

# HRT for Transmasculine People

an overview with supplementary information for those doing DIY

*NB: 'Transmasculine' in this context refers to trans men, and other non-binary/genderqueer people, who desire testosterone exposure and are for that reason seeking out hormone replacement therapy.*

## About This Guide

This guide is meant to provide general information about transmasculine hormone replacement therapy (henceforth HRT). Because this information is general and because different people need different things, the information you find here may be misleading for your individual circumstances. This information is not intended nor recommended as a substitute for medical advice. Where possible, seek the advice of your qualified health care provider regarding any more complex medical questions.

Self-administration of any drug is dangerous, so don't go in blind. Doing your own research is vital! Knowing what you can expect will help you to maximise the benefits and minimise the risks. That's why this guide exists.

## be sure T is something you want and need

Going DIY should not be taken lightly for several reasons!

The substance you will be acquiring is illegal and you can get into trouble for buying/using them. Injections can be dangerous if done incorrectly, so make sure you educate yourself and inject safely.

Hormones have a big impact on your emotions and there is no way of knowing how you will react to them (positively or negatively). Make sure you have a support system to get you through tough times. DO NOT go through this entirely alone. Reach out to someone you can trust (either IRL or online).

You need to take blood tests regularly to make sure your values are within the recommended ranges. By seeing your blood work, you can also decide if you need to increase or decrease your dose. If you are unable to regularly take blood tests, either from online sources or from your doctor then don't go DIY. In my opinion DIY should only be considered as a last resort, not because you are getting impatient due to the waiting lists.

Don't make an impulse decision, give it time and think it over.

Disclaimer: self-medicating testosterone can be very [dangerous for your health](#) if done wrong. Testosterone provided by legitimate sources such as prescriptions are FDA approved and have been created under very strict laws. The testosterone that is available online comes from an UGL (Underground Lab). These labs don't have to abide by any laws whatsoever and there is no way to know if their work environment is sterile.

# About Testosterone

For transmasculine people who have been born into "typically female bodies" (i.e., bodies that have functional ovaries), as well as those born into [intersex](#) bodies, the goal of testosterone therapy is to induce and maintain the presence of masculine [secondary sex characteristics](#)<sup>1</sup>.

Look at the [Trans Care Project - Hormones: A Guide for FTMs](#) to see how hormones work, what changes you can expect from testosterone, the risks and side effects of T and how you can maximise the benefits and minimise the risks. For a more detailed list of what changes you can expect look at [Hudson's FTM Resource Guide](#). It is important to know what you're working with and what you can expect.

## Methods of Administration

Testosterone can be administered either as a transdermal gel or as an intramuscular injection.

### Transdermal T<sup>2</sup>

The term "transdermal" refers to topical delivery through the skin, by the use of a patch, gel, or cream. Transdermal testosterone is usually applied to the skin daily in small doses in an effort to keep a steady level of testosterone in the system at all times. This approach avoids the "peaks and valleys" in T-levels sometimes associated with injectable testosterone. With injectables, T levels can reach a low-point a few days before the next shot is due, which can cause irritability, hot flashes, and low energy in some users. Daily transdermal application can help alleviate such problems. Some transmasculine people who regularly use injectable testosterone sometimes supplement with a gel or patch during the last few days of their dosing cycle to maintain their T levels. You can also simply shorten the time between injections to when you usually start experiencing those lows. Transdermal application is also attractive to those individuals who are not comfortable with needles and injections.

However, there are some disadvantages to transdermal delivery. Gels, creams and patches are more expensive than injectable testosterone. They can cause skin irritation and/or allergic reactions to some users. They can fall off with excessive sweating, and they must be fully protected with plastic when swimming. You should not shower or sweat extensively within the first 4 hours (preferably 8). Testosterone cream and gel can be transferred by direct skin contact with a partner; special care must be taken with female partners who wish to avoid potential virilization.

The only gels I have seen on the black market so far (I haven't researched them a lot) are [Androgel sachets](#) and NKNW (UG) [unpublished sources: [1](#), [2](#), [3](#), [4](#)]. There probably are more gels out there but you will have to find them yourself. I am unable to comment on the effectiveness and legitimacy of NKNW. If other people have experiences with them, please contribute them in the comments.

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<sup>1</sup> [Hudson's Guide: FTM Testosterone Therapy Basics](#)

<sup>2</sup> [Hudson's Guide: Types of Testosterone](#)

Research the [side effects](#) of using gel & [how to apply testosterone gel](#) if you're interested in using these.

