Hormone Therapy in Gender Dysphoria

AMBER0

Prescribing for **trans men** (this applies to a person assigned female, cis-female, at birth undertaking gender transition to become a male)

Prescribing Information Sheet: To be read in conjunction with the relevant SPCs

NHS England (NHSE) commission specialist gender identity centres. NHSE have stated that the patient's GP is responsible for organising blood and other diagnostic tests and for prescribing pharmacological treatments as recommended by the specialist identity centres. The Specialist Gender Identity service will assist by providing relevant information and support for prescribing and monitoring, including the interpretation of blood test results. It is therefore likely that GPs will be requested to prescribe hormones for patients that are under the care of a specialist identity centre.

However, **NHSE has also stated that NHS GICs should retain responsibility for providing prescriptions and for monitoring until the GP has agreed to a transfer of responsibilities. Individual prescribers MUST only prescribe within their own level of competence.**

The General Medical Council (GMC) have put together a set of ethical guidance on trans healthcare which can be accessed via: https://www.gmc-uk.org/ethical-guidance/ethical-hub/trans-healthcare. A summary of the main points follows:

- GPs can prescribe unlicensed medicines following the steps set out in GMC guidance
- If a patient is self-medicating with hormones that have been purchased, consider issuing a bridging prescription as part of a harm reduction approach. Seek the advice of an experienced gender specialist.

The following tables contain information relating to the most commonly requested hormone replacement therapies. **This information relates to trans men (a person assigned female, cis-female, at birth undertaking gender transition to become a male) only**. There is a separate prescribing sheet available for trans women (a person assigned male, cis-male, at birth undertaking gender transition to become a female) available on the

Table 1. Preparations for trans men adult patients (this applies to a person assigned female, cis-female, at birth undertaking gender transition to become a male)

Medication	**Typical Dosing and Product Information** off label use	**Additional Information** (See table 3 and 4 for Side Effects and Interactions)
Testosterone PC	Testogel® 50mg/5g sachets – Apply 50 to 100mg daily Testogel® 16.2mg/g gel pump – Apply 40.5 to 81mg daily (One pump actuation delivers 20.25mg) Tostran® 10mg/0.5ml metered pump – Apply 30 to 80mg daily (one pump actuation delivers 10mg) Testavan® 20mg/g gel metered pump – Apply 46 to 92mg daily (one pump actuation delivers 23mg)	Apply to clean dry skin. CD Sch. 4. Life-long therapy.
Testosterone decanoate, isocaproate, phenylpropionate and propionate IM	Sustanon® 250 – 1ml every TWO to SIX weeks	Can be considered for self - administration. Contains peanut oil. CD Sch. 4. Life-long therapy.
Testosterone enantate IM	Generic – 1ml every TWO to SIX weeks	Can be considered for self - administration. CD Sch. 4. Life-long therapy.
Testosterone undecanoate IM	Nebido® 1g/4ml – 250 to 1000mg every 10 – 20weeks	**Not** suitable for self-administration. Steady-state reached between third and fifth dose – Serum testosterone levels should be 8 - 12nmol/L trough serum level. i.e**., pragmatically blood tests can be taken up to two weeks before the next injection is given**. CD Sch. 4. Life-long therapy.
Leuprorelin acetate SC or IM	Prostap® SR DCS or Prostap® 3 DCS – 3.75 to 11.25mg every ONE, TWO or THREE months (as advised by the specialist centre).	Can be considered for self - administration. Typically used for refractory uterine bleeding.
Triptorelin IM Triptorelin acetate SC or IM	Decapeptyl SR 11.25mg Salvacyl 11.25mg Decapeptyl SR 3mg Gonapeptyl Depot 3.75mg 3 to 11.25mg every ONE, TWO or THREE months (as advised by the specialist centre)	**Not** suitable for self-administration. Typically used for refractory uterine bleeding.

Table 2. Dose adjustment of testosterone therapy. Seek further advice from the patient's original gender identity clinic if unable to

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achieve level in the therapeutic range.

