

Thymosin Alpha-1 Comprehensive Dosage Guide

(5 mg / 10 mg Vials)

I. Overview

Thymosin Alpha-1 (Tα1) is a 28-amino acid peptide originally isolated from the thymus gland, recognized for its broad immunomodulatory properties. It has been investigated as an immune enhancer in chronic viral infections (hepatitis B/C, HIV/AIDS) and critical illness (sepsis, COVID-19).

This guide covers dosage protocols for **5 mg** and **10 mg** vials of Thymosin Alpha-1, both based on once-daily subcutaneous administration, intended for educational and research purposes.

II. Dosage and Reconstitution Guidelines

2.1 5 mg Vial

Reconstitution: Add 3.0 mL bacteriostatic water → Concentration ≈ 1.67 mg/mL

U-100 Insulin Syringe Conversion: 1 unit = 0.01 mL ≈ 16.7 mcg

Shelf Life After Reconstitution: 7 days when refrigerated (2–8°C)

Standard/Gradual Protocol (Concentration ≈1.67 mg/mL):

Phase	Weeks	Daily Dose	Injection Volume (mL)	Units
Initial	Week 1	300 mcg (0.3 mg)	0.18 mL	18 units
Maintenance	Weeks 2–8	500 mcg (0.5 mg)	0.30 mL	30 units

Injection Frequency: Once daily subcutaneous injection. This 8-week protocol begins at 300 mcg to assess tolerance, then increases to a maintenance dose of 500 mcg daily from Week 2 onward.

Cycle Length: 8–12 weeks, extendable to 16 weeks if desired.

2.2 10 mg Vial

Reconstitution: Add 3.0 mL bacteriostatic water → Concentration ≈ 3.33 mg/mL

U-100 Insulin Syringe Conversion: 1 unit = 0.01 mL ≈ 33.3 mcg

Shelf Life After Reconstitution: 7 days when refrigerated (2–8°C)

Standard/Gradual Protocol (Concentration ≈3.33 mg/mL):

Phase	Weeks	Daily Dose	Injection Volume (mL)	Units
Initial	Week 1	300 mcg (0.3 mg)	0.09 mL	9 units
Maintenance	Weeks 2–8	500 mcg (0.5 mg)	0.15 mL	15 units

Injection Frequency: Once daily subcutaneous injection. This 8-week protocol begins at 300 mcg to assess tolerance, then increases to a maintenance dose of 500 mcg daily from Week 2 onward.

Cycle Length: 8–12 weeks, extendable to 16 weeks if desired.

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Note: For injection volumes ≤ 10 units (≤ 0.10 mL) – such as Week 1 for the 10 mg vial – using a **30- or 50-unit insulin syringe** is recommended for improved readability.

III. Reconstitution Steps (General)

1. Draw **3.0 mL** of bacteriostatic water into a sterile syringe.
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 ($2-8^{\circ}\text{C}$ / $35.6-46.4^{\circ}\text{F}$), protected from light.
5. Use within **7 days** of reconstitution; do not use if the solution is cloudy or discolored.

IV. Required Supplies

4.1 5 mg Vial

Peptide Vials (Thymosin Alpha-1, 5 mg per vial):

- 8-week cycle: ≈ 6 vials
- 12-week cycle: ≈ 9 vials
- 16-week cycle: ≈ 12 vials

Insulin Syringes (U-100):

- Per week: 7 syringes (1 per day)
- 8 weeks: 56 syringes
- 12 weeks: 84 syringes
- 16 weeks: 112 syringes

Bacteriostatic Water (10 mL vial): Use ~ 3.0 mL per vial for reconstitution.

- 8 weeks (6 vials): 18 mL $\rightarrow 2 \times 10$ mL vials
- 12 weeks (9 vials): 27 mL $\rightarrow 3 \times 10$ mL vials
- 16 weeks (12 vials): 36 mL $\rightarrow 4 \times 10$ mL vials

Alcohol Swabs: One for the vial stopper and one for the injection site daily.

- Per week: 14 swabs (2 per day)
- 8 weeks: 112 swabs $\rightarrow$ Recommend 2 x 100-count boxes
- 12 weeks: 168 swabs $\rightarrow$ Recommend 2 x 100-count boxes
- 16 weeks: 224 swabs $\rightarrow$ Recommend 3 x 100-count boxes

4.2 10 mg Vial

Peptide Vials (Thymosin Alpha-1, 10 mg per vial):

- 8-week cycle: ≈ 3 vials (total 26.6 mg)
- 12-week cycle: ≈ 5 vials (total 40.6 mg)
- 16-week cycle: ≈ 6 vials (total 54.6 mg)

Insulin Syringes (U-100):

- Per week: 7 syringes (1 per day)
- 8 weeks: 56 syringes
- 12 weeks: 84 syringes
- 16 weeks: 112 syringes

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Bacteriostatic Water (10 mL vial): Use ~3.0 mL per vial for reconstitution.

