

**Activity 3.2.5: PLTW Nutrition – Client Report for Trisha Knowles**

**Client Name**: Trisha Knowles

**Health History (including any specific health goals)**:

Trisha Knowles is a 19-year-old sophomore majoring in biology. Trisha exercises regularly, sometimes twice a day. She has been a vegetarian for just under a year and she recently eliminated almost all carbohydrates from her diet. Trisha does eat dairy and occasionally, she eats seafood. She packs small meals to take with her to campus as she refuses to eat in the cafeteria.

The patient has no family history of heart disease or diabetes, however both her parents are on medication for high blood pressure. Her paternal grandmother died of breast cancer at age 47. Her maternal grandmother suffers from severe osteoporosis and her mother is taking prescription medications to slow bone loss.

Trisha was hospitalized briefly in her junior year of high school for exhaustion and dehydration. Hospital records note that she reported skipping meals to fit into a dress for a dance.

Recent lab work shows that Trisha is moderately anemic. Her cholesterol levels are normal. Her average resting heart rate is 64 and her average resting blood pressure is 88/60.

Trisha feels sluggish and wants an assessment of her current health. She struggled with her weight in high school and reports that while she does not want to slip back into bad habits, she does want to maintain a slim figure.

**Height**: \_\_\_\_\_\_\_5’ 10”\_\_\_\_\_\_\_\_ **Weight:** \_\_\_\_\_\_\_122lbs\_\_\_\_\_\_\_\_\_\_\_

0.454 kilograms per pound and 2.54 centimeters in an inch.

55.388 kg

177.8 cm

**BMI**:

* Calculate Trisha’s BMI based on her height and weight and describe the implications of this number.

BMI= 17.5

Based on her BMI, Trisha is underweight. The base for normal BMI is 19.

**Activity Level: BMR and TDEE (Output)**:

Trisha reports running 3-5 miles every morning at a moderate pace. Occasionally, she adds in a night workout, either lifting light weights or taking an aerobics class. She always walks to class and she always takes the stairs.

* Compute Trisha’s BMR.

0.454 kilograms per pound and 2.54 centimeters in an inch.

55.388 kg

177.8 cm

* Women: BMR = 655.1 + (9.5663 x W) + (1.85 x H) – (4.676 x A)
* W = actual weight in kilograms
* H = height in centimeters
* A = age in years

**BMR= 1,425.04**

* Discuss the activity factor used in the Harris-Benedict Equation and calculate TDEE.

It was mentioned that she is moderately active, as she works out every day, sometimes twice a day. Her TDEE is **2,208.812.**

* BMR (1425.04) x 1.55 (moderately active) = 2,208.812

**Food Intake (Input)**:

Trisha completed a food diary for one week. Analysis of her food choices revealed the following results:

|  |  |
| --- | --- |
| Average calories consumed per day | 1601 |
| Average fat consumed per day | 42g |
| Average saturated fat consumed per day | 25g |
| Average carbohydrates consumed per day | 65g |
| Average protein consumed per day | 55g |
| Average sodium consumed per day | 1480mg |

Trisha reports eating 5 servings of vegetables per day. She does not eat fruit as she avoids the sugar. Trisha eats no rice, pasta, or bread products. Occasionally she has a piece of whole grain toast before she goes running. She eats beans, egg whites, tofu, and fish for protein. She reports drinking 8-10 glasses of water a day. She does not drink soda or coffee, but she does drink 1-2 sugar-free energy drinks per day. She sometimes skips meals if she forgets to pack food to take to campus.

Trisha does not eat fast food and only orders salad (with the dressing on the side) when she eats out.

**Calorie Deficit or Surplus (Compare Inputs and Outputs)**:

* Compare calories consumed versus calories expended.

Trisha’s TDEE tells us that she uses about 2,208 calories per day for energy. She consumes only about 1601 calories per day. Based on this, she has a calorie deficit of 607.812 calories per day.

* 2208- 1601= 607.8 calories per day
* Describe what will happen to Trisha’s weight over the next month if she continues the same eating patterns. Show your work.
* Approximately 3500 calories in a pound of fat.
* She has a calorie deficit around 608 calories a day.
* 608 x 30 days in a month= 18234.36 calorie deficit in a month.
* 18234 / 3500 cals in a lb = 5.2 pounds lost in a month.

According to the math, if Trisha continues to have this calorie deficit, she will lose about 5.2 pounds a month. For Trisha, this is not a healthy path because of her underweight status based on her BMI.

**Overall Assessment**:

* Discuss overall implications of BMI and any energy imbalance on overall health.

A persons BMI provides a gage of how healthy a person’s weight is compared to their height. From Trisha’s BMI, a dietician can see that she is underweight for her height. This could be caused by her energy imbalance. Because she is moderately active, she should be eating as many, if not, more calories than she burns off through activity. This could be the reason she feels fatigued, as her body is constantly having to burn fat.

* Analyze food choices
* Is the client getting enough of each of the designated food groups?

Fruit- MyPlate recommends to consume 2 cups of fruit each day. Trisha does not eat any.

Vegetables- 2.5 cups of vegetables are recommended each day. She eats 5 servings a day, this is better than the recommended amount.

Grains- For a 19 year old women, it is recommended to eat at least 3 to 6 ounces of grains each day. Trisha avoids grains, except for an occasional piece of whole wheat toast. She has a severe carbohydrate deficit due to this.

Proteins- It is recommended to consume 5.5 oz of proteins each day. She consumes approximately 55 grams or 1.94 ounces each day. Trisha’s has a protein deficit of 3.5 ounces each day.

* How does consumption of fats, carbohydrates, proteins and sodium compare to recommended values?

Based upon the FDA’s recommended intake of each food group, Trisha is not getting enough of her essential food needs based on a 2,000 calorie diet. One, she is not consuming the recommended 65g of total fat each day. However, her saturated fat is higher than recommended. She is also not consuming the recommended 2,400 mg of sodium. Lastly and important for her energy intake, she is not consuming nearly as many carbohydrates as recommended. She is consuming only 18% of the 300 carbs a day.



* Propose ways to bring the energy input and output in line with Trisha’s health goals. Describe final recommendations to improve Trisha’s overall health and help her regain energy and strength. How should Trisha alter her eating habits and her activity? Link your recommendations to her personal health history *and* her family history.

Trisha stated that she wants to lose 10 more pounds. As a dietician, I do not recommend that she continues on this path. For one, her BMI is in an unhealthy and shows that she is underweight. She currently has a calorie deficit of 607 calories a day. Her TDEE shows that she uses 2,208.812 calories a day. She should be eating at least the same number to prevent her from losing any more weight. The best strategy for her to keep the weight she has is to eat the recommended 5 ounces of protein to build muscle and 300 carbohydrates to maintain her energy levels. The path she is on is unhealthy, as she should not be losing 5 pounds a month. More dairy should also be added to her diet to prevent from further osteoporosis as her maternal grandmother and mother suffer from. Also, she should maintain her moderate exercise to prevent from high blood pressure as both of her parents suffer from. Overall, she should eat more calories to balance out the energy her body uses, especially carbohydrates, protein, and dairy, and maintain her exercise.