Dose titration of testosterone gel preparations:

Testogel® sachets/pump: if the testosterone level (taken 4 – 6 hours after application) >20nmol/L reduce dose by (25mg) ½ a sachet or one pump actuation (20.25mg) daily. If the testosterone level is <15nmol/L increase dose to 100mg (TWO sachets) or 81mg (FOUR pump actuations) daily if not already on maximum end of dose range. In both cases recheck levels in EIGHT to TWELVE weeks.

Tostran®: if the testosterone level (taken 4 – 6 hours after application) >20nmol/L reduce dose by 10mg (ONE pump actuation) daily. If the testosterone level is <15nmol/L increase dose by 10mg (ONE pump actuation) daily. In both cases recheck levels in EIGHT to TWELVE weeks.

Testavan®: if the testosterone level (taken 4 – 6 hours after application) >20nmol/L reduce dose by 23mg (ONE pump actuation) daily. If the testosterone level is <15nmol/L increase dose by 23mg (ONE pump actuation) daily. In both cases recheck levels in EIGHT to TWELVE weeks.

Dose titration of testosterone injectable preparations:

Sustanon®: if the trough testosterone level (taken immediately before the last dose) is >12nmol/L decrease the frequency of injections e.g. if receiving every THREE weeks reduce to every FOUR weeks. If the trough testosterone level is <8nmol/L increase the frequency of injection (e.g. if receiving every THREE weeks increase to every TWO weeks. In both cases recheck levels in THREE months.

Nebido®: if the trough testosterone level (taken immediately before the last dose) is >12nmol/L decrease the frequency of injections e.g. if receiving every 12 weeks reduce to every 14 weeks. Retake bloods in 12 to 14 weeks time. If the trough testosterone level is <8nmol/L increase the frequency of injection to every TEN weeks. Pragmatically blood tests can be taken up to TWO weeks before the next injection is given.

Table 3. Monitoring and review requirements

The following tests or measurements should be monitored in primary care every SIX months for THREE years after starting hormone therapy and continued ONCE yearly thereafter.

Test or Measurement	Recommended action if the result is outside of the normal range
Body Mass Index	Manage according to local guidelines if BMI increases to over 30 – only necessary in this context if the patient is considering surgery. BMI under 40 is desired (but not essential) prior to commencing hormone therapy.
Blood pressure	Manage according to local guidelines if BP greater than 140/90mmHg.
Haemoglobin and haematocrit	If a patient becomes significantly polycythaemic (haematocrit >0.50 or 50%) or experiences a thrombotic event, testosterone treatment be should temporarily suspended and wait for it to go below 50% (check Hct after 6 weeks) and then reduce the dose. If thrombotic episode or Hct not improving or Hct >0.54 refer to hematology. – seek further advice from the patient's original gender identity clinic.
Urea and electrolytes	If out-of-range, seek further advice from the patient's original gender identity clinic.
TSH 0.27 – 4.2miu\l	Refer to endocrinology if outside the normal range or treat in accordance with local guidelines
Liver function tests	If elevated, refer to gastroenterology – seek further advice from the patient's original gender identity clinic.
HbA1c	If elevated, manage according to local guidelines.
Lipid profile	If elevated, manage according to local guidelines.
Serum testosterone	Serum testosterone should be at the lower end of the normal range. Measure trough level for injectables one week post injection (trough range **< 8 – 12 nmol\L**; peak range **25 – 30nmol/L**). Take sample to measure levels for gel preparations 4 – 6 hours after application (**target is 17 – 18nmol/L**; range **15 – 20nmol/L).**
Serum estradiol	Target range **< 70pmol/L**; If estradiol above desired cut-off check LH/FSH and seek advice from the patient's original gender identity clinic.
Serum prolactin	Target range **< 500mU/L**; If above 1000mU/L on follow up refer to local endocrinologist. If prolactin > 500mU/L at baseline seek advice from the patient's original gender identity clinic.

