

Masculinizing Hormone Therapy for Gender Affirmation

Hormone therapy can have a positive effect on your life and your journey with gender affirmation. Hormone therapy, however, has some health risks. Knowing what to expect, how to benefit most and how to reduce the risks of hormone therapy is important.

The following information describes how hormones work and the hormone medications you can take to help you look more masculine. You also will learn what changes to expect, the risks of the hormone medications and how to decrease these risks.

How do hormones work?

Hormones are chemicals in your body. These chemicals control many of your body's functions, such as growth, sex drive, hunger, fat burning, ability to have children and more.

You have 3 main types of sex hormones:

- ♦ Androgens, which includes testosterone
- ♦ Estrogens
- ♦ Progesterone

Generally, people assigned male at birth have higher androgen levels. People assigned female at birth have higher estrogen and progesterone.

What hormone medications do I take for transition?

To help make you look more masculine, you will need to take testosterone. Testosterone is available in 5 forms.

- ♦ **Short-acting injectable** testosterone is the least expensive and provides quicker effects. However, some people find this form more difficult to use because of mood swings.
- ♦ **Transdermal (gels, creams or skin patches)** testosterone provides a steady amount of testosterone daily and is less likely to cause mood swings.

- ♦ **Pellets** are recommended only if you are fully transitioned physically and have been stable on testosterone for several years. During a clinic visit, pellets of hormone are inserted into the fat on your upper buttocks. Usually you will have pellets placed 3 times a year.
- ♦ **Long acting injectable testosterone** provides a steady amount of testosterone and fewer mood swings. Long action injections are recommended only if you are fully transitioned physically and have been stable on testosterone for several years. Injections are administered in clinic usually 5 times a year.
- ♦ **Buccal testosterone** is a tablet that you place on the gums in your mouth. It is not widely available. Currently, there is not enough medical evidence to know how well it works.
- ♦ **Testosterone pills taken by mouth** are **not** recommended. Most people are not able to absorb the hormone well enough into the body. The pills also can cause problems for your liver.

What changes can I expect from hormone therapy?

Hormone therapy will result in various changes. The amount of change is different from person to person. Some of these changes may be permanent. Others may not be permanent. See the table on the last page for more information.

Permanent changes

- ♦ **Hair growth on your face, arms, legs, chest, back and stomach.** Hair growth begins within 2 months of starting testosterone. Usually, the hair growth begins on your legs and back, chest and stomach, followed by hair on your face. To grow a full beard may take 4 to 5 years or more. Once the testosterone stimulates your hair follicles, you will need to use electrolysis or laser hair removal if you choose to remove any of the hair.
- ♦ **Growth of your clitoris.** Usually, growth of your clitoris begins within 2 months of starting testosterone. You may experience soreness as your clitoris grows.
- ♦ **Voice change.** About 3 to 6 months after starting testosterone, your voice will begin to deepen. Usually, the full range of voice changes occurs within a year or so.
- ♦ **Loss of hair on the head.** Male pattern balding may occur.

Changes that may be permanent

- ♦ **Stop ovulating and having periods.** You may have some bleeding from time to time. Prescription medications, including medroxyprogesterone (Depo-Provera), levonorgestrel IUDs (Mirena) or etonogestral implants (Nexplanon), can help stop bleeding.
 - » You can start these medications when you start testosterone **or** you can wait to see if you are having bleeding after a few months.
 - » You also can use these medications for birth control if you have sex with people who make sperm.
 - » Testosterone is not birth control—Do not get pregnant while on testosterone as the hormone can cause birth defects.

- ♦ **Decrease in fertility (ability to conceive children).** Hormones may cause the decrease in your fertility to be permanent. If you want to preserve your fertility, consider preserving your eggs before starting hormones.

Other possible side effects of hormone therapy

- ♦ **Menopause symptoms.** Due to the decrease in estrogen, you may experience menopause symptoms such as hot flashes, headaches and mood swings. These symptoms usually improve in a few weeks to months. You also may experience vaginal dryness and a need to urinate more often. These changes can sometimes last several years.
- ♦ **Acne.** You may develop or see an increase in acne. Occasionally, acne can be severe enough to cause scarring. Acne usually improves after a few years.
- ♦ **Increase in size of muscles.** If you exercise often, muscle increase may be greater.
- ♦ **Increase in fat on your stomach and decrease in fat on your hips and thighs.**
- ♦ **Increase in sex drive.** For most people, sex drive evens out over time.
- ♦ **Increase in mood swings.** An increase is more likely if you are doing short-acting testosterone injections 2 or more weeks apart.
 - » If you have bipolar disorder or other mood disorders, testosterone can make your mood disorder worse.
 - » If you have ADHD, testosterone can worsen symptoms, such as difficulty concentrating.
 - » If you have schizophrenia or other mental health concerns, testosterone has unknown effects on your mental health.
- ♦ **Increase in red blood cells.** An increase in red blood cells can cause your blood to flow more slowly.
- ♦ **Changes in your risk for heart disease.** Could have increased risk for heart attack or stroke or both compared with your risk before taking testosterone.

