The GLP-1 File

25,000+ people in trials · 1 published test of what is actually sold · 2 fake registry records

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About The Longevity Desk

The Longevity Desk is a research publication covering 65 compounds sold on the grey market. For each one we read the primary record: the trials, the labels, the regulator filings, and the independent lab tests. Then we report what that record actually says, including when the honest answer is that nobody knows yet. Every figure in this guide traces to a named source. Where a number has no source, we say so plainly instead of inventing one.

We hold ourselves to the standard we apply to everyone else. Every factual error we publish and then fix is logged publicly at **thelongevitydesk.org/corrections**: what we said, what is true, and how the mistake happened. If you find an error in this guide, it goes there too.

Educational material, not medical advice. Consult a qualified clinician before making decisions about your health.

Who this is for

You want to lose weight. You have seen three names, probably in this order: semaglutide, tirzepatide, retatrutide. You are deciding between a prescription and a vial from a website, and you have already priced both, which is the real reason you are still reading. Nothing here tells you which to do.

The short version

Almost everything else the Desk writes about has thin evidence behind it. This category is the exception. These drugs work. They were tested in tens of thousands of people against dummy injections, and the results held up on weight, on heart attacks and on kidney failure. The risk has moved somewhere else.

Two of the three are approved and a doctor can write you a prescription. The third, retatrutide, is approved nowhere in the world, and the company that makes it says it cannot legally be sold for people to use.

Then the vials. Somebody bought semaglutide from three online sellers and had a lab check it. The powder was mostly not the drug, and it still held about a third more drug than the label promised. Both numbers wrong, in opposite directions, at once. Anyone measuring carefully off that label was taking too much.

Two of these three names have a fake trial registration sitting on the United States government registry right now, marked as recruiting patients.

If you go ahead anyway, the two things worth getting right are where it came from and the mixing arithmetic.

By the numbers

FIGURE	WHAT IT IS
25,000+	People in semaglutide outcome trials alone. Humans, randomised against placebo. The strongest evidence base of anything on this site
7.7 to 14.37%	Purity of grey-market semaglutide against 99% advertised. Three online sellers, bought in 2024. the one published test of what is actually sold
28.6 to 38.7%	More semaglutide in those same vials than the label claimed. The researchers' stated concern was overdose
0	Countries where retatrutide is approved. Lilly says it cannot legally be sold or marketed for human use

Every trial figure in this guide came from manufactured product, not from compounded, research-grade or grey-market material.

What people actually run

Reporting what circulates. This is observation, and none of these numbers came from a trial unless we say so. What differs underneath the three names is the supply route, not the biology.

ROUTE	WHAT IS KNOWN ABOUT IT
1. A prescription: semaglutide and tirzepatide both have one	Has narrowed since the compounding window opened by the shortages closed
2. A clinic or telehealth service selling a compounded version	Among 75 weight-loss clinics and medspas in West Virginia and Oklahoma trading in late 2025, 56% offered GLP-1 products combined with B vitamins (PMID 42467450)
3. A vial of powder and a bottle of bacteriostatic water	For retatrutide it is the only route that exists. An unreviewed preprint analysing Reddit discussion to December 2025 counted 13,589 people reporting current use

The conventions along that third route are worth naming precisely, because they are conventions and nothing more. For tirzepatide, a "microdose" means any weekly amount below where the label starts, and those figures come off vendor and telehealth pages, marketing, not evidence. For retatrutide the charts teach a mixing recipe and a target to work up to, none of which any trial used, for a compound approved in no country. The circulating numbers are vial arithmetic, not trial arithmetic.

What each one is actually built on

Semaglutide. The human evidence runs past 25,000 people in outcome trials alone. In STEP 1, 1,961 people lost 14.9% of body weight against 2.4% on placebo, and SELECT followed 17,604 people with obesity and heart disease and cut heart attacks, strokes and cardiovascular deaths by 20% (PMID 37952131). Two things get left out: the effect is about a third smaller with type 2 diabetes, and in the withdrawal trial the group that switched to placebo gained back 6.9%.

