THE POWER OF FOOD

Registered Dietitian — Case Study 2

1. What is your patient's weight at the end of the study? Show or explain how you found the answer.

$152\frac{1}{4}$ pounds

$150 + 1 - 1\frac{1}{2} + 2 - \frac{1}{2} - \frac{1}{4} + 3 + 1 - 1 + 2 - 1\frac{1}{2} + 0 - 2 = 152\frac{1}{4}$

2. The lead nurse, who weighs the patients, made a mistake on Patient T's chart. He recorded that the patient lost 2 pounds in the very last month of the study, but he did not. That month, there was no change. What is the patient's total weight at the end of the study? Show and explain two different ways that you could fix this error.

$154\frac{1}{4}$ pounds

$152\frac{1}{4} - (-2) = 154\frac{1}{4}$

$152\frac{1}{4} + 2 = 154\frac{1}{4}$

You can either subtract –2 or add +2; both operations will fix the nurse's error.

3. Over the course of the next year, Patient T's weight changes, on average, $-\frac{1}{4}$ month. What is his weight at the end of the next year? Show your work.

$151\frac{1}{4}$ pounds

$154\frac{1}{4} + 12(-\frac{1}{4}) = 154\frac{1}{4} + (-3) = 151\frac{1}{4}$

4. If you recommend a total weight gain of 8 pounds over the course of a year, what average change in weight per month will help your patient reach that goal? Report your answer as a fraction and a decimal.

$\frac{8 \text{ pounds}}{12 \text{ months}} = \frac{2}{3}$ pound per month $\approx$ 0.67 pound per month

Part of your job as a registered dietitian is to create healthy diet plans for your patients. Since this patient is a healthy and moderately active man, you recommend that he eat 2200 calories daily. Create a meal plan for one day for Patient T. The meal plan should include:

- 3 meals: breakfast, lunch, and dinner; and
- 2 snacks: morning and afternoon.

Unless your teacher provides different instructions, use the "Caloric Guide" available online as a reference to make your meal plan.

According to mypyramid.gov, within those meals, you want to aim for the following:

- 6 oz. of grains;
- 2.5 cups of vegetables;
- 2 cups of fruit;
- 3 cups of milk or dairy; and
- 5.5 ounces of meat and beans.

Daily Meal Planner

Meal	Type of Food	Serving Size	Number of Calories
Breakfast	Eggs	3	210
	Avocado	3/4	120
	Wheat toast	2.5 slices	170
Snack	Whole wheat crackers	5 crackers	85
Lunch	White bread	2 slices	140
	Turkey	6 ounces (1.5 servings)	150
	Cheese	1 slice	75
	Peach	1	40
Snack	Watermelon	4 3/4 wedges	475
	Yogurt	1 cup	150
Dinner	Salmon	1 filet	200
	Potato	1	110
	Butter	1 tablespoon	100
	Asparagus	10 spears	40
	Ice cream	1/2 cup	135
		Total Calories:	2200

5. Explain how you determined Patient T's diet.

I looked at each meal individually, trying to make sure that Patient T got some fruit or vegetables and protein. I then divided the calories, trying to get at least 500 calories per meal and around 250 per snack.

6. To maintain a healthy weight, one strategy is to ensure that calories consumed are balanced by calories burned.

Your patient plays soccer for $2\frac{1}{4}$ hours per day, burning 460 calories per hour. If he burns no other calories that day, what is the net number of calories (consumed and spent) at the end of the day? Show or explain how you found your answer.

$2\frac{1}{4}$ hours x $\frac{-460 \text{ calories}}{1 \text{ hour}}$ = –1035 calories

2200 calories + (–1035 calories) = 1165 calories

7. If Patient T goes to a yoga class, he burns –350 calories per hour. The class is $1\frac{1}{4}$ hours long. If he burns no other calories that day, what is the net number of calories (consumed and spent) at the end of the day? Show or explain how you found your answer.

$1\frac{1}{4}$ hours x $\frac{-350 \text{ calories}}{1 \text{ hour}}$ = $-437\frac{1}{2}$ calories

2200 + ($-437\frac{1}{2}$ calories) = $1762\frac{1}{2}$ calories

8. Patient T follows your proposed meal plan for a week and continues to play soccer each weekday (Monday through Friday), attends the yoga class for $1\frac{1}{4}$ hours 3 times per week, and burns an average of 1100 calories doing daily activities. What is his total caloric change at the end of the week?

7 days x $\frac{2200 \text{ cal}}{1 \text{ day}}$ + 5 days x $\frac{-1035 \text{ cal}}{1 \text{ day}}$ + 3 sessions x $\frac{-437.5 \text{ cal}}{1 \text{ session}}$ + 7 days x $\frac{-1100 \text{ cal}}{1 \text{ day}}$

= 2121.5 calories

After spending some time on your recommended diet and exercise plan, Patient T comes to you for more dietary advice. He was recently diagnosed with celiac disease. Celiac disease is a digestive and autoimmune disorder that can cause damage to the small intestine when gluten in consumed. Gluten is a form of protein found in certain grains. Your patient's primary care physician advises that the patient stop eating all grains containing gluten.

You previously recommended that the patient eat 6 oz. per day of whole grains, as they are rich in B vitamins, vitamin E, magnesium, iron, and fiber. Answer questions 9 and 10 to adjust Patient T's diet.

9. Men need an average of 38 grams of fiber a day. One tablespoon of black beans has 1.9 grams of fiber. How many cups of black beans does Patient T need to eat to get his daily dose of fiber? (1 cup = 16 Tbs). Show or explain how you found the answer.

$x\left(\frac{1.9\text{ g}}{1\text{ Tbs}}\right) = 38\text{ g}$ $\quad x = 20\text{ Tbs}$

$20\text{ Tbs} \times \frac{1\text{ cup}}{16\text{ Tbs}} = 1.25\text{ cups}$

I first found the number of tablespoons needed by dividing the daily recommendation by 1.9 tablespoons. I took that number and converted it to cups, knowing that 1 cup is equal to 16 tablespoons.

10. Your patient, and any man between the ages of 19 and 50, needs 8 milligrams of iron daily. Use the internet to find iron-rich and gluten-free foods. Fill out the table by listing the foods you found and the serving sizes needed to get at least 8 milligrams of iron.

Food	Serving Size	Amount of Iron
Pumpkin seeds	1 oz	2.5 mg
Cashews	1 oz	1.9 mg
Beef	6 oz	4.2 mg
	Total iron:	8.6 mg

Answers will vary.

