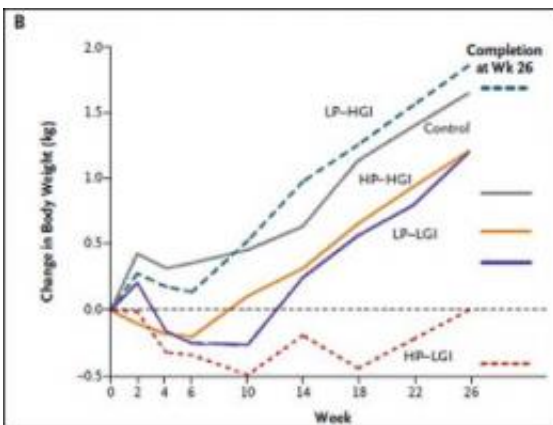


Danish researchers finally solve the obesity riddle

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This chart shows changes in body weight. Credit: Figure

Researchers at the Faculty of Life Sciences (LIFE), University of Copenhagen, can now unveil the results of the world's largest diet study: If you want to lose weight, you should maintain a diet that is high in proteins with more lean meat, low-fat dairy products and beans and fewer finely refined starch calories such as white bread and white rice. With this diet, you can also eat until you are full without counting calories and without gaining weight. Finally, the extensive study concludes that the official dietary recommendations are not sufficient for preventing obesity.

The large-scale random study called Diogenes has investigated the optimum [diet](#) composition for preventing and treating obesity. The study

was conducted by eight European research centres and headed by Thomas Meinert Larsen, PhD, and Professor Arne Astrup, DrMedSc and Head of Department at the Faculty of Life Sciences (LIFE) and is funded by an EU grant of EUR 14.5 million.

The results were recently published in the distinguished [New England Journal of Medicine](#) and have already attracted considerable international attention.

The objective of the Diogenes study has been to compare the official dietary recommendations in Europe, including the Danish recommendations, with a diet based on the latest knowledge about the importance of proteins and carbohydrates for appetite regulation. A total of 772 European families participated, comprising 938 adult family members and 827 children. The overweight adults initially followed an 800 kcal/day diet for eight weeks, losing an average of 11 kg. They were then randomly assigned to one of five different low-fat diet types which they followed for six months in order to test which diet was most effective at preventing weight regain. Throughout the project, the families received expert guidance from dieticians and were asked to provide blood and urine samples.

The five diet types

The design comprised the following five diet types:

- A low-protein diet (13% of energy consumed) with a high glycemic index (GI)
- A low-protein, low-GI diet
- A high-protein (25% of energy consumed), low-GI diet

- A high-protein, high-GI diet
- A control group which followed the current dietary recommendations without special instructions regarding glycemic index levels

A high-protein, low-GI diet works bestA total of 938 overweight adults with a mean body mass index (BMI) of 34 kg/sq m were initially placed on an 800-kcal-per-day diet for eight weeks before the actual diet intervention was initiated. A total of 773 adult participants completed this initial weight-loss phase and were then randomly assigned to one of five different diet types, where 548 participants completed the six-month diet intervention (completion rate of 71%).

Fewer participants in the high-protein, low-GI groups dropped out of the project than in the low-protein, high-GI group (26.4% and 25.6%, respectively, vs. 37.4%; $P = 0.02$ and $P = 0.01$ for the two comparisons, respectively). The initial weight loss on the 800-kcal diet was an average of 11.0 kg.

The average weight regain among all participants was 0.5 kg, but among the participants who completed the study, those in the low-protein/high-GI group showed the poorest results with a significant weight gain of 1.67 kg. The weight regain was 0.93 kg less for participants on a high-protein diet than for those on a low-protein diet and 0.95 kg less in the groups on a low-GI diet compared to those on a high-GI diet.

The children's study

The results of the children's study have been published in a separate article in the American medical journal *Pediatrics*. In the families, there were 827 children who only participated in the diet intervention. Thus,

they were never required to go on a diet or count calories – they simply followed the same diet as their parents. Approx. 45% of the children in these families were overweight. The results of the children's study were remarkable: In the group of children who maintained a high-protein, low-GI diet the prevalence of overweight dropped spontaneously from approx. 46% to 39% – a decrease of approx. 15%.

Proteins and low-GI foods ad libitum – the way ahead

The Diogenes study shows that the current [dietary recommendations](#) are not optimal for preventing weight gain among overweight people. A diet consisting of a slightly higher protein content and low-GI foods ad libitum appears to be easier to observe and has been documented to ensure that overweight people who have lost weight maintain their [weight](#) loss. Furthermore, the diet results in a spontaneous drop in the prevalence of overweight among their children.

More information: References:

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