**Chapter 1 – An Overview of Nutrition**

**Learning Objectives**

After completing Chapter 1, the student will be able to:

1.1 Describe how various factors influence personal food choices.

1.2 Name the six major classes of nutrients and identify which are organic and which yield energy.

a. List the six nutrients contained in food and a major use of each nutrient.

b. Identify the energy-providing nutrients and calculate the energy available from foods.

1.3 Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

a. Explain nutritional genomics and its role in the science of nutrition.

b. List the types of research designs and the strengths and weaknesses of each.

c. Assess the validity of a research study by evaluating whether peer review and replication processes were incorporated.

1.4 Define the four categories of the Dietary Reference Intakes (DRI) and explain their purposes.

a. Discuss DRI and the four parts of the DRI including the Estimated Average Requirements (EAR), Recommended Dietary Allowances (RDA), Adequate Intakes (AI), and Tolerable Upper Intake Levels (UL)

b. Explain the Estimated Energy Requirement (EER) and the Acceptable Macronutrient Distribution Ranges (AMDR) and how they are used to maintain energy balance.

c. Discuss the uses of Nutrient Recommendations and their application to specific populations

d. Compare the different nutrient standards used by various organizations

1.5 Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

a. List the four parts of a nutritional assessment and apply them to individuals to detect malnutrition.

b. List the major methods used to survey the nutritional status of populations.

1.6 Identify several risk factors and explain their relationships to chronic diseases.

a. Identify the leading causes of death in the United States.

b. Identify the risk factors for chronic disease.

H1 Recognize misinformation and describe how to identify reliable nutrition information.

a. Identify accurate sources of nutrition information.

b. List the eight red flags that identify nutrition misinformation.

**Assignments and Other Instructional Materials**

The following ready-to-use assignments are available in this chapter of the instructor’s manual:

* Case Study: Reducing Disease Risk
* Worksheet 1-1: Influences on Food Choices[[1]](#footnote-1)
* Worksheet 1-2: Chapter 1 Crossword Puzzle[[2]](#footnote-2)
* Worksheet 1-3: Choosing Party Foods and Snacks (Internet Exercise)[[3]](#footnote-3)
* Worksheet 1-4: Evaluation of Published Nutrition Information
* Worksheet 1-5: Research Project Using the Internet
* Critical thinking questions with answers
* Key Terms and Definitions

Other instructional materials in this chapter of the instructor’s manual include:

* Answer key for How To activities
* Classroom activities
* Worksheet answer keys (as appropriate)
* Handout 1-1: Inaccurate versus Accurate View of Nutrient Intakes

**Glossary**

**Chapter Key Terms**

* **Acceptable Macronutrient Distribution Ranges (AMDR)**: ranges of intakes for the energy nutrients that provide adequate energy and nutrients and reduce the risk of chronic diseases.
* **Adequate Intake (AI):** the average daily amount of a nutrient that appears sufficient to maintain a specified criterion; a value used as a guide for nutrient intake when an RDA cannot be determined.
* **anthropometric (**AN-throw-poe-MET-rick): relating to measurement of the physical characteristics of the body, such as height and weight.
* **anthropos** = human
* **metric** = measuring
* **calories** or **kcalories:** a measure of *heat* energy. Energy provided by foods and beverages is measured in *kilocalories* (1000 calories equal 1 kilocalorie), abbreviated *kcalories* or *kcal.* One kcalorie is the amount of heat necessary to raise the temperature of 1 kilogram (kg) of water 1°C. The scientific use of the term *kcalorie* is the same as the popular use of the term *calorie*.
* **chronic diseases:** diseases characterized by slow progression and long duration. Examples include heart disease, diabetes, and some cancers.
* **chronos** = time
* **covert** (KOH-vert)**:** hidden, as if under covers.
* **couvrir** = to cover
* **cultural competence:** having an awareness and acceptance of cultures and the ability to interact effectively with people of diverse cultures.
* **deficient:** inadequate; a nutrient amount that fails to meet the body’s needs and eventually results in deficiency symptoms.
* **diet:** the foods and beverages a person eats and drinks.
* **diet history:** a record of eating behaviors and the foods a person eats.
* **Dietary Reference Intakes (DRI):** a set of nutrient intake values for healthy people in the United States and Canada. These values are used for planning and assessing diets and include the following:
* Estimated Average Requirements (EAR)
* Recommended Dietary Allowances (RDA)
* Adequate Intakes (AI)
* Tolerable Upper Intake Levels (UL)
* **drug history:** a record of all the drugs, over-the-counter and prescribed, that a person takes routinely.
* **energy:** the capacity to do work. The energy in food is chemical energy. The body can convert this chemical energy to mechanical, electrical, or heat energy.
* **energy density:** a measure of the energy a food provides relative to the weight of the food (kcalories per gram).
* **energy-yielding nutrients:** the nutrients that break down to yield energy the body can use the following:
* Carbohydrate
* Fat
* Protein
* **essential nutrients:** nutrients a person must obtain from food because the body cannot make them for itself in sufficient quantity to meet physiological needs; also called *indispensable nutrients*.About 40 nutrients are currently known to be essential for human beings.
* **Estimated Average Requirement (EAR):** the average daily amount of a nutrient that will maintain a specific biochemical or physiological function in half the healthy people of a given age and gender group.
* **Estimated Energy Requirement (EER):** the average dietary energy intake that maintains energy balance and good health in a person of a given age, gender, weight, height, and level of physical activity.
* **ethnic foods:** foods associated with particular cultural groups.
* **foods:** products derived from plants or animals that can be taken into the body to yield energy and nutrients for the maintenance of life and the growth and repair of tissues.
* **genome** (GEE-nome)**:** the complete set of genetic material (DNA) in an organism or a cell. The study of genomes is called *genomics*.
* **health history:** an account of a client’s current and past health status and disease risks.
* **Healthy People:** a national public health initiative under the jurisdiction of the US Department of Health and Human Services (DHHS) that identifies the most significant preventable threats to health and focuses efforts to eliminate them.
* **inorganic:** not containing carbon or pertaining to living organisms. The two classes of nutrients that are inorganic are minerals and water.
* **in** = not
* **malnutrition:** any condition caused by excess or deficient food energy or nutrient intake or by an imbalance of nutrients.
* **mal** = bad
* **meta-analysis:** an objective and statistical summary of evidence gathered from multiple selected studies to develop a *quantitative* review, often derived from a systematic review.
* **minerals:** inorganic elements. Some minerals are essential nutrients required in small amounts by the body for health.
* **nutrients:** chemical substances obtained from food and used in the body to provide energy, structural materials, and regulating agents to support growth, maintenance, and repair of the body’s tissues. Nutrients may also reduce the risks of some diseases.
* **nutrition:** the science of the nutrients in foods and their actions within the body. A broader definition includes the study of human behaviors related to food and eating.
* **nutrition assessment:** a comprehensive analysis of a person’s nutrition status that uses health, socioeconomic, drug, and diet histories; anthropometric measurements; physical examinations; and laboratory tests.
* **nutritional genomics:** the science of how nutrients affect the activities of genes (*nutrigenomics*) and how genes affect the activities of nutrients (*nutrigenetics*).
* **organic:** in chemistry, substances or molecules containing carbon-carbon bonds or carbon-hydrogen bonds that are characteristic of living organisms. The four classes of nutrients that are organic are carbohydrates, lipids (fats), proteins, and vitamins.
* **overnutrition:** excess energy or nutrients.
* **overt** (oh-VERT)**:** out in the open and easy to observe.
* **ouvrir** = to open
* **phytochemicals** (FIE-toe-KEM-ih-cals)**:** nonnutrient compounds found in plants. Some phytochemicals have biological activity in the body.
* **phyto** = plant
* **primary deficiency:** a nutrientdeficiency caused by inadequate dietary intake of a nutrient.
* **processed foods:** foods that have been intentionally changed by the addition of substances, or a method of cooking, preserving, milling, or such.
* **Recommended Dietary Allowance (RDA)**: the average daily amount of a nutrient considered adequate to meet the known nutrient needs of practically all healthy people; a goal for dietary intake by individuals.
* **requirement:** the lowest continuing intake of a nutrient that will maintain a specified criterion of adequacy.
* **risk factor:** a condition or behavior associated with an elevated frequency of a disease but not proved to be causal. Leading risk factors for chronic diseases include obesity, cigarette smoking, high blood pressure, high blood cholesterol, physical inactivity, and a diet high in added fats and low in vegetables, fruits, and whole grains.
* **secondary deficiency:** a nutrient deficiency caused by something other than an inadequate intake such as a disease condition or drug interaction that reduces absorption, accelerates use, hastens excretion, or destroys the nutrient.
* **subclinical deficiency:** a deficiency in the early stages, before the outward signs have appeared.
* **systematic review:** a critical and integrative summary of evidence gathered from multiple selected studies to answer a specific question and develop a *qualitative* review.
* **Tolerable Upper Intake Level (UL):** the maximum daily amount of a nutrient that appears safe for most healthy people and beyond which there is an increased risk of adverse health effects.
* **ultra-processed foods:** foods that have been made from substances that are typically used in food preparation but not consumed as foods by themselves (e.g., oils, fats, flours, refined starches, and sugars) that undergo further processing by adding a little, if any, minimally processed foods, salt and other preservatives, and additives such as flavors and colors.
* **undernutrition:** deficient energy or nutrients.
* **vitamins:** organic, essential nutrients required in small amounts by the body for health. Vitamins regulate body processes that support growth and maintain life.
* **whole foods:** fresh foods such as vegetables, grains, legumes, meats, and milk that are unprocessed or minimally processed.

