

Tirzepatide Comprehensive Dosage Guide

(5 mg / 10 mg / 15 mg / 30 mg Vials)

I. Overview

Tirzepatide is a 39-amino acid dual incretin receptor agonist that activates both GLP-1 and GIP receptors, enhancing glucose-dependent insulin secretion, suppressing glucagon, slowing gastric emptying, and reducing appetite. Its ~5-day half-life allows convenient once-weekly subcutaneous dosing. Clinical trials demonstrate superior glycemic control and weight reduction compared to selective GLP-1 agonists.

This guide covers dosage protocols for **5 mg**, **10 mg**, **15 mg**, and **30 mg** vials of Tirzepatide, all based on once-weekly subcutaneous administration, intended for educational and research purposes.

II. Dosage and Reconstitution Guidelines

2.1 Overview of Vial Sizes

Vial Size	Reconstitution Volume	Concentration	U-100 Conversion	Shelf Life (Refrigerated)
5 mg	2.0 mL	2.5 mg/mL	1 unit = 25 mcg	28 days [6^]
10 mg	2.0 mL	5.0 mg/mL	1 unit = 50 mcg	28 days [6^]
15 mg	2.0 mL	7.5 mg/mL	1 unit = 75 mcg	28 days [6^]
30 mg	3.0 mL	10.0 mg/mL	1 unit = 100 mcg	28 days [6^]

2.2 Standard/Gradual Protocol

Weekly Dose and Injection Schedule (Common Titration Steps for All Vial Sizes):

Phase	Weeks	Weekly Dose	5 mg Vial (2.5 mg/mL)	10 mg Vial (5.0 mg/mL)	15 mg Vial (7.5 mg/mL)	30 mg Vial (10.0 mg/mL)
Initial	1–4	2.5 mg	100 units (1.0 mL) × 1 injection	50 units (0.50 mL) × 1 injection	33 units (0.33 mL) × 1 injection	25 units (0.25 mL) × 1 injection
Escalation	5–8	5 mg	100 units (1.0 mL) × 2	100 units (1.0 mL) × 1	67 units (0.67 mL) × 1	50 units (0.50 mL) × 1

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Phase	Weeks	Weekly Dose	5 mg Vial (2.5 mg/mL)	10 mg Vial (5.0 mg/mL)	15 mg Vial (7.5 mg/mL)	30 mg Vial (10.0 mg/mL)
			injections	injection	injection	injection
Escalation	9–12	7.5 mg	100 units (1.0 mL) × 3 injections	75 units (0.75 mL) × 2 injections	100 units (1.0 mL) × 1 injection	75 units (0.75 mL) × 1 injection
Maintenance	13–16	10 mg	100 units (1.0 mL) × 4 injections	100 units (1.0 mL) × 2 injections	67 units (0.67 mL) × 2 injections	100 units (1.0 mL) × 1 injection

Injection Frequency: Once weekly subcutaneous injection, on the same day each week .

Cycle Length: 12–16+ weeks; higher doses (12.5–15 mg/week) may be used in subsequent phases if tolerated and clinically indicated.

Important Notes:

For doses requiring multiple injections, administer consecutively at different sites on the same day.

Dose increases occur every 4 weeks to minimize gastrointestinal side effects .

With the **30 mg vial** (concentration 10 mg/mL), all recommended doses (up to 10 mg/week) can be administered in a single 1 mL insulin syringe.

III. Reconstitution Steps (General)

1. Draw the required volume of bacteriostatic water into a sterile syringe (2.0 mL for 5 mg, 10 mg, and 15 mg vials; 3.0 mL for the 30 mg vial).

2. Inject slowly down the vial wall to avoid foaming or a direct stream onto the lyophilized powder.

3. Gently swirl/roll until the powder is completely dissolved (do not shake vigorously).

4. Label with the reconstitution date and concentration. Store refrigerated (2–8°C / 35.6–46.4°F), protected from light.

5. Use within **28 days** of reconstitution; discard if turbidity or particulate matter is observed.

IV. Required Supplies

Plan based on an 8 to 16-week once-weekly protocol with gradual titration.

4.1 5 mg Vial

Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Peptide Vials (5 mg each)	≈6 vials (~30 mg)	≈12 vials (~60 mg)	≈20 vials (~100 mg)
Insulin Syringes (U-100, 1 mL)	12 syringes (~1.5/wk avg)	24 syringes (~2/wk avg)	40 syringes (~2.5/wk avg)

Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Bacteriostatic Water (10 mL vials)	12 mL → 2 vials	24 mL → 3 vials	40 mL → 4 vials
Alcohol Swabs (per injection day)	16 swabs → 1×100 box	24 swabs → 1×100 box	32 swabs → 1×100 box

