Sweet potato, white potato, winter squash, plantains

Tomato paste, tomato puree, tomato juice

Beet greens, spinach

White beans, soybeans, lima beans, lentils, kidney beans, split peas

Prune juice, prunes, carrot juice, orange juice

Dried apricots, bananas

Cantaloupe, honeydew melon

Chapter 9. Alcoholic Beverages

Recommendations of Dietary Guidelines

- Those who choose to drink alcoholic beverages should do so sensibly and in moderation—defined as the consumption of up to one drink per day for women and up to two drinks per day for men.

Chapter 9. Alcoholic Beverages

Recommendations of Dietary Guidelines

Alcoholic beverages should not be consumed by:

- Individuals who cannot restrict their alcohol intake
- Women of childbearing age who may become pregnant, pregnant and lactating women
- Children and adolescents
- Individuals taking medications that can interact with alcohol
- Individuals with specific medical conditions.

Page 91 in Module

Chapter 9. Alcoholic Beverages

Recommendations of Dietary Guidelines

- Alcoholic beverages should be avoided by individuals engaging in activities that require attention, skill, or coordination, such as driving or operating machinery.

Chapter 9. Alcoholic Beverages

- Alcoholic beverages supply calories but few essential nutrients.
- Excessive alcohol consumption makes it difficult to ingest sufficient nutrients within an individual's daily calorie allotment and to maintain a healthy weight.
- Heavy drinkers may be at risk of malnutrition if the calories derived from alcohol are substituted for those in nutritious foods.

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 83-89**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Chapter 10. Food Safety

Recommendations of Dietary Guidelines

To avoid microbial foodborne illness:

- Clean hands, food contact surfaces, and fruits and vegetables. Meat and poultry should *not* be washed or rinsed.
- Separate raw, cooked, and ready-to-eat foods while shopping, preparing, or storing foods.
- Cook foods to a safe temperature to kill microorganisms.

Page 94 in Module

Chapter 10. Food Safety

Recommendations of Dietary Guidelines

To avoid microbial foodborne illness:

- Chill (refrigerate) perishable food promptly and defrost foods properly.
- Avoid raw (unpasteurized) milk or any products made from unpasteurized milk, raw or partially cooked eggs or foods containing raw eggs, raw or undercooked meat and poultry, unpasteurized juices, and raw sprouts.

Chapter 10. Food Safety

- When preparing and consuming food, it is essential to wash hands often, especially after handling raw meat, poultry, eggs, or seafood.
- Raw meat and poultry should not be washed because this creates the danger of cross-contamination. It is not necessary to wash raw meat or poultry.
- Moisture on produce may promote survival and growth of harmful pathogens. Therefore, drying the food is critical if it will not be eaten right away.

Page 95 in Module

Chapter 10. Food Safety

- Bacteria grow most rapidly in the range of 40ºF and 140ºF.
- To keep food out of this danger zone, keep cold food cold (below 40ºF) and keep hot food hot (above 140ºF).
- The refrigerator should be set at no higher than 40ºF and the freezer at 0ºF or lower. These temperatures should be checked with an appliance thermometer.
- Refrigerated leftovers may become unsafe within 3 to 4 days.

Page 96 in Module

Chapter 10. Food Safety

There are some people who are at high risk for developing foodborne illness. These include pregnant women, their unborn babies, young children, older adults, and those who have a weakened immune system. For example, these people are at risk of developing **listeriosis** (a potentially life threatening illness caused by the bacteria *Listeria monocytogenes*.)

Chapter 10. Food Safety

Infants and young children, pregnant women, older adults, and those with weakened immune systems should not eat or drink the following:

raw (unpasteurized) milk or any products made from unpasteurized milk; raw or partially cooked eggs or foods containing raw eggs; raw or undercooked meat and poultry; raw or undercooked fish or shellfish; unpasteurized juices; and raw sprouts.

Also, frankfurters and deli meats should be reheated to steaming hot.

Page 96 in Module

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 90-96**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Part 3: MyPyramid

Overview of MyPyramid

- MyPyramid replaces the Food Guide Pyramid.
- MyPyramid is part of an overall food guidance system that emphasizes the need for a more individualized approach to improving diet and lifestyle.
- MyPyramid incorporates recommendations from the 2005 Dietary Guideline for Americans.

