Chapter 2 – Nutritional Assessment and Dietary Planning

Class Preparation and Assignment Materials for Chapter 2

This chapter of the instructor's manual includes the following class preparation tools:

- Sample answers to the "Everybody Has a Story" critical thinking questions from the text
- A description and expected learning outcomes for the *Diet Analysis +* activity in the text
- A list of chapter learning objectives
- A detailed chapter outline
- "Q and As" for further discussion of related topics

This chapter also includes the following student activities/assignments[1]:

- Worksheet 2-1: Let's Go to Lunch with Our Nutrient Requirements!
- Worksheet 2-2: ABCDs of Human Nutritional Status—Model of Protein Malnutrition
- Worksheet 2-3 (Enrichment Activity): Change a Dietary Habit and Score Success for Disease Prevention
- Worksheet 2-4 (Enrichment Activity): Social Eating Can Be Nutritious

Suggested Answer Key for In-Text "Everybody Has a Story" Questions[1]

Nutrient Deficiencies—Primary or Secondary? – Critical Thinking Part 1 (page 32):
Emily's story is not unique. Can you recall changes to your health that occurred when you first went to college?

[Tell us your story.] A few common changes in health that occur with the transition to a new environment include increased or reduced body weight, behavioral changes, and often, altered activity patterns.

Do you think any of these changes might have been due to altered eating habits?

Changes in body weight, behavioral responses to a new environment, and amount of physical activity are all related to altered eating habits through different mechanisms.

Can you list three nutritious foods that you ate before college but now rarely consume? Would it be possible to add these food items back to your dietary pattern?

1. Variety of nuts
2. Homemade tortillas
3. Fresh-squeezed orange juice

All 3 of the above food items would be simple to introduce into a college eating plan. College cafeterias are eager to accommodate students; take the time to meet the foodservice director or possibly one of the foodservice managers and ask them to change a few menu items.

Critical Thinking Part 2 (page 37):
After suffering with somewhat debilitating symptoms for months, Emily learned that she had secondary iron deficiency due to celiac disease. Why do you think this possibility was not explored when she first visited her campus health care provider?

Emily's symptoms of chronic fatigue, low serum iron lab value, and current level of stress with lack of sleep contributed to the initial diagnosis of iron-deficiency anemia. Since celiac disease causes chronic diarrhea with chronic loss of iron, Emily did present with secondary iron-deficiency anemia; however, since celiac disease wasn't tested for, the physician misdiagnosed her with primary iron-deficiency anemia.

What forms of nutritional assessment did her doctor use when examining her?

1. Measured body weight (anthropometric assessment)
2. Asked questions about lifestyle habits (dietary assessment)
3. Assessment of lab values from blood (biochemical assessment)

[1] By Susan Edgar Helm of Pepperdine University

Why might this misdiagnosis have been avoided if she had completed a dietary assessment?

A dietary assessment would have persisted with questions about the gastrointestinal tract. Eventually, Emily would have mentioned her recurrences of bloating and diarrhea, alerting the clinician to test the gastrointestinal tract for anomalies and screen for gluten intolerance.

Critical Thinking Part 3 (page 66):
Recall Emily, the college student with secondary iron deficiency whom you met at the beginning of the chapter. What tools might Emily use on a daily basis to make sure she is consuming only gluten-free foods?

She could check the ingredient lists on food labels for wheat or other grains containing gluten. She could network on the web for advice and daily support, and search for original and tasty gluten-free food items.

How can she continue to monitor her intake of iron so that her iron status is maintained?

1. Use a food diary to keep track of the iron content of her food
2. Purchase a computer application that allows easy access to find the iron content of food
3. Monthly blood checks at the Health Center
4. Log of daily energy level
5. Awareness of frequency of diarrheal episodes

What might be barriers to accomplishing this in a college setting, and how might university foodservice personnel help?

There are few barriers that would prevent Emily from continuing to monitor her iron status while attending university. One possible barrier might be lack of access to the Health Center on a regular basis; often insurance packages have a fixed number of visits. The number of visits can be prescribed by Emily's private physician and sent to the Health Center prior to her arrival on campus. Another barrier might be access to a computer; most universities have computers to rent or rooms with computers for student use. The more consequential barrier is Emily's availability of time to keep track of her symptoms, log her daily food intake, and access the nutrition labels/research the gluten content of her food supply at the cafeteria or outside dining experiences.

