

# Diabetes pill might replace injection to control blood sugar

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(HealthDay)— An injectable class of diabetes medication—called

glucagon-like peptide-1 or GLP-1—might one day be available in pill form, research suggests.

Based on the results of a global phase 2 clinical trial, the study authors reported a significant drop in blood sugar levels for people on the oral medication, and no significant increase in low blood sugar levels (hypoglycemia) compared to a placebo over six months.

The findings also showed that people taking the highest dose of the pill lost a large amount of weight—about 15 pounds—compared to a weight loss of fewer than 3 pounds for people on the inactive placebo pill.

The research was funded by Novo Nordisk, the company that makes the drug, called oral semaglutide.

"Semaglutide could transform diabetes treatment," said Dr. Robert Courgi, an endocrinologist at Southside Hospital in Bay Shore, N.Y.

"Glucagon-like peptide receptor agonists are agents that are highly recommended according to diabetes guidelines, but rarely used because they require injection. Most patients prefer a pill," Courgi explained.

Dr. Joel Zonszein, director of the clinical diabetes center at Montefiore Medical Center in New York City, agreed that these new findings were exciting.

"This medication looks pretty good. The high dose matched the [injection] version. There was low hypoglycemia. It controls blood glucose. There was weight loss and it's not an injection. This is the same molecule that's been shown [as an injection] to decrease cardiovascular mortality," Zonszein said.

"It has all the ingredients for an excellent medication. If this comes to

market, it would be very good for people with type 2 diabetes," he added.

Zonszein and Courgi were not involved in the current study.

The study included just over 1,100 people with type 2 diabetes recruited from 100 centers in 14 countries around the world.

The volunteers' average age was 57. The average time they'd had type 2 diabetes was six years. On average, they were considered obese.

The participants' average hemoglobin (HbA1C) levels were between 7 and 9.5 percent. HbA1C—also called A1C—is a measure of average blood sugar control over two to three months. The American Diabetes Association generally recommends an HbA1C of less than 7 percent for most people with type 2 diabetes.

The study volunteers were randomly placed into treatment groups that lasted 26 weeks. One group was given a once-weekly injection containing 1.0 milligram (mg) of semaglutide. Five groups were given one of five doses of oral semaglutide—2.5, 5, 10, 20 or 40 mg. Another group was given escalating doses of the pill version, starting with the smallest dose and ending at 40 mg. The final group was given an oral placebo.

The highest dose of the pill performed similarly to the injectable form as far as blood sugar control and weight loss. Those on the 40-mg oral dose and those who got the injection saw an average drop in their HbA1C of 1.9 percent, the study showed. More than 70 percent of those who took the pill saw a weight loss of at least 5 percent.

According to the study's lead author, Dr. Melanie Davies, "The A1C reductions and weight loss were very impressive and similar to what

we've seen with the weekly injection of semaglutide." Davies is a professor of diabetes medicine at the Diabetes Research Centre at the University of Leicester in England.

The two forms of the drug were also similar in the reported side effects, which affected up to around 80 percent of those taking both forms of the drug. The most common side effects were mild to moderate digestive concerns that tended to go away with time. Nausea was less common in people who started on the lowest dose and then were given stronger doses.

There were three reported cases of pancreatitis—inflammation of the pancreas—a potentially serious condition that has been linked to this class of medication in previous studies. One person was taking the injectable form of the drug. The other two were on the oral drug—20 mg and 40 mg.

Zonszein noted that "pancreatitis was a bit more in those who took the drug. This may be an issue we have to pay attention to, and it may help to start with a lower dose."

He also added that GLP-1 drugs, whether by injection or by mouth, should be given in combination with the standard first line type 2 diabetes drug metformin.

"We get more mileage from combining drugs and patients really do much better," Zonszein said.

Findings from the study were published Oct. 17 in the *Journal of the American Medical Association*. Davies said phase 3 trials of the pill are already well under way.

**More information:** *JAMA* (2017). [DOI: 10.1001/jama.2017.14752](https://doi.org/10.1001/jama.2017.14752)

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