

Changes in food preferences and ingestive behaviors after glucagon-like peptide-1 analog treatment: techniques and opportunities.

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Background:

GLP-1 RA medications are highly effective at achieving significant weight loss. With their increasing popularity for the management of obesity comes the question as to whether the weight loss effect of these medications may be related to changes in food preferences and ingestive behaviors. Understanding the mechanisms which impact ingestive behavior could help expand opportunities to develop more improved and personalized treatment options for obesity.

Objective:

This review focuses on GLP-1 RAs, semaglutide and liraglutide, and aims to explore current discoveries of their effect on ingestive behaviors, while also evaluating the tools and techniques used to study these dimensions. Future directions for further research were elicited.

Methods:

The review was conducted between July 2023 and October 2023 and evaluated research published within the last 25 years based on identified search terms with relevance to the topic of adults with obesity, GLP-1 medications, weight loss, food preference and ingestive behaviors. The main outcomes analyzed from each study are the impact of GLP-1 analogs on ingestive behavior, cravings and craving control, and differential effects in the weight loss and weight maintenance phase. Measurement tools utilized to obtain results were also reviewed.

Results:

GLP-1 studies in adults with obesity have primarily explored the weight loss phase with a notable gap in research evaluating the weight maintenance phase. Most of the human studies done to date have relied on verbal reports measured by use of a VAS tool. Verbal reports have been primarily used to examine food intake, which can be susceptible to subjectivity. Objective measurements of food intake are limited.

Key findings were reported in the following areas:

Changes in ingestive behavior after treatment with GLP-1 analogs: GLP-1 RAs act in the subcortical areas in the brain to potentially impact taste preferences and food intake. During the weight-loss phase, energy intake substantially decreases. The macronutrient profile of foods selected by individuals taking semaglutide may change. Consummatory behavior using direct and objective measures not contingent on verbal reporting has not yet been reported for patients in the weight-loss maintenance phase, which raises the question whether the patients may return to baseline (pre-intervention) food choices.

Effects on Food Cravings: Semaglutide users experienced a decreased intensity of food cravings as well as a change in the types of foods with a decrease in the preference for *dairy containing foods, high-fat, non-sweet and sweet foods, starchy, salty, and savory foods*.

Effects on control of eating: Semaglutide improves short-term control of eating through decreased feelings of hunger associated with increased fullness and decreased severity of food within the first 12–24 weeks over 104-weeks based on verbal reports.

Measurement Tools: Five tools were reviewed for mechanism, strength and limitations: Universal Eating Monitor, Drinkometer, VAS, Leeds Foods Preference Task, Control of Eating Questionnaire.

Measures of Diet Composition after use of GLP-1 analogues: Mean energy intake of high-fat sweet foods was lower in adults treated with semaglutide compared to a placebo with an overall high-fat food intake 40.8% lower in individuals taking oral semaglutide. Both variables represented statistically significant differences.

Measures of Food Preference: No differences in results were found between the verbal report measures and the direct measures of behavior based on the measurement procedure used.

Measures of Eating Control: Based on verbal reports, after GLP-1 analog treatment control of eating became easier.

Conclusions:

Future areas of research in adults with obesity who are being treated with GLP-1 RA therapy should focus on objective measures of food intake during the weight loss phase to gain a deeper understanding of the relationship between GLP-1 and consummatory behavior. In addition, little is known around appetite behavior and consummatory behavior during the weight-loss maintenance phase, especially using direct measures to report about appetite.

New research could reveal additional parameters which contribute to the anti-obesity effects of these medications.

Access publication link here: [Changes in food preferences and ingestive behaviors after glucagon-like peptide-1 analog treatment: techniques and opportunities - PubMed \(nih.gov\)](#)

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