

INFORMATION SHEET

TESTOSTERONE FOR ASSIGNED FEMALES WITH GENDER DYSPHORIA

The BCCH Gender Clinic follows the international guidelines for treatment of trans, non-binary and gender-diverse youth as set out by the World Professional Association for Transgender Health's *Standards of Care for the Health of Transgender and Gender Diverse People, Version 8* and the Endocrine Society's *Clinical Practice Guideline: Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons*.

Testosterone therapy is a common treatment for adults with gender dysphoria. Testosterone has been used in healthy youth with gender dysphoria since about 1995. However, doctors may not know all its long-term effects. Doctors only prescribe testosterone when they feel that it is in a youth's best interest to affirm their gender with hormone therapy.

The first step towards gender-affirming treatment is a hormone-readiness assessment. This will help a youth think about all the possible short- and long-term effects of taking hormones. Hormones will cause the physical change, called "transition", from a more feminine body to a more masculine body. A youth's gender team can help them find a qualified assessor to provide this readiness assessment.

Testosterone is generally started at a low dose, and the dose is slowly increased at a rate that is safe for a youth's age and size and is in keeping with their wishes. Testosterone causes a youth's body to become more masculine in appearance, and it reduces their female hormones. This means that a youth will probably not have monthly bleeding and will not be fertile (will not be able to get pregnant) while taking testosterone. Testosterone therapy will not change a youth's genetic sex (chromosomes), nor will it change their internal reproductive organs (ovaries, uterus, and vagina).

Information about taking testosterone:

1. Testosterone is generally taken as an injection (with a $\frac{5}{8}$ -inch needle) every week under the skin of the abdomen, or by injection (with a 1-inch needle) in the thigh muscle every 1–2 weeks. Gel and patch forms are also available, but they are not covered by BC PharmaCare.
2. The masculinizing effects of testosterone can take several months or longer to become noticeable. Doctors cannot fully predict the rate and amount of change for each person. Some changes (e.g. beard growth, masculine physique) may not be complete for 2–5 years after starting testosterone.
3. People taking testosterone require blood tests every 6–12 months to check their hormone levels and to check for complications.
4. A very small number of medical conditions make it dangerous to take testosterone. If the doctor suspects a youth may have one of these conditions, they will be checked for it before the decision to start or continue testosterone is made.
5. Since cisgender men make testosterone their whole lives, testosterone therapy for trans people is generally taken lifelong.

Physical changes from testosterone:

1. The following changes will likely be permanent, even if testosterone is stopped (that is, they will not go back to the way they were before testosterone):
 - lower voice pitch (i.e., voice becoming deeper)
 - increased growth of hair, with thicker/coarser hairs, on arms, legs, chest, back, and abdomen
 - growth of moustache/beard hair
 - hair loss at the temples and crown of the head, with the possibility of becoming completely bald
 - clitoral growth (typically 1–3 cm)
2. The following changes are usually not permanent (that is, they will likely go away if testosterone is stopped):
 - acne, which may be severe and can cause permanent scarring if not treated
 - fat may move to different parts of the body, into a more masculine pattern (less on buttocks/hips/thighs, more in abdomen—changing from a “pear shape” to an “apple shape”)
 - more muscle mass and upper-body strength
 - increased libido (sex drive)
 - monthly bleeding typically stops within 1–6 months after starting testosterone, and it comes back in weeks or months if testosterone is stopped
3. The effects of testosterone on fertility (ability to get pregnant) are not completely known. Even if a youth stops taking testosterone, there is no guarantee that they will be able to get pregnant in the future. The doctor can review the options for egg or ovary preservation and can coordinate a visit to a fertility clinic, if a youth desires this.
4. Even after testosterone stops the monthly bleeding, it may still be possible for a youth to get pregnant, and they should use birth control options (as applicable). A youth **must not** take testosterone if they are pregnant. All youth need to protect themselves from sexually transmitted infections.
5. There are some aspects of a youth’s body that will not be changed by testosterone:
 - breasts may look a little smaller due to fat loss, but the change will be very small
 - although voice pitch will likely drop, other features of speech will not become more masculine

Possible side effects of testosterone:

1. Taking testosterone can cause changes that increase the risk of heart disease, including:
 - decreasing good cholesterol (HDL) and increasing bad cholesterol (LDL)
 - higher blood pressure
 - more fat around the internal organs
2. A person on testosterone is more likely to have heart disease if they:
 - are overweight
 - smoke (cigarettes or other)
 - have high blood pressure or cholesterol
 - have someone in their family who has heart disease or high cholesterol

3. It is **strongly recommended** that all youth stop smoking completely before starting testosterone. The doctor can help to find options for weight loss or stopping smoking. For most gender-affirming surgeries, the patient must not be smoking tobacco or vaping nicotine.
4. Heart health check-ups—including checking weight, blood pressure, and cholesterol levels—will be done regularly as long as a youth is taking testosterone.
5. Taking testosterone can increase the red blood cells and hemoglobin. The increase is usually only into the normal male range (which does not cause health risks). However, if the levels go too high, this may cause problems like headaches or dizziness, or even heart attacks or strokes, which can be life-threatening. The blood-cell count is monitored regularly while youth are taking testosterone.
6. Taking testosterone can increase the risk for diabetes. This is because it: (1) decreases the body's response to insulin, (2) causes weight gain, and (3) increases fat around the internal organs. The fasting blood sugar is monitored regularly while a youth is taking testosterone.
7. Testosterone can be changed into estrogen by some tissues in the body. It is not known whether this increases the risks of ovarian, breast, cervical or uterine cancer.
8. Taking testosterone can cause the cervix and the walls of the vagina to become dry and fragile. This can lead to tears or scratches that increase the risk of sexually transmitted infections (including HIV) during intercourse—no matter the gender of the partner. Open discussion between youth on testosterone and their doctor about their sexual practices can help decide how best to prevent and monitor for sexually transmitted infections. Some patients need extra lubrication or a vaginal estrogen cream for this problem.
9. Taking testosterone can affect a youth's emotions. They may find themselves to be more irritable, frustrated, and easy to anger. Their doctor can help them find resources to explore and handle these changes.
10. Taking testosterone will cause physical changes that other people will notice. Some trans people have experienced harassment, discrimination, and violence while transitioning, while others have lost support of loved ones. On the other hand, these physical changes could also help you fit in and avoid discrimination. A youth's gender team can assist them in finding advocacy and support resources.
11. It is strongly advised not to take more testosterone than prescribed, as this increases health risks. Taking more testosterone than prescribed will not make masculinization happen more quickly or increase the amount of change.
12. The medical effects and safety of testosterone are not fully understood. As with any medication, there may be long-term risks that are not yet known.