Testosterone Replacement Therapy for Men

Testosterone is the hormone responsible for the experience of sexual desire not only for men but also for women. Testosterone is a male and female sex hormone. Testosterone deficiency is a condition, which potentially threatens a person’s health and “quality of life”. Research has shown that both men and women’s normal physiology includes a critical amount of testosterone, essential to normal sexual development, to the healthy functioning of virtually all tissues in the body, and to the experience of vital energy, sexual libido, and immune function. This critical amount of testosterone decreases in men, (usually late 50's and early 60's in susceptible men), resulting in a loss of vital energy and sexual libido.

In men lower testosterone levels indicate hypogonadism or androgen deficiency. As men age they can suffer frailty syndromes. Multiple illness can also suppress androgen production. The aging process leads to a decline in levels of testosterone. There is testosterone bound in the blood and free testosterone available to receptors. As men age the binding in the blood increases contributing to a decreasing free testosterone level. Free testosterone in general should be greater than 70ng/dl and total testosterone should be greater than 300ng/dl. Levels below this are called Andropause or ADAM (Androgen Deficiency in Men). This will lead to symptoms of muscle loss, memory loss, and sexual dysfunction.

Supplementary testosterone can be a substantial help in restoring a familiar level of energy, libido, and well being. Only the use of irresponsibly high doses of testosterone over a sustained period of time can produce undesirable effects of significant growth of facial and body hair, as well as leading to potential increases prostate hypertrophy and possibly prostate cancer.

In men the testes produce testosterone. As long as women have functioning ovaries, their bodies produce, on the average, 3/10 of one milligram a day. Men's bodies produce more than twenty times as much.

Testosterone is carried in the blood, most of it attached to a protein known as “sex hormone binding globulin”, or SHBG. Only a small amount of testosterone is unattached to protein, or “free” in the plasma and free to produce its effects on tissues. At any given time, a significant amount of testosterone is attached to binding protein. Therefore reducing the amount available to tissues.

Both testosterone and estrogen are carried on the same protein. Estrogen actually stimulates the production of more SHBG, which binds up still more of the testosterone, leaving less testosterone free to work on cells. This explains why women taking supplemental estrogen at menopause can tie up a little more of whatever testosterone may still remain, sometimes tipping the balance and causing the symptoms of testosterone deficiency.

The cells of some tissues produce and contain more testosterone receptors than others. The cells of the genital area, for example, are abundantly supplied with receptors. As aging occurs testosterone receptors gradually decrease as well as the enzymes involved in utilization at a cellular level.
During mid to late teens, the adrenal glands produce peak amounts of testosterone and other androgens. Even before the approach to andropause, adrenal production decreases by more than ½. This is “adrenopause”, and reflects the decline in DHEA and DHEA-sulfate. The adrenals continue to produce some androgens throughout life, but the amount is greatly reduced. Testosterone declines at about 100ng/dl every 10 years. By age 50 half of all men have free levels of testosterone below those of healthy men. By age seventy, 70% of all men are hypogonadic. This can lead to sexual dysfunction, loss of a feeling of general well being, loss of cognitive or brain function, bone loss, increased fat and decreased muscle leading to frailty in the elderly male.

Physiologic dose testosterone therapy in men can be achieved by the sublingual, buccal, or topical route, which will bypass the liver, optimize absorption, and decrease metabolites. Patients should consult with their physician, especially if there is a record of prostate cancer in their family history or benign prostatic hypertrophy, before beginning any hormonal androgen supplementation.

Due to the pervasiveness of our processed food diet, a number of nutrients should be supplemented, for persons not consuming a balanced diet, to optimize physiologic performance.

