



MEN'S HORMONES: Bio-identical vs. Synthetic

What Are Hormones

- Chemical messengers made by the glands in your body carried in your blood to act on other organs.
- Needed for growth, reproduction, and well-being.

The Brain & Male Reproduction

- Located at the base of your brain is your pituitary gland and hypothalamus where the production of male hormones and sperm are controlled.
- Your hypothalamus makes gonadotropin-releasing hormone (GnRH), controlling the release of other hormones from your pituitary gland such as luteinizing hormone (LH) and follicle stimulating hormone (FSH). These two hormones are important messenger hormones made in your pituitary that act on your testicles to make testosterone and sperm.

Androgens

- Male sex hormones that increase at puberty needed to develop into a sexually mature adult male who can reproduce.

Testosterone

- Most important androgen needed to have normal reproductive and sexual function.
- Responsible for physical changes that happen during puberty--development of penis, testicles, facial and body hair, and muscle growth.
- Testosterone acts on cells in your testicles to make sperm, help bone growth, and affects your mood and sex drive. Testosterone is also good for overall health.
- Some testosterone is converted into the female sex hormone, estrogen, needed for bone health.

Testosterone Production

- Mainly made in your testicles however, a small amount is created by your adrenal glands which are the two small glands that sit on top of your kidneys.

Testosterone in Your Blood

- Testosterone changes and metabolizes as it moves through your body in your blood into other sex hormones such as estradiol and dihydrotestosterone (DHT).
- DHT is a powerful androgen made from testosterone in some parts of your body, such as your skin and prostate.

Changing Testosterone Levels

- Testosterone levels change throughout the day and is highest when you wake up with the lowest concentration about 12 hours later.
- This pattern across your day is called a diurnal rhythm and occurs throughout your body's hormonal systems.
- Testosterone levels naturally begin to decline when men reach the age of 30-40 years at a rate of about 1-2% every year.

Advantages of Bio-identical Hormones

- Advantage is that they are exact copies of your natural ones.
- Are more effective following the same biological pathways as your real hormones because they are the same as the hormones created naturally in your body. Your body cannot tell the difference, reducing side effects and significantly increasing the benefits.
- They have few or no side effects.
- Can be customized for each individual patient with a combination of hormones at appropriate dosing.
- Can be administered as a pellet placed under the skin or intramuscular injection. This is called bio-identical hormone replacement therapy (BHRT).
- Bio-identical hormone replacement therapy restores optimum testosterone levels, relieving symptoms caused by low testosterone, leading to a multitude of benefits.

Disadvantages of Synthetic Hormones

- Synthetic hormones usually derived from natural sources such as pregnant horse urine.
- They are not natural for humans.
- Scientists manipulate these hormones in a lab to mimic the biological paths a human hormone would take, but they lack the correct structure to offer the same benefits and more likely to have significant risks, including some forms of cancer.

Benefits of Bio-identical Testosterone Replacement

- Improved ability to get and maintain an erection
- Increase sex drive (libido) and improve sexual satisfaction
- Rebuild weak muscles and lean muscle mass
- Strengthen your bones, reducing osteoporosis risk
- Feel energized, reduce stress, and regain mental capacity and memory
- Improved concentration, clears brain fog, and improves performance at work