The Ozempic Effect: Plant-Based Docs on the Pros and Cons of Semaglutide

By Courtney Davison
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The weight-loss pharmaceutical industry has seen explosive growth in the past few years, and no medication has generated as much buzz as semaglutide, the drug marketed under the brand names Ozempic and Wegovy. Originally released as an antidiabetic medication, semaglutide quickly found a wider audience thanks to its potent appetite-suppressing effects, which made it highly sought after among celebrities and others looking to quickly shed some pounds. Today the drug is FDA-approved for weight management in certain cases, but surging demand has sparked an ongoing semaglutide shortage—a trend that concerns Shilpa Ravella, M.D., gastroenterologist and author of *A Silent Fire: The Story of Inflammation, Diet and Disease*.

"This drug should not be used to quickly lose 10 or 15 pounds," Ravella says. "It's not a casual thing to drastically alter your body's metabolic processes." But what about for people who are obese or significantly overweight and looking to lose weight—is semaglutide an option worth considering? Read on for a breakdown of how semaglutide works, potential side effects and risks, and natural alternatives for managing an overactive appetite.

What Is Semaglutide?

First, a quick biochemistry lesson: Hormones are biochemical messengers that impact every aspect of our physiology, and scientists have pinpointed five that play key roles in hunger. One is glucagon-like peptide-1 (GLP-1). Produced in the small intestine, GLP-1 stimulates the pancreas to release insulin when we eat. Insulin helps cells take up glucose from the bloodstream, preventing blood sugar spikes. GLP-1 also promotes feelings of fullness and slows down the rate at which food leaves the stomach. (This is known as "delayed gastric emptying.")

Semaglutide is part of a class of drugs known as GLP-1 receptor agonists, which mimic GLP-1 in order to stimulate insulin production and dial down hunger signals.

In 2017, the FDA approved semaglutide for the treatment of Type 2 diabetes in adults, to be used in conjunction with diet and exercise. In 2021, the agency approved it for long-term weight management, as well. The drug is currently marketed under three brand names: Ozempic and Rybelsus (prescribed for Type 2 diabetes) and Wegovy (prescribed for weight management). Ozempic and Wegovy are generally taken as a weekly injection, self-administered at home. Rybelsus is taken in tablet form.

Who Is Semaglutide For?

The FDA currently approves of the use of semaglutide for a few populations.

- Adults with Type 2 diabetes (prescribed as Ozempic or Rybelsus)
- Adults with a BMI of 30 or higher (obese) (prescribed as Wegovy)
- Adults with a BMI of 25 to 29.9 (overweight) and at least one weight-related chronic health condition (prescribed as Wegovy)
- Pediatric patients age 12 and older with a BMI in the 95th percentile or greater for age and sex (prescribed as Wegovy)

The FDA advises against taking semaglutide if you have

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multiple endocrine neoplasia syndrome type 2 or a family history of medullary thyroid carcinoma.

Weight-Loss Wonder?

Semaglutide has a well-documented ability to promote weight loss. A randomized clinical trial published in 2021 found that participants who took semaglutide injections for 68 weeks and introduced healthy lifestyle changes lost an average of 15% of their body weight, compared with the control group, who only introduced healthy lifestyle changes and lost around 2.4%.

However, in 2022, researchers followed up with participants from the aforementioned trial and found that, one year after discontinuing semaglutide, participants had regained two-thirds of the weight they'd lost.

"The drug does cause weight loss—there's not much question about that," says Neal Barnard, M.D., FACC, president of the Physicians Committee for Responsible Medicine. "The problem is that it's like protection money: If you stop paying, it stops working. When a person stops taking Wegovy or Ozempic, they will put on the weight that they lost. And that's a big problem."

Barnard points to research that most people who start taking GLP-1 medications such as semaglutide stop taking them within two years, due to unpleasant side effects and high costs.

