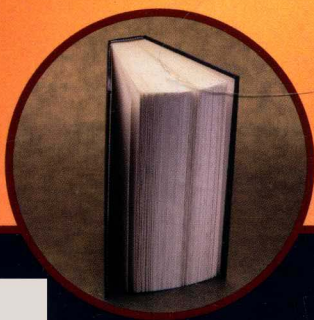


NFS 1020
Science and Application
of Human Nutrition

Professor
Dr. Deborah Gustafson



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NFS 1020

Science and Application of Human Nutrition

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Section 1 An Overview of Nutrition

Reading Assignment: Chapter 1 & Appendices G & J in Understanding Nutrition textbook

After completing this section students should be able to:

1. Identify factors that affect food choices.
2. List the major classes of nutrients.
3. List the nutrients that provide energy and the number of calories per gram that each provides.
4. Describe characteristics of food and water.
5. Identify four types of nutrition research.
6. Discuss how research studies provide information about nutrition and health.
7. Discuss the importance of research design in determining health effects of nutrients and food components.
8. Discuss the evolution of dietary recommendations including RDAs, DRIs, EARs, AIs and TULs.
9. Describe nutrients and methods for assessing nutrition among individuals.
10. Describe methods used for assessing nutrition in populations.
11. Identify the leading causes of death in the United States.
12. Students should be able to define and explain key terms present in the margins of the text and in relationship to material presented in class in the lecture outline.

Section 1 An Overview Of Nutrition

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Reading Assignment: Chapter 1 & Appendices G & I in Understanding Nutrition textbook

After completing this section students should be able to:

1. Identify factors that affect food choices.
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3. List the nutrients that provide energy and the number of calories per gram that each provides.
4. Describe characteristics of vitamins, minerals and water.
5. Identify four types of nutrition research.
6. Discuss how research studies provide information about nutrition and health.
7. Discuss the importance of research design in determining health effects of nutrients and food components.
8. Discuss the evolution of dietary recommendations including RDAs, DRIs, EARs, AIs and TULs.
9. Describe nutrition assessment methods and tools used for assessing nutrition among individuals.
10. Describe methods used for assessing nutrition in populations.
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SECTION OUTLINE

I. FOOD CHOICES

A. Factors Affecting Food Choices:

- Personal Preference
- Habit
- Ethnic Heritage or Tradition
- Social Interaction
- Availability, Convenience, Economy
- Positive & Negative Associations
- Emotional Comfort
- Values
- Body Image
- Nutrition

II. INTRODUCING THE NUTRIENTS

A. The Six Classes of Nutrients

1. Carbohydrates
2. Lipids
3. Proteins
4. Vitamins
5. Minerals
6. Water

B. The Energy-Yielding Nutrients

1. Energy measured in kilocalories
2. Energy from foods (see How To, p 8; Making It Click, p 21)
3. Energy in the body

C. The Vitamins

D. The Minerals

E. Water

III. THE SCIENCE OF NUTRITION

A. Nutrition Research

1. Epidemiologic Studies

2. Case-Control Studies

3. Animal Studies

4. Human Intervention (Clinical) Trials

5. Relevant Terms

- Controls
- Sample size
- Placebo
- Double blind
- Correlations and causes

6. Research vs. Rumors

IV. DIETARY REFERENCE INTAKES

A. Establishing Nutrient Recommendations

1. Estimated Average Requirements (EAR)

2. Recommended Dietary Allowances (RDA)

3. Adequate Intakes

4. Tolerable Upper Intake Levels

5. Comparing Nutrient Recommendations (see appendix G & I)

a. The Canadian Exchange System

b. World Health Organization

c. Food and Agriculture Organization

V. THE RECOMMENDED DIETARY ALLOWANCES (RDA)

(not presented in depth in the textbook Understanding Nutrition)

A. Guidelines

B. Safe and adequate and include a margin of safety

C. For normal, healthy individuals

D. Made for different sets of people: men, women, pregnant, children, other groups

E. Established by:

1. Food and Nutrition Board
2. National Academy of Sciences
3. National Research Council

F. RDA for Nutrients

1. Requirement
 - a. Distribution of nutrient requirements
 - b. Population-based

G. "R" is for Recommended

1. Recommended not required
2. Generous
3. Minimum requirements for health
 - a. Sodium
 - b. Potassium
 - c. Chloride

H. RDA for Energy

1. Nutrient RDA versus energy RDA
2. For average individuals
3. Reference woman

4. Reference man
5. No RDA for fat or carbohydrate

VI. NUTRITION ASSESSMENT

A. Nutrition Assessment of Individuals

1. Historical information
2. Anthropometric data
3. Physical Examinations
4. Laboratory tests

B. Nutrition Assessment of Populations

1. Healthy People 2000
2. Nationwide Food Consumption Survey (NFCS)
3. National Health and Nutrition Examination Survey (NHANES)

VII. DIET AND HEALTH

A. Chronic Disease

1. Leading causes of death in the United States
 - Heart disease
 - Cancers

- Strokes
- See table 1-2 (pg. 20)

Only two other lifestyle factors are more related to health than diet – smoking and excessive alcohol use.

