

1st Optimal

Men's Health Redefined

Hormones, Nutrition,
& Strength Across
the Lifespan

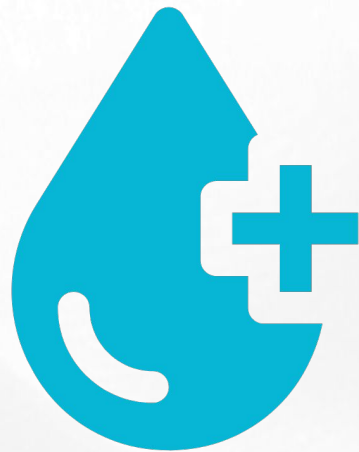


Men's Health

1. Blood Work Basics for Men's Health
2. If You're Not Horny, You're Not Healthy
3. Insulin Resistance: The Hidden Roadblock to Peak Performance
4. Testosterone Decline & "Man"o-pause
5. Next Steps

**SCAN FOR FREE
RESOURCES AND GUIDES**





Blood Work Basics



Total Testosterone

- This is the *overall* amount of testosterone in your bloodstream. It includes both the “active” (usable) and “inactive” forms. Think of this as the **total pool** of testosterone your body has available.

Free Testosterone

- This is the **active** form of testosterone that your body can actually use for things like energy, libido, muscle, and mood. It’s a smaller slice of your total testosterone, but it’s often a better indicator of how you feel day to day.

Estrogen

- Men need estrogen too—but in balance. In men, estrogen mainly comes from testosterone being converted into **estradiol**. Too much or too little can affect mood, sex drive, fat storage, and heart health.

Sex Hormone Binding Globulin (SHBG)

- This protein controls how much testosterone stays “bound” (inactive) versus how much is “free” (usable). If SHBG is too high, it can trap testosterone and lower your free levels even if your total testosterone looks normal.

PSA (Prostate-Specific Antigen)

- A protein made by the prostate. PSA tests help screen for prostate health issues, including enlargement or cancer. While it’s not perfect, higher levels may mean it’s time for a deeper check-in with your doctor.

Hemoglobin A1C (HbA1c)

- Reflects your **average blood glucose levels over the past 2–3 months** by measuring the percentage of glycated hemoglobin. A higher A1C means more glucose has been sticking to red blood cells, which correlates with long-term blood sugar elevation and risk of complications.



**If You're Not Horny,
You're Not Healthy.**





Joe Miller ✓
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Fellas, Your
Morning Wood
Is Trying to
WARN YOU.



Ignore the signal, and pay the price.

Morning Wood: The Canary in the Coal Mine for Your Heart

- If you're not waking up with regular morning erections, it's more than just a bedroom issue. Loss of "morning wood" can be an early warning sign of **endothelial dysfunction** meaning poor blood flow. The arteries in the penis are much smaller than those in your heart. Erectile issues often appear **years before** a heart attack or stroke.
- Research in *The Journal of the American College of Cardiology* shows that ED can predict **future cardiovascular events** even in otherwise healthy men.

Low Testosterone Isn't Just About Sex Drive—It's a Metabolic Disaster

- Think testosterone is just about libido? Think again. Low testosterone has been linked to increased **visceral fat**, insulin resistance, and even **Type 2 diabetes**.

Men with Low Libido Often Have Hidden Inflammation

- If your sex drive has tanked, chronic **inflammation** may be behind it. Low-grade inflammation can disrupt testosterone production at the brain and testicular level.

Testosterone and Dopamine: Your Motivation Molecule May Be Dying

- Low testosterone doesn't just kill sex drive it crushes **motivation** and mood. Testosterone directly interacts with **dopamine**, your brain's "reward" chemical tied to desire, drive, and even ambition.

Men with Low Libido Often Have Hidden Inflammation

- If your sex drive has tanked, chronic **inflammation** may be behind it. Low-grade inflammation can disrupt testosterone production at the brain and testicular level.
- In a study from *The Journal of Sexual Medicine*, men with higher levels of **C-reactive protein (CRP)**—a key inflammation marker—were far more likely to experience low testosterone and low libido.