Tirzepatide. Sold as Mounjaro and Zepbound. SURMOUNT-1 ran 72 weeks and produced 20.9% weight loss at the top dose against 3.1% on placebo (PMID 35658024), and SURMOUNT-5 put it head-to-head against semaglutide and got 20.2% against 13.7%. The lowest dose ever carried through a randomised trial with a sustained weight endpoint produced 0.9 kg over 26 weeks in people with type 2 diabetes.

Retatrutide. A weekly injection acting on three receptor systems instead of one. Phase 2 gave 24.2% weight loss at the top dose over 48 weeks against 2.1% on placebo (PMID 37366315), and the phase 3 TRIUMPH-1 readout in 2,335 participants reported 28.3% at 80 weeks, announced by press release, not yet peer reviewed.

How the class lines up

	APPROVED?	WHAT THE EVIDENCE BEHIND IT COVERS
Semaglutide	Yes. Ozempic, Wegovy	Weight, and hard endpoints: heart attacks, strokes, kidney failure
Tirzepatide	Yes. Mounjaro, Zepbound	Weight, blood sugar, and sleep apnoea on the label
Retatrutide	No, in any country	Weight and blood sugar. Phase 2 peer reviewed; phase 3 by press release
Mazdutide	China only, twice, since 2025	Weight in Chinese adults. FDA treats it as an unapproved new drug
Cagrilintide	No, alone or combined	Weight. and every human study of it has the same sponsor

Cagrilintide is the odd one out. It is a copy of amylin, a different hormone, and most of the percentages printed under its name were earned by a pen that also holds semaglutide.

The honest read

Evidence tier: well established: large randomised placebo-controlled trials with hard endpoints, in tens of thousands of people.

The evidence here is not thin, and pretending otherwise would be its own kind of dishonesty. The risk sits in three distinctions instead.

Approved is not a formality, and retatrutide is approved nowhere. For semaglutide and tirzepatide, going grey market is a substitution: a characterised, inspected, assayed version of the

same molecule exists, and a doctor can hand it to you. For retatrutide no such version exists at any price. Whatever arrives is the only one you will ever see, and no reference sample exists to tell you it is wrong.

The one published test of what is actually sold found two errors pointing opposite ways. Purity at 14.37, 8.97 and 7.7 percent against 99 advertised, and 28.6 to 38.7 percent more semaglutide than the label claimed (PMID 39509151). Most people picture the grey-market failure as a watered-down drink. What the lab found was a glass mostly made of something other than alcohol that still held more alcohol than the bottle promised. The one who poured carefully to the line got hit hardest. The only vial-level result published for retatrutide points the same way: a vendor-commissioned test on a 10 mg vial reported 12.05 mg, 121% of label.

Two of these three have a fabricated trial registration. On 31 July 2026, Morgan McSweeney published an investigation into a cluster of eight ClinicalTrials.gov registrations under one sponsor, all marked recruiting, all at a single site. NCT07481747 reproduces SURMOUNT-1's official title character for character and carries Eli Lilly's own internal protocol code with "(b)" appended. NCT07467447 copies the title of Lilly's phase 2 retatrutide study word for word and calls itself recruiting, the study it copied completed on 22 November 2022. A registry number is a lead to check, never evidence by itself.

And one thing is true of all three: the weight comes back when you stop. That is what the withdrawal arms of the manufacturers' own trials found. It is not a course you finish.

If you are going ahead anyway

This is the part the Desk actually cares about, and almost none of it is about the molecules. Two things decide how this goes: where the vial came from, and arithmetic.

☐ **Demand a certificate of analysis tied to your batch, not to the product.** In April 2025 the United States International Trade Commission barred importation of products containing tirzepatide and of "products purporting to contain tirzepatide." That last phrase is a federal agency recording, in an enforcement order, that some of what ships may contain no drug at all.

☐ **Read the content line ("assay"), not only the purity line.** Content is how many milligrams are actually in the vial, a different question from purity. Both published results above failed on content, in the same direction: upward.

☐ **Check the vial size on your own label against the vial size any chart assumes.** Sizes vary between vendors, for retatrutide, 10, 12, 24, 30 and 60 mg all circulate. The same mixing instruction poured into a different vial gives a different concentration, so the same units on the syringe deliver a different amount.

