Male Hormone Replacement Therapy Basics

Welcome to McKinney Family Medicine and the McKinney Center for Hormone Replacement Therapy. My name is Dr. Brian Procter, and I am the owner/director of this facility. By now you have expressed an interest in Male Hormone Replacement Therapy (HRT) aka Low Testosterone, Low T, and Andropause. My staff and I have treated thousands of patients with HRT over my twenty year career as a physician. The purpose of this document is to inform and educate you about the basics, benefits, and risks of Male HRT in layman's terms. I must stress that we DO optimize hormone levels. We DO NOT overdose patients with hormones or prescribe illegal anabolic steroids. Should you decide to start your HRT journey with us, you will sign a release that states that you have read, understand, and have had the opportunity to discuss and ask questions about the material in this document. It is imperative to us that we treat you in a safe, healthy, and effective manner that minimizes risks and adverse side effects. I strongly encourage all patients to research HRT on their own before deciding to begin therapy.

Andropause, or low T, is similar to menopause that most women experience around age 50. Andropause, however, may occur at virtually any age after 20. Andropause is characterized by decreased production of testosterone by the testes, and it is not reversible. Testosterone affects every organ in the human body, and, without it, we tend to age at a much faster rate. Symptoms of low T include: decreased energy, decreased sex drive, decreased height, decreased strength, increased irritability, increased moodiness, erectile dysfunction, difficulty concentrating, memory loss, decreased mental acuity, excessive daytime sleepiness, and difficulty functioning at work. Simply put, low T patients have a hard time functioning mentally and physically. This causes them to struggle in everyday life. Low T is also a major risk factor for heart attack, stroke, cancer, and dementia. So optimizing testosterone helps slow the aging process and protects against heart attacks, stroke, cancer, and dementia. It also increases lean muscle mass, burns fat stores, improves muscle tone, and enhances exercise.

Total Testosterone (TT) in our blood is comprised of two forms: Bound (BT) and Free (FT). FT is the amount of testosterone that is running around doing what it is supposed to do, and at any given time, most of the testosterone is in the form of BT; bound to a carrier protein in the blood called Sex Hormone Binding Globulin (SHBG). This is similar to a school bus (SHBG) loaded with kids (T molecules) riding around on the freeways of our bloodstream. If the kids are on the bus, they are not doing anything. Only the kids that are off the bus, or FT, are capable of running around and doing things. So in the body, we can measure TT and FT. The optimum range of TT (BT + FT) is 900-1200, and for FT, or active testosterone, it is 25-35. Once TT falls below 500 and/or FT falls below 15, most men start to feel some symptoms of low T. Once TT falls below 300 and/or FT falls below 10, most men have virtually all of the symptoms of low T. Also, men get all of their Estradiol (E2), basically our mood stabilizer, production from testosterone. Men need E2 just as much as women do, just a lower amount. If we increase TT levels, we will increase E2 levels. The optimum range of E2 is 20-60. If the E2 level falls below 20, men become irritable, and if it rises over 60, it can cause breast enlargement and testicular shrinkage. Testosterone can also convert into Dihydrotestosterone (DHT). DHT causes side effects such as fluid retention, weight gain (up to 10lbs), acne, increased amount of body hair, and potential loss of scalp hair. In men, there is not much we can do to minimize DHT levels, but these effects usually stabilize within a few months. Another side effect of low T treatment is that it may increase PSA levels (up to about 1 point), but it does not increase the risk of developing prostate cancer. However if prostate cancer is present, low T treatment may accelerate the growth of the cancer.

The main goal in low T treatment is to bypass the liver which can convert a lot of testosterone into a lot of other hormones that are very unhealthy and can increase our risk of developing a heart attack, stroke, or cancer. When we swallow pills, they get absorbed and go to our liver. So we do not use testosterone pills. Instead, we use forms of testosterone that bypass the liver such as putting it on or under the skin so that it goes into our systemic circulation and bypasses the liver (or hepatic) circulation. However, in the systemic circulation, some of the testosterone can get converted into E2 and DHT. We use a class of drugs called aromatase inhibitors (AI), usually Anastrozole or Arimidex, to modulate the levels of E2. So, if the E2 level becomes greater than 60, we prescribe a small dose of Anastrozole to be taken weekly. Also, testosterone can increase the production of red blood cells (RBCs). This may potentially increase blood pressure or lead to the formation of dangerous blood clots. Therefore, all men that are on low T treatment are expected to take low dose Aspirin (81mg) daily (except those with an Aspirin allergy/intolerance) to reduce any risk of blood clots, and some may have to donate blood at regular intervals to reduce their amount of RBCs. The latest studies, however, have shown no association between testosterone supplementation and blood clot formation. Hormone patients also take an over-the-counter supplement called DIM (Diindolylmethane) to help modulate E2 levels and increase levels of FT (help kick the kids off the bus). Also, when T levels fluctuate rapidly, irritability is a common side effect. But when T levels are at an optimal level and relatively stable, patients are usually quite calm.

