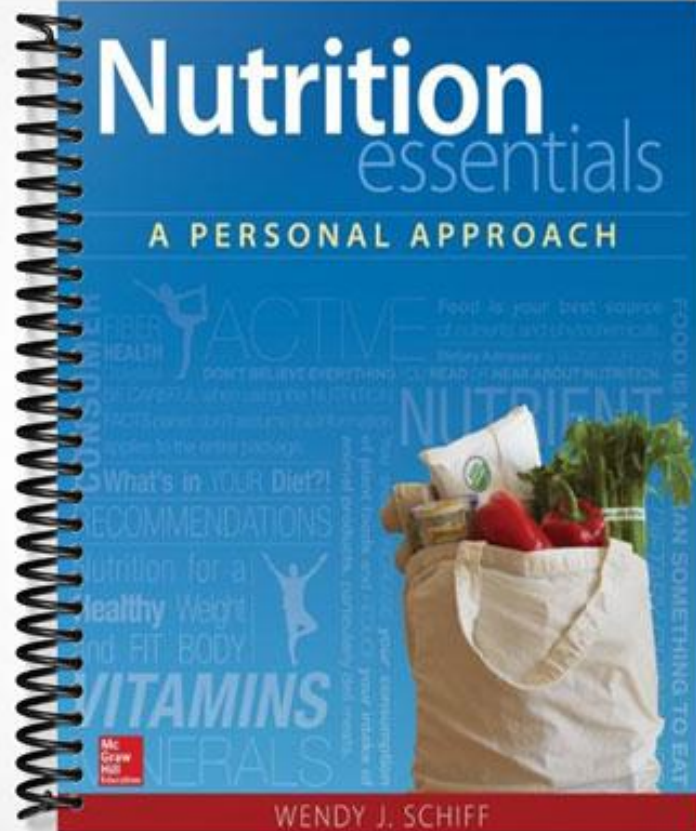


SOLUTIONS MANUAL



UNIT 2

NUTRITION INFORMATION: FACT OR FICTION?

OVERVIEW

Unit 2 focuses on the generation and dissemination of nutrition knowledge. The scientific method is presented as the basis for nutrition research, and different research methods are discussed. Various sources of nutrition information are evaluated, including peer-reviewed scientific journals, popular media, the Internet, and registered dietitians. This unit places a strong emphasis on the importance of being a critical and educated consumer of nutrition information.

LEARNING OUTCOMES

Module 2.1

1. Define all of the key terms in this module.
2. List the basic steps of the scientific method as it relates to nutrition research in general.
3. Discuss ways that scientists conduct nutrition-related research that involves human subjects.
4. Explain why results of similar studies can provide different findings.

Module 2.2

1. Define all of the key terms in this module.
2. Explain the difference between an anecdote and a testimonial.
3. Explain why there is so much nutrition misinformation.

Module 2.3

1. Define all of the key terms in this module.
2. Describe how you can become a careful and critical consumer of nutrition information.
3. Identify common “red flags” that are signs of nutrition misinformation.
4. Describe how to identify reliable sources of nutrition information.

Module 2.4

1. Explain how to identify reliable nutrition experts.

CHAPTER OUTLINE

I. Nutrition: Science for Consumers (Module 2.1)

A. Introduction

1. In the past, nutrition facts and recommended dietary practices were often based on intuition, common sense, “conventional wisdom” (tradition), or **anecdotes**
2. Anecdotes are reports of personal experiences
3. Today, evidence obtained by current scientific research no longer supports them

B. Collecting Science-Based Evidence

1. The scientific method is used to answer questions about natural and physical observations
2. An **experiment** is a way of testing a scientific question
3. The scientific method is illustrated in the Essential Concept (2.1, Applying the Scientific Method)
 - a. Make observations
 - b. Develop a question
 - c. Test the question
 - d. Collect information
 - e. Analyze the findings
 - f. Form conclusions
 - g. Share the results
 - h. Conduct more research
4. When sharing the result, the team submits an article to the editor and it undergoes **peer review** – expert critical analysis of a research article before it is published
5. Researchers must be careful when applying the results of laboratory experiments involving animals to people
6. Nutrition scientists do conduct experimental (intervention) studies using humans to obtain information about health conditions (outcomes) that can result from specific dietary practices
 - a. In a **double-blind study**, the researchers and subjects don't know which participants are assigned to the **treatment** and **control groups**
 - b. **Double-Blind study** – neither the participant nor the researcher is aware of each participant's group assignment
 - c. The **treatment group** receives a treatment; the **control group** does not receive a treatment
 - d. Subjects in the control group receive a **placebo** or fake treatment, such as a sham pill, injection, or medical procedure
7. The **placebo effect** is when a subject reports a positive or negative reaction to a treatment even though they received the placebo

