

TB-500 (Thymosin Beta-4) Therapy

A patient guide to TB-500 — subcutaneous (under-the-skin) self-injection

This guide is for patients who have been **prescribed TB-500 by a Rebel Med NW physician** as part of an individualized care plan. It explains what TB-500 is, what the research does and does not show, its potential benefits and risks, how it's commonly dosed, and how to inject it safely. It does not replace your physician's instructions.

⚠ Read this first — important context

TB-500 is **not an FDA-approved drug**, and its use for soft-tissue recovery is **investigational**. In July 2026, an FDA advisory committee voted to recommend adding TB-500 to the list of substances pharmacies may compound — but **that was an advisory vote, not a drug approval or a final FDA decision**, and the regulatory status of compounded TB-500 is still in transition. Compounded and research-grade peptides are **not reviewed by FDA for safety, effectiveness, or quality before marketing**. Use TB-500 **only as prescribed to you, under our supervision** — do not share it, buy product from online "research" sellers, or change your dose on your own.

What Is TB-500?

Thymosin beta-4 (Tβ4) is a small protein made naturally throughout your body. It is one of the main regulators of **actin** — the structural protein cells use to move, migrate, and rebuild tissue after injury. "TB-500" is the common name for a **synthetic copy of the short active fragment of Tβ4** — the segment responsible for actin binding. (Some gray-market products labeled "TB-500" actually contain other forms of the molecule — one more reason to use only the product your prescribed pharmacy dispensed.) It is used as a **subcutaneous injection**.

How It's Thought to Work

By binding and regulating actin, thymosin beta-4 helps cells **migrate to injured tissue** — a central step in wound repair. In laboratory and animal studies it also promotes new small blood-vessel growth (angiogenesis), calms inflammatory signaling, and reduces scar-tissue (fibrotic) formation. Because it acts "upstream" on cell movement and repair rather than on one organ, researchers have studied it in wounds, the cornea of the eye, the heart, and soft tissue. *These mechanisms come mostly from animal and cell research.*

What the Research Shows — Honestly

Evidence
type

What exists for TB-500 / thymosin beta-4

Human clinical trials	Human trials exist only for full-length thymosin beta-4 in other forms — eye drops for corneal conditions (including positive results in neurotrophic keratopathy, with mixed dry-eye results) and one Phase 1 intravenous safety study in healthy volunteers, where it was well tolerated. No published human trials exist for injected TB-500 used for muscle, tendon, or joint recovery.
Animal & lab studies	Encouraging results in heart-attack recovery models, skin and corneal wound healing, and soft-tissue repair in rodents.
Bottom line	TB-500 is promising but unproven for the way it's typically used. Evidence from eye drops or animal studies does not establish that injections work for recovery — and long-term human safety data for injected TB-500 do not exist.

Potential Benefits

Based on its mechanism and animal data, the hoped-for — *not guaranteed* — benefits include support for:

- **Soft-tissue recovery** — muscle, tendon, and ligament healing after injury or overuse.
- **Flexibility and reduced stiffness** in healing tissue.
- **Calming excess inflammation** as part of the repair process.

Honest expectations: This is a **theory-driven, investigational therapy**. TB-500 is sometimes prescribed alongside BPC-157 (a combination often called a "Wolverine" blend) — combining two investigational peptides does not make the evidence stronger, and we'll say so plainly. Healing still depends on the fundamentals: graded loading or physical therapy, nutrition, sleep, and time. We'll reassess together based on how you respond.

Who Should NOT Use TB-500

Do not use TB-500, and tell your provider, if any of these apply:

- **Active cancer, or a history of cancer** — thymosin beta-4 promotes blood-vessel growth and is found at elevated levels in several cancers; there is a theoretical (unproven) concern it could support tumor growth or spread. Discuss any cancer history with your physician before starting.
- **Pregnancy or breastfeeding** — there are no safety data; do not use.
- **Known allergy** to TB-500/thymosin beta-4 or any ingredient in the formulation.

Athletes & service members

Thymosin beta-4 and its derivatives, **including TB-500 by name**, are on the World Anti-Doping Agency Prohibited List (S2.3, growth factors) — **prohibited at all times**, in and out of competition. TB-500 has featured in high-profile professional sports doping cases. If you compete in tested sport or serve in the military, do not use it. Check **GlobalDRO.com** or ask us.

Also make sure we know your full medical history and **all medications and supplements** you take.

Possible Side Effects

Because controlled human studies of injected TB-500 haven't been done, the true side-effect profile is **not fully known**. Reported effects — from the intravenous Tβ4 safety study, clinical experience, and anecdote — include:

- **Injection-site reactions** — redness, swelling, itching, or mild pain (most common).
- Headache, temporary fatigue or lethargy, or mild flu-like feelings after injection.
- Unknown long-term risks — including the theoretical tumor-growth concern above, and the possibility of immune reactions to the peptide. Report anything unusual.

