Protocols for Hormone Therapy for Trans Clients

A quick reference guide for primary care providers

This quick reference guide was derived from Sherbourne Health Center’s Guidelines and Protocols for Hormone Replacement Therapy and Primary Health Care for Trans Clients and is designed to be used in conjunction with the full Protocols.

KEY MESSAGES

› Prescribing hormone therapy for trans clients is ideally situated in primary care.
› The risks of not providing hormone therapy are often more substantial than the risks of treatment.

AN INDIVIDUAL APPROACH TO CARE

There is no single pathway for a trans person to follow in order to actualize the expression of their authentic self. Non-binary clients may also seek hormone therapy to modify their secondary sex characteristics. Though hormones and/or surgery are medically necessary for many trans people, others may obtain relief of gender dysphoria through other means of modifying their self expression. The experience of regret after medical transition is very rare. There is no requirement of lived gender role experience prior to initiation of hormone therapy.

DECISION TO START HORMONES

The decision to initiate hormone therapy is a collaborative client-centered process that focuses on psychosocial readiness and informed consent. For each client seeking hormone therapy, it is important to not only consider the possible risks of treatment but to consider the often substantial risks of not undergoing hormonal therapy as part of the management plan for significant gender dysphoria.1

TERMINOLOGY

Cis
refers to a state of alignment of one’s gender identity with the gender assigned at birth

Trans
refers to a state of incongruence of one’s gender identity with the gender assigned at birth

Non-binary (e.g. gender queer, gender fluid, pangender, agender) may feel that their gender falls somewhere between “man” or “woman”, is both, neither or in flux.

Gender non conformity
refers to the extent to which a persons gender identity, role or expression differs from the cultural norms prescribed for people of a particular sex.

Gender Dysphoria
refers to discomfort or distress that is caused by a discrepancy between a person’s gender identity and their sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics). Only some gender nonconforming people experience gender dysphoria at some point in their lives.


DISCLAIMER
These protocols reflects the current practice at Sherbourne Health Centre in the management of trans clients. We do not present it as a ‘Standard of Care’ but instead as a guide to help clinicians in their day-to-day practice. Adaptations may be considered relating to each client’s unique circumstance. Clinicians must use their own expertise and decision-making skills within each clinical encounter.
INITIAL ASSESSMENT

The following is a tool to guide the assessment process with new (or newly transitioning) trans clients who have reached tanner stage V in pubertal development and are interested in hormone therapy.

It is more important that the tasks of the assessment period are completed, rather than a certain number of visits logged or period of time elapsed.

CRITERIA FOR HORMONE THERAPY

- Diagnosis of Gender Dysphoria (according to the DSM-V-TR*)
- Psychosocial readiness to begin treatment
- Completion of a period of assessment including appropriate physical and laboratory investigations
- Absence of absolute contraindications
- Optimal mitigation of risks relating to pre-existing health conditions
- Client understanding of risks, precautions and side effects of treatment

CULTURAL COMPETENCE

As with many marginalized populations, care of trans clients requires cultural competence, which includes an understanding and awareness of the barriers to care. Wherever possible, it is advisable to make the clinic setting accessible to trans people. This may include staff training around common office issues that affect trans clients, such as the use of appropriate pronouns. These considerations can go a long way towards reducing stigmatization while increasing the comfort of trans clients in the medical setting.

For more information, please visit www.rainbowhealthontario.ca/trans-health-connection

GENDER-AFFIRMING SURGERY

Some trans clients may consider gender affirming surgery.

