

Patient Information for FEMINIZING HORMONE THERAPY

Before using medications to feminize, you need to know the possible advantages, disadvantages and risks of these medications. We have listed them here for you. It's important that you understand all of this information before you begin taking these medications.

Please read the following. Once your questions or concerns are addressed, and if you have decided to proceed with feminizing hormone therapy, you will need to sign a consent form.

We are happy to answer any questions you have. Here are some typical questions.

What medications are used for feminizing hormone therapy?

Gender transition for some people involves taking hormones. For feminizing hormone therapy to be most effective, people take not only estrogens (hormone associated with people assigned female at birth), but also medicines to block their body from producing or utilizing testosterone (hormone associated with people assigned male at birth).

Different forms of the hormone estrogen can be used for feminizing hormone therapy. Estrogen can be given as an injection, as a pill, or as a patch. The form of estrogen someone takes will determine how frequently they take it. For example, someone using injection hormones will take it every week or every other week, whereas someone using oral hormones (a pill) will take it once or twice a day.

Medications that block the production or effects of testosterone are called androgen blockers. Androgen is another term for hormones associated with people assigned male at birth. Spironolactone is the androgen blocker that is most commonly used in the United States. Other medicines are sometimes used but because spironolactone is relatively safe, inexpensive, and effective to block testosterone, it is the primary androgen blocker used for feminizing hormone therapy.

What are the potential benefits and risks of feminizing hormone therapy?

Every medication has risks, benefits, and side effects that are important to understand before starting to take it. The effects of medicines used for transition need to be monitored with laboratory studies and regular visits to your provider to make sure that there are no negative impacts on your body.

Both the medicines that you take as well as the process of transitioning can affect your mood. While many people on feminizing hormone therapy are relieved by and happy with the changes that occur, it may be important to be under the care of a therapist experienced with gender-related issues while undergoing transition. The therapist can work to ease the transition experience for you at home, with friends and at work or school.

POTENTIAL BENEFITS

- Appearing more feminine
- Breast development*
- Softer and less oily skin
- Softer hair and slower balding (facial hair usually does not go away, however)
- Smaller testes*
- Body fat redistribution—from abdomen to hips, thighs, and butt
- Feeling more comfortable in your body

*These are permanent changes that will not be reversed if you stop feminizing hormone therapy.

RISKS

- Less interest in sex
- Lower fertility due to decreased ability to make sperm**
- Difficult achieving erection and fewer erections
- Feeling hungrier than usual, gaining weight and retaining fluids (bloating)
- Emotional changes such as depression, anxiety, suicidal thoughts or a worsening of existing mental health issues
- Higher chance of getting cardiovascular disease, such as high blood pressure and high cholesterol
- Increased chance of having a heart attack, blood clots or a stroke
- Increased risk of migraine headaches, prolactinoma (non-cancerous tumor of pituitary gland), breast cancer and liver irritation

**This is permanent for some and will return for others once they stop taking feminizing hormone therapy

Some people, due to their health status or health history, should not take estrogens.

Estrogens should not be used by anyone who has a history of:

- An estrogen-dependent cancer
- A disorder that makes them more likely to get blood clots that could travel to the lungs (unless they are also taking blood thinners and are followed by a specialist)

Estrogen should be used with caution and only after a full discussion of risks by anyone who:

- Has a strong family history of breast cancer or other estrogen-dependent cancers
- Has uncontrolled diabetes
- Has heart disease
- Has chronic hepatitis or other liver disease
- Has uncontrolled high cholesterol
- Has migraines or seizures
- Is clinically obese
- Smokes cigarettes

When can I expect to see physical changes from feminizing hormone therapy?

