

UC SANTA BARBARA

Student Health Service

Estrogen and Testosterone-Blocker Information and Consent

Estrogen and testosterone blockers are used to reduce testosterone-related features to make a person feel more at ease in their body.

It is important to know what to expect from taking estrogen and testosterone blockers, including the physical and emotional changes, side effects, and potential risks. The use of estrogen and testosterone blockers to treat gender dysphoria is not FDA-approved. Long-term medical effects and safety are not fully known, and some potential risks are serious.

At Student Health, estrogen is available in oral (pill), topical (patch), and injectable forms. Student Health uses Spironolactone pills for testosterone blockers. Each person responds differently to taking estrogen and testosterone blockers, and the amount of change varies from person to person. This chart outlines the most common effects and timelines.

Estrogen and testosterone blocker-related effects:

Estrogen and lower testosterone-related changes may include:	Expected onset	Expected maximum effect	Effect
Breast development	3-6 months	2-3 Years	Permanent
Smaller genitals (testes)	3-6 months	2-3 years	Permanent
Decreased fertility	Variable	Variable	Possibly Permanent
Cardiovascular changes	Variable	Variable	Possibly Permanent
Decreased scalp hair loss (balding)	1-3 months	1-2 years	Reversible
Decreased growth of body & facial hair	3-6 months	1-2 years	Reversible
Decreased muscle mass and strength	3-6 months	1-2 years	Reversible
Fat redistribution; possible weight change	3-6 months	2-5 years	Reversible
Mood and emotional changes	Variable	Variable	Reversible
Changes to libido, sexual interests, or sexual function	Variable	Variable	Reversible
Skin changes, including softening and decreased oil	1-6 months	Unknown	Reversible

Benefits that hormone therapy can have on health and quality of life:

- decreased discomfort related to gender
- increased success in work, school, & relationships
- increased comfort in body
- improved mental health

Hormone-related effects: potential risks and outcomes explained

The greatest threat to the health of trans and gender diverse (TGD) people is the well-documented high rates of discrimination and trauma these communities experience. Transphobia and its associated socio/economic effects can cause toxic stress, leading to negative mental and physical health outcomes. Research shows that the mental health and psychosocial outcomes for those taking hormones are overwhelmingly positive. Many consider gender-affirming care to be life-saving, life-changing medical treatment that allows them to live more authentic lives.

Breast Development

Estrogen will stimulate the development of breast tissue in the chest area. Within the first few weeks, small “buds” may begin to develop beneath the nipples. Fat may also redistribute more to the chest. There may be some initial discomfort as this growth and redistribution occur. Chest tissue growth is PERMANENT, though some fat may redistribute away from the chest if hormone therapy is stopped.

It's important to note that breast development varies from person to person. Not everyone develops at the same rate, and most people who begin hormone therapy after puberty, even after many years of treatment, can only expect to develop an “A” or small “B” cup. As with all people who have experienced estrogen-based puberty, breasts vary in size and shape and are sometimes uneven. It is recommended to undergo hormone therapy for at least a year before pursuing breast augmentation surgery.

Smaller Genitals (testes)

Estrogen and testosterone blockers will cause the genitals, specifically the testes, to shrink slightly. Atrophy of the testes occurs over many years. Any shrinking is PERMANENT and not reversible.

Decreased Fertility

Estrogen and testosterone blockers can reduce fertility within weeks to months of initiation, but the timing and degree of fertility impairment is variable and not fully predictable. The reversibility of fertility impairment after discontinuing estrogen and testosterone blockers is VARIABLE and may depend on the duration of therapy and individual factors.

Estrogen and testosterone blockers are not contraceptives. Those having penetrative sex with an egg-producing partner should take contraceptive precautions or discuss birth control options with their medical provider. If there is interest in having biological children in the future, talk to a provider about options before starting hormone therapy.

Cardiovascular Changes

Estrogen can result in an increased risk of Venous Thromboembolism, also known as blood clots. Additional risk factors include age, smoking, genetic predisposition, and preexisting health conditions. If you are experiencing chest pain, shortness of breath, vision changes, or one-sided weakness, contact a medical professional immediately or call 911. Permanency of effects is unknown and likely depends on the age at which hormones are begun and the total length of exposure.

Decreased Scalp Hair Loss (balding)

With estrogen and testosterone blockers, the progression of androgenic alopecia (male pattern baldness) may stop, but will not reverse. Some regrowth is possible with other medications and treatments. This decrease in balding is REVERSIBLE and will resume if estrogen and testosterone blockers are stopped (if genetically predisposed).

Body & Facial Hair

Estrogen and testosterone blockers typically cause a decrease in the thickness and length of body and facial hair. Existing hair follicles will continue to grow, but hair may become softer and grow more slowly. Some individuals also report changes in hair texture or color on the body or head. Changes to body and facial hair growth are REVERSIBLE, though changes to head hair texture or color may remain. Those who wish for more complete hair removal may choose to pursue electrolysis or laser hair removal.

Decreased Muscle Mass and Strength

Estrogen and testosterone blockers can cause a decrease in muscle mass and strength, although changes will vary depending on diet, activity levels, and genetics. Muscle mass changes are REVERSIBLE, though muscle loss may take some time to return to pre-hormone therapy levels.

Fat Redistribution; Possible Weight Gain or Loss

Estrogen and testosterone blockers can adjust how the body distributes/carries weight. Fat will tend to go to the hips and thighs, but hormones may not have a significant effect on the redistribution of stomach fat. Arms and legs may become less defined and have a smoother appearance as the fat just below the skin becomes a bit thicker. The eyes and face will begin to develop a more feminine appearance as the fat under the skin increases and shifts. It is recommended to undergo hormone therapy for at least one year before pursuing facial feminization surgery. Clothes or shoes may fit differently, but bone structure will remain the same. Fat redistribution is REVERSIBLE, though weight changes may take some time to readjust, and a return to pre-hormone therapy levels is not guaranteed.

