

Aging & The Testosterone Factor

New research once again puts testosterone upfront in the battle against age-related disease. According to coauthor Farid Saad, PhD, on his study of testosterone-deficient middle-aged/older men, "testosterone has a much wider therapeutic role than just improving sexual desire and erectile function."

He delivered the study results at The Endocrine Society's 91st Annual Meeting (June 10-13, 2009 in Washington, D.C.), where approximately 8,000 scientists and clinicians from 75 countries converged to discuss hormone research, health, science and endocrinology.

Saad, from Bayer Schering Pharma AG (Berlin), and his investigators focused on testosterone's declining levels that occur with age and lead to an array of medical issues: metabolic syndrome with increased risk for heart disease, stroke and type 2 diabetes.

Researchers assessed 122 hypogonadal (testosterone-deficient) men, aged 36 to 69, who were given a slow-release, parenteral testosterone undecanoate (injectable form) for 24 to 30 months. (Bayer Schering Pharma manufactures a brand of testosterone undecanoate.)

What they found. Per the study, progressive, significant changes occurred:

- **Decreased BMI (body mass index that measures fat) values in six months**
- **Decreased waist circumference in six months**

- **Decreased LDL in six months**
- **Increased HDL over study period**
- **Decreased serum cholesterol and triglyceride levels in one year, then stabilized**
- **Continued decline in C-reactive protein levels**
- **The 36 out of 47 men with metabolic syndrome at baseline no longer had metabolic syndrome after 2 years of treatment**

Saad also surprisingly reported "improvements in liver enzymes" that correlated with a decrease in fat mass. "Restoring plasma testosterone levels to normal in elderly hypogonadal men leads to significant improvements in features of the metabolic syndrome and of liver steatosis . . . these improvements were progressive over time," he said.

Saad concluded that "testosterone therapy in men with testosterone deficiency can largely improve or even remedy the metabolic syndrome, which will most likely decrease their risk of diabetes and cardiovascular disease."

But isn't there a causal link between testosterone and prostate cancer?

No, says a retrospective analysis done by Beth Israel Deaconess Medical Center. Published in the January 2004 *New England Journal of Medicine*, the investigators reviewed 72 studies to address sometime controversy surrounding corrective testosterone therapy (restoring clinically deficient levels to optimal ranges for a patient's age).

The Testosterone Scoop For Men

- Gonadotropic hormones released from the pituitary gland impact testosterone and sperm production.
- The pituitary gland releases luteinizing (LH) to up testosterone production.
- A testosterone deficiency continues to be linked to an increased mortality risk.
- Some symptoms of a testosterone deficiency: decreased sex drive, erectile dysfunction, reduced sperm count, depression, lack of mental focus, fatigue, decreased muscle and bone mass (leads to osteoporosis).
- A blood test measures testosterone levels.
- Younger men face different problems with a testosterone deficiency than older men. Their pituitary gland may slow down or stop producing LH, requiring a different type of protocol to stimulate LH production.

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Testosterone, Women & Improved Health

"We reviewed decades of research and found no compelling evidence that testosterone replacement therapy increases the incidence of prostate cancer or cardiovascular disease," said Harvard Medical School's Abraham Morgentaler, MD. Dr. Morgentaler has published widely on the topics of male sexual dysfunction, hypogonadism and male reproductive disorders. His particular area of interest is in the relationship of testosterone to prostate cancer. His recent book (*Testosterone for Life*, November 2008, McGraw-Hill/Harvard Health Publications) is a culmination of his 30-year research.

In a 2007 online interview with Healthline®, Morgentaler said that "low testosterone is under-recognized, its effects are greatly underappreciated, and its diagnosis isn't readily understood. This is an area that has tremendous research potential in the coming years."

He also noted that prostate cancer is more prevalent at a point in a man's life when he is experiencing testosterone decline.

"We almost never see it in men in their peak testosterone years, in their 20s for instance. We know from autopsy studies that 8% of men in their 20s already have tiny prostate cancers, so if testosterone really made prostate cancer grow so rapidly — we used to talk about it like it was pouring gasoline on a fire — we should see some appreciable rate of prostate cancer in men in their 20s. We don't. So, I'm no longer worried that giving testosterone to men will make their hidden cancer grow, because I'm convinced that it doesn't happen."

In his 2004 study, Morgentaler stated, "Testosterone is only for men who have symptoms of low testosterone combined with a confirmatory blood test. Testosterone therapy can be beneficial and safe for these men as long as they are appropriately monitored by their physician."

Additional studies cited. Per the online interview with Morgentaler, a number of smaller studies on men with testosterone therapy show a 1% per year prostate cancer rate. With men having prostate cancer screening—the same age population—the rate is about the same. Therefore, he says, there's "no signal in these results that testosterone therapy creates an unexpectedly high rate of prostate cancer."

Among other epidemiologic studies—such as the Physicians' Health Study, Baltimore Longitudinal Study of Aging and Massachusetts Male Aging Study, all with tens of thousands of men followed for 5, 10, 15 or even 20 years—Morgentaler says none have demonstrated a "definitive correlation between prostate cancer and total testosterone." He says, "three or four have shown weak associations, but none of those have been confirmed in subsequent studies."

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Saad's and Morgentaler's research, among others, further support our established approach.

The fact is this. Hormones start to drop by 1% to 3% each year, beginning around age 30. Everyone needs balanced levels of estrogen, testosterone, thyroid, DHEA and cortisol since each hormone not only has a specific job, but overlaps with others to create a synergistic environment for good health.

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- A female's ovaries and adrenal glands produce testosterone as well as estrogen and progesterone.
- A testosterone deficiency can lead to menstrual irregularities, muscle wasting, hot flashes, mood shifts, decreased bone mineral density and fatigue.
- A 2008 international study of 800 women from 65 countries revealed that testosterone (skin patch) upped sex drive in postmenopausal women, even if no other hormone therapy was used.
- February 2009 data suggests long-term testosterone therapy results in significant improvements in body composition, bone mineral density and quality of life in HIV-positive women, who are commonly testosterone deficient.

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