

The Write Weight: Nutrition and Body Image

by

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Part I – Kasey’s Story

Kasey is a 21-year-old college student who wants to go to veterinary school. She loves animals and is active in volunteering at a veterinary clinic near campus. While she knows it’s important to eat a balanced diet, Kasey still skips breakfast or lunch several days a week. She finds that with her busy class schedule, volunteering, studying, and spending time with her friends and family, she simply doesn’t have time to eat. With her hectic life, Kasey often feels so tired in the afternoons that she needs to have a few diet soft drinks or lattes to perk up. She rationalizes this by telling herself that the diet soft drinks are sugar-free, so they can’t be that bad. When she has a latte, she figures that she’s getting calcium from the milk, which is good for strong bones. Kasey has been drinking caffeinated beverages for so long that she feels she needs to drink more to have an effect, and she doesn’t want to go without them and risk getting a headache in the middle of class or work.

Like many young women, Kasey is concerned about her body weight and shape. She is 5’6”, weighs 142 lbs, and is of medium build, but she feels like she is never at her “ideal” weight, which she considers to be about 125 lbs. She usually eats salads for lunch or dinner, and when she eats things she considers “bad,” like creamy sauces or high-fat foods, she works out longer. Her friend, Laura, is naturally thin, and sometimes Kasey is jealous of Laura’s ability to eat anything she wants without gaining an ounce. Laura is 5’8” and 135 lbs, and it bothers Kasey that Laura is taller and yet weighs less than her. Her friend, Sara, is heavier, and Kasey hates to admit it but sometimes she would rather go to social activities with Sara. At least when she’s around Sara, Kasey feels less self-conscious about her body.

Kasey was particularly stressed during fall semester when she began applying to veterinary schools, and found herself eating a lot more than she intended. She gained six pounds between October and January, and in general, while she knew she was not overweight, she had been feeling badly about her appearance. While online late one night, she read an article that said keeping a food diary can help people become more aware of what they are eating, and that those who kept food journals had twice as much success in losing weight as well as maintaining their goal weight. Being leery of fad diets and diet pills, Kasey decided to try this out herself to see if she would have similar success. She wanted to be in better shape in time for her spring break mission trip to Guatemala, where she would bring much-needed veterinary supplies to farmers to care for the animals that earn them their livelihood. She hoped that losing a few pounds would also give her more energy.

Kasey tracked her meals in a food diary for three days. Record Kasey’s calories in the three tables below using online calorie calculators (e.g., <http://ndb.nal.usda.gov/ndb/search> and <http://www.caloriecount.com/>) to determine her calories per serving and total calories.

<i>Thursday, March 26</i>	<i>Serving size</i>	<i>Calories/serving</i>	<i>Total</i>
Vanilla latte, skim milk	16 oz		
Cranberry-orange muffin	large muffin		
Salad with tomato and cucumber	1 ½ cups		
Salad dressing (balsamic)	2 tbsp		
Diet Coke	8 oz		
DAILY TOTAL			

Kasey's notes: *I didn't have time for breakfast, so I got a latte on the way to class. Thursdays are busy, with a morning lab and a class afterwards that runs through the lunch hour. After class, I had to go to my job as a volunteer at a veterinary clinic, so I didn't get to eat again until dinner, around 7 PM.*

<i>Friday, March 27</i>	<i>Serving size</i>	<i>Calories/serving</i>	<i>Total</i>
Vanilla latte, skim milk	16 oz		
Luna bar (Nuts Over Chocolate)	1 bar		
Turkey wrap (turkey, lettuce, tomato, Dijon mustard, whole wheat tortilla)	1 wrap		
Diet Coke	8 oz		
Jelly beans	1 dozen pieces		
Fettuccine Alfredo	9 oz		
Milk, skim	1 cup		
DAILY TOTAL			

Kasey's notes: *I had time for both lunch and breakfast today. I usually only get to eat both meals on Mondays and Fridays; the rest of the week is too busy. I don't usually eat pasta with cream sauce, but I didn't feel like a salad, and the pizza in the dining hall tonight was overcooked and looked too gross.*

<i>Saturday, March 28</i>	<i>Serving size</i>	<i>Calories/serving</i>	<i>Total</i>
Chipotle burrito, chicken with sour cream, cheese, & salsa	1 burrito		
Diet Coke	8 oz		
Heineken beer	1 bottle		
Sour cream and onion chips	1 oz		
Pretzels	1 oz		
DAILY TOTAL			

Kasey's notes: *My friend, Sara, invited me to lunch. I always feel guilty when I eat at Chipotle, because the burritos are SO many calories, but they taste so good! We went to a party later on. I was still full from lunch, so I didn't have dinner, but they had chips and stuff out at the party, and I snacked on that when I felt hungry.*

Kasey also kept track of her activities for the same three days, using an activity tracking app on her smartphone. Calculate Kasey's totals in the table provided below.

