

Lesson Plan B

Course: Practical Nutrition

Module I: The Challenge of Nutrition Guidelines

Lesson B: Nutrition Basics: Nutrients

Lesson Length: 60 minutes

Lesson Equipment and Materials

Equipment

Computer and LCD Projector
Flip chart and Markers

Visual Aids

PowerPoint Slides 1-13

Supplies

Food Comparison Cards
Flip chart and Markers
Dairy Council Food Models (or other nutrition facts labels or pictures of foods)

Participant Materials

H-B1 *MyPyramid Provides Essential Nutrients*
H-B2 *Dietary Reference Intakes: EAR for Groups*
H-B3 *Nutrient Knowledge*
H-B4 *Live Well! Nutrient-Rich Shopping List*
H-B5 *Nutrient Brainteasers*
H-B6 *Food Comparison Cards*
H-B7 *The Big Picture*
H-B8 *Nutrition Bingo*

Lesson Preparation

1. Read the entire **Lesson Plan B**.
2. Reproduce all **Participant Materials** for Lesson B.
3. Prepare Food Models for Demonstration with foods.
4. Post Performance Standards for participants.

Lesson Outcome

On completion of this course, the learner will demonstrate knowledge and skills needed to incorporate the principles of sound nutrition into their personal lives based on the following **performance standards**:

- Identify nutrients lacking in the typical American diet.
- Select nutrient-rich foods for a healthful diet.

Lesson Instruction

◆ **Setting the Stage**

Focus learner's attention.

- There are about 50 nutrients known to be essential for the human body to function properly. These nutrients can be classified into six groups.
- Ask the group to try to identify the 6 classes of nutrients.

◆ **Relate to past experience.**

- What foods fit into a healthful diet?
- What foods would you limit if you were eating a healthful diet?
- Have participants brainstorm about healthful foods and foods to limit and list them with the marker on the flip chart.
- After the discussion, state all foods can fit into a healthful diet. Even foods with the most fat and sugar can fit into a healthful diet, in moderation. The challenge is to choose foods that supply adequate nutrients (nutrient-rich foods) while balancing appropriately fats and sweets. All foods can be a part of a healthy diet.

◆ **In today's lesson...**

- You will learn to choose foods that supply all 6 essential nutrients.

◆ **You will be able to...**

- Identify nutrients lacking in the typical American diet.
- Select nutrient-rich foods for a healthful diet.

◆ **Identify the Purpose**

- In order to make wise food choices it is necessary to be familiar with the nutrients in food.

Performance Standard

The learner will:

- Identify nutrients lacking in the typical American diet.
- Select nutrient-rich foods for a healthful diet.

LESSON CONTENT

Slide 1: Nutrition Basics: Nutrients

- ▶ Title Page

Slide 2: Objectives for This Session

- ▶ Quickly review the objectives for this session as outlined on the slide

Slide 3: Nutrients

- ▶ Setting the Stage

Focus learner's attention.

- ▶ There are about 50 nutrients known to be essential for the human body to function properly. These nutrients can be classified into six groups.

Activity

- ▶ Ask the group to try to identify the 6 classes of nutrients.

◆ Relate to past experience.

Activity

- What foods fit into a healthful diet?
- What foods would you limit if you were eating a healthful diet?
- Have participants brainstorm about healthful foods and foods to limit and list them with the marker on the flip chart.
- After the discussion, state all foods can fit into a healthful diet. Even the most high-fat and sugary foods can fit into a healthful diet, in moderation. The challenge is to choose foods that supply adequate nutrients (nutrient-rich foods) while balancing appropriately fats and sweets. All foods can be a part of a healthy diet.
- ▶ What then is a nutrient-rich food?
 - We should select a variety of nutrient-rich foods within and

among all five food groups to achieve optimum health. Nutrient-rich foods provide essential nutrients – such as vitamins A, C and E, zinc, calcium, complex carbohydrates, potassium, iron, fiber, B-vitamins and protein – and are needed at all ages to promote healthy growth, fuel activity and prevent chronic diseases. And, as people watch calories to reduce their waistlines, it's critical to make each calorie count more by selecting foods with more essential nutrients in fewer calories.

- Nutrient-rich foods are defined as foods that provide substantial amounts of vitamins, minerals, and other nutrients with relatively few calories. These foods include colorful fruits and vegetables; whole, fortified and fiber-rich grain foods; fat-free and low-fat dairy products; and lean meats, poultry, fish, eggs, beans and nuts.
- ▶ What are phytochemicals?
 - Phytochemicals are naturally occurring chemicals in plants that may reduce our risk for diseases like heart disease and cancer. They are found in abundance in fruits, vegetables, whole grains, legumes, seeds, soy products, garlic, onion, and black and green teas. They are still being studied, but are proving to have health benefits. This is a HOT topic in nutrition these days.

