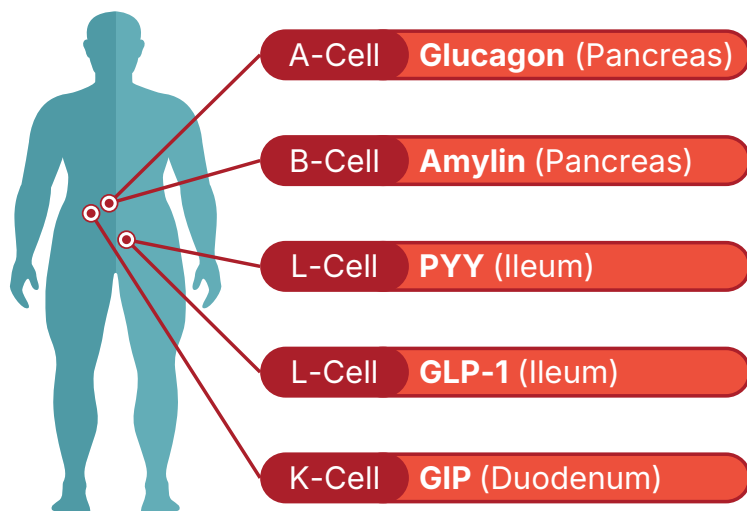


Role of Nutrient-Stimulated Hormone Therapies in Obesity Care

What are Nutrient Stimulated Hormones?

Nutrient-Stimulated Hormone Therapies (NuSH) are hormones produced by specialized enteroendocrine cells. These hormones have a broad impact on many metabolic functions, including appetite regulation, glucose levels and cardiovascular and kidney health.



NuSH therapies are also labeled as Incretin-based therapies.

Several have been approved by the FDA for the treatment of obesity and its complications, while others are in various phases of clinical investigation.

Clinical trials have shown these obesity complications improved with obesity treatment:

- type 2 diabetes
- obstructive sleep apnea
- osteoarthritis
- heart failure
- atherosclerotic cardiovascular disease
- peripheral vascular disease
- chronic kidney disease

FDA-Approved NuSH based therapies for obesity treatment:

Medication	Dosing Frequency	Average Weight Loss
Liraglutide (injection)	Daily	8%
Semaglutide (injection)	Weekly	16%
Tirzepatide (injection)	Weekly	21%

Side Effects & Safety

Common side effects may include gastrointestinal (GI) issues (e.g., nausea, early satiety, diarrhea, constipation)

- **Concerns:**
Gallbladder disease, pancreatitis (typically rare)
- **Contraindications:**
History of or at risk for medullary thyroid cancer and Multiple Endocrine Neoplasia 2 (MEN2) syndrome
- Lifestyle strategies help mitigate side effects (e.g., adequate hydration and a high-protein, high-fiber dietary plan)
- Sarcopenia can be prevented by adequate protein intake and weight training during weight loss

Treatment approaches to weight loss on **average**:



5–10%

Lifestyle alone



5–25%

Lifestyle + pharmacotherapy

