The Tavistock and Portman
NHS Foundation Trust

**Ongoing Hormone Monitoring & Management Information for:**
Treatment of Gender Incongruence in Transgender Men, Transmasculine and Non-binary People (assigned female at birth)
*A supplement to the Shared Care Prescribing Guidance*

This patient is registered with us at the Gender Identity Clinic. Below is guidance on the ongoing hormonal management of this patient in the immediate and longer-term future. **This is a supplementary document to be read in conjunction with our shared care document, and serves as a quick glance dose titration and monitoring guide.** The monitoring advice depends on the testosterone preparation being used, the details of each being given below.

For clients with a non-binary gender identity, the aims of therapy may be different to the standard aims outlined in this document and as such they may have an individualised care plan; please seek guidance from the GIC as needed.

Standard health screening programme recommendations should be followed. The patient should be advised that they will get an automatic call-up to male but not female screening programmes if they have had their gender changed on the NHS computer system. A comprehensive gov.uk guide to screening for transgender people can be found here https://www.gov.uk/government/publications/nhs-population-screening-information-for-transgender-people

Additionally, if the patient retains their uterus then they should have cervical smears as per standard screening programme recommendations. We no longer recommend routine monitoring of the endometrial thickness, but a pelvic ultrasound and examination may be indicated if they have irregular genital bleeding or other causes for concern (particularly if testosterone levels are in target range which typically suppresses ovarian function and associated bleeding/cramping for most people).

We recommend they self-check their chest tissue on a monthly basis for lumps; it is also recommended they continue with monthly checks of the remaining chest tissue after mastectomy or masculinising chest reconstruction surgery unless specifically advised by a surgeon that this is not necessary. They should be invited for mammography as per the national screening programme if they have not had a mastectomy or masculinising chest reconstruction surgery.

They may also need contraceptive advice. It is important to prevent pregnancy on testosterone therapy (as it can be harmful to a foetus) and contraception should be started or continued if needed. Please consider a progestogen only formulation - or alternatives such as a coil or IUD. Testosterone therapy itself cannot be relied upon as a contraceptive and it is not licensed for this purpose.

We suggest that from time to time you check with our website to see if there have been any changes in hormonal treatment practice, as occasionally, with increasing knowledge, we do change our hormonal advice and practice. Please see: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/.

Testosterone gels are usually recommended as first line for patients who:

- Have a BMI of 40 kg/m2 or higher
- Smoke/use tobacco (if smoking, use cisgender HRT dosing)
- Have a history of cardiovascular event or risk factors for cardiovascular disease
- Have significant mood instability or impulsivity (as testosterone gel tends to provide more stable testosterone levels day-to-day as compared to injectable formulations).

| **Testosterone formulations: QUICK GLANCE DOSE TITRATION & MONITORING GUIDE** | | | | | | |
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| **Preparation** | **Dose** | **Frequency** | **Monitoring Method** | **Target range, testosterone** | **Maximum Dose** | **How to adjust, if needed** |
| <u>Testosterone Injections (short-acting)</u><br><br>*Sustanon*<br><br>or<br><br>*Testosterone Enantate* | Starting dose 250mg (1ml vial) IM every 4 weeks<br><br>(usual dose range 150-250mg, 0.6-1ml) | 2-4 weekly | Trough: just before an injection (same day)<br><br>Peak: 7 days later<br><br>*bloods as below* | Trough level: 8 – 12 nmol/L<br><br>Peak level: Less than 30 nmol/L | 250mg every 7 days | Focus on trough level first, and adjust *dosing interval* as needed to achieve target (usually by a week up or down).<br>If trough is in range, but peak is high, reduce *dose* in 50mg steps |
| <u>Long-acting Testosterone Injection</u><br><br>*Nebido*<br><br>(**has an initial loading phase – ask GIC for instructions** before switching to Nebido) | 1,000mg (4ml vial) IM<br><br>*(if patient weight less than 55 kg, GIC may suggest reduced dose)* | 6-15 weekly | Trough: just before an injection (same day)<br><br>*bloods as below*<br><br>**No peak testosterone required | Trough level: 10-15 nmol/L | 1000mg every 6 weeks | Adjust dosing interval as required (usually by a week up or down).<br>Dose is not usually adjusted. |
| <u>Testosterone gel pumps:</u> <u>(topical)</u><br><br>*Testogel* 16.2mg/g (20.25mg testosterone per pump actuation)<br><br>*or*<br><br>*Tostran* 2% (10mg per pump actuation)<br><br>*or* | Usual starting doses:<br><br>Testogel: 2 pump actuations (40.5 mg)<br><br>Tostran: 4 pump actuations (40 mg)<br><br>Testavan: 2 pump actuations (46 mg) | Daily, apply full dose in the morning, to inner thighs or lower torso/ abdomen - but not to chest or genital areas. | Bloods 4-6 hours after gel application (ensure no gel on arms)<br><br>*bloods as below* | 15 – 20nmol/L | 100mg daily<br><br>(5 actuations of Testogel pump<br><br>10 actuations of Tostran pump<br><br>4 actuations of Testavan pump) | Adjust dose as required.<br><br>Adjustments usually as steps of 1 pump actuation at a time. |

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| *Testavan* 20mg/g gel (23mg per pump actuation) | | | | | | |

**Medications that may be recommended in addition to testosterone:**
If testosterone therapy to target testosterone levels (above) does not suppress menstruation, or the person has amenorrhoeic cycling, then a progestin (first-line) or GnRH analogue can be used to suppress ovarian function.