## Injectable T

### Injection Methods

There are 2 methods that are used to inject testosterone: [Intramuscular Injections](#) (IM) and [subcutaneous injections](#) (SQ). Either method can be used to administer [Cypionate](#) and [Enanthate](#), they are equally as effective.

[Intramuscular injection](#) (IM) injection is the injection of a substance directly into muscle. Muscles have larger and more blood vessels than subcutaneous tissue and injections here usually have faster rates of absorption. Depending on the injection site, an administration is limited to between 2 and 5 millilitres of fluid (more than enough for us). The best self-injection spot is into the [vastus lateralis](#) muscle of the thigh at a 90 degree angle. The needles are typically longer than subcutaneous injections since they need to reach the muscle. You should always use an 18 gauge needle to draw from the vial and then swap it out with the needle you use to inject yourself with. It is normal for the injection site to bleed a little and to feel some discomfort after an injection. However, if you experience any of [these complications](#) then you should contact a healthcare provider asap.

[Subcutaneous injections](#) (SubQ) delivers medication into the [subcutaneous](#) layer of tissue that is directly under the skin. SQ injections are self-administered in either the abdomen or thigh at a 45 degree angle. With this injection a short needle is used to inject the drug into the tissue layer between the skin and the muscle. Medication given this way is usually absorbed more slowly than if injected into a muscle. This type of injection is only used for drugs that have to be given in small volumes (up to 2 mL is safe, so still enough for us). The needles used for sub-q injections are shorter than IM injections. One test had shown that sub-q injections are preferred among some patients and just as effective<sup>3</sup>.

My recommendation is that you inject IM if you want the testosterone to be absorbed quickly and you are not afraid of longer needles. Choose SQ injections if you are not a fan of needles and are too afraid to inject into a muscle. SQ injections are also a better option if you are obese/morbidly obese. If you are obese and do opt for IM injections you might need a longer needle to reach the muscle tissue.

### Injection Guide

For a guide on how to inject either IM or SQ, look at the [Fenway Health Injection Guide](#). They discuss the type of injection, [gauges](#) of [hypodermic needles](#), give an injection guide, and instructions on disposing of "[sharps](#)". The IM guide starts on page 3 and the SQ guide starts on page 17. Using this guide, you can figure out the medical supplies you need to buy; I leave that task up to you. You should always use an 18 gauge needle to draw from the vial and then swap it out with the needle you use to inject yourself with.

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<sup>3</sup> <https://www.ncbi.nlm.nih.gov/pubmed/28379417>

## Esters Commonly Used for HRT<sup>4</sup>

**Testosterone enanthate:** Chemical formula C<sub>26</sub>H<sub>40</sub>O<sub>3</sub> Testosterone Enanthate is one of the main forms of testosterone prescribed to transmasculine people. It is a slow-acting ester with a release time between 8-10 days. The name-brand of T-Enanthate available in the United States is called "Delatestryl," which is suspended in sesame oil. Testosterone Enanthate is typically injected anywhere between once every week to once every three weeks. Enanthate is manufactured widely throughout the world. It can be given by either [intramuscular injection](#) or [subcutaneous injection](#).

**Testosterone cypionate:** Chemical formula C<sub>27</sub>H<sub>40</sub>O<sub>3</sub> Testosterone Cypionate is the other main injectable form of testosterone prescribed to transmasculine people in the United States. It is a slow-acting ester with a release time between 8-10 days, like that of Enanthate. The name-brand of T-Cypionate available in the United States is called "Depo-Testosterone," which is suspended in cottonseed oil. Testosterone Cypionate is typically injected anywhere between once every week to once every three weeks. Cypionate is less common outside the USA. It can be given by either [intramuscular injection](#) or [subcutaneous injection](#).

I recommend doing 1 injection every week instead of every 2 or 3 weeks. Since both these esters have a release time between 8-10 days, it could be possible that halfway through your 2nd week you could experience lows. Of course, this is my own personal opinion, and you should try out what works best for you.

Both of these esters are available in [vials](#) and [ampoules](#). I recommend vials because they can be re-used for multiple months. I won't be discussing [other esters](#) such as [Sustanon](#) and [testosterone undecanoate](#) (Nebido) because they are less common (however, Sustanon is reasonably common among transmasculine people in Continental Europe). Cypionate and Enanthate generally give the most stable T levels and have short injection periods. Because of their short injection period you can easily switch out a brand or stop if the one you are using gives you bad side effects.

