

Prescribing for transwomen

	Drug	Brand names	Starting dose	Directions	Dose range	Suitability
Estrogen	Transdermal estradiol patch 25/50/75/100 micrograms/24h	Estradot Evorel Estraderm Femseven Progynova	25-50 micrograms twice weekly	Stick the patch onto clean dry healthy skin below your waist (lower abdomen, upper thigh, or buttock). Press them down for the first minute to activate the adhesive. Change the patch twice per week. You can swim/shower/bathe with them on as normal.	Usually up to 200mcg twice weekly patch, exceptionally up to 300 micrograms twice weekly Usually increased in 25-100 micrograms increments every 3-4 months	Should be first line option for patients: a) Over 40 b) With risk factors for blood clots (VTE) (including BMI >35) c) With risk factors for Cardiovascular Disease (including cigarette smoking) d) With Type 2 Diabetes Consider lower starting doses in older patients or those with CV risk factors. Current smokers or those with BMI > 40 kg/m ² should not exceed 100 mcg patch or 1.5mg gel.
	Transdermal estradiol gel	Oestrogel pump pack 0.06%; one pumped dose = 0.75mg Sandrena sachets 0.1%; 0.5 mg and 1 mg sachets	0.75-1.5 mg daily	Rub in to clean, dry, healthy skin of inner thigh. If you are using more than two pumps per day you can divide the dose. Once your skin is dry, usually after 20-30 minutes, you can wear clothes and exercise as normal. Wait 30 minutes before applying other creams or sun screen.	Usually up to 6 mg daily, exceptionally up to 8 mg daily Usually increased in 0.5 mg increments for Sandrena and 0.75 mg for Oestrogel every 3-4 months	
	Transdermal spray (new!)	Lenzetto	1 spray daily	Apply to clean, dry, healthy skin of inner forearm, in areas that do	Up to 6 sprays Usually increased in increments	

				not overlap. Let the spray dry for 2 minutes before getting dressed and at least 60 minutes before bathing/washing/applying other creams e.g. sunscreen.	every 3-4 months	
Oral estradiol	Elleste Solo Progynova Zumenon Bedol	1 or 2mg daily	Swallow the tablet(s) once per day. Sublingual administration (dissolving under the tongue) is an alternative to swallowing the tablets and potentially avoids the first-pass liver effect so may be safer; however, this is not something that we routinely advise.	Up to 8 mg od Usually increased in 0.5-2 mg increments every 3-4 months		Use oral Estradiol with caution if: <ul style="list-style-type: none"> a) Over 40 b) With risk factors for blood clots (VTE) (including BMI >30) c) With risk factors for Cardiovascular Disease (including cigarette smoking) d) With Type 2 Diabetes <p>Transdermal Estradiol should be first line in these patients.</p> <p>Consider lower starting doses in older patients or those with CV risk factors</p> <p>Current smokers should not exceed maximum conventional HRT doses (up to 3 mg OD)</p>

Androgen blocker	GnRH agonist	Leuprorelin (Prostap)	11.25mg every 10-12 weeks	IM injection	Initiated at 12 week frequency	Can cause an initial 'flare' of testosterone, before it suppresses testosterone, in the first 3-4 weeks after initiation. Other GnRH agonists are available but are infrequently used by our service including: Nafarelin, Buserelin (both nasal sprays), Goserelin and other doses of Leuprorelin and Triptorelin
		Triptorelin (Decapeptyl SR)	11.25mg IM every 10-12 weeks	IM injection	Initiated at 12 week frequency	
	Oral anti-androgen	Spironolactone	50-200mg daily	One or two tablets daily or sometimes in divided doses	50-200mg daily	GnRH agonists are the treatment of choice , but other oral agents may be used if preferred by the individual. Spironolactone is a weak diuretic/BP lowering medication and can often result in side effects. Will need blood pressure monitoring.
		Finasteride	5mg alternate days			Where scalp hair loss is an ongoing concern, consider adding finasteride 5mg alternate days.
		Cyproterone acetate	12.5-200mg once daily			Not routinely used due to side effects, notably low mood, and the long-term increased risk of meningiomas, but can be used short-term as an alternative to spironolactone.

Additional Notes

Micronised progesterone (Utrogestan) – this is not used or prescribed routinely by any UK NHS gender service, but we are seeing increasing use from private clinics and a *continued prescription* should be considered on an individual basis after thorough discussion around the possible risks.

Only Estradiol preparations should be used. Other estrogens such as conjugated equine estrogen (e.g. **Premarin**) or synthetic estrogens such as **ethinylestradiol** are not recommended as their use is associated with a **higher risk of VTE and CVD**. Injectable estradiol preparations are not available in the UK on NHS prescription.

