

Information on Estrogen Hormone Therapy

Hi, I'm Dr. Maddie Deutsch, Director of Clinical Services at the UCSF Center of Excellence for Transgender Health. I'd like to talk to you about some of the risks, expectations, long term considerations, and medications associated with your transition from male to female.

Many people are eager for hormonal changes to take place rapidly- I understand that. But it's very important to remember that the extent of, and rate at which your changes take place, depend on many factors. These factors include your genetics, the age at which you start taking hormones, and your overall state of health.

Consider the effects of hormone therapy as a second puberty, and puberty normally takes years for the full effects to be seen. Taking higher doses of hormones will not necessarily bring about faster changes, but it could endanger your health. And because everyone is different, your medicines or dosages may vary widely from those of your friends, or what you may have read in books or online.

There are four areas where you can expect changes to occur as your hormone therapy progresses.

The first is physical.

The first changes you will probably notice are that your skin will become a bit drier and thinner. Your pores will become smaller and there will be less oil production. You may become more prone to bruising or cuts and in the first few weeks you'll notice that the odors of your sweat and urine will change. It's also likely that you'll sweat less.

When you touch things, they may "feel different" and you may perceive pain and temperature differently.

Probably within a few weeks you'll begin to develop small "buds" beneath your nipples. These may be slightly painful, especially to the touch and the right and left side may be uneven. This is the normal course of breast development and whatever pain you experience will diminish significantly over the course of several months.

It's important to note that breast development varies from person to person. Not everyone develops at the same rate and most transgender women, even after many years of hormone therapy, can only expect to develop an "A" cup or perhaps a small "B" cup. Like all other women, the breasts of transgender women vary in size and shape and will sometimes be uneven with each other.

Your body will begin to redistribute your weight. Fat will begin to collect around your hips and thighs and the muscles in your arms and legs will become less defined and have a smoother appearance as the fat just below your skin becomes a bit thicker. Hormones will not have a significant effect on the fat in your abdomen, also known as your "gut". You can also expect your muscle mass and strength to decrease significantly. To maintain muscle tone, and for your general health, I recommend you exercise. Overall, you may gain or lose weight once you begin hormone therapy, depending on your diet, lifestyle, genetics and muscle mass.

Your eyes and face will begin to develop a more female appearance as the fat under the skin increases and shifts. Because it can take two or more years for these changes to fully develop, you should wait at least that long before considering any drastic facial feminization procedures. What won't change is your bone structure, including your hips, arms, hands, legs and feet.

Let's talk about hair. The hair on your body, including your chest, back and arms, will decrease in thickness and grow at a slower rate. But it may not go away all together. For that you might want to consider electrolysis or laser treatment. Remember that all women have some body hair and that this is normal. Your facial hair may thin a bit and grow slower but it will rarely go away entirely without electrolysis or laser treatments. If you have had any scalp balding, hormone therapy should slow or stop it, but how much if it will grow back is unknown.

Some people may notice minor changes in shoe size or height. This is not due to bony changes, but due to changes in the ligaments and muscles of your feet.

The second impact of hormone therapy is on your emotional state

Your overall emotional state may or may not change, this varies from person to person. Puberty is a roller coaster of emotions, and the second puberty that you will experience during your transition is no exception. You may find that you have access to a wider range of emotions or feelings, or have different interests, tastes or pastimes, or behave differently in relationships with other people. While psychotherapy is not for everyone, most people would benefit from a course of supportive psychotherapy while in transition to help you explore these new thoughts and feelings, and get to know your new body and self.

The third impact of hormone therapy is sexual in nature.

Soon after beginning hormone treatment, you will notice a decrease in the number of erections you have. And when you do have one, you may lose the ability to penetrate, because it won't be as firm or last as long. You will, however, still have erotic sensations and be able to orgasm.

You may find that you get erotic pleasure from different sex acts and different parts of your body. Your orgasms will feel like more of a "whole body" experience and last longer, but with less peak intensity. You may experience ejaculation of a small amount of clear or white fluid, or perhaps no fluid. Don't be afraid to explore and experiment with your new sexuality through masturbation and with sex toys such dildos and vibrators. Involve your sexual partner if you have one.

Though your testicles will shrink to less than half their original size, most experts agree that the amount of scrotal skin available for future genital surgery won't be affected.

The fourth impact of hormone therapy is on the reproductive system.

Within a few months of beginning hormone therapy, you must assume that you will become permanently and irreversibly sterile. Some people may maintain a sperm count on hormone therapy, or have their sperm count return after stopping hormone therapy, but you must assume that won't be the case for you.

