

Pediatric Feminizing Hormone Therapy Information For Parents

The use of hormone therapy for gender transition/affirmation is based on many years of experience treating transgender people. Research on hormone therapy continues to provide information on the safety and efficacy of hormone therapy, but all of the long-term consequences and effects of hormone therapy may not be fully understood.

This information will help you and your child to consider the expected benefits of hormone therapy and the possible side effects of hormone therapy for your child. You and your child can decide, with their medical provider, if hormone therapy is right for them.

Hormone Therapy

Each individual person responds to hormone therapy differently. It is difficult to predict how each person will respond. Your child will need to take androgen blockers and/or estrogen only as prescribed and to discuss their treatment with their medical provider before making any changes.

Androgen (testosterone) blockers are used to decrease the amount and/or block the effect of testosterone on and reduce the male features of the body.

Estrogen (usually estradiol) is used to feminize the body; estrogens can also decrease the amount and effect of testosterone. Your child's medical provider will determine the form of estrogen (pills, patches, gels or shots) and the dose that is best for them based on their personal needs and wishes, as well as considering any medical or mental health conditions they might have.

Expected Effects of Hormone Replacement Therapy

Feminine changes to your child's body may take several months to become noticeable and usually take up to 3 to 5 years to be complete.

Permanent Changes

These will not go away, even if your child decides to stop hormone therapy:

- Breast growth and development. Breast development and size may vary, and many patients also opt for top surgery.
- Testicles will get smaller and softer.
- Testicles will produce less sperm, and your child will become infertile (unable to get someone pregnant); how long this takes to happen and become permanent varies from person to person.
 - » Your child may consider banking sperm prior to beginning hormone therapy.
 - » Because sperm production can be hard to predict, if they have penetrative sex with a natal female partner, they or their partner should still use birth control (e.g. condoms).

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Not Permanent Changes

These are likely to go away if hormone therapy is stopped:

- Loss of muscle mass and decreased strength, particularly in the upper body.
- Weight gain. If they gain weight, this fat will tend to go to the buttocks, hips and thighs, rather than the abdomen and mid-section, making the body look more feminine.
- 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 most people will choose to have other treatments (electrolysis or laser therapy) to remove unwanted hair.
- Male pattern baldness 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 there will be less of it.
- Changes in mood or thinking may occur; your child may find that they have increased emotional reactions to things. Some people find their mental health improves after starting hormone therapy. The effects of hormones on the brain are not fully understood.

Hormone therapy will not change the bone structure of your child's face or body; their Adam's apple will not shrink; the pitch of their voice will not automatically change. They may want to try other treatments to address these areas.

Risks of Hormone Therapy:

- **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. Note: transdermal estrogen has lower thromboembolic risks than oral.
- **Possible increased risk of having cardiovascular disease, a heart attack or stroke.** This risk may be higher if your child smokes cigarettes, or if they have high blood pressure, high cholesterol, diabetes, or a family history of cardiovascular disease. Note: transdermal estrogen has lower cardiovascular risks than oral.
- **Possible increase in blood pressure.** This might require medication for treatment.
- **Possible increased risk of developing diabetes.**
- **Nausea and vomiting** especially when starting estrogen therapy.
- **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.
- **May cause or worsen headaches and migraines.**
- **Possible risk for elevated levels of prolactin** (a hormone made by the pituitary gland). A few people on estrogen for hormone therapy developed prolactinomas, a benign tumor of the pituitary gland that can cause headaches and problems with vision and cause other hormone problems.

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- **May worsen depression or cause mood swings.**
- **May increase the risk of breast cancer.** The risk is probably higher than in natal men but lower than in natal women; the risk is probably related to how long estrogen therapy is taken.

The Risks and Possible Side Effects of Androgen Blockers (Spironolactone):

- Increased urine production and needing to urinate more frequently; possible changes in kidney function.
- A drop in blood pressure and feeling lightheaded.
- Increased thirst.
- Increase in the potassium in the blood and in the body. This can lead to muscle weakness, nerve problems and dangerous heart arrhythmias (irregular heart rhythm).

Additional Health Information:

- Smoking may greatly increase the risks of taking hormone therapy, especially the risk of blood clots and cardiovascular disease. If your child smokes, they should try to cut back or quit. If they have other risks for blood clots or cardiovascular disease, your child's provider may ask them to quit smoking before they start on hormone therapy.
- Taking estrogen in doses that are higher than recommended by their doctor will increase their risk of side effects and may not produce better feminizing effects.
- Your child may need to stop taking hormones for a few weeks before and after any surgery.
- Treatment with estrogen is expected to be lifelong.
- Your child may choose to stop taking hormone therapy at any time or for any reason. They are encouraged to discuss this decision with their medical provider.
- Your child's provider may decrease the dose of estrogen or androgen blockers or stop prescribing hormone therapy because of medical reasons and/or safety concerns; they can expect that the medical provider will discuss the reasons for all treatment decisions with you and them.
- Hormone therapy is not the only option for transitioning or gender affirming care; your child's medical provider and/or a mental health provider can help them think about other options.

It is important for you and your child to:

- Take androgen blockers and/or estrogens only at the dosage and in the form that their medical provider prescribes.
- Inform your child's medical provider if they are taking or start taking any other prescription drugs, dietary supplement, herbal or homeopathic drugs, street drugs or alcohol so they can discuss possible interactions with and effects on their hormone treatment.
- Inform your child's medical provider of any new physical symptoms or any medical conditions that may develop before or while they are taking hormone therapy and discuss the evaluation of these conditions. Inform their provider if they think you are having bad side effects from the medications.
- Keep regular follow up appointments. Routine preventive care is important.
- Have regular monitoring blood testing done. Your child's provider will discuss with you what tests are necessary in order to monitor for potential harmful effects and to ensure their hormone therapy is safe and effective.