Semaglutide Side Effects

Gastrointestinal upset, particularly nausea, is the most common complaint among people taking semaglutide injections. "Because GLP-1s cause delayed gastric emptying, your stomach isn't moving the food out as quickly as it normally would," explains Ravella. "So of course you might feel some nausea, and you may even have some vomiting." Abdominal pain, constipation, and diarrhea are also frequently reported.

Below are other possible side effects of semaglutide, according to the FDA:

- Inflamed pancreas (pancreatitis)
- Low blood sugar. This may manifest as dizziness; blurred vision; anxiety; irritability; sweating; confusion; drowsiness; shakiness; weakness; headache; fast heartbeat; or slurred speech.
- Kidney problems (kidney failure). Diarrhea, nausea, and vomiting may cause dehydration, which can exacerbate pre-existing kidney problems.
- Serious allergic reactions
- Gallbladder problems
- Changes in vision in people with Type 2 diabetes
- Increased heart rate
- Depression

More Research Needed on Potential Cancer Links

Some mice and rat studies have found a link between semaglutide and thyroid cancer, though this association has not been borne out in studies with human participants. Still, the FDA advises against taking semaglutide if you have a family history of medullary thyroid carcinoma.

The Bottom Line

For Ravella, whether or not semaglutide is a good treatment option depends on a number of factors, including how overweight the patient is. When an obese patient is looking to lose weight, "I start with diet and lifestyle, because, for one, there is so much that we don't know about the long-term issues for some of these drugs when used in nondiabetic individuals," says Ravella.

But, she says, for people who struggle with obesity even after attempting to make healthy diet and lifestyle changes, semaglutide might be worth considering, as it can help a patient lose weight and prevent chronic diseases associated with obesity: "When you're obese and you have additional chronic diseases associated with obesity, your risk of [further] chronic disease and death goes up markedly."

According to Barnard, the potential downsides of semaglutide generally outweigh the benefits. "It's too early to give any kind of a carte blanche for these drugs because the side effects and long-term risks are only now becoming clearer," says Barnard. "But there are relatively rare cases of individuals who have genetically based weight issues where their appetite has been completely dysregulated, [and] an appetite suppressant injectable may be necessary for their whole life."

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Can You Boost GLP-1 Naturally with Diet?

Want to boost your levels of GLP-1 without relying on pricey weekly injections? Fortunately, there's an easier way: Eat more whole plant foods.

"I always tell my patients that if you're trying to lose weight, one of the best things you can do is to go on a whole-food, plant-based diet," says Ravella. "That's going to increase some of these endogenous hormones that will help you lose weight."

In a 2019 study led by the Physicians Committee, researchers compared the GLP-1 impacts of a low-fat vegan meal versus a meat-based meal for participants with Type 2 diabetes. They found that participants had higher levels of GLP-1 after the vegan meal. "A meat-based meal does not cause a very big GLP-1 increase, so it doesn't tackle your appetite that effectively, but a vegan meal does," says Barnard, who explores these topics at length in his forthcoming book, *The Power Foods Diet*.

This is likely, at least in part, because the low-fat vegan meal was higher in fiber. Prebiotic fiber, or soluble fiber, feeds beneficial gut bacteria and stimulates the synthesis and release of GLP-1. Prebiotic fiber is found in nearly all whole plant foods to some degree, but it is known to be especially abundant in oats, green bananas, asparagus, dandelion greens, leeks, garlic, onions, apples, flaxseed meal, and cocoa.

Soluble fiber is such a GLP-1 powerhouse that psyllium husk, the key ingredient in Metamucil, is gaining traction on social media as "the poor man's Ozempic." Ravella doesn't recommend relying on supplements. "I use fiber supplements in my practice in certain cases, but we just don't have [the same level of data showing] improvements in chronic disease risk" as with diets rich in whole plant foods. "We have large-scale observational studies and randomized clinical trials showing that a whole-food, plant-based diet has so many beneficial effects throughout the body."

To learn more about a whole-food, plant-based diet, visit our Plant-Based Primer. For meal-planning support, check out Forks Meal Planner, FOK's easy weekly meal-planning tool to keep you on a healthy plant-based path.