

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

Tesamorelin is a growth hormone-releasing hormone (GHRH) analog that reduces visceral fat and liver fat in the populations studied. [1–8,25,26] It increases endogenous growth hormone and insulin-like growth factor 1 and has demonstrated human benefits for lipid profiles, lean body mass, and muscle composition in the populations studied. Cognitive improvement remains plausible, with mixed human findings. [1–5,10,12,17,22,23,25,26]

💉💉💉 Human trials characterize tesamorelin's safety profile through approximately 52 weeks; safety with indefinite use remains uncertain. [3–5,19,25,26]

★ ★ ★ Reduction in visceral fat is established for tesamorelin. [1–5,20,24–27]

★ Recovery, fitness, and generalized body recomposition through GH-axis support remain plausible. [1–5,20,24–27]

Disclaimer: These notes are not authoritative and should not be interpreted as definitive scientific guidance. They are summaries, compilations and plausible extrapolations drawn from the most relevant research I was able to locate, and may omit nuances, conflicting data, or emerging evidence. The material reflects an attempt to organize and understand complex topics, not to provide clinical recommendations or expert interpretation.



This document was updated 13-Oct-26. The most recent version of this document is available at <https://pdfs.researcher6076.com/pdfs/tesamorelin.pdf>

Dosage & Patterns

The pivotal phase 3 tesamorelin trials used 2 mg subcutaneously once daily for 26 weeks to reduce visceral fat in adults with HIV-associated abdominal fat accumulation. [2,4,5] A 12-week randomized, placebo-controlled trial in adults with type 2 diabetes compared tesamorelin 1 mg and 2 mg subcutaneously once daily. Both doses significantly increased IGF-1 relative to placebo, with mean increases of 33 ng/mL at 1 mg and 66 ng/mL at 2 mg. [11]

The following speculative dosing approaches are commonly discussed:

- **Tesamorelin 2 mg daily.**
- **Tesamorelin 0.5–1 mg daily**, often selected in community practice in an effort to improve tolerability.

Reported schedules include once daily, five days per week, or every other day.

Tesamorelin studies generally used continuous daily treatment, including trials extending to 52 weeks. If laboratory findings exist, clinical responses and adverse effects can be assessed, they can provide a basis for determining treatment duration and breaks rather than an arbitrary fixed cycle. [3–5,19] Persistent IGF-1 elevation above +3 SDS, clinically significant deterioration in

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

glucose control, or GH/IGF-1–related adverse effects such as edema, arthralgia, or carpal-tunnel symptoms are plausible reasons to discontinue or reduce GH-axis stimulation. Restarting after IGF-1 has returned to the age-adjusted reference range, glucose abnormalities have resolved or are adequately controlled, and clinically significant adverse effects have resolved is a conservative and biologically plausible approach. [19]

Instead of laboratory assessment, a common community practice is cycling GH-axis peptides. A 12-week ON / 6-week OFF pattern is commonly used in community protocols and longer cycles such as 12–24 weeks ON followed by 4–12 weeks OFF are also reported. These cycling schedules are speculative.

But, for a finite 26- or 52-week course, therefore, there is no clinical evidence that scheduled cycling is necessary **if laboratory values and tolerability remain acceptable**. If laboratory values cannot be practically obtained, or for indefinite or repeated long-term use, then periodic OFF periods can nevertheless be justified as a conservative, mechanistically plausible strategy to reduce cumulative GH/IGF-1 exposure. [3–5,19]

Benefits

Tesamorelin has demonstrated human benefits for visceral fat, liver fat, lipid profiles, lean body mass, and muscle composition. Cognitive improvement remains plausible, with mixed human findings. [1–8,12,17,22,23,25,26]

- **Visceral fat reduction:** Tesamorelin 2 mg subcutaneously once daily produced a pooled placebo-adjusted 15.4% reduction in visceral adipose tissue at 26 weeks. It also reduced waist circumference and waist-to-hip ratio while largely preserving abdominal subcutaneous fat. [5]
- **Improved lipid profile:** In pooled phase 3 trials, tesamorelin reduced triglycerides and improved the ratio of total cholesterol to high-density lipoprotein cholesterol. [5]
- **Reduced liver fat:** In a 12-month randomized trial, tesamorelin reduced liver fat and reduced progression of liver fibrosis. [7]
- **Plausible cognitive improvement:** A 20-week randomized trial in healthy older adults and adults with mild cognitive impairment found improved overall cognition and executive function. But, later trials did not establish a between-group cognitive benefit. [17,22,23]
- **Probable increased lean body mass:** In a 12-week randomized dose-ranging trial, tesamorelin 1 mg and 2 mg daily increased lean body mass relative to placebo. [1]
- **Plausible improved muscle composition:** In an exploratory analysis, trunk-muscle CT density and muscle area increased over 26 weeks. [12]
- **Plausible improved fat quality:** In an exploratory analysis visceral and subcutaneous fat CT density increased independently of changes in fat quantity, suggesting improved fat quality. [13]
- **Improved metabolic and vascular markers:** In a 12-month randomized trial in adults with abdominal obesity and reduced GH secretion, tesamorelin improved triglycerides, C-reactive

