

What You Need to Know About Masculinizing Hormone Therapy

The use of hormone therapy for gender transition/gender affirmation is based on many years of experience treating trans people. Research on hormone therapy is providing us with more and more information on the safety and efficacy of hormone therapy, but at this time not all the long-term consequences and effects of hormone therapy are fully understood.

Testosterone is used to masculinize the body, to reduce the feminine (female) features and increase the masculine (male) features. Testosterone is usually taken as shots or gels. The dose of testosterone is based on your personal needs and wishes while considering any medical or mental health conditions you might have. The dose is adjusted often based on how you are feeling and on lab results. Each person responds to hormone therapy differently, and it is difficult to predict how a specific person will respond.

Please take the medications only as prescribed and discuss your treatment with your doctor before making any changes.

What are the expected effects of testosterone therapy?

The masculine changes in the body happen gradually. It may take several months for the changes to become noticeable, and usually takes up to 3 to 5 years to be complete.

The following changes will be **permanent**. They will not go away, even if you decide to stop or are unable to access hormone therapy:

- Deepening of the pitch of your voice
- Possible hair loss at the temples and crown of the head (male pattern baldness) with possible complete baldness
- Increase in the size of the clitoris/phallus/penis

- Increased growth, thickening, and darkening of hair on the body and growth of facial hair (beard, mustache). Those will often reverse, but very slowly (over a few years) if you stop taking testosterone.

The following changes are **not permanent**. They will likely reverse if hormone therapy is stopped:

- Menstrual periods will stop, usually within a few months of starting testosterone
- Fat in your body will tend to go to the abdomen (belly) and mid-section, rather than the buttocks, hips, and thighs, making the body look more masculine.
- Increased muscle mass and body strength, especially upper body
- A feeling of more physical energy
- Skin changes, including more oily skin and acne
- Increase in red blood cells (measured by hemoglobin or hematocrit)
- Increased sex drive
- Changes in mood may occur. **If you have significant mood swings or changes let your doctor know.**
- Some people find that their mental health improves after starting hormone therapy.

Onset and timing of masculinizing effects of testosterone

Effect	Time to onset	Time to maximum effect
Skin oiliness/acne	1-6 months	1-2 years
Cessation of menses	1-6 months	
Fat redistribution	1-6 months	2-5 years
Increased muscle mass/strength	6-12 months	2-5 years
Clitoral enlargement	2-6 months	1-2 years
Deepening of voice	2-12 months	1-2 years
Facial and body hair growth	6-12 months	3-5 years
Scalp hair loss	6-12 months or not at all	

What are the risks and possible side effects of testosterone therapy?

- Possible loss of fertility. We do not fully understand the long-term effects of testosterone therapy on your fertility or ability to get pregnant or contribute gametes (eggs, containing your genetic material) to someone else carrying a pregnancy. Some people may choose to harvest and bank (freeze) eggs before starting on testosterone therapy, or even after they have started testosterone, although it is not clear if testosterone must be stopped to do so.
 - **Testosterone is not reliable birth control.** Even if your periods stop, you could get pregnant. If you are having penetrative sex with a partner who produces sperm, you should discuss using some form of birth control with your medical provider.
- Possible birth defects. If you do get pregnant while taking testosterone, the high levels of testosterone in your system may cause harm to the developing fetus.
- Pelvic pain. This occurs in some transgender men / transmasculine individuals, after being on testosterone for several months. The pain will often go away after some time, but it may persist.
- Changes to the lining of the cervix and walls of the vagina. The lining may become more dry and fragile (atrophy). This may cause irritation and discomfort. It may also increase your risk to develop urinary tract infections (UTIs), sexually transmitted infections (STDs), and HIV if you have unprotected penetrative sex.
- A small increased risk of cardiovascular disease (heart attacks, strokes, and blockages in the arteries). Testosterone may cause changes in cholesterol, higher blood pressure, and other changes that might lead to cardiovascular disease.
- Increased risk of developing diabetes.
- Increased risk of developing Sleep apnea (breathing problems while you are sleeping). This has negative effects on your cardiovascular health (blood pressure, heart and brain health),
- Increased appetite and increased weight gain from both muscle and fat.
- Abnormalities in blood tests for the liver, and possible worsening of damage to the liver from other causes.

- Increase in your red blood count (measured by hemoglobin and hematocrit). If this increases to levels higher than is normal in males, it may cause problems with circulation, such as blood clots, strokes, and heart attacks.
- sweating.
- Mood swings between injections and worsening of bipolar disorder, schizophrenia and psychotic disorders, or other unstable moods. **If you have this contact your doctor immediately.**

There is no reason to believe that testosterone increases your risk for breast, uterine or ovarian cancer, but you should still have regular screenings for breast cancer and cervical cancer (Pap smears) while you are taking testosterone. (as long as you have a cervix).

What can I do to reduce risks and side effects?

- If you smoke, try to cut back or quit. Smoking may greatly increase the risks of taking hormone therapy, especially the risk of blood clots, stroke, and cardiovascular disease. If you have other risks for blood clots or cardiovascular disease, your provider may ask you to quit smoking before you start hormone therapy.
- Take testosterone only at the dosage and in the form that your medical provider prescribes. Taking testosterone in doses that are higher than recommended will increase the risks of testosterone treatment. Higher doses will not necessarily work better to masculinize the body, in fact, abnormally high amounts of testosterone can be converted to estrogen that may interfere with masculinizing or cause bleeding.

What are my guidelines for successful hormone therapy?

- Inform your medical provider if you are taking or start taking any other prescription drugs, dietary supplements, herbal or homeopathic drugs, or street drugs or alcohol so that you can discuss possible interactions with and effects on your hormone treatment.
- Inform your medical provider of any new physical symptoms or any medical conditions that develop before or while you are taking hormone therapy. Discuss the evaluation of these conditions with your provider.

- Inform your provider if you think you are having bad side effects from the medications.
- Keep regular follow up appointments.
- Keep up with regular blood test monitoring. Your provider will discuss with you what tests are necessary to monitor for potential harmful effects and to ensure that your testosterone treatment is safe and effective. If you are taking testosterone injections, your monitoring blood tests will usually be done halfway between your injections (for example, if you inject your testosterone every Sunday, your blood tests will be drawn on a Wednesday or Thursday).
- Your provider may decrease the dose of testosterone or stop prescribing testosterone because of medical reasons and/or safety concerns. You can expect that the medical provider will discuss the reasons for all treatment decisions with you.

You may choose to stop taking hormone therapy at any time or for any reason. We encourage you to discuss this decision with your medical provider.

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