**Progestins:** Medroxyprogesterone acetate 10 mg BD, or TDS (if BD is not adequate).

**GnRH analogues (as used for endometriosis):** Decapeptyl (Triptorelin) SR 11.25 mg (IM) every 12 weeks
**or** Zoladex (Goserelin) 10.8 mg (sub cut) every 12 weeks. *Other alternatives listed in shared care document.*

**Blood tests that need to be requested (including safety blood tests, for monitoring):**

Testosterone gels:
4-6 hours after gel application: testosterone, FBC, LFTs and fasting lipids.
Remember to ensure no gel was applied to the arm from which blood is taken (or inaccurately high levels may result).

Sustanon / Testosterone Enantate:
1. On day of injection, immediately before injection (**trough**): testosterone, FBC, LFTs and fasting lipids.
2. 7 days later (**peak**): testosterone only.

Nebido:
On day of injection, immediately before injection (**trough**): testosterone, FBC, LFTs and fasting lipids
**No peak testosterone required.

**When the dosing or frequency of a preparation is changed, repeat blood tests (as above) need to be arranged**:

Testosterone gels: 8 weeks after the adjustment.

Sustanon / Testosterone Enantate: trough & peak bloods at the 4th injection after the adjustment.

Nebido: a trough level just before the 3nd injection after the adjustment. **No peak testosterone required.

**Monitoring frequency:**
We recommend that monitoring bloods are done when due (as per above) after any change to dose, frequency or formulation.

Additionally, monitoring bloods should be done every 3-6 months in the first year, every 6-12 months in the second year, and then annually thereafter if therapy is stable with no red flags as below.

Blood pressure and body mass index should be monitored every 3-6 months in the first year of therapy, and after any dose change, then annually when treatment stabilised (or more frequently if indicated).

**Red flags for monitoring, and actions:**

As well as adjusting the testosterone dosing regimens, as per the table above, there will occasionally be results from the safety blood tests that need action:

Liver Function Tests:
For values less than 3x the upper limit of normal: check medicines and alcohol history and re-test in 4-6 weeks. If Liver function tests are abnormal on repeat, then perform further investigations to determine the cause: Hepatitis B and C serology, HIV serology, EBV, Ferritin, Copper, Caeruloplasmin, liver auto-immune screen, ultrasound of the liver.

If the person is using injectable testosterone it may be appropriate to change to a topical testosterone gel to reduce the strain on the liver; please discuss this with the GIC team.

If values are greater than 3x the upper limit of normal: GP to temporarily suspend hormone therapy and refer to local hepatology.

Lipids:
Normal cardiovascular risk assessment and management applies. Seek advice if significant changes in lipids. Calculate the Q-risk score of the patient using the male gender to make intervention decisions.

For individuals with an LDL over 4.9 mmol/L, as per NHS England guidance, we recommend lifestyle and dietary advice and a repeat blood test which includes fasted lipid profile and LipA. If LipA is above normal range, TC > 9.0 nmol/l, LDL-C > 6.5 mmol/l, and non-hdl-c > 7.6 mmol/l referral to specialist lipid clinic is recommended.

Polycythaemia: actions for Haematocrit / Packed Cell Volume levels:

•Haematocrit less than 0.52 is acceptable.

•Haematocrit 0.52 – 0.55: Advise patient to drink 2L water, ensure they are not smoking. Repeat bloods just before next Sustanon or Nebido injection, or 8 weeks later if using gel. If still raised on repeat, GP to seek advice from GIC.

•Haematocrit 0.55 – 0.59: GP to inform GIC urgently. Check FBC history to see if a pattern. Advise patient to drink 2L water, ensure they are not smoking. Repeat bloods just before next Sustanon or Nebido injection, or 8 weeks later if using gel. If pattern of polycythaemia on

injections, then we advise switching to testosterone gel (as above) and also assess for other potential causes such as Obstructive Sleep Apnoea.

•Haematocrit 0.60 or above: GP to pause testosterone therapy and refer urgently to haematology for venesection, also inform GIC urgently. After haematology clearance then return to testosterone as topical therapy, with haematology plan for venesection.

If stopping therapy, reassure the patient that this is temporary, and that we would expect testosterone therapy to be resumed after the pause in treatment. The pause is unlikely to cause significant change in physical appearance.

New diagnosis of Cancer, Stroke or Myocardial Infarction:
Temporarily suspend hormone therapy until discussion with the GIC team.

**Medication shortages and alternative formulations:**
If there are local supply issues with particular formulations of hormonal medications, there are alternatives. We also have information on appropriate doses when switching formulations. Please see the following link for our advice: https://gic.nhs.uk/gp-support/updates-on-physical-interventions/

**Contact with the GIC endocrine team:**
Please note **we are not an emergency service**. We can only give advice on patients who are under, or who have been under, our care. **Please only contact us by one means, either email or telephone. Doing both puts extra strain on our resources.**

Many of your questions may be answered by looking at the endocrine advice on the GIC website we suggest that you check here for the answer to your question in the first instance: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/. Furthermore, the webpage for hormone advice is: https://tavistockandportman.nhs.uk/services/gender-identity-clinic-gic/information-for-health-professionals/

We can advise on dose titration and adjustments to therapy, on receipt of blood test results and other monitoring information. If sending results for review, please also send confirmation of current hormonal therapies and dosages for clarity and safety purposes.

**Email:** GPs and other healthcare professionals can email GIC.Endo@tavi-port.nhs.uk with queries, or for advice and support regarding hormonal therapies.

**Telephone:** We have a hormone advice telephone line for GPs and other healthcare professionals. If we do not answer the phone call, please leave a message. We aim to respond within 48 hours. The telephone number is: **020 8938 7369**