



## TESTOSTERONE therapy

...It is now time to become the man you know, used, and want to be -

NO EXCEPTIONS - NO MERCY.

- ▶ End Sexual Dysfunction
- ▶ Alleviate Prostate Problems
- ▶ Regain Muscle Loss
- ▶ Restore Energy & Endurance
- ▶ Improve Memory
- ▶ Boost Heart Strength

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### • What is testosterone?

It is the most abundant sex hormone in a man's body. In adulthood, testosterone helps maintain sexual function, sex drive, sperm production, and muscle & bone health. As men and women age, there is a natural decline in the body's ability to produce hormones. When this change occurs in women it is referred to as **menopause**. In men it is called **andropause**.

Starting around age 30, testosterone levels in men begin to drop. By age 50, the brain signal to make more testosterone has weakened significantly and a man's testosterone level has dropped by about 40% from the peak levels of his younger years. Further aggravating this problem is the body's production of **Sex Hormone Binding Globulin (SHBG)**, which increases by 1-2% per year after age 40. SHBG is a blood protein that attaches to testosterone. Once testosterone is bound to SHBG it becomes unavailable for use. Protein-bound hormones are not fully biologically active. Only unbound (free) testosterone is active in the body.

Another contributing factor to the onset of andropause is the increased production of **aromatase**. Aromatase is an enzyme found in the body that converts testosterone into estradiol (a potent natural estrogen). As men age, their bodies produce larger amounts of aromatase, which causes a shift in the ratio of testosterone to estrogen.

### • What causes low testosterone?

1. Low testosterone can result from problems with the testes (where testosterone is made) or problems with the brain or pituitary gland.
2. Testicular problems include damage from injury, infection or medications, certain inherited genetic abnormalities, and dilated veins in the scrotum (called varicoceles)
3. Brain/pituitary problems- often of unknown cause and are very common with aging.
4. Benign pituitary tumors can also cause problems.

### • What are symptoms & signs of low testosterone?

1. Decreased and **energy** (fatigue, tiredness), and reduced strength and stamina in both work and play.
2. Increase in **body fat**
3. Decreased mental acuity, **concentration**, impaired decision making abilities, and forgetfulness.
4. Development of **osteoporosis** –
5. Decrease in **sex drive**, sex desire, strength of orgasm, and erectile function.
6. Loss of **competitiveness**
7. Decreased enthusiasm/**enjoyment of life**.
8. Loss of **self-esteem**, increased anxiety, nervousness, and development of depression.
9. Decreased **physical agility** and athleticism.
10. More **sad**, angry, and/or grumpy than usual.
11. Deterioration in your **work performance**.
12. Low testosterone has been associated with an increased **risk of cancer, heart disease, diabetes**, and immune disorders.

### • How do we evaluate low testosterone?

1. Simple blood tests done to determine if your level is low.

2. If you are found to have low testosterone, we will check a few other blood tests to determine why your testosterone level is low- to determine if it is a problem with the testes or a problem with the brain or pituitary gland
3. If you have a low testosterone, we can be prescribe testosterone therapy to normalize the level or you may choose an HCG reset therapy (see additional literature.)

• **How is low testosterone treated?** Testosterone therapy: (\*Testosterone Injections are the ONLY form of synthetic Testosterone replacement therapy offered at Indian Lake Medical this time.)

**Testosterone injection:** Injections are given generally weekly to every 2 weeks into the muscle. Testosterone levels peak about 3 days after the injection and then slowly decline over the next weeks. Sometimes symptoms gradually return as the level is dropping, which some men find bothersome. Others are not bothered. ☒

### **What are the risks of testosterone therapy?**

1. **Prostate cancer:** Prostate cancer is very common in men as they age. It is currently thought that testosterone therapy DOES NOT cause prostate cancer, but may stimulate any prostate cancer which is already present to grow and potentially cause problems. After starting testosterone therapy, you will need to have a blood test (PSA) done to monitor the health of your prostate.
2. **Increased red blood cells:** A condition called “polycythemia” can arise as testosterone stimulates the body to produce red blood cells. If the level of the red blood cells is too high, testosterone may need to be adjusted. You will have a blood test (Hematocrit) done to monitor RBC production. This increases your risk for blood clotting.
3. **Breast tenderness:** Swelling & tenderness of the breasts can potentially occur, and usually improves after a few weeks.
4. **Sleep apnea:** Sleep apnea can be worsened by testosterone therapy. It is safe for men with sleep apnea to trial testosterone therapy, but we will need to monitor your response to therapy.
5. **Edema:** Swelling in the legs is occasionally seen and is generally not a significant problem. If swelling is associated with difficulty breathing, notify our office immediately.

**How will I be monitored while taking testosterone?** When taking testosterone, you will need to come to clinic periodically to discuss symptoms and potential side effects, and to have a physical exam. Periodically, blood testing will need to be done to measure your testosterone levels. Additional blood testing is performed to monitor your blood counts, and to monitor your PSA level if you are older than 45 years of age and have elected to have prostate cancer screening performed. Bone density is sometimes recommended to evaluate for osteoporosis.

**Polycythemia (elevated blood counts) Blood Donations:** When on Testosterone Replacement Therapy, it will be necessary for you to donate blood on a regular basis. You may donate blood every 56 days. It is our recommendation that you donate blood at least three times per year. While participating in TRT, your hematocrit levels are likely to increase, we monitor your hematocrit levels very closely on all of your follow up lab work. By donating blood you are able to keep your hematocrit levels optimal. If your levels become elevated, our practitioner will have to discontinue your Testosterone until your blood counts are back down.

Donating blood is good for your heart and entire cardiovascular system. Many physicians and cardiologists are recommending therapeutic blood donation as way to reduce cardiac risk, lower blood viscosity (thickness) and prevent iron overload. Male patients on testosterone replacement therapy tend to make an excess of red blood cells that can lead a higher blood viscosity. A simple blood test such as a CBC, can help determine if your blood is too thick.

Men can start therapeutic donation at age thirty. For donating blood, we recommend The American Red Cross. Be sure to let the red cross staff know that your hematocrit levels are elevated due to your testosterone replacement therapy and not due to some other illness or disease. This will help ensure that you are able to donate and not deferred. If you are deferred there is a fee associated with therapeutic donations.

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**Goodlettsville Community**  
613 South Main St Goodlettsville, TN  
Please call 800-RED-CROSS FOR Appointment

*If you have any questions about Testosterone Replacement Therapy, Blood Donations, or about your regimen please do not hesitate to call us at: (615) 822 - 9002. T. Taylor Minchey, NP.*