GLP-1

Also called: Glucagon-like peptide-1; GLP-1(7-36) amide; GLP-1(7-37)

What it is

GLP-1 is the incretin hormone released by intestinal L-cells after meals, mostly as GLP-1(7-36) amide (PMID 8138058). Infused into people it raises insulin only while glucose is raised, lowers glucagon, slows stomach emptying and cuts food intake (PMIDs 2890903, 11889194, 9374685, 11549680). DPP-4 inactivates it with a half-life of about two minutes (PMIDs 8100523, 14988249), which is why the medicines are resistant analogues with their own entries.

Approval status

Research Chemical. Not approved as a drug: Drugs@FDA (openFDA) returns no application for glucagon-like peptide-1 itself (read November 4, 2026). The approved GLP-1 medicines are modified analogues, each with its own entry.

Dosing, as printed in the page's Recommended Dosing box

Used in human trials

No manufacturer dose exists for this use: these are amounts given in published trials, not recommendations.

Protocol and source	Dose	Frequency	Duration	Route
Study: mild type 2 diabetes and matched controls, under a glucose clamp **[Human study]** PMID 8423228	0.4 then 1.2 pmol/kg/min GLP-1(7-36) amide	Continuous infusion	1 hour at each rate	Intravenous
Study: poorly controlled type 2 diabetes, fasting **[Human study]** PMID 8405741	1.2 pmol/kg/min GLP-1(7-36) amide	Continuous infusion	Single session; glucose was normal within 4 hours	Intravenous
Study: food intake in healthy men **[Human study]** PMID 9862830	0.375, 0.75 or 1.5 pmol/kg/min	Continuous infusion	Single session per rate	Intravenous
Study: satiety in healthy men **[Human study]** PMID 9449682	50 pmol/kg per hour	Continuous infusion	One day, from the start of breakfast	Intravenous

Educational information, not medical advice. Each dose above is tagged with its source: an approved label, a published human study, animal data, or amounts reported by users. None is a recommendation for you. An unapproved compound has no established safe or effective human dose, and products sold for "research use only" are not made or tested for people. Talk to a doctor before acting on anything on this site, including before you start, stop or change any medicine or dose.

Key human evidence

The first 3 of the 19 human studies carded on the page (25 study cards in all):

• **First shown to be an incretin in people** (Human, 1987). The Hammersmith group found GLP-1(7-36) amide in human bowel and saw its blood level climb after oral glucose and after breakfast. Infused into seven fasting volunteers at a rate copying the level seen after meals, it raised insulin and lowered both glucose and glucagon; during an intravenous glucose load it boosted insulin release enough to cut peak glucose, and some volunteers dipped into low blood sugar once the infusion stopped. GIP infused to normal levels was the weaker insulin stimulus. Very high levels after meals in people with dumping syndrome after stomach surgery hinted that the hormone drives the low blood sugar seen in that condition. **PMID 2890903**

• **Still works in type 2 diabetes, unlike GIP** (Human, 1993). Nine people with mild type 2 diabetes and nine matched controls were held at a raised glucose while receiving GIP, GLP-1(7-36) amide at 0.4 and then 1.2 pmol/kg/min, or placebo. Both hormones raised insulin and C-peptide in both groups, but with GIP the diabetic group's best response was 54% below the controls', while with GLP-1 they reached 71% of the controls' C-peptide rise, a gap that was not statistically significant. Only GLP-1 also lowered glucagon. This is the study that pointed drug developers at GLP-1 rather than GIP. **PMID 8423228**

• **Fasting glucose brought to normal in four hours** (Human, 1993). Ten people with poorly controlled type 2 diabetes (average HbA1c 11.6%) on sulphonylureas received an intravenous infusion of GLP-1(7-36) amide at 1.2 pmol/kg/min or placebo while fasting. Starting from an average glucose of 13.1 mmol/L, every patient's insulin and C-peptide rose, glucagon fell, and glucose reached a normal 4.9 mmol/L within four hours, which placebo did not do. Once glucose was normal, insulin drifted back down and glucose stayed level even though the infusion continued, which is the glucose dependence that limits how low GLP-1 alone can push blood sugar. **PMID 8405741**

Interactions

A PubMed search for interaction studies of this compound with any drug (November 4, 2026, 27 records) found none in people. That is not evidence that it is safe to combine with anything.

Side effects and cautions

Reported side effects	Contraindications and cautions
• Low blood sugar: some volunteers dipped after an infusion ended, and 8 non-diabetic heart failure patients had hypoglycaemia during 48 hours of infusion (PMIDs 2890903, 20081109) • Brief stomach upset during a 72-hour infusion after a heart attack (PMID 14981009) • A small rise in heart rate, about two beats a minute, and in diastolic blood pressure (PMID 20081109) • Stomach emptying slowed sharply, enough to blunt the rise in glucose and insulin after a meal (PMIDs 9374685, 8550773) • In a six-week continuous infusion and in single-session feeding studies, the authors saw no important side effects (PMIDs 11897280, 9862830)	• Any use of GLP-1 itself outside a supervised research study • People without diabetes who are unwell, since infusions caused low blood sugar in heart failure patients without diabetes (PMID 20081109) • Its effect ends within minutes of stopping, so an injection of the native hormone is gone within two hours (PMID 7672496) • Anything sold as 'GLP-1' outside a pharmacy is outside a regulated supply, so its identity and amount are unverified

Five questions to ask

1. GLP-1 is listed here as “Research Chemical”. What does the evidence on this sheet mean for someone in my situation, and is there an approved treatment I should consider instead?
2. Here are the medicines and supplements I take. Do any of them interact with GLP-1? This sheet records none published, which does not mean none exist.
3. Which side effects should make me stop and call you, for example low blood sugar: some volunteers dipped after an infusion ended?
4. Do any of the cautions on this sheet apply to me, such as: Any use of GLP-1 itself outside a supervised research study?
5. What should we check before I start and while I am on it (blood tests, blood pressure, weight), and how often?

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