

Leyla Weighs In: Good vs. poor scientific research (part two: a case study in faulty research design)



Last week, I got into the nuts and bolts of differentiating good scientific research from bad. This week, I'm going to illustrate how we scrutinize a particular educational research study and its conclusions.

Here's our example: A few months ago, a study published in *JAMA* (*Journal of the American Medical Association*) concluded that a low-glycemic index diet did not improve heart disease risk factors or insulin resistance.



The researchers looked particularly for changes or improvements in insulin sensitivity, cholesterol and triglyceride levels, and systolic blood pressure (the top number in your blood pressure reading).

Methodology/intervention: "Each diet was based on a healthful

Dietary Approaches to Stop Hypertension (DASH)-type diet, which is rich in fruits, vegetables and low-fat dairy foods, and low in saturated and total fat.” The following four diets were utilized:

- a) high-glycemic index, high carbohydrate diet (58%) of energy (calories)
- b) low-glycemic index, high carbohydrate
- c) high-glycemic index, low carbohydrate diet (40%) of energy
- d) low-glycemic, low carbohydrate diet.

Well, here are the problems with the methodology:

1. Even the lowest carb diet (d) contained carbohydrates equaling 40% of energy. That’s 160 grams of carbs a day on a 1600 calorie diet! NOT a low carb diet by any means.
2. All the intervention diets are low in fat (since it’s based on the DASH diet). A low fat diet does NOT help with insulin sensitivity or glycemic load (which is more important than glycemic index—a topic for another newsletter).
3. The study period was five weeks per diet. A true low carb diet requires 12 weeks for any biochemical changes to occur. Although in this study it doesn’t really matter since their “low carb” diets contained too many carbs.
4. I truly question the effectiveness of the low glycemic index diet. Did you know ice cream is low glycemic?!
5. All four diets contained caloric beverages which include juices. These are all insulin triggers. Certainly not helpful in improving insulin sensitivity.

Bottom line: This study is a good example of poor methodology and study design deeming its conclusions invalid and unreliable.

To your health!

JAMA. 2014 Dec 17;312(23):2531-41.