Overview of MyPyramid

- The MyPyramid symbol, which is deliberately simple, is meant to encourage consumers to make healthier food choices and be active everyday.
- The symbol represents the recommended proportion of foods from each food group.
- Physical activity is also part of the symbol.

Page 99 in Module

Overview of MyPyramid

MyPyramid illustrates:

- Personalization
- Gradual improvement
- Physical activity
- Variety
- Moderation
- Proportionality

MyPyramid: Getting Started

- The **MyPyramid.gov** website contains an interactive technology that makes it easy for individuals to key in their age, gender, and physical activity level so that they can get a more personalized recommendation on their daily calorie level.
- It also allows individuals to find general food guidance and suggestions for making smart choices from each food group.

MyPyramid: Getting Started

Take time to go to the MyPyramid.gov website. Go to a variety of areas of the website to learn about the MyPyramid food guidance system.

- Anatomy of MyPyramid
- MyPyramid's Basic Messages
- MyPyramid Plan
- Inside the Pyramid
- MyPyramid Tracker

MyPyramid for Kids

There is a child-friendly version of MyPyramid that is available for educators and for children ages 6 to 11 years. This section includes:

- MyPyramid Blast Off Game
- MyPyramid for Kids Poster
- Tips for Families
- A Close Look at MyPyramid for Kids
- MyPyramid for Kids Coloring Page & Worksheet
- Classroom Materials

MyPyramid Food Groups

Grains – Make half your grains whole.

- Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is a grain product. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples of grain products.
- In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or ½ cup of cooked rice, cooked pasta, or cooked cereal are considered to be equal to 1 ounce from the grains group.

Page 102 in Module

MyPyramid Food Groups

Vegetables – Vary your veggies.

- Vegetables may be raw or cooked; fresh, frozen, canned, or dried/dehydrated; may be whole, cut-up, or mashed; or may be in the form of vegetable juice.
- In general, 1 cup of raw or cooked vegetables or vegetable juice, or 2 cups of raw leafy greens are considered to be equal to 1 cup from the vegetable group.

Page 102 in Module

MyPyramid Food Groups

Fruits – Focus on fruits.

- Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, pureed, or may be in the form of fruit juice.
- In general, 1 cup of fruit or 100 percent fruit juice, or ½ cup of dried fruit are considered to be equal to 1 cup from the fruit group.

Page 102 in Module

MyPyramid Food Groups

Milk – Get your calcium-rich foods.

- All fluid milk products and many foods made from milk are considered part of this food group. Foods made from milk that retain their calcium content are part of the group, while foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not.
- Most milk group choices should be fat free or lowfat.
- In general, 1 cup of milk or yogurt, 1½ ounces of natural cheese, or 2 ounces of processed cheese are considered to be equal to 1 cup from the milk group.

Page 103 in Module

MyPyramid Food Groups

Meat & Beans – Go lean with protein.

- All foods made from meat, poultry, fish, dry beans or peas, eggs, nuts, and seeds are considered part of this group. Dry beans and peas are part of this group as well as the vegetable group.
- Most meat and poultry choices should be lean or lowfat. Fish, nuts, and seeds contain healthy oils, so choose these foods frequently instead of meat or poultry.
- In general, 1 ounce of meat, poultry or fish; ¼ cup cooked dry beans; 1 egg; 1 tablespoon of peanut butter; or ½ ounce of nuts or seeds are considered to be equal to 1 ounce from the meat & beans group.

Page 103 in Module

Daily Food Guide

- Figure 26 on page 104 of the Basic Nutrition Module shows the food groups and amounts recommended based on a variety of age ranges and genders.
- The calorie levels shown in this table are averages for the group.
- Calorie needs will vary for individuals depending on age, gender, height, weight, and activity level.

Page 104 in Module

Use Common Objects to Picture the Size of Food Portions

- Figure 27 on page 105 of the Basic Nutrition Module shows photos of a variety of food portions and how these can be estimated using common objects.

Page 105 in Module

What is the difference between portion size and serving size?

Portion size is the amount of a single food item served in a single eating occasion, such as a meal or a snack. Many people confuse portion size with serving size, which is a standardized unit of measuring foods—for example, a cup or an ounce.