4.2 10 mg Vial

Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Peptide Vials (10 mg each)	≈3 vials (~30 mg)	≈6 vials (~60 mg)	≈10 vials (~100 mg)
Insulin Syringes (U-100, 1 mL)	8 syringes (1/wk)	16 syringes (~1.3/wk avg)	24 syringes (~1.5/wk avg)
Bacteriostatic Water (10 mL vials)	6 mL → 1 vial	12 mL → 2 vials	20 mL → 2 vials
Alcohol Swabs (per injection day)	16 swabs → 1×100 box	24 swabs → 1×100 box	32 swabs → 1×100 box

4.3 15 mg Vial

Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Peptide Vials (15 mg each)	≈2 vials (~30 mg)	≈4 vials (~60 mg)	≈7 vials (~100 mg)
Insulin Syringes (U-100, 1 mL)	8 syringes (1/wk)	12 syringes (1/wk)	20 syringes (1/wk wks 1–12, 2/wk wks 13–16)
Bacteriostatic Water (10 mL vials)	4 mL → 1 vial	8 mL → 1 vial	14 mL → 2 vials
Alcohol Swabs (per injection day)	16 swabs → 1×100 box	24 swabs → 1×100 box	32 swabs → 1×100 box

4.4 30 mg Vial

Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Peptide Vials (30 mg each)	≈1 vial (~30 mg)	≈2 vials (~60 mg)	≈4 vials (~100 mg)

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Item	8 Weeks (2.5→5 mg/wk)	12 Weeks (2.5→7.5 mg/wk)	16 Weeks (2.5→10 mg/wk)
Insulin Syringes (U-100, 1 mL)	8 syringes (1/wk)	12 syringes (1/wk)	16 syringes (1/wk)
Bacteriostatic Water (10 mL vials)	3 mL → 1 vial	6 mL → 1 vial	12 mL → 2 vials
Alcohol Swabs (per injection day)	16 swabs → 1 × 100 box	24 swabs → 1 × 100 box	32 swabs → 1 × 100 box

V. Protocol Overview

Goal: Support glycemic control, weight management, and metabolic health through dual incretin receptor activation.

Schedule: Weekly subcutaneous injection on the same day each week for 12–16+ weeks.

Dose Range: 2.5–15 mg weekly with 4-week titration intervals.

Storage: Lyophilized frozen; reconstituted refrigerated (2–8°C), use within 28 days; do not freeze reconstituted solution.

VI. Dosage Protocol

Start: 2.5 mg once weekly for 4 weeks (initiation dose).

Escalate: Increase by 2.5 mg every 4 weeks as tolerated (2.5 → 5 → 7.5 → 10 → ...).

Maintenance: 5–15 mg weekly based on response and tolerability.

Frequency: Once per week (subcutaneous), same day each week.

Timing: Any time of day; with or without food; rotate injection sites.

VII. Storage Instructions

Lyophilized: Store at –20°C (–4°F) in dry, dark conditions; minimize moisture exposure.

Reconstituted: Refrigerate at 2–8°C (35.6–46.4°F); **do not freeze** reconstituted solution.

Shelf Life: Use reconstituted solution within **28 days**.

Allow vials to reach room temperature before opening to reduce condensation uptake.

VIII. Important Notes

Use new sterile insulin syringes; dispose in a sharps container.

Rotate injection sites (abdomen, thighs, upper arms) to reduce local irritation.

For multi-injection doses, use different sites for each injection on the same day.

Inject slowly; wait a few seconds before withdrawing the needle.

Document weekly dose, date, and injection site to maintain consistency.

Gastrointestinal effects (nausea, diarrhea) are common initially; gradual titration helps minimize them.

IX. Potential Benefits & Side Effects

Potential Benefits:

Glycemic Control: Significant HbA1c reductions in type 2 diabetes trials.

Weight Reduction: Clinical trials report substantial body-weight loss (up to ~11 kg more than GLP-1 RA comparators over 26 weeks at higher doses).

Cardiovascular Markers: Improvements in lipid profiles and blood pressure observed in some studies.

Common Side Effects:

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Gastrointestinal (nausea, diarrhea, vomiting, constipation) — typically mild-to-moderate and dose-dependent; **gradual titration reduces incidence.**

Injection-site reactions: Occasional mild redness or irritation.

X. Injection Technique

General subcutaneous guidance from clinical best-practice resources.

1. Clean the vial stopper and skin with alcohol; allow to dry.
2. Pinch a skinfold; insert the needle at a 45–90° angle into subcutaneous tissue.
3. Do not aspirate for subcutaneous injections; inject slowly and steadily.
4. After injection, withdraw the needle at the same angle.
5. Rotate sites systematically (abdomen avoiding 2-inch radius around navel, outer thighs, upper arms) to avoid lipohypertrophy.
6. Dispose of needles and syringes in a sharps container immediately after use

Important Disclaimer: This document is for educational and research purposes only and does not constitute medical advice, diagnosis, or treatment. Tirzepatide is an investigational compound and, in some regions, has been approved for specific medical conditions, but is not approved by regulatory agencies for routine research use. Please consult a qualified healthcare professional before use.