

How Insulin Can Wreak Havoc on Your Sex Hormones

What This Means

Insulin is not just a blood sugar hormone—it is a powerful regulator of other hormones in the body. When insulin levels are chronically elevated, it can disrupt estrogen, progesterone, and testosterone balance in both women and men.

Insulin resistance is one of the most common—and most overlooked—drivers of hormone imbalance.

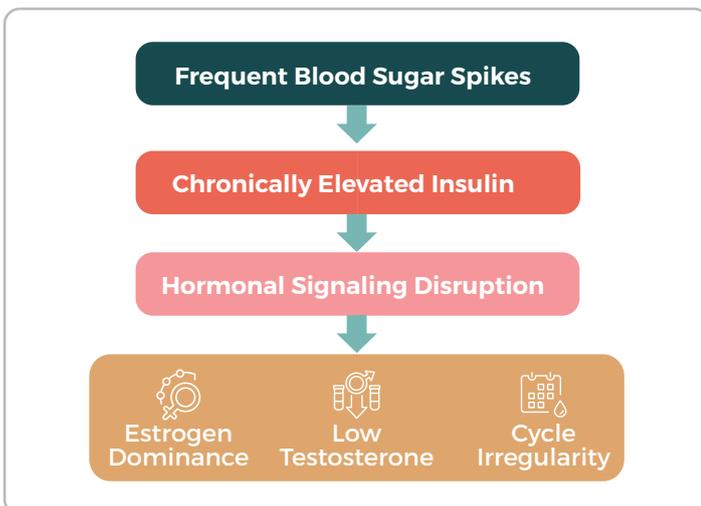
Why Insulin Matters for Hormone Balance

When cells become resistant to insulin, the body compensates by producing more of it. Chronically high insulin sends signals that:

- Increase estrogen production
- Increase conversion of testosterone into estrogen
- Suppress sex hormone-binding globulin (SHBG)
- Disrupt ovulation and androgen balance

Over time, this creates a hormonal environment that favors imbalance, inflammation, and metabolic dysfunction.

The Insulin–Hormone Disruption Pathway

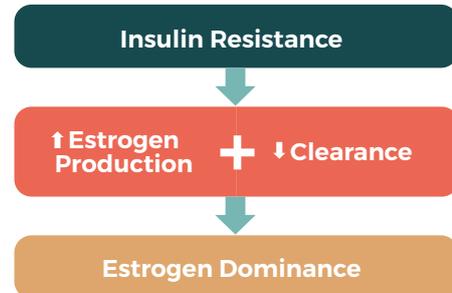


Insulin Resistance & Estrogen Balance

Chronically elevated insulin:

- Stimulates ovarian and adrenal estrogen production
- Increases inflammatory estrogen metabolites
- Slows estrogen clearance through the liver and gut

This can lead to **estrogen dominance**, even when estrogen levels appear normal on labs.



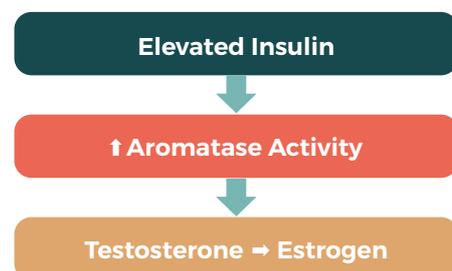
Common symptoms include PMS, heavy or painful periods, breast tenderness, mood changes, migraines, and weight gain.

Insulin Resistance & Testosterone Aromatization

Aromatization is the process by which testosterone is converted into estrogen via the enzyme aromatase.

Insulin resistance:

- Increases aromatase activity
- Promotes fat tissue growth (where aromatase is highly active)
- Lowers available testosterone



This affects both women and men and may contribute to low libido, fatigue, loss of muscle mass, mood changes, and difficulty losing weight.

Insulin, SHBG & Free Hormones

High insulin suppresses **sex hormone-binding globulin (SHBG)**, which regulates how much estrogen and testosterone are active in the body.

Low SHBG results in:

- More hormonally active estrogen
- Greater hormonal volatility
- Worsening symptoms despite “normal” total hormone levels

Common Signs of Insulin-Driven Hormone Imbalance

- Weight gain (especially abdominal)
- Sugar or carb cravings
- Fatigue after meals
- Irregular menstrual cycles
- Acne or excess facial hair
- Low libido
- Brain fog
- Difficulty responding to hormone therapy

Foundational Habits to Improve Insulin Sensitivity

- Eat balanced meals with protein, fiber, and healthy fats
- Avoid skipping meals or extreme restriction
- Strength train 2-3 times per week
- Prioritize sleep and stress management
- Support adrenal and cortisol balance

Functional Medicine Takeaway

From a functional medicine perspective, insulin resistance is often a root cause—not a side effect—of hormone imbalance. Improving insulin sensitivity is frequently required before hormone therapies can be fully effective.

When to Seek Additional Support

If hormone symptoms persist despite lifestyle changes, further evaluation of insulin signaling, metabolic health, and hormone pathways may be helpful. Personalized testing can guide a more targeted and effective plan.

If you're interested in the recommended clinical-grade supplements, please email howdy@medicalmavens.life and our team will send you a link for easy purchase. If you are a current Medical Mavens patient, your patient discount will automatically apply.

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