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PATIENT GUIDE

Tirzepatide *for weight and metabolic health*

Tirzepatide is a once weekly injection approved for weight management, obstructive sleep apnea and type 2 diabetes. It acts on two hormone receptors involved in appetite and blood sugar.

COMPOUND	CLASS	ROUTE	STATUS	SOURCES
Tirzepatide	Incretin agonist	Weekly injection	FDA approved	32 · PMID linked

§ 01

Overview

Tirzepatide is one of the most thoroughly studied medicines in modern metabolic care. It is a once weekly injection that acts on two of the body's own appetite and blood sugar hormones at the same time, and in large clinical trials it produced substantial and sustained weight reduction.[1] It is approved by the U.S. Food and Drug Administration under two brand names, Zepbound and Mounjaro, for weight management, obstructive sleep apnea, type 2 diabetes and cardiovascular protection in type 2 diabetes.[25][26]

This guide explains how tirzepatide works, what the trials showed, how the dose is built up, what the first months usually feel like, and what the safety information says. Every number is referenced at the end, with a link so you can read the source yourself.

20.9%	**Average weight reduction at the highest dose.** Over 72 weeks in SURMOUNT 1, a trial of 2,539 adults with obesity or overweight, the 15 mg dose lowered body weight by 20.9 percent on average, compared with 3.1 percent on placebo.[1]
3	**Years of trial follow up.** In SURMOUNT 1 participants with prediabetes, weight stayed 12.3 to 19.7 percent lower at 176 weeks, and type 2 diabetes was diagnosed in 1.3 percent on tirzepatide compared with 13.3 percent on placebo.[2]
4	**FDA approved uses.** Weight reduction and maintenance, and sleep apnea with obesity (Zepbound); type 2 diabetes, and cardiovascular risk reduction in type 2 diabetes (Mounjaro).[25][26]
Once weekly	**One injection a week.** Binding to albumin gives tirzepatide a half life of about five days, so a single weekly dose keeps a steady level in the blood after the first four weeks.[25]

§ 02

What tirzepatide is

After you eat, your gut releases two hormones called incretins. GIP (glucose dependent insulinotropic polypeptide) and GLP 1 (glucagon like peptide 1) tell the pancreas that food is arriving, and they help signal to the brain that you are being fed.[25]

Tirzepatide is a laboratory made peptide built on the GIP sequence and engineered to activate both the GIP receptor and the GLP 1 receptor. It carries two small substitutions in its amino acid chain and an attached fatty acid that lets it bind to albumin, the main protein in blood, which prolongs its half life and stretches its action across a full week.[25] [3] Because it acts on both receptors, it is often described as a dual agonist. [3]

TIRZEPATIDE AT A GLANCE

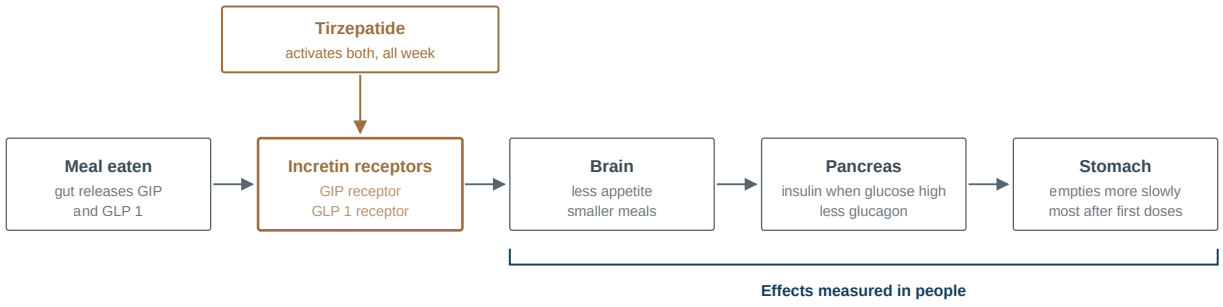
FEATURE	DETAILS
Name	Tirzepatide
Also called	Zepbound (weight management and sleep apnea), Mounjaro (type 2 diabetes). LY3298176 in early research[25] [26] [3]
Structure	A peptide based on the GIP sequence, with two aminoisobutyric acid substitutions and a C20 fatty diacid attached at position 20. Molecular weight 4,813.53 Da[25]
Origin	Synthetic. Developed by Eli Lilly and Company; first FDA approval in 2022[26]
Class	Dual GIP receptor and GLP 1 receptor agonist (an incretin medicine)[25]
How it is given	Injection under the skin once a week, by prefilled pen, vial or multidose KwikPen[25]