- ♦ **Increase in weight**—especially in the thighs, hips, waist and butt.
- ♦ **Increase in risk for diabetes**—especially if you have weight gain.
- ♦ **Increase in triglycerides.**
- ♦ **Increase in blood pressure**—which can happen with or without weight gain.
- ♦ **Increase in risk for blood clots**—which can happen in your legs or lungs.
- ♦ **Decrease in bone density as your estrogen decreases.** Testosterone will give some protection from bone loss. To help prevent too much bone loss, do weight-bearing exercise, such as walking. We recommend you take 1200 to 1500 milligrams (mg) of calcium daily and 400 to 1000 international units (IU) of vitamin D daily.

The effect of testosterone on the risk for breast cancer is unknown. Testosterone is unlikely to increase your risk for uterine, cervical or ovarian cancer, unless you take very high doses and the testosterone changes to estrogen. Scientists do not have much research information about the long-term risks of hormone therapy for gender affirmation.

How can I decrease the risks of hormone therapy?

To decrease risks of hormone therapy, practice the following healthy lifestyle habits:

- ♦ Get at least 30 minutes of physical activity most days, if not all days of the week.
- ♦ Eat a healthy diet of whole grains, vegetables, fruits and low-fat protein—Limit foods high in sugar and saturated fat to help keep a healthy weight.
- ♦ Include calcium and vitamin D in your diet to help you keep your bones healthy—Talk to your clinician about recommended amounts.

- ♦ Do not smoke or use tobacco—Tobacco raises blood pressure, can cause buildup of fat in your arteries and can increase your risk of blood clots.
- ♦ Limit alcohol use to not more than 2 standard drinks a day.
- ♦ Do not use illegal drugs or medications other than what your clinician has prescribed.
- ♦ Get emotional and social support—Ask your clinician for a referral to a psychotherapist or social worker who specializes in gender affirmation, if you do not already have one, and spend time with supportive family and friends.

How long do I need to take hormone therapy?

Most people on hormone therapy for gender affirmation take hormones for the rest of their lives, or for as long as they desire the changes that occur.

After you begin using hormones, you will likely have follow-up appointments, including blood tests, with your clinician, every 2 to 3 months for the first year. After changes stabilize and you have no side effects, you will see your clinician less often. The length of time for changes to stabilize and side effects to go away varies—for some people, 1 to 2 years, for others 10 years.

At your appointments, your clinician will review your medications, blood tests and any side-effects of hormones you are having. To help get the best care possible, keep all scheduled lab and clinic appointments and communicate openly with your clinician about your care.

Effects of Masculinizing Hormone Therapy: When They Happen

Effect	When effect usually occurs (time from when you begin therapy)	When you will see the maximum effect (time from when you begin therapy)	Will stopping therapy reverse this effect?
Acne, oily skin	1 to 6 months	1 to 2 years	Most likely yes
Redistribution of body fat	1 to 6 months	2 to 5 years	Possibly
Stopping of your menstrual cycle	1 to 6 months, most often closer to 6 months		Most likely yes*
Increase in size of clitoris	1 to 6 months	1 to 2 years	Most likely no
Thinning of walls of vagina (<i>vaginal atrophy</i>)	1 to 6 months	1 to 2 years	Most likely no
Deepening of voice	2 to 6 months	1 to 2 years	Considered permanent
Increase in muscle mass and strength	6 to 12 months	2 to 5 years	Possibly
Growth of facial and body hair	6 to 12 months	4 to 5 years	Most likely no
Scalp hair loss**	6 to 12 months	Dependent on genetic predisposition	Most likely no

* If you have a uterus, you can get pregnant while on masculinizing hormones. Masculinizing hormones are not birth control, and they can affect the development of the fetus. If you are trying to get pregnant, you should stop masculinizing hormones and can choose to start therapy again at a later time. The effect of masculinizing hormone therapy on ovaries varies from person to person and is unknown.

**It may be possible to prevent and treat scalp hair loss.