

Testosterone Replacement Monitoring Targets and Their Management

(Consult Your Physician Before Any Treatment Initiation, Cessation or Changes). PDF version has active links

Total Testosterone \geq 500 ng/dL for improvement in hypogonadism symptoms	If low or hypogonadal symptoms are not improved, increase testosterone dosage. High T levels (over 1500 ng/dL) with high hematocrit, low HDL and/or side effects may require dosage reduction.
Free Testosterone \geq 2 % of total T	If low, test for sex hormone binding globulin. Higher TRT dose may increase free T by decreasing SHBG. Low SHBG may be present in diabetes.
Hematocrit \leq 53 %	If high, donate blood or ask doctor for therapeutic phlebotomy order. If low, investigate anemia or stop donating blood more than every 3 months.
PSA \leq 4 ng/mL	If high, talk to your doctor about potential prostatic infection or a referral to an urologist. TRT is contraindicated if PSA is 4 ng/mL or greater.
Estradiol (Sensitive Test) = 20-40 pg/mL	If high, low dose aromatase inhibitor (AI) may be required. If low, higher testosterone dose and/or cessation of AI may be required. Range was derived from men with heart disease and low testosterone, so there is still debate.
Blood pressure \leq 135/85 mmHg	If high, weight loss, exercise, T dose reduction and/or blood pressure medications may be needed. If too low, blood pressure medication dose needs to be reduced, electrolytes checked or hypoglycemia excluded.
Estimated Glomerular Filtration Rate (eGFR) (kidney function) \geq 60 mL/min/1.73 m ²	If low, good hydration, use of blood pressure medications, and/or stopping offending oral supplements may improve eGFR. Exercise, high protein intake and higher muscle mass can also increase creatinine and decrease eGFR.
Liver enzymes \leq 1.2 x top value of reference range	If high, stopping oral supplements can help. AST and ALT can increase with exercise but this is not clinically relevant. If high AST and ALT, test GGT and bilirubin to ensure no liver toxicity is present.
TSH \leq 2.5 U/mL	If high, test for other thyroid tests like free T3, free T4 and antibodies to detect hypothyroidism.
Free T3 \geq 3.7 pg/mL	If low, hypothyroidism may be present. See comment on TSH. If high (>5 pg/mL), explore hyperthyroidism
Ferritin \geq 30 ng/mL and/or Iron < 55 micrograms/dL	If low, reduce frequency of blood donations or phlebotomies and supplement with iron until it is back to normal.
HDL \geq 40 mg/dL	The most difficult parameter to manage. Higher TRT doses decrease HDL. Niacin may help increase HDL but may cause flushing.
Prolactin (\leq 30 nd/dL)	Test if Total Testosterone is below 150 ng/dL before TRT to detect potential pituitary adenoma or other issues. High levels (> 30 ng/dL) may cause sexual dysfunction and galactorrhea in men (milk production)

Resources: Buy Blood Tests Online: DiscountedLabs.com

How to Manage Testosterone Replacement Side Effects: ExcelMale.com



Testosterone Side Effect Management Table

Printable View

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Testosterone Side Effect Management Table

1 Attachment(s)

Attachment 225

It is suggested that you talk to your physician about the need for [proper blood tests before and during testosterone](#).

Problem

Solution and Comments

Acne/oily skin

Caused by
Dihydrotestosterone (DHT)
effect on

increased oil production

- [Accutane](#) – a powerful prescription item - 40 mg/day for one week sometimes stops acne if started at the first sign or as directed by your doctor. Accutane is potentially highly liver toxic and can lower testosterone. Do not use unless as last resort.
- Sporanox – Effective for some acne-like eruptions that are caused by fungi. Some doctors also prescribe antibiotics, like tetracycline, for acne with good results.
- Minocycline
- Shower with Nizoral shampoo: Anti-bacterial soaps - Use a scrubbing brush and wash twice a day, especially after sweating during a workout.
- UV light or sunlight with moderation.
- [Zinc/copper supplements](#) or zinc soaps may help some men with acne.
- Other options: [How to treat and prevent acne](#)
- [Video on testosterone and acne](#)
- Article: [Acne treatment options](#)

Hair loss

Caused by DHT effect on hair
follicles

- Nizoral shampoo– Available by prescription and over-the counter as a lower dose product.
- Rogaine – Available over the counter
- Propecia (finasteride) - Available by prescription. A few males experience decreased erections with finasteride. Do not use.
- [Prescriptions gels from compounding pharmacies](#)

Increased sex drive

- A problem? Sex drive is part of quality-of-life. This is not necessarily a bad side effect. Enjoy it.