8 weeks (3 vials): 9 mL → 1 x 10 mL vial

12 weeks (5 vials): 15 mL → 2 x 10 mL vials

16 weeks (6 vials): 18 mL → 2 x 10 mL vials

Alcohol Swabs: One for the vial stopper and one for the injection site daily.

Per week: 14 swabs (2 per day)

8 weeks: 112 swabs → Recommend 2 x 100-count boxes

12 weeks: 168 swabs → Recommend 2 x 100-count boxes

16 weeks: 224 swabs → Recommend 3 x 100-count boxes

V. Protocol Summary

Concise summary for once-daily administration.

5.1 5 mg Vial

Objective: Support immune modulation and enhance host defense mechanisms.

Schedule: Subcutaneous injection daily for 8 to 12 weeks (can be extended to 16 weeks if desired).

Dose Range: 300–500 mcg daily, with gradual titration.

Reconstitution: 3.0 mL per 5 mg vial (~1.67 mg/mL) for accurate unit measurement.

Storage: Store lyophilized powder frozen or refrigerated; refrigerate after reconstitution and use within 7 days.

5.2 10 mg Vial

Objective: Support immune modulation and enhance host defense mechanisms.

Schedule: Subcutaneous injection daily for 8 to 12 weeks (can be extended to 16 weeks if desired).

Dose Range: 300–500 mcg daily, with gradual titration.

Reconstitution: 3.0 mL per 10 mg vial (~3.33 mg/mL) for accurate unit measurement.

Storage: Store lyophilized powder frozen or refrigerated; refrigerate after reconstitution and use within 7 days.

VI. Dosing Protocol

Starting Dose: 300 mcg daily for Week 1, to assess tolerance.

Target Dose: Increase to 500 mcg daily from Week 2 and maintain. The daily 500 mcg dose equates to approximately 3.5 mg/week, consistent with clinical dose ranges.

Frequency: Once daily (subcutaneous).

Cycle Length: 8–12 weeks; option to extend to 16 weeks.

Administration Time: Any consistent time is acceptable; rotate injection sites.

VII. Storage Instructions

Proper storage preserves peptide quality.

Lyophilized Powder: Store at 2–8°C (35.6–46.4°F) for short-term, or at –20°C (–4°F) for long-term storage, in a dry, dark environment; minimize moisture exposure.

After Reconstitution: Refrigerate at 2–8°C (35.6–46.4°F); use within 7 days when reconstituted with bacteriostatic water; avoid freeze-thaw cycles.

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

VIII. Important Notes

Practical considerations for consistency and safety.

Use a new, sterile syringe for each injection; dispose of in a sharps container.

Rotate injection sites (abdomen, thigh, upper arm) to minimize local irritation.

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

Record daily dosage and injection site to maintain consistency.

Inspect the solution before each use – do not use if cloudy or discolored.

IX. Potential Benefits and Side Effects

Potential Benefits

Immune Function: Supports enhanced T-cell function and overall immune capacity.

Safety Profile: Exhibits an excellent safety profile; well-tolerated at doses up to 1.6 mg twice weekly for 6–12 months. No significant Tα1-specific toxicity observed even at experimental doses up to 16 mg subcutaneously for up to 12 months.

Common Side Effects

The most commonly reported adverse effect is mild injection site irritation (redness or discomfort).

X. Injection Technique

General guidance for subcutaneous injection based on clinical best practice resources.

1. Clean the vial stopper and the selected skin site with alcohol swabs; allow them to air dry completely.
2. Pinch approximately one inch (2.5 cm) of skin fold (lower abdomen, outer thigh, or upper arm).
3. Insert the needle at a **45–90° angle** into the pinched skin fold.
4. Inject the solution slowly and steadily (do not aspirate for subcutaneous injections).
5. After complete injection, keep the needle in place for a few seconds before withdrawing to ensure full delivery.
6. Dispose of the used needle in a sharps container.
7. Systematically rotate injection sites (abdomen, thigh, upper arm) to avoid lipohypertrophy.

Important Disclaimer: This content is for educational and research reference purposes only and does not constitute medical advice, diagnosis, or treatment recommendations. Thymosin Alpha-1 is a research compound and is not approved by regulatory agencies for routine human therapeutic use. Consult a qualified medical professional before use.