**Choosing Foods Wisely**

**Chapter Outline**

***LO 1:*** Describe the continuum of *nutritional status*.

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| I. What is nutritional status?A. Primary & secondary malnutritionB. Adequate nutrient intake | ***Key terms:*** |
| undernutritionnutritional deficiencynutritional toxicitynutritional status | malnutritionprimary malnutritionsecondary malnutritionnutritional adequacy |
| ***Figures:***2.1 Dietary Intake Influences Nutritional Status and Health |

***LO 2:*** Differentiate the methods by which nutritional status is assessed.

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| II. How is nutritional status assessed?A. Anthropometric measurement1. Height, weight, & circumference2. Body compositionB. Biochemical measurementC. Clinical assessmentD. Dietary assessment1. Food composition tables & dietary analysis software | ***Key terms:*** |
| anthropometric measurementbody compositionbiochemical measurementsignsymptom | dietary assessmentdiet recallfood frequency questionnairediet record (food record) |

***LO 3:*** Understand and estimate dietary intake.

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| III. How much of a nutrient is adequate?A. Dietary Reference Intakes1. Estimated Average Requirements2. Recommended Dietary Allowances3. Adequate Intake levels4. Tolerable Upper Intake LevelsB. Using EARs, RDAs, AIs, & ULs to Assess Nutrient IntakeC. Energy intake can also be assessed1. Estimated Energy Requirements2. Acceptable Macronutrient Distribution Ranges | ***Key terms:*** |
| Dietary Reference Intakes (DRIs)nutrient requirementEstimated Average Requirement (EAR)Recommended Dietary Allowance (RDA)Adequate Intake (AI)Tolerable Upper Intake Level (UL)Estimated Energy Requirement (EER)Acceptable Macronutrient Distribution Range (AMDR) |
| ***Figures:***2.2 Dietary Reference Intake Standards2.3 Comparing EARs to RDAs2.4 Using DRI Values to Assess Nutritional Status***Tables:***2.1 Available Dietary Reference Intake (DRI) Standards for Adults2.2 Physical Activity (PA) Categories and Values |

***LO 4:*** Utilize contemporary food guidance systems.

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| IV. How can you assess & plan your diet?A. Food guidance systemsB. 2010 Dietary Guidelines for Americans1. Balance Calories to manage weight2. Reduce consumption of certain foods & food components3. Increase consumption of certain foods & nutrients4. Build healthy eating patternsC. USDA Food Patterns1. Focus on nutrient density2. Remember that beverages countD. MyPlate illustrates how to put recommendations into practice1. Basic themes & key messages of the MyPlate symbol2. Using the MyPlate Food Tracker to conduct a dietary self-assessment | ***Key terms:*** |
| USDA Food PatternsDietary Guidelines for Americansnutrient density | MyPlateFood Tracker |
| ***Figures:***2.5 Dietary Guidance Has Evolved Tremendously over the Years2.6 The USDA MyPlate Graphic2.7 An Example of a Daily Food Plan***Tables:***2.3 2010 Dietary Guidelines for Americans’ Major Concepts and Key Recommendations2.4 Amounts of Each Food Group Recommended by the USDA Food Patterns and MyPlate |

***LO 5:*** Use food labels to plan a healthy diet.

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| V. How can you use food labels to plan a healthy diet?A. Food labels1. The *Buy Fresh Buy Local* campaign2. Daily Values3. Why don’t all foods have food labels?B. Nutrient content claims & health claims | ***Key terms:*** |
| Nutrition Facts panelDaily Value (DV)nutrient content claim | health claimregular health claimqualified health claim |
| ***Figures:***2.8 Understanding Food Labels and Nutrition Facts Panels***Tables:***2.5 FDA-Approved Nutrient Content Claims |

***LO 6:*** Put the chapter concepts into action.

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| VI. Can you put these concepts into action?A. Step 1: Set the stage & set your goalsB. Step 2: Assess your nutritional statusC. Step 3: Set the table to meet your goalsD. Step 4: Compare your plan & your assessment: Did you succeed?E. There is no time like the present | *[No key terms, figures, or tables appear in this section.]* |

**Web Resources Directory**

**ThinkQuest: Malnutrition** – <http://library.thinkquest.org/07aug/00615/causetypes.html> ***LO:*** 1

“Malnutrition: A Global Pandemic” defines types of over- and under-nutrition.

**UNICEF: Anthropometry and Its Use** – <http://www.unicef.org/nutrition/training/3.1/1.html> ***LO:*** 1

Interactive training on the nutritional assessment of children using anthropometry data.