Page 106 in Module

Oils

- In addition to the five food groups, oils are also included in the MyPyramid plan.
- Oils are fats that are liquid at room temperature, like the vegetable oils used in cooking. (Animal fats or saturated fats are solid fats that are solid at room temperature.)
- Oils come from many different plants and from fish. Some common oils are: canola oil, corn oil, cottonseed oil, olive oil, safflower oil, soybean oil, and sunflower oil.

Why is it important to consume oils?

Most of the fats consumed in the diet should be polyunsaturated (PUFA) or monounsaturated (MUFA) fats. Oils are the major source of MUFAs and PUFAs in the diet. PUFAs contain some fatty acids that are necessary for health—called "essential fatty acids."

Page 107 in Module

Discretionary Calories

- In the MyPyramid food guidance system, each person has an allowance for some discretionary calories. But, many people have used up this allowance before lunch time! Most discretionary calorie allowances are very small, between 100 and 300 calories, especially for those who are not physically active.

Physical Activity

- In addition to food intake, physical activity is also an important component of the MyPyramid plan.
- Physical activity and nutrition work together for better health. Being active increases the amount of calories burned. As people age their metabolism slows, so maintaining energy balance requires moving more and eating less.
- There are many ways to increase your physical activity. See the ideas on pages 111-112 of the Basic Nutrition Module.

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 97-103**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Part 4: Beyond the Basics

Food Labels

- Food labels contain a great deal of information to help individuals plan a healthful diet that meets the recommendations of the Dietary Guidelines.
- **Principle Display Panel (PDP)** is the part of the label consumers see first when they purchase a product. In most cases, it is on the front of the package.

Page 113 in Module

Food Labels

- **Food Name** is called a **"statement of identity."** It must be in English or usual name must also be given; a brand name can serve as the statement of identity if the name is commonly used and understood by the public.
- **Net Quantity** of the contents statement aids consumers by letting the consumers know how much food is in a container and it aids in price comparison. The net quantity does not include the weight of the container or package.

Page 113 in Module

Food Labels

Label Descriptors can signal that a food is low in a certain dietary component for example:

- **Low Fat: 3 grams or less of fat per serving**
- **Fat Free: Less than 0.5 grams of fat per serving**
- **Low Cholesterol: 20 milligrams or less and 2 grams or less of saturated fat per serving**
- **Low Calorie: 40 calories or less per serving**

Food Labels

- **High:** This term can be used if the food contains 20% or more of the Daily Value of a particular nutrient per serving.
- **Sugar Free:** Less than 0.5 grams per serving.
- **Reduced:** This term means the product has been altered and contains at least 25% less of a nutrient or of calories than the regular referenced product.

Page 114 in Module

Food Labels

- **Information Panel** is designed for the nutrition information, ingredient list, and name and address of the manufacturer, packer, or distributor.
- **Ingredient List** helps consumers identify foods that have substances that they are allergic to or want to avoid or include. All packaged goods composed of two or more ingredients are required to list ingredients.
- **Company Name** is the firm responsible for the product and must be identified on the food label.

Page 114 in Module

Food Labels

Product Dates on food products can be used in several forms:

- **Pull date is the last day that the manufacturer recommends that the product remain for sale**
- **Quality Assurance or Freshness Date shows how long the manufacturer thinks a food will be of optimal quality.**
- **Pack Date is the date the food was packaged or processed.**
- **Expiration Date is the last date on which a product should be eaten.**

Page 114 in Module

Food Labels

The Nutrition Facts Panel includes:

- Serving size
- Servings per container
- Amount per serving
- Calories and calories from fat
- Iron
- Cholesterol
- Protein
- Vitamin A
- Vitamin C
- Calcium
- Sodium
- Total fat along with saturated fat and *trans* fat
- Total carbohydrates along with dietary fiber and sugars

Pages 115-117 in Module

Food Labels

- **The % Daily Value** shows the consumer how much of the recommended amounts for the day that the food provides in one serving, if 2,000 calories a day are consumed.

- To limit a nutrient (such as fat, cholesterol, sodium), try to choose foods with a lower % Daily Value.

