

# Common weight-loss drug successfully targets fat that can endanger heart health

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Researchers at UT Southwestern announced successful results of a clinical trial for a commonly prescribed weight-loss drug called liraglutide. In adults who are overweight or have obesity combined with high cardiovascular risk, once-daily liraglutide combined with lifestyle interventions significantly lowered two types of fat that have been associated with risk to heart health: visceral fat and ectopic fat.

"Our study used the latest imaging technology to evaluate different fat components in the body. The main finding was a significant decrease in visceral fat in patients without diabetes but who were overweight or had obesity. These results show the potential of [liraglutide](#) treatment for significantly lowering the risk of chronic disease in this population," said Parag Joshi, M.D., preventive cardiologist, Assistant Professor of Cardiology, and senior author of the study published in *The Lancet Diabetes & Endocrinology*.

Visceral fat is stored within the [abdominal cavity](#) around important internal organs, such as the liver, pancreas, and intestines. Ectopic fat is stored in tissues that normally contain small amounts of fat, such as the liver, skeletal muscle, heart, and pancreas.

The 185 study participants were given a once-daily injection of liraglutide over 40 weeks of treatment. The relative effects of liraglutide on fat reduction were two-fold greater in the abdominal tissues and six-fold greater in the liver than seen on overall body weight. The treatment effect was consistent across race/ethnicity and BMI categories, and among those with or without baseline prediabetes. Liraglutide also reduced fasting blood glucose and inflammation in this trial population without diabetes, the majority of whom had normal blood sugar levels at baseline.

In a 2016 study led by UTSW investigators called the Leader trial, the rate of the first occurrence of death from cardiovascular causes, nonfatal myocardial infarction, or nonfatal stroke among patients with type 2 diabetes was lower in those treated with liraglutide than with placebo. "Our findings help add a possible mechanism for why there is a benefit of liraglutide on cardiovascular outcomes while also showing its benefits in people without diabetes," said Dr. Joshi.

According to the researchers, obesity affects an estimated 1 in every 4

adults and 1 in every 5 youths, leading to substantial risk of cardiovascular disease and mortality. "Excess [visceral fat](#) and ectopic (e.g., liver) fat are central to the development of type 2 [diabetes](#) and cardiovascular disease," said Dr. Joshi. "It remains challenging to identify those at highest risk, in order to offer them treatment in addition to lifestyle changes such as diet and exercise."

**More information:** Ian J Neeland et al, Effects of liraglutide on visceral and ectopic fat in adults with overweight and obesity at high cardiovascular risk: a randomised, double-blind, placebo-controlled, clinical trial, *The Lancet Diabetes & Endocrinology* (2021). [DOI: 10.1016/S2213-8587\(21\)00179-0](#)

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