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

protein, and carotid intima-media thickness. These findings concern measured risk markers rather than demonstrated prevention of cardiovascular events. [8]

- **Plausible support for muscle mitochondrial recovery:** In a substudy of adults with obesity and reduced GH secretion, increases in IGF-1 during tesamorelin treatment were associated with improved phosphocreatine recovery after exercise. [24]

Potential Applications

- **Excess visceral fat.** [2,4,5,8]
- **Fatty liver.** [7]
- **Cognitive, recovery, fitness, and generalized body recomposition through GH-axis support.** [10,17,22–24,27]

Cautions

- **Active malignancy:** Tesamorelin should not be used with active malignancy. [19]
- **Disrupted hypothalamic-pituitary function:** Tesamorelin is contraindicated with disruption of this axis due to hypophysectomy, hypopituitarism, pituitary tumor or surgery, head irradiation, or head trauma. [19]
- **Previous malignancy:** A preexisting malignancy should be inactive and its treatment complete before tesamorelin is considered. [19,21]
- **Pregnancy or Breastfeeding:** Tesamorelin should be avoided during pregnancy or breastfeeding. [19]
- **Diabetes or glucose intolerance:** Tesamorelin can cause glucose intolerance or diabetes, so glucose status should be assessed before and during use. [19]
- **Persistently elevated IGF-1:** Reassess use when insulin-like growth factor 1 remains above the age-adjusted range. Discontinuation should be considered when it remains more than three standard deviations above the age-adjusted mean. [19]
- **Concerning growth-related symptoms:** Unexplained masses, rapid tissue growth, or other concerning symptoms warrant clinical assessment and reassessment of continued use. [19,21]

Side Effects

- **Fluid retention:** Peripheral edema can occur and is often most apparent early in treatment. [19]
- **Musculoskeletal symptoms:** Joint pain and muscle pain can occur. [19]
- **Headache and nausea:** Both have been reported in clinical studies. [1–4,11]
- **Changes in sleep:** Deeper sleep and vivid dreams are reported in peptide communities and remain speculative as tesamorelin-specific effects.

Cancer Risk

Tesamorelin increases circulating IGF-1. After 26 weeks of treatment, 47% of participants had levels more than two standard deviations above the age-adjusted mean and 36% had levels more than three standard deviations above the mean. Insulin-like growth factor 1 participates in cellular proliferation, and higher circulating levels are epidemiologically associated with several

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

cancers. It is therefore plausible that sustained growth-hormone and insulin-like-growth-factor-1 elevation could promote the growth of an occult or recurrent malignancy. [18–21]

Drivers of Diminished Response and Mitigation Strategies

GHRH-receptor regulation and desensitization plausibly influence response during repeated stimulation. Neutralizing antibodies were detected in vitro in some trial participants, but mean visceral-fat reduction and IGF-1 responses were similar in participants with and without them. Antibody-mediated loss of clinical response remains a plausible concern rather than an established outcome. [19] IGF-1-mediated negative feedback is established endocrine physiology. Feedback and intracellular signaling adaptation plausibly influence response, but their contribution to progressive loss of tesamorelin's clinical benefits remains uncertain. [3–5,20]

Treatment breaks are an empirical practice whose ability to preserve response remains speculative. Laboratory findings, clinical response, and adverse effects provide a basis for reassessing continued use. [3–5,19]

Biological Mechanism

Tesamorelin is a stabilized analog of growth-hormone-releasing hormone that activates the growth-hormone-releasing-hormone receptor on pituitary somatotrophs. These receptors couple primarily to the stimulatory G protein Gs, increasing adenylyl cyclase activity, cyclic adenosine monophosphate, and protein kinase A signaling that supports growth-hormone synthesis and secretion. [10,19,20]

Tesamorelin increases basal and pulsatile endogenous growth-hormone secretion in humans. [10]

