CARING FOR PEDIATRIC TRANSGENDER AND GENDER DIVERSE PATIENTS

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OBJECTIVES

• Development of gender identity in children

• Diagnosis of gender dysphoria in children and the rationale for gender-affirming treatment

• Options available to children at various ages and developmental stages

• Questions we most often hear from parents
HISTORY
• Gender diverse people have existed throughout history, on every continent.
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• Gender diversity is not a new phenomenon.
  • Various Native American tribes recognize and honor two-spirit persons
    • Zuni (Lhamana), Lakota (Winkte)
  • Pre-colonial Incas (Peru) worshipped a dual-gender god, and rituals honoring
    them were performed by third-gender shamans (Quariwarmi)
  • Mashoga (Kenya) includes a range of gender identities on a continuum,
    including gay men, but also biological men who identify as women. They often
    assume female gender roles and serve a crucial role in weddings.
  • Hijra (South Asia) consider themselves a third gender
  • Femminiello (Italy), kocek (Ottoman empire), sistergirls & brotherboys (Aboriginal
    Australia), Chuckchi (Russia)
In the US, understanding of gender is evolving

- 2015 Fusion Millenial poll of adults age 18-34 found that the majority see gender as a spectrum, rather than as a man/woman binary
TERMINOLOGY
TERMINOLOGY

- Gender Identity
  - Internal sense of self. The gender I know I am.
• **Gender Identity**
  • Internal sense of self. The gender I know I am.

• **Gender Expression**
  • What my appearance or behavior communicates about my gender.
TERMINOLOGY

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• **Natal Sex/Assigned Gender**
  • The sex assigned at birth (typically based on genitals or chromosomes).
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• **Gender Expression**
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• **Natal Sex/Assigned Gender**
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• **Transgender or non-binary**
  - When gender identity differs from gender assigned at birth.
• **Gender Identity**
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• **Gender Expression**
  • What my appearance or behavior communicates about my gender.

• **Natal Sex/Assigned Gender**
  • The sex assigned at birth (typically based on genitals or chromosomes).

• **Transgender or non-binary**
  • When gender identity differs from gender assigned at birth.

• **Gender expansive/creative/fluid/queer**
  • When behavior, appearance or identity are incongruent with what’s expected based on cultural/societal norms.
The Gender Unicorn

Gender Identity
- Female/Woman/Girl
- Male/Man/Boy
- Other Gender(s)

Gender Expression
- Feminine
- Masculine
- Other

Sex Assigned at Birth
- Female
- Male
- Other/Intersex

Physically Attracted to
- Women
- Men
- Other Gender(s)

Emotionally Attracted to
- Women
- Men
- Other Gender(s)

To learn more, go to: www.transstudent.org/gender

Design by Landyn Pan and Anna Moore
DEVELOPMENT OF GENDER IDENTITY IN CHILDREN
DEVELOPMENT OF GENDER IDENTITY

- By age 2-3,
  - Gender identity begins to emerge
  - Child can recognize most stereotypical gender expressions (e.g., clothes, toys, appearance)

- By age 3-4,
  - Child has a sense of their own gender identity & can use language to express it
  - They are aware of anatomical differences between sexes.
  - May start to segregate by gender

- By age 4-6,
  - Child may associate gender with specific behaviors ("girls wear makeup") but can modify this through exposure
  - Children often expressing their gender through behavior (dress, play)

- By age 5-7
  - Gender constancy develops
  - Child may develop behavior concerns if they feel their gender expression is limited or outside the "norm"
DEVELOPMENT OF GENDER IDENTITY

• Age 9-12
  • Puberty leads to continued gender exploration
  • Some gender diverse kids may begin to engage in more stereotypical masculine/feminine behaviors
  • Some kids may begin to express a transgender identity or explore their gender for the first time
  • The start of puberty can lead to significant MH concerns for transgender kids

• Age 12-18
  • Gender identity becomes fully developed
  • With hormonal/body changes, some teens realize they are transgender for the first time
  • Some transgender teens may have known when they were younger, but are just able to express it now
  • Some felt “different” as children but understand that difference better now
GENDER
DYSPHORIA/GENDER INCONGRUENCE
GENDER DYSPHORIA

So....what is gender dysphoria?
So….what is **gender dysphoria**?

- Distress experienced due to a conflict between the sex assigned at birth and one’s gender identity
Being transgender or gender expansive is NOT a diagnosis or disorder, but rather an identity factor.

