

Article Level: Advanced

Hormone Replacement Therapy for Men? Testosterone & Male Menopause

Lynn Shapiro, Medical Writer

Introduction

Doctors in the newly recognized specialty of antiaging medicine are giving their patients testosterone to protect them against the ravages of "male menopause" which doctors call "andropause."

Eugene Shippen, author of *The Testosterone Syndrome* and an internist in Shillington, Pennsylvania, says a carefully planned program of diet, exercise and hormonal replacement can make a man feel younger "next year than he did last."

"Their appearance, their energy, drive, sexual function, and musculoskeletal wellness show us that for a while, at least, we can enjoy the very special pleasure of spitting in the face of the calendar," Shippen writes.

"Get the man to stop smoking, to lose weight, to change medications. Don't shoot him up with testosterone if he doesn't need it."

Taking exception to this idea is Andre Quay, MD, an endocrinologist who is director of the Center for Sexual Function at the Lahey Clinic Medical Center in Burlington, Massachusetts.

Dr. Quay concedes that data have shown testosterone is necessary for both nocturnal and spontaneous erections. In one study he cites, hypogonadal men--those with very low testosterone levels--reported a boost in energy and well-being. However, once adequate levels of testosterone are achieved, a further increase did these men no good, Quay says.

Also, it is well known that testosterone is low in the presence of illness, he says. "Get the man to stop smoking, to lose weight, to change medications. Don't shoot him up with testosterone if he doesn't need it."

Believers in andropause agree that when there is an illness such as diabetes or heart disease, it should be treated. However, Robert Tan, MD, associate professor (geriatrics) in the Department of Family Practice and Community Medicine at the University of Texas (Houston) asserts testosterone deficiency has its own symptoms. Bone loss, impotence,

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weakness, memory loss, and depression all are symptoms of andropause that perhaps might be reversed with testosterone, he says.

Dr. Tan has conducted studies of his own in which he says he found a possible link between testosterone decline and memory loss. Some of his hypogonadic patients suffering from dementia improved when they received androgens (the class of hormones to which testosterone belongs). In another trial he discovered that men who smoked more than ten cigarettes a day had an earlier onset of andropause than those who did not, just as women who smoke reach menopause earlier.

Applying Testosterone

Until recently, men treated by mainstream doctors had to settle for several imperfect delivery systems. Two of them are patches applied to the skin: One irritates the skin; the other often requires a shaved scrotum. There are also pellets that can be surgically implanted into the buttocks or thighs, and there are intramuscular injections.

Many physicians are not aware that antiaging doctors are using testosterone creams and lozenges made especially for them by compounding pharmacists--pharmacists who actually make special, sometimes "custom," preparations composed of different ingredients in varying proportions. For the compounding pharmacist, hormone therapy has become big business--big because drug companies for the most part have not yet entered the market with an easy-to-use product.

Testosterone itself is not under any patents, but novel delivery systems, such as patches and gels, are every bit as patentable as any prescription drug.

Study Convinces FDA

Recently, Solvay Corporation's subsidiary, Unimed, won FDA approval to market its testosterone gel, "Androgel." It is simply rubbed on the body every morning after a shower.

Unimed is not permitted to market its gel for andropause: The FDA does not recognize that any such disease entity exists. For the time being, the company plans to sell its testosterone gel to the estimated 5 million men with hypogonadism (literally meaning, low sex hormones). These men's testosterone levels are clearly in the abnormal range, due to an X-chromosome syndrome called Klinefelter's syndrome, or to aging.

The testosterone-treated males were found to have improved sexual drive, improved mood, and a renewed sense of well-being.

The FDA based its approval on a multicenter trial conducted at universities across the country including Johns Hopkins, Baylor, and the University of Pennsylvania. Researchers enrolled 225 men ages 18-65 for a 6-month trial of testosterone or placebo.

The testosterone-treated males were found to have improved sexual drive, improved mood, and a renewed sense of well-being. After just 6 months, bone mineral density improved significantly in some of the men treated, says Ronald Swerdloff, MD, lead author of the study. Dr. Swerdloff is professor and chief of endocrinology at Harbor-UCLA Medical Center in Los Angeles.

Despite the study's success, Swerdloff says it is premature to give the hormone to everybody. "We're not anywhere near the place where I would encourage men with normal testosterone to be given youthful levels of the hormone," he says. "We need to do larger safety and efficacy studies. The National Institute on Aging and the Veterans Administration are considering such a study. They're coming."

Testosterone for Heart Disease

Dr. Shippen says studies on heart disease and testosterone could be one of the brightest spots in testosterone research, yet are curiously not mentioned at American Heart Association meetings.

Since Dr. Shippen is so passionate an advocate, Richard Stein, MD, chief of cardiology at Brooklyn Hospital, agreed to do a Medline search for CBSHealthWatch by Medscape on testosterone and the heart. He said he was surprised to find some very positive studies.

One, in the journal *Circulation* (1999), showed that testosterone causes coronary arteries to dilate (open) and increases coronary blood flow in men with established heart disease.

Another, in *Diabetes Metabolism* (1995), found that naturally occurring testosterone levels in the high normal range appear to be conducive to optimal cardiovascular health.

An abstract presented at the October 1997 meeting of the American Society of Reproductive Medicine found that testosterone dilated the coronary arteries in men with heart disease, suggesting that it may be beneficial to coronary circulation.

Measuring Testosterone

Most doctors believe that measuring total testosterone levels-- ranging anywhere from 300 to 1,000 nanograms per deciliter--will provide an accurate reading. Some proponents of testosterone therapy, however, say that any measurement other than the "free-fraction," or "bioavailable" portion of testosterone, is not precise enough.

For one, Eugene Shippen says it is unfortunate most doctors don't realize that measuring total testosterone levels is "useless." This is because a portion of testosterone binds to a protein called "sex hormone binding globulin"(SHBG) and as a result cannot be used by the body.

What happens is that the SHBG protein attaches itself to testosterone like flypaper. It then converts to estrogen. It's well known that estrogen produces more SHBG, which suppresses testosterone even more. And SHBG binding increases with age, especially after age 65, making the standard test least useful for the men who need it most.

Robert Tan, associate professor of geriatrics at the University of Texas, Houston, says he is aware that SHBG binds up testosterone. However, he says total testosterone measurements often correlate with the free-fraction test. Besides, the total testosterone test is four times cheaper than the "free" test.

Therefore, only if a man's total testosterone is borderline low, or if he has symptoms such as weakness or hot flashes, should his physician order the free-fraction test. If his total testosterone is not low for his age, the less expensive test may suffice, Dr. Tan says.

Both men and women experiencing "the change of life" show the same biochemical changes, Tan says. They both have elevated levels of follicle-stimulating hormone and leutinizing hormone. These brain chemicals are on overdrive, compensating for a growing shortage of estrogen in women and testosterone in men.

Lynn Shapiro is a medical reporter who lives in New York City. She writes frequently on such topics as psychiatry, reproductive and menopausal medicine, and biotechnology.

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Source: CBSHealthWatch
Copyright: © 2000 Medscape, Inc.
Posted On Site: May 2000
Publication Date: May 2000

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