GLP-1 Receptor Agonists for Weight Management

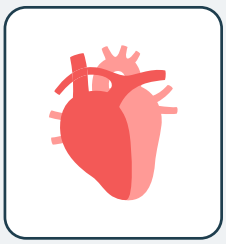
Misperceptions vs Medical Realities

Summary of Key Physiologic Actions of GLP-1

(GLP-1s help with far more than weight and blood sugar)

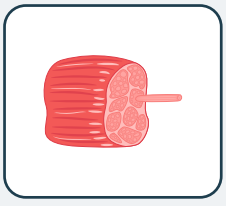
BRAIN
- Inflammation ↓
- Food Cravings ↓
- Appetite ↓
- Fullness ↑

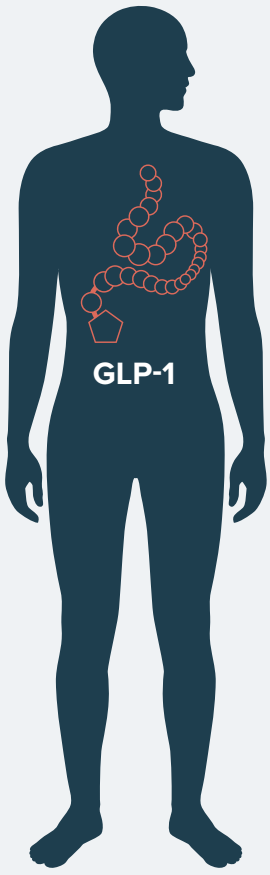
HEART
- Inflammation ↓
- Oxygen radicals ↓
- Plaque formation ↓
- Functional protection ↑
- Cardiac output ↑
- Myocardial sugar uptake ↑



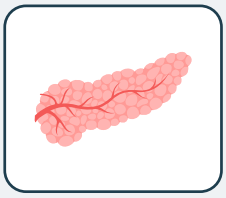
LIVER*
- Inflammation ↓
- Scar tissue ↓
- Sugar production ↓
- Fat buildup ↓

MUSCLE*
- Lean mass ↓
- Fat buildup ↓
- Insulin sensitivity ↑
- Sugar uptake ↑
- Local blood flow ↑



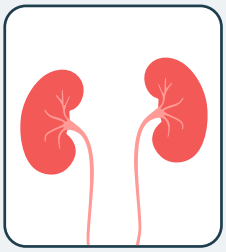


STOMACH
- Stomach emptying ↓
- Sugar spikes ↓
- Acid production ↓



PANCREAS
- Glucagon release ↓
- β-cell breakdown ↓
- Insulin Release ↑
- Insulin production ↑

GASTROINTESTINAL TRACT
- Inflammation ↓
- Intestinal motility ↓
- Nutrient absorption ↑



KIDNEYS
- Protein secretion ↓
- Blood pressure ↓
- Local blood flow ↑
- Sodium excretion ↑

GI = gastrointestinal; *GLP-1 actions on liver and muscle are indirect. Drucker DJ. *Cell Metab*. 2006;3:153-165.

COMMON MISPERCEPTIONS VS MEDICAL REALITIES

Misperception	Medical Reality
GLP-1 products are only for those with overweight or obesity	Some GLP-1 products are FDA-approved for weight loss, but they were first made for type 2 diabetes and can help in other ways. These include preventing cardiovascular events, preserving kidney function, treating a liver disease known as MASH, or helping improve sleep apnea.
GLP-1s are just another diet	They mimic a natural gut hormone (GLP-1) that helps you feel full and steady your blood sugar. They're not quick-fix diet pills.
The injections are painful	Most use a very small needle just under the skin. Many people feel little to no sting, especially with pen injectors. The needle size can be compared to the size of 2 human hairs.
I don't need to change my eating or exercise habits	Whether the goal of treatment with your GLP-1 is to lower blood sugar, reduce weight, lower cardiovascular risk, preserve kidney function, treat MASH, or access another benefit, the medicine works best alongside other healthy habits such as balanced food choices and exercising regularly.
Gastrointestinal side effects never go away	Nausea or bowel issues are common **at first** and usually improve within the first week or so as your body adjusts to the new medicine or new dose. There are ways to manage these issues.
I won't enjoy food or want to eat food anymore	You may feel full sooner, but you can still enjoy meals – just smaller portions and mindful choices. Taste and smell are also important factors in food enjoyment and those won't be affected.
These meds cause unhealthy weight loss and make you lose muscle	Most of the weight lost is **fat**. Making healthy food choices that include protein and vitamins, along with doing resistance exercise, helps protect your muscles. Remember that when you are eating less, it is important to fuel your body with the nutrients it needs to keep you healthy.
Why start? I'll just regain the weight	If you are considering a GLP-1 for weight loss, it is helpful to understand that obesity is a chronic disease without a cure. And just like other chronic diseases such as diabetes or heart disease, staying on treatment helps maintain weight loss while also benefiting from other effects of the medicine that include reducing risks of major cardiovascular events. Stopping often leads to weight regain, just like a person's blood pressure goes up if they quit taking their blood pressure medicine. Weight loss is a long-term journey.

