

Some food labels probably overestimate calorie content

By ACSH Staff — April 28, 2015



Amount Per Serving	
Calories 60 Calories from Fat 15	
%	
Total Fat 1.5g	3%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 70mg	3%
Total Carbohydrate 10g	3%
Dietary Fiber Less than 1g	3%
Sugars 0g	
Protein 2g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 2%

Americans trying to lose weight by eating a balanced, low calorie diet often refer

to the calorie counts on food packages. But as an [article](#) [1] in the *New York Times* explains, some of these counts could be as much as 25 percent too high. This is not because of malfeasance on the part of manufacturers, but because of inaccuracies in the way that calorie content is determined.

In general, the calorie or energy content of a food is determined by actually burning it in a device called a bomb calorimeter. The heat released raises the temperature of water surrounding the vessel containing the food. The energy content of the food can then be calculated from the increases in the water temperature. This part of the calorie calculation is accurate. What isn't taken into account in the final label, however, is how the body deals with different types of nutrients.

The body actually uses some energy to digest and absorb nutrients from foods, and the amount of energy thus used differs for protein, carbohydrates and fats. Proteins, which have the most complex chemical structures, need the most energy in their digestion process sometimes as much as 20 to 35 percent of the calories actually contained in the food. Carbohydrates and fats, on the other hand, would need only about 5 to 15 percent of the calories in the food to be digested. The inaccuracy of a high protein food's calorie content would be greater than that of one consisting primarily of refined carbohydrates. This caloric cost of digestion is called the specific dynamic action or the thermic effect of a food.

Yet another contribution to inaccuracy is the fact that not all foods are equally well absorbed into the body. Thus a cookie that consists of processed white flour will be digested and absorbed more completely than a high-protein and fiber bar. So the degree of inaccuracy of a food label that depends just on the results of a bomb calorimeter will also depend on a food's digestibility.

Should we expect all food labels to more closely reflect reality any time soon? Probably not. As ACSH advisor Dr. David Klurfeld, who is the program director for human nutrition in the USDA says, it would be impossible to correct the counts for all foods there are just too many possible

combinations. He's quoted in the *NYT* article : On average, the system is right, but on individual foods, it's not right, he said. It's not possible to test every single food, or combination of foods, but if you test individual foods, you could get more precise.

ACSH's Dr. Ruth Kava had this to say: While it's interesting to know that food labels are not 100 percent accurate, that fact can not really be used by individuals to adjust their calorie intake, since the degree of inaccuracy will vary substantially with the type of food in question. Rather, it's best to use the food labels to get an approximation of calorie content, and focus more closely on selecting foods with the best nutrient profile.

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[1] http://well.blogs.nytimes.com/2015/04/27/on-food-labels-calorie-miscounts/?_r=0