Diet:

Restrict or avoid carbonated beverages or “soda”, sugars, and grains with gluten. Limit grass fed red meat to 3 or fewer times per week. Choose organic vegetables for carbohydrate loads. Limit alcohol use as this causes estrone secretion to increase. Estrone levels can increase 300% for up to 5 hours after ingestion of alcohol. Dairy products are not necessary. Avoid sugar, refined carbohydrates, and refined fats, choosing instead plenty of fresh vegetables of all sorts particularly broad leafy greens. Consume up to 60% of daily calories in the form of good fats or essential fatty acids as from Chia or hemp seeds, coconut oil, flaxseed oil, fish oil, Borage oil, CLA (conjugated linoleic acid), or Black Currant oil.

**Daily recommendations:**

- **Vitamin D** 5000-10,000 IU daily.
- **Vitamin C** 1 to 2 grams twice daily.
- **Vitamin E** 400 IU twice daily.
- **Selenium** 150mcg twice daily.
- **Betacarotene** 25,000 IU/day (and/or Vitamin A 20,000 IU/ day).
- **Zinc** 50 to 100 mg a day.
- **Calcium** Seek to obtain 800 to 1000mg/day by diet and supplements.
- **Magnesium** 400 to 800mg/day supplement.
- Essential Omega 3 and 6 Fatty Acids, Fish, Chia, Flax seed oil, CLA, Borage oil 2000mg 2 to 3 x daily.
- Friendly Force Probiotics 25 billion cultures per capsule, use one to two capsules 2 times a day.
- Proanthocyanidins Grape seed extract or pycnogenol) use one to two 100mg capsules a day.

Pycnogenol and Grape Seed Extract are antioxidant’s that potentiate vitamins A, E, and C. (It has been shown in some studies to shrink tumors, improve rheumatoid arthritis, asthma, multiple sclerosis, and other autoimmune disorders. Dosage should be increased in autoimmune cases to 50mg, four capsules bid.) Antioxidants can help prevent and/or slow the progression of Alzheimer’s disease, arthritis, cancer, cataracts, diabetes, heart disease, all forms of hepatitis, immune weakness, inflammatory disorders, macular degeneration, and Parkinson’s disease.
Suggestions for better nutrition try,

Potency Guaranteed Supplements Beginning with;
1.) Multi-Vitamin, Mineral, and Trace Mineral Support Formulas

These are all high quality THERAPEUTIC multi-vitamins. They include B-vitamins which are used in the production of energy and essential trace minerals. It is in a specialized base that contains herbs, digestive enzymes, amino acids, and other compounds to assist in balancing for each specific problem area. The dose is 2 tablets twice daily, preferably with food.
Total doses of vitamins and minerals for daily dosing:

**Vitamin C 500-4000mg**  
Should be taken daily for immune system enhancement, heart protection, and anti-aging. Vitamin C is a powerful antioxidant. If you smoke it is very important to take this vitamin to prevent depletion. Vitamin C is also necessary for the body to fight infection.

**Vitamin E 300-500 IU**  
Vitamin E is another powerful antioxidant. Studies have shown that Natural Vitamin E helps with heart protection, anti-aging, prevents breast tenderness, and is helpful in the prevention of a number of illnesses. Water soluble Vitamin E is processed by the body efficiently. Patients on blood thinners should consult their physician prior to starting high dose Vitamin E therapy.

**Vitamin D3 5000-10,000IU**  
Needed for proper immune function via macrocytic activation factor pathways.

**Selenium 200mcg**  
Selenium is an antioxidant mineral that complements vitamin E to boost the immune system. It is also one of the more important cancer inhibiting nutrients available to man. This source comes from kelp.

**Elemental Magnesium 500mg to 800MG and Calcium 300mg to 500MG**  
Magnesium is deficient in most American diets. It is essential for bone health but must be in balance with Calcium to function properly. It also helps reduce spasms in the coronary artery and has a calming effect on nerves.

2.) **Osseoapatite Plus or CalApatite w/Magnesium**  
This form of calcium is the best absorbed and assimilated to bone. It has been shown to increase bone density in clinical practice. It is combined with other minerals and herbs essential for bone health. Take one or two tablets/capsules daily, with your individual Support formula multi-vitamin, peri and post-menopausally for a 500 to 750mg daily dose of calcium.  
Men are usually more deficient in magnesium than calcium.  
**Magnesium Citrate** a calming mineral useful in men, it tends to be deficient in the American diet. Take 500m to 800mg every day for both men an women.