**UNICEF: Review of Micronutrients** – <http://www.unicef.org/nutrition/training/4.1/1.html> ***LO:*** 1

Interactive training on recognition of micronutrient deficiencies.

**CDC: About BMI for Adults** – ***LO:*** 2

<http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html>
Definition, formula, and interpretation data for BMI.

**RD411: Nutritional Assessment** – ***LO:*** 2

<http://www.rd411.com/index.php?option=com_content&view=category&id=74&Itemid=353>
Nutritional assessment formulas, forms, tables, and interpretation guidelines.

**MyPyramid [MyPlate] Tracker** – <http://www.mypyramidtracker.gov/> ***LO:*** 3

MyPyramid [MyPlate] Tracker allows individuals to input and assess their dietary intake and compare it with their recommended intake.

**2010 Dietary Guidelines for Americans** – ***LO:*** 4

<http://www.health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf>
Download the easy-to-read report detailing the recommendations.

**USDA: Interactive DRI for Health Professionals** – <http://fnic.nal.usda.gov/interactiveDRI/> ***LO:*** 4

This website allows participants to enter their height, weight, gender, age, and activity level and then calculates their specific DRI.

**FDA: Make Your Calories Count** – ***LO:*** 5

<http://www.accessdata.fda.gov/videos/CFSAN/HWM/hwmintro.cfm>
Use the Nutrition Fact Label for Healthy Weight Management is an interactive tool that allows participants to practice using food labels to make healthy food choices.

**Health Finder: Eat Healthy** – ***LO:*** 6

<http://healthfinder.gov/prevention/ViewTopic.aspx?topicID=21&cnt=1&areaID=5>
The U.S. Department of Health and Human Services’ Eat Healthy Take Action section walks participants through a nine-step action plan to healthier eating.

**Class Checkpoint/Review Questions**

Are your students “getting it”? Ask these questions in class to check their progress in achieving the chapter’s learning outcomes.

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| **LO 2.1** | 1. What are some factors that can influence nutrition status?2. What separates good nutritional status from poor nutrition status?3. What personal characteristics need to be considered when assessing nutritional adequacy of a person’s overall diet or intake of a given nutrient? |
| **LO 2.2** | 4. Give an example of each type of nutrition assessment tool.5. What can be learned through clinical assessment that can't be learned through dietary assessment?6. Give one advantage and one disadvantage of each of the three types of dietary assessment. |
| **LO 2.3** | 7. Where determines an individual's nutrient requirements?8. Why is the Estimated Average Requirement (EAR) a better assessment tool for populations than the Recommended Dietary Allowance (RDA)?9. In assessing an individual’s diet, such as your own, how could you use the DRI values to determine if your intake of given nutrient is sufficient? For instance, if your intake level fell between the EAR and the RDA, would you consider your intake to be adequate or inadequate?10. What if your intake is at the UL or above?11. The Estimated Energy Requirements (EERs) are a standard set forth as part of the DRIs. How do EER values differ from the other DRI values in terms of what differentiates one level from another?12. What's the purpose of the AMDR? |
| **LO 2.4** | 13. According to the 2010 Dietary Guidelines for Americans, there are certain foods or nutrients that we should limit, and others that we should increase. Give examples of the foods or food components we should limit and then give examples of those that we should increase.14. How do the Dietary Guidelines and the MyPlate graphic intersect?15. Why isn’t the quantity recommended for each food group included in the MyPlate graphic? |
| **LO 2.5** | 16. Explain the use of the Daily Value column on the Nutrition Facts panel of a food label.17. What are the potential benefits to consumers of nutrient content claims or health claims on food labels? |
| **LO 2.6** | 18. What if Jodi hadn’t recorded portion sizes accurately in her diet record? How might that have impacted her assessment?19. Why is the follow-up assessment so important? |

**Answers:**

1. One's health, presence of illness, food access, types of foods available. (p. 21)

2. Adequate or good nutritional status would be achieved when nutrient requirements are being met; inadequate nutritional status applies to the inability to meet needs as result of either undernutrition or overnutrition.