How to read the certificate is Desk Guide Nº 2. The arithmetic is Desk Guide Nº 3, and it matters more here than in most categories. The one published case report of harm is a man who bought retatrutide online, escalated, then injected again the next day after forgetting the first, roughly

double his intended amount across two days. A week of intractable diarrhoea, dehydration and acute kidney injury. He recovered.

What would make you stop, the flags from the trials themselves:

- ⚑ **Gastrointestinal effects, dose-related rather than rare.** In the retatrutide phase 3, nausea ran 42.4% at the top dose against 14.8% on placebo, and more than one in nine people stopped that arm for adverse events.
- ⚑ **The boxed warning for thyroid C-cell tumours** both approved drugs carry. Seen in rats; human relevance undetermined.
- ⚑ **Pancreatitis, bowel obstruction and gastroparesis**, all raised signals in the semaglutide safety comparison. The pancreatitis estimate carries a margin of error wide enough to be genuinely uncertain.

Two things never make it onto a checklist, because there is no check to run. Sterility and endotoxin you cannot assess at home at any price, all three tested semaglutide samples carried bacterial toxin and looked normal. And if you compete under an anti-doping code, semaglutide is banned by WADA, and retatrutide falls into the category covering substances approved nowhere, prohibited at all times.

The five compounds, one page each

Each section below is the compound's card from the site, carried over exactly: what a published trial gave, what circulates, the distance between them, and whether a real medicine version exists. Every figure traces to the cited entry.

Semaglutide

Approved, and the evidence is not the problem.

GIVEN TO HUMANS · TRIAL OR LABEL

Large randomised placebo controlled trials

The strongest evidence base of anything on this site

WHAT CIRCULATES

Prescription doses, often from grey market vials

Observed, not endorsed

As a medicine	An approved medicine exists. As Ozempic, Wegovy and Rybelsus. No trial ever used research-grade material.
How they compare	What people take matches an amount a study gave
Route studied	Weekly injection of pharmaceutical product, in large trials. Also approved as a pill.

Route used	Weekly injection at home, often mixed by the person from a powder vial.
How long it lasts	About seven days in people, which is why it is a weekly shot. The natural gut hormone it is copied from lasts about two minutes.
Vial sizes seen	5, 10, 20, 30 mg

Where the circulating number comes from. The risk moved off the molecule and into the vial. Three tested vials were far less pure than claimed and simultaneously over label, so careful dosing meant overdosing.

The mistake that costs people. People assume the huge trial results and the number on the label both apply to the vial that arrived in the mail. No trial has ever used research grade or compounded material, and the one published test of grey market vials found the street belief backwards: the product was not weak and underdosed, it was dirty and stronger than the label said, which is how somebody dosing by that label overdoses.

Full cited entry: thelongevitydesk.org/compounds/semaglutide

Compare vendor prices for Semaglutide: biohackblueprint.ai/compound/semaglutide: price per mg across the vendors that carry it, certificates linked. *Our price directory; affiliate links.*

Tirzepatide

Approved, with a cloned trial record on the registry.

GIVEN TO HUMANS · TRIAL OR LABEL

5, 10 and 15 mg weekly

SURMOUNT-1, about a fifth of body weight at the top dose

WHAT CIRCULATES

Microdoses below 2.5 mg weekly

Observed, not endorsed

As a medicine	An approved medicine exists. As Mounjaro and Zepbound. The vials sold online are neither.
How they compare	People take less than what studies gave
Route studied	Under the skin, once a week, in large trials
Route used	Under the skin at home, once a week. Pharmacy mixed versions have also been sold as under the tongue liquids and dissolving tablets, neither an approved way to take it.
How long it lasts	The entry gives no number for how long it lasts in the body. It says only that a fatty tail on the molecule stretches its stay far enough for one injection a week under the skin, which is how every human trial dosed it.

Vial sizes seen	5, 10, 15, 20, 30, 40, 60, 100 mg

Where the circulating number comes from. Microdosing was tested once. At the smallest dose people lost under a kilogram in six months.

