**Chapter 1 – Food Choices and Human Health**

***Quick List: IM Resources for Chapter 1***

* **Class preparation resources:** learning objectives/key points, suggested activities and projects, lecture outline
* **Assignment materials: Related LO**
* Critical thinking questions (with answer key) 1.4, 1.5, 1.6, 1.7
* Discussion questions (with answers) for Controversy 1 1.8
* Worksheet 1-1: Palak Paneer Label Analysis 1.3, 1.4
* Worksheet 1-2: Intake Analysis—Diet Planning 1.4
* Worksheet 1-3: Why Do You Eat What You Eat? 1.4
* Worksheet 1-4: Making Food Choices[[1]](#footnote-1) 1.4
* Worksheet 1-5: Evaluation of Published Nutrition Information[[2]](#footnote-2) 1.5, 1.8
* Worksheet 1-6: Chapter 1 Review Crossword Puzzle
* **Enrichment materials:** Handout 1-1: Can Diet Help Manage Chronic Disease? 1.1

***Chapter Learning Objectives and Key Points***

1.1 Discuss the impact of food choices on a person’s health.

* The nutrients in food support growth, maintenance, and repair of the body.
* Deficiencies, excesses, and imbalances of energy and nutrients bring on the diseases of malnutrition.
* Nutrition profoundly affects health.
* Diet influences long-term health within the range set by genetic inheritance.
* Nutrition has little influence on some diseases but strongly affects others.
* Life choices, such as being physically active or using tobacco or alcohol, can improve or damage health.

1.2 List seven major categories of nutrition and weight-related objectives included in the publication Healthy People 2020.

* Each decade, the U.S. Department of Health and Human Services sets health and nutrition objectives for the nation.

1.3 Specify the six classes of nutrients.

* The energy-yielding nutrients are carbohydrates, fats (lipids), and protein.
* The regulator nutrients are vitamins and minerals.
* Foremost among the nutrients in food is water.
* Essential nutrients in the diet prevent deficiencies.
* Food energy is measured in calories; nutrient quantities are often measured in grams.
* Nutritious food is superior to supplements for maintaining optimal health.
* Most healthy people who eat a nutritious diet do not need supplements at all.

1.4 Recognize the challenges and solutions to choosing a health-promoting diet.

* Foods that form the basis of a nutritious diet are whole foods, such as ordinary milk and milk products; meats, fish, and poultry; vegetables and dried peas and beans; fruits; and grains.
* A well-planned diet is adequate, balanced, moderate in energy, and moderate in unwanted constituents and offers a variety of nutritious foods.
* Cultural traditions and social values often revolve around foodways.
* Many factors other than nutrition drive food choices.

1.5 Describe the science of nutrition.

* Nutrition is a young and fast-growing science.
* Scientists ask questions and then design research experiments to test possible answers.
* Researchers follow the scientific method and apply it to various research study designs.
* Single studies must be replicated before their findings can be considered valid.
* A theory is strengthened when results from follow-up studies with a variety of research designs support it.
* News media often sensationalize single-study findings and so may not be trustworthy sources.
* National nutrition research projects, such as NHANES, provide data on U.S. food consumption and nutrient status.

1.6 Explain the significance of behavior change in improving a person’s diet.

* Behavior change follows a predictable pattern.
* Setting goals and monitoring progress facilitate behavior change.

1.7 Discuss the importance of nutrient density in creating an effective diet plan.

1.8 Evaluate the authenticity of nutrition information sources.

***Answers to Global Nutrition Watch Activities***

1. a

2. lettuce

3. protein and fiber

***Critical Thinking Questions***

1. *Why is it important to develop an eating plan that incorporates adequacy, balance, calorie control, moderation, and variety in order to prevent or delay the development of a nutrition-related chronic condition?*

An adequate diet prevents deficiency diseases and allows the body’s systems to function properly. Dietary balance helps to achieve adequacy, since essential nutrients are found in different foods. Balance and moderation together prevent excessive intakes of nutrients that should be limited to reduce disease risk, such as saturated fat, salt, and added sugars. Calorie control permits maintenance of a healthy weight and body composition (body fat versus lean tissue). Dietary variety, like balance, assists with achieving adequacy, and also increases intakes of a range of nutrients and beneficial phytochemicals, which promote health, while preventing overconsumption of potentially harmful toxins and contaminants present in certain foods.

2. *Imagine someone in this situation: a single mother who is working two jobs to support herself and her two young children. What factors will likely influence her choices of foods for herself and for her family?*

She is likely on a budget, so she will choose foods that are inexpensive. She may not have much free time and will look for foods that are easy to prepare. She may also choose foods that are familiar to her since she doesn’t have time to investigate new foods, or because they provide emotional comfort when she is feeling stressed. This could lead to her choosing fast foods or processed foods, which are inexpensive, easy to prepare, and familiar.

It is possible for a person who has limited time and finances to eat well if she/he has received nutrition education. For example, this woman could be taught about the importance of a nutritious eating plan for herself and her children, and encouraged to choose inexpensive but wholesome staple foods.

