

Retatrutide Comprehensive Dosing Guide (5 mg, 10 mg, 20 mg & 30 mg Specifications)

I. Overview

Retatrutide is a triple-hormone-receptor agonist (GLP-1/GIP/glucagon). It activates GLP-1 and GIP receptors to enhance glucose-dependent insulin secretion and suppress appetite. Meanwhile, its glucagon-receptor agonism raises metabolic rate and boosts energy expenditure, thereby amplifying fat-burning and weight-loss effects[7][8]. This peptide is modified with a fatty-acid moiety to prolong circulation (half-life approx. 6 days), enabling once-weekly administration[2]. Based on published clinical-trial data, this educational document describes a once-weekly subcutaneous-injection protocol with gradual dose titration. This guideline covers vial dosing protocols for 5 mg, 10 mg, 20 mg and 30 mg specifications.

Research Background: Refer to relevant Retatrutide peptide reviews for evidence regarding mechanism of action, human and pre-clinical studies, limitations and safety.

II. Dosing & Reconstitution Guidelines

5 mg Specification

Reconstitution: Add 1.0 mL bacteriostatic water → concentration approx. 5.0 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL ≈ 50 mcg

Post-reconstitution shelf-life: Use within 4 weeks under refrigeration (2-8°C)[16]

10 mg Specification

Reconstitution: Add 1.0 mL bacteriostatic water → concentration approx. 10.0 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL ≈ 100 mcg

Post-reconstitution shelf-life: Use within 4 weeks under refrigeration (2-8°C)[16]

20 mg Specification

Reconstitution: Add 2.0 mL bacteriostatic water → concentration approx. 10.0 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL ≈ 100 mcg

Post-reconstitution shelf-life: Use within 4 weeks under refrigeration (2-8°C)[16]

30 mg Specification

Reconstitution: Add 3.0 mL bacteriostatic water → concentration approx. 10.0 mg/mL

U-100 insulin syringe conversion: 1 unit = 0.01 mL ≈ 100 mcg

Post-reconstitution shelf-life: Use within 4 weeks under refrigeration (2-8°C)[16]

Standard / Progressive Protocol (Once-Weekly, Subcutaneous Injection)

All specifications adopt the identical weekly-dose protocol; injection volume (syringe units) varies due to different concentrations.

Weeks	Weekly Dose (mg)	5 mg Specification (5.0 mg/mL)	10 mg Specification (10.0 mg/mL)	20 mg Specification (10.0 mg/mL)	30 mg Specification (10.0 mg/mL)
Weeks 1-4	2 mg	40 units (0.40 mL)	20 units (0.20 mL)	20 units (0.20 mL)	20 units (0.20 mL)
Weeks 5-8	4 mg	80 units (0.80 mL)	40 units (0.40 mL)	40 units (0.40 mL)	40 units (0.40 mL)
Weeks 9-12	6 mg	120 units (1.20 mL)	60 units (0.60 mL)	60 units (0.60 mL)	60 units (0.60 mL)
Week 13+	8 mg	160 units (1.60 mL)	80 units (0.80 mL)	80 units (0.80 mL)	80 units (0.80 mL)

Frequency: Once-weekly subcutaneous injection[1][2].

Dose Notes:

5 mg Specification: For doses >5 mg (6 mg, 8 mg), multiple vials must be reconstituted (1.0 mL per vial) to obtain the required volume. For example, for 6 mg, reconstitute 2 vials (total 10 mg in 2.0 mL), then draw 1.20 mL.

10 mg, 20 mg, 30 mg Specifications: All doses ≤12 mg may be drawn from a single reconstituted vial (10 mg vial reconstituted with 1.0 mL; 20 mg vial reconstituted with 2.0 mL; 30 mg vial reconstituted with 3.0 mL).

Volume Management: Volumes >1.0 mL may be split into 2-3 separate subcutaneous injections at different sites to ensure adequate absorption[5].

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Aggressive Protocol (Once-Weekly, Subcutaneous Injection)

Weeks	Weekly Dose (mg)	5 mg Specification (5.0 mg/mL)	10 mg Specification (10.0 mg/mL)	20 mg Specification (10.0 mg/mL)	30 mg Specification (10.0 mg/mL)
Weeks 1-4	2 mg	40 units (0.40 mL)	20 units (0.20 mL)	20 units (0.20 mL)	20 units (0.20 mL)
Weeks 5-8	4 mg	80 units (0.80 mL)	40 units (0.40 mL)	40 units (0.40 mL)	40 units (0.40 mL)
Weeks 9-12	8 mg	160 units (1.60 mL)	80 units (0.80 mL)	80 units (0.80 mL)	80 units (0.80 mL)
Week 13+	12 mg	240 units (2.40 mL)	120 units (1.20 mL)	120 units (1.20 mL)	120 units (1.20 mL)

Note: The 12 mg dose represents the highest dose tested in Phase-2 trials[3][4], yielding maximal weight-loss effects (approx. 24% body-weight reduction) at week-48.

5 mg Specification: For 12 mg, reconstitute 3 vials (1.0 mL per vial; total 15 mg in 3.0 mL), draw 2.40 mL.