The mistake that costs people. The mistake that costs money and safety is quoting the trial numbers while buying something the trials never used. The 20.9% figure comes from branded tirzepatide at the top weekly dose over 72 weeks, whereas the only randomised weight result anywhere near the tiny doses sold online was under a kilogram in six months, and roughly a quarter of people on that dose still had stomach and gut side effects.

Full cited entry: thelongevitydesk.org/compounds/tirzepatide

Compare vendor prices for Tirzepatide: biohackblueprint.ai/compound/tirzepatide: price per mg across the vendors that carry it, certificates linked. *Our price directory; affiliate links.*

Retatrutide

Approved nowhere, and every vial is off supply chain.

GIVEN TO HUMANS · TRIAL OR LABEL

Up to 12 mg weekly

Lilly phase 2, about a quarter of body weight at the top dose

WHAT CIRCULATES

0.25 to 1.5 mg starting, 4 mg maintenance

Observed, not endorsed

As a medicine	In drug trials, approved nowhere. Lilly's program is in large trials; no approved version exists at any price.
How they compare	People take less than what studies gave
Route studied	Under the skin, once a week, in company trials
Route used	Under the skin, once a week, from unapproved vials
How long it lasts	About 6 days, from the published human trial work on the shot given under the skin. That is why the dosing is weekly.
Vial sizes seen	5, 7, 10, 12, 15, 20, 24, 30, 50, 60 mg

Where the circulating number comes from. Trial results describe a molecule, not a vial. No approved version exists at any price, so there is no reference article to hold yours against.

The mistake that costs people. People assume the dose numbers passed around online came out of the trials. They came out of vial sizes: the trials used 1, 4, 8 and 12 mg a week, while

the vials sell in sizes from 5 to 60 mg, and the largest of them holds five times the highest dose ever given to anyone in a published trial.

Full cited entry: thelongevitydesk.org/compounds/retatrutide

Compare vendor prices for Retatrutide: biohackblueprint.ai/compound/retatrutide: price per mg across the vendors that carry it, certificates linked. *Our price directory; affiliate links.*

Cagrilintide

Its own trials exist, and the numbers quoted are the pen's.

GIVEN TO HUMANS · TRIAL OR LABEL

0.3 to 4.5 mg a week, including 2.4 mg

Lau 2021 in 706 adults, plus single agent arms of 302 and 152 in two phase 3 trials

WHAT CIRCULATES

2.4 mg a week from a 0.25 mg start, or up to 4.5 mg

Observed, not endorsed

As a medicine	In drug trials, approved nowhere. In Novo Nordisk's trials, alone and inside CagriSema.
How they compare	What people take matches an amount a study gave
Route studied	Injected under the skin, once a week, in trials running 26 to 68 weeks. The first in human trial gave it daily instead, up to 800 micrograms a day over eight weeks in 96 people.
Route used	Injected under the skin, once a week, from vials labelled research chemical.
How long it lasts	Novo gives it as approximately 180 hours, in the company's own words, supporting once weekly dosing. That is about seven and a half days, which is why the schedule is one injection a week.
Vial sizes seen	5, 10 mg

Where the circulating number comes from. 2.4 mg is a dose the single agent really was given, and it is also semaglutide's share of the fixed pen, which is where the convention came from. The one dose finding trial in the single agent found 4.5 mg did better, minus 10.8 against minus 9.7 percent. The monotherapy trials that would settle it started in November 2025 and I could not find their dose in either registration.

The mistake that costs people. The costly mistake is paying for one drug on another drug's numbers. The percentage usually printed beside the cagrilintide name is 20.4 percent of body weight over 68 weeks, and that belongs to the pen holding both drugs. The single agent arm of the same trial, the same 68 weeks, the same kind of people, came out at 11.8 percent. About half, and semaglutide is doing most of the work. The dose has the same problem. 2.4 mg a week

is semaglutide's share of the fixed pen, so the maintenance target people copy for cagrilintide alone was set by the other half of a product cagrilintide alone is not in, and the only dose finding trial the single agent has had found 4.5 mg did better than 2.4.

Full cited entry: thelongevitydesk.org/compounds/cagrilintide

Compare vendor prices for Cagrilintide: biohackblueprint.ai/compound/cagrilintide: price per mg across the vendors that carry it, certificates linked. *Our price directory; affiliate links.*

Mazdutide

Approved twice in China, quoted off a press release.

