

Taking Testosterone for Gender Affirmation

Taking hormones for gender affirmation (also called “transition”) is a process backed by many years of research among transgender and gender-diverse people. Research on hormone therapy is continuously providing new data on the safety and effectiveness of taking hormones, but all the long-term effects of taking hormones are not fully understood yet.

This information is meant to help you look at the possible benefits and side effects of taking the hormone testosterone. From there, you can partner with your care team to decide if taking testosterone hormone therapy is right for you.

Your care team will help you find the ideal type of testosterone (such as shots, gels or pills) and dosage for you, based on your personal needs and wishes, as well as any health conditions you might have. Each person responds to testosterone differently. This is why what you take may be different from what other people take. Taking higher levels of testosterone may not lead to faster changes, but could endanger your health. It’s important to take testosterone only as prescribed and to discuss your treatment with your doctor before making any changes.

We look forward to partnering with you to achieve your desired goals.

The Expected Effects of Taking Testosterone

Changes to your body may take several months to become noticeable and they usually take 3 to 5 years to be complete. Some changes are permanent, while others may not be permanent if you stop testosterone. Remember that the amount of change you experience is hard to predict. Please see **Table 1** for a summary and expected timeline of changes.

Changes that will not go away, even if you decide to stop taking testosterone, include:

- Deepening of your voice
- Increased growth and thickening of body and facial hair
- Scalp hair loss; this does not affect everyone, but it is difficult to predict who will have this; there are treatments that may reduce hair loss
- Increase in the size of the clitoris (also called “bottom growth”)
 - Some people find that the way they experience orgasm or sexual pleasure changes.

Changes that will likely reverse if testosterone treatment is stopped include:

- Skin becomes oilier and coarser
- Increase in muscle mass and strength; this also depends on your diet and exercise
- A decrease in fat, especially around the hips and pelvis, which leads to a change in your body shape
- An increase in sex drive
- Mood changes
 - Depression and stress usually improve. People often report fewer mood swings and a feeling of being more “removed” from emotions. Some people notice more irritability. Occasionally people find these changes bothersome. Overall, most people have an improvement in mood as a result of the treatment.
- Genital dryness
 - This may cause some discomfort with sex, occasionally even without penetration. There are treatment options if this is bothersome.
- Periods stop within several months of starting testosterone for most people. This can depend on the dose and type of testosterone.

The following are not affected by testosterone treatment. If you would like to change these areas, please let your doctor know:

- Overall chest size, though the shape or feeling of the chest may change somewhat
 - Bone structure, including in the face
 - It is possible that some people in their late teenage years may see some mild changes.
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Possible Risks of Taking Testosterone

Having any of the following health conditions could make taking testosterone unsafe for you. Please let your doctor know if you have any of these health conditions:

- Abnormally high blood count
- Estrogen-sensitive cancer (such as breast cancer)
- Severe liver disease
- Severe, complicated migraines (such as migraines with neurological symptoms)
- Blood clot, including deep venous thrombosis (DVT) or pulmonary embolism (PE)

Risks of testosterone therapy may include:

- **Thickening of your blood**, which may or may not increase your risk of blood clots
- **Acne**, which can be treated with medications if needed
- **May or may not increase risk of obstructive sleep apnea**
 - Please let your doctor know if you experience daytime sleepiness, loud snoring or pauses in your breathing during sleep.

- There may be a small increased risk of **heart attack or stroke**. All people, regardless of whether they take hormones, should talk with their care team about ways to reduce heart attack and stroke risk.
- Change in your **cholesterol levels**
- **Weight gain** and increased appetite
- **Blood pressure** may increase a small amount
- **Pelvic pain** may occur. In some cases, a cause can be found and treated. For others, it is unknown why. Some people find that this pain goes away if the uterus is removed.
- **Irregular menstrual bleeding** may happen and should be reported to your doctor.
- Though depression and anxiety usually improves with gender-affirming hormone therapy, any worsening of depression, anxiety or other mental health conditions should be reported to your doctor. If you have any serious mental health conditions, it is important that you have continued contact with a mental health professional.