OHIP COVERED SURGERIES FOR TRANS WOMEN

- Orchiectomy
- Vaginoplasty

OHIP COVERED SURGERIES FOR TRANS MEN

- Chest reconstruction
- Hysterectomy +/- bilateral salpingoophorectomy
- Metoidioplasty
- Phalloplasty
- Scrotoplasty

CRITERIA FOR HORMONE THERAPY

- Diagnosis of Gender Dysphoria (according to the DSM-V-TR*)
- Psychosocial readiness to begin treatment
- Completion of a period of assessment including appropriate physical and laboratory investigations
- Absence of absolute contraindications
- Optimal mitigation of risks relating to pre-existing health conditions
- Client understanding of risks, precautions and side effects of treatment

CULTURAL COMPETENCE

As with many marginalized populations, care of trans clients requires cultural competence, which includes an understanding and awareness of the barriers to care. Wherever possible, it is advisable to make the clinic setting accessible to trans people. This may include staff training around common office issues that affect trans clients, such as the use of appropriate pronouns. These considerations can go a long way towards reducing stigmatization while increasing the comfort of trans clients in the medical setting.

For more information, please visit www.rainbowhealthontario.ca/trans-health-connection

Ohip covered surgeries for trans women

- Orchiectomy
- Vaginoplasty

Ohip covered surgeries for trans men

- Chest reconstruction
- Hysterectomy +/- bilateral salpingoophorectomy
- Metoidioplasty
- Phalloplasty
- Scrotoplasty

CRITERIA FOR HORMONE THERAPY

- Diagnosis of Gender Dysphoria (according to the DSM-V-TR*)
- Psychosocial readiness to begin treatment
- Completion of a period of assessment including appropriate physical and laboratory investigations
- Absence of absolute contraindications
- Optimal mitigation of risks relating to pre-existing health conditions
- Client understanding of risks, precautions and side effects of treatment

CULTURAL COMPETENCE

As with many marginalized populations, care of trans clients requires cultural competence, which includes an understanding and awareness of the barriers to care. Wherever possible, it is advisable to make the clinic setting accessible to trans people. This may include staff training around common office issues that affect trans clients, such as the use of appropriate pronouns. These considerations can go a long way towards reducing stigmatization while increasing the comfort of trans clients in the medical setting.

For more information, please visit www.rainbowhealthontario.ca/trans-health-connection

Ohip covered surgeries for trans women

- Orchiectomy
- Vaginoplasty

Ohip covered surgeries for trans men

- Chest reconstruction
- Hysterectomy +/- bilateral salpingoophorectomy
- Metoidioplasty
- Phalloplasty
- Scrotoplasty

FEMINIZING HORMONE THERAPY

The goal of hormone therapy in trans women is to reduce the endogenous effects of testosterone and to induce female secondary sex characteristics. Physiologically, this requires a suppression of endogenous androgens and the addition of estrogen. This treatment results in both reversible and irreversible feminization.3

ESTROGEN

Estrogen acts directly on estrogen receptors to initiate feminization. It is usually the focus of hormonal transition for trans women. At SHC, oral estradiol (Estrace) is prescribed most often because it has a preferable safety profile compared to conjugated estrogen (e.g. Premarin), and is covered by the ODB program with an EAP request. Some report faster breast development with injectable estrogens.

The starting dose of estrogen can be maintained for 1-2 months, after which a dose increase can be considered barring any concerning effects. In clients over 50 years old who have been on estrogen for several years, doses may be reduced to those administered to post-menopausal cis women (i.e. 0.025 – 0.05 mg patch).

RELATIVE SAFETY

Transdermal estradiol seems to be safer than oral estradiol, have fewer hepatic side effects and is thus recommended for clients over 40 or with risk factors for cardiovascular or thromboembolic disease.4

PRECAUTIONS

All reasonable measures should be taken to reduce the risks associated with estrogen therapy.5 Suggested measures to minimize risks associated with listed precautions may be found in the Guidelines and Protocols for Hormone Replacement Therapy and Primary Health Care for Trans Clients.

PREVENTIVE CARE

Trans women maintained on feminizing hormone therapy have unique preventive care needs and recommendations. An Adapted Preventive Care Checklist for trans women that can be used at the point of care can be found in the Guidelines and Protocols for Hormone Replacement Therapy and Primary Health Care for Trans Clients.

ANTI-ANDROGEN

Spironolactone has traditionally been used preferentially as it was thought to have a superior safety profile. This practice has recently come into question as it has been anecdotally noted that adequate anti-androgen effects are achievable at lower doses of cyproterone at which adverse effects are less likely. Thus the choice of anti-androgen should be made individually for each client based on their medical history and preference regarding respective side effect profiles.