**Research Terms**

* **anecdote**: a personal account of an experience or event; not reliable scientific information.
* **blind** **experiment**: an experiment in which the subjects do not know whether they are members of the experimental group or the control group.
* **control group**: a group of individuals similar in all possible respects to the experimental group except for the treatment. Ideally, the control group receives a placebo while the experimental group receives a real treatment.
* **correlation** (CORE-ee-LAY-shun): the simultaneous increase, decrease, or change in two variables. If A increases as B increases, or if A decreases as B decreases, the correlation is *positive*. (This does not mean that A causes B or vice versa.) If A increases as B decreases, or if A decreases as B increases, the correlation is *negative*. (This does not mean that A prevents B or vice versa.) Some third factor may account for both A and B.
* **double-blind experiment**: an experiment in which neither the subjects nor the researchers know which subjects are members of the experimental group and which are serving as control subjects, until after the experiment is over.
* **experimental group**: a group of individuals similar in all possible respects to the control group except for the treatment. The experimental group receives the real treatment.
* **hypothesis** (hi-POTH-eh-sis): an unproven statement that tentatively explains the relationships between two or more variables.
* **peer review**: a process in which a panel of scientists rigorously evaluates a research study to ensure that the

scientific method was followed.

* **placebo** (pla-SEE-bo):an inert, harmless medication given to provide comfort and hope; a sham treatment used in controlled research studies.
* **placebo effect:** a change that occurs in response to expectations about the effectiveness of a treatment that actually has no pharmaceutical effects.
* **randomization** (RAN-dom-ih-ZAYshun):a process of choosing the members of the experimental and control groups without bias.
* **replication** (REP-lih-KAY-shun): repeating an experiment and getting the same results.
* **subjects:** the people or animals participating in a research project.
* **theory:** a tentative explanation that integrates many diverse findings to further the understanding of a defined topic.
* **validity** (va-LID-ih-tee):having the quality of being founded on fact or evidence.
* **variables:** factors that change. A variable may depend on another variable (e.g., a child’s height depends on his age), or it may be independent (e.g.,, a child’s height does not depend on the color of her eyes). Sometimes both variables correlate with a third variable (a child’s height and eye color both depend on genetics).