GIVEN TO HUMANS · TRIAL OR LABEL

4 mg and 6 mg weekly, for 48 weeks

GLORY-1, 610 Chinese adults, the trial the weight approval was built on

WHAT CIRCULATES

2.5 mg weekly for four weeks, then 5 mg weekly

Observed, not endorsed

As a medicine	An approved medicine exists. Twice, both in China, nowhere else.
How they compare	What people take matches an amount a study gave
Route studied	Injected under the skin, once a week, in trials running 48 to 60 weeks in Chinese adults, plus phase 1 and phase 2 work run by Lilly in the United States at higher doses
Route used	Injected under the skin at home, once a week, from grey market vials mixed with bacteriostatic water
How long it lasts	This entry gives no figure for how long it lasts in the body. What it says is that it is a once weekly injection, and that is how the Chinese label and every trial reported here dosed it.
Vial sizes seen	5, 10 mg

Where the circulating number comes from. The most copied chart starts at 2.5 mg and settles at 5 mg, and no published mazdutide trial used either number as a maintenance target in obesity. Both came off the vial rather than a paper, 10 mg reconstituted with 3.0 mL of bacteriostatic water. There is an approved human ladder sitting right there to compare against, 2 mg then 4 mg then up to 6 mg, which almost never happens in this reference, and the grey market went to vial arithmetic anyway. A second guide ends on 6 or 9 mg, which at least ends on a dose trials have used, though it skips the label's 2 mg start, and it cites for its titration speed a 2025 phase 2b trial in The Lancet Diabetes and Endocrinology that I could not find.

The mistake that costs people. The costly mistake is treating the number a seller prints as the trial's number. Four weight loss figures circulate and they measure three different things: 14.01% is the top arm of GLORY-1 at week 48 in the journal, against a 0.30% gain on placebo; 14.8% comes off the company's approval release counted a different way; 16.65% is the whole population of GLORY-2 over 60 weeks, against 1.50%; and about 20% is a subgroup of GLORY-2, the participants without type 2 diabetes. Only two of the four came out of a journal, and none of them is interchangeable. The second mistake is the dose chart. The most copied one pairs a 10 mg vial with 2.5 mg weekly for the first four weeks and then 5 mg weekly, and no published mazdutide trial used 2.5 mg or 5 mg as a maintenance target in obesity. That is vial arithmetic rather than trial arithmetic, and it is happening beside an approved human ladder that could have been compared against.

Full cited entry: thelongevitydesk.org/compounds/mazdutide

Compare vendor prices for Mazdutide: biohackblueprint.ai/compound/mazdutide: price per mg across the vendors that carry it, certificates linked. *Our price directory; affiliate links.*

Where to compare vendors

Biohack Blueprint (biohackblueprint.ai) lists what eleven vendors charge per milligram for the same compound, side by side, with each product's certificate linked where the vendor publishes one. It is our price directory, and its outbound links are affiliate links.

The Desk's take

We have spent most of this project arguing that the confidence around these compounds is manufactured. Here it is not. Somebody ran the trials, they were large, and they published the unflattering results too.

The evidence is real, and it is being used as cover for something it does not cover. A clinic quotes SURMOUNT-1's 20.9% while selling a compounded product no trial ever used. The number is true. It is just not a number about the thing in the box.

Retatrutide is the sharpest version, holding the best results and the worst position at once.

The question worth asking is not *which molecule*. It is whether you are buying the drug that was tested, or something that shares its name.

You have priced both routes, we would like the two numbers: what the prescription actually costs you per month after insurance, and what the vial costs delivered. The gap people quote in forums is wider than the gap most people face, and nobody publishes the real one: **hello@thelongevitydesk.org**.

Where to go from here

- **Every compound in one table**: thelongevitydesk.org/gap
- **Any two side by side**: thelongevitydesk.org/compare
- **How to read the certificate:** Desk Guide Nº 2
- **The mixing arithmetic:** Desk Guide Nº 3
- **One email a week at most**, nothing for sale: thelongevitydesk.org/subscribe