3. *Nutrition researchers want to study the link between a high-fiber diet and the reduced risk of colon cancer. Describe how they could carry out each of the following types of studies:*

a. *Intervention study*

The researchers could feed groups of people a preplanned diet for a given amount of time. The control group would eat a typical diet that provides 10-15 grams of fiber per day. The experimental group would eat a diet that includes more high-fiber foods, providing 25-30 grams per day. The researchers could have the subjects fill out questionnaires or perform colonoscopies to see the effects of high fiber intakes on the walls of their colons. The results for the two groups would then be compared.

b. *Epidemiological study*

The researchers would observe a group of people who regularly eat a higher-fiber diet versus a group of people who regularly eat a lower-fiber diet. The researchers would compare rates of colon cancer diagnosis to determine whether either group’s diet can be correlated with a higher or lower risk of colon cancer.

c. *Laboratory study*

The researchers would work with animals such as rats or mice in the lab and would manipulate their diets. One group of animals would receive a high-fiber diet and the other group would receive a low-fiber diet. After a given amount of time, the researchers could examine the colons of each group of animals for signs of cancer. By manipulating the animals’ diets, the researchers could determine whether changing the level of fiber in the diet reliably changes the likelihood of colon cancer.

4. *You decide that you want to increase your intake of fruits and vegetables up to three cups a day for both. Describe how you would work towards this goal using the 6 steps to behavior change listed in Table 1-9.*

In the precontemplation stage, you would either be unaware that your intake of fruits and vegetables is lower than recommended for health or not believe that your low intake is a problem.

You transition to the contemplation stage when you either learn about the importance of eating produce or recognize that your low intake could harm your health over time. You then think about whether you want to start eating more fruits and vegetables. You consider the pluses such as eating more nutrients with fewer calories. You also consider the minuses such as the fact that fruits and vegetables cost more and don’t last as long as other foods.

When you decide that you want to increase your produce intake, you move to the preparation stage. Here, you decide which fruits and vegetables you like and are willing to prepare. You also consider how you can eat more of these while you are at work. You are making plans to change your eating behaviors.

You then start to add ½ to 1 cup of the fruits and vegetables to your daily meals. You are actively involved in your new behavior; this is the action stage. You note how you feel as you add more produce to your diet.

You continue with your new behavior but you sometimes don’t meet your goal. You keep track of your produce intake and you also note what obstacles interfere with your progress. You are in the maintenance stage of your behavior change. You may have setbacks, but you keep acting on your behavior change.

Eventually, eating three cups of fruits and vegetables each day becomes a normal part of your eating behavior. You now wish to increase your whole grain intake. So you have moved on to new goals and are in the adoption stage as far as eating more fruits and vegetables each day is concerned.

5. *How can the concept of nutrient density of foods help you to develop a healthier eating pattern?*

Nutrient density describes the essential nutrient contents of a food relative to its calorie content. A food that is more nutrient dense will have more nutrients such as fiber, vitamins, or minerals but fewer calories. For example, instead of having fried chicken with a lot of calories, you can have baked chicken, which has fewer calories with the same key nutrients, such as protein and vitamin B12. You can compare the nutrient density of foods at the grocery store by reading the labels and selecting the food that has more fiber, minerals, and vitamins and less saturated and *trans* fat and sugar. Eating nutrient-dense foods will help you achieve adequacy with calorie control in your eating plan.

6. *What strategy could you develop to overcome each of the excuses for not eating well that are listed in Table 1-6?*

**No time to cook:** You could try cooking a few meals on the weekend and then freezing them into smaller portions for easy reheating during the week. There are also many healthy options for convenience meals that serve one person. Just check the labels for calories, sugar, salt, and saturated fat.

**Not a high priority:** You could ask any healthcare provider what chronic diseases could be caused by a poor diet. You could also talk with people who have these conditions to see how their quality of life has been impacted.

**Crave fast food and sweets:** It may work well to allow yourself a small serving of fast food once a week or of sweets each day. If you eliminate these foods all together, you will crave them. You can also make small, simple substitutions of a piece of fruit for sweets or pretzels or unsalted nuts for potato chips.

**Too little money:** You should go to the grocery store and compare the price of produce (fruits and vegetables) with processed or snack foods. You may only want to buy a couple of pieces of fruit at a time so that you will eat them before they spoil. You could also try growing fruits or vegetables in your own garden or as part of a community garden.

**Take vitamins instead:** You could try eating several cups of fruits and vegetables daily in place of a less healthy choice and see how you feel over time as compared with taking a supplement.

***Controversy Discussion Questions***

1. *Your good friend asks you if there is any particular type of diet that you can recommend for her sister who has multiple sclerosis. Where can she obtain reliable nutrition information?*

You could suggest that she check out the website of the Academy of Nutrition and Dietetics (www.eatright.org) or the American Medical Association (www.ama-assn.org) for information. If she does not want to use the Internet, she could look in her phone book for registered dietitians in her area. If she cannot find this information on her own, she could ask her doctor for a referral to a registered dietitian. She may also be able to find reliable information online from the National Multiple Sclerosis Society.