**Highlight Terms**

* **Academy of Nutrition and Dietetics:** the professional organizationofdietitians in the United States; formerlythe American Dietetic Association.
* **accredited:** approved; in the case of medical centers or universities, certified by an agency recognized by the US Department of Education.
* **certified nutritionist** or **certified nutritional consultant** or **certified nutrition therapist:** a person who hasbeen granted a document declaring his orher authority as a nutrition professional.
* **critical thinking:** the mental activity of rationally and skillfully analyzing, synthesizing, and evaluating information to reach an informed conclusion based on evidence.
* **dietetic technician:** a person who has completed a minimum of an associate’s degree from an accredited university or college and an approved dietetic technician program that includes a supervised practice experience. See also *dietetic technician*, *registered*.
* **dietetic technician, registered (DTR):** a dietetic technician who haspassed a national examination andmaintains registration through continuingprofessional education.
* **dietitian:** a person trained in nutrition, food science, and diet planning. See also *registered dietitian nutritionist.*
* **diploma mills**: entities without valid accreditation that provide worthless degrees.
* **DTR:** see *dietetic technician*, *registered.*
* **fraudulent:** the promotion, for financial gain, of devices, treatments, services, plans, or products (including diets and supplements) that alter or claim to alter a human condition without proof of safety or effectiveness.
* **license to practice:** permission under state or federal law, granted on meeting specified criteria, to use a certain title (e.g., dietitian) and offer certain services. *Licensed dietitians* may use the initials *LD* after their names.
* **misinformation:** false or misleading information.
* **public health dietitians:** dietitians who specialize in providing nutrition services through organized community efforts.
* **RDN**: see *registered dietitian nutritionist*.
* **registered dietitian nutritionist (RDN):** a personwho has completed a minimum of abachelor’s degree from an accrediteduniversity or college, has completedapproved course work and a supervisedpractice program, has passed a nationalexamination, and maintains registrationthrough continuing professionaleducation; also called *registered dietitian (RD)*.
* **registration:** listing; with respect to health professionals, listing with a professional organization that requires specific course work, experience, and passing of an examination.

**Lecture Presentation Outline**

**Key to instructor resource annotations (shown to the right of or below outline topics):**

IM = Included in this instructor’s manual: CS = case study, WS = worksheet, CA = classroom activity, HN = student

handout

*Introductory/whole chapter resources:* Test Bank; IM WS 1-2, CA 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8

I. Food Choices: Discuss the factors that can influence food choices and how these choices can support good health. IM WS 1-1

A. Preferences

B. Habit

C. Ethnic heritage and regional cuisines

D. Social interactions

E. Marketing

F. Availability, convenience, and economy

G. Positive and negative associations

H. Emotions

I. Values

J. Body weight and health

K. Nutrition

1. Cover the definitions of whole foods, processed foods, and ultra-processed foods

II. The Nutrients: Discuss the nutrients, including carbohydrate, fat, protein, vitamins, minerals, and water, and why they are important

A. Nutrients in Foods and in the Body: Explain how nutrients in foods and in the body are similar

1. Compare the nutrient compositions of foods and of the human body (Figure 1-1)

2. Discuss the difference between organic and inorganic nutrients

3. Explain essential nutrients (indispensable nutrients)

B. The Energy-Yielding Nutrients: Carbohydrate, Fat, and Protein: List the energy-yielding nutrients and explain why they are considered macronutrients

1. Explain how energy is measured

2. Discuss the amount of energy that can be obtained per gram of carbohydrate, fat, protein, and alcohol (Table 1-2)

3. Explain what happens to excessive energy nutrients that are consumed

4. Describe the other roles of energy-yielding nutrients

C.The Vitamins: Provide a definition of vitamins and explain that they are organic and essential nutrients

D. The Minerals: Provide a definition of minerals and explain that they are inorganic and essential nutrients

E. Water: Explain that water is an indispensable and essential nutrient

III. The Science of Nutrition

A. Introduction: Explain nutritional genomics

B. Conducting Research: Discuss how research studies are conducted (Figure 1-3), including the following:

1. Testing hypotheses and developing theories

2. Anecdotal evidence

3. The types of studies including epidemiological, and experimental (laboratory-based and human intervention trials) (Figure 1-4)

4. The difference between experimental and control groups and how subjects are divided between these two groups

5. The benefit of randomization

6. How sample sizes impact a research study

7. Why placebos are used and the placebo effect

8. The difference between blind and double-blind experiments

B. Analyzing Research Findings: Address how research findings are analyzed, including the following: IM WS 1-4

1. The definition of a correlation

2. The definition of a variable

3. The difference between positive and negative correlations

4. Cautions and limitations in generalizing study results

C. Publishing Research: Discuss the process of publishing research, including the following:

1. The peer review process

2. The definition of validity

3. The importance of being able to replicate a study

4. The definition of a systematic review

5. The definition of a meta-analysis

IV. Dietary Reference Intakes (DRI) IM HN 1-1

A. Establishing Nutrient Recommendations: Define and explain the following (Figures 1-5, 1-6):

1. Estimated Average Requirements (EAR)

2. Recommended Dietary Allowances (RDA)

3. Adequate Intakes (AI)

4. Tolerable Upper Intake Levels (UL)

B. Establishing Energy Recommendations: Explain how energy recommendations are established, including the following:

1. Estimated Energy Requirements (EER)

2. Acceptable Macronutrient Distribution Ranges (AMDR)

C. Using Nutrient Recommendations: Explain how to use nutrient recommendations, including:

1. How they apply to *healthy* people

2. That they are not individualized

3. The importance of variety in food choices

4. How recommendations apply to average daily intakes

5. How each DRI category serves a unique purpose

D. Comparing Nutrient Recommendations: Discuss how nutrient recommendations are established by the Food and Agriculture Organization (FAO) and World Health Organization (WHO)

V. Nutrition Assessment

A. Introduction: Provide definitions of malnutrition, undernutrition, and overnutrition IM CA 1-9

B. Nutrition Assessment of Individuals: Discuss how nutrition assessments of individuals are conducted, including the following:

1. Historical information

2. Anthropometric measurements

3. Physical examinations

4. Laboratory tests

5. Iron, for example: The stages in nutrient deficiency (Figure 1-8)

C. Nutrition Assessment of Populations: Discuss how nutritional assessments of populations are conducted, including the following:

1. National nutrition surveys

2. National health goals as established in “Healthy People”

3. National trends in health behaviors

VI. Diet and Health IM CS 1, WS 1-3

A. Chronic Diseases: Discuss chronic diseases, including the following:

1. How they are influenced by health behaviors

2. The relationship of health behaviors to leading causes of death

B. Risk Factors for Chronic Diseases: Discuss the risk factors for chronic diseases, including the following:

1. Persistence over time

2. Clustering

3. Most common risk factors for chronic disease and how unhealthy behaviors contribute to risks

VII. Highlight: Nutrition Information and Misinformation

A. Nutrition on the Internet: Discuss how nutrition information on the Internet: IM WS 1-5, CA 1-10

1. Can be published by anyone.

2. May be high-quality information (Figure H1-1).

3. May be misleading, incomplete, and inaccurate.

B. Nutrition in the News: Discuss how nutrition information in the news:

1. Can be misleading and contradictory.

2. May report scientific findings prematurely.

C. Identifying Nutrition Experts: Explain how to identify nutrition experts including the following:

1. Evaluating qualifications

a. Registered dietitian nutritionist

b. Certified nutritionists, certified nutritional consultants, and certified nutritional therapists

c.. Public health dietitians

d. Dietetic technicians and dietetic technicians, registered

e. Other dietary employees

D. Identifying Fake Credentials: Discuss how to identify fake credentials, including the following:

1. Characteristics of an accredited college or university

2. False credentials that may be provided

E. Red Flags of Nutrition Quackery: Nutritional misinformation can be identified by watching for the following eight red flags (Figure H1-2):