§ 03

How tirzepatide works

Both GIP and GLP 1 receptors are found in the areas of the brain that regulate appetite, and in the pancreas. When tirzepatide activates them, several things happen together. People feel less hungry and eat less. The pancreas releases more insulin, but only when blood sugar is raised, so tirzepatide on its own rarely causes low blood sugar.[4] The pancreas also releases less glucagon, the hormone that pushes blood sugar up, and the stomach empties more slowly. [25]

Each of these effects has been measured in people. In a 28 week trial in adults with type 2 diabetes, tirzepatide 15 mg improved insulin secretion and insulin sensitivity more than semaglutide 1 mg, and lowered glucagon after meals.[5] In the same trial it reduced appetite and the amount people ate at a test meal compared with placebo. [6] The slowing of stomach emptying is strongest after the first doses and fades with continued treatment. [7] [25]



Tirzepatide activates two hormone receptors and acts in several organs. Tirzepatide activates the receptors for both GIP and GLP 1, lowering appetite and food intake, releasing insulin only when blood sugar is raised, reducing glucagon, and slowing stomach emptying.[25] Each effect has been measured in human trials. [5] [6] [7]

Tirzepatide does not act on the two receptors equally. Laboratory studies found that, at the doses used clinically, it engages the GIP receptor more fully than the GLP 1 receptor and signals through the GLP 1 receptor in a way that favors insulin release. Researchers think this balance may help explain why its effects exceed those of medicines that act on GLP 1 alone, though the full explanation is not yet known.[8] [6]

The weight lost is mostly fat. In a body composition substudy of SURMOUNT 1 using DXA scans, fat mass fell by 33.9 percent and lean mass by 10.9 percent over 72 weeks, so about three quarters of the weight lost was fat and one quarter was lean tissue, the same proportions seen with the smaller weight loss on placebo.[9]

KEY POINT

Tirzepatide works through appetite and metabolism, and it works best alongside the eating and activity changes it was tested with.[25] Because the stomach slows most at the start of each new dose, the dose is raised gradually, and most stomach side effects happen during those weeks.[25] [10] Because some of the weight lost is lean tissue, adequate protein and regular strength work are sensible companions to treatment, and worth discussing with your physician.

§ 04

What the research shows

Tirzepatide has been studied in two large phase 3 programs: SURMOUNT for weight and related conditions, and SURPASS for type 2 diabetes, with many thousands of participants followed for one to three years.

What the evidence supports

Weight reduction. In SURMOUNT 1, adults without diabetes lost an average of 15.0, 19.5 and 20.9 percent of body weight at 5, 10 and 15 mg over 72 weeks, compared with 3.1 percent on placebo. Half of those on 10 mg and 57 percent of those on 15 mg lost 20 percent or more.[1] In adults who also had type 2 diabetes, weight fell by 12.8 and 14.7 percent at 10 and 15 mg.[11]

Compared with semaglutide. In SURMOUNT 5, a 72 week head to head trial of 751 adults with obesity, tirzepatide lowered weight by 20.2 percent and semaglutide by 13.7 percent.[12] In type 2 diabetes, SURPASS 2 found tirzepatide lowered HbA1c more than semaglutide 1 mg at every dose.[13]

Sleep apnea. In SURMOUNT OSA, adults with moderate to severe obstructive sleep apnea and obesity started with about 50 breathing interruptions per hour of sleep, and tirzepatide lowered this by 25 to 29 events per hour, compared with about 5 on placebo.[14] Between 42 and 50 percent of treated participants reached remission or mild sleep apnea without daytime sleepiness, compared with 14 to 16 percent on placebo.[25]

Type 2 diabetes and heart protection. Used on its own, tirzepatide lowered HbA1c by about 2 percentage points without clinically significant low blood sugar.[4] In SURPASS CVOT, which enrolled 13,165 people with type 2 diabetes and cardiovascular disease, heart attack, stroke or cardiovascular death occurred in 12.2 percent on tirzepatide and 13.1 percent on dulaglutide, a medicine already shown to reduce these events, meeting the test for being at least as protective.[15] Mounjaro's label now includes this use.[26]