The foodservice personnel can do the following:
1. provide the iron content of all their foods and menu items
2. offer gluten-free food items on a daily basis
3. take time to listen to Emily's individual dietary needs

Overview of Chapter 2's *Diet Analysis* + Activity[2]

Description of the assignment: The Nutrition Facts panel is an important part of the food label, and is an effective tool in comparing the nutrient content of foods. This assignment uses the Nutrition Facts panel to illustrate the difference between white and whole-wheat breads. It also requires students to calculate Calories and percent Calories from the macronutrients as well as the contribution of sugars, fiber, saturated fat, and *trans* fat to total Calories. It provides an opportunity to learn about the RDIs, DRVs, and the Daily Value.

Expected learning outcomes: This assignment satisfies the following learning objectives for this chapter:
Interpret the Nutrition Facts label.
- Students will use the Nutrition Label to obtain nutrient content of a food.
- Students will interpret the information on the label to compare 2 foods.
- Students will calculate the contribution of Calories from the 3 macronutrients as well as selected subclasses of the macronutrients to total Calories.

Plan a healthful diet based on the regulations and guidelines developed by federal and private programs to help consumers choose foods wisely.
- Students will use *deductive* reasoning to make the more healthful selection based on the information obtained from the label.

[2] By Prithiva Chanmugam and Judy Myhand of Louisiana State University

- Students will apply the dietary guidelines developed by federal agencies such as USDA and DHHS and private organizations like the American Heart Association.
- Students will use *inductive* reasoning to assess how the item examined can benefit health.

Chapter Learning Objectives

The student will be able to:

1. Define nutritional adequacy and its impact on nutritional status and overall health.
2. Outline the ABCDs of nutritional status assessment.
3. Name and discuss the DRIs and how they came into existence.
4. List and provide examples for implementing the key recommendations of the U.S. Dietary Guidelines for Americans.
5. Outline the attributes of the MyPlate food guidance system and describe how it may be used by consumers.
6. State what information must be contained on a food label based on FDA regulations.
7. Interpret the Nutrition Facts label.
8. Plan a healthful diet based on the regulations and guidelines developed by federal and private programs to help consumers choose foods wisely.

Lecture Presentation Outline[3]

I. What Do We Mean by "Nutritional Status"? TA 7 (Fig. 2.1)

- A. Nutritional status - health of a person as it relates to how well his or her diet meets that person's individual nutrient requirements
  - 1. Undernutrition
    - a. Consuming too little of a nutrient
    - b. Can lead to nutritional deficiencies
  - 2. Overnutrition
    - a. Eating too much of a nutrient or food
    - b. Can lead to obesity & health consequences
    - c. Nutritional toxicity
  - 3. Malnutrition
    - a. State of poor nutrition due to an imbalance between nutrient requirements and nutrient availability
    - b. Undernutrition and overnutrition are both forms
- B. Primary and Secondary Malnutrition Can Lead to Poor Nutritional Status
  - 1. Primary malnutrition - Due to inadequate or excess food intake
  - 2. Secondary malnutrition
    - a. Due to factors besides diet
    - b. E.g. illness or drug-nutrient interaction
- C. Adequate Nutrient Intake Can Be Different among Individuals
  - 1. Factors
    - a. Sex
    - b. Age
    - c. Physical activity
    - d. Genetics
  - 2. Nutritional adequacy - Required amount of nutrients are consumed to meet physiological needs

II. How Is Nutritional Status Assessed? Worksheet 2-2

- Anthropometric measurements
- Biochemical measures
- Clinical assessment
- Dietary assessment

[3] By Lisa Esposito, M.S., R.D., C.S.S.D., L.D.N. (Chicago, IL)

