

GLP-1 Drugs, Uses, Mechanism, Risks and Regulation

April 13, 2026 • vajiramandravi.com



GLP-1 drugs have emerged as an important medical innovation in the treatment of metabolic disorders such as type 2 diabetes and obesity. GLP-1 drugs, or glucagon-like peptide-1 receptor agonists, are medicines that help control blood sugar levels and body weight. They work by mimicking a natural hormone in the body that regulates insulin release and appetite. Recently, these drugs have gained popularity in India, but concerns have also risen regarding their misuse and unsupervised availability in the market.

What are GLP-1 Drugs?

GLP-1 drugs are hormone-based medicines used mainly for diabetes and obesity management.

- GLP-1 drugs are a class of medicines that imitate the natural GLP-1 hormone in the human body.
- They are primarily used for the treatment of type 2 diabetes and obesity.
- These drugs help regulate blood sugar levels and reduce excessive appetite, which leads to weight loss.

How Do GLP-1 Drugs Work?

These drugs act by mimicking natural hormonal functions involved in digestion and glucose control.

- When food is consumed, the body naturally releases the GLP-1 hormone in response to rising blood sugar levels.
- This hormone stimulates the pancreas to release insulin, which helps move glucose from the blood into cells for energy use.
- It also suppresses glucagon, a hormone that increases blood sugar levels by releasing glucose from the liver.
- GLP-1 drugs mimic this hormone and prolong its action in the body, thereby improving blood sugar control.
- These drugs also slow down gastric emptying, meaning food stays in the stomach longer, which increases the feeling of fullness and reduces appetite.

Types of GLP-1 Drugs Available

Several GLP-1 medicines are currently available in the global and Indian pharmaceutical market.

- **Semaglutide injection** is widely used for both diabetes and weight management.
- Semaglutide tablets provide an oral alternative for patients who prefer non-injectable treatment.
- Liraglutide is used for blood sugar control and obesity management under medical supervision.
- Tirzepatide is a newer drug that targets multiple metabolic pathways for better glucose control and weight loss.
- Dulaglutide is commonly used in type 2 diabetes treatment with long-lasting effects.
- Exenatide and extended-release exenatide are among the earlier GLP-1 based therapies used for diabetes management.

Medical Uses of GLP-1 Drugs

These drugs are primarily used for managing metabolic disorders under strict medical supervision.

- They are used to control blood sugar levels in patients suffering from type 2 diabetes.
- They are prescribed for obesity management in cases where lifestyle changes alone are not sufficient.
- They help reduce appetite and support long-term weight reduction in clinically diagnosed patients.
- In some cases, they are also used to reduce cardiovascular risk in diabetic patients under specialist guidance.

GLP-1 Drugs Side Effects and Health Risks

Although effective, GLP-1 drugs can cause serious health complications if not used properly.

- Common side effects include nausea, vomiting, dizziness, and digestive discomfort.
- Serious risks may include pancreatitis, kidney injury, and bowel obstruction.
- In rare cases, long-term use may increase the risk of thyroid-related complications.
- These drugs may also worsen existing health conditions if taken without medical supervision.
- Due to these risks, self-medication or unsupervised use is considered unsafe.

GLP-1 Drugs Regulation and Safety Measures in India

Indian regulatory authorities have strengthened monitoring to prevent misuse of GLP-1 drugs.

- The Drug Controller General of India has increased surveillance on the sale and distribution of GLP-1 drugs.
- These medicines are allowed only through valid medical prescriptions issued by qualified specialists such as endocrinologists, internal medicine doctors, and cardiologists.
- On 10 March 2026, a national advisory was issued to pharmaceutical companies to stop misleading advertisements and promotional practices encouraging unsupervised use.
- Inspections have been conducted across pharmacies, wholesalers, online platforms, and wellness clinics to identify illegal sales and prescription violations.
- Strict penalties such as license cancellation, fines, and legal action are being enforced against violators.

Concerns Related to GLP-1 Drugs

The rising popularity of these drugs has also created regulatory and public health concerns.

- Easy availability through online and retail channels increases the risk of misuse without medical guidance.
- Misleading marketing practices may encourage self-medication for weight loss purposes.
- Lack of awareness about side effects can lead to serious health complications.
- Unregulated usage may create long-term public health risks if not controlled effectively.

Source: <https://vajiramandravi.com/current-affairs/glp-1-drugs/>

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