

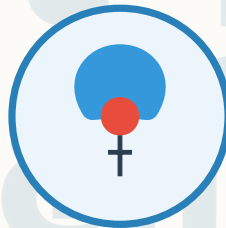
Semaglutide - All you need to know

Evidence-Based Patient Guide to GLP-1 RA Therapy

Pharmacodynamics: Mechanism of Action

Semaglutide is a potent, long-acting Glucagon-Like Peptide-1 Receptor Agonist (GLP-1 RA). Its efficacy in weight management and metabolic control is driven by several physiological pathways:

- **Central Anorexigenic Effect:** Crosses the blood-brain barrier to interact with the hypothalamus, upregulating satiety signals and downregulating hunger cues.
- **Gastric Emptying:** Delays gastric motility, prolonging the sensation of postprandial fullness.
- **Glycemic Optimization:** Enhances glucose-dependent insulin secretion and suppresses inappropriate post-meal glucagon release.



The Crucial Role of Diet & Resistance Training

Semaglutide induces rapid weight loss, but without targeted lifestyle interventions, up to 30-40% of the lost weight can be lean muscle mass (sarcopenia).

- **Pre-Requisite Dietary Shift:** A high-protein, nutritionally dense diet is mandatory to preserve lean body mass. High-glycemic and processed foods must be eliminated to prevent severe gastrointestinal distress (nausea/vomiting) induced by delayed gastric emptying.
- **Resistance Training:** Aerobic exercise is insufficient. Progressive resistance training is clinically necessary to maintain bone mineral density and skeletal muscle mass during the caloric deficit phase.

Clinical Eligibility Criteria

Indications, Contraindications, & Precautions

Absolute Indications

Semaglutide is indicated as an adjunct to a reduced-calorie diet and increased physical activity for chronic weight management in adult patients with:

- **Obesity:** Initial Body Mass Index (BMI) ≥ 30 kg/m².
- **Overweight with Comorbidities:** Initial BMI ≥ 27 kg/m² in the presence of at least one weight-related comorbid condition (e.g., Hypertension, Type 2 Diabetes Mellitus, or Dyslipidemia).

Absolute Contraindications

Administration is strictly prohibited under the following clinical conditions:

- Personal or family history of **Medullary Thyroid Carcinoma (MTC)**.
- Patients with **Multiple Endocrine Neoplasia syndrome type 2 (MEN 2)**.
- Known hypersensitivity to semaglutide or any of its excipients.
- Pregnancy or active planning for pregnancy (must discontinue 2 months prior to conception).

Administer With Extreme Caution

- **History of Pancreatitis:** Risk of acute pancreatitis; monitor for severe, persistent abdominal pain radiating to the back.

- **Diabetic Retinopathy:** Rapid improvement in glucose control has been associated with a temporary worsening of diabetic retinopathy complications.
- **Concomitant Insulin/Sulfonylurea Use:** High risk of hypoglycemia; dose reduction of the secretagogue or insulin is usually required.
- **Severe Gastrointestinal Disease:** Including severe gastroparesis, due to the drug's mechanism of delaying gastric emptying.



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Pre-Therapy Diagnostic Workup

Mandatory Pre-requisite Investigations

To ensure patient safety and establish a physiological baseline, the following diagnostic panel must be completed prior to initiating GLP-1 RA therapy.

Laboratory & Imaging Diagnostics

- **HbA1c & Fasting Blood Sugar (FBS):** To assess baseline glycemic control and determine if co-management for Type 2 Diabetes is required.
- **Fasting Lipid Profile:** To monitor cardiovascular risk factors and observe therapeutic improvements.
- **Comprehensive Metabolic Panel (CMP):** Specifically focusing on Renal Function Tests (Serum Creatinine, eGFR) and Liver Function Tests (SGOT, SGPT). Dehydration from GI side effects can precipitate acute kidney injury.
- **Serum Lipase & Amylase:** Baseline evaluation, particularly in patients with any prior history of gallbladder issues or suspected pancreatic anomalies.
- **Thyroid Function Tests (TSH, Free T3/T4):** Essential due to the thyroid-related contraindications. (Serum Calcitonin is ordered if there is clinical suspicion or family history of MTC).
- **Electrocardiogram (ECG):** A baseline cardiovascular assessment, crucial given the high correlation between obesity and undetected cardiac stress.



Dose Titration Protocol

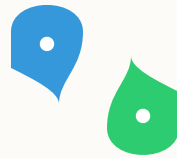
Therapy must follow a strict step-up titration schedule to mitigate adverse gastrointestinal events. Starting at the lowest dose allows physiological adaptation before reaching the therapeutic maintenance dose.



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Clinical Q&A: Myth vs. Fact

Addressing Common Misconceptions



Myth: "I can eat whatever I want because the injection will burn the fat."

Fact: Semaglutide is not a fat-burner; it is an appetite suppressant. If you override the satiety signals by forcing calorie-dense foods, you will not lose weight and will likely experience severe nausea and vomiting.

Myth: "The weight loss is permanent, even after I stop the injection."

Fact: Obesity is a chronic, relapsing disease. Discontinuing the GLP-1 RA causes physiological hunger cues to return rapidly. Without sustained behavioral and metabolic changes, significant weight regain is highly probable.

Myth: "I don't need to exercise if I am losing weight quickly."

Fact: Rapid weight loss without exercise results in profound muscle wasting. You must perform resistance training to preserve metabolic rate and skeletal integrity.

Myth: "Gastrointestinal side effects are a sign of toxicity."

Fact: Mild to moderate nausea is a known pharmacological effect due to delayed gastric emptying. It can be largely managed by eating smaller portions, avoiding high-fat foods, and proper dose titration.



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Discontinuation & Maintenance

Life After Semaglutide Therapy

Discontinuation Protocol

Cessation of Semaglutide must be a planned clinical decision. Sudden discontinuation leads to a rapid resurgence of appetite, known as rebound hyperphagia.

- **Gradual Tapering:** While not pharmacologically required to prevent withdrawal, tapering the dose can help the patient psychologically adapt to returning hunger cues.
- **Metabolic Recalibration:** As weight drops, your Basal Metabolic Rate (BMR) decreases. Post-therapy caloric intake must be calculated based on your *new* body weight, not your starting weight.

Preventing Weight Regain

Long-term success is dictated exclusively by habits formed during the treatment phase:

- Maintain a protein-forward diet (1.2g to 1.5g per kg of ideal body weight).
- Commit to a minimum of 150 minutes of moderate cardiovascular activity and 2-3 days of resistance training per week.
- Continuous biometric monitoring (weight, waist circumference, HbA1c) to catch relapses early.

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For more information or to start your weight loss journey you are just one step away.

Get in touch with Swasthya Hospital either through online consult or walk-in personal consult to start your personalized weight loss journey tailor made for you.

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