Tesamorelin-induced growth-hormone pulses activate hepatic growth-hormone receptors and increase circulating insulin-like growth factor 1. Its effects plausibly involve increased lipolysis and lipid oxidation, altered very-low-density-lipoprotein metabolism, growth-hormone-receptor signaling through Janus kinase 2, signal transducer and activator of transcription 5, and mitogen-activated protein kinase pathways, and insulin-like-growth-factor-1 signaling that supports protein synthesis and mitochondrial function. [7,10,15,20,24,27]

Tesamorelin contains an amino-terminal trans-3-hexenoyl modification that increases resistance to enzymatic degradation and improves stability relative to native growth-hormone-releasing hormone. [10,19]

For the original tesamorelin acetate formulation, mean elimination half-life was 26 minutes in healthy subjects and 38 minutes in participants with HIV after 14 consecutive days of subcutaneous dosing. Peptide clearance does not define the duration of its hormonal effects:

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

increased basal and pulsatile GH secretion was measured overnight, beginning approximately eight hours after the final dose in a two-week human study. [10,19]

References

1. Falutz J, Allas S, Kotler D, et al. A placebo-controlled, dose-ranging study of a growth hormone releasing factor in HIV-infected patients with abdominal fat accumulation. AIDS. 2005;19(12):1279-1287. <https://doi.org/10.1097/01.aids.0000180099.35146.30>
2. Falutz J, Allas S, Blot K, et al. Metabolic effects of a growth hormone-releasing factor in patients with HIV. N Engl J Med. 2007;357(23):2359-2370. <https://doi.org/10.1056/nejmoa072375>
3. Falutz J, Allas S, Mamputu JC, et al. Long-term safety and effects of tesamorelin, a growth hormone-releasing factor analogue, in HIV patients with abdominal fat accumulation. AIDS. 2008;22(14):1719-1728. <https://doi.org/10.1097/qad.0b013e32830a5058>
4. Falutz J, Potvin D, Mamputu JC, et al. Effects of tesamorelin, a growth hormone-releasing factor, in HIV-infected patients with abdominal fat accumulation: a randomized placebo-controlled trial with a safety extension. J Acquir Immune Defic Syndr. 2010;53(3):311-322. <https://doi.org/10.1097/qai.0b013e3181cbdaff>
5. Falutz J, Mamputu JC, Potvin D, et al. Effects of tesamorelin (TH9507), a growth hormone-releasing factor analog, in human immunodeficiency virus-infected patients with excess abdominal fat: a pooled analysis of two multicenter, double-blind placebo-controlled phase 3 trials with safety extension data. J Clin Endocrinol Metab. 2010;95(9):4291-4304. <https://doi.org/10.1210/jc.2010-0490>
6. Stanley TL, Feldpausch MN, Oh J, et al. Effect of tesamorelin on visceral fat and liver fat in HIV-infected patients with abdominal fat accumulation: a randomized clinical trial. JAMA. 2014;312(4):380-389. <https://doi.org/10.1001/jama.2014.8334>
7. Stanley TL, Fourman LT, Feldpausch MN, et al. Effects of tesamorelin on non-alcoholic fatty liver disease in HIV: a randomised, double-blind, multicentre trial. Lancet HIV. 2019;6(12):e821-e830. [https://doi.org/10.1016/s2352-3018\(19\)30338-8](https://doi.org/10.1016/s2352-3018(19)30338-8)
8. Makimura H, Feldpausch MN, Rope AM, et al. Metabolic effects of a growth hormone-releasing factor in obese subjects with reduced growth hormone secretion: a randomized controlled trial. J Clin Endocrinol Metab. 2012;97(12):4769-4779. <https://doi.org/10.1210/jc.2012-2794>
9. Koutkia P, Canavan B, Breu J, et al. Growth hormone-releasing hormone in HIV-infected men with lipodystrophy: a randomized controlled trial. JAMA. 2004;292(2):210-218. <https://doi.org/10.1001/jama.292.2.210>
10. Stanley TL, Chen CY, Branch KL, et al. Effects of a growth hormone-releasing hormone analog on endogenous GH pulsatility and insulin sensitivity in healthy men. J Clin Endocrinol Metab. 2011;96(1):150-158. <https://doi.org/10.1210/jc.2010-1587>

