

Is diet or exercise the best way to reduce diabetes risk?

May 6 2015



Credit: Darren Lewis/public domain

In a paper recently published in *Diabetes Care*, Saint Louis University associate professor of nutrition and dietetics Edward Weiss, Ph.D, and colleagues found that, though people often think of the benefits from exercise, calorie restriction and weight loss as interchangeable, it appears that they may all offer distinct and cumulative benefits when it comes to managing Type 2 diabetes risk.

The SLU study enrolled sedentary, overweight, middle-aged men and

women who were assigned to one of three groups designed to reduce weight by 6-8 percent through [calorie restriction](#), exercise or a combination of both.

Researchers recorded the participants' insulin sensitivity levels, a marker for diabetes risk that measures how effectively the body is able to use insulin.

"Your blood sugar may be perfectly normal, but if your insulin sensitivity is low, you are on the way to blood sugar issues and, potentially, Type 2 diabetes," Weiss said.

The investigators found that both exercise and calorie restriction had positive effects on insulin sensitivity. Most interestingly, the group that did both saw two times the improvement in [insulin sensitivity](#) than either of the single-approach groups.

The study suggests that both exercise and calorie restriction have additive beneficial effects on glucoregulation (the steady maintenance of glucose, or sugar, in the body).

"The [exercise group](#) was, in a way, our control group. It was already known that exercise can improve glucoregulation, both through weight loss and through mechanisms that are independent of weight loss," Weiss said. "This means that even if you don't lose weight, exercise helps.

"On the other hand, it often has been assumed that calorie restriction improves glucoregulation simply because it leads to weight loss."

For this reason, it was somewhat surprising to researchers when they found that exercise-induced weight loss did not lead to greater improvements in glucoregulation than calorie restriction alone.

"What we found is that calorie restriction, like exercise, may be providing benefits beyond those associated with [weight loss](#) alone," Weiss said.

If this is true, researchers would expect that the combination of exercise and calorie restriction (with participants still losing between 6 and 8 percent of their weight, like the other groups) would lead to even more improved glucoregulation than either of the other groups alone.

This is, in fact, what the results of the third, exercise and calorie restriction combination group confirmed.

"On the surface it may seem obvious, and yet there are a lot of people who believe that if they maintain a healthy weight, it doesn't matter what they eat," Weiss said. "And others have an appropriate food intake but don't exercise.

"This study says you can be healthier if you [exercise](#) and eat the right amount of food. There is more to be gained by including both approaches in your life."

More information: *Diabetes Care*, care.diabetesjournals.org/content/77/dc14-2913.abstract

Provided by Saint Louis University

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