10 mg Specification: For 12 mg, reconstitute 2 vials (1.0 mL per vial; total 20 mg in 2.0 mL), draw 1.20 mL.

20 mg and 30 mg Specifications: 12 mg may be drawn from one single reconstituted vial (20 mg vial reconstituted with 2.0 mL; 30 mg vial reconstituted with 3.0 mL).

Key point: Gradual titration is critical for minimising gastrointestinal adverse effects[6].

III. Reconstitution Procedure

1. Withdraw the specified volume of bacteriostatic water using a sterile syringe (1.0 mL for 5 mg and 10 mg vials; 2.0 mL for 20 mg vials; 3.0 mL for 30 mg vials).
2. Inject slowly along the inner vial wall to avoid foam formation.
3. Gently swirl / roll vial until full dissolution (do not shake vigorously).
4. Label with preparation date; store refrigerated at 2-8°C (35.6-46.4°F), protected from light.
5. Use within 4 weeks after reconstitution[16].

IV. Required Supplies

5 mg Specification

Planning is based on 12-24-week weekly-dosing protocol with progressive dose adjustment.

Peptide vials (Retatrutide, 5 mg per vial):

12 weeks (standard titration up to 6 mg): 10 vials

24 weeks (standard titration up to 8 mg): 29 vials

12 weeks (aggressive titration up to 8 mg): 12 vials

Insulin syringes (U-100, 1 mL):

Weekly: 1-3 syringes (dose-dependent; higher-dose volumes require split injections)

12 weeks: 12-36 syringes

24 weeks: 24-72 syringes

Bacteriostatic water (10 mL vials): ~1.0 mL required per vial for reconstitution.

12 weeks (10 vials): 10 mL → 1 × 10 mL vial

24 weeks (29 vials): 29 mL → 3 × 10 mL vials

Alcohol swabs: One swab for vial stopper plus one swab per injection site.

Weekly: 4-8 swabs (1 per vial + 1-3 per injection site)

12 weeks: ~75 swabs → recommended: 1 box × 100-count

24 weeks: ~150 swabs → recommended: 2 boxes × 100-count

10 mg Specification

Planning is based on 12-24-week weekly-dosing protocol with progressive dose adjustment.

Peptide vials (Retatrutide, 10 mg per vial):

12 weeks (standard titration up to 6 mg): 5 vials

24 weeks (standard titration up to 8 mg): 15 vials

12 weeks (aggressive titration up to 8 mg): 6 vials

Insulin syringes (U-100, 1 mL):

Weekly: 1-2 syringes (dose-dependent)

12 weeks: 12-24 syringes

24 weeks: 24-48 syringes

Bacteriostatic water (10 mL vials): ~1.0 mL required per vial for reconstitution.

12 weeks (5 vials): 5 mL → 1 × 10 mL vial

24 weeks (15 vials): 15 mL → 2 × 10 mL vials

Alcohol swabs: One swab for vial stopper plus one swab per injection site.

Weekly: 2-4 swabs

12 weeks: ~50 swabs → recommended: 1 box × 100-count

24 weeks: ~100 swabs → recommended: 1 box × 100-count

20 mg Specification

Planning is based on 12-24-week weekly-dosing protocol with progressive dose adjustment.

Peptide vials (Retatrutide, 20 mg per vial):

12 weeks (standard titration up to 6 mg): 3 vials

24 weeks (standard titration up to 8 mg): 8 vials

12 weeks (aggressive titration up to 8 mg): 3 vials

Insulin syringes (U-100, 1 mL):

Weekly: 1-2 syringes (dose-dependent)

12 weeks: 12-24 syringes

24 weeks: 24-48 syringes

Bacteriostatic water (10 mL vials): ~2.0 mL required per vial for reconstitution.

12 weeks (3 vials): 6 mL → 1 × 10 mL vial

24 weeks (8 vials): 16 mL → 2 × 10 mL vials

Alcohol swabs: One swab for vial stopper plus one swab per injection site.

Weekly: 2-4 swabs

12 weeks: ~50 swabs → recommended: 1 box × 100-count

24 weeks: ~100 swabs → recommended: 1 box × 100-count

30 mg Specification

Planning is based on 12-24-week weekly-dosing protocol with progressive dose adjustment.

Peptide vials (Retatrutide, 30 mg per vial):

12 weeks (standard titration up to 6 mg): 2 vials

24 weeks (standard titration up to 8 mg): 5 vials

12 weeks (aggressive titration up to 8 mg): 2 vials

Insulin syringes (U-100, 1 mL):

Weekly: 1-2 syringes (dose-dependent)

12 weeks: 12-24 syringes

24 weeks: 24-48 syringes

Bacteriostatic water (10 mL vials): ~3.0 mL required per vial for reconstitution.

12 weeks (2 vials): 6 mL → 1 × 10 mL vial

24 weeks (5 vials): 15 mL → 2 × 10 mL vials

Alcohol swabs: One swab for vial stopper plus one swab per injection site.