3.) **Super EPA or Omega 3 Fish Oil or Krill oil, or Astaxanthin**  
This Omega 3 supplement is literally brain food. It improves thinking and memory. There is also heart protection and arthritis prevention in this product. It is an essential fatty acid or a ‘good’ fat that can not be made into fat but is used for energy production in the body. It is highly recommended for balanced nutrition. Chia, Flax seed oil, CLA, Borage oil may also be used. Take one or two omega 3’s 1000mg capsules 2 times a day or more, along with other healthy fats. Check with your physician if you have adrenal conditions..

4.) **Grape Seed Extract 100mg**  
This antioxidant is 20 times more powerful than vitamin C, 50 more times powerful than vitamin E, and has been shown to help with auto-immune disorders. It also strengthens the Multi-Vitamin Support Formulas and, Vitamins C and E. Take 1 or 2 capsules daily.

5.) **Megasporebiotics**
Use to promote healthy functioning of the gut which is necessary for appropriate excretion of endogenous excess estrogen. Spores are capable of regenerating intestinal flora, where probiotics did not. Probiotics work as they pass thru the gut tract only. Take 2 capsules daily with food.

**Steroidogenesis Pathways**

Pregnenolone > 17 Alpha-Hydroxyprogrenolone > Dehydroepiandrosterone > Androstenediol

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Progesterone --> 17Alpha-hydroxyprogesterone --> Androstenedione --> Testosterone

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11-deoxycorticosterone 11-deoxycortisol Estrone = Estradiol

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Corticosterone Cortisol Estriol

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18-hydroxycorticosterone

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Aldosterone

(Note: Dehydroepiandrosterone (DHEA) is an alternative pathway to androstenedione and the gonadal hormones.)

**Summary**

This presentation is a summary of many informational sources (primarily, J. Lee M.D., Deborah Maragopoulos, MN, RNC, FNP, Physicians in A4M, and ACAM) all of which agree, natural progesterone is a remarkably effective, safe, and relatively inexpensive therapy for a wide range of female disorders resulting from estrogen dominance, both by Rx and OTC. However useful, it will be up to individual practitioners to develop their own patient specific criteria for progesterone use as treatment continues.

It is not uncommon to experience failures due to lack of knowledge. If you have questions please call IHHS Health & Wellness Center for a consultation.

Use this information in in concert with advice given you by your health care professional.
Testosterone Information Sheet:

This compounded prescription you have received contains testosterone.

Use:

This medication is a hormone that is found naturally in the body. It is used to treat hormone deficiencies, hypogonadism, and other conditions as determined by your doctor.

Side Effects:

Side effects of this medication include nausea, vomiting, diarrhea, agitation, depression, acne, chronic priapism (persistent, abnormal erection of the penis, usually accompanied by pain and tenderness), change in libido, hirsutism, voice changes, electrolyte retention, hepatotoxicity with oral dosing, gynecomastia, fluid retention, and change in coagulation time. If you are using a formulation that is applied to the skin you may experience itching, discomfort, or irritation. These effects may go away during treatment. If they continue or are bothersome, check with your doctor.

Precautions:

Contact your physician as soon as possible if you experience frequent or persistent erections of the penis, nausea, vomiting, change in skin color, ankle swelling, or headache. If you notice other effects not listed above, contact your physician. There is an increased risk of developing prostatic hypertrophy and prostatic carcinoma while using this product.

If you have diabetes mellitus and use insulin, this medication may affect your blood sugar and insulin requirements. Check blood glucose levels closely and ask your doctor before adjusting the dose of your insulin.

Directions:

This medication may be administered as a gel or cream applied to your skin, a sublingual drop or troche, or an injection. Always follow your physician's instructions. Do not exceed the dosage prescribed by your physician. Store this medication at a controlled room temperature.