3. Individual nutrient needs are determined by a combination of factors. The person’s sex, age, physical activity level, and genetic traits should all be considered. (p. 22)

4. Anthropometric: Objective measures of the body's physical dimensions (height, weight, body composition, head circumference, and waist circumference). Biochemical measurements: Laboratory values of biological samples such as blood or urine (e.g., serum vitamin D levels). Chemical assessment: An assessment of the signs and symptoms that a given person displays (the patient answers many questions, including questions about history of their symptoms, and describes how they are feeling). Dietary assessment: an evaluation of the adequacy of someone's dietary intake (dietary recall, food frequency questionnaire, diet record). (pp. 23-26)

5. In a clinical assessment, a practitioner can learn about a patient's disease history, family history of diseases, weight gains, and medications used, whereas, with dietary assessment, a practitioner will learn what the patient consumes and will be able to assess nutritional adequacy. The best use of the dietary assessment is when it is considered in light of the information gained during clinical assessment. (pp. 24-25)

6. Diet recall is typically a 24-hour dietary recall, where a person will record every food and drink consumed and then that intake is evaluated. The main advantage is that it's quick. The main disadvantage is that it may not represent a person’s usual food intake. The second type of dietary assessment discussed is the food frequency questionnaire. The main advantage is that it gives you an idea of someone's overall food selection patterns over an extended period of time. The main disadvantage is that it’s not a tool that can assess nutrient intake with accuracy, only food intake patterns. The diet record is the third dietary assessment tool discussed. The diet record is considered to provide a very accurate dietary assessment because you get an idea of what the person consumes over time (based on a representative three days). The drawback is that it's more labor intensive, making it difficult to get full compliance (and that there may be some recall bias). (pp. 25-26)

7. Besides gender, age, and life stage, many factors such as genetics, certain diseases, medications, lifestyle choices, and environmental influences can influence an individual’s nutrient requirements. (p. 27)

8. The EAR represents the daily value of nutrient intake that meets the physiological requirements of half of healthy individuals in an age, life stage, and gender group in a whole population, whereas the RDA represents the daily value of nutrient intake that is adequate for 97% of the population. So, when evaluating populations, if the mean intake of the population is greater than the EAR, then there is a high likelihood that intake of that nutrient is adequate in that population. In contrast, if the RDA was used to assess population-wide adequacy of a given nutrient, individuals for whom adequate intake could occur between the EAR value and the RDA value would be considered to have an insufficient intake and that could lead to falsely concluding that the intake for the entire population was inadequate. (pp. 27-28)

9. It could be adequate, but you probably should get closer to the RDA by consuming foods rich in that nutrient, or if appropriate, taking a supplement. (pp. 30-31)

10. Then you should reduce your intake of that nutrient (or foods rich in that nutrient). (pp. 30-31)

11. Age and gender are still considered, but now weight, height, and physical activity are also incorporated into the equation. (p. 31)

12. The AMDR establish appropriate proportions of energy intake from each of the energy-yielding nutrients. Maintaining a diet that adheres to the AMDR decreases your risk of chronic diseases and promotes the adequate intake of essential micronutrients. (p. 32)

13. Foods and nutrients to limit include sodium, saturated fats, cholesterol, *trans* fatty acids, solid fats, added sugars, and refined grains. Foods to increase include fruits and vegetables, whole grains, low-fat or fat-free dairy products, a variety of protein foods (seafood, lean meat, etc.), and foods that contain more potassium, fiber, calcium, and vitamin D. (p. 35)

14. The Dietary Guidelines incorporate the USDA food patterns; these patterns are reflected in individual MyPlate analyses. (p. 37)

15. The recommended amount of each food group depends on a person's age, gender, and physical activity level. The creators of MyPlate wanted to encourage each person to determine how much food is needed on an individual basis. (p. 38)

16. The Daily Values provide a benchmark to consumers as to whether a food is a good source of a given nutrient. There are two types of DVs. The first set is used for select vitamins and minerals. These values represent the recommended daily intake levels of these nutrients for person who requires 2000 calories. The second type of DV represents a nutrient’s upper limit. Thus, the DVs for vitamins A and C, calcium and iron, and dietary fiber are values that you’d like to have over 20%, whereas percentages for total fat, saturated fat, cholesterol, and sodium are percentages you'd like to have under 5%. (pp. 42-43)

17. The consumer can have some confidence that the health claims are based on scientific evidence that what the manufacturers are stating is true, and that the nutrient content claims are reflective of how much of a given nutrient is contained in the item. This may help consumers decide whether or not they should include the food item in their particular diets. (pp. 43-44)

18. The assessment would have been less accurate and, therefore, not as helpful. (pp. 44-45)

19. In Jodi’s case, the follow-up showed that she had achieved her goals by improving her intakes of iron, vitamin B12, and fiber, and reducing her total fat intake. Without the follow-up she may not have had any assurance that the changes in her diet were related to changes in how she was feeling. (p. 45)