

Kisspeptin-10

What is Kisspeptin?

Kisspeptin is a naturally occurring peptide that plays a crucial role in reproductive health, primarily through its regulation of the hypothalamic-pituitary-gonadal (HPG) axis. Its primary function is to regulate the release of gonadotropin-releasing hormone (GnRH), which in turn influences the secretion of luteinizing hormone (LH) and follicle-stimulating hormone (FSH). Recent research has also highlighted its potential in areas beyond reproduction. Kisspeptin got its name from its discovery in the city of Hershey, Pennsylvania, famously associated with Hershey's chocolate and the iconic Hershey's Kisses.

Potential Benefits

1. Regulation of Reproductive Health

- **Puberty Initiation:** Kisspeptin is essential for the onset of puberty. Mutations in the *KISS1* gene or its receptor (*KISS1R*) can lead to delayed puberty or hypogonadotropic hypogonadism.
- **Fertility:** It stimulates GnRH release, which is vital for ovulation in women and spermatogenesis in men.
- **Menstrual Health:** It helps maintain regular menstrual cycles by promoting LH and FSH release.
- **Kisspeptin analogs or therapy** can induce ovulation in women with conditions like polycystic ovary syndrome (PCOS) or hypothalamic amenorrhea.
- In men, it may improve testosterone levels and sperm production in cases of secondary hypogonadism.

2. Support for Assisted Reproductive Technologies (ART) - Women

- **Ovarian Stimulation:** Kisspeptin has been used to safely trigger ovulation during in vitro fertilization (IVF), potentially reducing the risk of ovarian hyperstimulation syndrome (OHSS), a severe side effect of conventional fertility treatments.

3. Potential in Neuroendocrine and Behavioral Health

- **Mood and Emotional Regulation:** Emerging evidence suggests that kisspeptin may influence brain regions associated with mood, stress, and emotional behavior.
- **Sexual Behavior:** Studies in animals and humans have linked kisspeptin to enhanced sexual arousal and behavior.

4. Role in Metabolic Health

- **Energy Balance:** Kisspeptin signaling interacts with metabolic pathways, potentially influencing appetite and energy expenditure.

- **Glucose Homeostasis:** It may have a role in glucose regulation, with some research suggesting its potential in managing metabolic disorders.

5. Bone Health

- Kisspeptin may indirectly influence bone density and health through its role in sex hormone regulation, which is critical for bone metabolism.

6. Cancer Research

- The *KISS1* gene was initially identified as a metastasis suppressor gene in melanoma. It continues to be studied for its potential role in inhibiting cancer metastasis in various malignancies, including breast and prostate cancer.

7. Cardiovascular Health

- Kisspeptin receptors are expressed in vascular tissues, suggesting it may play a role in blood pressure regulation and vascular function.

8. Potential in Therapeutic Research

- **Hypogonadotropic Hypogonadism:** Kisspeptin therapies are being explored for treating individuals with GnRH deficiencies.
- **Endometriosis:** Research suggests kisspeptin might modulate inflammation and angiogenesis in endometrial tissue, offering potential for novel treatments.

Potential Side Effects and Precautions

1. Reproductive and Hormonal Effects

- **Overstimulation of the HPG Axis:** Excessive stimulation of GnRH release can lead to:
 - Hypersecretion of luteinizing hormone (LH) and follicle-stimulating hormone (FSH), potentially disrupting hormonal balance.
 - Premature ovulation, which could interfere with timed fertility treatments.
- **Risk of Ovarian Hyperstimulation Syndrome (OHSS):** Although kisspeptin is thought to reduce the risk of OHSS compared to traditional triggers like hCG, higher doses or mismanagement could still lead to this complication that may cause:
 1. Excessive growth of ovarian follicles.
 2. High levels of hormones (primarily estradiol).
 3. Leakage of fluid into the abdomen and chest due to increased vascular permeability.

2. Mood and Behavioral Changes

- **Emotional or Mood Swings:** Since kisspeptin affects brain regions involved in mood and emotion, some individuals may experience anxiety, irritability, or emotional sensitivity.
- **Sexual Behavior Alterations:** Changes in sexual arousal or desire could occur, although the direction (increase or decrease) may vary by individual and dose.

3. Metabolic Effects

- **Appetite Changes:** As kisspeptin interacts with metabolic pathways, it may lead to appetite alterations, though this is not yet well-characterized in humans.
- **Weight Changes:** Related to metabolic effects, kisspeptin treatment could theoretically influence weight regulation, but more research is needed.

4. Cardiovascular Side Effects

- **Blood Pressure Changes:** Kisspeptin is expressed in vascular tissues and may influence blood vessel dilation or contraction, leading to fluctuations in blood pressure.

5. Localized Reactions

- **Injection-Site Reactions:** If administered via injection, there could be minor side effects such as redness, swelling, or discomfort at the injection site.

6. Long-Term Safety Concerns

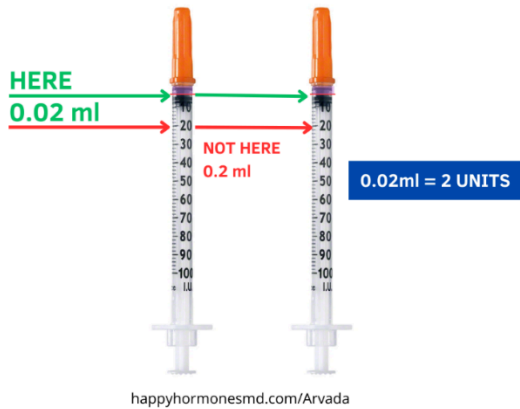
- **Unknown Risks:** Long-term use of kisspeptin therapies is not yet fully understood, and prolonged stimulation of reproductive or other systems could have unforeseen consequences, such as desensitization of GnRH receptors or hormonal dysregulation.

