

Hormone Therapy Prescribing Guide for General Practitioners working with Trans, Gender Diverse and Non-Binary Patients



JULY 2020 • V3.0

Last update July 2020 Dr P. Cundill, Dr P. Wong, Dr A. Cheung
Previous versions written by Dr P Cundill, Dr A. Brownhill

EQUINOX
GENDER DIVERSE HEALTH CENTRE

thorneharbour
health*

INTRODUCTION

Equinox Gender Diverse Health Centre was established in Feb 2016 and is operated by Thorne Harbour Health. We are based in Fitzroy Melbourne and have 4 GPs, a nurse, 2 counsellors and a drug and alcohol worker on site. We have welcomed over 1000 trans and gender diverse & non binary (TGD & NB) clients to our service. At Equinox, we provide general practice services and routinely prescribe hormone therapies for gender affirmation under an informed consent model of care for clients over 18y.

Informed consent:

Protocols for the Initiation of Hormone Therapy for Trans and Gender Diverse Patients

<https://equinox.org.au/RESOURCES/>

This document briefly outlines the use of and monitoring requirements for clients accessing hormone therapies including oestrogen, testosterone, antiandrogens, GnRH analogues and progesterone. The information in this document has been prepared for use by registered medical practitioners to help them safely and confidently prescribe hormone therapies.

Because every person has individual goals, needs and outcomes, clients are strongly encouraged to seek professional medical support to access and safely take hormone replacement therapies. Understanding the options, risks and side effects, both positive and negative, is an important aspect of self care and positive health outcomes. Each person is different and a regimen used by one person may not have the same effect on another. Having a regimen individually tailored and monitored by a medical practitioner is the safest, fastest way to achieve affirmation goals.

PRONOUNS

It is essential to get pronouns right. When you misgender a transgender person you can cause significant distress. We ask our service users to record their sex assigned at birth, current gender identity and chosen name and pronoun on their intake form at first appointment. If unsure, it's appropriate ask "could I ask what pronoun I should use". Once this is established, ensure that all people in the clinic from reception to medical staff use the correct name and pronoun. Non binary clients may use gender neutral pronouns (them/they, rather than he or she). People may change their pronouns over time to reflect their gender affirmation, it's ok to periodically confirm that currently recorded pronouns remain accurate.

Learn more about pronouns here:

<https://www.minus18.org.au/pronouns-app/>



AFFIRMATIVE PRACTICE

At Equinox we seek to provide trans affirmative and person centred health care and reduce unnecessary barriers in accessing hormone therapies. Our mission is to provide comprehensive high quality services to our patients of diverse gender identity and expression. To achieve this it is important that the practice has trans affirmative workplace policies and clinical protocols in place. All staff and contractors are provided training and work as a team to ensure consistent and affirmative care to our service users.

PRESCRIBING HORMONES

These prescribing guidelines have been written by GPs for GPs. There are some simple rules to follow. This guide outlines the various options for feminising and masculinising hormone therapy. It also includes simple monitoring requirements and dosage management when changing modes of hormone administration.

It is important that both the practitioner and patient are aware of the intended and unintended side effects of hormone therapy. A helpful summary of hormone effects in simple language for patients can be found here:

<https://equinox.org.au/RESOURCES/>

The commonly used drugs for gender affirmation are medications that GPs will be familiar with.



Masculinising hormones - testosterone

Aim of testosterone therapy

To reduce gender dysphoria and distress by aligning physical appearance with gender identity. Doses can be adjusted to target trough total testosterone levels in the lower end of the male reference range (10–15nmol/L).

Non-binary clients may request lower doses for partial masculinisation. Medical supervision is required to monitor effects, hormone levels, and prevent complications.

Expected effects of testosterone

Within a few weeks...

Increase in clitoral size, heightened libido, oily skin, increased appetite, acne

Within a few months...

Facial hair and body hair growth (permanent), increased muscle bulk, body fat redistribution, deeper voice (permanent), cessation of periods

Longer term...