Treatment is long term. When people who had lost 20.9 percent on tirzepatide were switched to placebo in SURMOUNT 4, they regained 14.0 percent of their weight over the following year, while those who continued lost a further 5.5 percent.[16] SURMOUNT MAINTAIN found that stepping down to the 5 mg dose kept much of the benefit, though less than staying on the full dose.[17]

What is not yet known

Several promising uses are not yet approved. In SUMMIT, people with heart failure with preserved ejection fraction and obesity had fewer worsening heart failure events or cardiovascular deaths on tirzepatide (9.9 percent) than on placebo (15.3 percent), and felt better on a standard quality of life score.[18] In a phase 2 liver trial, 44 to 62 percent of people with fatty liver inflammation (MASH) confirmed by biopsy had it resolve, compared with 10 percent on placebo; larger trials are needed.[19] Whether tirzepatide lowers heart attacks, strokes and deaths in people with obesity who do not have diabetes is being tested in SURMOUNT MMO, a trial of about 15,000 adults whose results have not yet been published.[20] Researchers are also still defining the best long term maintenance dose for each person.[17]

MAIN HUMAN TRIALS BEHIND THE APPROVED USES All randomized. Doses are once weekly injections under the skin.

STUDY	N	DESIGN	MAIN FINDING
SURMOUNT 1[1]	2,539	72 weeks vs placebo, obesity or overweight without diabetes	Weight reduced 15.0, 19.5 and 20.9 percent at 5, 10 and 15 mg vs 3.1 percent
SURMOUNT 1, 3 years[2]	1,032	176 weeks, participants with prediabetes	Weight 12.3 to 19.7 percent lower; diabetes in 1.3 vs 13.3 percent
SURMOUNT 4[16]	670	Withdrawal trial after 36 weeks of treatment	Continuing: further 5.5 percent reduction. Switching to placebo: 14.0 percent regained
SURMOUNT MAINTAIN[17]	378	Maintenance at full dose, 5 mg, or placebo	From the start, weight 21.9, 16.6 and 9.9 percent lower at 112 weeks
SURMOUNT 5[12]	751	72 weeks, open label vs semaglutide	Weight reduced 20.2 vs 13.7 percent
SURMOUNT OSA[14]	469	Two 52 week trials, sleep apnea with obesity	Breathing events fell 25.3 and 29.3 per hour vs 5.3 and 5.5
SURPASS 2[13]	1,879	40 weeks vs semaglutide 1 mg	HbA1c down 2.01 to 2.30 vs 1.86 points
SURPASS CVOT[15]	13,165	Type 2 diabetes with cardiovascular disease, vs dulaglutide	Major cardiovascular events 12.2 vs 13.1 percent; at least as protective

SUMMARY

Tirzepatide is one of the best supported medicines available for weight and metabolic health. Large, well designed trials show substantial weight reduction, better blood sugar control, improvement in sleep apnea and, in type 2 diabetes, cardiovascular protection at least equal to an established medicine. The benefits last as long as treatment continues, and the stomach side effects are common but usually temporary. We think of it as a long term treatment and plan it that way with you.

§ 05

How tirzepatide is given

Tirzepatide is approved only as a once weekly injection under the skin.

Injection under the skin, once a week

The injection goes into the abdomen or thigh, or into the back of the upper arm if someone else gives it, and the site is rotated each week. It can be taken at any time of day, with or without food.[25] The medicine is absorbed steadily. Blood levels peak about 24 hours after the dose, about 80 percent of the dose reaches the circulation, and a steady level is reached after four weekly doses. Absorption is similar from the abdomen, thigh and upper arm.[25]

Zepbound and Mounjaro come as a single dose autoinjector pen, a single dose vial used with a syringe, and a multidose KwikPen or vial that holds four weekly doses. You and your physician will choose the presentation, and you will be shown how to use it before your first dose.[25] [26]

How the dose is built up

Every patient starts low and steps up gradually, because this reduces nausea and other stomach side effects. The schedule comes directly from the FDA label.[25]

DOSE SCHEDULE ON THE FDA LABEL Once weekly injection under the skin.