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

11. Clemmons DR, Miller S, Mamputu JC. Safety and metabolic effects of tesamorelin, a growth hormone-releasing factor analogue, in patients with type 2 diabetes: A randomized, placebo-controlled trial. PLoS One. 2017;12(6):e0179538.
<https://doi.org/10.1371/journal.pone.0179538>
12. Adrian S, Scherzinger A, Sanyal A, et al. The Growth Hormone Releasing Hormone Analogue, Tesamorelin, Decreases Muscle Fat and Increases Muscle Area in Adults with HIV. J Frailty Aging. 2019;8(3):154-159. <https://doi.org/10.14283/jfa.2018.45>
13. Lake JE, La K, Erlandson KM, et al. Tesamorelin improves fat quality independent of changes in fat quantity. AIDS. 2021;35(9):1395-1402. <https://doi.org/10.1097/qad.0000000000002897>
14. Stanley TL, Falutz J, Mamputu JC, et al. Effects of tesamorelin on inflammatory markers in HIV patients with excess abdominal fat: relationship with visceral adipose reduction. AIDS. 2011;25(10):1281-1288. <https://doi.org/10.1097/qad.0b013e328347f3f1>
15. Fourman LT, Billingsley JM, Agyapong G, et al. Effects of tesamorelin on hepatic transcriptomic signatures in HIV-associated NAFLD. JCI Insight. 2020;5(16):140134.
<https://doi.org/10.1172/jci.insight.140134>
16. Russo SC, Ockene MW, Arpante AK, et al. Efficacy and safety of tesamorelin in people with HIV on integrase inhibitors. AIDS. 2024;38(12):1758-1764.
<https://doi.org/10.1097/qad.0000000000003965>
17. Baker LD, Barsness SM, Borson S, et al. Effects of growth hormone-releasing hormone on cognitive function in adults with mild cognitive impairment and healthy older adults: results of a controlled trial. Arch Neurol. 2012;69(11):1420-1429.
<https://doi.org/10.1001/archneurol.2012.1970>
18. Qian F, Huo D. Circulating Insulin-Like Growth Factor-1 and Risk of Total and 19 Site-Specific Cancers: Cohort Study Analyses from the UK Biobank. Cancer Epidemiol Biomarkers Prev. 2020;29(11):2332-2342. <https://doi.org/10.1158/1055-9965.epi-20-0743>
19. U.S. Food and Drug Administration. EGRIFTA (tesamorelin acetate) original prescribing information. Revised November 2010.
https://www.accessdata.fda.gov/drugsatfda_docs/nda/2010/022505Orig1s000Lbl.pdf
20. Smith RG. Development of growth hormone secretagogues. Endocr Rev. 2005;26(3):346-360.
<https://doi.org/10.1210/er.2004-0019>
21. Boguszewski MCS, Boguszewski CL, Chemaitilly W, et al. Safety of growth hormone replacement in survivors of cancer and intracranial and pituitary tumours: a consensus statement. Eur J Endocrinol. 2022;186(6):P35-P52. <https://doi.org/10.1530/eje-21-1186>
22. Ellis RJ, Vaida F, Hu K, et al. Effects of Tesamorelin on Neurocognitive Impairment in Persons With HIV and Abdominal Obesity. J Infect Dis. 2025;231(5):1230-1238.
<https://doi.org/10.1093/infdis/jiaf012>
23. Stewart CE, French KP, Wright TJ, et al. The effect of growth hormone-releasing hormone on cognition and brain connectivity in adults with cognition ranging from normal to mild

Tesamorelin Off Label for Longevity & Body Recomp

(0.5 - 2 mg, 3 – 7 days / week, fasted, subq)

cognitive impairment. eNeurologicalSci. 2026;44:100616.

<https://doi.org/10.1016/j.ensci.2026.100616>

24. Makimura H, Murphy CA, Feldpausch MN, et al. The effects of tesamorelin on phosphocreatine recovery in obese subjects with reduced GH. J Clin Endocrinol Metab. 2014;99(1):338-343. <https://doi.org/10.1210/jc.2013-3436>
25. Badran AS, Helal A, Shata KS, et al. Body composition, hepatic fat, metabolic, and safety outcomes of Tesamorelin, a GHRH analogue, in HIV-associated lipodystrophy: A meta-analysis of randomized controlled trials. Obes Res Clin Pract. 2026;20(1):2-12. <https://doi.org/10.1016/j.orcp.2026.01.002>
26. Ditta AM, Naeem RM, Sami MM, et al. Efficacy and Safety of Tesamorelin in People Living With HIV (PLWH) With Lipodystrophy: A Systematic Review and Meta-Analysis. J Int Assoc Provid AIDS Care. 2026;25:23259582261475549. <https://doi.org/10.1177/23259582261475549>
27. Doessing S, Heinemeier KM, Holm L, et al. Growth hormone stimulates the collagen synthesis in human tendon and skeletal muscle without affecting myofibrillar protein synthesis. J Physiol. 2010;588(Pt 2):341-351. <https://doi.org/10.1113/jphysiol.2009.179325>