- a. Populations studies – scientists may collect information about a specific population's health and food-related practices by surveys
- b. The Farmington Heart Study (1949) - scientists analyzed collected information and found relationships among a variety of personal characteristics and health outcomes
- c. Medical researchers are still collecting information from the original Framingham Heart Study participants as well as their descendants

C. Confusion and Conflict

1. Consumers often become confused and disappointed when they learn about conflicting results generated by nutrition studies
2. Situational, genetic, behavioral, and environmental differences among individuals account for much of the variation in the ways they respond to a treatment
3. Scientists expect other researchers to avoid relying on their personal attitudes and biases ("points of view") when collecting and analyzing data and to evaluate and report their results objectively and honestly
4. It is impossible to eliminate all research bias
5. Population studies involving people and their eating practices generally cannot establish cause and effect – whether a practice is responsible for an outcome
6. Multiple risk factors, including your genetic susceptibility to develop a disease, usually influence the development of a chronic disease

II. Spreading Nutrition Misinformation (Module 2.2)

A. Introduction

1. Be careful when seeking nutrition information and advice
2. What are your sources of information for finding nutrition facts?

B. Anecdotes and Testimonials

1. A person can make a "claim" that a product works for him or her if he or she sees an improvement in his or her health
2. A **testimonial** is a person's endorsement of a product
3. When your source of nutrition information is a testimonial, advertisement, or an anecdote, you cannot be sure that the information is based on scientific facts and is, therefore, reliable

C. A Matter of Mistrust

1. People's lives have improved as a result of scientific advancements in medicine
2. Americans mistrust the motives of scientists, dietitians, and other medical professionals
3. Promoters of nutrition misinformation use this mistrust to sell their products
4. It is wise to seek information and opinions from medical professionals who have the best scientific training and experience to diagnose and treat health disorders

D. Why is There So Much Nutrition Misinformation?

1. To be a careful consumer, you shouldn't assume that all nutrition information presented in the popular media are reliable
2. The First Amendment to the U.S. Constitution does not protect consumers with freedom from nutritional misinformation or false nutrition claims
3. The **U.S. Food and Drug Administration (FDA)** can regulate nutrition- and health-related claims on product labels, but the agency cannot prevent the spread of health and nutrition misinformation published in books or pamphlets or presented in television or radio programs

III. **Becoming a More Critical Consumer of Nutrition Information (Module 2.3)**

A. Introduction

1. The **Federal Trade Commission (FTC)** enforces consumer protection laws and investigates complaints about false or misleading health claims that are used in advertising
2. According to the FTC, Americans spend billions of dollars annually on fraudulently marketed and unproven health-related products and treatments that are often useless
3. Skeptical people don't believe the claims without checking into them

B. Becoming a More Skeptical Consumer

1. Don't believe everything you hear or read about nutrition, including nutrition-related products or services
2. Ask questions about the source of information
3. Ask questions about the source's motives for promoting the information
4. Be wary of salespeople, nutrition "experts," claims that the product was "scientifically tested" or "clinically tested at a major university," citation to what appears to be scientific journal articles, scientific sounding terms, and popular sources of nutrition information
5. Practicing medicine without the proper training and licensing or **quackery** is illegal

C. Look for "Red Flags" of Misinformation

1. A red flag is a term or expression that draws your attention
 - a. Promises of quick and easy health remedies
 - b. Claims that sound too good to be true
 - c. Scare tactics
 - d. Money back guarantees
 - e. Statements about the superiority of unconventional medicine practices
 - f. Testimonials and anecdotes as evidence of effectiveness
 - g. Information that promotes a product's benefits, while overlooking its risks
 - h. Recommendations based on a single study

- i. Information concerning nutrients or the human body that's not supported by reliable scientific evidence
 - j. Disclaimers, usually in small or difficulty-to-read print
2. Red flags are clues or signals of misinformation in media, advertising, and personal communications

D. The Internet

1. The Internet is an abundant source of information about nutrition and the benefits of dietary supplements
2. A careful consumer:
 - a. Uses multiple sites (especially, [.gov](#) agencies)
 - b. Relies primarily on sites that are sponsored by groups or qualified health professionals
 - c. Is skeptical of blogs
 - d. Is wary of Web sites that promote or sell products for a profit ([.com](#))
 - e. Avoids sites that include disclaimers
 - f. Doesn't trust sites that include attacks on the trustworthiness of the medical or scientific establishment
 - g. Avoids sites that provide online diagnosis and treatments
 - h. Avoids giving personal information at the site
3. The FTC enforces protection laws and investigates complaints about false or misleading health claims that appear on the Internet

IV. Seeking Reliable Nutrition Information (Module 2.4)

A. Introduction

1. Finding the answers to questions about food or nutrition can be challenging
2. Should you ask your friends or coaches?