STAGE	WEEKLY DOSE	WHAT THE LABEL SAYS
Weeks 1 to 4	2.5 mg	Starting dose only. It is not a maintenance dose[25]
Week 5 onward	5 mg	First maintenance option[25]
Further steps	7.5, 10, 12.5, 15 mg	Increase by 2.5 mg only after at least 4 weeks on the current dose, guided by response and tolerability[25]
Maintenance	5, 10 or 15 mg	For weight reduction and long term maintenance. For sleep apnea, 10 or 15 mg[25]
Maximum	15 mg	For all adult indications[25] [26]

If a dose is missed, it can be taken within four days; after that, skip it and take the next dose on the usual day. The injection day can be changed as long as doses are at least three days apart. If side effects are bothersome, your physician may hold a dose longer or choose a lower maintenance dose, as the label allows.[25]

Tablets, drops under the tongue, and nasal sprays

There is no FDA approved oral, sublingual or nasal form of tirzepatide, and none of these forms has been tested in published human clinical trials. Some compounding pharmacies prepare sublingual drops or dissolving tablets, and a 2026 review of these products found that whether they work or are safe is largely unknown.[21] Tirzepatide is a large peptide, it is not given into muscle, and everything we know about its benefits comes from the injection under the skin used in the trials and on both labels. [25] [26]

COMPARING THE OPTIONS

	WEEKLY INJECTION UNDER THE SKIN	ORAL, SUBLINGUAL OR NASAL
FDA approved	YES Zepbound and Mounjaro[25] [26]	NO
Half life	About 5 to 6 days[25]	Not studied in people
Human research	**Large randomized trials**[1] [13]	None published[21]
Common experience	Nausea, loose stools or constipation, mostly while the dose is rising[25] [10]	Unknown

§ 06

What to expect

The first weeks. Many people notice a quieter appetite.[6] Stomach side effects such as nausea, diarrhea or constipation are the most common experience, and in the trials they mostly occurred while the dose was being raised and eased over time. [25] [10] Having nausea did not change how much weight people lost, so you do not need to feel unwell for the medicine to work. [10]

The first six months. Most of the weight reduction happens over the first several months.[22] People respond at different speeds. In SURMOUNT 1, 18 percent had lost less than 5 percent by week 12, yet 90 percent of that slower group had reached 5 percent or more by week 72.[23]

Reaching a plateau. Weight loss gradually slows and levels off. In SURMOUNT 1 the median time to a plateau was about 24 to 36 weeks, depending on starting weight, and close to 9 in 10 participants had reached one by week 72.[22] A plateau is expected, and it is when the conversation turns to maintenance.

Over the long term. The benefits last while treatment continues. People who stopped regained much of the weight they had lost over the following year,[16] so tirzepatide is best planned as ongoing care. In one trial, stepping down to a lower dose kept part of the benefit.[17]

TELL US PROMPTLY IF

- Nausea, vomiting or diarrhea are severe or persistent, or you cannot keep fluids down. Dehydration is the main way kidney problems arise on this medicine.[25]
- You have severe abdominal pain, especially if it spreads to your back.[25]
- You notice a lump in your neck, persistent hoarseness, or trouble swallowing or breathing.[25]

§ 07

Safety

Tirzepatide's safety has been studied in thousands of people across its trial programs, and the FDA label describes it in detail. The most common side effects involve the digestive tract. In the pooled weight trials, 4.8, 6.3 and 6.7 percent of people on 5, 10 and 15 mg stopped because of side effects, compared with 3.4 percent on placebo.[25]

MOST COMMON SIDE EFFECTS IN THE WEIGHT TRIALS Percent of participants, from the Zepbound label (selected; abdominal pain and indigestion each occurred in 9 to 10 percent, and allergic type reactions, belching, reflux and dizziness in 4 to 5 percent).

SIDE EFFECT	PLACEBO	5 MG	10 MG	15 MG
Nausea	8	25	29	28
Diarrhea	8	19	21	23
Vomiting	2	8	11	13
Constipation	5	17	14	11
Injection site reactions	2	6	8	8
Fatigue	3	5	6	7
Hair loss	1	5	4	5

The boxed warning. In rats, tirzepatide caused thyroid C cell tumors. It is not known whether this happens in people, because the relevance of the rodent finding to humans has not been determined. For this reason, tirzepatide must not be used by anyone with a personal or family history of medullary thyroid carcinoma or with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2), and it must not be used after a serious allergic reaction to tirzepatide.[25]

