Jocelyn Baltazar

Class BIO2312 Lecture/Lab

Wednesdays; 2:30pm

Project Report: “Know Your Body”

Spring 2020

Name: Jocelyn Baltazar

Sex: Female

Age: 20

Ethnicity: Mexican

Height: 4.11”

Weight: 125lbs

BMI: 25.2 (overweight)

Underlying health conditions: None

Pulse:

Pulse rate is the number of times your heart beats per minute. Your heart’s beat can indicate if you have a normal rate, rhythm and how strong your pulse is. A normal heart rate is anywhere between 60-100 beats per minute depending on your age and underlying health conditions. If your pulse is less than 60 this will be considered bradycardia and faster than 100 beats is considered tachycardia. The best way to determine your heart rate is by finding a pulse either on your wrist or on the side of your neck and counting the beats for 30 seconds. After counting for 30 seconds you would then multiply this number by 2 to get a full reading of one minute. While conducting this experiment in class, we counted our pulse 3 times and the first time I found my heartbeat to be at 92 beats per minute at 2:45pm. The second time and third time my heart rate measured at 90 beats per minute. Although, during this time I was sitting down on a chair relaxed I did have a 16oz Redbull not even an hour before this class. This can be an explanation as to why my heart rate can be considered high for someone who was resting. While I do not have any known underlying health conditions, many conditions that can cause a faster heart rate are anemia, asthma, pregnancy, specific medications, coffee, etc. On the other hand, a slower heart rate can be due to certain medications, heart attack, infections or diseases, etc.

Blood pressure:

Blood pressure is the pressure of blood within the arteries. Blood pressure contains two numbers. The first number which is at the top is called the systolic pressure. The systolic pressure is the pressure in your arteries during contraction of your heart. The bottom number is called diastolic pressure. Diastolic pressure is the blood pressure in the heart muscle between beats. A normal blood pressure is one with both systolic numbers and diastolic numbers lower than 120/80 mm Hg. An elevated blood pressure is one with the systolic rate being between 120-129 and the diastolic rate being lower than 80. Hypertension stage 1 would be a blood pressure that has a systolic rate of 130-139 and the diastolic rate between 80-89mm Hg. Hypertension stage 2 consists of a systolic rate of 140 or higher and a diastolic rate of 90 or higher. Hypertensive crisis would be a systolic rate of higher than 180 and the diastolic rate higher than 120mm Hg. After conducting this experiment my partner and I found that both of us had normal blood pressures. My partner had a blood pressure of 110/80mmHg, and I had a blood pressure of 100/ 70mm Hg.

EKG:

An electrocardiogram or an ECG/EKG is a technique used to record the heart's activity. An EKG can provide information regarding one's heart rate and rhythm. The rhythms in an electrocardiogram appears as waves, each wave represents the process of what is going on inside of your body, specifically your heart. There is a P wave, T wave, and QRS complex. The P wave is the first small hill in the EKG. The P wave represents the initial interaction, this is when the blood is being squeezed into the heart from the atria and upper chamber of the heart. The QRS complex is when the ventricles/lower chambers of the heart now distribute blood throughout the entire body. The T wave is the final step where the heart relaxes to in order to prepare itself to