## Why Not Oral T?

A US Food and Drug Administration (FDA) advisory panel has voted against approval of what would have been the first oral testosterone replacement therapy, citing concerns that ease of use — and potential for cardiovascular side effects — could expose millions to unnecessary risk<sup>5</sup>.

When Testosterone (or any other anabolic steroid) is ingested orally, very little of it will enter the bloodstream — too little, in fact, to impart any significant effects on the body. This is because all ingested substances that are swallowed and processed through the [gastrointestinal \(GI\) tract](#) must always undergo what is known as a first pass through the liver prior to finally entering the bloodstream. Unfortunately, nearly all anabolic steroids are very easily metabolised and broken down by the liver, leaving a very miniscule percentage that actually survives this liver metabolism.

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<sup>4</sup> <http://www.ftmguideline.org/ttypes.html#injectables>

<sup>5</sup> <https://www.medscape.com/viewarticle/891186>

It was then discovered at one point, that by modifying the chemical structure by adding a [methyl group](#) (also known as an alkyl group) to the 17th carbon on the steroid structure (also known as carbon 17-alpha), it would allow the anabolic steroid to become more resistant to hepatic metabolism. This chemical bonding of a methyl group onto the 17th carbon is known as C17-alpha alkylation. As previously mentioned, when an anabolic steroid becomes C17-alpha alkylated, it allows an anabolic steroid to become orally active and bioavailable – without it, the anabolic steroid would not survive liver metabolism. However, the negative downside in this case is that of increased [hepatotoxicity](#) (increased liver toxicity). C17-alpha alkylation allows an anabolic steroid to become more resistant to hepatic breakdown, and any compound that is further resistant to hepatic breakdown will always have greater hepatotoxicity associated with it for various reasons<sup>6</sup>,

Notice that no clinic prescribes oral testosterone for HRT. That should tell you enough as to why one shouldn't use it.

## Bloodwork

You should test your blood before you take any testosterone to get a baseline. This is not necessarily needed for your t-levels but for your general health. This way, if some of your levels are high to begin you know that testosterone is not the main cause of those. Testosterone itself also has side effects (which you should know about if you read this) and by knowing beforehand which one of your levels are too high or low, you can try to improve them. Of course living a healthy life with plenty of [exercise](#) and [nutritious food](#) is always something you should strive for.

After your first T dose, you should test your blood as follows:

- Test your blood every 3 months for the first year.
- If everything goes well during that year, you feel well, have no side effects and your values are within the desired ranges, switch to testing every 6 months.
- Keep testing every 6 months for years 2 and 3.
- If everything remains good and there are no complications, then switch to testing annually.

Different people have recommended different periods; this is what I consider to be the best.

- Testing regularly for the first year will help you figure out what dosage you need to get your T levels in the right range.
- The 2nd and 3rd year (testing every 6 months) is just to make sure everything remains as it should and there are no sudden spikes or dips in your levels. After that you should test yearly just to make sure everything looks good.

For lists of recommended things to test for, see the [RCPsych Good Practice Guidelines](#) page 42, and [Hudson's Guide](#). For reference ranges, see this [Wikipedia page](#).

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<sup>6</sup> <https://www.steroidal.com/oral-steroids/>

# A Note on Oestrogen

Oestrogen is made from (among other ways) the circulating testosterone in the body by an enzyme called [aromatase](#)<sup>7</sup>. When you have high levels of testosterone it can elevate your oestrogen levels however it differs per individual when and if this happens. In case your oestrogen levels are too high you can invest in aromatase inhibitors. These inhibitors reduce oestrogen conversion when using external testosterone<sup>8</sup>. This is why it is important to test your oestrogen levels when doing blood work. High oestrogen levels do not mean that all the progress you have made so far will be lost!

I am in no way a professional or doctor and my knowledge won't even come close to theirs. I will always recommend you contact a healthcare professional to get your blood tested, even if they don't approve that you self-medicate. It might be overwhelming at first but take your time and look through everything you need to know carefully. Having your blood tested and checked is extremely important to minimise the risks.

