



## Estrogen

### What is the goal of estrogen therapy?

Estrogen has two main jobs: It causes feminizing changes to occur throughout the body, and it suppresses the production of testosterone. Some of the changes caused by estrogen are permanent and others are reversible.

### Is estrogen used alone?

Estrogen may be used alone or together with another medication to block production of testosterone or block the effect of testosterone. The most common medication used for this purpose is called spironolactone, which is a pill taken once or twice daily. In some cases, medications called “puberty blockers” are also used for this purpose.

### How is estrogen administered?

Estrogen is administered as pills, patches, or injections. Pills may be taken either by swallowing them or dissolving under the tongue and are once or twice a day. Patches are placed on the skin and replaced twice a week. Injections are given into the muscle every two weeks.

### What are the permanent effects of estrogen?

Breast development caused by estrogen is permanent. Additionally, estrogen may irreversibly impair fertility. Fertility goals should be considered prior to starting estrogen, as fertility preservation may be an option. We work with Lurie's fertility preservation team to provide these services.

### What are the reversible (non-permanent) effects of estrogen?

Estrogen causes skin softening, muscle tone reduction, fat redistribution, and slows the rate of hair growth. Estrogen decreases erections and may reduce sex drive.

### What are the side effects and risks of taking estrogen?

Estrogen may impair your metabolic health – that is, the risk for conditions including diabetes, high cholesterol, and high blood pressure. These things can increase risk for heart disease. People who take estrogen should have monitoring for these conditions and should focus on strategies to prevent these conditions, like eating well, exercising, and avoiding smoking cigarettes.

Estrogen increases the risk of blood clots, though it is still relatively rare. Estrogen patches are recommended for people who already have higher than normal risk of blood clots.

Estrogen can cause increase in appetite, weight gain, nausea, mood changes, and headaches. There are also some more rare side effects that your provider will discuss with you.



### How is estrogen treatment monitored?

Blood tests are collected prior to starting estrogen and every 3 months for the first year of treatment. In the second year, labs are checked every 3 months. After that, test frequency depends on the patient but is usually every 6-12 months. Testing includes cholesterol, diabetes screening, hormone levels, and a hormone called prolactin. These can be drawn at Lurie or another facility closer to home.

### How long will I need to take estrogen?

Many people plan on taking estrogen for an indefinite time period because some of the effects of estrogen are not permanent and can reverse if estrogen is stopped. But the decision to take estrogen is individual, and there is not one right amount of time to take it for everyone. We support patients in continued decision making about estrogen during their treatment.

### How quickly will changes develop?

It's normal to want to see changes occur quickly, but these changes take time. Most changes start in about 3-6 months but can take years to develop. The table below explains the expected timeline. Remember – everyone's experience on estrogen is different and can be influenced by your individual body composition and genes. It's impossible to predict *exactly* how your body will change with estrogen. For example, breast size and shape varies from person to person.

The right dose of estrogen is different for different people. Taking more estrogen than prescribed increases health risks. It's important to take the prescribed dose of estrogen and talk with your provider if you have concerns about the effects of estrogen.

Change	Beginning of change	Maximum effect
Fat redistribution	3-6 months	2-5 years
Softening of skin and decreased oiliness	3-6 months	Unknown
Thinning and slowed growth of body and facial hair	6-12 months	>3 years
Decreased muscle mass and strength	3-6 months	1-2 years
Breast growth	3-6 months	2-3 years
Decreased sex drive and spontaneous erections	1-3 months	1-2 years
Decreased size of testicles	3-6 months	2-3 years
Decreased sperm production	Varies	varies

Table information is based on guidelines from the World Professional Association for Transgender Health