Testosterone and Dopamine: Your Motivation Molecule May Be Dying

- Low testosterone doesn't just kill sex drive it crushes **motivation** and mood. Testosterone directly interacts with **dopamine**, your brain's "reward" chemical tied to desire, drive, and even ambition.
- A 2022 study in *Frontiers in Endocrinology* showed that men with low testosterone had impaired dopamine signaling, leading to reduced sexual desire, energy, and even increased risk of **depression**.



Insulin Resistance: The Hidden Roadblock to Peak Performance



Got a Beer Belly of Dad Bod?

- It's not just the beer it could be insulin resistance sneaking up on you, and it's making you hold onto that stubborn belly fat.

Feeling Sluggish?

- Insulin resistance makes your body less effective at burning fat, leading to **fat retention** and **lower free testosterone**. And guess what? High SHBG (sex hormone-binding globulin) can trap your testosterone, making it less available to your body.

Is Your Performance Down?

- Insulin resistance doesn't just affect your weight it can impact **muscle growth, energy, and even your libido**. If you're struggling in the gym or the bedroom, it could be more than just a 'slump.' It could be your body's resistance to insulin.



Why It Matters

Insulin resistance not only promotes belly fat but also lowers **free testosterone** by increasing **SHBG** (Sex Hormone-Binding Globulin), which binds to your testosterone, making it less available for your body.

This leads to decreased performance, energy, and muscle mass, while fat accumulates more easily.

Tip: Want to optimize your testosterone? **Improve your insulin sensitivity** by adopting these tips, and you'll likely notice better performance in the gym—and the bedroom.

Insulin as a Sedative

- **Fact:** Insulin has a calming effect on the body, which can make you feel sleepy after meals.
- **How:** High insulin levels stimulate the brain's sleep-promoting pathways, leading to feelings of drowsiness or lethargy after eating.

Insulin Blocks Fat Loss

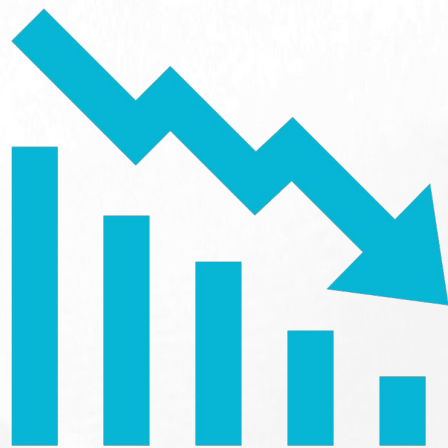
- **Fact:** Insulin is a **storage hormone**, which means it encourages the body to store fat instead of burning it.
- **How:** When insulin levels are high, your body is in **storage mode**, prioritizing fat storage over fat burning. This makes it much harder to lose fat, especially around the belly area.

High Insulin Levels = Fat Storage

- **Fact:** Elevated insulin levels trigger your body to store excess calories as fat.
- **How:** Insulin prevents fat cells from releasing stored fat for energy (lipolysis), meaning the body holds onto fat, especially when insulin is chronically high due to poor diet or insulin resistance.

Why It Matters for Men

- **Link to Weight Gain:** High insulin levels directly contribute to **increased belly fat** and make it harder to shed excess weight.
- **Link to Lower Testosterone:** Elevated insulin can lower **free testosterone** levels by increasing SHBG (Sex Hormone-Binding Globulin), which binds testosterone and reduces its effectiveness.



Testosterone Decline & “MAN”-O-Pause



Is Your Testosterone Secretly Dropping?

- By age 40, your testosterone could be 20% lower than it was in your 20s here's how to tell.

Your Waistline Might Be the First Warning Sign

- As testosterone drops, **belly fat** tends to climb.
- Testosterone helps regulate **fat distribution**, and low levels trigger more visceral fat especially around your waistline. One study in *Diabetes Care* found that men with declining testosterone gained significantly more abdominal fat, even without major changes in diet or exercise.

Brain Fog and Poor Memory? It Could Be Low T

- Struggling to focus, remember names, or feel sharp? It might not just be “aging.” Testosterone plays a critical role in **cognitive function**.

Crashing Energy Levels Could Signal Hormonal Burnout

- That afternoon crash isn't always from poor sleep or caffeine withdrawal. Low testosterone reduces **mitochondrial function** your body's energy engines.
- Research from *The Journal of Clinical Endocrinology & Metabolism* shows that men with testosterone deficiency often report persistent **fatigue**, reduced stamina, and slower recovery from exercise or stress.

