Laboratory Report Sheet: Nutrition and Dietary Analysis

# Overview

This focus of this lab will be on nutrition. You will learn that the foods we eat have a direct impact on our health and welfare. To help make it easier for you to make healthy food choices, you will learn how to read information found on the Nutrition Facts labels on food products. Also, you will analyze your own diet for total calories, amount and percent of macronutrients and selected micronutrients. You will compare your own diet to the recommended features of a healthy diet.

# Exercise 1: Reading a Food Product Label



The Nutrition Facts label is required by the Food and Drug Administration to be placed on most packaged foods and beverages. Nutrition labels provide us important information about the calories, fats, protein, vitamins, minerals and other ingredients found in foods. Learning to read nutrition labels is important because it allows you to make healthy food choices. In addition, knowing how to read food labels is of critical importance if you have health conditions such as high blood pressure, diabetes, or high cholesterol and need to follow a special diet. You have previously watched a video on food labels now, click on [Reading Food Nutrition Labels](http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/HeartSmartShopping/Reading-Food-Nutrition-Labels_UCM_300132_Article.jsp) to obtain some helpful tips on how to use the information contained on Nutrition Facts labels. After reviewing the website, complete the following activity below regarding food labels.

Choose a food item at home that has a Nutrition Facts Label. Using the Nutrition Facts Label, answer the questions below about the food item. You will also need to include a picture of your food label.

| **Question** | **Response** |
| --- | --- |
| 1. What is the name of the food item? (.5 points) | Oatmeal |
| 1. What is the serving size? (.5 points) | 40grams |
| 1. How many servings per container or package? (.5 points) | 30 |
| 1. How many calories per serving? (.5 points) | 150 |
| 1. Would you consider the calories per serving high or low? Why? (.5 points) | I would it is in the middle. Sure, 450 calories of straight oatmeal is low, but oatmeal on its own doesn’t taste good. You are generally adding another 200-300 calories to make it a full meal as you need more protein. So in a dieting context, I would actually avoid Oatmeal. |
| 1. How many calories per serving come from fat? (.5 points) | 25 |
| 1. What are the four main ingredients of the food? (.5 points) | Whole Grain Rolled Oats |
| 1. In terms of the % DV section, which specific nutrients would be considered high (20% or more) or low (5% or less)? (.5 points) | All of the micronutrients are below 20. So the ones that are considered low (less than 5%) are Vitamin A, C, D, Calcium, Potassium, and Iron |
| 1. Are there any nutrient claims on the label that have been provided by manufacturer (fat free, low sodium, etc.)? If yes, what are they? (.5 points) | Heart Healthy because of fiber and lowers cholesterol. |
| Insert Image (2 points)  Click in the box below and paste the picture you took of the food label. |  |

# Exercise 2: Dietary Analysis Project

Complete the dietary log including the analysis portion at the end of the document. The Dietary Log file is located in your course. Make sure you follow the directions for proper use of the file! (15 points)

# Review Questions:

1. Use the [Calorie Calculator](http://www.calorieking.com/foods/) to estimate the number of daily calories your body needs to maintain you current body weight. This tool also allows you to see how your daily calorie needs change if you alter your activity level.

1. How does the average daily caloric intake that you recorded in your food journal compare to what is recommended by the calorie calculator? (.5 points)

The online calorie calculator is only a rough estimate. So the only way to get the correct answer is to track your calories each week and weigh yourself each week. From there, you can adjust your calories each week until the scale stops going up or down. This also assumes a low calorie level or your usual routine, because we are trying to find your basic metabolic rate.

1. Do you plan to make any changes to your diet or activity level? Why or why not? (.5 points)

The amount of calories will change depending on whether I am trying to gain muscle or lose bodyfat. The calories will also adjust as I gain muscle mass because muscle is metabolically active which will increase the energy your body burns.

1. If you ate a meal that contained 60 grams of protein, 100 grams of carbohydrate and 30 grams of fat, how many total kilocalories would you have consumed? You must show your math in your answer. (1 point)

60\*4 = 240 grams of protein

100\*4 = 400 grams of carbs

30\*9 = 270 grams of fat

This assumes there is no fiber as apart of the carbs. Fiber can either be 0 or 2 depending on if its soluble or insoluble.

Complete the following table that relates to micronutrients. (3 points)

|  |  |  |
| --- | --- | --- |
| **Micronutrient** | **Examples of major Food sources** | **Function in the body** |
| **Vitamin B12** | Animal meat, dairy | Red blood cell functioun, brain function, energy |
| **Vitamin C** | Fruits, carrots | Collagen production, wound healing, and antioxidant |
| **Vitamin E** | Nuts, oils, leafy greens | Antioxidate and helps prevent oxidative stress |
| **Iron** | Red meat, leafy greens | Oxygen transport and energy production |
| **Calcium** | Dairy, leafy greens | Promotes bone health, muscle function, and nerve signaling |
| **Sodium** | Table, seasonings | Similar to Potassium |
| **Potassium** | Bananas, beans, avocado | Electrolyte, which is important for hydration and muscle and nerver function |

1. Answer the following questions:
   * 1. What is osteoporosis? (.5 points)

A degenerative bone disease that also inhibits the bodies ability to produce new bone tissue.

* + 1. What nutrients can help prevent osteoporosis? (.5 points)

Calcium can help prevent osteoporosis by building new bone tissue.

* + 1. How does diet and exercise contribute to bone density? (.5 points)

Diet can contribute to bone density by providing the body

With the materials to build strong bones. Exercise, especially weight bearing exercise, encourages the body to build stronger muscles and bones.

1. When macronutrients (carbohydrates, lipids and proteins) are broken down by our digestive system, the monomers (building blocks) can be used to build what cellular structures? (.5 points)

Carbohydrates can be converted to glycogen for short-term storage in the liver and muscles.

Lipids are fat and can be used for enzyme, hormonal, and structural elements.

1. Answer the following questions:   
     
   a. What role does insulin play in the regulation of blood glucose? (.5 points)

Insulin spikes blood sugar(glucose) which tells the body to absorb the glucose for immediate use. This is why the stigma of a sugar rush is a thing.

b. What is diabetes? (.5 points)

Diabetes is a condition that impairs the body’s ability to process blood sugar. In type 1 diabetics, the body can’t produce insulin. In type2, the body doesn’t respond to insulin as effectively, this is known as being insulin resistance.

c. What dietary measures can diabetics take to help manage the disease? (.5 points)

Diabetics can eat food that are low on the glycemic index. This means when consumed, the body doesn’t produce the signals to consume glycogen. This allows for a slow release of glucose. Increasing fiber and protein intake can add extra benefits.