A. Anthropometry: Body Measurements Provide Information Concerning Nutritional Status
    1. Assess physical dimensions and composition
    2. Easy and inexpensive but are not diagnostic
    3. Physical Dimensions: Height, Weight, and Circumferences
        a. Height and weight - Assess risk for chronic degenerative diseases
        b. Circumferences
            1. Waste and hip - Increase or decrease in body fat
            2. Head - Brain growth during infancy
    4. Body Composition—What You Are Made Of
        a. Distribution of fat, lean mass, & minerals
        b. Used with anthropometric measurements to assess nutritional status and health
B. Laboratory Tests Are Important Biochemical Indicators of Nutritional Status
    1. Lab analysis of biological samples used in nutritional assessment
    2. Blood & urine
    3. Analyzes for:
        a. Specific nutrients
        b. Biological markers (biomarkers) - reflect nutrients' function
    4. Help specify nutrient deficiency or excess
C. Clinical Evaluations Assess Signs and Symptoms of Disease
    1. Medical history
        a. Weight loss or gain
        b. Surgeries
        c. Medications
        d. Family history
    2. Signs
        a. Outcomes of disease seen or assessed by someone else
        b. E.g. pale skin, shortness of breath, edema, rashes
    3. Symptoms
        a. Cannot be observed or noticed by someone else
        b. Lack of energy, blurred vision, loss of appetite
D. Analysis of Your Diet Can Also Be Helpful
    1. Collecting information about a person's nutrient intake
    2. Retrospective Methods: Recalls and Questionnaires
        a. Person must remember what he ate in past
        b. 24-hour recall
            1. Food & drink recorded over 24 hours
            2. May not represent usual intake
        c. Food frequency questionnaire
            1. Analyzes food intake patterns over an extended period of time
            2. Limited in accuracy & completeness
    3. Prospective Methods: Diet Records
        a. Recorded when person consumes food
        b. Portion sizes estimated (tablespoons and cups)
        c. Most accurate method of dietary assessment - ideally food records kept for three days, one of which is a weekend day
E. Food Composition Tables and Dietary Analysis Software Are Important Tools
    1. Determines nutrient & energy content of diet
    2. Food composition tables
        a. www.nal.usda.gov/fnic/foodcomp
        b. Time consuming and tedious
    3. Computerized nutrient databases
        a. www.mypyramid.gov
        b. Online tools
    4. Commercial dietary assessment software programs

III. How Much of a Nutrient Is Adequate? TA 8 (Fig 2.2)

A. Dietary Reference Intakes (DRIs) Provide Reference Standards
   1. Developed by Institute of Medicine in 1994
   2. DRIs include:
      a. Estimated Average Requirements (EARs)
      b. Recommended Dietary Allowances (RDAs)
      c. Adequate Intake Levels (AIs)
      d. Tolerable Upper Intake Levels (ULs)
      e. Estimated Energy Requirements (EERs)
      f. Acceptable Macronutrient Distribution Ranges (AMDRs)
   3. A Historical Perspective on Nutrient Recommendations
      a. National Academy of Sciences
         1. RDAs created in 1943
         2. Developed to address health issues
      b. DRIs developed to address chronic diseases as well

B. DRI Values Depend on Many Factors
   1. Sex, age, life stage
      a. Females have 16 "life stage" groups
      b. Males have 10 "life stage" groups
      c. Life stage - age group and/or physiological state
   2. Nutrient requirement
      a. Amount of nutrient to consume to promote optimal health
      b. Majority require mid-level amount of a nutrient
   3. Other factors - Genetics, medication, lifestyle choices, environmental influences

C. Estimated Average Requirements (EARs) Reflect a *Population's* Average Need TA 9 (Fig 2.3)
   1. Intake value thought to meet the requirement of ½ the healthy individuals in a particular:
      a. Life stage
      b. Sex
   2. Developed by panel of experts on specific nutrient
   3. Useful in research and public health settings
   4. Not useful for setting individual recommendations - Only ½ population's needs would be met

D. Recommended Dietary Allowances (RDAs) Are Recommended Intake Goals for *Individuals*
   1. Expanded from preventing deficiencies to promoting optimal health
   2. Average chronic intake level of a nutrient thought to meet the nutrient requirements of 97% of healthy people
      a. Life stage
      b. Sex
   3. Do not distinguish natural, additive, or supplemental forms of nutrients

E. Adequate Intake (AIs) Levels Were Set When Data Were Lacking for EARs
   1. Amount of a nutrient that meets the physiological requirements of 50% of the healthy population of similar individuals
   2. More research is needed on these nutrients