The distress of gender dysphoria IS a concern that might be diagnosable and for which treatment exists, according to DSM-5 criteria.
PREVALENCE

- Broad range of estimated prevalence (0.5% - 1.3%)
  - Older data based on who presented to clinics for treatment of gender dysphoria
  - Newer data based on population sampling
    - May be influenced by perceived safety of respondent
- Minnesota survey of teens in 2016: 2.7% HS students identify as transgender or GNC
- 2017 Harris poll of millennials found that 12% identify as transgender or gender nonconforming.
GENDER DYSPHORIA

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• Minnesota survey of teens in 2016: 2.7% HS students identify as transgender or GNC
• 2017 Harris poll of millennials found that 12% identify as transgender or gender nonconforming.

PERSISTENCE
• Unclear how many pre-pubertal children who experience GD have this persist into adulthood.
• By adolescence, persistence appears to be closer to 100%.
RATIONALE FOR TREATMENT OF GD

• Increased risk of depression, anxiety, behavior problems, drug abuse, alcohol abuse, self injury, suicide
  • 54% of TGNB youth considered suicide in the last year
  • 29% made an attempt
RATIONALE FOR TREATMENT OF GD

• Increased risk of depression, anxiety, behavior problems, drug abuse, alcohol abuse, self injury, suicide
  • 54% of TGNB youth considered suicide in the last year
  • 29% made an attempt

• These risks are due to the chronic discrimination and stigmatization experienced by the individual, not inherent to the TGNB identity
RATIONALE FOR TREATMENT OF GD

• Providing gender-affirming care improves mental and physical health
  • What constitutes gender-affirming care?
    • Medical interventions
    • Social transition
    • Family support
    • Legal and educational support
RATIONALE FOR GENDER AFFIRMATIVE CARE

• Gender-affirming care reduces suicidal ideation and suicide attempts
• Family acceptance is associated with positive mental health and reduced suicide attempts
• Socially transitioned youth have similar rates of depression and anxiety as cisgender siblings and peers
• Usage of youth’s chosen name reduces suicidal ideation
RATIONALE FOR TREATMENT OF GD

• Puberty suppression is associated with improvement in behavior problems and overall psychological functioning, as well as lower lifetime suicidal ideation

• Hormone therapy is associated with reduced emotional and behavioral problems and decreased suicidality
TREATMENT OPTIONS
TREATMENT OPTIONS

• Guidelines and Standards
  • WPATH Standards of Care (currently v7; v8 in the works)
  • Endocrine Society Guidelines (updated 2017)
TREATMENT OPTIONS

- **Pre-adolescent (Tanner stage 1)**
  - No medical treatment indicated
  - Support, support, support
  - Social transition
    - social transition does not have to be permanent
    - You can also express gender-variant behavior without fully socially transitioning
TREATMENT OPTIONS

- Early adolescent (>= Tanner stage 2)
  - Puberty suppression with a GnRH agonist
    - Leuprolide
    - Histrelin
  - spironolactone

Fully reversible
TREATMENT OPTIONS

• Early adolescent (>= Tanner stage 2)
  • Puberty suppression with a GnRH agonist
    • Leuprolide
    • Histrelin
    • spironolactone

• Adolescent
  • Hormone therapy
    • Estradiol
    • Testosterone

  Fully reversible

  Partially reversible
PUBERTY SUPPRESSION

Table 1  unwanted sexual characteristics and their typical age of presentation

<table>
<thead>
<tr>
<th>Unwanted male secondary sexual characteristics</th>
<th>Unwanted female secondary sexual characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td><strong>Tanner stage of development (Typical age in years)</strong></td>
</tr>
<tr>
<td>Lower pitch voice</td>
<td>T3 (13–14)</td>
</tr>
<tr>
<td>Adam’s apple</td>
<td>T4 (14–16)</td>
</tr>
<tr>
<td>Prominent jaw</td>
<td>T4–5 (15–18)</td>
</tr>
<tr>
<td>Larger hands and feet</td>
<td></td>
</tr>
<tr>
<td>Broadened shoulders</td>
<td></td>
</tr>
<tr>
<td>Coarser facial and body hair</td>
<td></td>
</tr>
</tbody>
</table>
Criteria for puberty suppressing hormones

In order for adolescents to receive puberty suppressing hormones, the following minimum criteria must be met:

1. The adolescent has demonstrated a long-lasting and intense pattern of gender nonconformity or gender dysphoria (whether suppressed or expressed);

2. Gender dysphoria emerged or worsened with the onset of puberty;

3. Any co-existing psychological, medical, or social problems that could interfere with treatment (e.g., that may compromise treatment adherence) have been addressed, such that the adolescent’s situation and functioning are stable enough to start treatment;