Following orchiectomy (+/- vaginoplasty), most trans women will not require androgen suppression. The androgen-blocker can be tapered over the course of 4-6 weeks.

Formulations and recommended doses of estrogens and anti-androgens

<table>
<thead>
<tr>
<th>Formulations</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>Cost* (4 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>50 - 100 mg OD</td>
<td>200 mg BID</td>
<td>$16.56 - $40.58</td>
</tr>
<tr>
<td>Cyproterone</td>
<td>12.5 - 25 mg OD</td>
<td>50 mg OD</td>
<td>$32.98 - $101.92</td>
</tr>
<tr>
<td>Conjugated Estrogen*</td>
<td>0.625 mg OD</td>
<td>1.25 mg OD</td>
<td>$20.01</td>
</tr>
<tr>
<td>Estradiol (oral)*</td>
<td>1 - 2mg OD</td>
<td>4 mg OD</td>
<td>$18.53 - $40.14</td>
</tr>
<tr>
<td>Estradiol Patch (transdermal)**</td>
<td>0.1 mg OD / apply path 2x/week</td>
<td>0.2 mg OD / apply path 2x/week</td>
<td>$39.97 - $69.95</td>
</tr>
<tr>
<td>Estradiol valerate (injectable (IM))**</td>
<td>10mg q 2/52</td>
<td>10mg q 1/52</td>
<td>$14.20 - $28.40</td>
</tr>
</tbody>
</table>

* Price quotes provided by www.pharmacy.ca. represent the price for 4 weeks’ supply of a generic brand of medication where available (unless indicated otherwise). Prices include a usual and customary dispensing fee of $9.99 ($10.99 for Pace), which may vary from pharmacy to pharmacy. Accurate as of February 4th, 2015.

**estradiol valerate IM must be prepared by a compounding pharmacy, price quote provided by Pace Pharmacy

For more information, please visit www.rainbowhealthontario.ca/trans-health-connection
The degree and rate of physical effects is dependent on the dose and route of administration\(^6\), as well as client-specific factors such as age, genetics, body habitus and lifestyle.

Standard monitoring of estrogen administration should be employed at baseline, 1, 3, 6, and 12 months. This should include a functional inquiry, targeted physical exam, bloodwork, and health promotion/disease prevention counselling as indicated.

Testosterone level may be the most useful test for monitoring in trans women; for many clients, the goal will be to achieve the suppression of testosterone into the female range. That said, the client may have clinically relevant results without total suppression of testosterone because of androgen blockade, which is not easily measured\(^7\).

Estradiol levels are of variable utility in monitoring feminizing therapy given the wide cyclical variation in cis women. Most clients attain considerable feminization at estradiol levels between 200-500 pmol/L. According to the Endocrine Society Guidelines, serum estradiol levels should not exceed the mean daily level for cis women (approximately 700 pmol/L).

Hormone treatment results in both reversible and irreversible feminization.

**EFFECTS AND EXPECTED TIME COURSE OF A REGIMEN CONSISTING OF AN ANTI-ANDROGEN AND ESTROGEN**

<table>
<thead>
<tr>
<th>PHYSICAL EFFECTS</th>
<th>REVERSIBILITY</th>
<th>ONSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening of skin/decreased oiliness</td>
<td>Reversible</td>
<td>3-6 months</td>
</tr>
<tr>
<td>Body fat redistribution</td>
<td>Reversible</td>
<td>3-6 months</td>
</tr>
<tr>
<td>Decreased muscle mass/strength(^b)</td>
<td>Reversible</td>
<td>3-6 months</td>
</tr>
<tr>
<td>Thinned/slowed growth of body/facial hair(^c)</td>
<td>Reversible</td>
<td>6-12 months</td>
</tr>
<tr>
<td>Male Pattern Baldness(^d)</td>
<td>Reversible</td>
<td>1-3 months</td>
</tr>
<tr>
<td>Breast growth</td>
<td>Irreversible</td>
<td></td>
</tr>
<tr>
<td>Decreased testicular volume</td>
<td>Variable</td>
<td>3-6 months</td>
</tr>
<tr>
<td>Decreased libido</td>
<td>Variable</td>
<td>1-3 months</td>
</tr>
<tr>
<td>Decreased spontaneous erections</td>
<td>Variable</td>
<td>1-3 months</td>
</tr>
<tr>
<td>Decreased sperm production</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Erectile Dysfunction</td>
<td>Variable</td>
<td></td>
</tr>
</tbody>
</table>