Food Labels

- The Food Allergen Labeling and Consumer Protection Act of 2004 requires that the label of a food declare the presence of a major food allergen.
- The major food allergens are:

Milk	Eggs
Fish	Shellfish
Tree Nuts	Peanuts
Wheat	Soybeans

Page 119 in Module

☑ Self-Check

- **Go to** the **Workbook** and complete **Self-Check Questions 104-110**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Individual Dietary Preferences and Concerns

Factors that are involved when an individual makes food choices:

- **Cultural**
- **Personal**
- **Social**
- **Economic**
- **Medical**
- **Educational**

Page 120 in Module

Individual Dietary Preferences and Concerns

Cultural factors **are based on:**

family tradition, country of origin/ethnicity, religious, traditional, or cultural beliefs

Personal factors*:*

taste, emotional attachment, ethical/philosophical beliefs

Page 120 in Module

Individual Dietary Preferences and Concerns

Social factors **include:**

parental eating habits, food preparation skills, peer group pressures, family events, holidays, food fads and superstitions, merchandising, advertising

Economic factors*:*

poverty, transportation, lack of refrigeration or cooking equipment, geography/climate, living in rural areas vs. city

Page 121 in Module

Individual Dietary Preferences and Concerns

- Medical factors/conditions:
  - hypertension
  - heart disease
  - diabetes
  - iron-deficiency anemia
  - substance abuse

- Educational factors
  - lack of education

Page 122 in Module

☑ Self-Check

- Go to the **Workbook** and complete **Self-Check Question 111.**

- **Check** your answer against the **Answer Key** in **your Workbook**.

Vegetarian Diets

Types of vegetarians:

- Vegan **or pure vegetarian consumes only foods of plant origin.**
- Lacto-vegetarian **consumes foods of plant origin, *plus milk and milk products .***
- Lacto-ovo-vegetarian **consumes plant foods of plant origin, *plus milk, milk products, and eggs.***
- Semi-vegetarian **consumes foods of plant origin, *plus eggs, milk, milk products, and small amounts of fish or poultry on occasion.***

Page 123 in Module

Vegetarian Diets

Vegetarians, especially vegans or pure vegetarians, need to make careful food choices in order to get enough energy, protein, calcium, vitamin D, vitamin B_{12}, iron, and zinc.

Page 123 in Module

Vegetarian Diets

- Energy—**Vegetarian meals provide fewer calories than meat-based diets; vegetarians can increase their caloric intake by eating more whole grain breads and cereals, legumes, nuts, and seeds.**

Page 124 in Module

Vegetarian Diets

- Protein—The requirement of protein is really a requirement for the 9 essential amino acids. Vegans need to eat a variety of plant foods over the course of the day to obtain adequate amounts of the 9 essential amino acids.
  A variety of legumes and whole grains along with seeds and nuts should be consumed. Soy protein offers a high quality protein. It is found in tofu, soy milk, and soy burgers.

Page 124 in Module

Vegetarian Diets

- Calcium—Milk provides a large portion of the required calcium for most people. Vegetarians who don't consume milk and milk products may not get enough calcium. The most reliable and practical source of calcium for vegans is calcium-fortified soy milk. Firm tofu and calcium-fortified orange juice are products that can fit into a vegetarian diet.

Page 125 in Module

Vegetarian Diets

- Vitamin D—Vitamin D may be a concern for vegans since they don't eat eggs or drink cow's milk. While it is true the body makes vitamin D through exposure of the skin to sunlight (20-30 minutes two or three times a week), vegetarians shouldn't rely on this source, especially considering current recommendations to stay out of the sun. Some brands of soy milk, breakfast cereals, orange juice, and margarine are fortified with vitamin D.

Vegetarian Diets

- Vitamin B_{12}—This vitamin is found primarily in animal products, including eggs and dairy products. While some foods of plant origin contain B_{12}, plant foods are not a reliable source. The most reliable sources are foods fortified with vitamin B_{12} such as breakfast cereals, soy products, or vegetarian burgers.

Vegetarian Diets

- Iron—Plant products contain non-heme iron, which has a lower absorption rate (2 to 20 percent) than the absorption rate of heme iron found in meat, fish and poultry (15 to 35 percent). Fortified breakfast cereals, blackstrap molasses, legumes, tofu, dried fruits, enriched pasta, and enriched breads all contribute iron to the diet.

