Chapter 1 – Linking Food, Function & Health

Read Chapter 1 Page 3-13

Define the following terms:

1. **Food:**
2. **Nutrition:**
3. **Chronic Diseases:**
4. **Wellness:**
5. **Nutrients**:
6. **Organic**:
7. **Macronutrients:**
8. **Define micronutrients**:
9. **Define metabolism:**

Answer the following questions:

1. **List the 5 types of health that contribute to wellness:**
2. **What are the top 4 leading causes of death?**
3. **List the 6 groups of essential nutrients including an example:**
4. **Macronutrients – what are they? Provide 3 examples.**
5. **What is used to measure food energy?**
6. **What is the difference between a Kcal and a Cal as found on food labels?**
7. **What is the main function of carbohydrates?**
8. **List 5 common examples of foods rich in carbs.**
9. **Why are fats important?**
10. **List 3 common examples of dietary fat.**
11. **What are the 4 main functions of proteins?**
12. **What are the building blocks of proteins?**
13. **Which foods are high in protein?**
14. **Define vitamins.**
15. **List 6 common vitamins.**
16. **What is the function of minerals?**
17. **List 6 major minerals that your body requires.**
18. **Besides drinking pure water, list 5 other ways we can intake water.**
19. **List 6 reasons water is so important to us.**

Chapter 2 – Designing a Healthy Diet

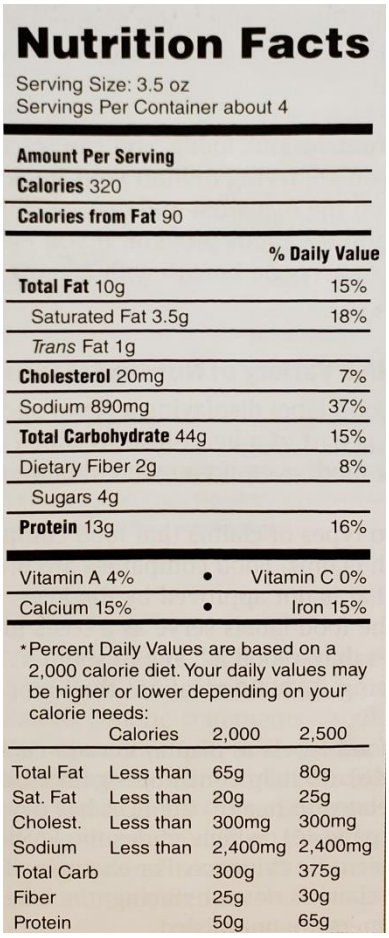
Read Chapter 2

Define the following terms:

1. **Healthful diet:**
2. **Adequate diet:**
3. **Moderation:**
4. **Balanced diet:**
5. **Variety:**

Answer the following questions:

1. **List the 5 components that must be listed on a food label.**
2. **What is the difference between serving size and the serving size by container?**.
3. **What info is given in the calories section?**
4. **Use the food label on p.43 to answer the following.**
   How large is a single serving?
   How many calories in a single serving?
   How many calories are in the entire box?
   How many calories would you consume if you ate 12 ounces of it?
   How many grams of fat are there per serving?
   How many grams of carbs are there per serving?
   How many grams of protein are there per serving?
   If you consumed 7 ounces how many grams of fat, carbs and protein are you consuming?
5. **Explain why % of daily values can often be misleading.**
6. **Given that in order to maintain a given weight you have to balance your calories intake with your calorie/energy output, what must be the result of each of the following?**
   Calorie Surplus.
   Calorie Deficit.
7. **What is the difference between low and high nutrient density foods (page 48) and high and low CALORIE density foods?**
8. **What is an example of a high vs low nutrient density food?**
9. **What is an example of a high vs low calorie density food?**
10. **What are empty calories? Provide several examples.**



Nutrition Facts

Serving Size: 3.5 oz
Servings Per Container about 4

Amount Per Serving	
Calories 320	
Calories from Fat 90	
	% Daily Value
Total Fat 10g	15%
Saturated Fat 3.5g	18%
Trans Fat 1g	
Cholesterol 20mg	7%
Sodium 890mg	37%
Total Carbohydrate 44g	15%
Dietary Fiber 2g	8%
Sugars 4g	
Protein 13g	16%

Vitamin A 4%	•	Vitamin C 0%
Calcium 15%	•	Iron 15%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat. Fat	Less than	20g	25g
Cholest.	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carb		300g	375g
Fiber		25g	30g
Protein		50g	65g

Chapter 4 - Carbohydrates

Define or answer the following:

1. **Glucose**:
2. **Starch:**
3. **Glycogen:**
4. **Ketosis:**
5. **Diabetes:**

Answer the following questions:

1. **What are monosaccharides?**
2. **List four examples of monosaccharides.**
3. **What are disaccharides?**
4. **List three examples of disaccharides.**
5. **Explain what makes up lactose, maltose and sucrose.**
6. **What is a complex carbohydrate (polysaccharide)?**
7. **What is dietary fiber?**
8. **List 6 benefits of dietary fiber.**
9. **Sketch (using little circles to represent glucose molecules) starch, glycogen and fiber.**
10. **Fill in this chart.**

Exercise Intensity	% Energy from Carbs	% Energy from Fat
Light		
Moderate		
Intense		

11. **How many kcal (Cal) does one gram of carbohydrates contain?**
12. **What is meant by "carbohydrates spare protein"?**
13. **When our bodies use protein for energy, the amino acids (building blocks of protein) cannot be used for their regular functions. List a few of the functions the proteins can no longer perform.**
14. **What could potentially develop if a person was eating an extremely LOW carbohydrate diet for a prolonged period of time and was therefore in or near ketosis for a long period of time?**
15. **Look over Figure 4.10 on p.122. Fill in the table below to explain the three-step pathway that occurs as a result of a spike in blood glucose that would take place after consuming a meal extremely high in glucose. For example eating a huge bowl of pasta or four candy bars.**

HIGH Blood Sugar	Step 1	Step 2	Step 3
Name of Action			
Brief Description			

16. **List four health problems that may or may not be associated with a high sugar diet.**
    Explain the difference between type 1 and type 2 diabetes.

17. **Look over figure 4.10 p.122. Fill in the table below to explain the three-step pathway that occurs as a result of a drop in blood glucose that would take place after not eating carbohydrates for a long period.**

LOW Blood Sugar	Step 1	Step 2	Step 3
Name of Action			
Brief Description			

18. **How many grams of carbohydrates should a "typical" 19 year old consume in 1 day?**
19. **In an "average person" what % of the total energy (calories) should come from carbohydrates?**
20. **How many grams of fiber per day does a "typical" female require?**
21. **How many grams of fiber per day does a "typical" male require?**
22. **What makes a grain whole grain? List and in a few words explain each of the three components to whole grains.**
23. **What are artificial sweeteners and, according to research, are artificial sweeteners harmful?**
24. **Class discussion will be used to answer this question. Consider this statement "artificial sweeteners have zero calories". Draw a flow chart to summarize the leading theory which explains why many people who are on a diet designed to lose weight (that contains lots of artificial sweeteners) often end up gaining weight.**

Chapter 5 – Fats

Read Chapter 5 Page 146-190

Define the following terms:

1. **Fats:**
2. **Oils:**
3. **Saturated Fat:**
4. **Monounsaturated Fat:**
5. **Polyunsaturated Fat:**
6. **Trans Fatty Acid:**
7. **Hypertension:**

Answer the following questions:

1. **Technically, what we commonly refer to as "fats" are actually scientifically called lipids. What is the difference between the two types of lipids (fats and oils)?**
2. **What does a triglyceride consist of?**
3. **Copy and paste an image of a simple triglyceride. Label the fatty acid and glycerol portions.**
4. **List 6 foods high in saturated fat.**
5. **List 3 foods high in monounsaturated fat.**
6. **List 4 examples of monosaccharides.**
7. **List 4 foods high in polyunsaturated fat.**
8. **Copy & paste an image of a Trans arrangement.**
9. **How does the majority of Trans Fatty acids get into our foods?**
10. **What is hydrogenation? Exactly why is it so harmful?**
11. **What is an omega-6 fatty acid?**
12. **What is an omega-3 fatty acid?**
13. **What foods are high in omega-6 fatty acid?**
14. **What foods are high in omega-3 fatty acid?**
15. **What is the daily recommended intake for omega-6 fatty acids?**
    What is the daily recommended intake for omega-3 fatty acids?
    What are sterols and which is the most common in our diet?
    Where is dietary cholesterol commonly found? Provide 5 examples.
16. **Why don't we need to consume cholesterol?**
17. **List 4 reasons we need cholesterol.**
18. **Fats provide energy. List 3 ways we use fat energy that we consume.**
19. **List 4 other reasons besides providing energy that we need fats.**
20. **What is the difference between visible and hidden fats?**
21. **What is the difference between the following?**
22. **What is the recommended intake of saturated fats in terms of % of our calories?**
23. **List 3 specific "animal product" foods high in saturated fats.**
24. **List 6 specific "grain product" foods high in saturated fats.**
25. **List three specific "vegetable product" foods high in saturated fats.**
26. **List 6 controllable risk factors for cardiovascular disease.**