2. *Discuss how anecdotal evidence for the effectiveness of a weight-loss supplement differs from scientific evidence of the effectiveness of a weight-loss supplement. Which source of evidence would you trust more and why?*

Anecdotal evidence comes in the form of patient testimonies as to how well the product works. There may only be testimonies from a few people who make the product sound wonderful. There is usually no cited study from a credible research center. This type of anecdotal evidence would be seen on TV or would be published in a popular magazine as a story.

Scientific evidence would actually describe a study that is done at an accredited research or clinical center. There would be results from a large number of people and the study would employ the suitable controls such as a group of patients who get the weight-loss supplement versus patients who get a placebo. The results of this study would be reviewed by and then published in a journal that is read by experts in the fields of nutrition and medicine.

Most people would trust information from a well-designed and published scientific study, since large numbers of people have participated in the study and the results are more easily repeatable by other researchers.

3. *Your community leaders decide to have a speaker come to discuss the management of diabetes using lifestyle approaches. They have a choice between inviting a physician who specializes in internal medicine or a certified diabetes educator. Which of these individuals is more apt to have reliable nutrition information related to diabetes and why?*

A certified diabetes educator is a health professional who has obtained additional training in nutrition and other lifestyle factors related to the management of diabetes and earned a certification on diabetes education through work experience and successful completion of an examination. Many certified diabetes educators are also either registered dietitians or registered nurses.

A physician does receive extensive schooling in human biochemistry and physiology, but most medical school programs only devote a small amount of time to the study of nutrition—often, they spend less time on this topic than students who take nutrition at the undergraduate level! In fact, very few medical schools require even 25 hours of instruction in the field of nutrition. There are some physicians who are trained in clinical nutrition and are highly qualified to give nutritional advice on diabetes management and other health issues. Unless a physician specializes in clinical nutrition, she or he will have spent much less time learning about nutrition than a certified diabetes educator.

4. *Discuss any 3 websites with reliable sources of nutrition information and explain why you chose them.*

As listed in Table C1-2, reliable websites include those of government agencies charged with protection of the public’s health, respected and peer-reviewed journals, and professional, consumer, and volunteer organizations that support public health promotion. They can be considered reliable because they are produced by trustworthy organizations, link to other reputable sites, are updated regularly, and do not charge fees or attempt to sell products (see Table C1-3).

***Worksheet Answer Key***

**Worksheet 1-1: Palak Paneer Label Analysis**

1. Cheery Chef Foods, Inc.

2. a. 5 ounces (142 grams)  
b. *Open question (answers will vary)*

3. 2

4. a. 14 grams per serving or 28 grams per package  
b. Per serving: 130 kilocalories based on the label, or 126 kilocalories based on calculation

5. 2,000 kilocalories

6. By heating in the microwave or conventional oven

7. a. Spinach

b. It is reassuring to know that a product with the word *spinach* in the name (*palak* = spinach) has spinach as the main ingredient instead of another artificial ingredient.

8. a. Citric acid  
b. No

9. 35% of the DV of vitamin A is provided by one serving of this product

**Worksheet 1-2: Intake Analysis—Diet Planning**

1. Fruits, vegetables, and whole grains

2. Beer and one enchilada instead of two

3. a. Milk, whole-wheat bread, cereal, and meat

b. It has a lot of grains and dairy products

c. No fruit, few vegetables, and too much beer

4. a. Lots of fruits, vegetables, and whole grains

b. A bit light on complex carbohydrates

**Worksheet 1-6: Chapter 1 Review Crossword Puzzle**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. essential  2. staple foods  3. nutrient dense  4. *Healthy People 2020* | 5. intervention  6. organic  7. fortified  8. control group | 9. gram  10. balance  11. epidemiologic  12. calories | 13. nitrogen  14. maintenance  15. hypothesis  16. adequacy |

***Learning Activities & Project Ideas***

**Activity 1-1: Brief Research Report on Milk[[3]](#footnote-3)** LO 1.5

Most students don’t understand that there are harmful effects of everyday foods, along with “tainted” marketing. This project helps students to discover the truth in marketing foods for themselves. Explain: “I’d like to see some current research on how good milk really is for you. Certainly you should include the different types of milk (whole milk vs. 2% vs. skim) along with the organic varieties. Be sure to include the good and the bad. Your citations should be from either this year or last year.”

**Activity 1-2: Students’ Burning Questions[[4]](#footnote-4)**

The first day of class, give each student three “Post-It” notes. On each note, students are to write down a “burning” question they have about nutrition. While they are doing this, tape fifteen large pieces of construction paper around the room, each with a title that roughly corresponds to chapters of the text.

When they finish writing their questions, have them categorize their Post-It notes according to the fifteen chapters by placing their Post-It on the piece of construction paper that relates to their question. When they finish, ask them to take turns reading the questions that they have generated. Before the next class, check the categorization of their questions and rearrange the Post-It notes so that they are placed with the appropriate chapter sheet if necessary. As you begin a new chapter, bring the corresponding piece of construction paper to class, and read the questions aloud.

This activity helps reassure students, early on, that you will (or won’t) be covering some of their “burning” questions. It also helps show students the relevance of the information you’re covering in class, and helps show instructors the interests of the students.