It is important to remember that hormones work a little differently in every person. Some physical changes will occur more rapidly for some people and more slowly for others. The following is an approximate schedule of when you might expect to see physical changes

APPROXIMATE TIMELINE OF EXPECTED CHANGES

Change	Will start in:	Will be most pronounced in:
Body fat changes	3-6 months	2-5 years
Less muscle mass/strength	3-6 months	1-2 years
Softer/less oily skin	3-6 months	Unknown
Less interest in sex	1-3 months	1-2 years
Fewer erections	1-3 months	3-6 months
Difficulty getting erections	Depends	Depends
Breast growth	3-6 months	2-3 years
Smaller testes	3-6 months	2-3 years
Decreased fertility/making less sperm	Depends	Depends
Softer, thinner hair that grows more slowly	6-12 months	>3 years
Balding slows down	No regrowth, hair loss slows 1-3 months	1-2 years

Feminizing Process

Estrogen, anti-androgens, or a combination of both may be prescribed to feminize your appearance.

It can take several months or longer for the effects to become noticeable. It is difficult to predict how quickly or how significantly change will happen.

Taking estrogen will cause you to develop breasts.

- It takes several years for breasts to get to their full size.
- The breasts will remain, even if you stop taking estrogen.
- You might have a milky discharge from your nipples called galactorrhea. If you do, you should tell your clinician because it could be caused by the estrogen or by something else.
- While we do not know to what degree, your risk of breast cancer may be increased.
- Developing breasts means that you will have to take care of them. This includes annual breast exams from your health provider and, when you are older, regular mammograms.

The following changes are usually not permanent — they are likely to go away if you stop taking the medicines.

- Body hair will become less noticeable and will grow more slowly. It will not completely stop, even if you take the medication for a long time.
- You will probably have less fat on your abdomen and more on your butt, hips, and thighs.
- If you have the predisposition to go bald, it may start later than it would have but may not stop completely.
- If you stop taking hormones you may lose your hair faster than if you hadn't taken hormones.
- You may lose muscle and strength in your upper body.
- Your skin may become softer.

Your body will make less testosterone. This may affect your sex life in different ways and alter your future ability to cause pregnancy.

- Your sperm may no longer mature. This could make you less able to cause pregnancy. There is a small risk that you might never produce mature sperm again. On the other hand, your sperm could still mature even while you are taking hormones. You might get someone pregnant if you have vaginal intercourse and don't use birth control.
- Ask about options for sperm banking/fertility preservation.
- Know that your testicles may shrink down to half their size, but that they are part of your body and that you need to take care of unless you have surgery to remove them. This means that you will need regular checkups for them.
- You won't have as much semen when you ejaculate.
- You may not have an erection in the morning as often as before. It is also likely that you will have fewer spontaneous erections.
- It may become harder or less possible to use your penis for vaginal/anal sex.
- You may want to masturbate or have sex less often and that may find it harder to ejaculate when you do.
- This treatment may make you permanently unable to cause pregnancy.

Some parts of your body will not change much by using these medicines.

- The hair of your beard and moustache may grow more slowly than before and may become less noticeable. It will not go away unless you have treatments like electrolysis.
- The sound of your voice will not be affected by feminizing hormone therapy.
- Your Adam's apple will not shrink because of feminizing hormone therapy.
- There are other treatments that might help with these changes. Ask your clinician if you are interested.

There may be mood changes with these medicines. You should continue therapy with a qualified clinician as needed.

Risks of Feminizing Medications

The side effects and safety of these medicines are not completely known. There may be long-term risks we don't know about from taking these medications.

Do not take more medicine than you are prescribed because it increases health risks. Taking more medicine than you are prescribed won't make changes happen more quickly or more significantly.

These medicines may damage the liver and may lead to liver disease. You should be checked for possible liver damage for as long as you take them.

These medicines cause changes that other people will notice. Some people have experienced discrimination because of this. Ask your clinician for help finding advocacy and support resources.

Risks of Estrogen

Taking estrogen increases the risk of blood clots or problems with blood vessels that can result in

- chronic problems with veins in the legs
- heart attack
- pulmonary embolism – blood clot to the lungs – which may cause permanent lung damage or death
- stroke, which may cause permanent brain damage or death

The risk of blood clots is much worse if you smoke cigarettes. The danger is so high that you should stop smoking completely if you start taking estrogen. You can ask your clinician for advice about how to stop smoking.