If there's any chance you may want to parent a child from your own sperm, you should speak to the provider about preserving your sperm in a sperm bank. This process generally takes 2-4 weeks and costs roughly \$2000-\$3000. Your sperm should be stored before beginning hormone therapy. All too often, transgender women decide later in life that they would like to parent a child using their own sperm but are unable to do so because they did not take the steps to preserve sperm before beginning hormone treatment.

Also, if you are on hormones but remaining sexually active with a woman who is able to become pregnant, you should always continue to use a birth control method to prevent unwanted pregnancy.

Many of the effects of hormone therapy are reversible, if you stop taking them. The degree to which they can be reversed depends on how long you have been taking them. Breast growth and possibly sterility are not reversible. If you have an orchiectomy, which is removal of the testicles, or genital reassignment surgery, you will be able to take a lower dose of hormones but should remain on hormones until you're at least 50 to prevent weakening of the bones, otherwise known as osteoporosis.

Now let's talk about treatments. Cross gender hormone therapy for transwomen may include three different kinds of medicines: Estrogen, testosterone blockers and progesterones.

Estrogen is the hormone responsible for most female characteristics. It causes the physical changes of transition and many of the emotional changes. Estrogen may be given as a pill, by injection, or by a number of skin preparations such as a cream, gel, spray or a patch.

Pills are convenient, cheap and effective, but are less safe if you smoke or are older than 35. Patches can be very effective and safe, but they need to be worn at all times. They could also irritate your skin.

Many transwomen are interested in estrogen through injection. Estrogen injections tend to cause very high and fluctuating estrogen levels which can cause mood swings, weight gain, hot flashes, anxiety or migraines. Additionally, little is known about the effects of these high levels over the long term. If injections are used, it should be at a low dose and with an understanding that there may be uncomfortable side effects, and that switching off of injections to other forms may cause mood swings or hot flashes.

Contrary to what many may have heard, you can achieve the maximum effect of your transition with relatively small doses of estrogen. **Taking high doses does not necessarily make changes happen quicker it could, however, endanger your health.** And after you've had genital surgery or orchiectomy—removal of the testicles—your estrogen dose will be lowered. Without your testicles you need less estrogen to maintain your feminine characteristics and overall health

To monitor your health while on estrogen, your provider will periodically check your liver functions and cholesterol and screen you for diabetes.

Let's move on to testosterone blockers.

There are a number of medicines that can block testosterone and they fall into two categories: those that block the action of testosterone in your body and those that prevent the production of it. Most testosterone blockers are very safe but they can have side effects.

The blocker most commonly used, spironolactone, can cause you to urinate excessively and feel dizzy or lightheaded, especially when you first start taking it. It's important to drink plenty of fluids with this medication. Because spironolactone can be dangerous for people with kidney problems and because it interacts with some blood pressure medicines, it's essential you share with your provider your full medical history and the names of all the medications you're taking. A rare but potentially dangerous side effect of spironolactone is a large increase in the production of potassium, which could cause your heart to stop, so while on this medication you should have your potassium levels checked periodically.

Finasteride and dutasteride are medicines which prevent the production of dihydro-testosterone, a specific form of testosterone that has action on the skin, hair, and prostate. These medicines are weaker testosterone blockers than spironolactone but have few side effects, and are useful for

those who cannot tolerate spironolactone. It is unclear if there is any added benefit to taking one of these medicines at the same time as spironolactone.

Lastly, let's talk about Progesterone.

Progesterone is a source of constant debate among both transwomen and providers. Though it's commonly believed to have a number of benefits, including: improved mood and libido, enhanced energy, and better breast development and body fat redistribution, there is very little scientific evidence to support these claims. Nevertheless, some transwomen say they experience some or all of these benefits from progesterone. Progesterone may be taken as a pill or applied as a cream.

So what are the risks?

- The risk of things like blood clots, strokes and cancer are minimal, but may be elevated.
- There is not much scientific evidence regarding the risks of cancer in transgender women.
 - We believe your risk of prostate cancer will go down but we can't be sure, so you should follow standard testing guidelines for someone your age.
 - Your risk of breast cancer may increase slightly, but you'll still be at less of a risk than a non-transgender female. When you've been on hormones for at least 2-3 years, we recommend you begin breast cancer screenings depending on your age and risk factors after discussion with your provider.
- Since there is not a lot of research on the use of estrogen in transwomen, there may be other risks that we won't know about, especially for those who have used estrogen for many years

In conclusion, please be patient and remember that all of the changes associated with the puberty you're about to experience can take years to develop.

Thank you for reading and for taking care of your health.

This info as well as a video of this info, see:

<https://transcare.ucsf.edu/article/information-estrogen-hormone-therapy>

<https://www.youtube.com/watch?v=GJEix-i5pmE&feature=youtu.be>