F. Tolerable Upper Intake Levels (ULs) Reflect Safe Maximal Intakes
   1. Highest level of usual daily nutrient intake likely to pose no risk of adverse health effects
   2. Helps assess:
      a. Supplements
      b. Excess amounts of fortified foods
   3. Lack of UL does not indicate that high level of consumption is safe
   4. Using EARs, RDAs, AIs, and ULs to Assess Your Nutrient Intake TA 10 (Fig 2.4)
      a. When EARs, RDAs, and ULs have been established
         1. Intake of a nutrient is much less than your EAR - likely to be inadequate
         2. Intake is between EAR and RDA - probably should increase
         3. Intake is between RDA and UL - probably adequate
         4. Intake is > UL - probably too high
      b. When only AIs are available

1. Intake falls between AI and UL - probably adequate
2. Intake < AI - no conclusion can be made

G. Energy Intake Can Also Be Evaluated Q&A 2-1

1. Estimated Energy Requirements (EERs) - Average energy intakes needed to maintain weight in a healthy person of a particular:
   a. Age
   b. Weight
   c. Sex
   d. Height
   e. Physical activity level
2. Calculating Estimated Energy Requirements (EERs)
   a. Adult man: EER = 662 - [9.53 × age (y)] + PA × [15.91 × wt (kg) + 539.6 × ht (m)]
   b. Adult woman: EER = 354 - [6.91 × age (y)] + PA × [9.36 × wt (kg) + 726 × ht (m)]
3. Acceptable Macronutrient Distribution Ranges (AMDRs) Worksheet 2-1
   a. Ranges of intakes for each class of energy source that are associated with reduced risk of chronic disease while providing adequate intakes of essential nutrients
   b. Carbohydrates: 45%-65% total energy
   c. Protein: 10%-35% total energy
   d. Fat: 20%-35% total energy

IV. How Can You Easily Assess and Plan Your Diet?

A. Food Guidance Systems Have Been Part of Dietary Planning for Decades
1. United States Department of Agriculture (USDA)
2. 1894 - First set of nutritional recommendations
3. Calories & protein
4. USDA Food Patterns
5. 1980 DHHS and USDA - *Dietary Guidelines for Americans* (*DGA*)
6. MyPlate

V. 2010 Dietary Guidelines for Americans: Our Current Recommendations

A. Introduction
1. Developed by nutrition scientists
2. Systematic evaluation of published scientific literature to formulate recommendations
3. Recommendations regarding dietary and physical activity patterns
   a. Poor diet and physical inactivity are the most important factors contributing to an epidemic of overweight and obesity in all segments of the society
   b. Nearly 15% of American households are currently unable to acquire adequate food to meet their dietary needs
4. Two overreaching goals
   a. To help individuals maintain energy balance over time to achieve and sustain a healthy weight
   b. To help individuals focus on consuming nutrient-dense foods and beverages

B. Balance Calories to Manage Weight
1. Balance Calories in and Calories out for lifelong health
2. "Obesity epidemic" - energy intake exceeds energy expenditure
3. Must maintain appropriate calorie balance during each stage of life
4. Strategies
   a. Focus on total number of calories
   b. Monitor food intake, body weight, and physical activity
   c. Smaller portions or lower-calorie foods when eating out
   d. Prepare, serve, and consume smaller portions of foods and beverages
   e. Nutrient-dense breakfast
   f. Limit "screen time"
5. Know Your Energy Requirements
   a. Estimated Energy Requirement (EER) equations
      1. Eat that amount or fewer calories (e.g. 500 kcal/day less)

2. Maintain or reach a healthy body weight
   b. Control calorie intake
      1. Whole grains
      2. Vegetables and fruits
      3. Reduce intake of sugar-sweetened beverages
      4. Monitor calorie intake from alcohol

C. Reduce Certain Foods and Food Components
   1. Foods and food components known to increase risk for chronic degenerative disease
      a. Sodium
      b. Saturated and *trans* fatty acids and solid fats
      c. Cholesterol
      d. Added sugar
      e. Refined grains
   2. Strategies
      a. Read Nutrition Facts labels for sodium content
      b. Consume fresh over processed foods
      c. Eat more home-prepared foods
      d. Ask that salt not be added to foods at restaurants
      e. Limit solid fats and added sugars
      f. Fewer and smaller portions of foods and beverages with solid fats and added sugars