## Dosages

I recommend you start with the 'Initial – typical' dose recommended by [transhealth.ucsf.edu](https://transhealth.ucsf.edu) to see how your body reacts. The low dosing is recommended as a non-binary/genderqueer dosing. Note that they say: "Maximum dosing does not mean maximal effect. Furthermore, these dosage ranges do not necessarily represent a target or ideal dose. Dose increases should be based on patient response and/or monitored hormone levels. Some patients may require less than this amount, and some may require more." Every individual is different and what dose works for some might not work for you. In case your t-levels are too low you can increase your current dosage with 10mg. In case your t-levels are too high you can decrease your current dosage with 10mg.

If you have had a [hysterectomy](#), the dose you need to use will most likely go down. If you had PCOS and got a hysterectomy the dose you need might even go up. Once again, your feelings and blood levels will let you know how to act.

It is important to know the concentration of your dose—measured in milligrams (mg) of testosterone per millilitre (mL)—to figure out how many mL to inject. Usually, the name implies the concentration: Cypionate 250 = 250mg/mL, Enanthate 200 = 200mg/mL. So how many mg/mL does Enanthate 250 have? It has x mg/mL. (In case it doesn't say the mg/mL in the name you can always just check the description.) Once you know how concentrated your T is, you can calculate how much you need to get your desired dose.

### *Worked Examples*

Jack wants to inject weekly and needs a 50mg dosage of T to get his levels within the required range. He has 1 vial of Cypionate that has 250mg/mL. He needs to take the dosage he wants to have weekly, divide it by the mg/mL his vial has and multiply it by the number of weeks that is between his shots. His wanted dosage:  $50\text{mg} \div 250\text{mg per mL of his vial} \times 1 \text{ week between shots} = 0,2\text{mL per week}$ .

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<sup>7</sup> [HowStuffWorks: Sex Hormones](#)

<sup>8</sup> [Wikipedia: Aromatase inhibitors](#)

To make sure you understand the calculation: grab a calculator and try it yourself. Chris needs a weekly dosage of 80mg, he wants to take his shot every 2 weeks and his vial concentration is 200 mg/mL. The mL he needs to inject every 2 weeks is  $x$  mL.

One last time just to be sure! Henry needs a weekly dosage of 65mg, he wants to take his shot every week and his vial contains 250mg/mL. Every week he needs to take  $x$  mL. I feel like a maths teacher now :P.

All jokes aside, it is extremely important you do this right; if you do not trust yourself to calculate this, or my example hasn't made sense, then use [this calculator](#) to calculate how much mL you need to inject. The "desired" dose is the mg that you need to have weekly, the "have" dose is the mg/mL your vial contains, and the "quantity" is the number of weeks between your injections. If you inject every 1 week the value should be 1; if you inject every 2 weeks the value should be 2 etc. etc.

One thing to remember when you buy from an UGL is that the concentration of testosterone will differ per batch made. There is no way of knowing if your product is underdosed (less mg/mL than advertised), dosed as indicated or overdosed (more mg/mL than advertised). Of course, you could have your product professionally tested, but this is prohibitively expensive and overkill for the effort. Because of this inconsistency, it is even more important to keep on top of your blood work whenever you switch brands or purchase from a different batch.

[Anaboliclab](#) is a website where they test different products to see if they are overdosed or underdosed. Although this won't give you an indication of how much mg/mL your vial contains; it will give you an understanding of how much products can differ from their advertised concentration. All these products have been created in underground labs so there will always remain a risk with using them.

Another thing that might be fun and interesting to see is a [testosterone survey](#) that had been done in 2014 with members from [r/ftm](#), [r/asktransgender](#), and Tumblr.

## Sources

There are somewhat trustworthy testosterone sources available within and outside the UK. I say 'somewhat' because it is a black-market product and there is always a chance that your package is found and confiscated. Look at websites such as [eroids](#) and bodybuilding forums such as [Meso-Rx](#) and within 30 minutes of research you will find multiple somewhat trustworthy sites. DO NOT post questions on the forums asking for sources to purchase from. The people that will answer your question are out to scam you and the people that are trustworthy won't give you a direct answer. Be careful and try not to get scammed.

## Author's Note

This guide is meant to introduce you to transmasculine hormone therapy and to provide information about DIY options, should you choose to do so.

While the contents of this guide reflect current research in the field, this guide was neither made nor reviewed by endocrine professionals, so please do take it with a grain of salt. Do not be content with the information contained. Put in extra research on your own. Most importantly, please take care of yourself!