Table 4. Summary of medication side effects Please refer to the individual medications SPC for more details

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Testosterone

Likely increased risk

Polycythaemia*(see below for further details)
Weight gain
Acne
Androgenic alopecia (balding)
Sleep apnoea

Possible increased risk

Altered lipid profiles ** Liver dysfunction

Possible increased risk with presence of additional risk factors

Type 2 diabetes** Hypertension**
Mania and psychosis in patients with pre-existing disorders*
Cardiovascular disease

No increased risk or inconclusive

Breast Cancer, Osteoporosis, Cervical cancer, Ovarian cancer, Uterine cancer

*Risk is greater with supraphysiologic (beyond normal male range) serum levels of testosterone, which are more likely to be found with extended intramuscular dosing, than transdermal administration

**Patients with Polycystic Ovarian Syndrome may be at greater risk

Table 5. Interactions Please refer to the individual medications SPC for more details

Testosterone

The BNF lists severe interactions with alcohol, bemiparin, dalteparin, enoxaparin and tinzaparin. There is an increased risk of hepatotoxicity with the concomitant use of these agents and testosterone. The manufacturer makes no recommendation.

Leuprorelin and Triptorelin

No interactions listed in the BNF.

Leuprorelin

Common or very common

Appetite decreased; arthralgia; bone pain; breast abnormalities; depression; dizziness; fatigue; gynaecomastia; headache; hepatic disorders; hot flush; hyperhidrosis; injection site necrosis; insomnia; mood altered; muscle weakness; arthralgia; nausea; peripheral oedema; sexual dysfunction; testicular atrophy; vulvovaginal dryness; weight change

Uncommon

Alopecia; paraesthesia; dizziness; weakness of lower extremities; diarrhoea; fever; myalgia; palpitations; visual impairment; vomiting

Rare or very rare

Haemorrhage

Frequency not known

Anaemia; glucose tolerance impaired; hypertension; hypotension; leucopenia; paralysis; pulmonary embolism; QT interval prolongation; seizure; spinal fracture; thrombocytopenia; urinary tract obstruction

Triptorelin

Common or very common

Asthenia; depression; diabetes mellitus; dizziness; dry mouth; embolism; gastrointestinal discomfort; gynaecomastia; haemorrhage; headache; hot flush; hyperhidrosis; hypersensitivity; hypertension; joint disorders; menstrual cycle irregularities; mood altered; muscle complaints; nausea; oedema; ovarian and fallopian tube disorders; pain; painful sexual intercourse; pelvic pain; sexual dysfunction; skin reactions; sleep disorders; weight changes; injection site reaction

Uncommon

Alopecia; appetite abnormal; asthma exacerbated; chills; confusion; constipation; diarrhoea; drowsiness; dyspnoea; flatulence; gout; muscle weakness; taste altered; testicular disorders; tinnitus; vertigo; vision disorders; vomiting; thrombocytosis; diabetes mellitus; hyperlipidaemia; insomnia; paraesthesia; palpitations; epistaxis; abdominal pain; acne; rash (various types); pruritis; muscle disorders; bone pain; arthralgia; nocturia; urinary retention; gynaecomastia; lethargy; peripheral oedema; pain; rigors; somnolence

Rare or very rare

Abnormal sensation in eye; chest pain; difficulty standing; fever; hypotension; influenza like illness; musculoskeletal stiffness; nasopharyngitis; orthopnoea; osteoarthritis; memory impairment; joint problems; pyrexia; dysstasia

Frequency not known

Angioedema; malaise; urinary incontinence QT interval prolongation; anxiety

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Please access this guidance via the LMMG website to ensure that the correct version is in use.

Version Control

Version Number	Date	Amendments Made
Version 1.0	July 2019	New guideline. AG.
Version 1.1	March 2021	Prescribing responsibility updated. AG.
Version 1.2	Dec 2023	Amended to align with updated Sheffield Guidance and SPCs

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