Chapter 6 – Protein

Read Chapter 6 Page 191-233

Define the following terms:

1. **Protein:**
2. **Amino Acids:**
3. **Gene:**
4. **Vegetarianism:**

Answer the following questions:

1. **How many amino acids are there?**
2. **What is an essential amino acid? How many are there?**
3. **What is a non-essential amino acid?**
4. **What does gene expression refer to?**
5. **Look over the figure on slide 7.**
   a. **What are the body's two sources of amino acids for our amino acid pool?**
   b. **List five reasons why we need an amino acid pool.**
   c. **What happens to excess amino acids from the amino acid pool?**
6. **What is an incomplete protein?**
7. **What is a complete protein?**
8. **List seven complete proteins:**
9. **Explain the concept of complementary proteins.**
10. **List 7 reasons why your body needs protein.**
11. **Antibodies are proteins. What do they do for us?**
12. **Look the figure on slide 13. Fill in the chart below.**

Energy Balance	Sketch the "Balance"	Summary
Positive		
Negative		
Balanced		

13. **List two ways too much dietary protein can be harmful.**
14. **Look over Table 6.2 on page 209. Complete the chart. [Recommended Protein Intakes]**

Group of People	Protein intake (grams/kg of body weight)
Sedentary Adults	
Non-vegetarian Endurance Athlete	
Non-vegetarian Strength Athlete	
Vegetarian Endurance Athlete	
Vegetarian Strength Athlete	

15. **Based on the above chart, highlight which group of people need the most dietary protein?**
16. **List eight legume sources of protein:**
17. **According to research what two diseases can consuming 2-5 ounces of nuts/week reduce the chances of?**
18. **Suggest six possible benefits of vegetarianism.**
19. **What is protein-energy malnutrition?**
20. **Read/Discuss on Page 208: Do Athletes Need More Protein?**

Chapter 11 – A Healthy Body Weight

Read Chapter 11 Page 389-439

Define the following terms:

1. **Underweight:**
2. **Overweight:**
3. **Obesity:**
4. **Morbid Obesity:**

Answer the following questions:

1. **What does Body Mass Index (BMI) represent?**
2. **Use one of the two formulas to calculate your BMI.**
   BMI = Weight (kilograms) / height $(m)^2$ or BMI = (weight (pounds)/height $(inches)^2$) x 703

   For me: BMI = (73 kg)/$(1.8\ m)^2$ = 23 kg or BMI = (160 lbs/$(71\ in)^2$)(703) = 22 kg

3. **Why is BMI important? Look at the BMI ranges on the top of page 391 to determine where you fall.**
4. **Why is using BMI alone to assess fitness and health NOT a good idea?**
5. **What does body composition mean?**
6. **Read over both the methods and limitations on Figure 11.2 on page 939. List the five current ways a person can have their body composition tested.**
7. **Which body shape (apple or pear) tends to be more associated with chronic diseases such as heart disease, diabetes and high blood pressure?**
8. **What is the difference between energy intake and energy expenditure (often called TDEE - total daily energy expense)?**
9. **Read over Figure 11.5 on page 396. Fill in the chart.**

Energy Balance	What does it Mean	Result

10. **What is BMR (basil metabolic rate) referring to?**
11. **List eight factors that might increase your BMR and therefore increase your calorie burning capability.**
12. **List four metabolic factors that might put a person at risk for weight gain and cause resistance to weight loss.**
13. **Explain how Leptin and Ghrelin are opposite energy relating hormones.**
14. **What three strategies should you look for in a weight-loss plan?**
15. **What are five "indicators" for fad diets?**
16. **What are the three basic "styles of diets"? According to research, which seem to be effective for weight loss?**
17. **What three key strategies should be included in designing your own weight loss plan?**
18. **What are four recommendations for healthy weight gain?**
19. **What does research tell us about the need for amino acid and protein supplements for weight gain?**
20. **A person with Metabolic Syndrome is at risk for heart disease, type 2 diabetes, and stroke. What are the risk factors (that you need to have three or more of) to have Metabolic Syndrome?**

21. **What are the main health concerns for weight loss supplements like Caffeine, PPA and Ephedra?**
22. **What are the drawbacks to liposuction?**
23. **Discuss these phrases/statements with a friend. Write down what you think each means.**
    Feed Muscle, Burn Fat • You can't outrun your fork • Show me your friends, and I'll show you your fitness level • 95% of weight-loss efforts fail • Metabolic damage is often a result of the bodies starvation response • Yoyo dieting