

# Feminizing Hormone Therapy for Gender Transition

Hormone therapy can have a positive effect on your life and your journey with gender transition. 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 feminine. 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 feminine, you can take estrogen, progesterone and androgen blockers. These medications work together to help change how you look, but each has slightly different effects.

### Androgen blockers

- ♦ Prevent the effect of testosterone and dihydrotestosterone (DHT) hormones in your skin, breast tissue and penis, and possibly, your brain
- ♦ Slow down growth of hair on your face and body
- ♦ Help with growth of breast tissue

- ♦ Possibly decrease your erectile function (ability to keep an erection of your penis), the frequency of erections and/or amount of ejaculate (semen ejected from your penis)

Common androgen blockers are spironolactone (Aldactone) and finasteride (Proscar, Propecia). Another androgen blocker, cyproterone (Androcur, Cyprostat), is not available in the United States, but often is discussed on international websites. You can take all these medications as pills by mouth.

### Estrogens

- ♦ Decrease testosterone produced by your testicles
- ♦ Decrease sperm production and your erectile function
- ♦ Increase breast tissue by increasing the number of breast cells

Estrogen comes in different forms.

- ♦ **Transdermal (skin patches, gels or sprays)** estrogens are the safest. They pose less risk of life-threatening blood clots and have little harmful effect on your liver. Gels and sprays are more expensive than patches.
- ♦ **Injectable (intramuscular)** estrogens can provide quicker effects, which some people prefer. However, you must avoid dangerously high levels of estrogen.

- ♦ **Estrogen pills taken by mouth** pose the most dangerous risks for blood clots and gall bladder disease. However, estrogen pills are the least expensive and have been used for gender transition longer than any other form of estrogen.

### Progestagens

Progestagens include both natural progesterone and synthetic (human-made) progestins. The most common progestagens include the oral progesterone (Prometrium). These hormones may or may not make your breast cells mature and plump up. Not everyone uses progestagens for feminization.

Progestagens for feminization only come in pill form. Over-the-counter progesterone cream does not provide the same effect. Your skin is not able to absorb the cream in a way that changes your hormone levels.

### 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

- ♦ **Breast growth.** This is the most permanent change you will see from the hormones. The amount of growth varies from person to person. The amount depends on your genes as well as your age when you start hormones. Other less well-understood factors also may affect the amount of breast growth.

#### Changes that may be permanent

- ♦ **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 banking your sperm before starting hormones. Ask your clinician for more information.

#### Likely changes

- ♦ **Softer skin and increase in fat in the hips, butt and, sometimes, face.**
- ♦ **Slower regrowth of hair on your face or body.** You may notice slower or less regrowth after shaving, waxing or other mechanical hair removal, such as laser or electrolysis. Mechanical hair removal removes the hair and, possibly, destroys the hair follicle so the hair does not grow back. Estrogen and androgen blockers alone will not stop growth of hair on your face or body.
- ♦ **Decrease in muscle size.** This occurs as your testosterone levels fall.
- ♦ **Changes in your risk for heart disease.** Could have increased risk for heart attack or stroke or both compared with your risk before taking estrogen.
- ♦ **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.

#### Possible changes

- ♦ **Increase in thickness and appearance of scalp hair.** You may also have regrowth of some scalp hair. Usually regrowth is not enough to cover all bald spots.
- ♦ **Hot flashes, headaches and mood swings.** These changes usually occur when starting hormones and often go away in a few weeks.
- ♦ **Decrease in bone density as your testosterone decreases.** Estrogen 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.

- ♦ **Increase in risk for breast cancer.** Your risk increases especially with high doses of hormone therapy or prolonged treatment, or both. An increase in risk for other types of cancer is unlikely.

## What will hormones not do for me?

Hormone therapy for gender transition will not change your:

- ♦ **Voice**—You will need to change the way you speak to sound more feminine. Ask your clinician for a referral for voice therapy if you wish.
- ♦ **Adam's apple**—The lump in the front of your neck will look the same.
- ♦ **Bone structure in your face or anywhere else in your body.**

## 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 those your clinician has prescribed.
- ♦ Get emotional and social support—Ask your clinician for a referral to a psychotherapist or social worker specializing in gender transition and spend time with supportive family and friends.

## How long do I need to take hormone therapy?

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

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 1st 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 clinician appointments and communicate openly with your clinician about your care.

## Effects of Feminizing 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?
Fewer spontaneous erections	1 to 3 months	3 to 6 months	Most likely yes
Erectile dysfunction	Variable	Variable	Most likely yes
Decreased sex drive	1 to 3 months	3 to 6 months	Most likely yes
Decrease in muscle mass and strength	3 to 6 months	1 to 2 years	Most likely yes
Redistribution of body fat	3 to 6 months	2 to 3 years	Most likely yes
Softening of skin/ decreased oiliness of skin	3 to 6 months	Unknown	Most likely yes
Decreased size of testes	3 to 6 months	2 to 3 years	Result varies
Decrease in sperm	Unknown	> 3 years	Result varies
Breast growth	3 to 6 months	2 to 3 years	No; these changes are usually permanent
Decreased growth of facial and body hair	6 to 12 months	> 3 years*	Most likely yes, unless you have received electrolysis or laser treatment*
Increase in thickness and appearance of scalp hair	Varies	Varies. You may also continue to have scalp hair loss because of family history	Most likely no
Voice changes	These changes happen with help of voice training by speech pathologists		Most likely yes

\*Electrolysis, laser treatments or both can remove male facial, armpit and pubic hair. In most cases, these changes are permanent.

\*\*If you are on feminizing hormones, your body is still able to make sperm, so your partner could still get pregnant. Feminizing hormones are not birth control. Some people choose to stop feminizing hormones with the goal of having a baby. You may then choose to go back to feminizing hormone therapy at any time. The effect of feminizing therapy on the amount and quality of sperm varies and is unknown.