D. Increase Certain Foods and Nutrients
   1. "Nutrients of concern" - known to be lacking in American diets
      a. Potassium
      b. Dietary fiber
      c. Calcium
      d. Vitamin D
   2. Nutrients specific populations may lack
      a. Iron
      b. Folate
      c. Vitamin B_{12}
   3. Wholesome and healthy foods
      a. Seafood
      b. Beans and peas
      c. Whole grains
      d. Low-fat dairy products
   4. Working Toward the Goal: Maximizing Nutrient Intake by Increasing Fruit & Vegetable Intake

E. Build Healthy Eating Patterns
   1. Important notes
      a. There is more than one healthful eating pattern
      b. Cultural, ethnic, traditional, and personal preferences
      c. Food costs and availability
   2. Establishing the Current Food Patterns
      a. Recommendations about what kinds of foods and what proportions
      b. 5 food groups
         1. Vegetables
         2. Fruits
         3. Grains
         4. Dairy products
         5. Protein foods
         3. 12 different USDA Food Patterns based on caloric needs
   3. Focus on Nutrient Density
      a. Nutrient-dense foods and beverages
         1. Provide significant amounts of vitamins, minerals, and other substances that may have positive health effects relative to their caloric value
         2. Generally naturally occurring
   4. Remember That Beverages Count

a. Beverages provide substantial calories to American diets
b. "Empty calories" - not nutrient dense, mostly added sugars
c. Major types - non-diet soda, energy and sports drinks, and alcoholic beverages
d. Good - water, low-fat or fat-free milk, 100% juice, or beverages with few or no calories

F. Helping Americans Make Healthy Choices
1. "Call to Action" principles
a. Ensure all Americans have access to nutritious foods and opportunities for physical activity
b. Facilitate individual behavior change through environmental strategies
c. Set the stage for lifelong healthy eating, physical activity, and weight management behaviors
b. Individuals + local, state, and federal groups must work together

G. MyPlate Illustrates How to Put Recommendations into Practice TA 13 (Table 2.4)
1. Illustrates the recommendations of the Dietary Guidelines and Food Patterns
2. Each color represents one of the 5 food groups
3. Simple place setting image showing how to fill a plate with food groups
4. "Servings" not used - food intake recommendations are individualized
5. "Choose My Plate" website
a. www.choosemyplate.gov
b. Generates a "Daily Food Plan" with recommendations on food intake, amounts of food & menu selection
6. Key Themes and Messages of the MyPlate Symbol
a. Half your plate = fruits & vegetables
b. Enjoy your food, but eat less
c. Drink water instead of sweetened beverages
d. Eat ≥50% whole grains
e. Limit portion sizes
f. Choose lower-Na foods
g. Choose fat-free or low-fat milk
7. Using MyPlate Tracker for Conducting a Dietary Self-Assessment
a. Assess whether your diet meets the recommendations
b. Track everything you eat and drink for 1-3 days
c. Tips
1. Details are important
2. Estimate or measure serving sizes accurately
3. Choose representative "normal" days
4. Do not change your normal eating patterns

H. Healthy People 2020 Outlines Our Nation's Goals for Healthy Living
1. Overall health objectives for the nation to achieve by 2020
2. Used by government agencies, communities, professional organizations to improve health
3. Overarching goals:
a. Increase quality & years of healthy life
b. Eliminate health disparities
c. Create health-promoting social & physical environments
d. Promote quality of life & healthy development/behaviors for all life stages
4. 39 focus areas
5. Health indicators designed to track the nation's progress

VI. How Can You Use Food Labels to Plan a Healthy Diet?

A. Understanding Nutrition Facts Panels TA 14 (Fig. 2.11) & 1, Q&A 2-2
1. Established (in 1973) and regulated by U.S. Food & Drug Administration (FDA)
2. Purpose: Way to help consumers become aware of nutrient content of food
3. Required components
a. Product name and place of business
b. Product net weight
c. Product ingredient content
d. Company name & address

e. Country of origin
f. Product code (UPC bar code)
g. Product dating if applicable
h. Religious symbols if applicable
i. Safe handling instructions if applicable
j. Special warning instructions if applicable
k. Nutrition Facts panel outlining specified nutrient information