4. The adolescent has given informed consent and, particularly when the adolescent has not reached the age of medical consent, the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process.
PUBERTY SUPPRESSION

- GnRH agonists
  - Leuprolide (Lupron) – intramuscular injection monthly, q3 months, q6 months
  - Histrelin (Vantas) – subcutaneous implant; effective for up to 2 years
  - Suppress LH production and thereby testosterone/estrogen production
    - Stops virilization in natal males
    - Stops menses in natal females and may cause some atrophy of existing breast tissue
PUBERTY SUPPRESSION

• Benefits
  • Reduction in distress around physical changes
  • Potential reduction in future surgical intervention
  • Fully reversible
PUBERTY SUPPRESSION

• Benefits
  • Reduction in distress around physical changes
  • Potential reduction in future surgical intervention
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• Risks
  • Compromised bone mineralization
    • Varying data on catch-up
  • Fertility implications
  • ? Brain development
PUBERTY SUPPRESSION

Limited data are available regarding the effects of GnRH analogs on brain development. A single cross-sectional study demonstrated no compromise of executive function (107), but animal data suggest there may be an effect of GnRH analogs on cognitive function (108).

Values and preferences

Our recommendation of GnRH analogs places a higher value on the superior efficacy, safety, and reversibility of the pubertal hormone suppression achieved (as compared with the alternatives) and a relatively lower value on limiting the cost of therapy. Of the available alternatives, depot and oral progestin preparations are effective. Experience with this treatment dates back prior to the emergence of GnRH analogs for treating precocious puberty in papers from the 1960s and early 1970s (109–112).

These compounds are usually safe, but some side effects have been reported (113–115). Only two recent studies involved transgender youth (116, 117). One of these studies described the use of oral lynestrenol monotherapy followed by the addition of testosterone treatment in transgender boys who were at Tanner stage B4 or further at the start of treatment (117). They found lynestrenol safe, but gonadotropins were not fully suppressed. The study reported metrorrhagia in approximately half of the individuals, mainly in the first 6 months. Acne, headache, hot flashes, and fatigue were other frequent side effects.

Another progestin that has been studied in the United States is medroxyprogesterone. This agent is not as effective as GnRH analogs in lowering endogenous sex hormones either and may be associated with other side effects (116). Progestin preparations may be an acceptable treatment for persons without access to GnRH analogs or with a needle phobia. If GnRH analog treatment is not available (insurance denial, prohibitive cost, or other reasons), postpubertal, transgender female adolescents may be treated with an antiandrogen that directly suppresses androgen synthesis or action (see adult section).

Remarks

Measurements of gonadotropin and sex steroid levels give precise information about gonadal axis suppression, although there is insufficient evidence for any specific short-term monitoring scheme in children treated with GnRH analogs (88). If the gonadal axis is not completely suppressed—as evidenced by (for example) menses, erections, or progressive hair growth—the interval of GnRH analog treatment can be shortened or the dose increased. During treatment, adolescents should be monitored for negative effects of delaying puberty, including a halted growth spurt and impaired bone mineral accretion. Table 7 illustrates a suggested clinical protocol.

Table 7. Baseline and Follow-Up Protocol During Suppression of Puberty

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every 3–6 mo</td>
<td>Anthropometry: height, weight, sitting height, blood pressure, Tanner stages</td>
</tr>
<tr>
<td></td>
<td>Every 6–12 mo</td>
</tr>
<tr>
<td></td>
<td>Laboratory: LH, FSH, E2/T, 25OH vitamin D</td>
</tr>
<tr>
<td>Every 1–2 y</td>
<td>Bone density using DXA</td>
</tr>
<tr>
<td></td>
<td>Bone age on X-ray of the left hand (if clinically indicated)</td>
</tr>
</tbody>
</table>

Table adapted from Hembree et al. (118).

Abbreviations: DXA, dual-energy X-ray absorptiometry; E2, estradiol; FSH, follicle stimulating hormone; LH, luteinizing hormone; T, testosterone; DOI: 10.1210/jc.2017-01658 https://academic.oup.com/jcem/issue/102/11/3869/4157558

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HORMONE THERAPY

• When can you start?
  • 16?
  • 14?
  • 13?
Evidence

Adolescents develop competence in decision making at their own pace. Ideally, the supervising medical professionals should individually assess this competence, although no objective tools to make such an assessment are currently available.

Many adolescents have achieved a reasonable level of competence by age 15 to 16 years (119), and in many countries 16-year-olds are legally competent with regard to medical decision making (120). However, others believe that although some capacities are generally achieved before age 16 years, other abilities (such as good risk assessment) do not develop until well after 18 years (121). They suggest that health care procedures should be divided along a matrix of relative risk, so that younger adolescents can be allowed to decide about low-risk procedures, such as most diagnostic tests and common therapies, but not about high-risk procedures, such as most surgical procedures (121).