Estrogen can increase the deposits of fat around internal organs. This can increase your risk for diabetes and heart disease.

Taking estrogen can raise your blood pressure. If it goes up, your clinician can work with you to try to control it with diet, lifestyle changes, and/or medication.

Taking estrogen increases your risk of getting gallstones. You should talk with your clinician if you get severe or long-lasting pain in your abdomen.

Estrogen can cause nausea and vomiting. You should talk with your clinician if you have long-lasting nausea or vomiting.

Estrogen can cause migraines or make them worse if you already have them. You should talk with your clinician if you have headaches or migraines often or if the pain is unusually severe.

It is not yet known if taking estrogen increases the risk of prolactinomas. These are non-cancerous tumors of the pituitary gland. While they are not usually life threatening, they can damage vision and cause headaches if they are not treated properly. Changes in vision, headaches that are worse when you wake up in the morning, and milky discharge from your nipples can be signs of a prolactinoma. You should talk to your health care provider if you develop these symptoms. There is a blood test that can check for this.

You are more likely to have dangerous side effects if:

- you smoke
- are clinically overweight or obese
- you have a personal or family history of blood clots
- you have a personal or family history of heart disease and stroke
- your family has a history of breast cancer

Risks of Androgen Blockers

Spirolactone (an androgen blocker) affects the balance of water and salts in the kidneys. This may:

- increase the amount of urine you produce, making it necessary to urinate more frequently
- make you thirstier
- rarely cause high levels of potassium in the blood, which can cause changes in heart rhythms that are life-threatening
- reduce your blood pressure

Some androgen blockers make it more difficult to evaluate test results for cancer of the prostate. This can make it more difficult to check up on prostate problems. If you are older than 50, you should discuss appropriate prostate cancer screening with your care provider. Even if you have genital reconstruction surgery the prostate is not usually removed.

Prevention of Medical Complications

The dose and type of medication that's prescribed for me may not be the same as someone else's.

You need periodic physical exams and blood tests to check for any side effects.

In addition to periodic checks from your provider, you must also take responsibility for your health. This means paying attention to and talking to your provider about any symptoms that might be side effects from medicines. This also means if you choose to have sex with others, you should protect yourself and your partners by using condoms to prevent sexually transmitted infections (STIs) and getting screened for STIs routinely.

Feminization medications can interact with other drugs and prescribed/over-the-counter medicines. These include alcohol, dietary supplements, herbs, other hormones, and street drugs. This kind of

interaction can cause complications, which can be life-threatening. You need to be honest with your clinician about whatever else you take to prevent complications.

It can be risky for anyone with certain conditions to take these medicines. You should be evaluated if your clinician thinks you may have one of them. Together, we will decide if it's a good idea for you to start or continue using them.

You should stop taking estrogen two weeks before any surgery or when you may be immobile for a long time (for example, if you break your leg and are in a cast). This will lower the risk of getting blood clots. You start taking it again a week after you are back to normal or when your clinician says it is okay.

Even if you have to stop taking estrogen, you may still be able to take the testosterone blockers that you are on to prevent the effects of your testicles producing testosterone again.

Using these medicines for feminizing hormone therapy is an off-label use of these drugs. This means it is not approved by the Food and Drug Administration (FDA). The medicine and dose that is recommended for you is based on the judgment and experience of your health care provider and the best information that is currently available in the medical literature.

You can choose to stop taking these medicines at any time. If you decide to do that, you should do it with the help of your clinician. This will help to make sure there are no negative reactions. Your clinician may suggest that you cut the dose or stop taking it altogether if you develop certain conditions. This may happen if the side effects are severe or if there are health risks that can't be controlled.

Alternatives

There are alternatives to using feminizing medicines to help people appear more feminine. Some people choose not to take hormones or have surgery and may only socially transition. If you are interested in alternatives, talk with your clinician about alternate options.