4. What Makes a Food Kosher? Q&A 2-3
   a. Prepared according to Jewish dietary laws
   b. Standards
      1. Kosher
         a. Beef, deer, sheep, and goat if properly prepared
         b. Fowl: Chicken, ducks, geese, and turkey
         c. Fish
         d. People must be trained and qualified to slaughter kosher animals in a kosher manner
         e. Meat and dairy products cannot be prepared or served together on the same plate
         f. Processed foods must be prepared in the presence of a rabbi
         g. Other foods, such as pickles, must be prepared in a certified kosher facility
      2. Non-kosher
         a. Pigs and rabbits
         b. Reptile and shellfish
         c. Meat and dairy prepared and/or served together
   c. Tradition
   d. Kosher indicated on food labels
5. Nutrition Facts panel
   a. Standards regulated by the FDA
      1. Serving size of food
      2. Total energy
      3. Total carbohydrates (including fiber)
      4. Sugar
      5. Protein
      6. Total fat
      7. *Trans* fat
      8. Cholesterol
      9. Sodium
      10. Vitamins A & C
      11. Minerals calcium & iron
   b. Some information not regulated by the FDA
6. The *Buy Fresh Buy Local* Campaign
   a. Established in 2002 to strengthen regional markets for family farms
   b. Goals:
      1. Increase visibility of local food producers in markets and the media
      2. Open new local food markets for family farmers
      3. Educate consumers about the benefits of buying local foods
   c. Supports local agriculture, farmers' markets, selected schools, retailers, and restaurants
   d. Community-supported agriculture
      1. Pay a fixed weekly/monthly amount
      2. Predetermined amount of locally-grown produce - varies by season
   e. Ensures family farms will thrive
7. Daily Values (DVs)
   a. Benchmark for whether a food is a good source of a nutrient
   b. Beneficial for comparing foods
   c. DVs
      1. Recommended intakes of nutrients based on either a 2,000- or 2,500-kcal diet
      2. "Upper limits" - daily amounts not to exceed
   d. % DVs

1. Percentage of recommended intake (DV) of a nutrient provided by a single serving of a food
2. Based on 2,000-kcal diet
3. Serves as a reference
    a. <5% DV = low source
    b. 10%-19% = good source
    c. ≥20% = high, excellent, rich source

B. Nutrient Content Claims, Structure/Function Claims, and Health Claims
1. Nutrient content claim
    a. Describes level of a nutrient in a food
    b. "Sugar free," "low sodium," "good source of"
2. Health claims
    a. Approved by FDA
    b. Regular - describes a specific, scientifically supported health benefit
    c. Qualified
        1. Less scientific backing
        2. Must be accompanied by a disclaimer

VII. Can You Put These Concepts into Action? Worksheets 2-3 & 2-4

A. Step 1: Set the Stage and Set Your Goals
B. Step 2: Assess Your Nutritional Status
C. Step 3: Set the Table to Meet Your Goals
D. Step 4: Compare Your Plan with Your Assessment: Did You Succeed?
E. There is No Time Like the Present
1. Consider the changes you have made
2. Were they healthy or detrimental to overall health?

Q and As

Q&A 2-1

Question:
I just used the formula in this book and calculated my EER to be 2,900 kcal/day. If I ate that much, I am positive that I would gain weight. Does this mean that there is something wrong with my metabolism?

Answer:
No. Keep in mind that the EER represent the Estimated Energy Requirements for individuals of similar sex, weight, height, and activity patterns. Your individual energy requirement may be somewhat more or less depending on other factors such as body composition and genetic factors.

Q&A 2-2

Question:
Some food labels say "use by," while others say "sell by." What do these terms mean?

Answer:
"Sell by" dates indicate the last day the product can be sold. This helps the store know when it should remove products from its shelves. The "sell by" date is based on the quality of the food, not its safety. The "use by" date is the last date a consumer is recommended to use a product. This date is recommended for best flavor or quality. "Expiration dates" indicate the last date a food should be eaten or used for food safety reasons. Foods that are used after the expiration date could contain bacteria or pathogens and may cause illness.

