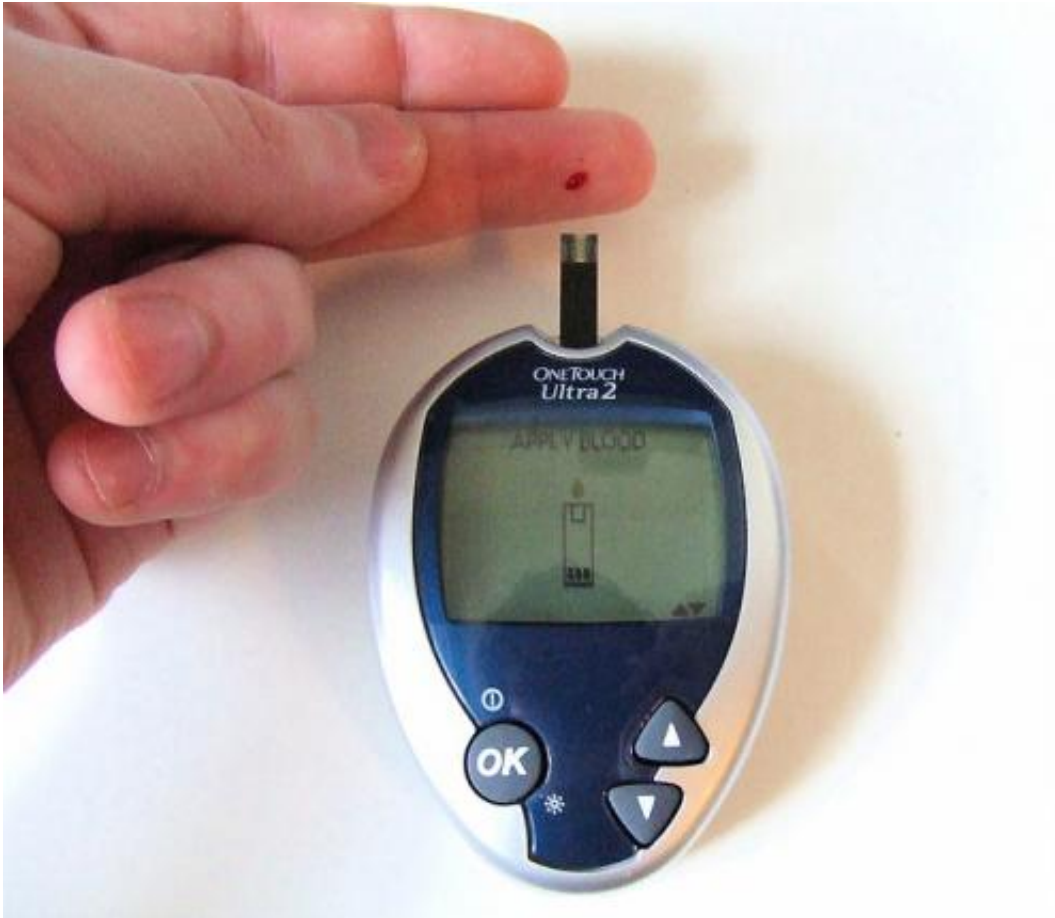


# GLP-1 alters how the brain responds to food

June 9 2015

---



Blood glucose monitoring. Credit: Wikipedia

Gut hormone-based medications used to treat diabetes, such as GLP-1 receptor agonists, have also been shown to reduce body weight. Researchers have been working to understand how. This study, presented today at the American Diabetes Association's 75th Scientific Sessions,

sheds light on how GLP-1 receptor agonists alter the brain's response to food, possibly reducing cravings and increasing satisfaction while eating.

Previous studies have shown that the brains of obese people have a greater response to pictures of [food](#) than those of lean people, and a reduced reward response during the consumption of food, which may lead to overeating. Researchers in Amsterdam tested the hypothesis that the GLP-1 receptor agonist exenatide—a medication which mimics the effects of natural GLP-1 by binding to the GLP-1 receptor—was helping patients with [type 2 diabetes](#) lose weight by altering the brain's response to food consumption and decreasing appetite.

"When you eat, there are several hormones released. GLP-1 is one of them," explained Liselotte van Bloemendaal, MD, a PhD student at the Diabetes Center, VU University Medical Center in Amsterdam. "These hormones relay information to the central nervous system about nutritional status to regulate appetite. Using functional MRIs (which measure brain activity by detecting changes in blood flow), we looked at the reward centers in the brains of obese individuals with and without type 2 diabetes and measured the response to the anticipation of and drinking of chocolate milk while being given GLP-1 receptor agonist intravenously versus placebo. We found that GLP-1 receptor activation decreased anticipatory food reward, which may reduce cravings, and increased the feeling of [food reward](#) during consumption, which may reduce overeating."

"Given the dramatic, global rise in the prevalence of obesity, further insights into the mechanisms by which these reward centers are activated are needed," she said, adding that one avenue that merits further investigation would be to study whether adding a second hormone, such as glucagon, to GLP-1 receptor agonist treatment could further increase weight loss. In addition, Bloemendaal is interested in determining if

GLP-1 receptor agonists can alter cravings for drugs, alcohol and nicotine in humans, offering a possible therapeutic target for substance abuse disorders. The U.S. Food and Drug Administration recently approved the first GLP-1 agonist for the treatment of obesity in the United States.

Provided by American Diabetes Association

Citation: GLP-1 alters how the brain responds to food (2015, June 9) retrieved 20 November 2023 from <https://medicalxpress.com/news/2015-06-glp-brain-food.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.