**Activity 1-3: Scheduled Interruption—Think/Pair/Share[[5]](#footnote-5)**

Examination of student attention levels throughout class indicate that students’ attention levels are the highest during the first five minutes of class, then slowly decline throughout a lecture. To enhance students’ attentiveness, teaching authorities suggest scheduled interruptions. One planned interruption is think, pair, and share. The purpose of this activity is to encourage the participation of all students, especially those who are quiet. Pose a statement, problem, or situation. Instruct students to quietly write their comments including their thoughts and feelings regarding this topic. Next, pair students with a partner and instruct them to share their comments. Circulate while students are talking. After they have shared with their partner, ask for comments to be shared with the entire class.

**Activity 1-4: Controversies Presentations Project[[6]](#footnote-6)** LO 1.8

For controversies, divide the students into two teams per chapter to present the controversies. Instruct the students to look for peer-reviewed journal articles that include points in favor and points against. Students should also interview 15 people outside of their nutrition class to get the general public opinion. Afterwards, the two teams will present the two sides of the issue and the rest of the class will discuss and then vote. The leader of each team will receive extra points.

***Chapter Lecture Outline***

1. Introduction – The science of how food nourishes the body
   1. What is this chapter about??
   2. Why care about nutrition?
   3. What are the nutrients in foods and what roles do they play in the body?
   4. What constitutes a nutritious diet?
   5. How do we know what we know about nutrition?
2. A Lifetime of Nourishment
   1. Introduction
      1. The nutrients in food support growth, maintenance, and repair of the body.
      2. Deficiencies, excesses, and imbalances of nutrients can lead to malnutrition that can negatively impact health over time.
   2. The Diet and Health Connection
      1. Nutrition profoundly affects health.
      2. Chronic diseases have a connection to a poor diet.
         1. Chronic diseases include heart disease, chronic lung disease, diabetes, some cancers, dental disease, and adult bone loss.
         2. Chronic diseases cannot be prevented by a good diet alone.
         3. To some extent, chronic diseases are determined by genetics, activities, and lifestyle.
         4. See Handout 1-1: Can Diet Help Manage Chronic Disease?
   3. Genetics, Nutrition, and Individuality
      1. An inherited disease is a condition that is passed from a parent to a child; e.g., hemophilia, sickle cell anemia, Down syndrome, and many others.
      2. Other conditions are associated with lifestyle behaviors or diet, e.g., heart attack, diabetes, mineral or vitamin deficiencies.
      3. Choice of diet influences long-term health within the range set by genetic inheritance.
      4. Nutrition has little influence on some diseases but strongly affects others.
   4. Think Fitness: Why Be Physically Active?
      1. Regular physical activity should be integrated into everyone’s daily lives.
      2. There are many short- and long-term health benefits of physical activity.
   5. Other Lifestyle Choices
      1. Tobacco use and alcohol and other substances can destroy health.
      2. Staying active, getting enough sleep, and stress can all affect health.
3. *Healthy People*: Nutrition Objectives for the Nation
   1. U.S. Department of Health and Human Services sets nutrition objectives for the nation each decade.
   2. In 2015, the nation’s health report shows some negative and positive trends.
   3. Percentage of adults meeting physical activity and muscle strengthening guidelines increased.
   4. Most people lacked enough vegetables in their diets.
   5. The number of people 2 years and older with obesity has increased.
4. The Human Body and Its Food
   1. Six different families of molecules from food are required for the body’s proper functioning.
   2. The nutrients provide energy, building material, maintenance and repair, and support growth.
   3. Carbohydrates, fats, proteins, vitamins (they contain carbon).
   4. Meet the Nutrients
      1. Quantities of food and nutrients are measured in grams.
      2. The Energy-Yielding Nutrients
         1. Carbohydrates provide 4 cal/g.
         2. Fats provide 9 cal/g.
         3. Proteins provide 4 cal/g.
      3. Vitamins and Minerals
         1. Also known as micronutrients.
         2. Regulate body processes but provide no calories.
      4. Water
         1. Foremost among the nutrients in quantity needed.
         2. The body constantly loses water, and needs sufficient water to function properly.
      5. The Concept of Essential Nutrients
         1. Essential nutrients must be obtained in the diet because the body does not make them.
         2. Essential nutrients can be found in all six classes of nutrients.
      6. Calorie Values
         1. Calorie is a unit of heat energy.
         2. Scientists have determined the amount of calories and nutrients people need based on their gender, age, and activity level.
   5. Can I Live on Just Supplements?
      1. Elemental diets
         1. Diets with a precise chemical composition.
         2. Lifesaving for people who cannot eat ordinary food.
         3. Not appropriate over long periods for healthy people as “meal replacers” or “insurance” against malnutrition.
      2. Food Is Best
         1. People in the hospital improve more quickly after eating food than when receiving their nutrients through IVs.
         2. Eating provides physical, psychological, and social comfort for people as well.
      3. Complex Interactions
         1. Food provides phytochemicals and other bioactive compounds
         2. These interact with the body’s metabolic processes and may affect disease risks.
5. The Challenge of Choosing Foods
   1. The Abundance of Foods to Choose From
      1. Foods come in a bewildering variety in the marketplace, but the foods that form the basis of a nutritious diet are basic foods.
      2. The original foods were whole foods that underwent little if any processing.
      3. There are fast foods, processed foods, functional foods, and staple foods that people need to consider in their daily food choices.
   2. How, Exactly, Can I Recognize a Nutritious Diet?
      1. Elements of a healthy diet = ABCMV
      2. Adequacy – get enough of essential nutrients as well as fiber and energy.
