

Informational Sheet for Gender Affirming Hormone Therapy (Estrogen and Testosterone Blockers)

Gender affirming hormone therapy (GAHT) is an important component of transition for some people. GAHT (estrogen and testosterone blockers) change secondary sex characteristics to affirm one's gender presentation and identity. While there are risks associated with any medication, including GAHT, GAHT can greatly improve quality of life, psychological well-being, and affirm identity.

What are the different types of gender affirming medications?

There are two major types of medications used to change a person's secondary sex characteristics: estrogen and testosterone blockers.

- Estrogen (estradiol) is used to “feminize” the body; estrogens can also decrease the amount and effect of testosterone. Estrogen comes in pills taken orally or under the tongue (sublingual), patches, gels, creams, or injections.
- Testosterone blockers are used to decrease the amount and/or block the effect of testosterone on and reduce the more “masculine” features of the body. Testosterone blockers typically come in pills. The main testosterone blocker used is a medication called spironolactone.

How will I respond to GAHT?

GAHT can cause both reversible (temporary) and irreversible (permanent) changes to a person's body. Each individual person responds to GAHT differently, and it is difficult to predict how each person will respond. Taking more medication than is prescribed will not make the changes happen faster and may even increase your risks or side effects.

Potential reversible changes may include, but are not limited to:

- Decreased muscle mass and strength, particularly in the upper body.
- Weight gain. If you gain weight, this fat will tend to go to the buttocks, hips, and thighs, rather than the abdomen and mid-section.
- Skin will become softer, and acne may decrease.
- Facial and body hair will get softer and lighter and grow more slowly; usually, this effect is not sufficient, and many people on GAHT will choose to have other treatments (electrolysis or laser therapy) to remove unwanted hair. Electrolysis will be required on the genital area if a person desires vaginoplasty (bottom surgery).
- Hair loss of the scalp may slow down or stop, but hair will generally not regrow.
- Reduced sex drive.
- Decreased strength of erections or inability to get an erection. The ejaculate will become thinner and watery and will decrease. There are medications that can improve the quality and quantity of erections.

Potential irreversible effects may include, but are not limited to:

- Breast growth and development. People often choose to have breast augmentation (implants) to achieve their desired breast size.

- Decreased bone density.
- Fat redistribution. Fat tends to redistribute to the hips and buttocks.
- Genital changes (smaller testes and penis).
- Decreased sperm production.

Hormone therapy will not change the bone structure of the face or body; your Adam's apple will not shrink; the pitch of your voice will not automatically change without other interventions.

What are the risks and possible side effects of GAHT?

GAHT is generally considered safe. Many of the risks associated with GAHT are reversible if you stop GAHT.

The risks and possible side effects associated with estrogen include:

- While rare, there is an increased risk of developing blood clots; blood clots in the legs or arms (DVT) can cause pain and swelling; blood clots to the lungs (pulmonary embolus) can interfere with breathing and getting oxygen to the body; blood clots in the arteries of the heart can cause heart attacks; blood clots in the arteries of the brain can cause a stroke. Blood clots to the lungs, heart or brain could result in death.
- Possible increased risk of having cardiovascular disease, a heart attack, or stroke. This risk may be higher if you smoke cigarettes, are over 45, or if you have high blood pressure, high cholesterol, diabetes, or a family history of heart disease.
- Possible increase in blood pressure; this might require medication for treatment.
- Possible increased risk of developing diabetes.
- Increase in cholesterol and triglycerides.
- Increased risk of gallbladder disease and gallstones.
- Changes in blood tests for the liver; estrogen may possibly contribute to damage of the liver from other causes.
- Decreased number of red blood cells.
- Nausea and vomiting, especially when starting estrogen therapy.
- May cause or worsen headaches and migraines.
- May cause elevated levels of prolactin (a hormone made by the pituitary gland); a few people on estrogen for hormone therapy have developed prolactinomas, a benign tumor of the pituitary gland that can cause headaches and problems with vision and cause other hormone problems.
- May worsen depression or cause mood swings.
- May increase the risk of breast cancer. The risk is probably higher than in those assigned male at birth, but lower than those assigned female at birth; the risk probably is related to how long you take estrogen therapy.
- Loss of fertility.
- May cause side effects or increase risks of medical conditions that are still unknown.

The risks and possible side effects associated with the testosterone blocker spironolactone include:

- Increased urine production and needing to urinate more frequently, possible changes in kidney function. Your provider may perform blood tests periodically to check your kidney function.
- A drop in blood pressure and feeling lightheaded.
- Increased thirst.
- Increase in the potassium in the blood and in your body; this can lead to muscle weakness, nerve problems and dangerous heart arrhythmias (irregular heart rhythm).
- The mechanism of action of spironolactone may theoretically play a role in reduced breast development, though further study is needed.

We know GAHT is life-affirming care, but some side effects from GAHT are irreversible and could cause death in rare circumstances.

What if I desire children with my own genetic material?

Whether or not a person can produce sperm after starting or stopping GAHT is difficult to predict and a return to sperm production cannot be guaranteed. Many people become infertile after starting GAHT, meaning they will not produce enough sperm to have a biological child. Even though GAHT can cause infertility, estrogen and testosterone blockers should **not** be used to prevent pregnancy.

How does GAHT affect my risk of sexually transmitted infections?

GAHT does not prevent or reduce your risk of sexually transmitted infections. Condoms are always recommended. A daily pill called PrEP (pre-exposure prophylaxis) like Truvada or Descovy can significantly decrease the risk of HIV infection. Talk to your provider if you want more information about PrEP.

What can increase my risks?

There are certain medical conditions and health behaviors that can increase your risks and side effects of GAHT. Risks and side effects may be increased by pre-existing medical conditions (diabetes, high blood pressure, history of blood clots), pre-existing psychiatric conditions, age, cigarette smoking, and alcohol use. Having these conditions or behaviors does not mean you will not be allowed to have GAHT, but some forms of GAHT may be safer for you than others.

Can GAHT affect my mental health?

Changes in mood or pre-existing mood disorders such as depression, suicidal feelings, anxiety, and psychosis (disorganization and loss of touch with reality) may occur. Many patients report significant improvement in overall quality of life. Changes in relationships, academic, work, and other support networks can occur during transition. We offer support and connection to resources in the community.

What about my privacy and confidentiality?

Your health record is confidential at UHS. Notes and correspondence stay within UHS as part of your protected medical record. However, UHS has contracted with outside laboratories to process lab samples. Your legal name and lab results are protected health information stored by the laboratories on their electronic medical record (EMR), which includes Epic/MyChart. UHS does not control Epic or MyChart. If you have given a parent/guardian access to your MyChart account as an adult, and aren't out to that person(s), revoking their MyChart access is recommended.

An outside organization or provider may be able to access your lab results, including labs performed at UHS, through a system called CareEverywhere. UHS does not use/control data in the CareEverywhere system.

If you use insurance to pay for your medication and you are a dependent on a parent or guardian's insurance, they may be able to access your prescription information, including GAHT. If you are concerned about privacy, please speak with the pharmacy to make sure any refill alerts are sent to your device and not to a parent or guardian if you use insurance or pay out of pocket.

For additional resources, please go to <https://www.uhs.wisc.edu/resources-for-trans-students/>.