



WEIGHT LOSS / EATING HABITS

Low Fat vs. Low Carb & the Power of Protein

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A science-based website recently posted a [nice summary](#) of 23 randomized, controlled trials from peer-reviewed journals pitting low-carb diets against low-fat diets.¹ The conclusion was that the debate is over: Low-carb diets are more effective than low-fat diets for weight loss.

I reviewed all 23 studies this author selected to make his point. Of the 21 that reported weight loss, low carb beat low fat 18 times; weight loss was equal (within the margin of error) in the other three. However, every single low-carb diet had higher protein than the low-fat diets they competed against.

The Plot Thickens...

In a study done by researchers from the National Institutes of Health (NIH) National Institute of Diabetes and Digestive and Kidney Diseases division, 19 overweight men and women volunteered for an experiment that required them to spend 11 days in a metabolic ward on two occasions, separated by a three-week washout.² Activity was light with the exception of a daily 60-minute walk on a treadmill inside the facility.

They began each stay with a dose of doubly labeled water (DLW), followed by body composition assessed with dual-energy X-ray absorptiometry (DXA). The metabolic chamber allowed indirect calorimetry to measure the heat released by a person based on the amount of O₂ they inhaled and CO₂ they exhaled over a specific time period. The DXA test was repeated on day 11.



For the first five days, participants received a eucaloric baseline diet (calorie level would not cause weight gain or loss), followed by six days of either a reduced-fat or reduced-carb diet. Both diets contained 30 percent fewer calories. (Table 1) After a three-week break, they repeated the 11-day procedure with the opposite lower calorie diet during the last six days.

What set this study apart from the typical low-fat vs. low-carb study was that both the protein and calories were almost identical. The 24-hour supervision of all activity and every bite of food consumed allowed a degree of accuracy other studies have not approached.

Results

When subjects followed the low-carb diet, weight loss averaged 4 pounds in six days. Fat oxidation increased and insulin levels decreased, which is exactly what is expected with a low-carb diet. When they consumed a diet lower in fat for six days, their metabolism did not change and their weight loss averaged 2.86 pounds.

Diet	Baseline	Low Carb	Low Fat
Calories per day	2,740	1,918	1,918
Protein (g)	101	101	105
Carbohydrate (g)	350	140	352
Fat (g)	109	108	17
Sugars (g)	152	37	170
Saturated fat (g)	39	36	4
Monounsaturated (g)	143	40	4

Polyunsaturated (g)	121	24	4
Total fiber (g)	24	16	21
Cholesterol (mg)	472	522	189
Sodium (mg)	4,514	4,514	4,533

However, unlike other studies, researchers were able to determine how much of the weight lost was from fat. Of the 4 pounds lost on the low-carb diet, fat loss averaged 8.75 ounces; but the fat loss after the low-fat diet averaged 16.5 ounces. In other words, when obese men and women consumed the same amount of protein and calories during six days of 30 percent less calories from carbs vs. six days of 30 percent fewer calories from fats, carb reduction caused more body-weight loss, but fat reduction caused more body-fat loss.

Following the publication of this study, low-carb advocates said the carbs were not low enough. They were correct in that 140 carbs a day is higher than the 50 or less recommended in some low-carb diets. However, most low-carb vs. low-fat studies do not reduce carbs to a ketosis-inducing level and still cause more weight loss than their low-fat counterparts.

Furthermore, reducing carbs to an average of 140 grams a day was enough to increase fat oxidation and reduce insulin by 22 percent, meaning carbs were low enough to have a significant metabolic effect. And if you look at table 1 again, you will see simple carbs (aka, sugars) were actually elevated during the low-fat diets, yet insulin did not increase and subjects lost body fat.

Diet	Baseline	Low Carb	Low Fat
Protein (%)	14.5	20.9	21.1
Fat (%)	35.3	50.1	7.7
Carbohydrate (%)	50.2	29.0	71.2
Saturated fat (%)	13.2	17.3	1.9
Monounsaturated (%)	14.6	19.7	2.1
Polyunsaturated (g)	7.0	11.9	1.9

The following quotes by the authors sum up their findings and views:²

"This study demonstrated that, calorie for calorie, restriction of dietary fat led to greater body fat loss than restriction of dietary carbohydrate in adults with obesity. This occurred despite the fact that only the carbohydrate-restricted diet led to decreased insulin secretion and a substantial sustained increase in net fat oxidation compared to the baseline energy-balanced diet."

"In contrast to previous claims about a metabolic advantage of carbohydrate restriction for enhancing body fat loss, our data and model simulations support the opposite conclusion when comparing the reduced fat and reduced carb diets. Furthermore, we can definitively reject the claim that carbohydrate restriction is required for body fat loss."

"Translation of our results to real-world weight-loss diets for treatment of obesity is limited since the experimental design and model simulations relied on strict control of food intake, which is unrealistic in free-living individuals. While our results suggest that the experimental reduced-fat diet was more effective at inducing body fat loss than the reduced-carbohydrate diet, diet adherence was strictly enforced. We did not address whether it would be easier to adhere to a reduced-fat or a reduced-carbohydrate diet under free-living conditions."

Comment

Prior to the study, the authors applied advanced mathematics to their planned protocol. Their mathematical model was included in the supplementary section following the paper. It included complex calculations for numerous factors including, but not limited to resting, active and basal energy expenditures; rates for thermogenesis, glycogenolysis, lipolysis, proteolysis and ketogenesis; body composition; and macronutrient balances. Their calculations predicted a shift toward fat oxidation with the reduced-carb diet and no metabolic change with the low-fat diet.

Ironically, when the lead author [was interviewed](#), he said, "[O]ne of the reasons that we did the study, was because I kind of thought that the model might be wrong. I kinda thought, maybe hoped, secretly, that when we reduced fat in the diet, that there might be a shift in metabolic fuel utilization."³

My Recommendation

My recommendation is to avoid the carb vs. fat debate and simply reduce calories (from carbs and fat) in whatever combination is the easiest for the individual. The key for dieters is to not cut protein. For weight loss, protein should be no less than double the RDA to maximize the effects of a self-imposed calorie deficit. That number (in grams) can be determined by multiplying body weight in pounds by 0.7.

Weight loss and the weight maintenance that follows both require consistent attention to detail over time. In other words, every step counts, every bite counts and as long as the counting continues, the weight will be controlled.

References

1. Gunnars C. "23 Studies on Low-Carb and Low-Fat Diets - Time to Retire the Fad." Posted on AuthorityNutrition.com, May 2016.
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3. Brady I. "New Study Challenges the Carbohydrate Hypothesis." *Science 2.0*, Aug. 14, 2015.

JULY 2016