Slide 4: Classes of Nutrients

- ▶ The 6 classes of nutrients include:
 - Carbohydrates
 - Protein
 - Fat
 - Vitamins
 - Minerals
 - Water

Activity

- ▶ Distribute **H-B1 MyPyramid Provides Essential Nutrients** – Use handout to explain the 6 classes of nutrients.

Slide 5: Nutrient – Carbohydrates

- ▶ Carbohydrates are the foundation of our diets and are found primarily in grains, fruits, vegetables, and milk.
- ▶ During digestion, carbohydrates are broken down into glucose, the fuel for our bodies. Glucose is burned in all body cells and is the primary source of energy for us to function. If glucose is not

immediately used for fuel, the body stores glucose as glycogen.

- ▶ There are two types of carbohydrates that we find in foods, *simple* (fruit sugars-fructose, milk sugar-lactose, and table sugar-sucrose) and *complex* (also called starches and which include fruits, potatoes, beans, cereal, rice, pasta, bread, corn, peas, etc.).
- ▶ 50-60% of calories should be carbohydrates.
- ▶ Use the **H-B1 MyPyramid Provides Important Nutrients** handout to point out where this nutrient can be found in the food groups.

Slide 6: Nutrient – Protein

- ▶ Building and repairing the body tissues is a primary function of protein.
- ▶ It forms enzymes, hormones, and hemoglobin, which is the oxygen-carrying part of the red blood cell.
- ▶ It will be used as a source of energy, but only in the cases of injury, starvation, and malnutrition.
- ▶ Protein is found in grains, milk, eggs, dried beans, peas and lentils, meat, poultry and fish.
- ▶ 15-20% of calories should come from protein, which translates into about 6 ounces a day.
- ▶ Use the **H-B1 MyPyramid Provides Important Nutrients** handout to point out where this nutrient can be found in the food groups.

Slide 7: Nutrient – Fat

- ▶ Fat is another important nutrient.
- ▶ It contributes to healthy skin, proper growth and healthy cell membranes.
- ▶ It is an insulator and protector of organs.
- ▶ Fat also provides transport for the fat soluble vitamins (A, D, E, K).
- ▶ It also makes food taste good.
- ▶ Saturated fat, *trans* fat and cholesterol have all been linked to heart disease. Saturated fats are solid at room temperature (butter, meat fat, coconut oil).
- ▶ Unsaturated fats and oils are liquid at room temperature. *Trans* fat, as discussed earlier contribute to heart disease. Cholesterol is found only in animal products.
- ▶ We need to choose more unsaturated vegetable oils – canola, soybean, corn, olive – more tub-type margarines and low fat dressings.

- ▶ Use the **H-B1 MyPyramid Provides Important Nutrients** handout to point out where this nutrient can be found in the food groups.

Slide 8: Nutrient – Vitamins

- ▶ Vitamins help keep body cells healthy and protect against cancer. They are known as antioxidants.
- ▶ There are two main types the water soluble vitamins and the fat soluble vitamins.
- ▶ Water soluble vitamins are the C and the B-complex vitamins. Vitamin C is primarily found in citrus fruits, strawberries, and peppers. B-complex vitamins include thiamin, riboflavin, niacin, B12, folic acid, etc. We primarily find these vitamins in grain products, green leafy, and in some meats. Excess of water soluble vitamins are excreted in the urine.
- ▶ Fat soluble vitamins A, D, E, and K are stored in your fat. At extremely high levels, some are toxic. Dietary Reference Intakes have been established for all of the vitamins.
- ▶ Use the **H-B1 MyPyramid Provides Important Nutrients** handout to point out where this nutrient can be found in the food groups.

Slide 9: Nutrient – Minerals

- ▶ Minerals, like vitamins, create healthy bodies by growing strong bones, teeth, skin and bodies.
- ▶ They play a role in regulating our nervous and cardiovascular systems and act as enzymes in chemical reactions in our normal body processes.
- ▶ Minerals are found in all of the food groups.
- ▶ Calcium and Iron are the most common mineral deficiencies in the United States.
- ▶ Use the **H-B1 MyPyramid Provides Important Nutrients** handout to point out where this nutrient can be found in the food groups.

Slide 10: Nutrient – Water

- ▶ Water...we can't live without it!
- ▶ It is necessary to regulate body temperature through sweat.
- ▶ It serves as the transport (blood) for delivery of the other nutrients to the cells and works to also remove waste.
- ▶ Eight 8-ounce glasses is the daily recommendation for water.
- ▶ Thirst is not a good indicator of status. Most of the time if you are already thirsty, you are already mildly dehydrated.

- ▶ Alcohol and caffeine work against water and dehydrate the body.

