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LOW-GLYCEMIC MEALS PRODUCE FAVORABLE LEPTIN AND INSULIN RESPONSES

In a recent study, metabolic effects of meals with varying glycemic index (GI) were evaluated. In a group of healthy volunteers, glucose, insulin and leptin responses to two contrasting breakfast cereals were measured. Leptin is a hormone produced by fat cells that indicates the degree of hunger to the hypothalamus of the brain. Higher leptin levels trigger a sense of satiety and decreased hunger.

Meals were provided on two separate occasions in random order after a 12-hour overnight fast, and consisted of 50 g of available carbohydrate from either Corn Flakes (Kellogg's), or Fiber One (General Mills). Blood samples were obtained at rest, and 30, 60, 90 and 120 min after eating. The GI was calculated from the glucose response to the test meal normalized against a 50 g oral glucose load.

The average GI for Corn Flakes was 125 and 49 for Fiber One. These meals were classified as high GI and low GI, respectively, and were significantly different from each other. The insulin response following the low glycemic meal was significantly reduced compared to the high glycemic meal. The high glycemic meal significantly suppressed circulating leptin levels compared to the low glycemic meal.

Lower insulin response and higher circulating leptin levels suggest that low glycemic meals promote a post-meal environment that is favorable for reduced food consumption; this may be advantageous in the control of obesity and related disorders, including insulin resistance and type 2 diabetes.

< [Ann Nutr Metab 2007 Dec 10;51\(6\):512-518](#) >