      3. Balance – contains a good proportion of nutrients. No overemphasis of a food group.
      4. Calorie Control – choose foods to maintain ideal body weight.
      5. Moderation – eat any food in reasonable-size portions.
      6. Variety – eat different types of food to prevent boredom and to ensure dietary adequacy.
   3. Why People Choose Foods
      1. Eating is an intentional act. People choose what to eat, where to eat, whom to eat with, how to prepare it.
      2. People often have a variety of excuses for not eating well, such as no time to cook, not making nutrition a health priority, craving fast foods or sweets, and taking supplements instead.
      3. Cultural and Social Meanings Attached to Food
         1. Foodways are the sum of a culture’s habits, customs, beliefs, and preferences concerning food.
         2. An omnivore is a person who eats foods of both plant and animal origin, including animal flesh.
         3. A vegetarian avoids animals out of respect for them or for health benefits.
      4. Factors That Drive Food Choices
         1. Advertising
         2. Availability
         3. Cost
         4. Emotional comfort
         5. Habit
         6. Personal preference and genetic inheritance
         7. Positive or negative associations
         8. Region of the country
         9. Social norms
         10. Values or beliefs
         11. Weight
         12. Nutrition and health benefits
6. The Science of Nutrition
   1. The Scientific Approach
      1. The scientific method is used to advance the knowledge within nutrition in a consistent way.
      2. The findings of such studies are published in journals that are reviewed and read by other scientists.
   2. Scientific Challenge
      1. Once a finding is published, it is still only preliminary.
      2. One experiment does not “prove” or “disprove” anything.
      3. Must be duplicated, supported, and challenged by other scientists
      4. A finding that has stood up to repeated, rigorous testing may become a theory.
      5. A theory is still subject to challenge by other studies and is not “set in stone.”
      6. Research designs
         1. Include case studies, epidemiological studies, controlled clinical trials, and lab studies.
         2. Controlled clinical trials should include both experimental and control subjects so that the effects of a variable (such as a nutrient) can be studied more thoroughly.
      7. When many of these types of studies together confirm a relationship between the intake of a nutrient and a health outcome, one can confidently state that the relationship is supported.
   3. Can I Trust the Media to Deliver Nutrition News?
      1. Read nutrition information with an educated eye.
      2. Scientists watch trends and evaluate nutritional studies to see if they are properly carried out before the scientist endorses the data from the study.
      3. Popular media may release information about preliminary findings without describing details of the studies being done; e.g., the cholesterol lowering effects of oats in the diet.
   4. A Consumer’s Guide to Reading Nutrition News
      1. Tricks and Traps
         1. Nutrition headlines are constantly changing, which leads to consumer frustration.
         2. Reporters use phrases like “now we know” or “the truth is” to get the reader’s attention.
         3. Scientists use more tentative language when describing their research findings.
      2. Markers of Authentic Reporting
         1. Only peer-reviewed journals contain reliable information from clearly described studies.
         2. The subjects in the studies should be clearly described and the harms and benefits of a studied treatment should be clearly stated.
         3. Review articles written by nutrition experts will reference reliable studies.
         4. Scientific journals contain credible sources of nutrition information.
      3. Moving Ahead
         1. All consumers should read nutrition news with a critical eye and with the scientific method in mind.
   5. National Nutrition Research
      1. National Health and Nutrition Examination Surveys (NHANES)
      2. Includes *What We Eat in America* survey
      3. Asks people what they have eaten
      4. Records measures of their health status
7. Changing Behaviors
   1. Introduction
      1. Nutrition knowledge is useful if it helps people improve their diets.
      2. People need to change behaviors.
   2. The Process of Change
      1. Psychologists describe six stages of behavior change.
      2. Precontemplation, contemplation, preparation, action, maintenance, and adoption or moving on.
   3. Taking Stock and Setting Goals
      1. Track food intake over several days and compare to standards.
      2. Set small, achievable goals in areas that need changing.
   4. Start Now
      1. As you read this book, little reminders entitled “Start Now” appear in each chapter.
      2. They invite you to go to the website to take inventory of your current behaviors and set goals for needed changes.
8. Food Feature: How Can I Get Enough Nutrients without Consuming Too Many Calories?
   1. Nutrient density – a measure of nutrients per calorie
   2. Whole foods like vegetables have high nutrient density.
   3. People are pressed for time and tend to choose convenience foods like frozen pizzas or ramen noodles, which are not the most nutrient-dense choices.
9. Controversy: Sorting the Impostors from the Real Nutrition Experts
   1. More Than Money at Stake
      1. Costs include worsened health.
      2. Scams can result in wasted money and time.
   2. Information Sources
      1. Misinformation is spread through television, magazines, urban legends
      2. Table C1-1 shows quackery and Internet terms to look out for.
   3. Nutrition on the Net
      1. PubMed is a reliable website with links to scientific and medical journals.
      2. Tables C1-2 and C1-3 show credible sources of nutrition information.
   4. Who Are the True Nutrition Experts?
      1. The registered dietitian nutritionist (RDN) is a qualified nutrition expert.
      2. Table C1-4 describes terms associated with nutrition credentials.
   5. Detecting Fake Credentials
      1. Be sure to identify qualified professionals to avoid getting inaccurate information.
      2. Educational Background
         1. Look out for diploma mills.
         2. See Table C1-4 for terms related to nutritional education.
      3. Accreditation and Licensure
      4. A Failed Attempt to Fail
      5. Would You Trust a Nutritionist Who Eats Dog Food?
      6. Staying Ahead of the Scammers

