Overview of Masculinizing Hormone Therapy

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The below information is required reading before you can begin hormone therapy. Please take notes and make a list of questions to bring with you to your next visit. You should also re-read this within 24 hours of your visit so the information is fresh in your mind when we meet. You reading and understanding this material is an important component in the informed consent process for receiving a hormone prescription.

This document will provide an overview of gender affirming masculinizing hormone therapy, including choices, risks, and unknowns associated with testosterone therapy.

As you prepare to begin treatment, now is a great time to think through what your goals are, as the approach to hormone therapy is definitely not one-size-fits-all. Do you want to get started right away on a path to the maximum safe effects? Or, do you want to begin at a lower dose and allow things to progress more slowly? Perhaps your long term goal is to seek less-than-maximal effects and you would like to remain on a low dose for the long term. Thinking about your goals will help you communicate more effectively with your medical provider as you work together to map out your care plan.

Many people are eager for hormonal changes to take place rapidly- understandably so. 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 in online forums. Use caution when reading about hormone regimens that promise specific, rapid, or drastic effects. While it is possible to make adjustments in medications and dosing to achieve certain specific goals, in large part the way your body changes in response to hormones is more dependent on genetics and the age at which you start, rather than the specific dose, route, frequency, or types of medications you are taking.

While this document reviews the approach to hormone therapy in transgender men, content is also applicable to non-binary people who were assigned female at birth and are seeking masculinizing hormone therapy.

There are four areas where you can expect changes to occur as your hormone therapy progresses: Physical, emotional, sexual, and reproductive.

Physical

The first physical changes you will probably notice are that your skin will become a bit thicker and more oily. Your pores will become larger and there will be more oil production. You'll also notice that the odors of your sweat and urine will change and that you may sweat more overall. You may develop acne, which in some cases can be bothersome or severe, but usually can be managed with good skin care practices and common acne treatments. Some people may require prescription medications to manage acne, please discuss this with your provider. Generally, acne severity peaks during the first year of treatment, and then gradually improves. Acne may be minimized by using an appropriate dosing of testosterone that avoids excessively high levels.

Your chest will not change much in response to testosterone therapy. That said, surgeons often recommend waiting at least 6-12 months after the start of testosterone therapy before having masculinizing chest surgery, otherwise known as top surgery, in order to first allow the contours of the muscles and soft tissues of your chest wall to settle in to their new pattern.

Your body will begin to redistribute your weight. Fat will diminish somewhat around your hips and thighs. Your arms and legs will develop more muscle definition, with more prominent veins and a slightly rougher appearance, as the fat just beneath the skin becomes a bit thinner. You may also gain fat around your abdomen.

Your eyes and face will begin to develop a more angular, male appearance as facial fat decreases and shifts. Please note that it's not likely your bone structure will change, though some people in their late teens or early twenties may see some subtle bone changes. It may take 2 or more years to see the final result of the facial changes.

Your muscle mass will increase, as will your strength, although this will depend on a variety of factors including diet and exercise. Overall, you may gain or lose weight once you begin hormone therapy, depending on your diet, lifestyle, genetics and muscle mass.

Testosterone will cause a thickening of the vocal chords, which will result in a more male-sounding voice. Not all trans men will experience a full deepening of the pitch of their voice with testosterone, however. Some may find that practicing various vocal techniques or working with a speech therapist may help them develop a voice that feels more comfortable and fitting. Voice changes may begin within just a few weeks of beginning testosterone, first with a scratchy sensation in the throat or feeling like you are hoarse. Next your voice may break a bit as it finds its new tone and quality.

The hair on your body, including your chest, back and arms will increase in thickness, become darker and will grow at a faster rate. You may expect to develop a pattern of body hair similar to other men in your family—just remember, though, that everyone is different and it can take 5 or more years to see the final results.

Regarding the hair on your head: most trans men notice some degree of frontal scalp hair thinning, especially in the area of your temples. Depending on your age and family history, you may develop thinning hair, male pattern baldness or even complete hair loss. Approaches to managing hair loss in trans men is the same as with cisgender men; treatments can include the partial testosterone blocker finasteride, minoxidil, which is also known as Rogaine, applied to the scalp, and hair transplantation. As with cis men, unfortunately there is no way to completely prevent male pattern baldness in those

predisposed to develop this condition. Ask your provider for more information on strategies for managing hair loss.

Regarding facial hair, beards vary from person to person. Some people develop a thick beard quite rapidly, others take several years, while some never develop a full, thick beard. Just as with cisgender men, trans men may have varying degrees of facial hair thickness and develop it at varying ages. Those who start testosterone later in life may experience less overall facial hair development than those who start at younger ages.