Low T is only successfully treated using methods that replace testosterone. Over-the-counter T boosters are expensive, have unwanted side effects, and do not work! Sometimes, rigorous exercise may increase levels by 200-300 points, but rarely does this result in optimum T levels. Therefore, there are three ways to optimize T levels: Topicals (gels, creams, and patches), Injections (shots), and Subcutaneous Pellet Implantation (pellets or BioTE). Each is characterized as follows:

--**Topicals**:

Pros: Painless, no down time, INS may cover, no risk of increased RBCs

Cons: Expensive, do not produce steady T levels in target zone, cause more irritability due to rapidly fluctuating levels, little data, must apply daily at home, difficult to apply correctly, may rub off on others, may have a distinct smell, synthetic

Cost: $250 every 4 weeks, or $50/week cash (using the GoodRx app)

--**Injections**:

Pros: Most cost effective method, cheap, produces moderately steady T levels in target zone, injection done weekly at home, no down time, INS may cover

Cons: Painful to administer, lack of preventative data, synthetic, higher risk of increased RBCs

Cost: $50 every 10-20 weeks, or $3-5/week cash (using the GoodRx app)

--**Pellets/BioTE**:

Pros: Best method, produces almost constant levels in the target zone, extensive amount of preventative data, auto-regulates, surgically inserted every 3-6 months in the office, natural and bioidentical (made from soy but soy free), lower risk of increased RBCs

Cons: Expensive, cash only (INS does not cover), painful to insert, 1 week of down time, may have complications such as extrusion (pellets ejecting themselves) or infection

Cost: $650-750 every 3-6 months, or $27-$65/week cash

Most men choose weekly injections due to cost. Once you decide on a method, we will start treatment, check labs in 4 weeks then have a follow up office visit 2 weeks later. After that, we will check labs and follow up twice yearly (one of those counts as a physical). Treatment will consist of prescribing gel, prescribing and teaching how to administer injections, or inserting the pellets (whichever you decide) combined with prescribing Anastrozole (if necessary), recommending DIM and Aspirin, and recommending a healthy vitamin regimen to optimize Vitamin D and Vitamin B12 levels.

If you choose Topicals, your healthcare provider will prescribe them and discuss proper dosage and usage. Please read and follow all material that accompanies your prescription including pharmacist recommendations.

If you choose Injections, we will teach you (or your partner) how to administer your weekly injection of testosterone safely and effectively. Possible injection sites include the thigh and the flank and you will switch sides every week. Side effects specifically related to injections include bruising, infection, and pain.

If you choose Pellets, we will insert them today or at another scheduled appointment. The insertion procedure takes only a few minutes, is performed at the top of either hip under local anesthesia through a small incision, and we will switch sides every time we insert. You will not have stitches, only a Steri-strip. The bandage stays on for 7 days. Please let us know if you are allergic to latex, anesthetic, or adhesive. Epinephrine that is used in the anesthetic may cause temporary palpitations, anxiety, and tremors that usually subsides within 30 minutes. Please ice the area for about 30 minutes that night to minimize swelling and post-op pain. Please do not do any physical activity that causes the pellets to bounce around to minimize extrusion risk for 1 week after insertion including jogging, running, tennis, and basketball. Please do not get the incision area wet other than showering daily. You will be given a post-op sheet with these instructions as well.

Most patients begin feeling better in about a week. They usually notice an increase in cognition and energy first. It may take up to six months to assist erectile dysfunction and libido. HRT helps about 95% of patients, making it an extremely effective treatment. Most patients do not reach a maximum benefit for about 3-5 years although they usually realize 80-90% improvement in the first year. Because this is a journey and a process where individual results vary, we ask that you commit yourself to at least one year of treatment before you decide whether or not to continue. Most patients that discontinue treatment revert to the way they felt prior to treatment fairly quickly. However, patients may continue treatment forever if they wish.

In closing, we are very excited that you have chosen us to assist you in your HRT journey. Please do not hesitate to call us with any questions or difficulties that you may have. We sincerely hope that your HRT regimen will lead you to a much more productive and fulfilling life!

Sincerely and with Best Wishes