



Effects and Possible Side Effects of Testosterone-Based Hormone Therapy

Gender-affirming hormone therapy is a medical process that can help some people better align their physical traits with their gender identity. This document focuses specifically on testosterone-based hormone therapy, which involves the use of testosterone to promote masculinizing changes. Testosterone can be taken as injections (either injected into a muscle or just under the skin) or as a gel applied on the skin or in the nose.

Testosterone-based hormone therapy can improve people's quality of life and reduce distress. It can also cause side effects, which vary depending on the person and their treatment plan (including the type of medication, how it's taken and the dosage). The tables below outline what physical changes to expect with testosterone-based hormone therapy, when these changes typically occur and how to manage common side effects.



Effects of Testosterone-Based Hormone Therapy and Expected Timeline

Note: Some effects (marked with *) may be permanent or semipermanent, even if hormone therapy is stopped.

EFFECTS	ONSET	FULL EFFECT
Increased sweat and changes in body odour	1-2 months	Variable (years)
Changes to internal genitals (thinning and dryness of vaginal tissue, called atrophy, causing occasional pain and irritation during sexual activity or in daily life)	1-6 months	1-2 years
Stopping of monthly bleeding (period)	Variable (2-6 months)	Variable (1-2 years)
Increased growth of facial and body hair*	3-12 months	3-5+ years
Deeper voice*	3-12 months	Variable (1-2+ years, depending on dose)
Increased muscle mass/strength (depending on physical exercise)	6-12 months	2-5 years
Oily skin and acne	1-6 months	1-2 years Peaks usually in first year and gradually resolves Reversible but acne scars may not be
Changes in where fat is stored on your body (fat redistribution)	3-6 months	2-5 years
Infertility, mood changes and changes to sexual response (sex drive)	Variable	Reversible but long-term effects on fertility are unknown
Scalp hair loss* (depending on dose and family history)	Variable (may start to be seen in 6-12+ months)	Variable (5+ years)
Growth of external genitals (clitoris)*	3-6 months	1-2 years



Effects and Possible Side Effects of Testosterone-Based Hormone Therapy



How to Manage Possible Side Effects

Abbreviations: HCP= health-care provider; OTC=over the counter

ACNE

Usually most apparent in the first year. May be treated first with OTC products containing benzoyl peroxide or salicylic acid. Avoid touching your face. Wash your face gently no more than twice a day using noncomedogenic products (products that don't clog your pores) and avoiding face scrubs.

Contact your HCP if acne persists, becomes severe or is troublesome. They can evaluate the need for a different anti-acne product. It can sometimes be beneficial to lower the testosterone dose if your embodiment goals can still be met on a lower dose.



IMPORTANT

Testosterone injections are made in cottonseed oil or sesame seed oil; avoid using these formulations if you are allergic to these.

GENITAL DRYNESS

Internal genital (vaginal) dryness: Can be treated with OTC internal moisturizers or lubricants for dryness. If these don't help, ask your HCP about prescription options such as local genital estrogen creams or genital tablets, which are not significantly absorbed and do not have an impact on general physical traits.

Discuss with your HCP if you'd like to have a biological child, as testosterone may affect fertility and is also known to cause harm to a developing fetus if used during pregnancy.

SKIN REACTIONS



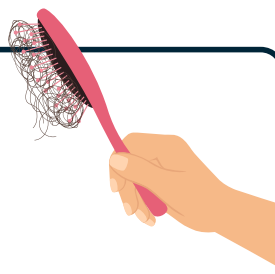
Skin reactions where gel is applied (gel formulation only): OTC products are likely to resolve the issue. Cleanse the affected area with mild soap and lukewarm water and use hydrocortisone cream to help reduce itching and inflammation. Avoid any irritants (e.g., perfumed products, certain fabrics). If the skin reaction doesn't go away, talk to your HCP as soon as possible.

Effects and Possible Side Effects of Testosterone-Based Hormone Therapy



HAIR LOSS

If it's bothersome, talk to your HCP. They may be able to prescribe a topical (minoxidil) or oral (finasteride) drug. Hair loss may continue unless treated.



RISK OF ...

Likely increased risk of the following: increase in red blood cells (hematocrit), sleep apnea, high blood pressure, high cholesterol.

Likely increased risk of the following if risk factors are present: cardiovascular disease, diabetes.

- Blood work should be done as regular follow-up and as needed.
- Blood pressure may need to be monitored.
- A healthy lifestyle is recommended, including regular exercise, healthy eating and smoking cessation.
- Lifestyle changes are the first choice if blood pressure or cholesterol is of concern.
- Drugs may need to be prescribed as required.
- Risks and benefits of gender-affirming hormone therapy should be discussed with your HCP before starting hormone therapy and then on a regular basis during treatment.

BODY WEIGHT CHANGES

Every person responds differently. Weight gain might be associated with increased muscle mass and/or mental health improvements. If you experience weight gain and it is severe, concerning or negatively affecting you, talk to your HCP to make a management plan moving forward.

Resources:

1. Richard G, Dahl M, Knudson G et al. *Gender-affirming care for transgender and gender-diverse individuals* [internet]. January 23, 2025. Available from: <https://cps.pharmacists.ca>. Subscription required. Accessed September 22, 2025.
2. John Hopkins Medicine. *Gender-affirming hormone therapy (GAHT)* [internet]. Available from: www.hopkinsmedicine.org/health/treatment-tests-and-therapies/gender-affirming-hormone-therapy-gaht. Accessed September 23, 2025.
3. Trans Care BC. *Hormone therapy* [internet]. Available from: www.transcarebc.ca/hormone-therapy. Accessed September 23, 2025.
4. Hembree WC, Cohen-Kettenis PT, Gooren L et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2017;102(11):3869-903.
5. Rainbow Health Ontario. (November 2023). *Guidelines for gender-affirming primary care with trans and non-binary patients* [PDF file]. Available from: www.rainbowhealthontario.ca/wp-content/uploads/2021/09/Guidelines-FINAL-4TH-EDITION-With-2023-Updates.pdf.
6. Trans Care BC. (March 2023). *Gender-affirming care for trans, two-spirit, and gender diverse patients in BC: a primary care toolkit* [PDF file]. Available from: www.transcarebc.ca/sites/default/files/2024-03/Primary-Care-Toolkit.pdf.
7. University of California San Francisco Gender Affirming Health Program. *Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people* [internet]. June 17, 2016. Available from: <https://transcare.ucsf.edu/guidelines>. Accessed December 5, 2025.
8. TransEstrie; Conseil Québécois LGBT. *Hormones masculinisantes* [internet]. Available from: <https://transitionner.info/hormones-masculinisante>. Accessed December 5, 2025.
9. Coleman E, Radix AE, Bouman WP et al. Standards of care for the health of transgender and gender diverse people, version 8. *Int J Transgend Health* 2022;23(Suppl 1):S1-S259.