

Management of the Transgender Adolescent

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Transgender individuals are people whose self-identification as male, female, both, or neither (gender identity) does not match their assigned gender (identification by others as male or female based on natal sex). The phenomenon of transgender is uncommon, but as more media attention is directed toward the subject, more adolescents and young adults are “coming out” at an earlier age. Transgender adolescents are an underserved and poorly researched population that has very specific medical and mental health needs. Primary care physicians are in a unique and powerful position to promote health and positive outcomes for transgender youth. While not all transgender adolescents desire phenotypic transition to match their gender and physical body, most do. The process of transitioning is complex and requires the involvement of both a mental health therapist specializing in gender and a physician. Finding comprehensive medical and mental health services is extremely difficult for these youth, who are at risk for multiple psychosocial problems including family and peer rejection, harassment, trauma, abuse, inadequate housing, legal problems, lack of financial support, and educational problems. This review supports and describes timely medical intervention to achieve gender/body congruence paired with affirmative mental health therapy as an appropriate approach to minimize negative health outcomes and maximize positive futures for transgender adolescents.

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Transgender is an umbrella term that is used to describe individuals whose gender self-identification or expression transgresses established gender norms. Specifically, it is the state of one's *gender identity* (self-identification as male, female, both, or neither) not matching one's *assigned gender* (identification by others as male or female based on natal sex).¹ The identity and behavior of

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transgender individuals are socially and medically stigmatized, resulting in a notably underserved population at high risk for significant morbidity and mortality. Transgender patients are often assigned a psychiatric diagnosis of

gender identity disorder (GID) when they are experiencing dissonance between their birth sex and their gender identity.

Health care professionals can benefit from an understanding of gender-related terms that may be used by other professionals, patients, and community members (**Table 1**)²⁻⁵ as well as knowledge of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*⁵ (DSM-IV-TR) criteria for GID in adolescents and adults (**Table 2**). There are proposed changes to these diagnoses for the upcoming DSM-5^{6,7} (<http://www.dsm5.org/PROPOSEDREVISIONS/Pages/SexualandGenderIdentityDisorders.aspx>). This article addresses considerations in the management of transgender adolescents. There is little consensus about the approach to children with

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Table 1. Gender-Related Terms That May Be Used by Other Professionals, Patients, and Community Members^a

Term	Meaning
Gender	Psychological, behavioral, or cultural characteristics associated with maleness or femaleness.
Gender role	Behaviors, attitudes, and personality traits that a society, in a given historical period, designates as masculine or feminine—that is more typical of male or female social role.
Gender identity	A person's basic sense of being male, female, or of indeterminate sex; the sameness, unity, and persistence of one's individuality as male, female, or ambivalent in greater or lesser degree, especially as it is experienced in self-awareness and behavior.
Gender expression	The way in which a person acts to communicate gender within a given culture.
Gender variance	Displaying or expressing behaviors, interests, or characteristics that do not conform to dominant cultural norms for one's biological sex. ⁴
Sexual orientation	The tendency to be sexually attracted to persons of the same sex, opposite sex, both sexes, or neither sex.
Gender dysphoria	The aversion to some or all of physical characteristics or social roles that connote one's own biological sex. ⁵
Transgender	The behavior, appearance, or identity of persons who cross, transcend, or do not conform to culturally defined norms for persons of their biological sex. <i>Transgender</i> is an umbrella term that came into use due to dissatisfaction with the categorical term of <i>transsexual</i> and recognizes multiple gender identities that do not fit neatly into the rigid boxes of male or female. ² Transgender includes a spectrum of identities such as transsexual, androgynous, bigendered, and gender-queer.
Transgender female	Natal males who have a gender identity that is female. Transgender females may or may not use hormones or surgery to assist in transition.
Transgender male	Natal females who have a gender identity that is male. Transgender males may or may not use hormones or surgery to assist in transition.
Transsexual	The desire to live and be accepted as a member of the opposite sex, usually accompanied by a sense of discomfort with or inappropriateness of one's anatomical sex, and a wish to have surgery and hormonal treatment to make one's body as congruent as possible with one's preferred sex.
Gender identity disorder	A psychiatric diagnosis defined in the <i>DSM-IV TR</i> . ⁵ Its principal criteria are gender dysphoria and a strong and persistent cross-gender identification, resulting in clinically significant distress or impairment in social or occupational functioning.

Abbreviations: APA, American Psychological Association; *DSM-IV-TR*, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*.
^aFrom the APA Report of the APA Task Force on Gender Identity and Gender Variance³ except where noted.

gender variance, and management of these children is a topic for a separate review.