1. Satisfaction guaranteed

2. Quick and easy fixes

3. Natural

4. One product does all

5. Time tested or newfound treatment

6. Paranoid accusations

7. Personal testimonials

8. Meaningless medical jargon

**Case Study: Reducing Disease Risk**

Maria Gonzales is a 57-year-old operating room nurse who works full-time at a local hospital. She is 65 inches tall and weighs 160 pounds. She has a family history of diabetes and heart disease, and was recently diagnosed with high blood cholesterol. Maria has declined the cholesterol-lowering medication that her doctor prescribed, explaining that she would like to explore other methods for lowering her cholesterol first. After reading an article on the Internet a few weeks ago, Maria has been taking a tablespoon of coconut oil every day in the hopes that it will lower her cholesterol. She says that she lacks time and energy for exercising. Her diet history reveals that she often skips breakfast or buys a bagel with cream cheese and flavored coffee on her way to work. While at work, she drinks at least one more cup of coffee with cream and sugar before noon. Lunch is a salad with crackers and iced tea with sugar in the hospital cafeteria. When Maria arrive homes, she occasionally drinks one or two glasses of wine, especially after a stressful day. She lives alone and relies on frozen dinners and other convenience foods for dinner. An analysis of her diet reveals an average daily intake of 200 grams of carbohydrates, 50 grams of protein, and 80 grams of fat.

1. Consider Maria’s typical evening meals and the factors that may influence her food habits. Which factor is likely to have the biggest impact on her choices?

a. Convenience

b. Social interaction

c. Ethnic heritage

d. Regional cuisine

e. Values

2. Which of Maria’s food habits is most influenced by her emotions?

a. Buying convenience foods

b. Putting cream cheese on a bagel

c. Eating a salad for lunch

d. Drinking wine in the evening

e. Heating a frozen meal for dinner

3. Which of these seems to be the most whole food that Maria typically eats?

A. Bagel

B. Frozen dinner

C. Salad

D. Flavored coffee

E. Crackers

4. Using Table 1-2 from the text, calculate Maria’s average daily kilocalorie intake from carbohydrates, protein, and fat. Adding these figures together, what is her total daily caloric intake?

a. 1320

b. 1420

c. 1520

d. 1620

e. 1720

5. What percentages of Maria’s daily calories are provided by carbohydrates, protein, and fat?

a. Carbohydrates: 46 percent; protein: 12 percent; fat: 42 percent

b. Carbohydrates: 56 percent; protein: 12 percent; fat: 32 percent

c. Carbohydrates: 36 percent; protein: 22 percent; fat: 42 percent

d. Carbohydrates: 36%; protein: 32%; fat: 32%

e. Carbohydrates: 56 percent; protein: 22 percent; fat: 22 percent

6. Compare the composition of Maria’s diet with the Acceptable Macronutrient Distribution Ranges (AMDR). How would you characterize her intake?

a. Adequate carbohydrate, adequate protein, and adequate fat

b. Adequate carbohydrate, inadequate protein, and high fat

c. Inadequate carbohydrate, inadequate protein, and adequate fat

d. Adequate carbohydrate, adequate protein, and high fat

e. Inadequate carbohydrate, inadequate protein, and high fat

7. Maria explains that she learned about the effects of coconut oil on the Internet, while reading an online article about a well-known movie star who claims it helped him lower his bad cholesterol. What are these types of testimonials called?

a. Controls

b. Anecdotes

c. Correlations

d. Hypotheses

e. Theories

8. Which of the following risk factors contributing to deaths in the United States does Maria seem to exhibit?

a. Tobacco use

b. Illicit drug use

c. Poor diet/inactivity

d. Sexual behavior

e. Dangerous use of motor vehicles

**Answer Key**

1. a

2. d

3. c

4. e

5. a

6. d

7. b

8. c

**Suggested Classroom Activities**

A nutrition course should begin on a note of excitement. The best classes involve students and help them to see nutrition’s importance to them. Once they are hooked on nutrition because they feel personally involved with it, they will be motivated to learn about nutrition topics.

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

Objective: Introduction to nutrition Class size: All sizes

Materials needed: Post-It notes (3 per student), 20 sheets construction paper, tape

Instructions: 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 20 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 20 topics 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 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.

**Classroom Activity 1-2: “Find a Person Who” Introduction Activity**

Objective: Enhancing emotional classroom environment Class size: All sizes

Materials needed: Copy of form described next (developed by instructor) for each student

Instructions: Students sometimes enjoy classes more when they are acquainted with other students. One way to assist this process is by providing students with a “Find a Person Who” form. Develop a form several columns wide and several rows long that lists a variety of traits in each square such as enjoys cooking, recycles, has a pet, and is a nutrition major. Instruct students to walk around the class, introduce themselves to each other, and try to find a person who fits the categories described on the sheet. When they find someone who fits a category, have them write person’s first name in that category. The goal is to complete the sheet. You may also suggest that they exchange e-mail addresses or phone numbers and form study groups. This activity works best for small to medium size classes.

**Classroom Activity 1-3: Brown-Bag Introduction Activity**

Objective: Establishing positive classroom environment Class size: Small to medium

Instructions: In the class period preceding this introduction activity, read the following list of categories: a hobby or interest that students enjoy, something that is a favorite (color, book, music, food), future plans or goals, something they would like to do better, a place they’d like to visit, something special about family or friends, the best part of their last vacation, a healthy activity they like to do, and a talent or special ability they have. From this list, students are to select one item that represents each of three categories and bring these three items to class in a small brown bag. They should try to select items that are three-dimensional and unique. During class, they will share the contents of their brown bags with the class. This is a good way for students to become acquainted with others. This activity works best with small classes.