Dosage Guidelines

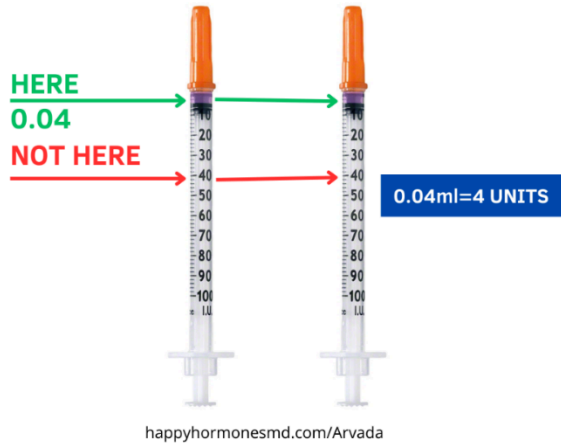
General Dose: 0.1mg – 0.2mg (0.02 – 0.04ml or 2-4 units) SQ daily

- **Testosterone Production (Men)** - Best Taken in the morning in a fasted state
- **Fertility (Men and Women)** - Best taken near ovulation, 45-60 minutes before attempting conception

0.02ml - 2 units (Not 20 UNITS)



0.04ml - 4 units (Not 40 units)



Cost

Kisspeptin is currently only available as a research peptide. Please see document titled *“Research Peptide Information”* in the Education Folder under Records in the patient portal.

Kisspeptin 5mg Vial (5mg/ml): \$93.50 (includes shipping and bacteriostatic water). **One vial = 25-50 doses.**

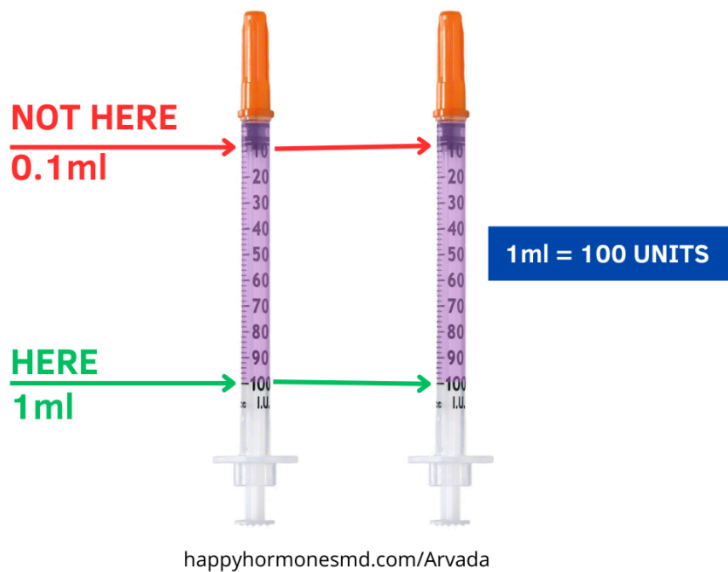
Reconstitution Instructions

IMPORTANT:

- Follow the instructions below regarding the amount of bacteriostatic water to use when reconstituting the peptide. **DO NOT** follow the instructions that come with the peptide.
- **Do NOT** throw away the vial of bacteriostatic water!!! It is a multiuse vial and can be used for your next order!

Inject **1ml of bacteriostatic water** into the vial (**1ml = 100 units**).

1 ml - 100 units (Not 10 UNITS)



- See the **document** titled “*Reconstituting Medications in Powder Form*” in the Education Folder in the patient portal.
- See the following Instructional **videos** in the Education Folder in the patient portal:
 - “*Reconstituting Powdered Medications*”
 - “*Injection Video – Introduction*”
 - “*Injection Video – Drawing Up the Medication*”
 - “*Injection Video – Administering the Medication*”

Storage and Stability

- Vials are shipped as **lyophilized powder**, requiring no refrigeration during shipping.
- In Lyophilized Form:
 - Stable for up to 3 years in the freezer and 2 years in the refrigerator.
 - Protect from light.
- Once Reconstituted:
 - Stable for 6 weeks.

- Must be refrigerated and kept away from light.
 - Avoid placing vials in the refrigerator door to prevent degradation from frequent temperature changes.
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Important Disclosures

- These statements have not been evaluated by the US Food and Drug Administration (FDA).
 - Not intended to diagnose, treat, cure, or prevent any disease.
 - Compounded drugs and research peptides are not FDA-approved but are produced under strict quality control measures.
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Quality Assurance

- All peptides are subjected to third-party testing with publicly available Certificates of Analysis (COA).
- Testing includes:
 - RP-HPLC (Reversed-Phase High-Performance Liquid Chromatography)
 - Mass Spectrometry (MS)
 - Sterility Testing
 - Additional tests meeting or exceeding U.S. Pharmacopeia (USP) and USP-National Formulary (NF) regulations.
- The manufacturer ensures quality, safety, and efficacy, complying with regulatory standards.