Currently available data from transgender adolescents support treatment with sex hormones starting at age 16 years (63, 122). However, some patients may incur potential risks by waiting until age 16 years. These include the potential risk to bone health if puberty is suppressed

Table 8. Protocol Induction of Puberty

<table>
<thead>
<tr>
<th>Induction of female puberty with oral 17β-estradiol, increasing the dose every 6 mo:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 µg/kg/d</td>
</tr>
<tr>
<td>10 µg/kg/d</td>
</tr>
<tr>
<td>15 µg/kg/d</td>
</tr>
<tr>
<td>20 µg/kg/d</td>
</tr>
<tr>
<td>Adult dose = 2–6 mg/d</td>
</tr>
</tbody>
</table>

In postpubertal transgender female adolescents, the dose of 17β-estradiol can be increased more rapidly:
- 1 mg/d for 6 mo
- 2 mg/d

Induction of female puberty with transdermal 17β-estradiol, increasing the dose every 6 mo (new patch is placed every 3.5 d):
- 6.25–12.5 µg/24 h (cut 25-µg patch into quarters, then halves)
- 25 µg/24 h
- 37.5 µg/24 h
| Adult dose = 50–200 µg/24 h |

For alternatives once at adult dose, see Table 11.
Adjust maintenance dose to mimic physiological estradiol levels (see Table 15).

Induction of male puberty with testosterone esters increasing the dose every 6 mo (IM or SC):
- 25 mg/m²/2 wk (or alternatively, half this dose weekly, or double the dose every 4 wk)
- 50 mg/m²/2 wk
- 75 mg/m²/2 wk
- 100 mg/m²/2 wk
| Adult dose = 100–200 mg every 2 wk |

In postpubertal transgender male adolescents the dose of testosterone esters can be increased more rapidly:
- 75 mg/2 wk for 6 mo
- 125 mg/2 wk
| For alternatives once at adult dose, see Table 11. |
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**Table 9. Baseline and Follow-up Protocol During Induction of Puberty**

<table>
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<table>
<thead>
<tr>
<th>Every 6–12 mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>In transgender males: hemoglobin/hematocrit, lipids, testosterone, 25OH vitamin D</td>
</tr>
<tr>
<td>In transgender females: prolactin, estradiol, 25OH vitamin D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Every 1–2 y</th>
</tr>
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<tbody>
<tr>
<td>BMD using DXA</td>
</tr>
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</table>

BMD should be monitored into adulthood (until the age of 25–30 y or until peak bone mass has been reached).

For recommendations on monitoring once pubertal induction has been completed, see Tables 14 and 15.

Adapted from Hembree et al. (118).

Abbreviations: IM, intramuscularly; SC, subcutaneously.

Table 12. Masculinizing Effects in Transgender Males

<table>
<thead>
<tr>
<th>Effect</th>
<th>Onset</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin oiliness/acne</td>
<td>1–6 mo</td>
<td>1–2 y</td>
</tr>
<tr>
<td>Facial/body hair growth</td>
<td>6–12 mo</td>
<td>4–5 y</td>
</tr>
<tr>
<td>Scalp hair loss</td>
<td>6–12 mo</td>
<td>—</td>
</tr>
<tr>
<td>Increased muscle mass/strength</td>
<td>6–12 mo</td>
<td>2–5 y</td>
</tr>
<tr>
<td>Fat redistribution</td>
<td>1–6 mo</td>
<td>2–5 y</td>
</tr>
<tr>
<td>Cessation of menses</td>
<td>1–6 mo</td>
<td>—</td>
</tr>
<tr>
<td>Clitoral enlargement</td>
<td>1–6 mo</td>
<td>1–2 y</td>
</tr>
<tr>
<td>Vaginal atrophy</td>
<td>1–6 mo</td>
<td>1–2 y</td>
</tr>
<tr>
<td>Deepening of voice</td>
<td>6–12 mo</td>
<td>1–2 y</td>
</tr>
</tbody>
</table>

Estimates represent clinical observations: Toorians et al. (149), Asscheman et al. (156), Gooren et al. (157), Wierckx et al. (158).

aPrevention and treatment as recommended for biological men.

bMenorrhagia requires diagnosis and treatment by a gynecologist.
Table 13. Feminizing Effects in Transgender Females

