

A lower glycemic load diet improves weight maintenance after achieving weight loss in healthy men.

Carbohydrate intake and glycemic index affect insulin and fat oxidation in healthy men participating in a controlled weight cycle study

It is known that a high glycemic index (GI) carbohydrate content in the diet increases insulin levels and can potentially impair fat oxidation. In a new study published in the *European Journal of Clinical Nutrition*, researchers theorized that refeeding a low GI, moderate carbohydrate diet would improve chances of weight maintenance.

The study involved 32 healthy young men who were not overweight (BMI < 25 kg/m²). For one week, they were overfed at a level of 50% higher than their caloric needs, followed by a caloric restricted diet (-50% of their energy needs). They were then overfed again at +50% and given either a high or low GI diet (74 vs 41) and moderate versus high carbohydrate (CHO) intake (50% or 65%). Fat mass and adaptation of fasting macronutrient oxidation were measured.

During the first overfeeding the subjects gained an average of 1.9 kg (4.2 lbs), followed by an average weight loss of 6.3 kg (13.9 lbs). During the last overfeeding the subjects gained back an average of 2.8 kg (6.2 lbs). Subjects eating the higher CHO diet gained more body weight compared to the 50% CHO diet, especially when eating the high GI meals. Refeeding the high GI diet impaired fat oxidation compared to the low GI diet. The impairment in fasting fat oxidation was correlated with regain in fat mass and body weight. Metabolic impairment after eating the 50% CHO was not significant.

The results of this study show that both higher GI and higher carbohydrate intake can negatively affect fat oxidation leading to body weight regain in healthy men. A lower glycemic index and glycemic load diet enhances the ability to maintain weight after weight loss.

J Kahlhöfer et al. Carbohydrate intake and glycemic index affect substrate oxidation during a controlled weight cycle in healthy men. *European Journal of Clinical Nutrition* (2014) 68, 1060–1066; doi:10.1038/ejcn.2014.132.