\(\text{a)}\) Estimates represent published and unpublished clinical observations  
\(\text{b)}\) Significantly dependent on amount of exercise  
\(\text{c)}\) Complete removal of male facial and body hair requires electrolysis, laser treatment, or both  
\(\text{d)}\) No regrowth, loss stops  

**MONITORING STRATEGIES & DOSE ADJUSTMENTS**

Standard monitoring of estrogen administration should be employed at baseline, 1, 3, 6, and 12 months. This should include a functional inquiry, targeted physical exam, bloodwork, and health promotion/disease prevention counselling as indicated.

Testosterone level may be the most useful test for monitoring in trans women; for many clients, the goal will be to achieve the suppression of testosterone into the female range. That said, the client may have clinically relevant results without total suppression of testosterone because of androgen blockade, which is not easily measured\(^6\).

Estradiol levels are of variable utility in monitoring feminizing therapy given the wide cyclical variation in cis women. Most clients attain considerable feminization at estradiol levels between 200-500 pmol/L. According to the Endocrine Society Guidelines, serum estradiol levels should not exceed the mean daily level for cis women (approximately 700 pmol/L).

**Clinical effects are the goal of therapy, not specific lab values**


---

**HORMONE MONITORING SUMMARY FOR TRANS WOMEN**

<table>
<thead>
<tr>
<th>EXAM/INVESTIGATION</th>
<th>BASELINE</th>
<th>MONTH 1</th>
<th>MONTH 3</th>
<th>MONTH 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Physical Exam, measure: height, weight, waist &amp; abdo circ., +/- breast, hips as per client preference, EKG if over 40, EKG + cardiac stress test if additional risk factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP, weight, waist &amp; abdo circ., abdominal exam including liver palpation, extremity exam, measure breast and hips as per client preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BLOODWORK**

<table>
<thead>
<tr>
<th></th>
<th>BASELINE</th>
<th>MONTH 1</th>
<th>MONTH 3</th>
<th>MONTH 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ALT/AST(^a)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Creatinine/Lytes/Urea(^b)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fasting Glucose</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LDL/HDL/TG</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Testosterone (+/- Estradiol)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Prolactin(^c)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LH(^d)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Other</td>
<td>Hep A, B, C</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

\(\text{a)}\) for Ontario providers who may be restricted in ordering OHIP-covered AST levels, ALT alone may be used to screen for liver dysfunction  
\(\text{b)}\) Elevated LH post-gonadectomy may have implications regarding bone mineral density (See Osteoporosis and BMD Screening in Protocols)  
\(\text{c)}\) Prolactin should be monitored at least yearly, and more frequently if elevation noted  
\(\text{d)}\) Elevated LH post-gonadectomy may have implications regarding bone mineral density (See Osteoporosis and BMD Screening in Protocols)
The cornerstone of hormone therapy for trans men is testosterone. The goal of treatment is virilization – development of masculine secondary sexual characteristics. This treatment results in both reversible and irreversible masculinization.\(^3\)

### TESTOSTERONE

In Ontario, options for testosterone administration include injectable and transdermal preparations (patch or gel). Injectable formulations are most commonly used, both because of their superior efficacy and lower price. Nurse practitioners (NPs) in Ontario are unable to prescribe testosterone due to its classification as a controlled substance; NPs providing trans care may opt to work collaboratively with a physician to overcome this restriction.

