

Patient Information for MASCULINIZING HORMONE THERAPY

You want to take testosterone to masculinize your body. Before taking it, there are several things you need to know. They are the possible advantages, disadvantages, risks, warning signs, and alternatives. We have listed them here for you. It's important that you understand all of this information before you start. We are happy to answer any questions you have.

Please read the following. Once your questions or concerns are addressed, and if you have decided to proceed with masculinizing hormone therapy, you will need to sign a consent form.

What is testosterone?

Testosterone is the sex hormone that makes certain features appear more typically masculine. It builds muscle and causes the development of facial hair and a deeper voice.

How is testosterone taken?

Testosterone is usually injected every one to four weeks. It is not used as a pill because the body may not absorb it properly and because it may cause liver problems. Some people use skin creams and patches, but they tend to be more expensive.

The doses used for injection differ from product to product and from patient to patient. They may range from 50 to 100 mg. The injections are given under the skin or in a large muscle to allow for a slow release of the hormone into the rest of the body. There may be unwanted changes in hormone levels. To remedy this, you can change how often a dose is given, how much of a dose is given, or by switching to a cream or a patch.

What are the potential benefits and risks of taking testosterone?

POTENTIAL BENEFITS

- Appearing more masculine
- Bigger clitoris*
- Coarser skin
- Lower voice*
- More body hair*
- More facial hair*
- More muscle mass
- More strength and energy
- No more menstrual periods
- More interest in sex
- Protection against bone thinning (osteoporosis)
- Feeling more comfortable in your body

*These are permanent changes and will not be reversed if you stop taking testosterone

RISKS

- Acne (may permanently scar)
- Blood clots
- Emotional changes—for example, more aggression
- Headache
- High blood pressure (hypertension)
- Increased red blood cell count
- Infertility**
- Inflamed liver
- Interaction with drugs for diabetes and blood thinning—for example Coumadin and Warfarin
- Male pattern baldness
- More abdominal fat—redistributed to a male shape*
- More risk of heart disease
- Swelling of hands, feet, and legs
- Weight gain

**This is permanent for some and will return for others once they stop taking testosterone

Importantly, testosterone should not be used by anyone who is pregnant or has unmanaged coronary artery disease.

It should be used with caution and only after a full discussion of risks by anyone who:

- Has acne
- Has a family history of heart disease or breast cancer
- Has had a blood clot
- Has high levels of cholesterol
- Has liver disease
- Has a high red blood cell count
- Is clinically obese
- Smokes cigarettes

Periodic blood tests to check on the effects of the hormone will be required. Routine breast exams and pelvic exams (including Pap smear) should be continued when applicable.

When can I expect to see physical changes from taking testosterone?

It is important to remember that testosterone works a little differently in every person who takes it. Some physical changes will occur more rapidly for some people and more slowly for others. The following is an approximate schedule of when you might expect to see some of the physical changes.

APPROXIMATE TIMELINE OF EXPECTED CHANGES

Change	Will start in:	Will be most pronounced in:
Oily skin/pimples	1-6 months	1-2 years
Facial/body hair	3-6 months	3-5 years
Balding	Over 12 months	Depends
More muscle/strength	6-12 months	2-5 years
Fat redistribution	3-6 months	2-5 years
End of menstrual periods	2-6 months	-----
Bigger clitoris	3-6 months	1-2 years
Vaginal dryness	3-6 months	1-2 years
Deeper voice	3-12 months	1-2 years

Masculinizing Process

Testosterone may be prescribed to make you appear less feminine and more masculine.

It can take several months or longer for the effects to become noticeable.

No one can predict how fast – or how much – change will happen. The changes may not be complete for two to five years after you start.

The following changes are likely to be permanent even if you stop taking testosterone:

- bigger clitoris — typically about half an inch to a little more than an inch
- deeper voice
- gradual growth of moustache and beard
- hair loss at the temples and crown of the head; the possibility of going completely bald
- more, thicker, and coarser hairs on abdomen, arms, back, chest, and legs

The following changes are not likely to be permanent — if you stop taking testosterone, they should go away:

- acne (many permanently scar)
- menstrual periods typically stop one to six months after starting
- more fat distribution on abdomen and less on buttocks, hips, and thighs
- more muscle mass and strength
- more sex drive
- vaginal dryness

The effects of testosterone on fertility are unknown. You might still be able to get pregnant even after testosterone stops your menstrual periods. You also might not be able to get pregnant even if you stop taking testosterone. Ask about your birth control options (if applicable). You can't take testosterone if you are pregnant.