***Figures/Tables from the 13th Edition***

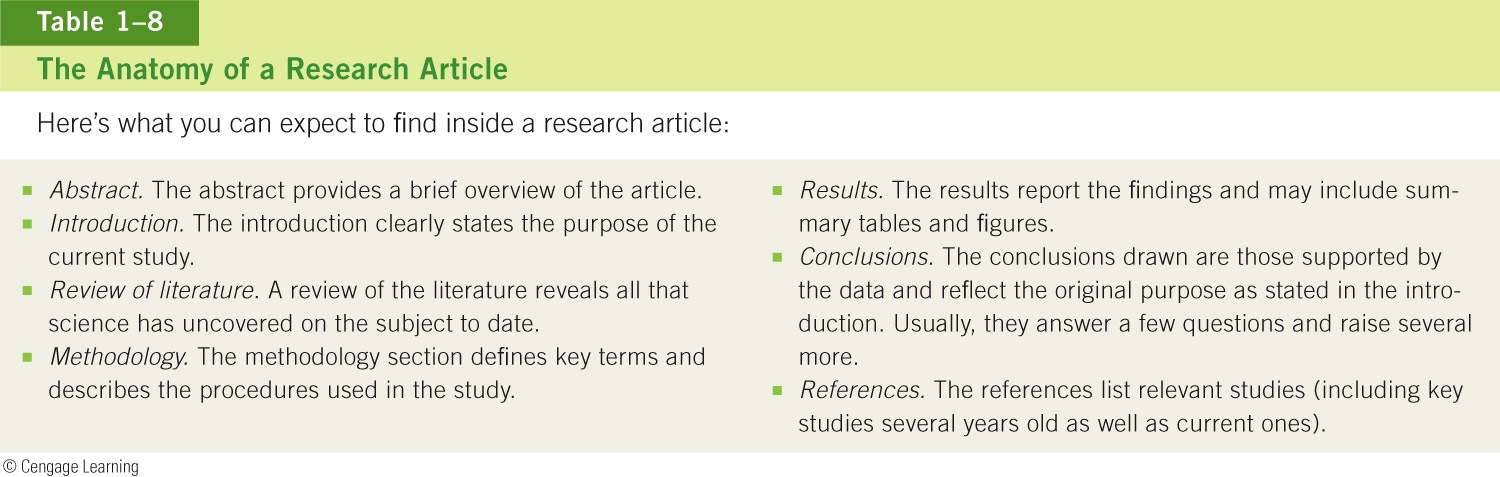


Table 1-8

The Anatomy of a Research Article

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**Worksheet 1-1: Palak Paneer Label Analysis**

**Instructions:** Use the label for frozen palak paneer to answer the questions that follow on a separate sheet of paper.

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| **DIRECTIONS:** (Do not thaw)  **Microwave Oven:**  1. Remove tray from carton and puncture film 3-4 times.  2. Heat on high setting for 3 minutes.  3. Remove film completely.  4. Gently stir contents, turn dish and heat for additional 2 minutes.  5. Gently stir before serving.  **Conventional Oven:** See side panel.  **INGREDIENTS:** Spinach, paneer (milk, part skim milk, vinegar, salt), tomatoes (tomatoes, tomato juice, salt, calcium chloride, citric acid), cream, onions, tomato puree (water, tomato paste, citric acid), milk, canola oil (expeller pressed), water, spices, sea salt, garlic, green peppers, tumeric, bay leaves, citric acid.  ***Allergens: Milk***  **Made in a facility that processes peanuts, tree nuts, soy, milk and wheat.**  **Cheery Chef Foods, Inc.**  Belmont, CA 94002 | |  |  |  |  | | --- | --- | --- | --- | | **Nutrition Facts** | | | | | Serving Size 5 oz. (142g) | | | | | Servings Per Container 2 | | | | | **Amount Per Serving** | | | | | **Calories** 170 | Calories from Fat 130 | | | |  | | | **% Daily Value\*** | | **Total Fat** 14g | | | **22**% | | Saturated Fat 6g | | | **31**% | | *Trans* Fat 0g | | |  | | **Cholesterol** 35mg | | | **12**% | | **Sodium** 600mg | | | **25**% | | **Total Carbohydrate** 6g | | | **2**% | | Dietary Fiber 2g | | | **9**% | | Sugars 1g | | |  | | **Protein** 6g | | |  | | Vitamin A 35% | • | Vitamin C 30% | | | Calcium 8% | • | Iron 10% | | | \* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs. | | | | |

1. Who is the manufacturer of your product?

2. a. What is the serving size of your product?

b. Does this serving size seem reasonable to you based on your perception of portion sizes?