<table>
<thead>
<tr>
<th>Effect</th>
<th>Onset</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redistribution of body fat</td>
<td>3–6 mo</td>
<td>2–3 y</td>
</tr>
<tr>
<td>Decrease in muscle mass and strength</td>
<td>3–6 mo</td>
<td>1–2 y</td>
</tr>
<tr>
<td>Softening of skin/decreased oiliness</td>
<td>3–6 mo</td>
<td>Unknown</td>
</tr>
<tr>
<td>Decreased sexual desire</td>
<td>1–3 mo</td>
<td>3–6 mo</td>
</tr>
<tr>
<td>Decreased spontaneous erections</td>
<td>1–3 mo</td>
<td>3–6 mo</td>
</tr>
<tr>
<td>Male sexual dysfunction</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Breast growth</td>
<td>3–6 mo</td>
<td>2–3 y</td>
</tr>
<tr>
<td>Decreased testicular volume</td>
<td>3–6 mo</td>
<td>2–3 y</td>
</tr>
<tr>
<td>Decreased sperm production</td>
<td>Unknown</td>
<td>&gt;3 y</td>
</tr>
<tr>
<td>Decreased terminal hair growth</td>
<td>6–12 mo</td>
<td>&gt;3 y</td>
</tr>
<tr>
<td>Scalp hair</td>
<td>Variable</td>
<td>100%</td>
</tr>
<tr>
<td>Voice changes</td>
<td>None</td>
<td>100%</td>
</tr>
</tbody>
</table>

Estimates represent clinical observations: Toorians et al. (149), Asscheman et al. (156), Gooren et al. (157).

*a* Complete removal of male sexual hair requires electrolysis or laser treatment or both.

*b* Familial scalp hair loss may occur if estrogens are stopped.

*c* Treatment by speech pathologists for voice training is most effective.
Evidence

Adolescents develop competence in decision making at their own pace. Ideally, the supervising medical professionals should individually assess this competence, although no objective tools to make such an assessment are currently available. Many adolescents have achieved a reasonable level of competence by age 15 to 16 years (119), and in many countries 16-year-olds are legally competent with regard to medical decision making (120). However, others believe that although some capacities are generally achieved before age 16 years, other abilities (such as good risk assessment) do not develop until well after 18 years (121). They suggest that health care procedures should be divided along a matrix of relative risk, so that younger adolescents can be allowed to decide about low-risk procedures, such as most diagnostic tests and common therapies, but not about high-risk procedures, such as most surgical procedures (121).

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<tr>
<th>Schedule</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mg/kg/d</td>
<td>17β-estradiol (oral)</td>
</tr>
<tr>
<td>15 mg/kg/d</td>
<td>Increasing dose every 6 mo</td>
</tr>
<tr>
<td>20 mg/kg/d</td>
<td>Adult dose = 2–6 mg/d</td>
</tr>
</tbody>
</table>

In postpubertal transgender female adolescents, the dose of 17β-estradiol can be increased more rapidly:

- 1 mg/d for 6 mo
- 2 mg/d

Induction of male puberty with testosterone esters increasing the dose every 6 mo (IM or SC):

- 25 mg/m^2/2 wk
- 50 mg/m^2/2 wk
- 75 mg/m^2/2 wk
- 100 mg/m^2/2 wk

Adult dose = 100–200 mg every 2 wk

In postpubertal transgender male adolescents, the dose of testosterone esters can be increased more rapidly:

- 75 mg/2 wk for 6 mo
- 125 mg/2 wk

For alternatives once at adult dose, see Table 11.

Adjust maintenance dose to mimic physiological estradiol levels (see Table 15).

Table 9. Baseline and Follow-up Protocol During Induction of Puberty

Every 3–6 mo
- Anthropometry: height, weight, sitting height, blood pressure, Tanner stages

Every 6–12 mo
- In transgender males: hemoglobin/hematocrit, lipids, testosterone, 25OH vitamin D
- In transgender females: prolactin, estradiol, 25OH vitamin D

Every 1–2 y
- BMD using DXA
- Bone age on X-ray of the left hand (if clinically indicated)

BMD should be monitored into adulthood (until the age of 25–30 y or until peak bone mass has been reached).

For recommendations on monitoring once pubertal induction has been completed, see Tables 14 and 15.
the secondary sex characteristics of the individual's designated gender, and (2) to place endogenous hormone levels consistent with the individual's gender identity by using the principles of hormone replacement treatment of hypogonadal patients. The timing of these two goals and the age at which to begin treatment with the sex hormones of the chosen gender is codetermined in collaboration with both the person pursuing transition and the health care providers. The treatment team should include a medical provider knowledgeable in transgender hormone therapy, an MHP knowledgeable in GD/gender incongruence and the mental health concerns of transition, a primary care provider able to provide care appropriate for transgender individuals. The physical changes induced by this sex hormone transition are usually accompanied by an improvement in mental well-being.