EPIDEMIOLOGIC FACTORS OF GID

Estimating the prevalence of GID for adolescents and adults is very difficult due to the lack of population-based studies. Estimates of adults with GID have generally been based on the numbers of individuals who have had sexual reassignment operations or those seeking services at specialized clinics (mostly in Western Europe). There are serious challenges to estimating the prevalence of GID; social stigma around GID care in many countries, including the United States, limited access to funding for health care, the ability of many people to live stealthily with or without hormonal treatments often obtained outside the legal health care system, and finally, the issue of accurately defining GID. (A binary system of gender being male or female is currently used, but there is increasing acceptance of a nonbinary approach to gender identification that could make calculation of prevalence even more complicated.)

The classic estimate for prevalence of GID comes from the 1994 *DSM-IV*⁸, which reported 1:30 000 natal males and 1:100 000 natal females. A 2009 review by Zucker and Lawrence⁹ concluded that the prevalence may be 3 to 8 times the numbers reported in the *DSM-IV*,⁸ based mostly on reports from Western European clinics.⁹ These estimates would clearly be a minimum based on the limitations stated in the previous paragraph. Intriguing is work from Asia,¹⁰ where prevalence in Singapore was estimated at 1:2900 males and 1:8300 females and in a Thai¹¹ study, with prevalences of 1:180 and 1:3000, respectively.

In general, what we experience is that (1) GID seems to be slightly more prevalent in male to female patients (transgender females) than in female to male patients (transgender males); (2) estimates of prevalence seem to be increasing over time, which likely reflects increased access to care; and (3) population-based studies are needed to truly capture the hidden populations not accessing formalized care.

ETIOLOGIC FACTORS OF GID

The etiologic factors associated with GID are unknown and clearly very complicated. Research includes intrauterine hormone exposure, childhood psychologic factors (usually based on child-parent interactions), anatomic differences in brain structure and activation, and subtle genetic variations. A review of factors can be found in an article¹² examining whether GID is a psychiatric condition vs a natural variation and an earlier review on the biology of human psychosexual differentiation.¹³ It is likely that the origin of GID is multifactorial.

DEVELOPMENT

Gender identity begins to develop in early childhood. Traditional views of gender identity have been categorical, asserting that one is either male or female and that this is fixed over time. However, recent theoretic and empiric work suggest that multidimensional models that view gender on a continuum and allow for fluidity over time and context best capture the complexities of gender identity.^{2,14}

Cross-gender identification often emerges in childhood. A more developed psychologic sense of gender iden-

Table 2. DSM-IV-TR Criteria for Gender Identity Disorder (302.6 Gender Identity Disorder in Children; 302.85 Gender Identity Disorder in Adolescents or Adults)⁵

Criteria

- A. A strong and persistent cross-gender identification (not merely a desire for any perceived cultural advantages of being the other sex). In children, the disturbance is manifested by 4 (or more) of the following:
1. Repeatedly stated desire to be, or insistence that he or she is, the other sex;
 2. In boys, preference for cross-dressing or simulating female attire; in girls, insistence on wearing only stereotypical masculine clothing;
 3. Strong and persistent preferences for cross-sex roles in make-believe play or persistent fantasies of being the other sex;
 4. Intense desire to participate in the stereotypical games and pastimes of the other sex; or
 5. Strong preference for playmates of the other sex.
- In adolescents and adults, the disturbance is manifested by symptoms such as a stated desire to be the other sex, frequent passing as the other sex, desire to live or be treated as the other sex, or the conviction that he or she has the typical feelings and reactions of the other sex.
- B. Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex.
- In children, the disturbance is manifested by any of the following: In boys, assertion that his penis or testes are disgusting or will disappear or assertion that it would be better not to have a penis, or aversion toward rough-and-tumble play and rejection of male stereotypical toys, games, and activities; in girls, rejection of urinating in a sitting position, assertion that she has or will grow a penis, or assertion that she does not want to grow breasts or menstruate, or marked aversion toward normative feminine clothing.
- In adolescents and adults, the disturbance is manifested by symptoms such as preoccupation with getting rid of primary and secondary sex characteristics (eg, request for hormones, surgery, or other procedures to physically alter procedures to physically alter sexual characteristics to simulate the other sex) or belief that he or she was born the wrong sex.
- C. The disturbance is not concurrent with a physical intersex condition.
- D. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Abbreviation: DSM-IV-TR, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*.

tity usually emerges in adolescence, although as transgender persons become more visible in everyday life and in the media, youth may examine and label their gender identities at earlier ages than in the past.