Unresolved erectile function

- **Viagra, Cialis, Levitra** – Available by prescription; enables robust erections. If you have sinus congestion or headaches/back aches (Cialis) take a non-drowsy allergy medication and ibuprofen. ED drugs can be combined with alpha blockers and/or nitric oxide precursor aminos (**arginine or citrulline**)
- Yohimbine (Yocon) - Available by prescription; increases sex organ sensitivity. Can increase heart rate and blood pressure
- Muse - Available by prescription; pellet inserted into the urethra to produce erection. Unpopular
- **Trimix** – Available by prescription from compounding pharmacies. The best and cheapest formula for injection into the penis for lasting erections.
- Caverject - Available by prescription. An injection into the penis that produces an erection that can last 1 to 2 hours. Be careful with injecting too much since it can produce dangerously long erections that need to be treated in emergency rooms! Follow instructions from your urologist.
- Papaverine – An older injectable medication, less expensive than Caverject.
- Wellbutrin – Prescription at 300 to 450 mg/day; increases dopamine.
- **Human chorionic gonadotropin (HCG)** – First dose is 2,000 IU, then 250-500 IU twice or three times a week. No protocol has been proven in controlled studies yet.

When Testosterone Replacement Doesn't Lead to Better Erections

Insomnia

Usually this is caused by dosages that are too high. Find the least amount that gives you a good result.

- Sleeping medications – e.g. Ambien, Sonata, Lunesta, Restoril
 - **Melatonin** - 1 to 3 mg before bedtime. If you wake up groggy after 6 hours your dose should be lower.
 - Avoid working out too close to bedtime.
 - Limit caffeine, especially after 3 pm.
 - You may want to try a **comprehensive sleep formula** with tryptophan, melatonin and herbs. Nutrients do not work as well as drugs, but they can help some people.
- Article: [How to protect your circadian rhythm](#)

Sleep Apnea

- Have your doctor prescribe a sleep study if you snore and wake up tired even after 7 hours of sleep. Some people may have to wear a C-PAP machine to breathe at night. Visit <http://www.sleepapnea.org/> for more information. There are also oral devices for those people who fail CPAP. **Fatigue- When Testosterone Is Not Enough**

Testicular atrophy

- **Human Chorionic Gonadotropin (hCG)**– One 2,000 unit injection per week for 2 weeks, followed by maintenance of 250-500 IU twice a week. Decrease testosterone dosage accordingly after starting hCG to reach levels around 500-1200 ng/dL while keeping all other lab work monitored
- [Video on HCG](#)

Enhanced assertiveness or reactivity.

- Make sure you are getting enough sleep.
- Count until 10 and be aware of your interaction with others.
- Decrease caffeine.
- **Meditation, mindfulness**, yoga, breathe from your belly for a few minutes when over reacting.
- The testosterone dosage may be too high.
- Ask yourself: Do I need to always be right?
- Vent extra energy at the gym, sex, and sharing with your buddies at www.excelmale.com

High blood pressure/water retention

- Blood pressure medications - Elevated blood pressure may be transient or not. Try ACE or ARBs since they seem to have fewer sexual dysfunction related effects.
- **Supplements** – Magnesium (600 mg/day); vitamin B₆ (100 to 200 mg/day); may help reduce water retention.
- Water - Drink extra water every day to help flush the kidneys.
- Check your estradiol to make sure it is not over 45 pg/ml. Treat if high.
- Make sure you are doing cardio exercise at least 3 times a week for 30 min.