**Classroom Activity 1-4: Getting Acquainted Activity**

Objective: Establishing positive classroom environment Class size: Small to medium

Instructions: This activity allows students to learn more about each other and can provide an environment in which people practice listening skills. Instruct students to pair off with someone who they do not know very well. Give the students 10–15 minutes to converse and ask some general questions about each other. Bring the group back together in a large circle with each student sitting next to his or her partner. Ask each student to introduce and speak about his or her new friend. This activity works best for small and medium sized classes.

**Classroom Activity 1-5: “How Is Your Day Going?” Activity**

Objective: Enhancing positive classroom environment Class size: Small to medium

Instructor: An instructor who displays sincere caring about students is likely to be effective at gaining student trust. At the beginning of class, tell students you want to find out how they are doing. Instruct students to individually introduce themselves to the class by stating their name, where they are from, and what type of day they are having (either A, B, or C day). Then they are to share why they are having that type of day. The next person repeats the process, sharing information about him/herself and his/her day, then repeats what the other students shared. This can be a challenging activity, especially in larger classes. This activity is most appropriate for small classes.

**Classroom Activity 1-6: Who Are You? Introduction Activity**

Objective: Establishing rapport Class size: Any

Materials needed: One index card per student

Instructions: Instructors who know their students and can refer to them by name are better equipped to gain trust and be effective in the classroom. Distribute index cards to each student and instruct students to record information about themselves on each card. Write on the board the information you are interested in obtaining. Some suggestions include name, address, phone, e-mail, major, year in college, home town, employment, professional goals, hobbies, what they hope to learn from the class, reason for taking the class, and something interesting and/or unique about themselves. After students have recorded this information, you may ask them to introduce themselves to the class or you may simply collect the cards to help you learn more about your students. Instructors may want to use the cards to learn student names.

**Classroom Activity 1-7: Chapter Opening Quiz**[[5]](#footnote-5)

Objective: Introducing new material Class size: Any

Instructions: As a way of introducing any new chapter, give a “quiz” to the class. The students will moan initially, but they will enjoy the activity once you get underway and they realize that it is taken as a class and does not count toward their grade. The “quiz” asks ten true/false or multiple-choice questions projected on a PowerPoint slide or transparency. The students are not allowed to talk during the quiz and must show their choice of answer by raising hands. Note the answer chosen by the majority of hands, then go over the correct answers (their curiosity is piqued!) and seize the “teachable moment.” Generally, they score about 55 percent and realize there is a lot to learn.

This “pretest” is valuable because it creates interest in the subject matter, challenges students’ erroneously held beliefs, and introduces new terms and concepts. It is valuable to instructors in assessing the level of knowledge and attitudes in the subject area and identifying the needs and the focus for the unit.

**Classroom Activity 1-8: Using FAQs for Class Information[[6]](#footnote-6)**

Objective: Disseminating class information Class size: Any

Instructions: As many people know, a Frequently Asked Questions page is worthwhile to examine. The questions asked and answered are the type of questions a student may have about the class but may not have thought about until reading them. These questions should be designed carefully based on questions that are often received so they will be of high interest to students. These could be the top-10 questions for surviving the nutrition class. A sample question is as follows: “What is the best way for a student to learn nutrition well enough to ace this course?” If you can cover questions that students really have about the course, you’ll be showing them early on that you understand their concerns and can also provide some good advice.

**Classroom Activity 1-9: Exploration of “ChooseMyPlate.gov” Website[[7]](#footnote-7)**

Key concepts: MyPlate diet planning tools, Internet skills Class size: Any

Objective: The purpose of this assignment is to help the student become familiar with the available resources offered on the MyPlate website provided by the United States Department of Agriculture (USDA). Since the majority of people have computer access (24/7), this activity will help the student to see what is available to both the health professional and health consumer on a daily basis.

Instructions:

1. Divide the students in the class into five equal groups. This can be accomplished either through a lottery ticket mechanism or use of a student roster list.

2. Secure online access and have each of the student groups go to the following URL address: <http://www.choosemyplate.gov/>.

3. Assign each group to one of the following areas: (1) Specific Audiences: Children, (2) MyPlate: Food Groups, (3) Popular Topics: Healthy Eating on a Budget, (4) Popular Topics: MyPlate Tip Sheets, and (5) Online Tools: SuperTracker: My Plan.

4. For each group assignment, have the student group enter into the assigned area and ascertain the following information:

a. Describe the content area of the link.

b. Identify the resources available from the link.

c. Describe how many steps are required to get to all of the information and the length of time involved in accessing the information.

5. If the class is Web enhanced, post a MyPlate discussion board to the course site. Have the student groups post their critical appraisal of each of the assigned links prior to coming to the next class session. If the course is not Web enhanced, then have the groups do a write-up of the assignment.

6. At the next class session, review the information posted on the Web, or in the case of the course not being Web enhanced, have the groups bring their written information to class and discuss the groups’ findings in terms of these criteria:

a. Was the information easy to access? (Yes or no)

b. If the information was not easy to access for you as a “college student,” then how do you think that others who have less experience with either the subject matter or computer competency would be able to access the information?

c. Do you think that the information was representative across cultural lines?

d. Overall, who do you think would be most likely to benefit from the information on this website?

**Classroom Activity 1-10: Using the Internet as a Research Tool**

Key concept: Research process Class size: Any

Instructions: The Internet can be used as a valuable research tool in nutrition. The student can become familiar with the diversity of Internet resources and can learn to participate in online discussions about nutrition topics in class-based and listserve groups. Worksheet 1-5 provides assignments to help students acquire Internet skills.

**How To “Try It” Activities Answer Key**

**How to Think Metric**

The student should divide his or her body weight in pounds by 2.2 to determine weight in kilograms, and multiply his or her height in inches by 2.54 to determine height in centimeters. For example, a student who weighs 115 lbs. and is 5’6” tall would convert this to 52.27 kg and 167.64 cm.

**How to Calculate the Energy Available from Foods**

The bean/cheese burrito would provide 388 kcal and 56.7 percent of kcal from carbohydrate, 15.5 percent from protein, and 27.8 percent from fat.

**How to Determine Whether a Website Is Reliable**

The student should provide a URL for the website chosen, and then describe the group or individual that created the site, name the date it was most recently updated, discuss sources for the information presented, speculate on the motivation for presenting this information, and evaluate the overall message of the site.