### PRECAUTIONS

All reasonable measures should be taken to reduce the risks associated with testosterone therapy. Suggested measures to minimize risks associated with listed precautions may be found in the Guidelines and Protocols for Hormone Replacement Therapy and Primary Health Care for Trans Clients.

### PREVENTIVE CARE

Trans men maintained on masculinizing hormone therapy have unique preventive care needs and recommendations. An Adapted Preventive Care Checklist for trans men that can be used at the point of care can be found in the Guidelines and Protocols for Hormone Replacement Therapy and Primary Health Care for Trans Clients.

### ABSOLUTE CONTRAINDICATIONS

- Pregnancy or breast feeding
- Active known androgen-sensitive cancer
- Unstable ischemic cardiovascular disease
- Active endometrial cancer
- Poorly controlled psychosis or acute homicidality
- Psychiatric conditions which limit the ability to provide informed consent
- Hypersensitivity to one of the components of the formulation

### RELATIVE SAFETY

Gel formulations have the risk of inadvertent exposure to others who come into contact with the client’s skin. This is of particular importance for clients with young children and/or with intimate partners who are pregnant or considering pregnancy.

Testosterone therapy does not prevent pregnancy even if amenorrhea is achieved. Testosterone is a teratogen thus reliable contraception may be required depending on sexual practices.

### Formulations and recommended doses of testosterone

<table>
<thead>
<tr>
<th>Formulations</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>Cost Per Unit</th>
<th>Approx. Cost(^a) (4 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testosterone enanthate (IM)</td>
<td>50mg q week or 100mg q 2 weeks</td>
<td>100mg q week or 100mg q 2 weeks</td>
<td>$69.03 per vial (each vial contains 200mg/mL x 5mL = 1000mg)</td>
<td>$13.81 - $27.60 (Generally approved by ODB with EAP request)</td>
</tr>
<tr>
<td>Testosterone cypionate (IM)</td>
<td>50mg q week or 100mg q 2 weeks</td>
<td>100mg q week or 100mg q 2 weeks</td>
<td>$43.31 per vial (each vial contains 100mg/mL x 10mL = 1000mg)</td>
<td>$8.66 - $17.32 (Generally approved by ODB with EAP request)</td>
</tr>
<tr>
<td>Testosterone Patch (transdermal)</td>
<td>2.5 - 5 mg OD</td>
<td>5 - 10 mg OD</td>
<td>$159.27 / 60 x 2.5mg patches</td>
<td>$74.33 - $297.30</td>
</tr>
<tr>
<td>Testosterone Gel (transdermal)</td>
<td>2.5 - 5g OD (2-4 pumps, equivalent to 25-50 mg testosterone)</td>
<td>5 - 10g OD (4-8 pumps, equivalent to 50-100 mg testosterone)</td>
<td>$85.90 / 30 x 2.5g patches</td>
<td>$77.88 - $233.65 (Axiron not covered by ODB)</td>
</tr>
<tr>
<td>Testosterone Gel (transdermal, axillary)(^k)</td>
<td>1.5 - 3g OD (1-2 pumps, equivalent to 30-60 mg testosterone)</td>
<td>3 - 4.5mL OD (2-3 pumps, equivalent to 60-90 mg testosterone)</td>
<td>$166.89 / pump bottle(^l)</td>
<td>$166.89 - $274.94 (Sachets)</td>
</tr>
</tbody>
</table>

\(^a\)Price quotes provided by www.pharmacy.ca. The above-mentioned prices are accurate as of February 4th, 2015 and represent the price of the generic brand of medication where available (unless otherwise indicated). Prices include a usual and customary dispensing fee of $9.99, which may vary from pharmacy to pharmacy.

\(^k\) Axiron\(^m\) 2% solution

\(^l\) Each pump bottle provides 60 doses of 1.5 mL (=30mg testosterone)

For more information, please visit www.rainbowhealthontario.ca/trans-health-connection
**EFFECTS AND EXPECTED TIME COURSE OF A REGIMEN CONSISTING OF TESTOSTERONE**

The degree and rate of physical effects is dependent on the dose and route of administration, as well as client-specific factors such as age, genetics, body habitus and lifestyle.