Page 126 in Module

Vegetarian Diets

- Zinc—This mineral is widely available in animal products, and to a lesser extent in foods of plant origin. It is a mineral vegans need to be aware of, especially because substances in plants such as fiber and phytates can reduce the bioavailability of zinc/zinc absorption by the body. Plant sources of zinc include legumes, tofu, miso, tempeh, nuts, seeds, wheat germ, and whole grains.

Food Allergy

- A **food allergy** is an immune system response to a particular component of food or food additive.

- Statistics show that food allergies occur in only about 2 percent of adults and in about 5 percent of infants and children.

Page 128 in Module

Food Allergy

Symptoms of food allergy:

- Eczema
- Skin rashes
- Nausea
- Vomiting / diarrhea
- Cramps
- Runny nose
- Coughing
- Swelling of face or throat

Page 128 in Module

Food Allergy

- In severe forms a food allergy can cause death if not treated immediately.
- **Anaphylactic shock** is a life-threatening, whole-body allergic reaction to a food or substance.
- Symptoms of an allergic reaction usually appear within seconds or up to 2 hours after eating the food. Reactions may be delayed up to 2 days later.

Food Intolerance

- **Food Intolerance** is the body's abnormal response to a food or food additive that does not involve an immune mechanism.
- **Lactose Intolerance** is difficulty digesting lactose, the sugar that is naturally present in milk. These people do not have enough lactase, the enzyme that breaks down lactose in the small intestine. The consumption of the milk and foods that contain milk may cause symptoms such as bloating, cramping, gas, discomfort, an/or diarrhea.

Page 128 in Module

Food Aversion

- **Food Aversion** is an intense dislike of a food that results from an illness or other negative experience associated with that particular food.

Page 129 in Module

☑ Self-Check

- Go to the **Workbook** and complete **Self-Check Questions 112-119**.

- **Check** your answers against the **Answer Key** in your **Workbook**.

Treatment of Overweight and Obesity in Adults

Overview of Weight Management Techniques

- Diet Therapy
- Physical Activity
- Behavior Therapy
- Pharmacotherapy
- Surgery

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Treatment of Overweight and Obesity in Adults

Adults for whom weight loss therapy is not appropriate are:

- Most pregnant and breastfeeding women
- Those with uncontrolled psychiatric illness
- Those who have a variety of serious illnesses and for whom caloric restriction might exacerbate the illness

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Treatment of Overweight and Obesity in Adults

Diet Therapy

The health care provider in consultation with the nutritionist will determine the appropriate caloric level for the individual. A meal plan that is individually planned to help create a deficit of 500 to 1,000 calories per day should be an integral part of any weight loss plan that is aimed at achieving a weight loss of 1 to 2 pounds per week. Very low calorie diets (VLCDs) of less than 800 calories per day are to be avoided.

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Treatment of Overweight and Obesity in Adults

Low calorie diet (LCD) meal plans

- Meal plans of 1,000 to 1,200 calories per day are prescribed for most women.
- Meal plans between 1,200 and 1,600 calories per day are prescribed for men and may also be appropriate for women who weigh 165 pounds or more, or who are physically active.
- A variety of meal plans for 1,200 and 1,600 calories are shown in Figures 28 to 33 on pages 121 to 126 of the modules.

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Treatment of Overweight and Obesity in Adults

Physical Activity

- Increased physical activity is important to efforts to lose weight because it increases energy expenditure and plays an integral role in weight management. Physical activity also reduces the risk of heart disease more than that achieved by weight loss alone.
- Moderate levels of physical activity for 30 to 45 minutes, 3 to 5 days per week, should be encouraged.

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Treatment of Overweight and Obesity in Adults

- Starting a physical activity regimen may require supervision. The need to avoid injury during physical activity is a high priority.

- The health care provider must decide whether exercise testing for cardiopulmonary disease is needed before an individual begins a physical activity regimen; based on an individual's age, symptoms, and other risk factors.

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Treatment of Overweight and Obesity in Adults

Behavior Therapy

- Behavior therapy provides methods for overcoming barriers to compliance with diet therapy and/or increased physical activity.