Lastly, you may notice changes in your perception of the senses. For example, when you touch things, they may “feel different” and you may perceive pain and temperature differently. Your tastes in foods or scents may change.

Emotional state changes

The second area of impact of hormone therapy is on your emotional state.

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 narrower range of emotions or feelings, or have different interests, tastes or pastimes, or behave differently in relationships with other people. For most people, things usually settle down after a period time. Some people experience little or no change in their emotional state. I encourage you to take the time to learn new things about yourself, and sit with new or unfamiliar feelings and emotions while you explore and familiarize yourself with them. While psychotherapy is not for everyone, many people find that working with a therapist while in transition can help you to explore these new thoughts and feelings, get to know your new body and self, and help you with things like coming out to family, friends, or coworkers, and developing a greater level of self-love and acceptance.

Sexual changes

The third area of impact of hormone therapy is on your sexuality

Soon after beginning hormone treatment, you will likely notice a change in your libido. Quite rapidly, your genitals, especially your clitoris, will begin to grow and become even larger when you are aroused. You may find that different sex acts or different parts of your body bring you erotic pleasure. Your orgasms will feel different, with perhaps more peak intensity and a greater focus on your genitals rather than a whole body experience. Some people find that their sexual interests, attractions, or orientation may change when taking testosterone; it is best to explore these new feelings rather than keep them bottled up.

Don’t be afraid to explore and experiment with your new sexuality through masturbation and with sex toys. If you have a sex partner or partners, involve them in your explorations..

Reproductive system changes

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

You may notice at first that your periods become lighter, arrive later, or are shorter in duration, though some may notice heavier or longer lasting periods for a few cycles before they stop altogether.

Testosterone may reduce your ability to become pregnant but it does not completely eliminate the risk of pregnancy. Transgender men can become pregnant while on testosterone, so if you remain sexually active with someone who is capable of producing sperm, you should always use a method of birth control to prevent unwanted pregnancy. Transgender men may use any form of contraception, including the numerous options available that do not contain estrogen, and some that contain no hormones at all. There are many contraception options that are long acting and do not require taking a daily pill. Transgender men may also use emergency contraception, also known as the “morning after pill”. Ask your medical provider for more information on the contraceptive and family planning options available to you.

If you suspect you may have become pregnant or have a positive pregnancy test while taking testosterone, speak with you provider as soon as possible, as testosterone can endanger the fetus.

If you do want to have a pregnancy, you’ll have to stop testosterone treatment and wait until your provider tells you that it’s okay to begin trying to conceive.

It’s also important to know that, depending on how long you’ve been on testosterone therapy, it may become difficult for your ovaries to release eggs, and you may need to consult with a fertility specialist and use special medications or techniques, such as in vitro fertilization, to become pregnant. These treatments are not always covered by insurance, and can be expensive. Uncommonly, testosterone therapy may cause you to completely lose the ability to create fertile eggs or become pregnant.

Risks

While cisgender men do have higher rates of cholesterol related disorders and heart disease than cisgender women, the available research on transgender men taking testosterone has generally not found these differences. Most of the research on risk of heart disease and strokes in transgender men suggests that risk does not increase once testosterone is begun. However, longer term, definitive studies are lacking. It has been suggested that the risk of other conditions such as diabetes or being overweight is increased by masculinizing testosterone therapy, however actual research supporting these claims are limited.

One known risk is that testosterone can make your blood become too thick, otherwise known as a high hematocrit count, which can cause a stroke, heart attack or other conditions. This can be a particular problem if you are taking a dose that is too high for your body’s metabolism. This can be prevented by maintaining an appropriate dose and through blood tests to monitor blood and hormone levels.

While available data are limited, it does not appear that testosterone increases the risk of cancer to the uterus, ovaries, or breasts. Because not all breast tissue is removed during masculinizing chest surgery, otherwise known as top surgery, there is a theoretical risk that breast cancer could develop in the remaining tissue. However, it can be difficult to screen for breast cancer in this tissue, and there are risks of a false positive test result. Your provider can give you more information about breast cancer screening after top surgery.

Cervical cancer is caused by an infection with the human papillomavirus, or HPV. HPV is transmitted sexually, more commonly by having sexual contact with someone who has a penis. However, people who have never had sexual contact with a penis may still contract an HPV infection. The HPV vaccine can greatly reduce your risk of cervical cancer, and you may want to discuss this with your provider. Pap smears are used to detect cervical cancer or precancer conditions, as well as an HPV infection. Your provider will make a recommendation as to how often you should have a pap smear. It is unclear if testosterone therapy plays any role in HPV infection or cervical cancer.