3.1. We recommend that clinicians confirm the diagnostic criteria of GD/gender incongruence and the criteria for the endocrine phase of gender transition before beginning treatment.

3.2. We recommend that clinicians evaluate and address medical conditions that can be exacerbated by hormone depletion and treatment with sex hormones of the affirmed gender before beginning treatment (Table 10).

3.3. We suggest that clinicians measure hormone levels during treatment to ensure that endogenous sex steroids are suppressed and administered sex steroids are maintained in the normal physiologic range for the affirmed gender.

Evidence

It is the responsibility of the treating clinician to confirm that the person fulfills criteria for treatment. The treating clinician should become familiar with the terms and criteria presented in Tables 1–5 and take a thorough history from the patient in collaboration with the other members of the treatment team. The treating clinician must ensure that the desire for transition is appropriate; the consequences, risks, and benefits of treatment are well understood; and the desire for transition persists. They also need to discuss fertility preservation options (see recommendation 1.3).

Transgender males

Clinical studies have demonstrated the efficacy of several different androgen preparations to induce masculinization in transgender males (Appendix A) (113, 114, 131–134). Regimens to change secondary sex characteristics follow the general principle of hormone replacement treatment of male hypogonadism (135). Clinicians can use either parenteral or transdermal preparations to achieve testosterone values in the normal male range (this is dependent on the specific assay, but is typically 320 to 1000 ng/dL) (Table 11) (136). Sustained supraphysiologic levels of testosterone increase the risk of adverse reactions (see section 4.0 “Adverse Outcome Prevention and Long-Term Care”) and should be avoided.

Similar to androgen therapy in hypogonadal men, testosterone treatment in transgender males results in increased muscle mass and decreased fat mass, increased facial hair and acne, male pattern baldness in those genetically predisposed, and increased sexual desire (137).

<table>
<thead>
<tr>
<th>Table 10. Medical Risks Associated With Sex Hormone Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transgender female: estrogen</td>
</tr>
<tr>
<td>Very high risk of adverse outcomes:</td>
</tr>
<tr>
<td>• Thromboembolic disease</td>
</tr>
<tr>
<td>Moderate risk of adverse outcomes:</td>
</tr>
<tr>
<td>• Macroprolactinoma</td>
</tr>
<tr>
<td>• Breast cancer</td>
</tr>
<tr>
<td>• Coronary artery disease</td>
</tr>
<tr>
<td>• Cerebrovascular disease</td>
</tr>
<tr>
<td>• Cholelithiasis</td>
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<tr>
<td>• Hypertriglyceridemia</td>
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<tr>
<td>Transgender male: testosterone</td>
</tr>
<tr>
<td>Very high risk of adverse outcomes:</td>
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<tr>
<td>• Erythrocytosis (hematocrit &gt; 50%)</td>
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<tr>
<td>Moderate risk of adverse outcomes:</td>
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<tr>
<td>• Severe liver dysfunction (transaminases &gt; threefold upper limit of normal)</td>
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<tr>
<td>• Coronary artery disease</td>
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<tr>
<td>• Cerebrovascular disease</td>
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<tr>
<td>• Hypertension</td>
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<tr>
<td>• Breast or uterine cancer</td>
</tr>
</tbody>
</table>
Psychological interventions for children and adolescents:

- Help families to accept and nurture their child
- Facilitate social support within the community
- Reduce child’s distress related to gender dysphoria or psychosocial difficulties
- Help youth develop positive self-concept
- Support families in managing anxiety about child’s psychosexual outcomes
- Avoid imposing binary view of gender; Support options for exploring gender expression/identity
- Support families and child in deciding how/when to socially transition
- Serve as an advocate to schools, courts, community, etc.
ABOUT OUR CLINIC
• Located within the outpatient Pediatrics Clinic (CSC, 3rd floor)
• Meets on Thursdays, AM session and PM session
• Staffed by Dr. Rhamy Magid (pediatrician), Dr. Courtney LeClair (psychologist), Ka Powell (psychology intern), Kari Abraham (nurse), Gina Davis (social worker)
  • Devoted admin support (Lola Dee) and medical assistant (Maria Gayles)
  • Affiliated psychologists and psychiatrists available for referral and consultation
• Serves children and teens ages 3 -18 +
• Primary care (e.g. well child checks, vaccinations)
• Mental health care (individual and family therapy, diagnostic assessment, and psychological evaluation)
• Pubertal suppression
• Gender-affirming hormone therapy
• Social work support
• Referrals to surgeons or subspecialists (e.g., reproductive health) as needed
• Referral to community supports or resources as needed
Intake appointments