3. How many servings are in each container of your product?

4. a. How many grams of total fat are in your product?

b. How many calories does this amount of fat represent?

5. What total calorie intake per day diet is the label information based on?

6. How can this product be prepared?

7. a. Which ingredient is present in the highest amount? (Hint: The ingredients are listed from most to least abundant in the food.)

b. Why might this information be important to know?

8. a. What ingredient is present in the least amount?

b. Is this ingredient a nutrient?

9. What percentage of the Daily Value for vitamin A is contained in this product?

**Worksheet 1-2: Intake Analysis—Diet Planning**

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| **Eating Plan A (1 Day’s Intake)**  1 cup of Corn Flakes cereal  1 cup of 1% fat milk  2 cups of coffee  2 slices of whole-wheat bread  2 ounces thinly sliced baked ham  2 ounces cheddar jalapeño cheese  8 ounces chocolate milk  3 12-ounce beers  2 beef and cheese enchiladas | **Eating Plan E (1 Day’s Intake)**  ¾ cup Nature’s Path flax cereal  ½ cup soy milk  ½ cup acai juice + seltzer water  1 medium banana  12 ounces coffee  6 ounces 6-grain yogurt  ½ cup blueberries  ¾ cup raspberries  2 Mushroom Lover’s Veggie Burgers  1 cup roasted carrot soup  ½ cup sweet green peppers  6 carrot sticks  2 whole-wheat wasa crackers  8 ounces Vruit juice  8 ounces soy milk  1 peanut butter Fiber One Bar  6 ounces grilled salmon  10 cooked asparagus spears  6 ounces white wine  ½ cup olives  ½ cup sun-dried tomatoes  ½ cup whole-wheat angel hair pasta  ¼ cup mixed nuts |

**Look at Eating Plans A and E:**

1. What types of foods could you add to Eating Plan A to increase its adequacy?

2. What foods could you reduce in Eating Plan A to help ensure moderation?

3. a. What are the strengths of Eating Plan A in terms of nutritional adequacy?

b. What are the strengths of Eating Plan A in terms of representation of the major food groups?

c. What are its weaknesses based on your findings in 3 a. and 3 b. above?

4. a. What are the strengths of Eating Plan E?

b. What are its weaknesses?

**Worksheet 1-3: Why Do You Eat What You Eat?**

**Instructions:** Record what you eat and drink for 1 day in the spaces provided below. Note what helped you decide to pick a particular food. Some examples could be convenience, taste, familiarity, cost, or other reasons.

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| --- | --- | --- | --- | --- |
|  | **Food** | **Preparation Level** | **Amount** | **Reason** |
| **Breakfast:** |  |  |  |  |
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| **Snack:** |  |  |  |  |
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| **Lunch:** |  |  |  |  |
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| **Snack:** |  |  |  |  |
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| **Dinner:** |  |  |  |  |
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| **Snack:** |  |  |  |  |
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Table 1-5 in the textbook shows a glossary of food types. Compare your food types recorded with the food types described.

1. Do you see any patterns in the food types that you choose?

2. Do you eat any one type of food type more often than others and, if so, what factors may influence you to select this type of food more often?

3. How could you adjust your food choices to include more whole foods or fortified foods?

**Worksheet 1-4: Making Food Choices**

We decide what to eat, when to eat, and even whether to eat for a variety of reasons. Examine the factors that influence your food choices by keeping a food diary for 24 hours. Record the times and places of meals and snacks, the types and amounts of foods eaten, and a description of your thoughts and feelings when eating. Now examine your food record and consider your choices.

1. Which, if any, of your food choices were influenced by emotions (happiness, boredom, or disappointment, for example)?

2. Was any particular social pressure a factor in any food decisions that you made on this day?

3. Which, if any, of your food choices were influenced by marketing strategies or food advertisements?

4. What is the role of food availability, convenience, and economy in your food choices?

5. How might your age, ethnicity, or health concerns influence your food choices?

6. At what times did you eat because you were truly hungry? How often did you think of health and nutrition when making food choices?

7. Were these food choices based on your level of hunger or on your appetite?

8. If you were to record your intakes for 3-5 days instead of one day, do you think that there would be a time of day that you would consistently eat more based on your appetite?

Compare the choices you made in your 24-hour food diary to the USDA Food Patterns recommendation for your age, gender, and activity level (see Table 2-3 on page 45).

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| --- | --- | --- |
| **Food Groups** | **Suggested Quantity** | **Quantity Consumed** |
| Fruits |  |  |
| Vegetables |  |  |
| Grains |  |  |
| Protein foods |  |  |
| Milk |  |  |
| Oils |  |  |
| Solid fats and added sugars | Limit intakes |  |

9. Do you eat appropriate amounts of food from each of the five major groups daily?

10. Do you try to vary your choices within each food group from day to day? If not, suggest some foods that you would be willing to eat regularly to increase the variety.

11. a. What dietary changes could you make to improve your chances of enjoying good health?

b. What choices can you make within each food group to improve your chances of enjoying good health?