Q&A 2-3

Question:
What does it mean when a food is “kosher?”

Answer:
Kosher foods are those that are allowed to be consumed according to Jewish dietary laws described in the Jewish holy book the Torah. For example, only certain animals killed in a particular way are acceptable to eat, and some foods such as milk and meat are not to be prepared or eaten together. There is little question that some of the Jewish dietary laws have beneficial health effects, especially in terms of food safety. For example, the laws regarding kosher slaughter are so sanitary that kosher butchers and slaughterhouses have been exempted from many USDA regulations. However, the nutritional contents of kosher and nonkosher foods are similar.

Worksheet 2-1: Let's Go to Lunch with Our Nutrient Requirements!

Think about your favorite lunch you consumed at age 10. Do you remember the lunchbox more than the lunch? At age 16, what was your favorite item for lunch?

Our current lunch has become a meal "on the go," because we have more scheduled lives with limited attention given to food consumption and pure enjoyment of our food choices. If we pack a lunch quickly prior to departure in the morning, or choose from the awesome variety of fast food or cafeteria possibilities once we arrive at school or work, then can we meet our nutrient needs? Let's go to lunch and find out.

You will design a favorite "on the go" nutrient-dense lunch. In the table provided below, fill in items you think would travel easily in your lunchbox, keeping in mind food safety parameters... and of course, the food needs to be delicious and aesthetically pleasing. Besides designing your lunch preferences, you will determine the macronutrient value of each lunch item, then compare the total macronutrient value to a dietary reference standard. In this case, use the AMDRs (Acceptable Macronutrient Distribution Ranges).

Some additional factors to consider include: temperature, cost, and portion size.

Once your table is completed, share your favorite lunch with a classmate.

Favorite lunch item (provide amount)	CHO (g)	Protein (g)	Fat (g)	Energy (kcal)

Calculate the percentages for carbohydrate, protein, and fat for you lunch, and compare them to the AMDRs:

AMDRs	your lunch	Any changes you might consider to your lunch?
45-65% CHO		
10-35% protein		
20-35% fat		

Worksheet 2-2: ABCDs of Human Nutritional Status—Model of Protein Malnutrition

In the empty box provided below, draw an outline of a protein-malnourished human body.

Explain your drawing (to a classmate or your instructor) using your knowledge of nutritional status assessment.

Some measurements to complete your illustration:

A (anthropometerics)— Height, weight, body composition, and circumferences; perhaps BMI.
B (biochemical)— Consider blood and urine measurements testing protein status.
C (clinical)— Weight? Any clinical signs? What symptoms might this individual describe?
D (dietary)— What dietary assessment method would be appropriate to assess diet?

After your discussion, do you now have a "mental picture" of protein malnutrition?

Has it changed? Have your nutrition assessment skills become more organized?

Worksheet 2-3 (Enrichment Activity): Change a Dietary Habit and Score Success for Disease Prevention

1. Since you've started college, your dietary choices have probably changed. Do you think they've changed?

One research methodology used to discover changes in dietary habits is the 24-hour dietary recall. In the 24-hour recall you are asked to remember all that you've consumed as food and beverages over the last 24-hour period and write the amounts for each. Choose a day during the week to write a 24-hour recall and a day during your weekend to write a 24-hour recall.

2. Do you observe any differences between mid-week vs. weekend food consumption?

3. Think back to your last month of high school, and try and recall what you would have consumed over 24 hours then. Now, consider your current 24-hour recall. Do you note any substantial differences? Why or why not?

4. Can you think of alternatives to this change (or changes) that might be more healthful?

Worksheet 2-4 (Enrichment Activity): Social Eating Can Be Nutritious

1. In the table provided below, list the friends you eat with at each meal.

	BREAKFAST	LUNCH	DINNER	LATE EVENING
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

2. Do you eat well at each of these meals?

3. Do you think that being with your friends affects what or how much you eat at each of these meals? If so, how do you imagine your food choices would differ if you ate the meal alone?

4. Would your friends notice if you changed your eating habits? If you told your friends you were making a change to improve your health, do you think this would encourage them to attempt a change as well?