

What tirzepatide is

A 39-amino-acid synthetic peptide that binds the receptors for two gut hormones, GIP and GLP-1. A fatty-acid side chain lets it ride on albumin in the blood, stretching its half-life to about five days, so it is injected once a week.

CLASS	Dual GIP / GLP-1 receptor agonist
ROUTE	Subcutaneous, once weekly
HALF-LIFE	About 5 days
APPROVED AS	Mounjaro (type 2 diabetes, 2022) and Zepbound (weight management, 2023; sleep apnea, 2024)

COMPOUNDED IS NOT GENERIC

There is no generic tirzepatide. A compounded preparation is made to order by a pharmacy from bulk ingredient and is not reviewed by the FDA for safety, effectiveness, or quality before sale.

This pamphlet is for adults prescribed compounded tirzepatide by a licensed prescriber and dispensed by a licensed pharmacy. It does not cover vials sold online without a prescription.

Before the first dose, ask

- ☐ Did my prescriber document why the approved product isn't right for me?
- ☐ Is the pharmacy licensed in my state? 503A or 503B?
- ☐ What is the concentration in mg/mL, and will it stay the same on refills?
- ☐ What is my dose in mg, mL, and units, printed on the label?
- ☐ What is the beyond-use date once opened, and how is it stored?
- ☐ Can I see a certificate of analysis for this batch? Any additives, and why?

SOURCES

1. Zepbound (tirzepatide) injection. Prescribing information. Eli Lilly and Company. Current revision.
2. Mounjaro (tirzepatide) injection. Prescribing information. Eli Lilly and Company. Current revision.
3. Coskun T, et al. LY3298176, a novel dual GIP and GLP-1 receptor agonist for the treatment of type 2 diabetes mellitus: from discovery to clinical proof of concept. *Mol Metab*. 2018;18:3-14.
4. Jastreboff AM, et al. Tirzepatide once weekly for the treatment of obesity (SURMOUNT-1). *N Engl J Med*. 2022;387(3):205-216.
5. Frias JP, et al. Tirzepatide versus semaglutide once weekly in patients with type 2 diabetes (SURPASS-2). *N Engl J Med*. 2021;385(6):503-515.
6. Aronne LJ, et al. Tirzepatide as compared with semaglutide for the treatment of obesity (SURMOUNT-5). *N Engl J Med*. 2025.
7. Malhotra A, et al. Tirzepatide for the treatment of obstructive sleep apnea and obesity (SURMOUNT-OSA). *N Engl J Med*. 2024;391(13):1193-1205.
8. U.S. Food and Drug Administration. FDA clarifies policies for compounders as national GLP-1 supply begins to stabilize. December 19, 2024.
9. U.S. Food and Drug Administration. FDA's concerns with unapproved GLP-1 drugs used for weight loss. Updated 2025.
10. U.S. Food and Drug Administration. Human drug compounding: sections 503A and 503B of the Federal Food, Drug, and Cosmetic Act.
11. United States Pharmacopeia. General Chapter <797> Pharmaceutical Compounding — Sterile Preparations. 2023 revision.

This guide is an educational summary of published sources and is not medical advice. Tirzepatide is a prescription medicine; decisions about starting, dosing, or stopping it belong with a licensed prescriber and pharmacist. Trial results describe the FDA-approved product and have not been demonstrated for any compounded preparation.

Newport Peptide Society

[NEWPORTPEPTIDESOCIETY.COM/GUIDES/TIRZEPATIDE](https://newportpeptidesociety.com/guides/tirzepatide)

FIRST EDITION · SEPTEMBER 2026 · REVISED
OCTOBER 1, 2026

Compounded Tirzepatide

A guide to the dual GIP / GLP-1 receptor agonist

Tirzepatide is the first medicine to activate two gut-hormone receptors at once: GLP-1 and GIP. Since 2022 it has produced the largest weight and blood-sugar reductions of any approved injectable. This guide explains how it works, what the trials showed, and what changes when the drug comes from a compounding pharmacy rather than a manufacturer's pen.

How it works, and what the trials showed

	GLP-1	GIP
Pancreas	Insulin up, glucagon down, only when sugar is high	Insulin up after meals
Stomach	Slows emptying; meals feel larger	Little direct effect
Brain	Lowers appetite and food reward	Separate appetite circuits; may blunt nausea
Fat	Indirect, via weight loss	Better lipid storage and insulin sensitivity

−20.9%⁴

Body weight at 72 weeks on 15 mg vs −3.1% placebo (SURMOUNT-1)

−2.3 pts⁵

HbA1c at 40 weeks on 15 mg; semaglutide 1 mg −1.9 (SURPASS-2)

−20.2% vs −13.7%⁶

Tirzepatide vs semaglutide 2.4 mg, head-to-head at 72 weeks (SURMOUNT-5)

THESE NUMBERS DESCRIBE THE BRANDED PRODUCT

No compounded tirzepatide has been tested in a clinical trial. Read trial results as the ceiling of what the molecule can do, not a promise about any vial.

Dosing, and what changes when it's compounded

LABELED TITRATION FOR A 30 MG VIAL + 1.5 ML WATER (20 MG/ML)			
WEEKS	DOSE	UNITS	PER 4 WK
1–4	2.5 mg	12.5	10 mg
5–8	5 mg	25	20 mg
9–12	7.5 mg	37.5	30 mg
13–16	10 mg	50	40 mg
17–20	12.5 mg	62.5	50 mg
21+	15 mg	75	60 mg

Each step at least 4 weeks; stop at the lowest dose that works. Half units: 0.3 mL syringe under 30 units, else round. Keep one concentration for the whole course.

- Abdomen, thigh, or upper arm; rotate sites. Same day each week.
- Missed dose: take within 4 days, otherwise skip. Never two doses within 3 days.
- Oral contraceptives absorb less for 4 weeks after starting and after each increase; add a barrier method.

DEC 2024	FDA declares the tirzepatide shortage over
FEB–MAR 2025	Deadlines for pharmacies to stop compounding copies
SINCE THEN	Compounding only for a documented, patient-specific need

THE DOSING-ERROR PROBLEM

Pens deliver one fixed dose. Compounded vials are drawn up with an insulin syringe marked in units, and the FDA has received reports of 5- to 20-fold overdoses from confusing mg, mL, and units. Concentration can change between refills. Read the label every time.

Reading a vial, and staying safe

UNITS = (DOSE MG ÷ MG/ML) × 100

30 mg + 1.5 mL = 20 mg/mL, so 5 mg = 0.25 mL = 25 units. At 10 mg/mL (30 mg + 3 mL), the same dose is 50 units.

IF YOUR LABEL SHOWS A DIFFERENT CONCENTRATION

DOSE	10 MG/ML	20 MG/ML
2.5 mg	25 units	12.5 units
5 mg	50 units	25 units
10 mg	100 units	50 units
15 mg	100 + 50 units	75 units

Your pharmacy label overrides this table.

BOXED WARNING: THYROID C-CELL TUMORS

Seen in rats; unknown in humans. Never use with a personal or family history of medullary thyroid carcinoma or MEN 2.

- Common: nausea (25–29%), diarrhea (19–23%), constipation, vomiting. Worst after each increase; usually fades.
- Stop and seek care for severe abdominal pain (pancreatitis, gallbladder), or if unable to keep fluids down.
- Lower insulin or sulfonylurea doses to avoid hypoglycemia.
- Tell every surgeon and anesthesiologist: slowed stomach emptying raises aspiration risk.
- Not for use in pregnancy or breastfeeding.