

# Kisspeptin-10 — Research Summary

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## 1. What It Is

Kisspeptin-10 is the shortest biologically active fragment of the kisspeptin family of neuropeptides, which act on specialized GnRH (gonadotropin-releasing hormone) neurons in the hypothalamus. Activating these neurons triggers the pituitary to release luteinizing hormone (LH) and follicle-stimulating hormone (FSH) — placing kisspeptin-10 at the top of the reproductive hormone signaling cascade (the hypothalamic-pituitary-gonadal axis).

Research focus: reproductive endocrinology, particularly hormone-stimulation protocols in fertility medicine research.

## 2. Reported Effects in Research Literature

*Kisspeptin-10 has a genuinely notable human clinical trial base for a research peptide, concentrated in reproductive endocrinology research at academic medical centers (e.g., Imperial College London / MRC Human Reproductive Sciences Unit, Edinburgh).*

- Sexual dimorphism in gonadotropin response: A key human study found kisspeptin-10 robustly stimulates LH/FSH release in men (serum LH and FSH elevated at doses as low as 0.3–1.0 nmol/kg IV bolus), but fails to stimulate gonadotropin release in healthy women during the follicular phase, even at much higher doses. In women during the preovulatory phase specifically, kisspeptin-10 did elevate LH and FSH.
- LH pulse dynamics in men: A controlled infusion study (1.5 µg/kg·h over 9 hours) reported LH rising from a mean of 5.4 to 20.8 IU/liter, with a corresponding testosterone increase from 16.6 to 24.0 nmol/liter.
- Fertility/IVF research application: The related, longer isoform kisspeptin-54 has been shown to trigger egg (oocyte) maturation in women undergoing IVF treatment, offering a potentially safer alternative to standard hCG triggers by reducing risk of ovarian hyperstimulation syndrome (OHSS).
- Related isoform, sexual function research (not kisspeptin-10 specifically): Two randomized, double-blind, placebo-controlled crossover trials at Imperial College London (2022–2023, published in JAMA Network Open) tested IV kisspeptin-54 infusion in men and women with hypoactive sexual desire disorder (HSDD). Kisspeptin-54 significantly modulated brain activity in sexual-processing brain regions on fMRI versus placebo in both sexes, and increased sexual behavior and penile tumescence in response to visual stimuli in the men's trial (n=32 each study).
- Related compound in trials: Phase 2 studies have separately evaluated a kisspeptin analogue, TAK-448, for effects on reproductive hormone secretion in healthy men.

## 3. Clinical & Preclinical Study References

George JT, Veldhuis JD, Roseweir AK, et al. "Kisspeptin-10 is a potent stimulator of LH and increases pulse frequency in men." J Clin Endocrinol Metab. 2011;96(8):E1228-36. PMID: 21632807

"The effects of kisspeptin-10 on reproductive hormone release show sexual dimorphism in humans." J Clin Endocrinol Metab. PMID: 21976724

Jayasena CN, et al. "Direct comparison of the effects of intravenous kisspeptin-10, kisspeptin-54 and GnRH on gonadotrophin secretion in healthy men." Hum Reprod.

Mills EG, et al. "Effects of Kisspeptin on Sexual Brain Processing and Penile Tumescence in Men With Hypoactive Sexual Desire Disorder." JAMA Netw Open. 2023;6(2):e2254313. (Kisspeptin-54, not kisspeptin-10.)

Thurston L, et al. "Effects of Kisspeptin Administration in Women With Hypoactive Sexual Desire Disorder." JAMA Netw Open. 2022;5(10):e2236131. (Kisspeptin-54, not kisspeptin-10.)

Related registered trial: NCT01952782 — Neuropeptides in Human Reproduction

**Regulatory/Safety Note:** Kisspeptin-10 is not approved by the FDA for the diagnosis, treatment, cure, or prevention of any disease.

**Verification Update:** Two significant published RCTs (JAMA Network Open, 2022 and 2023) evaluating kisspeptin for hypoactive sexual desire disorder in men and women were identified and added. Both used kisspeptin-54, the longer isoform, not kisspeptin-10 — noted explicitly to avoid conflating isoform-specific evidence.

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