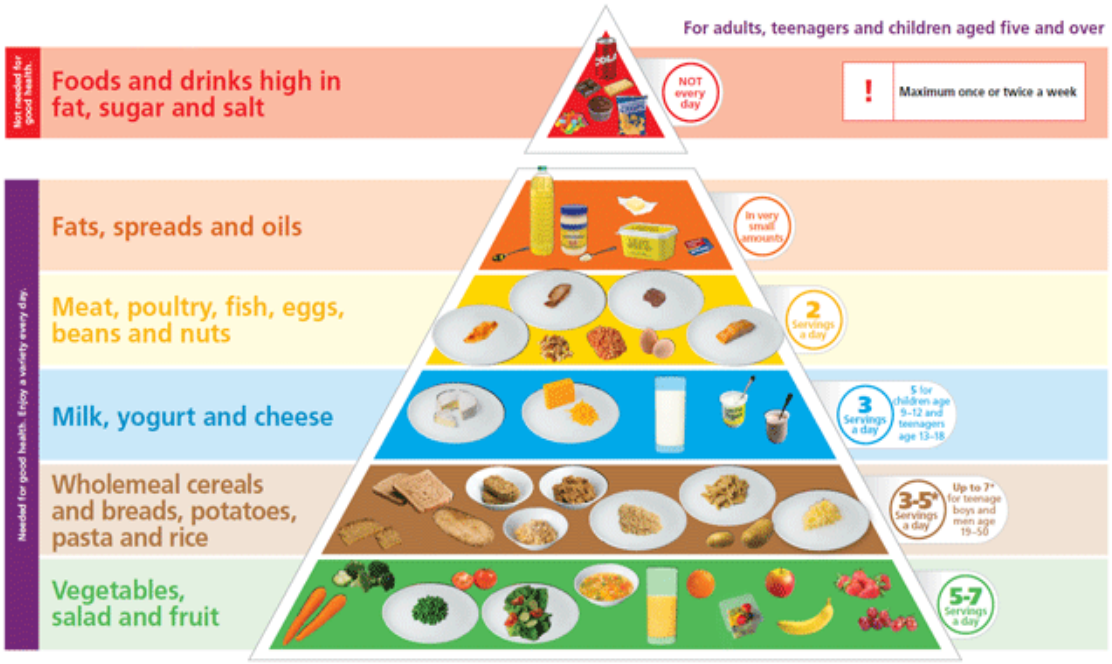
start squeezing blood again. During the experiment conducted in class, one student named Jessica volunteered to have her electrocardiogram taken. 12 electrodes were placed throughout the patient's chest, arms, and legs. All 12 electrodes were placed in specific locations, the first three electrodes were placed in lead I, II, and III. Electrodes 4, 5, and 6 were placed on augmented vector right, left, and foot. The last 6 electrodes were placed in the fourth intercostals space and fifth intercostal place labeling these electrodes V1-V6. These electrodes were then attached to wires that connected to the electrocardiogram machine. Once your ECG prints out you can measure the heart rate by counting the peaks and dividing 300 by the number of boxes. In the experiment my patient had a heart rate of 60 beats per minute making her heart rate normal. All the other findings in my patient's ECG appear to be normal since the recordings appear to be almost identical to one another.

Lung capacity:

Lung capacity is the maximum amount of air one's lungs can hold. The average lung capacity for a healthy adult varies between 5-6 liters depending on the gender. There are many factors that can affect the total lung capacity. One of the many tests that are done to measure this is called lung plethysmography. Doctors conduct these tests to determine diseases such as pulmonary fibrosis, pneumonia, asthma, chronic obstructive pulmonary disease (COPD), etc. When diagnosed with such diseases it can indicates either an increase or a decrease in total lung capacity. An increase in total lung capacity indicates an obstructive disease is present. An obstructive disease is when oxygen moves out of the lungs at a much slower rate than usual. Diseases that indicate an increase in total lung capacity are asthma, Bronchiectasis, COPD, and cystic fibrosis. A decrease in total lung capacity indicates a restrictive disease. A restrictive disease is when the lungs cannot expand enough for a deep breath of air which results in problems with airflow. Diseases that result in a decreased total lung capacity are sarcoidosis,

idiopathic pulmonary fibrosis, pneumonia, etc. Some diseases that can cause a decreased total lung capacity is obesity, scoliosis, and pleural effusions.

Food Diary:



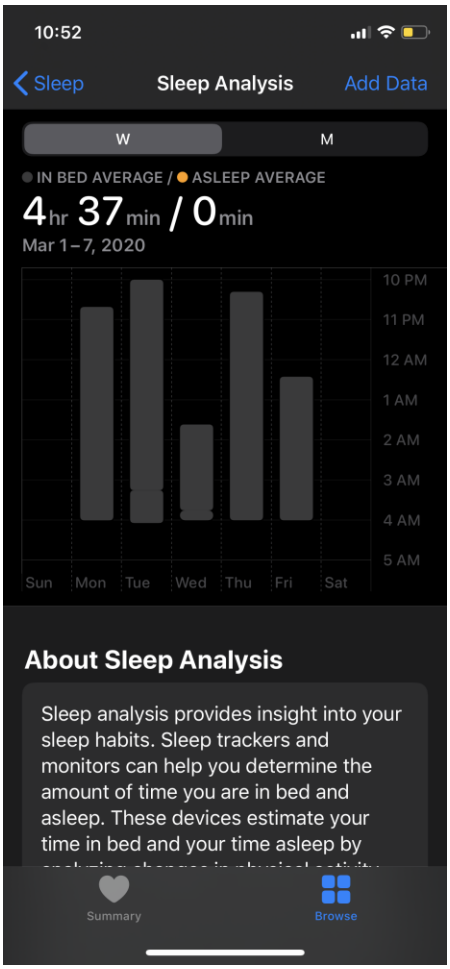
Day	Breakfast/ calories	Lunch/ calories	Dinner/ calories
Sunday	Oatmeal/ 158 calories Egg sandwich/ 326 calories 16oz coffee/ 30 calories		Pasta; Fettucine alfredo with chicken/ 1480 calories 1 can of coca cola/ 140 calories
Monday	Banana nut bread/ 420 calories 160z iced latte/ 313 calories	Chicken quesadilla with sour cream and guacamole/ 1060 calories 160z Black tea peach lemonade/ 90 calories 160z hot white chocolate mocha/ 430 calories	Fried chicken/ 435 calories 3 Cheese empanadas/ 258 calories 1 can of Soda (coca-cola)/ 140 calories
Tuesday	16oz coffee/ 313 calories Yogurt parfait/ 330 calories	3-piece tenders with fries and a biscuit/ 445 calories 1 glass of Soda/ 140 calories	Pinkberry (large pomegranate with toppings; brownie bites, coconut shavings, Oreos, and

			chocolate chips)/ 280 calories
Wednesday	160z coffee/ 313 calories Blueberry muffin/ 360 calories	Chicken quesadilla/ 1060 calories Monster energy drink/ 200 calories	
Thursday	2 butter croissants/ 520 calories 160z coffee/ 313 calories		Chicken cutlet sandwich/ 580 calories Coca cola- 2 cans/ 280 calories
Friday	1 butter croissant/ 260 calories 160z black tea peach lemonade/ 90 calories		2 slices of cheese pizza/ 570 calories Snapple peach/ 160 calories
Saturday	Egg sandwich/ 326 calories Orange juice/ 170 calories	1 cannoli/ 374 calories	Rotisserie chicken (320 calories) with rice and beans / (695 calories) Total 1015 calories A can of coke/ 140 calories A slice of strawberry cheesecake/ 401 calories)

I began logging my food intake on Sunday, March 1st. I had a heavy breakfast this day that consisted mostly of dairy, grains, and some protein. I skipped lunch this day and had a heavy dinner since I went on a date to an Italian restaurant. Monday's breakfast I had mostly dairy and grains again, I had some fruit since my bread contained bananas, but it wasn't as natural as it should've been. On Monday's and Wednesday's, I have school at 1pm and won't be home until 6pm therefore I make sure to have something heavy during lunch. My quesadilla consisted of mostly grains, dairy, some protein, and only a bit of vegetables (guacamole). The drinks I had to go with my lunch consisted mostly of sugar and were not healthy at all. For dinner I had protein again with some dairy however, my dinner was mostly fried therefore it was not such a healthy meal. On Tuesday my breakfast consisted of all dairy. My lunch was again unhealthy due to it being fried and my consumption of soda. By Wednesday I started to realize that my breakfasts

always consist of dairy and grains and because I go to school on Wednesday, I knew my lunch would consist of a quesadilla and some sort of energy drink. By the middle of the week I started to realize also that I don't have enough fruits or vegetables in my diet and that I am always drinking sugary drinks. On Thursday I woke up hungrier than usual I think it was because I did not have dinner Wednesday night. For breakfast I had 2 butter croissants and my usual 16oz coffee. I felt guilty for having two butter croissants, so I skipped lunch to make myself feel better and had a sandwich for dinner which was mostly grains, protein, dairy and of course no fruits or vegetables. Friday, I cut down on my morning coffee and found myself having a tea instead which might have had some fruit inside and I had one (only one) butter croissant and for dinner since it was pizza night I had 2 slices of pizza with Snapple peach. By Sunday I had again a little bit of proteins with grains and dairy. For lunch I had a dessert (not a good choice) and for dinner I had a big dinner with my weakness Coca Cola and another dessert (why did I have another dessert I have no idea) While logging my foods I've realized how unhealthy I eat and how little fruits and vegetables I have. I also find myself always having coffee in the morning especially since it's what makes me feel more awake. Working at Starbucks makes it a lot harder to stay away from the coffee and the pastries. I have tried to cut down on the grains and have something like yogurt instead but sometimes it gets the best of me and I end up going for two butter croissants instead of one.