Mood and Emotional Changes

Changes in mood or thinking may occur. Some people report access to a wider range of emotions or feelings while on estrogen. Some may experience a change in interests, tastes, pastimes, or behavior in relationships with others.

While most people find that their overall mental health improves after starting gender affirming hormone therapy, some people may experience mood swings or a worsening of anxiety, depression, or other mental health conditions as a result of the shifts associated with starting a second puberty. Mood and emotional changes are REVERSIBLE. The effects of hormones on the brain are not fully understood, and it is impossible to predict how hormone therapy may interact with preexisting mental health conditions such as depression, bipolar disorder, and schizophrenia.

Libido, Sexual Interests, and Sexual Function

Estrogen and testosterone blockers will likely cause a decrease in libido or sex drive. Erections won't be as frequent, firm, or last as long (medication options can be discussed with a medical provider). There will also be a decrease in ejaculation fluid output. Orgasms may feel like more of a "whole body" experience and last longer, but with less peak intensity. Different sex acts, body parts, or people may bring sexual arousal or pleasure. Some people find that their sexual interests, attractions, or orientation may change during hormone therapy. Changes to libido, sex drive, and sexual function are typically REVERSIBLE, though discoveries of sexual interest made while on estrogen and testosterone blockers may remain.

Skin Changes, Including Softening and Decreased Oil

Skin may become a bit softer, smoother, and less oily on estrogen and testosterone blockers. The odors of sweat and urine will change, and the amount of sweat may decrease overall. There may also be changes in how one perceives their senses. For example, touching things may “feel different,” and the perception of pain and temperature may change. Skin changes are REVERSIBLE.

Changes to Lab Values

Some lab test results, such as alkaline phosphatase, hemoglobin, hematocrit (H&H), and creatinine, vary depending on the current sex hormone configuration and will likely change while on estrogen and testosterone blockers. Some lab systems may automatically flag these values as abnormal based on the sex marker in one’s medical record. All results should be reviewed by a medical provider in the context of an individual’s hormonal treatment. These changes are REVERSIBLE and should return to pre-hormone therapy levels if therapy is stopped.

Medication-Specific Potential Side Effects

Estrogen: Mild headaches and nausea are common side effects when starting or adjusting estrogen. These will settle down as the body gets used to the medication. If nausea and headaches are persistent, this could be an indication of excess intake.

Spironolactone is a mild diuretic, meaning it increases urine output, which can lead to dehydration and increased potassium. Risk of dehydration can be mitigated by increasing daily water intake. Excess potassium can lead to muscle weakness, nerve problems, and dangerous heart arrhythmias (irregular heart rhythm). Regular blood tests will be done to monitor potassium levels.

Risks and outcomes may be affected by:

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| ■ ■ Pre-existing physical or mental health conditions | ■ ■ Family history of health conditions |
| ■ ■ Cigarette smoking or other substance use | ■ ■ Nutrition, exercise, stress |
| ■ ■ Consistency of medication administration | ■ ■ Amount of time consistently on medication |

****Those who have a history of breast cancer, Venous Thromboembolism, cardiovascular disease, cerebrovascular disease, or severe liver dysfunction should talk to a provider about possible increased risks before starting hormone therapy.****

What will estrogen and testosterone blockers NOT do?

Estrogen and testosterone blockers will not affect the voice. Vocal changes can only be achieved through consistent voice training or speech therapy. Hormone therapy will not change one’s bone structure or shrink the Adam’s apple.

Alternatives to estrogen and testosterone blockers:

Some changes to one’s body can be achieved with diet and exercise. Appearance can be temporarily altered using cosmetics and various gender-affirming products. Permanent changes to the body can be made using gender-affirming surgery. Changes to the voice can be made with consistent vocal therapy/voice training. Permanent hair removal is possible via laser hair removal or electrolysis. A provider can discuss options, answer questions, and suggest alternatives to hormone replacement therapy if requested. Estrogen and testosterone blockers can be stopped or paused at any time.

Important considerations to ensure the best outcomes:

- Taking estrogen and testosterone blockers in doses that are higher than recommended will increase the risks of treatment. Higher doses will not necessarily work better; abnormally high amounts of estrogen can cause nausea and headaches.
- Hormone therapy can be discontinued at any time and for any reason. Discussion with a medical provider is encouraged.
- Keep regular follow-up appointments. In the first year of treatment, visits are recommended at least every three months.
- To ensure that hormone treatment is safe and effective, regular blood testing will be done. When measuring hormone levels, the blood draw should be performed within a day or two before the next injection is due or at least 4 hours after taking oral medication.
- Health maintenance and screenings such as routine STI testing, prostate exams, and mammograms will be advised when applicable.
- The prescription or dosage of estrogen and testosterone blockers may need to be adjusted or paused if there are medical and/or safety concerns; all treatment decisions should be a conversation between the medical provider and their patient.
- Any new physical symptoms or medical conditions while taking estrogen and testosterone blockers should be communicated to the medical provider. Providers are here to help and work best when they have all the information.
- Many effects of estrogen and testosterone blockers are outwardly visible. Physical transition may increase the chances of harassment, targeting, or outing if perceived by others. It is recommended that all patients consider any possible effects this visibility may have on their living situation, interpersonal relationships, and financial stability before starting hormone replacement therapy.

Questions or concerns?

If you would like to talk to someone about transition options before meeting with a medical provider, please email equity@sa.ucsb.edu. For more resources and information on gender affirmation and exploration at UCSB, refer to our [Trans@UCSB](#) webpage.