**Worksheet 1-5: Evaluation of Published Nutrition Information**

**Assignment for discussion:** Carefully read a nutrition article and answer the following questions on a separate sheet of paper:

1. a. What type of information source did you use to find this article?

b. Summarize the basic idea of the article in a short paragraph.

2. a. What are the credentials of the author(s)? What do the initials, signifying degrees, after the name(s) mean? Do they enhance the authors’ credibility? Explain.

b. Is the author(s) affiliated with an organization or institution? Does the affiliation with the organization or institution enhance the authors’ credibility? Briefly explain.

c. Does the periodical have an editorial board? Do the editors’ credentials enhance the article’s credibility? Where does one look in a periodical for the editorial board?

d. Does the website that you used (if applicable) have a .gov, .edu., or .org URL? These types of websites often use information that has been published and scrutinized by experts.

3. a. Is scientific research being presented or discussed? Is the research current (from within the last 3-5 years)?

b. If so, what specific kinds of research or data are presented or cited to support the ideas?

c. Were references listed to allow readers to investigate the information’s original source? Were full citations provided?

4. a. What is the underlying hypothesis (if/then, cause/effect, etc.)?

b. What are the article’s conclusions/recommendations?

c. Are the conclusions or recommendations supported by the research discussion? Explain briefly why or why not.

5. a. Develop and describe potential additional research that could more decisively test the hypothesis identified. Describe any control measures that you would use in your study.

b. Indicate what variables will be measured.

c. State the type of experimental design and type of experiment that is being described in your article.

6. Identify the statements in the article that you believe and those that you do not believe, and discuss why or why not for each.

7. What sources other than those listed in the periodical would you refer to if you were to research the article’s topic further?

Source: Adapted with permission of: Deborah Fleurant, MOE Thesis, University of New Hampshire, 1989 (Thesis Advisor Sam Smith)

**Worksheet 1-6: Chapter 1 Review Crossword Puzzle**

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(clues on following page)

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| --- | --- |
| **Across** | **Down** |
| 1. A nutrient that must be taken in through the diet  4. Most current objectives of nutrition for the nation  5. Studies in which an experimental variable is manipulated by the researchers  8. The subject group that does not receive the real treatment is called a \_\_\_\_\_.  11. Studies that examine correlations between dietary intakes and disease in populations  14. The act of making a new behavior part of everyday life  15. A tentative answer to a question or explanation of a relationship between 2 variables  16. Facet of a nutritious diet that ensures all nutrients are present in the necessary amounts | 2. Regularly eaten foods that make up a large part of a diet such as rice or potatoes  3. Foods that provide a lot of vitamins and minerals but few calories are \_\_\_\_\_.  6. Carbon containing and made by living things  7. Foods that have nutrients added to them  9. A unit of weight equal to that of a cubic centimeter or milliliter of water  10. A dietary facet that emphasizes foods of a number of types in proportion to each other  12. Units used to measure energy from foods  13. Element found in protein but not in the other energy nutrients |

**Handout 1-1: Can Diet Help Manage Chronic Disease?**

A chronic disease cannot be cured, can progress, and can be due to genetic factors or lifestyle choices (or a combination of the two). Why do some people with chronic diseases seem more active or more able to function than others with a similar chronic disease? Could it be due to their genetic make-up? Could their food choices affect their ability to cope with their condition? Can a person’s diet help him to manage his condition by allowing him to function more fully or be able to use a lower dose of medicine or fewer medicines?

You can look up information about any condition that you are interested in learning more about. You can consult the following web sites to get reliable information about a variety of chronic conditions:

• www.mayoclinic.org

• www.diabetes.org

• www.cancer.org

• www.heart.org

• www.eatright.org

• www.nih.gov

• www.ama-assn.org

There are other web sites that you can get to by using a general search engine such as Google or Yahoo and typing a key word to access your site of interest. Be sure to look for a .gov, .edu, or .org website as these sites use reliable sources of information.

After you select a condition of interest, you can research whether a certain food may help you cope with a particular condition. For example, people with rheumatoid arthritis are encouraged to eat fish in order to get essential fatty acids. These polyunsaturated acids may play a role in reducing inflammation and pain. You can also find out if a certain food is an accepted part of a treatment plan for a chronic condition by consulting more than one website that has reliable information about that particular condition. If any particular food is recommended by more than one reliable website, it is relatively likely to be considered by several experts to be an acceptable part of a treatment plan for a chronic condition.

1. Contributed by Sharon Rady Rolfes [↑](#footnote-ref-1)
2. Adapted with permission of: Deborah Fleurant, MOE Thesis, University of New Hampshire, 1989 (Thesis Advisor Sam Smith) [↑](#footnote-ref-2)
3. Contributed by Peter C. DuBois, M.Ed., Lorain County Community College [↑](#footnote-ref-3)
4. Contributed by Caroline Roberts, R.D., M.P.H., Nutrition Education Specialist for California Department of Education and Instructor at Sierra College [↑](#footnote-ref-4)
5. Contributed by Lori W. Turner, Ph.D., R.D., University of Alabama [↑](#footnote-ref-5)
6. Contributed by Nancy J. Correa-Matos, Ph.D., R.D., University of North Florida [↑](#footnote-ref-6)