• Meet initially with both psychologist and pediatrician
• Later, time alone with each of them, as well as with SW, Gina Davis, as needed
• If needed/desired – physical exam, labs, xray
Follow up appointments

- Meet with psychologist and/or pediatrician, as needed
- Labs, if needed
- Coordination of care may involve:
  - Referrals to surgeons, speech and language pathologists, therapists, etc.
  - Communication with schools, religious organizations, other community orgs
  - Communication with primary care doctors, other docs involved in care
  - Communication with therapists, case managers
  - Assistance with name change/gender marker change process
QUESTIONS WE HEAR FROM PARENTS
Is medical treatment safe?
Is medical treatment safe?

• Yes, gender affirming hormone therapy is generally regarded as safe, both in adults and adolescents.
Is medical treatment safe?

- Yes, gender affirming hormone therapy is generally regarded as safe, both in adults and adolescents.

- Study of 116 youth, mean age 14-25
  - Testosterone:
    - Increase in BMI, Hct, cholesterol. Decrease in HDL.
    - No change in liver enzymes, BUN, Cr, prolactin, TG, HbA1c, BP
  - Estradiol:
    - Decrease in ALT (still wnl). Increase in prolactin (still wnl).
    - No change in BMI, BP, AST, cholesterol, TG
Is medical treatment safe?

- Puberty blockers are also a safe and fully reversible treatment
Is medical treatment safe?

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• The Endocrine Society recommends treating adolescents with GD with puberty blocking medication
  • Extends the gender exploration period
  • Leads to improved physical and mental health outcomes
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• Long history of use in children with precocious puberty
• Biggest long term considerations are bone mineral density (BMD) and fertility.
  • BMD compromise appears to reverse with stopping blocker or starting hormone
  • Puberty blockade alone does not appear to interfere with fertility
How do children know their gender identity?
How do children know their gender identity?

• "Gender is an innate part of a person and it is not “decided” upon; rather, it is known or comes to be known." (Gender Identity Workbook for Children)

• Why do we only question how transgender children know their gender identity? Why don't we question how cisgender children know their gender identity?

• How did YOU know?

"If we believe and affirm a child when they are cisgender and stereotypical in their gender expression, what good reason is there to chronically reject a child’s persistent assertion of their gender or their expressions of their gender simply because we aren’t used to the diversity?" (Gender Identity Workbook for Children)
Are adolescents being influenced by their peers, media, etc, to have a transgender/gender diverse identity?
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• Most teens explore various facets of their identity, and gender identity is no exception. It is normal and healthy to explore one’s gender expression or identity, as teens figure out who they are.

• Part of our mental health assessment explores how a teen began thinking about their gender identity and how they continue to explore/view their identity. We assess this in order to ensure that a teen is not being unduly influenced by others.

• Often, a teen who is interested in exploring their gender identity is drawn to other teens who are interested in this as well.

• Sometimes seeing their peers who are further along in their gender exploration helps teens put the pieces together about who they are.
RESOURCES
Strategies for Adults to Promote Healthy Gender Development In Children

(Adapted from NACCHO website: http://essentialelements.naccho.org/archives/9103)

- Learn the key terminology related to gender (e.g., identity, expression), understand that gender is a spectrum rather than binary, and understand that gender identity is distinct from sexuality.
- Pay attention to the world through a "gender lens". Notice how gender is described in media, how behaviors/clothes/activities are gendered, how expectations vary based on gender. Decide whether you want these messages passed to children, and give deliberate information to contradict these messages if not.
- Explore your own gender to better understand your biases and stereotypes. Questions to ask yourself include (but are not limited to):
  - Growing up, did you think of yourself as a boy, a girl, both, neither or something different? How did you come to that recognition? When?
  - What messages did you receive from those around you about gender? Did those messages make sense to you?
  - How were kids who did not fit into expectations about gender treated by others (teachers, family, faith community, etc.)? By you?
  - How have your race, ethnicity, faith, class, community/sense of place influenced your gender?
  - How has your understanding of gender influenced how you parent your children?
• Create a family/clinic/school environment conducive to gender exploration. Allow access to varied types of clothing, hair styles, accessories, activities, etc, without pressure to choose.