Some aspects of your body will not be changed by taking testosterone.

- Fat redistribution may slightly reduce the size of your breasts, but you will still have breasts.
- Although your voice will deepen, other aspects of the way you speak will not be affected.

There are other treatments that may be helpful to make your breasts smaller or speech more masculine. If you have concerns, ask for referrals to help explore treatment options.

Risks of Testosterone

The medical effects and the safety of testosterone are not completely known. There may be long-term risks that are not yet known.

You should not take more testosterone than prescribed because it increases health risks. Taking more testosterone than you are prescribed won't make changes happen more quickly or more significantly. Your body can convert extra testosterone into estrogen, which can slow down or alter its masculinizing effects.

Testosterone can increase your risk of heart disease by altering:

- helpful cholesterol (HDL), which protects against heart disease
- less helpful cholesterol (LDL), which increases risk of heart disease
- blood pressure
- the amount of fat deposits around internal organs

Your risk of heart disease is higher if:

- people in your family have had heart disease
- you are clinically overweight/obese
- you smoke

You should have periodic heart health checkups for as long as you take testosterone. You must watch your weight and cholesterol levels and have them checked by your clinician.

Testosterone can damage your liver and possibly lead to liver disease. You should be checked for possible liver damage for as long as you take testosterone.

Testosterone can increase your red blood cells and hemoglobin, which happens to anyone with higher levels of testosterone. This places you at higher risk of stroke and heart attack. For this reason, you need to have periodic blood checks for as long as you take testosterone.

Taking testosterone can increase your risk for diabetes. Testosterone decreases the body's response to insulin, causes weight gain, and increases deposits of fat around internal organs. For these reasons, you should have periodic checks of your blood glucose for as long as you take testosterone. Your body can turn testosterone into estrogen. It is unclear whether that will increase the risk for cancer of the breasts, cervix or uterus.

Taking testosterone can thin the tissue of the cervix and the walls of the vagina. This can lead to tears or abrasions during vaginal sex. Regardless of the gender of partners, this raises your risk of getting a sexually transmitted infection, including HIV. You should speak honestly with clinicians about sexual practices to learn the best ways to prevent and check for infections.

Testosterone can give you headaches or migraines. You should talk with your clinician if you get them a lot or if the pain is unusually severe.

Testosterone can cause emotional changes. You could become more irritable, frustrated, or angry. You should ask your clinician to help you find resources to explore and cope with these changes.

Testosterone causes changes that other people will notice. Some people have experienced harassment, discrimination, and violence because of this. Others have lost the support of loved ones.

You should speak with your clinician to help find advocacy and support resources if you experience this.

Prevention of Medical Complications

You must take testosterone as prescribed. Tell your clinician if you have any problems or are unhappy with the treatment.

Know that the dose and type of medication that is prescribed for you may not be the same as someone else's.

You will need periodic physical exams and blood tests to check for any side effects.

Testosterone can interact with other drugs and medicines. These include alcohol, dietary supplements, herbs, other hormones, and street drugs. This kind of interaction can cause complications, which may be life-threatening. You need to be honest with your clinician about whatever else you take to prevent complications.

Know that it can be risky for someone with certain conditions to take testosterone. You should be evaluated if your clinician thinks you may have one of them. Together, you will decide if it's a good idea to start or to continue taking testosterone.

Using testosterone to appear more masculine is an off-label use. This means it is not approved by the Food and Drug Administration for this specific use. The medicine and dose that is recommended for you is based on the judgment and experience of your health care provider and is supported by the Pediatric Endocrine Society.

You can choose to stop taking testosterone at any time. If you decide to do that, you should do it with the help of your clinician. This will help to make sure there are no negative reactions. Your clinician may suggest that you cut the dose or stop taking it altogether if you develop certain conditions. This may happen if the side effects are severe or there are health risks that can't be controlled.

Alternatives

There are alternatives to taking testosterone to help people appear more masculine. If you are interested in alternatives to testosterone therapy, talk to your clinician about your options.