

Low glycemic-index diet may be most effective for weight loss

Low-fat diets and low-carbohydrate diets have proven ineffective for different reasons.

By **Jeremy Moore**

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WASHINGTON D.C. – The incidence of obesity continues to increase in America, especially among young people, despite a shift in focus from low-fat to low carb-diets.

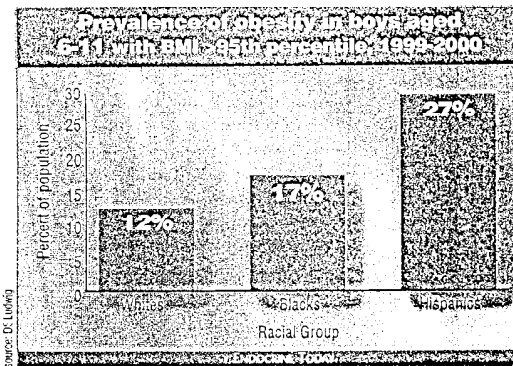
David Ludwig, MD, director of the obesity program at Children's Hospital in Boston, suggests that the focus should shift again to low glycemic-index diets, which have been shown in small studies to decrease obesity and its related complications.

Ludwig called a low-glycemic diet "the perfect compromise" between low-fat and low-carb approaches.

"Low-fat diets were so prevalent that we currently have a low-fat Twinkie on the market being sold as a health food, but it's hormonally indistinguishable from a glucose tolerance test," Ludwig said at the American Association of Clinical Endocrinolo-

gists fully one in three adults is obese, and if we include the category of overweight (BMI of 25 to 30), that figure rises to two in three. So being lean is a minority position today," Ludwig said.

The rate of obesity is going just as strong, if not stronger, in children. Childhood obesity can affect almost every organ in the body, causing mus-



culoskeletal disorders such as slipped femoral epiphysis or endocrine disorders such as type 2 diabetes.

"When most of us were endocrine fellows, type 2 diabetes in children was hardly ever seen. I just came off my rotation as attending on the endocrine service and saw one case of type 2 diabetes in children for every case of type 1," Ludwig said.

Obesity affects not just physical risk but psychosocial factors as well. Adults who were overweight during their adolescent years completed fewer years of school, had higher poverty rates and were less likely to get married.

"In a society where even relatively thin people can sometimes see themselves as too fat, the burden on the obese can be truly huge," Ludwig said.

Fats vs. carbohydrates

Ludwig said it was once conventional wisdom to associate increased weight with increased fat intake and to suggest a low-fat diet as the best way to treat obesity and diabetes.

However, this notion has been questioned as the prevalence of obesity continued to rise despite a decrease in fat consumption since the 1960s. Longitudinal studies did not consistently show an association be-

tween dietary fat and body fat. Furthermore, low-fat diets appeared to have poor clinical effectiveness.

"There are literally hundreds of studies in which individuals have been placed on low-fat diets that were caloric restricted, high in fruits and vegetables, and had an exercise component and a behavioral component," Ludwig said. "And, yes, people did lose weight for the short-term, but that did not demonstrate causality with fat reduction any more than an effective five-drug cocktail proved the efficacy of drug B."

As Americans controlled their fat intake, they began consuming more carbohydrates and the average weight went up significantly. So the question shifted again to controlling certain types of carbohydrate. Scientists developed the glycemic index to measure how much

high glycemic index, while foods like an apple or lentil beans have a low glycemic index.

Foods with a low glycemic index promote satiety. Volunteers tested four hours after a low glycemic index meal had a hunger scale of approximately four (on a 10-point scale) compared to approximately seven among



volunteers who ate the high glycemic index meal.

Diets low in glycemic index also promoted beneficial outcomes in resting energy expenditure. One weight-loss study showed that patients assigned to a high glycemic index diet had a decrease in resting energy expenditures of about 170 Kcal/d compared with about 90 Kcal/d among those on the low glycemic diet.

Low glycemic index diets have also been shown to have benefits in LDL cholesterol, C-reactive protein and blood pressure, with an effect more pronounced than that seen with low-fat diets, Ludwig said.

Finally, in adolescents, decreased glycemic index was shown to have a more beneficial effect than decreased fat. Over a period of one year, those

adolescents eating a low-fat diet had a BMI increase of approximately one, while those eating the low glycemic-index diet had a BMI decrease of approximately two.

"We can't attribute this directly to glycemic index, but from a public health standpoint it may not matter," Ludwig said.

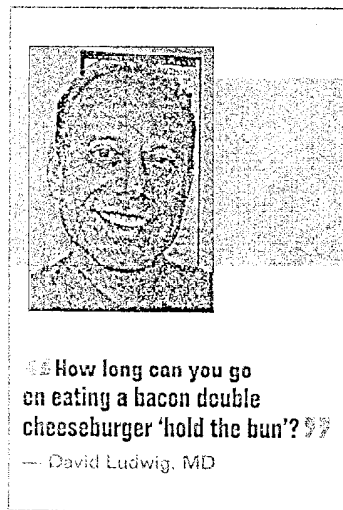
Animal studies have demonstrated improvements in adiposity and related metabolic variables on a diet of low vs. high glycemic-index starch.

"We can consume plenty of carbohydrates as long as we pay attention to the glycemic index," Ludwig said.

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For more information:

Ludwig DS. Novel dietary approaches to pediatric obesity. Presented at the American Association of Clinical Endocrinologists 14th Annual Scientific Meeting and Clinical Congress May 18-22, 2005. Washington D.C.



gists 14th Annual Meeting and Clinical Congress in Washington, D.C.

"Low-carb diets may be more effective, at least in the short-term, but after a year there's almost complete weight regain. How long can you go on eating a bacon double cheeseburger 'hold the bun'?"

Several population studies have shown that obesity is on the rise. Ludwig said the prevalence of obesity was "essentially flat" for much of the 60s and 70s, but increased dramatically in the 80s and 90s. "Today,

sugar the body would retain during the digestive process.

Glycemic index

The glycemic index is a measure of the carbohydrate digestion rate. It is defined as the area under the curve after consumption of 50 g of carbohydrates from a test food, divided by the area under the curve after 50 g of carbohydrate from a control food.

Corn flakes or white bread have a

Glycemic Index	
High Glycemic Index Foods	Low Glycemic Index Foods
Corn Flakes	Broccoli
White Bread	Peanuts
Rye Bread	Milk
Muesli	Lentil Beans
Banana	Apple
Parsnip	Carrots
Potatoes	Peas
Watermelon	Cherries
White Rice	Lima Beans
Bagel	Grapefruit
Honey	Prunes
Pumpkin	Oranges