B. Nutrition Experts

1. There are no standard legal definitions for people who call themselves a nutrition expert, "nutritionist" or "nutritionalist"**[AQ: Please check the use of the word nutritionalist.]**
2. You can visit www.quackwatch.org and submit "Ask a Question" e-mail requesting information about a person's credentials from the organization's sponsors
3. Nutrition professors and registered dietitians often can be found at a university or college
 - a. Generally have advanced degrees in human nutrition from accredited universities; can conduct research and teach nutrition courses or both
 - b. A registered dietitian (RD) or a registered dietitian nutritionist (RDN) is a college trained health care professional who has extensive knowledge of foods, nutrition, and dietetics

- c. The title “registered dietitian” is legally protected
- d. Visit the Academy of Nutrition and Dietetics Web site (www.eatright.org) or the dietitians of Canada’s Web site (www.dieticians.ca)

ANSWERS TO FIGURE QUESTIONS

There are no figure questions in this unit.

RESPONSES TO “CONSIDER THIS...” QUESTIONS

1. Answers will vary but the discussion should focus on ways to determine the trustworthiness of the source of information
2. Answers will vary. If the student took the advice, was it because they trusted the person who recommended the product? Was the product effective? If the student didn’t use the product, was it because he or she was concerned about the supplement’s safety, effectiveness, and, possibly, cost?
3. Answers will vary but should include at least one of the points listed in Section 2.3c
4. Answers will vary but should include some of the points listed or discussed in Section 2.3b

HELPFUL TEACHING IDEAS

1. Ask students to select, review, and bring in a nutrition research article from a peer-reviewed journal. Have students briefly summarize the research topic, research question(s), methods used to explore the research questions, results, and potential applications to the practice of dietetics.
2. In small groups, have students select a research question that interests them. Ask the students to outline a research study to address the research question. Be sure that students are able to identify a hypothesis, select an appropriate study design, and identify the strengths and limitations of their own study design.
3. Ask students to find a Web site that offers nutrition information. Have students summarize the information, identify the source of the information, evaluate the potential for bias, and locate any disclaimers given on the site. Based on this information, ask students to evaluate the reliability of the information presented on the Web site.
4. Present a recording of a nutrition-related infomercial to the class. Have students identify any of the red flags presented on pages 33–34.
5. Connect students or groups of students with RDs for a brief interview. Ideally, the RDs should be employed in a variety of settings, including clinical dietetics, community nutrition, food service systems management, academics, and research. Students should ask the RDs about their motivation to pursue dietetics, educational background, the path their careers have taken, their likes and dislikes about the profession, and their future career plans.
6. Have students research a dietary supplement or complementary or alternative medicinal practice of interest to them in order to understand the volume of research on the topic and the efficacy of the supplement or treatment. Short class presentations on the information would be beneficial to all.
7. Select a **Tasty Tidbit** or a **What IS That?** segment and generate an active discussion. Engage students in a conversation about the topics or facts in these areas.

IN A NUTSHELL

First, ask your class to review the learning outcomes at the beginning of each module. Then, review this section with your class after you have completed the unit. Highlight the key points of each module, making sure to relate the learning outcomes with the key points highlighted in the **In a Nutshell** section.

TEST YOURSELF

Use these sections/materials as in-class exercises or homework assignments. Discuss with the students best practices and strategies for taking tests on this unit's materials.

www.mcgrawhillconnect.com

Demonstrate at the beginning of the semester the McGraw-Hill Connect Web site (see note below).

FOR ADDITIONAL HELP IN STUDYING THIS UNIT, PLEASE VISIT www.mcgrawhillconnect.com. Enhance your study of nutrition and this unit with a wealth of proven resources available on connectPlus® Nutrition! Ask your instructor how to get access to SmartBook, the dietary analysis software NutrionCalc Plus, and more from the LearnSmart Advantage suite of products.