If your periods have stopped because of testosterone treatment, be sure to report any return of bleeding or spotting to your provider, who may request an ultrasound or other tests to be certain the bleeding isn't a symptom of an imbalance of the lining of the uterus. Sometimes such an imbalance could lead to a precancerous condition, although this is rare in transgender men. Missing a dose or changing your dose can sometimes result in return of bleeding or spotting. Some men may experience a return of spotting or heavier bleeding after months or even years of testosterone treatment. In most cases this represents changes in the body's metabolism over time. To be safe, always discuss any new or changes to bleeding patterns with your doctor.

Fortunately, since you do not have a prostate, you have no risk of prostate cancer and there is no need to screen for this condition.

If you have had your ovaries removed, it is important to remain on at least a low dose of hormones post-op until at minimum age 50. This will help prevent a weakening of the bones, otherwise known as osteoporosis, which can result in serious and disabling bone fractures.

Most people using masculinizing testosterone therapy will experience at least a small amount of acne. Some may experience more advanced acne. Often this acne responds to typical over-the-counter treatments, but in some cases prescription medication may be required. Acne usually peaks within the first year of treatment and then begins to improve.

While gender affirming hormone therapy usually results in an improvement in mood, 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. If you have any mental health conditions it is recommended you remain in discussion with a mental health providers as you begin hormone therapy.

Other medical conditions may be impacted by gender affirming hormone therapy, though research is lacking. These include autoimmune conditions, which can sometimes improve or worsen with hormone shifts, and migraines, which often have a hormonal component. Ask your medical provider if you have further questions about the risks, health monitoring needs, and other long term considerations when taking hormone therapy.

Some 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 testosterone. Clitoral growth, facial hair growth, voice changes and male-pattern baldness are not reversible.

Treatment approaches

All gender affirming hormone therapy is "off-label", which means that while the medications used have been approved for use by the US Food and Drug Administration, they have not been approved specifically for gender affirming care. This does not prevent their use for this purpose, and in medicine there are many times that medications are used "off-label". This use is still considered appropriate, and is legal.

Testosterone comes in several forms. Injections are usually best given weekly to maintain even levels of testosterone in the blood. Studies have shown that using a smaller needle and injection by the subcutaneous, or under the skin, approach, is just as effective as the intramuscular approach, which involves a larger needle injecting deeper into the muscle. In addition to injections, there are gels that can be applied to the skin daily. The gel is applied to skin and once dry, you can swim, shower, and have casual contact with others. If you will be having prolonged skin-skin contact with someone who does not have testosterone in their system such as a child or female, or will be having vigorous skin-skin contact such as during sex, the gel could potentially transfer a small amount of testosterone to the other person. There is not a risk of transfer with occasional or casual contact. All of these forms work equally well when the dosing is adjusted to achieve the desired hormone levels, and the decision about which form to use should be based mostly on your preference.

Another option for testosterone is the use of pellets under the skin. These are inserted every few months via a minor in-office procedure. Pellets are only used after being on an established and stable dose of another form of testosterone. Ask your medical provider for more information about this approach.

Regardless of the type of testosterone you are taking, it's important to know that taking more testosterone will not make your changes progress more quickly, but could cause serious side effects or complications. Excess testosterone can result in mood symptoms or irritability, bloating, pelvic cramping, or even a return of menstruation. High levels of testosterone also result in increased estrogen levels, as a percentage of all testosterone in the body is converted to estrogen. In general estrogen blocking medicines are not used as a part of masculinizing hormone therapy.

Other medications that may be used include progestagens, which are hormones similar to or identical to those made by the body to maintain a balance in the lining of the uterus. These hormones can be used in cases where periods continue after testosterone levels have been optimized. These hormones can cause mood swings, bloating, and other side effects, so it is recommended that you discuss these medications further with you provider if they are to be used.

Final thoughts

And finally, please remember that all of the changes associated with the puberty you're about to experience can take years to develop. Starting hormone therapy in your 40s, 50s, or beyond may bring less drastic changes than one might see when beginning transition at a younger age, due to the accumulated lifetime exposure to estrogen, and declining responsiveness to hormone effects as one approaches the age of menopause. Once you have achieved male-range testosterone levels, taking higher doses won't result in faster or more dramatic changes, however they can result in more side effects or complications.

Video from UCSF: https://www.youtube.com/watch?v=GAJZ4fwTuyc