Engaging Facts (Cited)

- **Testosterone** is linked to **muscle mass**, **bone density**, and **sexual health**. Lower testosterone levels can impact all these areas
- **Symptoms of low testosterone** can include irritability, poor concentration, and weight gain ([NIH, 2021](#)).

One Powerful Tip

- **Tip:** If you're noticing signs of fatigue or low libido, ask your doctor for a blood test to measure your testosterone levels. If your levels are low, **Testosterone Replacement Therapy (TRT)** can significantly improve your energy and quality of life.
- **Don't ignore the signs of low testosterone early intervention is key.**



Next Steps



Get Connected



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Additional Tips & References



References:

- A study in *The Journal of Clinical Endocrinology & Metabolism* found men with low testosterone had significantly higher rates of **metabolic syndrome** a dangerous cluster of fat gain, high blood sugar, and high blood pressure.
- **Research:** Studies show that reducing sugar intake can significantly improve insulin sensitivity and reduce fat accumulation, especially in the abdominal area (Journal of Clinical Endocrinology & Metabolism, 2019).
- A 2020 study in *Endocrine Reviews* confirmed that men with lower testosterone performed worse on tests of **memory, processing speed, and executive function** compared to men with optimal levels.
- In a study from *The Journal of Sexual Medicine*, men with higher levels of **C-reactive protein (CRP)** a key inflammation marker were far more likely to experience low testosterone and low libido.
- A 2022 study in *Frontiers in Endocrinology* showed that men with low testosterone had impaired dopamine signaling, leading to reduced sexual desire, energy, and even increased risk of **depression**.

Key Tip #1: Cut the Sugar, Keep the Muscle

- **Tip:** Insulin resistance thrives on sugar and processed carbs. Cut back on refined sugars and simple carbs to keep insulin levels in check and help your body burn fat instead of storing it.
- **Research:** Studies show that reducing sugar intake can significantly improve insulin sensitivity and reduce fat accumulation, especially in the abdominal area (Journal of Clinical Endocrinology & Metabolism, 2019).

Key Tip #2: Prioritize Protein & Healthy Fats

- **Tip:** Protein and healthy fats, such as those found in lean meats, fish, avocados, and nuts, help regulate insulin levels and support fat loss. They also keep you feeling fuller for longer.
- **Research:** Consuming adequate protein has been shown to improve insulin sensitivity and help maintain lean muscle mass as you age, balancing blood sugar and keeping fat storage in check (American Journal of Clinical Nutrition, 2021).

Key Tip #3: Hit the Weights & Stay Active

- **Tip:** Resistance training increases muscle mass and helps your body become more efficient at using insulin. Cardio is great too, but weightlifting can boost your metabolism and prevent fat storage.
- **Research:** Strength training can improve insulin sensitivity and lower fat mass by increasing the muscle-to-fat ratio, particularly in abdominal regions where insulin resistance often leads to fat accumulation (Diabetes Care, 2020).

Key Tip #4: Get More Sleep & Reduce Stress

- **Tip:** Poor sleep and high stress can contribute to insulin resistance and increased fat storage. Aim for 7-9 hours of quality sleep and practice stress-reduction techniques like meditation or deep breathing.
- **Research:** Poor sleep and chronic stress increase cortisol levels, which in turn can cause insulin resistance and fat retention. Managing stress and getting enough sleep can help prevent and reverse this process ([Journal of Sleep Research, 2020](#)).

Key Tip #5: 5 Hour around Training Time

- **90 Minutes Before:** Resistance training increases muscle mass and helps your body become more efficient at using insulin. Cardio is great too, but weightlifting can boost your metabolism and prevent fat storage.
- **Intra-workout:** Strength training can improve insulin sensitivity and lower fat mass by increasing the muscle-to-fat ratio, particularly in abdominal regions where insulin resistance often leads to fat accumulation (Diabetes Care, 2020).

Key Tip #6: Intra-workout Nutrition & Hydration

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Key Tip #7: Carbohydrates vs. Protein

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Key Tip #8: Get Plug In

- Follow [@JoeMiller1o](#), [@1stOptimal](#) on Instagram
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- <https://1stoptimal.com/blog/>

