

You Are What You Eat

Organisms get energy from the food they eat, but the energy contained in foods varies greatly. Most foods contain a combination of proteins, carbohydrates, and fats. One gram of protein or a carbohydrate such as glucose contains roughly 4 Calories. One gram of fat, however, contains about 9 Calories. The accompanying table shows the approximate composition of one serving of some common foods.

Composition of Some Common Foods			
Food	Protein (g)	Carbohydrate (g)	Fat (g)
Apple, 1 medium	0	22	0
Bacon, 2 slices	5	0	6
Chocolate, 1 bar	3	23	13
Eggs, 2 whole	12	0	9
2% milk, 1 cup	8	12	5
Potato chips, 15 chips	2	14	10
Skinless roasted turkey, 3 slices	11	3	1

- 1. Interpret Data** Per serving, which of the foods included in the table has the most protein? Which has the most carbohydrates? Which has the most fat?

- 2. Calculate** Approximately how many more Calories are there in 2 slices of bacon than there are in 3 slices of roasted turkey? Why is there a difference?
- 3. Calculate** Walking at a moderate pace consumes around 300 Calories per hour. At that rate, how many minutes would you have to walk to burn the Calories in one chocolate bar? (*Hint: Start by calculating the number of Calories consumed per minute by walking.*)

- Which food has most protein?
 - Compare the grams of protein for each food...2 Eggs has most = 12g
- First, determine how many calories are in each food. Remember there are **4cal/g in Carbs, 4cal/g in Protein and 9cal/g in fat.**
 - 2 slices of bacon has 5g of Protein. To determine the # of calories from protein, multiply the # of grams by 4 calories/g. $5g \times 4cal/g = 20$ calories from protein
 - 2 slices of bacon has 0g of Carbs. To determine the # of calories from carbs, multiply the # of grams by 4 calories/g. $0g \times 4cal/g = 0$ Calories from Carbs
 - 2 slices of bacon has 6g of Fat. To determine the # of calories from Fat, multiply the # of grams by 9 calories/g. $6g \times 9cal/g = 54$ calories from fat
 - Add up all three calorie counts (protein, carbs and fat) to determine total calories. In 2 slices of bacon there are $20cal$ (Protein) + $0cal$ (carb) + $54 cal$ (fat) = **74 Total Calories**
 - Do the same for 3 slices of Roast Turkey. You should get **65 Total Cal**
 - The difference is $74-65=9$ calories. Why? More fat in bacon which has over 2x's the calories as carbs or protein.
- Hint: To convert 300cal/hr to cal/min: $300cal/1hour \times 1hr/60min = 300cal/60min = 5cal/1min$
 - Find the Total cal in the chocolate bar by following the steps for #2. (you should get 221)
 - How many minutes of walking to burn 221 calories? Divide $221cal/(5cal/min) = 44.2$ min
- Determine the amount of calories in the apple, potato chips and 2% Milk.