Development of male pattern baldness may occur (permanent), infertility or reduced fertility, cervical and vaginal atrophy, breast tissue atrophy

Possible side effects of testosterone

Testosterone can cause side effects such as polycythaemia. Some people experience mood swings on testosterone, and irritability as the dose is wearing off. Generally, mental health improves for TGD & NB people when they commence hormone therapy. Testosterone may increase heart disease risk and cause dyslipidaemia. Encourage that clients quit smoking, optimise their BMI and reduce other risk factors. Monitor fasting lipids, BP and BMI.



Masculinising hormones - testosterone

Which testosterone should I prescribe?

REANDRON for masculine gender affirmation

- 3 monthly shots (6-8 weekly on initiation)
- Preferred by most due to reduction of peaks and troughs, less acne
- Mood generally more stable compared to fortnightly shots.
- Use 21G (green needle) slow IM glut
- 4ml oily depot
- For larger clients use 2" 21G (green needle) to ensure muscle deposition
- PBS listed

PRIMOTESTON (periodic inconsistent product supply)

- Fortnightly shots, usually 125-250mg deep IM glut, alternate sides each visit
- Use green 21G needle and discard the large yellow needle supplied in box
- Private script only, not PBS listed (approx. \$40 for 3 shots)
- Many clients learn to self administer (fairly easy), supply with sharps bins etc

ANDROFORTE 5%

- Daily transdermal cream
- Normal starting dose is 1-2ml, maintenance dose 2ml daily
- Much quicker at drying than testogel

TESTOGEL

- Daily transdermal gel, pump pack is 12.5mg per application (1-4 pumps daily)
- Risk of transferring dose to a partner
- Takes a while to dry

Transdermal preparations are good for needle phobic people, and for those wanting partial masculinisation eg non-binary clients.

For people wanting to “go slow”, remember low dose **DOES NOT EQUAL NO DOSE.**



Masculinising hormones - testosterone

Practice points:

Doses can be adjusted to target trough total testosterone levels in the lower end of the male reference range (10–15nmol/L)

- Check bloods frequently (3 monthly initially, 6 monthly in longer term)
- Watch for polycythaemia (HCT>0.50), if this occurs reduce dose / frequency
- If polycythaemia persists consider haematology referral for regular venesection and to exclude other causes
- Testosterone is not adequate contraception, consider Implanon / IUD / Depoprovera
- For vaginal irritation / atrophy clients can use Vagifem low, twice weekly if desired
- DHT cream is not recommended for 'bottom growth'
- Offer physician collected or self-collected HPV for cervical screening as per national guidelines subject to Medicare rebate restrictions
- Call Medicare for authority testosterone scripts, use "established androgen deficiency with testicular or pituitary disorder" indication
- For the client to access PBS scripts, the prescribing GP will need to obtain an approval from a sexual health physician, urologist or endocrinologist depending on local specialist availability
- How people feel is far more important than actual levels as long as those levels are medically safe/appropriate



Masculinising hormones - testosterone

Guide to changing testosterone therapy:

Use target trough level of 10-15 nmol/L total testosterone

Multiple scenarios including multimodal previous therapy. When starting new regime, define trough level, then implement new plan. For example, if changing from transdermal (gel/cream) to long acting injectables (Reandron), switch by giving the loading dose of 6-8 weekly injections then monitor as per guidelines.

Table. Testosterone formulations on PBS commonly used in practice in Australia

^ adapted from Medical Journal of Australia

Preparation	Advantages	Disadvantages & specific Adverse Effects	Monitoring Trough level
Testosterone Gel 1% (Testogel) <ul style="list-style-type: none"> • 50mg pump pack • Daily 	<ul style="list-style-type: none"> • Can be self-administered 	<ul style="list-style-type: none"> • Chance for inadvertent transfer to close contacts (partner/children/nursing/carers) • Must cover application site • Variation in bloods testosterone level 	<ul style="list-style-type: none"> • Morning before application • use for 7 days
Testosterone cream 5% (Androforte) <ul style="list-style-type: none"> • 2ml • Daily 	<ul style="list-style-type: none"> • Can be self-administered 	<ul style="list-style-type: none"> • Chance for inadvertent transfer to close contacts (partner/children/nursing/carers) • Must cover application site • Variation in bloods testosterone level 	<ul style="list-style-type: none"> • Morning before application, after minimum use for 15 days
Testosterone esters (Primoteston) <ul style="list-style-type: none"> • 250mg intramuscular injection • fortnightly 	<ul style="list-style-type: none"> • Can be self-administered • once trained 	<ul style="list-style-type: none"> • Frequency of injections • Fluctuation in blood testosterone levels • Injection site pain • Fluctuation in mood or libido • Excessive erythrocytosis 	<ul style="list-style-type: none"> • Baseline and at intervals during treatment before injection
Testosterone undecanoate (Reandron 1000) <ul style="list-style-type: none"> • 1g intramuscular injection • 3-monthly 	<ul style="list-style-type: none"> • Convenience • Fewer treatment episodes 	<ul style="list-style-type: none"> • Slow to reach steady-state blood testosterone levels • Cannot be self-administered • Injection site pain • Deep intramuscular injection unsuitable for patients with coagulopathies or thrombocytopenia 	<ul style="list-style-type: none"> • Morning before injection • Allow a further 2 injections after dose adjustment before rechecking