**Critical Thinking Questions[[8]](#footnote-8)**

1. Take a moment to reflect on the factors that influence your personal food choices following reading Chapter 1 in the textbook. Which factors influence your daily food choices the most? Which factors influence your daily food choices the least? Based on your understanding of the stated food choice factors in this textbook, provide evidence that identifies potential advantages and disadvantages for each food selection factor.

2. Discuss the differences between an essential and a nonessential nutrient in terms of dietary consumption. Can the body exist without the provision of essential and nonessential nutrients? If an individual utilizes basic diet-planning principles, can he/she be sure that he/she will be able to obtain all of the necessary essential nutrients? Why or why not?

3. In reviewing nutritional research, one must address pertinent issues related to research design, sample size, correlations, and findings. Based on the simulated abstract given next, identify and analyze these pertinent issues:

**Abstract:** Researchers proposed a hypothesis that ingestion of foods high in phytochemicals would decrease the likelihood that individuals would develop chronic heart disease. Researchers initially interviewed a group of adults (68 females and 72 males), all living in the town of Main Street, United States, between the ages of 21 and 75, noting their food consumption patterns. Of those interviewed, 100 adults (65 females and 35 males) were included in the final data analysis as they met inclusion criteria for the research design. Participants were then asked to record a food diary over a three-day period. Following that activity, participants were reinterviewed and their food diaries analyzed.

Initial research findings were that females were more likely to provide a detailed food diary as compared to males. Findings also reflected that individuals who already consumed foods that are high in phytochemicals were more likely to believe that these foods provided increased health benefits. Regardless of gender, both groups stated they believed that foods high in phytochemicals were beneficial to preventing disease. These are just the first reported results of this study as there will be planned follow-up interviews with participants over a period of 5 years.

4. Nutritional assessment includes several component parts so that a comprehensive analysis of an individual’s nutrition status can be conducted. Discuss how each factor contributes to the overall determination of health and well-being.

5. Attention has long been focused on the American diet. National nutrition surveys report increased consumption of food in general. Increased portion sizes and increased dietary intake patterns are duly noted. Reports indicate that consumers are making poor food choices. How can you as an individual food consumer make a difference in helping to slow or reverse these national trends? Provide supportive evidence to explain your point of view.

6. Research clearly demonstrates that there is a correlation between risk factors and the development of certain chronic diseases such as heart disease and diabetes. How can one modify potential risk factors to prevent the development of these chronic diseases? Consider your own potential risk factors. What methods could you utilize to improve your health outcomes?

**Answer Key**

1. Students’ answers to the first part of this reflective question will vary but this process will lead to enhanced discussion of the variable impact of personal food choice factors. Students will be able to share their own aspects of preference and choice, leading to the realization that individual choice is based on personal identification of factors.

In the textbook, the following factors are listed as influencing personal food choices: preferences; habit; ethnic heritage and regional cuisine; social interactions; marketing, availability, convenience, and economy; positive and negative associations; emotions; values; body weight and health; and nutrition.

Potential advantages for **preference** are mediated by individual selection, focusing on whether or not an individual likes or dislikes a certain food. The quality of the taste of food is perhaps the most recognized attribute of preference. If it tastes good, then individuals will eat it. One’s preference for the taste of certain foods may also be affected by one’s genetic background. How one perceives taste can be mediated through other underlying factors such as one’s baseline physiological status. Thus, this factor might pose disadvantages for individuals with conditions that would influence taste of food. For example, the body’s hormones can cause different perceptions of the taste of food as during pregnancy. Additionally, medications can alter taste perception, thus affecting one’s potential food intake.

**Habit** can also have advantages and disadvantages related to personal food choice. An advantage of habit may be linked with food identification patterns related to time of day. Thus, individuals select foods associated with breakfast, lunch, or dinner. When one goes out in the morning for a meal, he/she is more likely to choose breakfast food items such as scrambled eggs rather than opting for a lobster. Similarly, habit can be viewed as a disadvantage if the food choice becomes a routine task. If an individual only eats scrambled eggs each morning, then the food choice may lead to poor health outcomes as one’s cholesterol levels may be increased due to routine consumption on a daily basis.

**Ethnic heritage and regional cuisine** as personal food choices can have both advantages and disadvantages. They may be viewed as an advantage in that they form a strong foundation for food choice influenced by family demographics and environment. Thus they allow for the progression of cultural diversity over the life cycle. However, ethnic heritage and regional cuisine food choices may lead to the development of potential health problems that may also be exhibited over the life cycle. Preferred eating of spicy or high-sodium foods over time, for example, may eventually lead to health problems.

**Social interactions** play a large part in influencing personal food choice. The advantage of social interaction is that it allows for increased communication between individuals. Eating foods together with family and/or friends opens up a dialogue and sharing of thoughts and ideas. The disadvantage of combining food intake in the context of social interactions may become evident if the food/drink eating activity becomes a fixed behavioral pattern. For example, meeting someone for a drink after work at the end of the work week is seen as a way to unwind from the stress of the week’s activities. However, meeting someone for a drink after work at the end of each work day may potentially lead to overconsumption.

**Marketing** has a major influence on food choices. This can be helpful when looking for new healthy alternatives. The disadvantage is that marketing efforts persuade people to eat more food, more often.

**Availability, convenience, and economy** are significant factors that can influence personal food choice. In terms of advantages, if a food choice is readily available, convenient in terms of preparation and is of economic value, the food choice is viewed as being beneficial. And yet these variables may also be associated with disadvantages. Foods that are typically available and easily prepared may be correlated with processing as a preparation method. Thereby, the individual choice is being affected by food processing methods that may provide less than healthy food choices. The economic disadvantage is that certain foods and/or food types may be marketed as being of economic value yet they are highly processed. The “dollar menu” of a restaurant may not always reflect the healthiest food choice. Additionally, healthier foods may be associated with higher food costs dependent on whether the food is readily available.

The factor of **positive and negative associations** may represent both advantages and disadvantages depending on what one links aspects of food consumption with. One can form both positive and negative associations with food items based on personal experience. These linked food experiences typically stay with an individual over a lifetime, influencing her/his ability to consume food. If they are happy or positive associations, the foods are viewed as being beneficial. If they are sad or negative associations, the foods are viewed as being suspect or dangerous. These linked food associations help to form the basis of preferences.