Slide 11: Dietary Reference Intakes (DRIs)

- ▶ The Dietary Reference Intakes (DRI) are a set of four lists of nutrient intake values for healthy people in the United States and Canada. These values are used for planning and assessing diets:
 - Recommended Dietary Allowances (RDA): Nutrient intake goals for individuals. Derived from the Estimated Average Requirements.
 - Estimated Average Requirements (EAR): Population-wide average nutrient requirements used in nutrition research and policy making. The basis on which the RDA values are set. Strong scientific research data supports the EAR and the RDA.
 - Adequate Intake (AI): Nutrient intake goals for individuals. Set whenever scientific data are insufficient to allow the establishment of a RDA value.
 - Tolerable Upper Intake Levels (UL): Suggested upper limits of intake for potentially toxic nutrients. Intakes above the UL are likely to cause illness from toxicity.

Activity

- ▶ Hand out **H-B2 Dietary Reference Intakes (DRIs): Estimated Average Requirements for Groups** and review the new DRIs with the participants.
- ▶ The DRIs are used for developing and regulating nutrition in the United States. It is a basis for the food guides prepared for the public and serves as the basis for the establishment of standards for public assistance programs (National School Lunch and Breakfast, WIC, Food Stamps, commodities, etc.) They serve as a base in the development of diets and products.

Slide 12: Nutrient-Rich Foods

- ▶ Review the concept of nutrient-rich foods if needed.
- ▶ Choose
 - Brightly colored fruits and 100% fruit juices
 - Vibrant-colored vegetables
 - Lean meat, skinless poultry, fish, eggs, beans and nuts
 - Whole, fortified and fiber rich grain foods
 - Fat-free and low-fat (1%) milk, cheese and yogurt
- ▶ Encouraging you to choose foods that are nutrient rich is especially relevant today as many Americans are overfed, but undernourished. Sedentary lifestyles and poor food choices have

Americans exceeding their caloric needs without meeting nutrient requirements. This not only causes obesity and related diseases, but also leads to malnutrition.

- ▶ The number of overweight Americans has climbed to a record high, with nearly two-thirds (65.1%) classified as overweight or obese. Yet, many people aren't meeting recommended intake levels for several key nutrients including many B vitamins, Vitamins A, C and E, calcium, magnesium, zinc and iron. At a time when Americans are counting calories, it is more vital than ever to make those calories count more in terms of their nutritional value. Choosing nutrient-rich foods first does just that.
- ▶ Nutrient-rich foods provide a substantial amount of vitamins, minerals and other nutrients, and relatively few calories. Foods with few nutrients many times supply calories but relatively small amounts of vitamins, minerals, and other nutrients and sometimes they provide none at all. Nutrient-rich foods are aligned with the Dietary Guidelines and MyPyramid. Choose brightly colored fruits and 100% fruit juice, vibrant colored vegetables, whole-fortified and fiber-rich grain foods, lean meat, skinless poultry, fish, eggs, beans and nuts, and fat-free and low-fat milk, cheese and yogurt.

◆ **PERFORMANCE CHECK**

Slide 13: Nutrient-Rich Foods

- ▶ Choosing the most nutrient-rich foods from each food group ensures that you will get more nutrition out of your calories. Refer to handout **H-B3 *Nutrient Knowledge*** worksheet and review. Hand out **H-B4 *Live Well! Nutrient-Rich Shopping List*** (attached to **H-B3**) is a handy list to have when shopping for nutrient-rich food.

Activity

Activity

Activity

- ▶ Complete handout **H-B5 *Nutrient Brainteasers***.
- ▶ Discuss nutrient-rich foods vs. empty calorie foods using the handouts **H-B6(1)-H-B6(5) *Food Comparison Cards***. Compare: Skim milk vs. Soft drinks, French Fries vs. Baked Potato, apple and apple pie, cheese pizza vs. deluxe pizza, chocolate bar and chocolate chip cookies.
- ▶ Choose **one** of the following activities:
 - **Nutrient-Rich Foods Game**: Put a variety of naturally nutrient-rich foods from one food group into a bag (for example: put all of the fruit food models into a grocery bag,

Activity

put all of the vegetables into another bag, do the same with meats, milk/dairy and grains). Include a variety of nutrient-rich foods and ones that are not so nutrient rich. Have the participants break up into groups and give them 5-7 minutes to sort foods into nutrient rich and not so nutrient rich. If time allows have them share with the group. If you want to create competition, time them to see who gets done first!

Activity

- The Big Picture. Distribute the handout **H-B7 The Big Picture**. Explain to learners how to interpret the nutrient bar graphs. Have participants complete the questions on the handout. Use the answer key to guide discussion.

Activity

- Nutrition Bingo. Distribute the handout **H-B8 Nutrition Bingo**. Instruct participants to select empty calorie foods or nutritious foods from the list of foods and write them in the squares of the game grid. Instructor will call out foods and participant will write “N” on the food name if it is nutrient rich and “E” on those providing only empty calories. The first person to correctly complete the grid yells “Nutrition Bingo”. Compare the answers with the answer key. Prize could be a nutritious snack.

◆ **Independent Practice**

- N/A