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Honors Capstone

Food Labels: how accurate are they?

Nutrition is vital for human health, but cost and lack of time can hinder consistent healthy eating habits. Frozen packaged meals address demand largely due to long shelf-life and convenience. Food labels provide nutritional content and can be part of a dietary plan. Food label inaccuracy has been a long-standing issue and my study's goal is aimed to add to the understanding of this problem, specifically in frozen meals.

I explored the potential difference in individual ingredients (g) between 20 frozen meals consisting of four different meals. In addition to this, I measured the total weight (g) and its conversion to calories of the actual food content and compared it to the label. Out of the different pre-packaged meals, the Lean Cuisine Sesame Chicken frozen meal had the largest discrepancy between the label and measured ($p=0.00$). This signified that the label inaccurately represented the food content found within the meal. The label indicated a total of 350 kcal per box, but the measured content of 411 kcal contradicted this information. The Lean Cuisine Roasted Turkey frozen meal had the greatest variability regarding individual ingredients with a standard deviation of ± 22.2 g.

Looking back at the methodology, a source of error was the reliance on several different measuring devices. Two different scales which could have introduced some error in our reported measurements. Additionally, a bomb calorimeter that allows for precise caloric content of foods to be assessed may have added a layer of sophistication to our analysis.

This capstone opened my eyes to the endless possibilities of research. Being able to create, conduct, and analyze my own research project was a transformative process that had its fair share of ups and downs. It was rewarding to be able to share my data and hard work with others who truly were invested in my findings. I was confident in sharing my work and was proud of the efforts I put forth through the process that led me to grow academically, personally, and professionally.