<i>Thursday</i>	<i>Activity</i>	<i>Time spent (min.)</i>	<i>Total energy expended (calories)</i>
Throughout day	Walking to and from classes	20	75
2:30–6:30 PM	Work at vet clinic	240	334
TOTAL			

<i>Friday</i>	<i>Activity</i>	<i>Time spent (min.)</i>	<i>Total energy expended (calories)</i>
Throughout day	Walking to and from classes	30	113
7:00–8:00 PM	Working out	60	355
TOTAL			

<i>Saturday</i>	<i>Activity</i>	<i>Time spent (min.)</i>	<i>Total energy expended (calories)</i>
12:00–1:30 PM	Walking with friend	35	132
10:00–11:00 PM	Dancing	60	291
TOTAL			

Part II – Calculating Kasey’s Energy Budget

The body mass index (BMI) is a widely used measure that reflects one’s ideal weight. A BMI of 18.5–24.9 is considered ideal. A BMI below 18.5 is considered underweight and a BMI greater than 25 is considered overweight. A person is considered obese if the BMI is greater than 30.

1. Determine Kasey’s BMI. Kasey is 5’6” and weighs 142 lbs. Visit the Centers For Disease Control and Prevention (CDC) and use their BMI calculator to determine Kasey’s BMI: <http://www.cdc.gov/healthyweight/assessing/bmi/>

Record Kasey’s BMI here: _____

Our basal metabolism is the energy required by our body at rest to carry out normal processes, such as breathing, regulating blood pressure and body temperature, heartbeat, and nerve impulses. Kasey calculated her basal metabolic rate per hour by multiplying her basal metabolic rate by her body surface area (both calculated from a chart using her height and weight).

Kasey determined her BMR/hour is 59.47

2. Calculate Kasey’s daily BMR. To obtain Kasey’s daily BMR, multiply her hourly BMR by 24 hours. This shows the number of calories needed each day for Kasey’s body to function.

Kasey’s BMR/day: _____

3. Calculate Kasey’s average daily physical activity. This is the amount of energy Kasey spent as a result of movement of skeletal muscles, and does not include her basal metabolic activity. Add up the calories she expended each day according to her activity log, and average the three numbers.

Total for day 1: _____

Total for day 2: _____

Total for day 3: _____

Average energy expended per day: _____ calories

4. Calculate Kasey’s specific dynamic action (SDA). This is the amount of energy needed to process her food. To determine Kasey’s SDA, add the energy for daily BMR (from #2) and the average energy required for her daily physical activity (from #3). Multiply this total by 10% to obtain an estimate of Kasey’s daily SDA.

Kasey’s SDA/day _____

5. Calculate Kasey’s average daily caloric intake from her food diary.

Total for day 1: _____

Total for day 2: _____

Total for day 3: _____

Average calories consumed per day: _____ calories

6. Finally, compare Kasey’s average daily intake (from #5 above) to her average daily energy output by adding her daily BMR, her physical activity, and her SDA (#2 + #3 + #4).

Average intake: _____

Average output: _____

Part III – Assessment of Kasey’s Energy Budget

1. If average daily energy intake is greater than average daily energy output, weight gain is likely over the long term.
 - a. Is it likely that Kasey will lose weight, gain weight, or stay the same if she continues with her current eating and exercise habits?
 - b. Do you think Kasey should be concerned about her current weight? Explain.
2. Calculating BMI places us in a weight category.
 - a. Is Kasey at an ideal weight according to the BMI method?
 - b. Is Kasey’s “ideal weight” of 125 lbs reasonable for a woman of her height and build? Why or why not?
 - c. Are there any problems with using BMI as an indicator of health?
3. Look over Kasey’s food diary.
 - a. Do you think she is eating a healthy diet? Why or why not?
 - b. Do you have any dietary suggestions for Kasey?
4. Kasey complains of feeling tired often, so she drinks Diet Coke, coffee, and espresso drinks.
 - a. What do you think may be to blame for her lack of energy? Provide a few examples.
 - b. What solutions would you recommend to Kasey to help with her fatigue?
 - c. How much caffeine is too much? What are some side-effects of caffeine?
 - d. What problems (besides excess caffeine) are associated with drinking a lot of soda and coffee, even if they are sugar-free?
5. Is skipping meals a good idea? Why or why not? Do some research and see if skipping meals really can help with weight loss.
6. Do you think that Kasey suffers from body image issues? What evidence do you have to support your opinion, and what advice would you have for Kasey?