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Subcutaneous Testosterone Hormone Therapy

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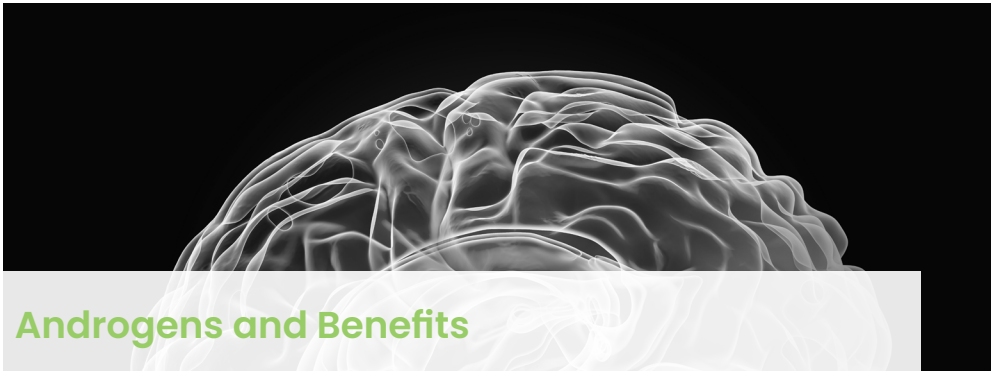
Hormone replacement therapy (HRT) is used to treat menopausal symptoms in women and andropause symptoms in males. Most women who take HRT for menopausal reasons are given an estrogen/progesterone/testosterone combination, except those who have had a hysterectomy, as some schools of thought are they may not need progesterone.

Hormone decline during the 3rd through 5th decades of life is central to decreased health and quality of life, and natural hormone restoration and balance has been shown to not only increase quality of life and over all sense of well being, but prevent, and in some cases reverse, many chronic disease processes. Dimitrakakis states: “Androgen receptors are found in virtually every tissue in both women and men from the brain, breast, and bones, indicating the role they play in normal tissue homeostasis and possibly pathologies including breast cancer and osteoporosis; libido and cognitive decline” (2011).



Androgens and Benefits

Androgen replacement has been shown in women and men to improve mood, lift anxiety and depression, improve deep sleep patterns, and enhance sexuality, all of which improve health related quality of life (HRQOL)[1]. **In addition to improving overall sense of well-being, energy levels, libido and quality of life, natural hormones have been shown to prevent osteoporosis, increase muscle mass, increase muscle strength, increase bone density, reduce visceral fat, reduce total cholesterol levels, induce glucose homeostasis, increase metabolism, manage PMS, reducing severity and frequency of migraine headaches, improved cognition, improved memory, prevent Alzheimer's disease, improve Parkinson's symptoms, treat HIV wasting syndrome, in women and men; and decrease in CVD risk and all cause mortality in men**[2].

Misrepresentation of study outcomes in the media and in the Women's Health Initiative Trial of 2002 has constructed breast cancer as a woman's biggest fear with regards to HRT. Expansive literature review shows testosterone not only improves overall quality of life, but also to be protective and preventative for breast cancer[3]. Further, studies show use of testosterone replacement therapy in women does not increase the risk of breast cancer, even in breast cancer survivors[4]. Most haunting in the literature review were the studies from a half a century ago that revealed testosterone therapy in women with metastatic breast disease showed not only remission of the cancer but a marked improvement in quality of life[5]. Posing the question of why aren't these modalities more utilized today knowing the proven beneficial effects?

Pellet Therapy

Hormone replacement therapy by pellet implantation has been used with great success in the United States, Europe and Australia since 1938 and found to be superior to other methods of hormone delivery[6]. Subcutaneous hormone pellet therapy is not experimental. Pellets deliver consistent physiologic levels of hormones and avoid the fluctuations of hormone levels seen with other methods of delivery like pills, creams, gels and synthetic injections[7]. Pellets are superior to oral and topical hormone therapy with respect to relief of menopausal symptoms[8]. Some key aspects to consider with the use of subcutaneous pellet HRT are as follows:

- Hormones delivered by the subcutaneous implants bypass the liver, do not affect clotting factors and do not increase the risk of thrombosis[9].
- Testosterone and estradiol delivered by pellet implantation, does not adversely affect blood pressure, glucose or liver functions[10]. In fact, testosterone and estradiol improved lipid profile by reducing cholesterol, reducing triglycerides and increasing HDL cholesterol[11]. This has positive benefits on the cardiovascular system.
- Hormone replacement therapy with estradiol and testosterone implants is superior to oral and topical (both the patch and gel) hormone replacement therapy for bone density[12]. Subcutaneous pellet HRT not only prevents bone loss but also increase bone density[13].
- Testosterone replacement therapy in men with subcutaneous implants (pellets) has been shown to be extremely effective, convenient and safe[14].

- The routine doses of testosterone delivered by pellet implantation in recent studies are between 1000 and 2400 mg in men. The pharmacokinetics and pharmacodynamics are well established showing that these doses deliver reproducible physiologic levels of testosterone for 4-6 months. A 6-9 mg daily production of testosterone is a 'physiologic' level produced by the testicle. Peak serum testosterone levels with the implants are usually seen at month one. Therapeutic testosterone levels at month one, are expected at the upper limits of normal for healthy young males (900-1100 ng/dL). These levels are necessary to protect the brain from Alzheimer's disease, diabetes, heart disease, prostate cancer, osteoporosis and all-cause mortality [15]. By month 4 to 5 testosterone levels drop to below 500-600 ng/dL at which time symptoms return and the pellets are reinserted. Each individual has their own reproducible levels where symptoms return.
- Testosterone implants have been used in women in 5 continents for decades. Doses used in studies are as low as 50 mg and up to 225 mg; normal testosterone levels are not established in females[16].
- Symptoms return when testosterone levels reach the upper end of endogenous ranges[17].
- End organ response to testosterone remains optimal (i.e., relief of depression, increase in bone density, relief from insomnia, relief from aches and pains, lessened anxiety, improved memory and concentration, increased energy, etc.) when testosterone levels at 4-6 weeks after pellet insertion is 150-250 ng/dL.
- Steady state is subsequently is achieved at approximately half of these levels equaling 80-120 ng/dL, which is in the physiologic to slightly supra-physiologic range. It should of primary importance to titrate the dose to achieve symptom relief and minimize side effects, not to achieve some phantom blood level.
- As testosterone receptors become less responsive as women age more often than not higher levels of testosterone are required to achieve the clinical outcome desired of symptom relief and long-term protection to the brain, breast, heart and bones.

Conclusion

As you can see from this expansive literature review, not only does testosterone and female hormone replacement produce an overall increased sense of well being, but can also be beneficial in preventing, treating, and in some cases reversing many chronic diseases of aging, thus have a direct impact on HRQOL. Also noted is the superior efficacy of subcutaneous pellets over other modalities.

We hope this evidence-based information was helpful for you. For a detailed list of references provided or any additional clarity please do not hesitate to contact the author.

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