Hormone treatment results in both reversible and irreversible masculinization.

<table>
<thead>
<tr>
<th>Physical Effect</th>
<th>Reversibility</th>
<th>Onset</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin oiliness/acne</td>
<td>Reversible</td>
<td>1-6 months</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Body fat redistribution</td>
<td>Reversible/Variable</td>
<td>3-6 months</td>
<td>Reversible/Variable</td>
</tr>
<tr>
<td>Increased muscle mass/strength&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Reversible</td>
<td>6-12 months</td>
<td>Reversible/Variable</td>
</tr>
<tr>
<td>Facial/body hair growth</td>
<td>Irreversible</td>
<td>3-6 months</td>
<td>Reversible</td>
</tr>
<tr>
<td>Scalp hair loss</td>
<td>Irreversible</td>
<td>variable</td>
<td>Reversible</td>
</tr>
<tr>
<td>Cessation of menses</td>
<td>Reversible</td>
<td>2-6 months</td>
<td></td>
</tr>
<tr>
<td>Clitoral enlargement</td>
<td>Irreversible</td>
<td>3-6 months</td>
<td></td>
</tr>
<tr>
<td>Vaginal atrophy</td>
<td>Reversible</td>
<td>3-6 months</td>
<td></td>
</tr>
<tr>
<td>Deepened voice</td>
<td>Irreversible</td>
<td>3-12 months</td>
<td></td>
</tr>
<tr>
<td>Infertility</td>
<td>Irreversible</td>
<td>variable</td>
<td></td>
</tr>
</tbody>
</table>

- Expected Onset<sup>a</sup>
- Expected Maximum Effect<sup>a</sup>

---

**MONITORING STRATEGIES & DOSE ADJUSTMENTS**

As with treatment for trans women, monitoring should be done at 1, 3, 6 and 12 months after starting therapy. This should include a functional inquiry, targeted physical exam, bloodwork, and health promotion/disease prevention counselling as indicated. Titration of doses will occur in the early phases of treatment (i.e. after bloodwork done at 1 or 3 months). There may be utility varying the timing of bloodwork (i.e. trough vs. midcycle) to gather information regarding serum levels throughout the injection cycle. For clients seeking maximum masculinization, the target dose will bring the free and total testosterone levels into the physiologic male range. Dose reduction is warranted if supraphysiologic doses are measured at mid-cycle or trough. Once menstrual cessation is achieved, any vaginal bleeding without explanation (e.g. missed dose(s) or lowered dose of testosterone) warrants a full workup for endometrial hyperplasia and cancer including endometrial biopsy.

**Clinical effects are the goal of therapy, not specific lab values**

---

**HORMONE MONITORING SUMMARY FOR TRANS MEN**

**BASELINE**

**MONTH 1**

**MONTH 3**

**MONTH 6**

**EXAM/INVESTIGATION**
- Full Physical Exam with PAP if indicated, include height, weight, waist & abdo circ.
- EKG if over 40, EKG + cardiac stress test if additional risk factors
- BP, weight, waist & abdo circ.
- Abdominal exam including liver palpation
- BP, weight, waist and abdo circ., abdominal exam including liver palpation

**BLOODWORK**

<table>
<thead>
<tr>
<th>Test</th>
<th>Baseline</th>
<th>Month 1</th>
<th>Month 3</th>
<th>Month 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>ALT/AST&lt;sup&gt;b&lt;/sup&gt;</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Fasting Glucose</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>LDL/HDL/TG</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Testosterone (± Estradiol)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>LH&lt;sup&gt;b&lt;/sup&gt;</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Other</td>
<td>Hep A, B, C Pregnancy test (before first injection)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

---

<sup>a</sup> for Ontario providers who may be restricted in ordering OHIP-covered AST levels, ALT alone may be used to screen for liver dysfunction

<sup>b</sup> Elevated LH post-gonadectomy may have implications regarding bone mineral density (See Osteoporosis and BMD Screening)