Sleep Record:



To track my sleep I used the health app on my iPhone and due to my work schedule, I try to be in bed by 10-11pm to wake up at 4am. Based on my analysis I found myself sleeping for 5 hours and 19 minutes on Monday. Tuesday, I found myself getting an hour of more sleeping making it a total of 6 hours and 4 minutes of sleep. Wednesday I had almost no sleep I had only 2 hours and 23 minutes of sleep. Thursday I was back on track with getting my usual 5 hours of sleep (5 hours and 42 minutes to be exact) Friday again I only had 3 hours and 35 minutes of sleep. For some reason the app I used did not track my sleep on weekend, but I know I sleep a good 9-11 hours on the weekends.

Family History:

On my paternal side of my family, majority of my family members have high blood pressure and diabetes. My grandmother (who is now 57 years old) is experiencing arthritis and knee pain. On my maternal side my mother has had diabetes since her early 20's. Most of my maternal side has diabetes for example both my grandmother and my grandfather have diabetes since the age of late 40's, my aunts and uncles have diabetes (also diagnosed early on). From my knowledge my aunt who was diagnosed with diabetes passed away from kidney failure at the age of 63 and one of my uncles who has diabetes passed away also in his 60's of heart attack but he was also diagnosed with pancreatic cancer and the Coronavirus.

Conclusion/Take home message:

Based on all the data I have collected I see myself gaining more weight and soon to be diagnosed with diabetes if some habits are not changed. I know that from here on out I need to really be careful with how much sugar I put into my body and the amount of greasy foods I have. With the way I eat I know I can soon be diagnosed with high blood pressure and diabetes if I don't make a change in my diet. This report has made me realize how little I eat fruits and vegetables and how I need to implement this into my diet. Based on my food entries I realized how much soda I drink with my meals and my soda intake needs to be cut down tremendously especially because there are other options than drinking soda. By implementing all food groups in my daily diet now it will be easier when I am older, and it will ensure myself a healthier life.

List of References:

"Body Mass Index (BMI) Calculator." *DiabetesCanadaWebsite*, www.diabetes.ca/managing-my-diabetes/tools---resources/body-mass-index-(bmi)-calculator.

"ECG (Electrocardiogram): When You Need It and When You Don't." *Choosing Wisely Canada*, 22 Jan. 2019, choosingwiselycanada.org/ecg-electrocardiogram/.

Harvard Health Publishing. "How's Your Heart Rate and Why It Matters?" *Harvard Health*, www.health.harvard.edu/heart-health/hows-your-heart-rate-and-why-it-matters.

Jackson, Matthew. "How to Read an ECG: ECG Interpretation." *Geeky Medics*, 11 Apr. 2020, geekymedics.com/how-to-read-an-ecg/.

Leader, Deborah. "Understanding Total Lung Capacity." *Verywell Health*, Verywell Health, 20 Feb. 2020, www.verywellhealth.com/total-lung-capacity-914915.

"Pulmonary Function Tests." *Pulmonary Function Tests | Johns Hopkins Medicine*, www.hopkinsmedicine.org/health/treatment-tests-and-therapies/pulmonary-function-tests.

Rachel Nall, RN. "EKG Results for A-Fib: Characteristics, Types, Symptoms, and Treatment." *Medical News Today*, MediLexicon International, 30 Mar. 2017, www.medicalnewstoday.com/articles/316662#characteristics.

"Understanding Blood Pressure Readings." *Www.heart.org*, www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings.

"Vital Signs (Body Temperature, Pulse Rate, Respiration Rate, Blood Pressure)." *Vital Signs (Body Temperature, Pulse Rate, Respiration Rate, Blood Pressure) | Johns Hopkins Medicine*, www.hopkinsmedicine.org/health/conditions-and-diseases/vital-signs-body-temperature-pulse-rate-respiration-rate-blood-pressure.