Gynecomastia (male breast development)

Caused by overproduction of estrogen, which can happen when there is too much testosterone. (Testosterone converts into estrogen.)

- **Arimidex (anastrozole)** - Inhibits estrogen production. Available by prescription. 1 mg/day until sensitivity stops, then 1/2 mg per day. Some people take .25 mg two to three times a week for maintenance. Ensure that your estradiol is under 45 pg/dl but do not go too low (under 20 pg/ml) since it is needed for bone, skin, brain, lipids, libido, good lipids and hair health.
 - Nolvadex (tamoxifen)– Competes with estrogen for receptors. Available by prescription, 10 to 20 mg/day. Use of Nolvadex during a steroid cycle may reduce the net anabolic effect, as it decreases the production of GH [i] and IGF-1.
 - Severe cases may require removal of the breast tissue by surgery.
 - **DHT cream**- Some people have obtained great results by rubbing a 10% DHT cream on their nipples. Not available in the US but some people order it online from Germany
 - Read about **medications/foods to avoid** if you have gynecomastia.
 - Those who do know respond to the above, check **other reasons**
- [Video on estradiol and testosterone](#)

Check your estradiol with the right sensitive test.

Virilization (body hair growth, deepened voice, clitoral growth in women)

- **Women** with this problem should ensure that they are using the lowest possible dosage
- Testosterone replacement in men seems to exacerbate body hair growth.

Benign Prostate

- Proscar - Available by prescription. For men, 1 to 5 mg/day. (Note: **Can cause decreased**

enlargement (diagnosed by digital rectal exam and/or ultrasound. Symptom: frequent urination and not voiding urine completely)

sex drive and erections in some men.)

- Hytrin, Flomax and other alpha blockers- Available by prescription. Can improve ED when used with ED drugs
- Saw palmetto extract – May be effective for reducing prostate problems, but one study suggests that this herb may reduce the effects of testosterone, too.[ii] Contradictory data.
- **Cialis has been approved for BPH at 5 mg/day**
- Estrogen inhibitors like Arimidex. Estrogen dominance appears to increase prostate growth.[iii] [iv]
- Check your prostate specific antigen and have a digital rectal exam before starting any TRT program, to detect potential for prostate cancer, especially if you are over 35 or have a family history of prostate problems, and discuss with your doctor who frequently to monitor in the future since guidelines have changed.

Video on testosterone and the prostate

Polycythemia (Elevated hematocrit over 53, which means there are too many red blood cells that can increase blood viscosity and cardiovascular risks)

- **Therapeutic phlebotomy** or blood donation : It means to have a pint or more of blood removed, usually 1 pint every 2-3 months. (1 pint usually will lower hematocrit by about 3 points. You may hematocrit to be under 50). Polycythemia is a compelling reason to avoid using higher TRT doses than are necessary. Taking the lowest effective dose reduces the risk of over-production of hemoglobin (red blood cells). If you are healthy you can donate blood every 2-3 months to keep hematocrit under 54
- Although not proven, there is some evidence that **grapefruit** may lower hematocrit. However, grapefruit increases blood levels of many medications and cause increased side effects due to that,so talk to your doctor.

Video on testosterone and hematocrit

Check your hematocrit cheaply [here](#).

Low Sperm Count that prevents pregnancy

- Talk to your doctor (or ask for a referral to a fertility doctor) about the findings of **these studies** using HCG or Clomid (clomiphene). No need to stop or avoid TRT if you want to have kids!

Decreased HDL (high density lipoprotein- good cholesterol under 40 mg/dL)

- Decreases in HDL occur when higher doses of testosterone are used (100-200 mg per week are standard). This side effect is not easy to manage. Some people respond to **Niacin** but many have skin flush no matter what type of Niacin they use. Exercise, fiber and diet can increase HDL but they may not compensate for the effects of higher than normal (supraphysiologic) doses. A small study showed that **NAC** can increase HDL. Note: Testosterone decreases triglycerides and LDL. **More information**