• Talk with children about gender. Communicate openness and acceptance of gender diversity through your words and actions.
Transforming Families is a community where transgender, gender non-conforming, and questioning youth and their families come together to support each other in a safe, welcoming space. At our monthly gatherings, separate breakout groups for parents, kids, siblings, and teens provide the opportunity to meet and learn from other people traveling the same path.
### Transgender, Non-Binary and Gender Expansive Children (and Animals) in Diverse Picture Books

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Age Range</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000 Dresses.</td>
<td>Marcus Ewert</td>
<td>(1–3)</td>
<td>A modern fairy tale about becoming the person you feel you are inside. While Bailey dreams of beautiful dresses, no one wants to hear about it because he is a boy. Then an older girl comes along who is inspired by Bailey and they make beautiful dresses together.</td>
</tr>
<tr>
<td>The Adventures of Tulip, Birthday Wish Fairy.</td>
<td>S. Bear Bergman</td>
<td>(K–2)</td>
<td>Follow Tulip as he helps out with birthday wishes. When Tulip receives a wish from a child known as David who wishes to live as Daniela, he seeks the wise counsel of the Wish Fairy Captain.</td>
</tr>
<tr>
<td>Annie’s Plaid Shirt.</td>
<td>Stacy B. Davids</td>
<td>(Pre-K–2)</td>
<td>Annie loves her plaid shirt and wears it everywhere. One day her mom tells her that she must wear a dress to her uncle’s wedding. While Annie protests, her mom insists. Annie is miserable. She feels weird in dresses. Why can’t her mom understand? Annie has an idea. But will her mom agree?</td>
</tr>
<tr>
<td>Are You A Boy Or Are You A Girl?</td>
<td>Sarah Savage</td>
<td>(Pre-K–1)</td>
<td>Follow Tiny, a non-binary child who prefers gender-neutral pronouns and loves dressing up and playing football (soccer). When they start school, the other kids ask, “Are you a boy or are you a girl?” Tiny’s graceful answer introduces kids (and adults) to gender diversity and respecting those around you.</td>
</tr>
<tr>
<td>Backwards Day.</td>
<td>S. Bear Bergman</td>
<td>(K–1)</td>
<td>Andrea looks eagerly forward to Backwards Day every year, so she can turn into a boy for one day. But one year she doesn’t turn along with everyone else. She’s miserable. The next day, however, she turns into a boy and stays that way!</td>
</tr>
<tr>
<td>The Boy &amp; the Bindii.</td>
<td>Vivek Shraya</td>
<td>(Pre-K–2)</td>
<td>A five-year-old South Asian boy becomes fascinated with his mother’s bindi, the red dot commonly worn by Hindu women and wishes to have one of his own. Rather than chastise her son, she agrees to it, giving him permission to be more fully himself.</td>
</tr>
<tr>
<td>Bunnybear.</td>
<td>Andrea J. Loney</td>
<td>(Pre-K–1)</td>
<td>Although Bunnybear was born a bear, he feels more like a bunny. The other bears don’t understand him, and neither do the bunnies. Will Bunnybear ever find a friend who likes him just the way he is?</td>
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</tbody>
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BACKGROUND

1. A growing number of youth are realizing that they are transgender — a person whose gender is different from their birth sex (often called the sex that they were “assigned at birth.”)

2. For some parents/guardians, it is a big surprise to learn that a child is transgender, while for others, it makes sense right away.

3. Some parents/guardians feel confused, sad, or disconnected when they first learn that a child is transgender and feel that they need to get to know their child again.

4. Even when parents/guardians are not surprised or sad, many feel worried about their child’s safety, happiness, and future. Most parents/guardians feel unprepared to help their child navigate life as a different gender, particularly in relation to peers, siblings, school administrators, family, and faith communities.

5. You, your child, and your family deserve love and support. Many families are uncertain about how to find knowledgeable, affirming health care, counseling resources, friends and role models for their child, and support for themselves — especially early on after learning that a child is transgender. Many families find that the beginning of this journey is the hardest and that, with time and support, life gets easier.

THINGS TO SAY TO YOUR CHILD

1. I don’t understand this yet, but I am trying, and, I love you.

2. What name do you want me to call you? What gender pronouns do you use (he/him/his, she/ her/her/hers, they/them/their or another pronoun)? I might mess up sometimes, but I will try.

3. You deserve to be loved and respected; I love and respect you. If anyone hurts or disrespects you, come to me and we will figure it out together.

4. You deserve to feel good about yourself, and I support you. If you feel sad or worried, come to me and we will figure it out together.

5. You will always have a place to live, even if we argue.

6. How do you feel the same? How do you feel different? What worries do you have?

7. You may have known for a while that you are transgender, and you may be in a rush to start living as your true gender, but this is new for me. Please try to be patient while I catch up because I want to and I will.

8. Let’s remember to have fun together even when things are hard. What things would you like to
QUESTIONS?