Misperception	Medical Reality
Compounded versions are the same as FDA-approved ones	Compounded products are not FDA-approved and can have dosing or ingredient problems, especially if they do not come from FDA-registered suppliers. FDA-registered suppliers have a certificate of analysis (COA) verifying the identity, purity, and potency of the active ingredient. Even compounded GLP-1 products using ingredients from FDA-registered suppliers are not the same as commercially manufactured products. It is recommended to use FDA-approved medications from licensed pharmacies.

ADE = adverse drug event; BMI = body mass index; FDA = U.S. Food and Drug Administration; GI = gastrointestinal; MASH = metabolic-associated steatohepatitis.

REFERENCES

1. Alqifari SF, Alkomi O, Esmail A, et al. Practical guide: glucagon-like peptide-1 and dual glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonists in diabetes mellitus. *World J Diabetes*. 2024;15(3):331-347.
2. American Diabetes Association Professional Practice Committee. Pharmacologic approaches to glycemic treatment. *Diabetes Care*. 2025;48(Suppl 1):S1-S344.
3. Badve SV, Bilal A, Lee MMY, et al. Effects of GLP-1 receptor agonists on kidney and cardiovascular disease outcomes: a meta-analysis of randomised controlled trials. *Lancet Diabetes Endocrinol*. 2025;13(1):15-28.
4. Drucker DJ, Nauck MA. The incretin system: glucagon-like peptide-1 receptor agonists and dipeptidyl peptidase-4 inhibitors in type 2 diabetes. *Lancet*. 2006;368(9548):1696-1705.
5. Drucker DJ. Mechanisms of action and therapeutic application of glucagon-like peptide-1. *Cell Metab*. 2018;27(4):740-756.
6. Echeverry-Guerrero S, González-Vélez S, Arévalo-Lara A-S, et al. The inappropriate use of GLP-1 analogs: reflections from pharmacoepidemiology. *Pharmacoepidemiology*. 2024;3(4):365-372.
7. Gorgojo-Martínez JJ, Mezquita-Raya P, Carretero-Gómez J, et al. Clinical recommendations to manage gastrointestinal adverse events in patients treated with Glp-1 receptor agonists: a multidisciplinary expert consensus. *J Clin Med*. 2022;12(1):145.
8. Larkin A, Le A. 504-P: Success of aligned clinician–patient education improves clinicians' ability to use GLP-1 RAs in practice and patients' understanding of GLP-1 RAs. *Diabetes*. 2022;71(Suppl 1):504-P.
9. Moorman J. GLP-1 medications and weight loss: helping patients navigate beyond the trends. Wolters Kluwer Website. https://www.wolterskluwer.com/en/expert-insights/glp-1-medications-and-weight-loss-help-patients-navigate-beyond-trends. Accessed July 11, 2025.
10. Rhodes RT. Myths & facts: GLP-1 drugs for weight loss. BioSupply Trends Quarterly Website. https://www.bstquarterly.com/article/myths-facts-glp-1-drugs-for-weight-loss/. Published April 1, 2025. Accessed October 14, 2025.
11. U.S. Food and Drug Administration [FDA]. FDA's concerns with unapproved GLP-1 drugs used for weight loss. FDA Website. https://www.fda.gov/drugs/postmarket-drug-safety-information-patients-and-providers/fdas-concerns-unapproved-glp-1-drugs-used-weight-loss. Updated September 25, 2025. Accessed October 16, 2025.