**Emotions** provide the subtext of many life experiences. In the case of food consumption, emotions may influence how food is perceived. Depending on one’s emotional state, food may become a focus or extension of behavior. Food may be viewed as a stimulus for a certain response, either providing comfort or distress. Certain psychological influences may mediate food consumption, leading to altered eating patterns.

How one perceives **value** in food may be associated with religious, political, and/or environmental concerns. These associations may be viewed positively if they help define a person’s cultural/religious beliefs, providing comfort and spirituality. They may also be viewed as an advantage if they provide a sense of well-being associated with legal social practices and are environmentally friendly. Unfortunately, there can be disadvantages as well if these values are not congruent with societal beliefs and practices.

The idea of **body weight and health** places a lot of influence on personal food choice practices. If the basis of the food choice is sound nutritional evidenced-based practice, then it would be viewed as an advantage. However, not all body weight and health practices are based on healthful lifestyle behaviors. Dietary patterns may be based on fad practices, which are promoted by extensive marketing methods. Thus, it is important to research all associated body weight and health claim methods before jumping into a dietary method or regimen.

**Nutrition** forms the basis for many personal food choices. Current clinical evidence illustrates a link between healthy food intake and decreased disease risks. Whole foods and some processed foods provide health benefits. The consumption of whole-grain foods in the diet is viewed as beneficial. If the information utilized is based on sound clinical evidence, then there is a clear advantage. However, if the information does not have sound, supportive clinical evidence, there could potentially be a disadvantage to certain food consumption choices.

2. Essential nutrients are those components that are needed and supplied to the body in their constituent form. As such they provide basic structural elements and raw materials for energy metabolism. Nonessential nutrients are equally important to the health and well-being of the body, but the body is able to meet supply and demand needs through its own physiological mechanisms. The body must have both essential and nonessential nutrients in order to maintain physiological health.

Even if one utilizes basic diet planning principles as the basis of dietary consumption, it may still prove difficult to obtain all of the necessary essential nutrients. Intervening variables such as age, genetics, environment, and baseline health status may affect an individual’s ability to handle nutrient sources. Additionally, economics may affect an individual’s ability to acquire nutrient sources. Preference may also prove to be an intervening factor, as even though someone may know that something is “good” for her/him, she/he may not opt to select the item due to differences in taste and preference.

3. The above research abstract identifies an epidemiological cohort study, as its participants are located in one demographic area. In addition, it is an interval study as the design is such that the participants will be followed over a 5-year time period. Sample size for data analysis is 100 adults (65 females and 35 males). Initially, 140 adults (68 females and 72 males) were interviewed but out of those participants, only 100 met the inclusion criteria. There was no randomization of the sample size into control or experimental groups. Reported correlations and findings showed no differences in beliefs between genders related to effectiveness of phytochemicals in preventing the development of chronic heart disease. Females provided more detail in submitted food diaries than their male counterparts. Lastly, individuals, regardless of gender, who consumed foods high in phytochemicals were more likely to believe in their health benefits.

4. The component parts of a nutrition assessment include historical information, anthropometric measurements, physical examination, and laboratory testing. Each of these component parts helps the practitioner and/or dietician obtain an understanding of the baseline nutritional health status of the individual. Historical information refers to the collection of subjective data from the individual. It reflects dietary patterns of behavior, health history (details of past medical/surgical history), social/family history, and medications (OTC and Rx) used. Based on the information provided in the history section, the practitioner focuses on the physical examination, including visual inspection and an interview to identify physical symptoms. Additionally, anthropometric measurements can be taken that will be used in comparison to standardized gender/age charts. Data from the physical assessment and anthropometric measurements will help to provide a baseline for comparison for the individual. Lastly, ordering of certain lab tests will help to provide baseline measurements for the individual that will assess nutritional status. Test values will be compared to normal-range values for a specific population. The presence of abnormal results will lead to further inquiry, whereas the confirmation of normal results will support a finding of adequate nutritional status.

5. The burden of dietary choice rests on the individual consumer and yet the selection of food choices is mediated by other variables such as the activities of corporations and their marketing strategies. Some of the variables affecting this progressive trend are as follows:

* Many of the increased consumption trends are attributed to eating outside the home.
* Restaurants have changed the food consumption dynamics by increasing the size of food portions.
* Consumers are being taught that more is required so that they feel that they are getting their money’s worth.
* The easier access/availability of certain nutrient-poor foods influences choice in many circumstances.
* The tempo in today’s society is fast paced. Food consumption often becomes a fast-paced activity (snacking) as opposed to healthy meal consumption.

Individual consumers can help to make a difference by reading food labels and increasing their knowledge base so as to make healthy, informed choices. They can pressure food corporations and markets to produce healthy food choices rather than highly processed, nutrient-poor, preservative-laden foods. Individual consumers can look toward establishing healthy eating behaviors and slowing down mealtime consumption patterns. They can go back to previous dietary behaviors regarding snacks, eating one or two a day as opposed to increased snack consumption throughout the day.

Answers will vary slightly based on the individual’s ability to recognize patterns of consumption. Supportive evidence can be provided by the student by submitting website articles related to this issue as well as journal articles addressing increased dietary intake patterns.

6. Those risk factors that are classified as modifiable can be potentially altered to decrease one’s risk of developing chronic disease. Health behaviors that are associated with increased risk such as smoking, frequency of drinking alcohol, and sedentary lifestyle can be minimized. Decisional intervention related to stopping smoking, drinking less alcohol, and limiting intake of high-saturated fat foods will help to decrease risks of developing chronic diseases. Those factors that are considered nonmodifiable (age, gender, and genetics) still may pose a significant risk towards progression of chronic disease processes over the life cycle. Thus, it is important to make reasonable and prudent choices each day so that they can counteract these nonmodifiable factors across one’s lifetime.

Evaluation of student’s individual potential risk factors will vary. Methods students may select will also vary dependent on their understanding of risk factors and personal life factors. This question will allow for an interactive discussion about the influence of genetics, life style, and personal choice in helping to promote healthy outcomes.

**IM Worksheet Answer Key**

**Worksheets 1-1, 1-4, and 1-5 –** Answers will vary.

**Worksheet 1-2: Chapter 1 Crossword Puzzle**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. scientific method  2. healthy People  3. heart disease | 4. control group  5. organic  6. taste | 7. PubMed  8. healthy  9. protein | 10. water |

**Worksheet 1-3:** **Choosing Party Foods and Snacks (Internet Exercise)**

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| 1. c  2. a  3. b | 4. b  5. a  6. b | 7. d |  |

**Worksheet 1-1: Influences on 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 (e.g., happiness, boredom, or disappointment)?