Weekly: 2-4 swabs

12 weeks: ~50 swabs → recommended: 1 box × 100-count

24 weeks: ~100 swabs → recommended: 1 box × 100-count

V. Protocol Summary

Brief Summary:

Objective: Support substantial weight loss and metabolic improvement via triple-receptor activation[1][7].

Timing: Once-weekly subcutaneous injection for 12-48 weeks (clinical-trial duration 36-48 weeks)[2].

Dose Range: Weekly doses of 2-12 mg with titration at 4-week intervals[3][4].

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Reconstitution: Reconstitute vials of different specifications separately with specified-volume diluent for accurate measurable concentrations.

Storage: Lyophilized powder stored frozen at -20°C (-4°F); reconstituted solution refrigerated at $2-8^{\circ}\text{C}$ ($35.6-46.4^{\circ}\text{F}$), usable for 4 weeks[16].

VI. Dosing Protocol

Starting Dose: 2 mg weekly for the first four weeks to assess tolerability[6].

Dose Escalation: Increase by 2-4 mg every four weeks subject to tolerability.

Target Dose: 6-8 mg weekly for standard protocol; 12 mg weekly for aggressive protocol.

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

Cycle Duration: Minimum 24 weeks; trials extended up to 48 weeks[3][4].

Injection Time: Consistent fixed time each day; rotate injection sites for each administration.

VII. Storage Instructions

Proper storage preserves peptide quality and stability.

Lyophilized Powder: Store under dry, dark conditions at -20°C (-4°F) or lower; stable for up to 24 months[16].

Post-Reconstitution: Refrigerate at $2-8^{\circ}\text{C}$ ($35.6-46.4^{\circ}\text{F}$); use within 4 weeks[16].

Before Use: Allow vial to reach room temperature to minimise condensation.

Extended Storage: Aliquot reconstituted solution and freeze at -20°C (-4°F); thaw each aliquot only once before use[17].

VIII. Important Considerations

Practical points for consistency and safety.

Use a new sterile insulin syringe for every injection; discard into an approved sharps container[14].

Systematically rotate injection sites (abdomen, thighs, upper arms) to reduce local irritation and lipohypertrophy[13].

For volumes $>1.0\text{ mL}$, split into 2-3 injections at separate sites for better absorption[5].

Inject slowly; wait several seconds prior to needle withdrawal to ensure full dose delivery.

Document weekly dose, date and injection site for consistency.

Gradual titration is critical to minimise gastrointestinal side effects; do not skip escalation steps[6].

IX. Potential Benefits & Adverse-Effect Profile

Observations from Phase-2 human clinical trials.

Benefits

Substantial Weight-Loss Effect: Obese non-diabetic subjects achieved average 22-24 % body-weight reduction over 48 weeks under 8-12 mg doses[3][4].

Glycaemic Control: Among type-2-diabetes subjects, 4-12 mg doses reduced HbA1c by 1.3-2.0 % (from approx. 8.0 % down to approx. 6.0 %)[1]; approximately 82 % participants achieved HbA1c $\leq 6.5\%$.

Cardiometabolic Improvements: Reductions in blood pressure, LDL-cholesterol, waist circumference and hepatic fat content; $>80\%$ resolution of hepatic steatosis observed at higher doses[10][11].

Overall Response: 100 % of participants receiving 8-12 mg doses achieved at least 5 % body-weight reduction[4].

Adverse Effects

Gastrointestinal Symptoms: Most common adverse events are mild-to-moderate nausea, vomiting and diarrhoea, predominantly occurring during dose-escalation periods[6][12].

Side effects are dose-dependent and transient; gradual 4-week-interval titration significantly reduces gastrointestinal discomfort compared with rapid escalation[6].

No severe hypoglycaemia or treatment-related serious adverse events were reported in trials[1][2].

With appropriate titration, safety profile is comparable to GLP-1 agonists[12].

X. Injection Technique

General subcutaneous-injection guidance derived from clinical best-practice resources[13][14][15].

Supplies: U-100 insulin syringe (1 mL), fine-gauge needles, alcohol swabs, sharps-disposal container.

Site Selection: Prefer abdomen, thighs and upper arms; systematically rotate injection locations.

Injection Procedure:

Wipe vial rubber stopper and skin with alcohol swab; allow to fully air-dry.

Pinch up skin fold to elevate subcutaneous tissue.

Insert needle at $45-90^{\circ}$ angle into subcutaneous tissue.

Aspiration is not required for subcutaneous injection; inject slowly and steadily.

Split administration across multiple sites for injection volumes greater than 1.0 mL.

Withdraw needle at matching insertion angle after complete delivery.

Apply light pressure for bleeding; do not rub injection site.

Immediately dispose of used needle-syringe assembly into approved sharps container after each use.

Important Disclaimer: This document serves educational purposes only and does not constitute medical advice, diagnosis or treatment. Retatrutide is not FDA- approved and is intended for research- use only. All information presented is based on published clinical- trial data and does not encourage off- label use. Always consult a qualified healthcare- provider before commencing any research- peptide protocol. Individual responses may vary; appropriate medical oversight is essential for safety- and- efficacy monitoring.

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