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Treatment of Overweight and Obesity in Adults

Behavior Modification Techniques

- **Self-monitoring** refers to observing and recording some aspect of behavior, such as caloric intake, exercise sessions, medication usage, etc., or an outcome of these behaviors, such as changes in body weight.
- **Rewards** can be used to encourage attainment of behavioral goals.
- **Stimulus control** changes involve learning what social or environmental cues seem to encourage undesired eating and then modifying those cues.
- **Dietary behavior** changes can make it easier to eat less without feeling deprived.

See page 145 in the module for the Guide to Behavior Change.

Treatment of Overweight and Obesity in Adults

Pharmacotherapy

- Weight-loss drugs approved by the Food & Drug Administration (FDA) for long-term use may be helpful as an addition to diet and physical activity for clients with a BMI of greater than or equal to 30 and without obesity-related risk factors or diseases.
- **Herbal medications** are not recommended as part of a weight loss program. These preparations have unpredictable amounts of active ingredients and unpredictable and potentially harmful effects.

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Treatment of Overweight and Obesity in Adults

Weight Loss Surgery

- Weight loss surgery is an option for weight reduction in individuals with clinically severe obesity, i.e., a BMI greater than or equal to 40, or a BMI greater than or equal to 35 who have accompanying obesity-related risk factors or diseases. Weight loss surgery is usually reserved for those individuals in whom other methods of treatment have failed.

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Eating Healthy Foods Away From Home

Specific Tips for Healthy Choices

Breakfast

- Fresh fruit or small glass of fruit juice.
- Whole grain bread, bagel, English muffin.
- Whole grain cereal with 1% or fat free milk.
- Oatmeal with fat free milk topped with fruit.
- Omelet, scrambled egg, or boiled egg.
- Multigrain pancakes or waffles without butter.
- Fat free yogurt.

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Eating Healthy Foods Away From Home

Beverages

- Fat free milk.
- 100% fruit juice.
- Water with lemon and ice.
- Flavored sparkling water (non calorie).
- Juice spritzer (half fruit juice/sparkling water).
- Iced tea without added sugar.
- Tomato juice.

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Eating Healthy Foods Away From Home

Bread

- Most bread and bread sticks are low in calories and low in fat, unless coated in butter or oil; eating a lot of bread in addition to the meal will add extra unwanted calories and not leave enough room for fruits and vegetables.

Eating Healthy Foods Away From Home

Appetizers

- Steamed seafood.
- Shrimp cocktail (limit cocktail sauce-it's high in sodium).
- Melons or fresh fruit.
- Bean soups.
- Salad with reduced dressing (or add lemon juice or vinegar).

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Eating Healthy Foods Away From Home

Entrée

- Lean meat, poultry, fish, shellfish, and vegetable dishes baked or broiled without added fat.
- Pasta with red sauce or with vegetables.
- Look for terms such as: baked, broiled, steamed, poached, lightly sauteed, or stir-fried.
- Ask for sauces and dressings on the side.
- Limit the amount of butter, margarine, and salt you use at the table.

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Eating Healthy Foods Away From Home

Salad/Salad Bars

- Fresh greens, lettuce, and spinach.
- Fresh vegetables–tomatoes, mushroom carrots, cucumber, peppers, onion, radishes, and broccoli.
- Beans, chickpeas, and kidney beans.
- Skip the non-vegetable choices: deli meats, bacon, egg, cheese, croutons.
- Choose lower calorie, reduced fat, or fat free dressing, lemon juice, or vinegar.

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Eating Healthy Foods Away From Home

Side Dish

- Vegetables and starches (rice, potato, noodles) make good additions.
- Ask for side dishes without butter or margarine.
- Ask for mustard, salsa, or low fat yogurt instead of sour cream or butter.

Eating Healthy Foods Away From Home

Desserts

- Fresh fruit
- Nonfat frozen yogurt
- Sherbet or fruit sorbet
- Ask for low fat milk for coffee (instead of cream or half-and-half)

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☑ Self-Check

- Go to the **Workbook** and complete **Self-Check Questions 120-125.**
- Check your answers against the Answer Key **in your Workbook.**
- Go to the **Practical Activity** for the **Performance Objectives** in your **Workbook** and complete according to the instructions.
- Arrange for the **Posttest** with your supervising nutritionist.