2. Was social pressure a factor in any food decisions?

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

4. How large a role do availability, convenience, and economy play in your food choices?

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

6. How many times did you eat because you were truly hungry? How often did you think of health and nutrition when making food choices? Were those food choices different from others made during the day?

Compare the choices you made in your 24-hour food diary to the USDA Food Patterns recommendations. To obtain a set of personalized recommendations, you can enter your age, sex, and activity level after clicking on “Create Your Profile” at the SuperTracker website <https://www.supertracker.usda.gov/default.aspx>.

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| **Food Groups** | **Suggested Amounts** | **Amounts Consumed** |
| Grains |  |  |
| Vegetables |  |  |
| Fruit |  |  |
| Milk |  |  |
| Protein Foods |  |  |

7. Do you eat the suggested amounts from each of the five food groups daily?

8. Do you try to vary your choices within each food group from day to day?

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

**Worksheet 1-2: Chapter 1 Crossword Puzzle**

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| --- | --- |
| Across | Down |
| 1. Sequential process used to conduct nutrition research  4. Research study group that does not receive a “treatment”  6. Main reason people choose certain foods  10. Primary component in the body’s composition of nutrients | 2. National nutritional assessment program  3. Number one leading cause of death in the U.S.  5. Meaning “alive” and containing carbon  7. Example of trustworthy website  8. Dietary Reference Intakes are recommendations for \_\_\_\_\_ people.  9. Nutrients that provide energy (calories) to the body: carbohydrate, fat, and \_\_\_\_\_ |

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**Worksheet 1-3: Choosing Party Foods and Snacks (Internet Exercise)**

**Instructions:** Go to <http://www.choosemyplate.gov/MyPlateOnCampus/index.html> and click on the MyPlate on Campus Toolkit to answer questions 1–7. Do not close the window until you have finished answering the questions.

1. What is a good tip to keep in mind for the all-you-can-eat campus dining hall?

a. Never go back for seconds.

b. Wait to drink until after eating.

c. Use a smaller plate.

d. Eat only from the salad bar.

The MyPlate Campus Toolkit gives college students some tips on how to eat healthy. Determine which statements match these tips, and which do not.

2. Make half of your plate fruits and vegetables.

a. True

b. False

3. Do not take snacks to class.

a. True

b. False

4. Drink energy drinks during the day as you walk from class to class.

a. True

b. False

5. Consume low-fat dairy products, or try soy milk as an alternative.

a. True

b. False

6. Eliminate sodium from your diet.

a. True

b. False

7. You binge-watch a series with your roommates every Friday night. What is a good tip for keeping healthy while engaging in this activity?

a. Don’t take breaks so that you’ll have more time to study later.

b. Try not to eat at all while you watch to save calories.

c. Stay up all night and sleep for the whole weekend afterward.

d. Do periodic yoga stretches or jumping jacks while watching.

**Worksheet 1-4: Evaluation of Published Nutrition Information**

**Literature Critique: Critical Evaluation of Published Nutrition Information—**

**“Should I Believe What I Just Read?”**

**Assignment for Discussion:** Carefully read a journal article and answer the following questions on a separate sheet of paper.

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

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

b. Is the author 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?

3. a. Is scientific research being presented or discussed? Is the research current?

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. Design and describe in-depth additional research that could more decisively test the hypothesis identified. Pay particular attention to details and controls.

b. Indicate what will be measured.

c. State the type of experimental design and type of experiment.

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 1-5: Research Project Using the Internet**

This research project will employ the use of the Internet as a research tool. The student will be expected to become familiar with the diversity of Internet resources. The purpose of this project is to develop research skills using the Internet.

1. Access the Internet. Access several search engines for locating publications in peer-reviewed journals.

2. Select a topic such as vitamin A, osteoporosis prevention, or obesity among children.

**Topic chosen:**

3. Search for articles using key words related to your topic.

**Key words you used:**

4. Print out the references of articles that you found.

5. Print out abstracts from selected articles that are most interesting.

6. Obtain entire articles for selected articles.

7. Discuss your findings (1–2 pages, typed).

**Handout 1-1: Inaccurate versus Accurate View of Nutrient Intakes**

Two column charts show inaccurate and accurate views of nutrient intakes. The vertical axis represents “Intake”. The column for Inaccurate view is divided into two parts: one below the RDA level and one above. The bottom portion constitutes 30 percent of the column and is labeled “Danger”. The remaining 70 percent of the column is labeled “Safety”. The column for Accurate view shows the chart divided into four parts. The bottom portion, below EAR, constitutes 30 percent of the column and is labeled “Danger”. Text associated with this portion reads, “4. If a person’s usual intake falls below the EAR, the intake is probably inadequate and the possibility of deficiency is likely.” The second portion, above EAR and below RDA (or AI), constitutes 10 percent of the column. Text associated with this portion reads, “3. A usual intake that falls between the RDA and the EAR is more difficult to assess; the intake may be adequate, but the chances are greater or equal that it is inadequate.” The third portion, above RDA and below UL, constitutes another 30 percent of the column and is labeled “Safety”. Text associated with this portion reads, “2. If a person’s usual intake falls above the RDA, the intake is probably adequate because the RDA meets the needs of almost all people.” The last 30 percent of the column, above UL, is labeled “Danger” and text associated with this portion reads, “1. If a person’s usual intake regularly falls above the UL, the intake is probably excessive and the possibility of toxicity likely.”

1. Worksheet 1-1 and Handouts 1-1 contributed by Sharon Rady Rolfes. [↑](#footnote-ref-1)
2. Contributed by Carrie King. [↑](#footnote-ref-2)
3. Contributed by Daryle Wane. [↑](#footnote-ref-3)
4. Activity provided 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. Activity provided by Lin Brown, Shasta College, Redding, CA. [↑](#footnote-ref-5)
6. Activity provided by Dr. Neil Allison, University of Arkansas. [↑](#footnote-ref-6)
7. Contributed by Daryle Wane. [↑](#footnote-ref-7)
8. Contributed by Daryle Wane. [↑](#footnote-ref-8)