Most children aged 5 to 12 years diagnosed as having GID do not persist in having GID as adolescents; rather, most become homosexual or bisexual adolescents and adults.^{15,16} However, most adolescents and adults with GID report that they experienced cross-gender behavior and identity as children, and many teenagers diagnosed as having GID do have persistence of GID into adulthood.^{3,17}

A full discussion of whether gender identity variants are disorders is beyond the scope of this article; however, it is important for adolescent health care professionals to be aware that a controversy exists around proposed changes to the GID diagnoses for the upcoming DSM-5.^{6,7} Those who advocate for removal of GID from the DSM-5 cite concerns about harm to transgender persons due to stigmatization and increased distress and risk; they see gender identity as analogous to homosexuality, which was removed from the DSM in 1973.^{18,19} Those in favor of the GID diagnosis remaining in the DSM-5 assert that it does meet criteria of being a mental disorder and that without the GID diagnosis, transgender persons will be unable to receive needed health and mental health care services required for accurate diagnosis and support through the transitioning process.³

MENTAL HEALTH

Research suggests that simply identifying an individual as transgender does not necessarily indicate the existence of other mental health concerns.³ However, many transgender adolescents experience significant psychosocial and mental health concerns, which are likely due to the challenges faced by youth with nonconforming gender identity and expression. Psychosocial concerns for transgender youth include family rejection, peer rejection, harass-

ment, trauma, abuse, inadequate housing, legal problems, lack of financial support, and educational problems. Transgender persons experience alarmingly high rates of verbal harassment, physical violence, and economic discrimination; for youth, this often occurs at home and at school.³ Atypical gender expression in childhood has been correlated with more experiences of abuse and mental health problems in childhood and adolescence.²⁰

Given these difficulties, it is not surprising that many transgender youth face significant mental health issues including depression, suicidality, anxiety, body image issues, substance abuse, and posttraumatic stress disorder. Families play a key role in the lives of transgender youth. Supportive families protect and buffer youth from negative outcomes and promote positive health and well-being; rejecting and abusive families negatively affect youth and contribute to poor health and mental health outcomes. Family members go through their own process of adjusting to a child's transgender identity and typically experience the following stages: denial/shock, anger/fear, grief, self-discovery, acceptance, and pride/advocacy.^{4,21} Families can obtain support from organizations such as Trans Youth Family Allies.²²

PSYCHOLOGIC TREATMENT APPROACHES

Treatment approaches for gender identity issues in youth generally fall into 1 of 3 categories. The first of these is affirming approaches that are based on certain fundamental concepts, including the idea that being transgender is not a mental illness. Affirmative approaches actively promote exploration of gender identity and assist adolescents and their families in learning about and engaging in appropriate gender transitioning interventions, such as social transitioning and hormone therapy. The second treatment approach involves supportive therapies, which generally endorse a "wait and see" approach on how gender identity unfolds as the child ages; supportive interventions are

not focused on gender specifically and do not advocate any gender-related interventions. Finally, “corrective” treatment strategies aim to align gender identity with biological sex. The corrective strategy is the treatment that has been researched in the most depth; however, many experts express serious concern about how “success” is defined in these studies and the harm done to youth by invalidating their sense of self.^{3,23} Research also suggests that interventions that increase gender conformity pressure might be harmful and increase distress, whereas approaches that increase comfort with and acceptance of gender are likely to be helpful.^{4,23}

We, plus the majority of other gender specialists, believe that affirming strategies are most appropriate for adolescents and young adults. In using affirming treatment strategies, mental health therapists and physicians do not define adolescents as transgender but rather affirm their sense of self, allow for exploration of gender and self-definition, and give the message that it is entirely acceptable to be whoever you turn out to be. In 2006, Vancouver Coastal Health, Transcend Transgender Support & Education Society, and the Canadian Rainbow Health Coalition published guidelines for caring for transgender adolescents.^{17,24} These guidelines advise a supportive, affirming treatment approach with an interdisciplinary team that includes physicians and mental health professionals.

While many transgender adolescents function well and do not have serious mental health concerns, referral to an experienced psychologist, social worker, or other mental health professional is recommended. Therapists who do not have experience in caring for transgender adolescents are advised to seek support and consultation from those who have expertise. Therapy is recommended to ensure that transgender youth have the support they need and a safe place to explore their identities and process the transitioning experience—not because they are inherently disturbed.

More research on psychologic interventions for gender-variant children and adolescents is greatly needed, particularly regarding affirmative treatment models. To our knowledge, no treatment outcome studies have been conducted with adolescents who identify as transgender.³ Affirmative treatment models that are promising include individual therapy, youth group therapy, parent group therapy, family therapy, and narrative family therapy.^{17,23,25}

MEDICAL TREATMENT

The first step in therapy for transgender adolescents is confirmation of the diagnosis of GID by a mental health professional. Involvement of a mental health therapist, ideally one experienced with GID, is essential for helping patients move smoothly and successfully through the transition process.

