Retatrutide Research Summary

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What the Research Suggests, in Plain Language

Retatrutide is an experimental compound from Eli Lilly. It has been tested in large, well-designed human trials, but it is not approved anywhere.

• In people, large trials compared retatrutide with a dummy (placebo) in adults with obesity, and in adults with type 2 diabetes. In these studies, people given retatrutide lost more body weight than people given placebo, and blood-sugar measures improved more in the diabetes trials. One set of trials in people with sleep apnea reported fewer breathing interruptions during sleep.

• The most common side effects reported were stomach and digestive problems such as nausea.

• Long-term results, such as effects on heart attacks and strokes, are not yet available. All of the major trials were paid for by the company developing it.

In short: the trials report these results only for the people, conditions and study designs tested. Retatrutide remains an investigational compound.

Overview

Retatrutide is an investigational compound developed by Eli Lilly that acts on three hormone receptors involved in appetite and blood sugar. It is not approved by any regulator as of November 2026.

What the Research Actually Presents

Phase 2 obesity trial (NEJM 2023, 338 adults; PMID 37366315): Participants receiving retatrutide showed greater reductions in body weight compared with placebo over the study period.

Phase 2 type 2 diabetes trial (Lancet 2023, 281 participants; PMID 37385280): Greater reductions in HbA1c (a blood marker of average blood sugar) and body weight were reported versus placebo.

Phase 3 TRIUMPH-1 (NEJM 2026, obesity, 2,339 randomized; PMID 42814954): Significant weight reduction versus placebo was reported.

Phase 3 TRIUMPH-2 (Lancet 2026, obesity with type 2 diabetes, 1,152 randomized; PMID 42810372): Additional weight and glycemic endpoints were reported.

Phase 3 TRANSCEND-T2D-1 (Lancet 2026, type 2 diabetes, retatrutide alone versus placebo, 537 randomized; PMID 42250575): Glycemic and weight endpoints were reported.

Obstructive sleep apnea trials (NEJM 2026, TRIUMPH-1-OSA and TRIUMPH-2-OSA; PMID 42904878): Improvements in the apnea-hypopnea index (breathing interruptions per hour of sleep) were reported.

All trials were sponsored by Eli Lilly. Gastrointestinal adverse events were the most commonly reported side effects.

What the Research Suggests

The large randomized controlled trials report that retatrutide produced greater reductions in body weight and improvements in glycemic markers than placebo in the populations studied (obesity and type 2 diabetes).

These findings are limited to the trial conditions and populations tested. Long-term cardiovascular outcome data are still pending. The compound remains investigational.

Mechanism and Signaling Pathways (as described in the literature)

Trial publications describe retatrutide as a single-molecule agonist of the glucose-dependent insulinotropic polypeptide (GIP), glucagon-like peptide-1 (GLP-1), and glucagon receptors. Reported effects on body weight and glycemic markers are consistent with activation of these pathways in the clinical settings studied.

Research Landscape

Catalog: 249 records — 40 human randomized controlled trials (RCTs, including registry entries), 24 other human, 19 animal, 1 in-vitro, 94 reviews, 37 systematic reviews/meta-analyses, 34 other. 34 ClinicalTrials.gov entries under the TRIUMPH and TRANSCEND programs.

Key Studies

• Jastreboff AM et al. 2023 (NEJM): phase 2 randomized, placebo-controlled trial in obesity; 338 adults (PMID 37366315).

• Rosenstock J et al. 2023 (Lancet): phase 2 randomized trial in type 2 diabetes; 281 participants (PMID 37385280).

• Jastreboff AM et al. 2026 (NEJM), TRIUMPH-1: phase 3 trial in obesity; 2,339 randomized (PMID 42814954).

• Bellido V et al. 2026 (Lancet), TRIUMPH-2: phase 3 trial in obesity with type 2 diabetes; 1,152 randomized (PMID 42810372).

• Bajaj HS et al. 2026 (Lancet), TRANSCEND-T2D-1: phase 3 trial in type 2 diabetes; 537 randomized (PMID 42250575).

• Grunstein RR et al. 2026 (NEJM): phase 3 trials in obstructive sleep apnea; 243 and 448 randomized (PMID 42904878).

Safety Findings Reported in the Studies

Gastrointestinal adverse events were the most common. Long-term cardiovascular event data remain pending.

Limitations and Evidence Gaps

Long-term outcome data (cardiovascular events) are still pending. Every major trial is sponsored by one company. Investigational status only.

Regulatory Status

Investigational. Not approved by FDA or any regulator as of November 2026, and not approved for human use. Lilly has stated plans to file for approval in Q1 2027.

References

Jastreboff AM et al. NEJM 2023 (PMID 37366315). Rosenstock J et al. Lancet 2023 (PMID 37385280). Jastreboff AM et al. NEJM 2026, TRIUMPH-1 (PMID 42814954). Bellido V et al. Lancet 2026, TRIUMPH-2 (PMID 42810372). Bajaj HS et al. Lancet 2026, TRANSCEND-T2D-1 (PMID 42250575). Grunstein RR et al. NEJM 2026, sleep apnea (PMID 42904878). Full citations in research catalog.

Evidence reviewed through November 2026 (PHX research catalog snapshot of PubMed, ClinicalTrials.gov and Europe PMC).

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