



How do GLP-1 drugs (like Ozempic) work?

KS4 Ages 14-16 ⌚ 5 min read

A few years ago, a class of diabetes drugs started getting attention for an unexpected side effect: people were losing significant amounts of weight. Now those drugs — Ozempic, Wegovy, Mounjaro — are among the most talked-about medicines in the world. Here's what they actually do inside your body.

What is GLP-1?

GLP-1 stands for glucagon-like peptide-1. It's a hormone your gut naturally produces when you eat. When food hits your small intestine, GLP-1 is released into your bloodstream and does several things: it tells your pancreas to release insulin (to handle the blood sugar from your meal), it slows down how quickly your stomach empties, and — crucially — it sends signals to your brain saying you're full.

GLP-1 drugs are synthetic versions of this hormone, engineered to last much longer in the body than the natural version (which breaks down in minutes). An injection of semaglutide (the active ingredient in Ozempic) keeps those signals running for a full week.

📡 Your hunger and fullness are controlled by a radio signal your gut sends to your brain. Normally, that signal is brief — it turns on after a meal and fades within hours. GLP-1 drugs are like tuning that signal to a constant, low hum that never quite switches off. You still feel hunger, but it's quieter. You feel full faster and stay full longer.

Why does that cause weight loss?

Because people eat less. It sounds simple, but that's the mechanism — the drugs reduce appetite and slow gastric emptying (food sits in your stomach longer), so people naturally consume fewer calories without having to fight hunger constantly. For many people, food "noise" — the persistent background thoughts about eating — quiets down significantly. Clinical trials showed average weight loss of 15-20% of body weight, which is comparable to some surgical interventions.

Weren't these diabetes drugs?

Yes. GLP-1 drugs were originally developed to treat type 2 diabetes because of their effect on blood sugar and insulin. The weight loss was spotted as a side effect, then the doses were adjusted and the drugs were reformulated specifically for weight management. Wegovy is essentially a higher dose of the same molecule as Ozempic.

What are the downsides?

The most common side effects are nausea, vomiting, and digestive discomfort — particularly when starting the drug or increasing the dose. More seriously, there are concerns about muscle loss alongside fat loss, questions about long-term effects on the gut and thyroid, and the fact that when people stop taking the drugs, weight typically returns. That means for many people it becomes a lifelong medication — which has significant cost implications given these drugs currently cost hundreds of pounds a month.