When to stop and call us

Stop and contact your provider (or seek urgent care for severe symptoms) for signs of an allergic reaction — **trouble breathing, swelling of the face/lips/throat, hives** — signs of infection at an injection site (spreading redness, warmth, pus, fever), or any reaction that worries you. **Call 911 for any emergency.**

Dosing

Your physician will prescribe your exact dose and duration. There is **no scientifically validated human dose** of TB-500 — the ranges below reflect common clinical practice, not controlled trial data:

Phase	Commonly used range	Notes
Loading	2–5 mg SC, 1–2× per week	Often 4–6 weeks, then reassess.
Maintenance (if continued)	Lower dose or less frequent (e.g., weekly to monthly)	Only if you and your physician decide it's helping.

Important — how much to draw up or click: Your dose is prescribed in **milligrams (mg)**, but you'll measure it in **units on an insulin syringe or clicks on a dosing pen** — and that conversion depends entirely on the concentration your pharmacy prepared. **Use the exact number of units or clicks your provider or pharmacy gives you — do not estimate or copy numbers from the internet.** If you're unsure, call us before injecting.

How to Give a Subcutaneous Injection

TB-500 is injected into the fatty layer just under the skin using a small **insulin syringe** or dosing pen. If your TB-500 came as a powder, your provider will show you how to reconstitute it (mix it with bacteriostatic water) — follow those specific instructions.

You'll need

- Your TB-500 vial or pen (refrigerated)
- A sterile insulin syringe (U-100) with a fine, short needle — or your pen needle
- Alcohol swabs and a sharps disposal container

Step by step

- 1 **Wash your hands** thoroughly with soap and water.
- 2 **Inspect the vial or pen.** The liquid should be clear. Don't use it if it's cloudy, discolored, has particles, or is past its discard date.
- 3 **Clean the vial top** (or pen septum) with an alcohol swab and let it dry.
- 4 **Draw up or dial your exact prescribed dose** (units or clicks, as instructed). For a syringe: push air into the vial, draw liquid to your prescribed mark, and tap out air bubbles.
- 5 **Choose and clean your site.** The abdomen is ideal — at least 2 inches from your belly button — or the front of the thigh. Wipe with an alcohol swab and let it dry. *Rotate sites* each time.
- 6 **Pinch a fold of skin** gently between your thumb and finger.
- 7 **Insert the needle** all the way at a 45–90° angle in one smooth motion.
- 8 **Inject slowly**, then release the pinch.
- 9 **Withdraw the needle** and apply gentle pressure with clean gauze (don't rub). A tiny bit of bleeding is normal.
- 10 **Dispose** of the syringe or pen needle immediately in your sharps container — never recap or reuse. Wash your hands.

Storage & sharps

- **Refrigerate** reconstituted TB-500 (do not freeze), protect it from light, and use it within the timeframe your pharmacy specifies on the label.

- **Never reuse or share** needles, pens, or vials. Dispose of all needles in an approved **sharps container**.

Monitoring & Follow-Up

Because this is an investigational therapy, follow-up matters. We'll track your symptoms and function, watch for side effects, and decide together whether to continue, adjust, or stop. Keep your scheduled visits, and call sooner if something concerns you.

Questions?

Your Rebel Med NW care team is here to help. If anything about your dose, schedule, or injections is unclear — or you're weighing whether this therapy is right for you — **call us before your next dose**.

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Medical disclaimer: This guide is educational, for patients prescribed TB-500 by a Rebel Med NW physician; it is not medical advice for the general public and it does not recommend TB-500 for any condition. **TB-500 is not FDA-approved. Its benefits in humans are unproven for injected use, its long-term safety is unknown, and compounded peptides are not reviewed by FDA for safety, effectiveness, or quality.** The July 2026 FDA advisory committee recommendation was not an approval; regulatory status is evolving and current access rules remain unchanged until FDA acts. Benefits are not guaranteed and individual results vary. Always follow the specific instructions from your provider and pharmacy. Report suspected side effects to us, and — if you wish — to FDA MedWatch (1-800-FDA-1088 · [fda.gov/medwatch](https://www.fda.gov/medwatch)). In an emergency, call 911.

Key references: Esposito S, et al. Characterization of TB-500 (Tβ4 fragment). *Drug Test Anal.* 2012;4:733–8. PMID 22962027. · Bock-Marquette I, et al. Thymosin β4 and cardiac repair. *Nature.* 2004;432:466–72. PMID 15565145. · Ruff D, et al. Phase 1 IV Tβ4 safety study. *Ann N Y Acad Sci.* 2010;1194. · Sosne G, et al. Tβ4 ophthalmic trials (RGN-259). *Int J Mol Sci.* 2023;24(1):554. PMID 36613994. · Cha HJ, et al. Tβ4, tumor angiogenesis/metastasis. *J Natl Cancer Inst.* 2003;95(22). PMID 14625258. · WADA Prohibited List 2026, S2.3. · FDA Pharmacy Compounding Advisory Committee meeting, July 23–24, 2026 ([fda.gov](https://www.fda.gov)). Educational summary only.