

It's the Carbs!

A challenge to the calories in-calories out paradigm

We have all learned that the secret to losing weight or maintaining weight is the balance of calories in and calories out. Like a scale, we need to balance this ratio. But what if it isn't that simple? What other factors may have effects on our fat storage and weight gain? Is the "eat less, move more" theory correct? If not, then what is the mechanism?



Abstract

- According to a commonly held view, the obesity pandemic is caused by overconsumption of modern, highly palatable, energy-dense processed foods, exacerbated by a sedentary lifestyle. However, obesity rates remain at historic highs, despite a persistent focus on eating less and moving more, as guided by the energy balance model (EBM). This public health failure may arise from a fundamental limitation of the EBM itself. Conceptualizing obesity as a disorder of energy balance restates a principle of physics without considering the biological mechanisms that promote weight gain. An alternative paradigm, the carbohydrate-insulin model (CIM), proposes a reversal of causal direction. According to the CIM, increasing fat deposition in the body—resulting from the hormonal responses to a high-glycemic-load diet—drives positive energy balance. The CIM provides a conceptual framework with testable hypotheses for how various modifiable factors influence energy balance and fat storage. Rigorous research is needed to compare the validity of these 2 models, which have substantially different implications for obesity management, and to generate new models that best encompass the evidence.

Over 40% of adults in the United States meet the criteria for obesity placing these people at higher risk of heart disease, stroke, type 2 diabetes, and certain cancers, not to mention severe outcomes from Covid-19. Over the past 50 years, the average weight of men and women is up over 30 lbs. The traditional guidelines from our government entities have been "reduce the number of calories they get from foods and beverages and increase the amount expended through physical activity", basically decrease calories in and increase calories out. Despite this messaging, our rate of obesity continues to rise. The paper is calling for a new approach to weight management, the "carbohydrate-insulin model". Unlike the energy balance model, the model believes that excessive consumption of foods high in sugar, or have high glycemic content (highly processed, easily digestible carbohydrates) results in weight gain. Rather than emphasizing eating less and counting calories, which is hard to sustain, this strategy focuses on what is eaten. The emphasis is more on hormone levels, especially insulin. Lowering blood glucose spikes decreases insulin levels which over time lowers insulin resistance, which is a very inflammatory state resulting in much of the morbidity of chronic diseases. We are unable to burn fat when we are in a high insulin state and in fact, giving people insulin causes weight gain.

Our bodies are a complex biological system. The bottom line is that for us to lose weight or maintain our weight as we age several things need to be taken into consideration. Most people who do this successfully use multiple techniques including some form of carbohydrate restriction, exercise/physical activity, and caloric restriction through time-restricted eating or portion control. This is an interesting review that provides good "food for thought" in regards to our nutrition.

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