Other warnings on the label. Stomach side effects are occasionally severe (1.7 to 3.1 percent compared with 1 percent on placebo), and tirzepatide is not recommended with severe gastroparesis. Dehydration from vomiting or diarrhea can lead to kidney injury. Gallbladder inflammation occurred in 0.7 percent compared with 0.2 percent on placebo. Confirmed pancreatitis occurred in 0.2 percent of both the tirzepatide and placebo groups in the weight trials. Severe allergic reactions

are rare (0.1 percent). Low blood sugar is uncommon on tirzepatide alone but more likely with insulin or a sulfonylurea. In type 2 diabetes, rapid improvement in blood sugar can temporarily worsen diabetic eye disease. Because the stomach empties slowly, food can remain in the stomach during anesthesia.[25]

Contraception and pregnancy. Tirzepatide can reduce the effect of birth control pills. The label advises switching to a method that is not taken by mouth, or adding a barrier method, for 4 weeks after starting and for 4 weeks after each dose increase. Tirzepatide should be stopped when a pregnancy is recognized.[25]

Hair and mood. Hair thinning was linked to weight loss, was reported mainly in women (7.1 percent compared with 0.5 percent of men), and led no one to stop treatment.[25] In more than 4,000 SURMOUNT participants without major psychiatric illness, tirzepatide did not increase depression scores, and suicidal thoughts were reported at the same rate as placebo (0.6 percent).[24]

TELL YOUR PHYSICIAN BEFORE STARTING IF ANY OF THESE APPLY

- You or a family member has had medullary thyroid cancer, or you have MEN 2.
- You have had pancreatitis, gallbladder disease, severe gastroparesis or another significant digestive condition.
- You have type 2 diabetes, especially if you use insulin or a sulfonylurea, or you have diabetic eye disease.
- You have kidney disease, or you are prone to dehydration.
- You are pregnant, planning a pregnancy, breastfeeding, or use birth control pills.
- You have a surgery or procedure planned.
- You have had a serious allergic reaction to tirzepatide or to any GLP 1 medicine, or you already take one.
- You take any prescription medication, over the counter product or supplement. Please bring the full list.

The longest published follow up in the weight trials is about three years, with no new safety signals.[2] Data spanning a decade or more do not yet exist, and a large outcome trial in people with obesity without diabetes is still under way.[20] We therefore review your treatment at regular visits.

§ 08

Is this right for you

Zepbound is approved for adults with a body mass index of 30 or higher, or 27 or higher with at least one weight related condition such as high blood pressure, high cholesterol or sleep apnea, and for adults with obesity and moderate to severe sleep apnea.[25] [1] Your consultation is where we work out whether it fits your health and your other medicines.

Before we begin

- [ ] A review of your medical history, current medications and supplements
- [ ] Your weight, waist measurement, blood pressure and heart rate
- [ ] Baseline bloodwork, so that anything we see later can be compared against a starting point
- [ ] A clear note of what you are hoping to achieve, written down, so we can tell together whether it worked

If your evaluation points to a specific contributor to weight gain, such as a thyroid problem or a medication effect, we will address it as part of your plan, alongside the eating and activity changes tirzepatide was studied with.[25]

Reviewing your progress

We will reassess against your documented starting point once you are on a steady dose. If you are doing well, we will plan how to maintain it. If side effects are limiting you, we can hold or lower the dose. If you and your physician decide to stop, we will plan for that together, since weight tends to return after stopping.[16] You are welcome to raise any of this at any time.

> QUESTIONS TO ASK YOUR PHYSICIAN
>
> Which dose would you aim for in my situation, and how quickly would we get there? How will we protect muscle while I lose weight? What should I do if the nausea is hard to manage? What is the plan if my weight plateaus earlier than expected? What would happen if I needed to stop?

§ 09

Regulatory status

Tirzepatide is an FDA approved medicine. As Zepbound, it is approved, together with a reduced calorie diet and increased physical activity, to reduce excess body weight and maintain weight reduction long term in adults with obesity, or with overweight and at least one weight related condition, and to treat moderate to severe obstructive sleep apnea in adults with obesity.[25] As Mounjaro, it is approved to improve blood sugar control in adults and children 10 years and older with type 2 diabetes, and to reduce the risk of heart attack, stroke and cardiovascular death in adults with type 2 diabetes at high risk of these events. [26]

Compounded tirzepatide is not FDA approved. Pharmacies were permitted to compound it while it was on the FDA drug shortage list. The FDA determined the shortage was resolved in October 2024, confirmed this in December 2024, and ended the transition periods on 18 February 2025 for state licensed pharmacies and 19 March 2025 for outsourcing facilities. Since then, pharmacies may not regularly make what are essentially copies of the approved product unless the prescriber documents a change that makes a significant difference for that individual patient.[27] On 1 May 2026 the FDA also proposed not to add tirzepatide to the list of substances outsourcing facilities may compound from bulk ingredients; that proposal is not yet final. [28]

For athletes, tirzepatide is not on the World Anti Doping Agency Prohibited List. Since 1 January 2026 it has been part of WADA's Monitoring Program, which tracks use in sport without penalty.[29] Athletes who are tested should confirm current rules with their governing body.