Taking testosterone does not appear to increase the risk of cancer to the cervix, uterus, ovaries or breasts. It is important to have routine cancer screenings with your doctor. Your screening will depend on your anatomy as well as your risk factors for cancer.

Because we are still learning about the long-term health of people who take testosterone for gender affirmation, you should work with your doctor to reduce any risks and discuss the appropriate health screenings for you.

Reproductive Health

Testosterone may reduce your ability to become pregnant, but it does not eliminate the risk of pregnancy even when your periods stop. If you are having sex with someone who produces sperm, you should speak with your doctor about pregnancy prevention options. There are many ways to do this that will not interfere with your gender affirming treatment. Testosterone is not safe in pregnancy. If you want to become pregnant, or if you have an unexpected pregnancy, you should stop taking testosterone right away and talk with your doctor.

The effects of testosterone on fertility appear to be reversible in many people. However, it remains unknown if and how much testosterone may permanently impact fertility (or your ability to have biological children). If this is important to you, you may consider meeting with a fertility specialist to better understand your options about preserving eggs before you start taking hormones or what your options may be later in life. Please let your care team know if you are interested in learning more about this.

How to Take Testosterone

There are different ways testosterone is prescribed, all of which have their own pros and cons. The methods include:

Injections: Testosterone is given as a shot under the skin once a week by you at home.

Gel: Testosterone is applied to the skin of your upper arms and shoulders once a day.

It is important to avoid skin-to-skin contact with other people after it is applied until it is washed off.

Pills: Testosterone pills are taken twice daily by mouth.

We will work with you to find the type of testosterone treatment that is best for you.

Other Options

There are ways other than hormones to affirm your gender. These may be used along with or instead of hormones. Please let us know if at any time you would like more information about any of the following treatments:

- Voice therapy to change voice pitch or style
- Voice surgery to change voice pitch (generally not recommended until you have worked with a voice therapist first and have been on testosterone for at least 1-2 years)
- Surgery to reduce or remove breast tissue
- Surgery to change facial bone structure (generally not recommended until you have taken hormones for at least 1-2 years to see what change in facial appearance happens)
- Surgery to change the appearance and function of the genitals (generally not recommended until you have taken hormones at least 1-2 years, to ensure you are comfortable taking hormones long-term and to see the effects of the hormones on the genitals)
- Surgery to remove the ovaries (generally not recommended until you have taken hormones at least 1 year, to ensure you are comfortable continuing the hormones long-term)
- Surgery to remove the uterus (generally not recommended until you have taken hormones at least 1 year)
- Other body shaping procedures such as liposuction or plastic surgery

We want to help you achieve your gender-related goals in the safest way possible. In order to do this, we need to be well-informed about your health. Please tell your health care team if you notice any changes to your health at any time during treatment. We will do everything we can to continue your treatment if it can be done safely, which is almost always the case.

Table 1. | Expected Effects of Taking Testosterone

Effect	When the Effect Will Start†	How Long the Effect Lasts†
Skin oiliness and possible acne	1 - 6 months	1- 2 years
Facial and body hair growth*	6 - 12 months	4 - 5 years
Scalp hair loss*	6 - 12 months	Ongoing
Increased muscle mass and strength	6 - 12 months	2 - 5 years
Fat redistribution: less fat around thighs, hips and buttocks	1 - 6 months	2 - 5 years
Periods stop	1 - 6 months	
Clitoral or “bottom” growth*	1 - 6 months	1 - 2 years
Genital dryness	1 - 6 months	1 - 2 years
Voice deepening*	6 - 12 months	1 - 2 years

Adapted from 2017 Endocrine Society Guidelines

** Permanent changes*

† People on low-dose hormone therapy may expect slower or less pronounced changes