Feminising hormones - oestrogens

Aim of oestrogen therapy

- To reduce gender dysphoria and distress by aligning physical appearance with gender identity
- Usually aim for hormone levels in the average female range (oestradiol level 300-600pmol/l)
- Be mindful with respect to timing of dosing and blood tests when interpreting results
- Non binary clients may request lower doses for partial feminisation
- Ongoing medical supervision required to monitor effects, hormone levels and prevent complications

Expected effects of oestrogen

Within a few weeks...

Calmer mood, decreased libido, softer skin

Within a few months...

Body fat redistribution, reduced muscle bulk and power, breast tenderness and swelling

Longer term...

Breast growth (permanent, may take 2-3y), reduction in size of penis and testicles, reduced facial and body hair, slowing of male pattern baldness, infertility (permanent)

Possible side effects of oestrogen

Oestrogen may cause nausea and weight gain. Oestrogen can cause serious side effects such as DVT, PE, liver impairment - however these side effects are rare. Some people experience mood swings on oestrogen. Generally, mental health improves for trans and gender diverse & non binary people when they commence hormone therapy. Transdermal oestrogens are preferred in clients >40y due to lower thromboembolic risk. Smokers should be advised to and provided support to quit. Oral oestrogen is contraindicated in people experiencing migraine with aura.



Feminising hormones - oestrogens

Which oestrogen should I prescribe?

PROGYNOVA

- Most (85%) of our clients take Progynova (oral oestradiol valerate)
- Most clients take 6-8mg. For hormone therapy initiation start with 2mg daily and gradually titrate up to 6 or 8mg depending on blood hormone levels

CLIMARA

- Weekly oestradiol patch. Lower clot risk, good for clients >40y

ESTRADERM / ESTRADOT

- Topical oestradiol patch, change every 3-4 days

SANDRENA GEL / ESTROGEL

- Daily oestrogen topical gel

Practice points:

- Oestrogen can cause permanent infertility - encourage patients to consider freezing sperm prior to hormone therapy and document this
- Aim for trough oestradiol levels around 300-600pmol/L. Remember to take into account timing of dosing and blood test when interpreting levels
- Oestrogen therapy does not change voice - consider referral to speech therapy if the person desires 'voice feminisation'
- Oestrogen alone may suppress testosterone, but often not to desired level, consider adding in anti-androgen (see below)
- How people feel is far more important than actual levels as long as those levels are medically safe/appropriate

Guide to changing oestrogen therapy

Aim for target oestradiol trough level of 300-600 pmol/L, monitor levels 6-8 weeks after changing therapy

To simplify the multiple oestrogen therapies, it is easier grouping them into 3 levels. Switching up or down can be applied by using the table below. Switching between products within the same dose level can be seen as equivalent.