Tirzepatide is not among the peptides named in the federal enforcement discretion policy for compounded peptides published on 30 October 2026, and that policy does not change its status.[30]

If you would like details about the preparation used in your treatment, please ask.

§ 10

Common questions

Is tirzepatide approved by the FDA?

Tirzepatide is FDA approved as Zepbound, to reduce excess body weight and maintain weight reduction long term in adults with obesity or with overweight and a weight related condition, and to treat moderate to severe obstructive sleep apnea in adults with obesity.[25] As Mounjaro, it is approved for type 2 diabetes in adults and children 10 years and older, and to reduce the risk of heart attack, stroke and cardiovascular death in adults with type 2 diabetes at high risk of these events. [26]

Is it safe, and what side effects should I expect?

Its safety has been studied in thousands of people, and the most common side effects involve the digestive tract. In the weight trials, nausea affected 25 to 29 percent of people on tirzepatide against 8 percent on placebo, and diarrhea 19 to 23 percent against 8 percent.[25] These effects mostly occurred while the dose was being raised and eased over time.[25] [10]

How soon would I notice anything, and how will we know it is working?

Many people notice a quieter appetite in the first weeks, and most of the weight reduction happens over the first several months.[6] [22] People respond at different speeds. Of the SURMOUNT 1 participants who had lost less than 5 percent by week 12, 90 percent had reached 5 percent or more by week 72.[23] Once you are on a steady dose, we reassess against the starting point we wrote down together.

How is it given, and for how long?

It is one injection under the skin each week, in the abdomen or thigh, or the back of the upper arm if someone else gives it, at any time of day. The dose starts at 2.5 mg for four weeks and rises in 2.5 mg steps no sooner than every four weeks, up to a maximum of 15 mg.[25] The benefits last while treatment continues, so tirzepatide is best planned as ongoing care.[16]

Can I take it with other peptides or another GLP 1 medicine?

None of the published trials tested tirzepatide together with other peptides, so that combination has no evidence behind it. If you already take a GLP 1 medicine, tell your physician before starting. Low blood sugar is uncommon on tirzepatide alone but more likely with insulin or a sulfonylurea.[25]

Who should not use it?

Tirzepatide must not be used by anyone with a personal or family history of medullary thyroid carcinoma, with MEN 2, or after a serious allergic reaction to tirzepatide.[25] It is not recommended with severe gastroparesis, and it should be stopped when a pregnancy is recognized.[25] A history of pancreatitis, gallbladder disease, kidney disease or diabetic eye disease is also something to raise with your physician first.

Does it affect birth control pills?

Tirzepatide can make birth control pills less effective, because it slows how quickly the stomach empties. The label advises switching to a method that is not taken by mouth, or adding a barrier method, for 4 weeks after starting and for 4 weeks after each dose increase.[25] Hormonal methods that are not taken by mouth should not be affected.[25]

What happens if I stop?

The benefits last while treatment continues. In SURMOUNT 4, people switched to placebo regained 14.0 percent of their weight over the following year, while those who continued lost a further 5.5 percent.[16] Stepping down to the 5 mg dose kept much of the benefit in SURMOUNT MAINTAIN, though less than staying on the full dose.[17] If you and your physician decide to stop, we will plan for that together.

Why is a compounded version of tirzepatide a different medicine?

A pharmacy prepares a compounded medicine for one patient on that patient's own prescription, which is a different activity from manufacturing an approved product to a label the FDA has examined, and no oral, sublingual or nasal form has been tested in published human trials.[21] A preparation dispensed by a state licensed pharmacy or a registered outsourcing facility carries a named prescriber, oversight from a state board of pharmacy or from the FDA, ingredients that meet federal requirements, and a route for reporting a problem.[31] A vial bought online and labelled for research use only carries none of that, and the FDA treats those products as unapproved new drugs when they are intended for people.[32] Please do not use one.

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