B. Risk Factors for Chronic Diseases

VIII. HIGHLIGHT 1: FINDING NUTRITION INFORMATION-SITES AND SOURCES (p 23)

A. Nutrition on the Net

B. Identifying Nutrition Experts

1. Physicians
2. Registered Dietitians
3. Professional health organizations
4. Government health agencies
5. Volunteer health agencies
6. Reputable consumer groups
7. Public health nutritionists

C. Identifying Fake Credentials

D. Identifying Valid Information

1. Properly designed experiments
2. Inadequacy of anecdotal evidence
3. Animal findings not directly applied to humans
4. Care in generalizing to all people
5. Report findings in a peer-reviewed scientific journal

E. Identifying Misinformation

Critical Thinking

1. Spend a couple of hours watching Saturday morning cartoons. How many minutes of food commercials were shown? What kinds of foods were advertised?
2. Think about a TV or radio food advertisement that attracted your attention. Analyze it for the following: What was its message? What did it promise? How do you feel about the product in light of the advertising?
3. What impact does advertising have on your food choices? What impact does the advertising have on the cost of the food?

Section 2 Planning a Healthy Diet

Reading Assignment: Chapter 2 in Understanding Nutrition textbook

After completing this section students should be able to:

1. List six diet planning principles.
2. List the Dietary Guidelines.
3. Describe the Daily Food Guide and list the five food groups.
4. Describe the original Food Guide Pyramid and explain how it can be used in selecting a healthy diet, utilizing the food group number of servings and serving sizes for each food group.
5. Explain the general use of food labels.
6. List and explain the types of information provided on food labels.
7. List several descriptive terms and health claims that can be used on food labels.
8. Compare the USDA Food Guide Pyramid and the Mediterranean Food Guide Pyramid.
9. Students should be able to define and explain key terms present in the margins of the text and in relation to the lecture outline.

Section 2 Planning A Healthy Diet

Critical Thinking

1. Spend a couple of hours watching Saturday morning cartoons. How many minutes of food commercials were shown? What kinds of foods were advertised?
2. Think about a TV or radio food advertisement that attracted your attention. Analyze it for the following: What was its message? What did it promise? How do you feel about the product in light of the advertising?
3. What impact does advertising have on your food choices? What impact does the advertising have on the cost of the food?

Section 2

Planning

A

Healthy Diet

Section 2

Planning a Healthy Diet

Reading Assignment: Chapter 2 in Understanding Nutrition textbook

After completing this section students should be able to:

1. List six diet planning principles.
2. List the Dietary Guidelines.
3. Describe the Daily Food Guide and list the five food groups
4. Describe the original Food Guide Pyramid and explain how it can be used in selecting a healthy diet, by utilizing the food groups, number of servings and serving sizes for each group.
5. Explain the general use of exchange lists.
6. List and explain the types of information provided on food labels.
7. List several descriptive terms and health claims that can be used on food labels.
8. Compare the USDA Food Guide Pyramid and the Mediterranean Food Guide Pyramid.
9. Students should be able to define and explain key terms present in the margins of the text and in relationship to material presented in class in the lecture outline.

SECTION OUTLINE

I. PRINCIPLES AND GUIDELINES

A. Diet-Planning Principles

1. Adequacy
2. Balance
3. Kcalorie control
4. Nutrient density
5. Moderation
6. Variety

II. DIETARY GUIDELINES

A. Stress Moderation

B. Address Dietary Practices Related to Chronic Disease

1. Overnutrition

C. Include Physical Activity

D. Examples:

1. Dietary Guidelines for Americans, 1995 (see table 2-1, p 33)
 - a. Eat a variety of foods
 - b. Balance the food you eat with physical activity, maintain or improve your weight.
 - c. Choose a diet with plenty of grain products, vegetables, and fruits.
 - d. Choose a diet low in fat, saturated fat, and cholesterol.
 - e. Choose a diet moderate in sugars
 - f. Choose a diet moderate in salt and sodium
 - g. If you drink alcoholic beverages, do so in moderation.