Monitoring requirements

Please refer to the consent forms on our website for further details of the risks associated with hormones

Factor	Action
Estradiol (E2)	<p>Target - 350-750 pmol/l if aged <40, - 300-600 pmol/l if aged 40-50 - 200-400 pmol/l if aged >50 or younger and significant CV risk factors. Use transdermal route E2 administration for this group.</p> <p>Discuss with specialist if target range not achieved within these parameters.</p> <p>Monitoring blood tests are taken ideally on day 2 of patch wear (24-36 hours after new patches applied), 4-6 hours after applying gel/spray and around 4 hours after dosing with oral Estradiol.</p> <p>The dose is gradually increased to achieve the desired degree of feminisation, within agreed target ranges. High levels of Estradiol are associated with an increased risk of adverse effects.</p> <p>Doses are increased every 3-4 months and slower gradual titration is thought to be important for optimising breast development.</p>

Prolactin	If persistent hyperprolactinaemia (>1000 mU/l or lower levels with symptoms/signs of hyperprolactinaemia) refer to local endocrinologist for further evaluation provided other reasons for raised prolactin levels are absent.
Blood pressure	May increase. Treat as appropriate. Anything over 140/85 should be followed up in primary care and a diagnosis of hypertension made or management of established hypertension adjusted. It is not safe to start or change HRT with uncontrolled high blood pressure but it is safe to use in well managed people with controlled blood pressure and a diagnosis of hypertension.
LFTs	Refer back to the specialist if three times greater than upper limit of normal reference range.
Lipids	Full lipid screen including fasting triglycerides. Treat raised triglycerides as per local guidance.
HbA1c	If diabetes or pre-diabetes.
Breast cancer screening	Performed according to usual screening protocols: Any one with breasts from the ages of 50 to 70. If there is continued use of Estradiol then breast cancer screening should continue past 70 until Estradiol is ceased. If you are registered female with your GP you will be automatically invited to breast cancer screening.

Prescribing for transmen

	Drug	Brand names	Starting dose	Directions	Frequency/dose range	Further treatment
Injectable	Testosterone	Sustanon	250 mg every 4 weeks	1ml injection IM Avoid in peanut/soya allergy	2-6 weeks	If periods persist after 6 months of adequate testosterone treatment, a GnRH agonist such as Leuprorelin (11.25mg 3 monthly) or a long-acting form of progestogenic contraception can be added.
		Testosterone enanthate	250 mg every 4 weeks	1ml injection IM	2-6 weeks	
	Testosterone undecanoate injection	Nebido	1000 mg every 12 weeks	4ml IM injection into buttock	Starting regimen may have second dose at 6 weeks then third dose at 12 weeks when initiating. 8-26 weeks maintenance dosing frequency.	
Gel						
	Testogel pump	16.2mg/g topical gel (20.25 mg per actuation)	1-2 actuations daily (20.25-40.5 mg)	Apply to clean, dry, healthy skin of both inner thighs or abdomen.	40.5-81mg once daily	
	Testogel sachets	50mg/5g topical gel (50mg per sachet)	50mg daily		50-100mg once daily	
Tostran pump	20 mg/1g topical gel (10 mg per actuation)	1-2 actuation daily (10-20mg)	20-80mg once daily			

Monitoring requirements

Please refer to the consent forms on our website for further details of the risks associated with hormones

Factor	Action
Testosterone	Initial monitoring at 4 months but would be later for Nebido Trough level (immediately before injection or if not possible within two days prior to injection) on Sustanon; mid-way between injections on Nebido (although can be a trough sample of logistically easier); 4 to 6 hours after application of gel if applied in morning first thing in the morning if gel applied in evening. Target: Lower third reference range for trough level on injection; middle third reference range on gel or mid-way between Nebido injections. If outside target range, increase/decrease as appropriate: injection frequency by 1 week for Sustanon, 2 weeks for Nebido; or gel dose by 10mg.
Estradiol	Usually aim for less than 400 pmol/l with suppression of menstruation, however if there are no periods this may be variable.
Blood pressure	May increase. The clinician can diagnose and treat hypertension as appropriate.
FBC	Can cause polycythaemia (a high concentration of red blood cells in the blood). Testosterone should be withheld if haematocrit (PCV) \geq 54% (0.54) and/or haemoglobin > 18 g/l and ongoing treatment immediately discussed with specialist. .
LFTs	Refer back to specialist if ALT three times greater than upper limit of normal reference range.
Lipids	Full lipid screen including fasting triglycerides. Treat raised triglycerides as per local guidance.
HbA1c	If diabetes or pre-diabetes.

Calcium	Can possibly cause hypercalcaemia – refer to specialist if greater than upper limit of reference range.
Cervical smear	Performed according to usual screening protocols. As normal before GRS and if tissue left following GRS Cervical-Screening-Guidance-Document-for-Primary-Care-Staff-Trans-Men-and-or-Non-Binary-People .pdf (leedscg.nhs.uk)
Breast cancer screening	<p>Performed according to usual screening protocols: Anyone who has not had bilateral mastectomy and male chest construction from the ages of 50-70 should access breast cancer screening. People who have had bilateral mastectomy surgery can also speak to their surgeon to confirm if any tissue remains, and whether future screening is needed. If the patient has not had bilateral mastectomy and male chest reconstruction and would like to take part in screening, then they can organise their mammogram by visiting their GP or booking an appointment at a screening service. If they notice any changes that are not normal for them, they should talk to their GP</p> <p>Anyone taking Estradiol between the ages of 50- 70 should access breast cancer screening. If there is continued use of Estradiol then breast cancer screening should continue past 70 until Estradiol is ceased. If you are registered female with your GP you will be automatically invited to breast cancer screening.</p>