Table. Oestrogen formulations commonly used in practice in Australia

^ adapted from AMS Guide to equivalent MHT/HRT doses *Private/non-PBS scripts

Product	Preparation	Composition
LOW DOSE		
Progynova	Tablet	1mg oestradiol valerate
Climara 25	Transdermal patch	25mcg/24 hrs 17B oestradiol (weekly application)
Estradot 25 or 37.5, Estraderm 25 MX	Transdermal patch	25-37.5mcg/24hours 17B oestradiol (twice weekly application)
Estrogel*	Gel	0.75 oestradiol = 1 pump
Estrofem*	Tablet	1mg 17B oestradiol
Premarin*	Tablet	0.3mg conjugated equine estrogen
MEDIUM DOSE		
Progynova	Tablet	2mg oestradiol valerate
Zumenon	Tablet	2mg 17B oestradiol
Premarin*	Tablet	0.625mg conjugated equine oestrogens
Climara 50	Transdermal patch	50mcg/24hrs 17B oestradiol (weekly application)
Estradot 50, Estraderm 50 MX	Transdermal patch	50mcg/24hrs 17B oestradiol (twice weekly application)
Sandrena	Gel	1mg oestradiol (daily application)
Estrogel*	Gel	1.5mg oestradiol = 2 pumps
HIGH Dose		
Progynova	Tablet	2mg oestradiol valerate, 2-4 tab daily in divided dosing (8mg daily max)
Zumenon	Tablet	2mg 17B oestradiol, 2-4 tab daily in divided dosing (8mg daily max)
Climara 75, Climara 100	Tansdermal patch	75or 100mcg/24hrs oestradiol (weekly application)
Estradot 75, Estradot 100	Transdermal patch	75 or 100mcg/24hr (twice weekly application)
Estraderm 100 MX	Transdermal patch	100mcg/24hrs 17B oestradiol (twice weekly application)
Estrogel*	Gel	2.25mg oestradiol= 3 pumps or 3.0mg oestradiol = 4 pumps



Who should take Anti-androgens?

Aim of anti-androgen therapy

- To reduce gender dysphoria and distress by aligning physical appearance with gender identity
- To reduce testosterone levels

Expected effects of anti-androgens

- Reduce body hair growth, reduce libido and erections and reduce acne

Possible side effects of anti-androgens

- Spironolactone may cause electrolyte/renal disturbance, postural hypotension, diuresis, gynaecomastia
- Androcur may cause liver impairment (rare)
- Anti-androgens can cause or exacerbate fatigue and depression

Monitor closely. Ongoing medical supervision required to monitor effects, hormone levels, and prevent complications



Which anti-androgen should I prescribe?

Most of our service users take spironolactone or cyproterone acetate. Both are currently PBS listed.

SPIRONOLACTONE

Usually 25-100mg daily. Monitor electrolytes/eGFR, low BP

CYPROTERONE ACETATE

Usually 12.5-25mg daily eventually this can in some cases be reduced to 12.5mg 2-3/wk. Monitor LFT

PRACTICE POINTS

- Not all people want anti-androgens. For those wishing to preserve erections, consider oestrogen alone, or oestrogen + low dose anti-androgen
- Cyproterone acetate is more potent and a good option for clients who want to cease erections
- Reduction in body hair can take several months. For facial hair laser or electrolysis may be required to achieve desired outcomes
- Anti-androgen effects are generally reversible on cessation (except gynaecomastia with spironolactone)
- Beware of using anti-androgens as a sole hormone therapy agent, as it is likely to cause osteoporosis without concurrent oestradiol therapy
- Some people opt for an orchidectomy to reduce testosterone levels and avoid lifelong anti-androgen medication. Oestradiol should be continued to preserve bone density.



What about Progestogen?

There is no clear role for progestogen use for feminisation. Anecdotally many clients report breast growth and mood improvements with progestones, particularly when used in the first 2-3 years of gender affirmation.

Progestones should be prescribed with caution due to potential side effects such as fluid retention, insulin resistance, depression and increased clotting risks.

Evidence currently support progestogen use for mood stabilising benefits with limited feminisation effects.

Prometrium 100mg daily (micronised progesterone) is preferred to Provera 5mg daily due to its lower thromboembolic risk profile but may be financially prohibited as it is not currently PBS listed. Prometrium is sedating and should taken at night. There is no need to cycle the progesterone.

GnRH Analogues

GnRH analogues are used for puberty blockade for younger gender diverse clients through the tertiary hospital system. They are prescribed to adults overseas for gender affirmation and are very effective in combination with either oestrogen or testosterone. They are rarely used for this purpose in Australia as they are not PBS listed and are very expensive (up to \$1000 per month on private script).

Version 3.0 of the Hormone Therapy Prescribing Guide for General Practitioners working with Trans, Gender Diverse and Non-Binary Patients has been endorsed by AusPATH