The most widely used guidelines for the diagnosis and treatment of GID come from the World Professional Association for Transgender Health, formerly the Harry Benjamin International Gender Dysphoria Association; the Vancouver Coastal Health, Transcend Transgender Support & Education Society¹⁷; and the protocols published and practiced at the Amsterdam Gender Clinic in the Netherlands.²⁶ In June 2009, The Endocrine Soci-

ety²⁷ released the first guidelines for treatment of transsexual persons to originate from the United States. The guidelines were cosponsored and received input from the European Society of Endocrinology, European Society for Paediatric Endocrinology, Lawson Wilkins Pediatric Endocrine Society, and the World Professional Association for Transgender Health.

It is often difficult for transgender adolescents and their families to find comprehensive medical and mental health services. The low prevalence of children and adolescents seeking care, combined with the historical refusal of most insurance providers to pay for care, has led to inadequate research in the United States, thus making care for this population uncommon. Due to the tremendous paucity of research in transgender youth, specific medication regimens are neither standardized nor approved by the Food and Drug Administration for treatment of GID. The Amsterdam Gender Clinic²⁶ has demonstrated reasonable safety and thus far good outcomes in a small cohort of white youth. Increased media attention is leading to greater numbers of transgender youth coming out, thus making understanding the diagnosis and treatment options for these patients imperative for health care professionals.

THE TRANSITIONING PROCESS

Phenotypic transitioning occurs in phases: reversible, partially reversible, and irreversible.

Reversible

The reversible portion of transition includes the adoption of preferred gender hairstyles, clothing, and play, perhaps adopting a new name, and suppression of puberty with gonadotropin-releasing hormone (GnRH) analogues. The portions of the reversible phase that do not involve suppression of puberty sometimes occur before the age of 10. Parents of younger children with GID may work with families, friends, teachers, and administrators to create a safe environment for children to present in their preferred gender. Allowing transition before the onset of puberty is controversial and should be determined by a close evaluation of the potential risks and benefits in a decision-making process among health care professionals, parents, and children. Before the onset of puberty, no hormonal intervention is necessary. The beginning signs of puberty in transgender children often bring increased body dysphoria and the potential development of a whole host of comorbidities including depression, anxiety, illicit substance use, high-risk sexual behaviors, and increased suicidality. The guidelines from The Endocrine Society call for the suppression of puberty at Tanner stage 2 for patients when GID is diagnosed.²⁷ This suppression can be achieved by using GnRH analogues in a similar manner to the suppression of precocious puberty. To date, it has been difficult to get insurance plans to cover the cost of GnRH analogue therapy because the care for GID is frequently excluded from plans. Because patients are potentially starting GnRH analogue therapy early in the pubertal process, the common adverse effects of these agents are generally not ex-

pected. The most common concern with the administration of GnRH analogues is the effect on height and bone density. In a study²⁶ of the Dutch protocol that calls for the administration of GnRH analogues starting at age 12 and moving to concomitant administration of cross-gender hormones at age 16, bone density was diminished at the time of GnRH analogue administration but was found to catch up when appropriate cross-gender hormone therapy was started. Height was increased for female to male patients by delaying biologic female puberty and was decreased in male to female patients with the administration of estrogen promoting closure of the growth plates. This effect is generally desirable to both populations. It is unlikely that GnRH analogue administration alone would affect fertility. However, initiating cross-gender hormones after the use of GnRH analogues is likely to prevent the maturation of the gonads. Early and effective treatment with cross-gender hormones clearly precludes the ability to bank sperm or ova. Parents, with input from their child, are generally capable of making an informed consent pertaining to these complex medical decisions.²⁸ There are complicated logistical factors surrounding the initiation of GnRH analogues and cross-gender hormones. Ideally, adolescents should be treated early to facilitate psychotherapy by easing distress, “buy time” to avoid reactive depression, and prevent unwanted secondary sex characteristics, thereby reducing the need for future medical interventions.

Partially Reversible Treatments

The partially reversible phase of transitioning involves the use of cross-gender hormone therapy. While The Endocrine Society guidelines²⁷ recommend deferring partially reversible treatments like estrogen and testosterone therapy, it is often not pragmatic to delay the initiation of treatment with cross-gender hormones until the patient becomes 16 years of age. Delay can lead to similar emotional concerns that have been associated with constitutional delay of puberty. While this approach is unstudied, we advocate using age 16 as a guideline and consider the earlier initiation of cross-gender hormones on a case-by-case basis after careful review of the potential risks and benefits with the youth and parents. Ultimately, the objective of medical treatment is appropriate masculinization or feminization of patients to achieve a gender phenotype that matches their gender identity as closely as possible. Absolute dichotomy in gender (wanting to appear 100% male or 100% female) is not always the goal for every patient with gender dysphoria.¹⁷

Cross-gender hormone therapy is indicated in patients who have been assessed for readiness by a mental health care professional as well as by a physician whose role is to evaluate patients for medical readiness (including exclusion of medical conditions for which hormone treatment would be contraindicated). For female to male patients (transgender males), testosterone administration is indicated; for male to female patients (transgender females), estrogen, usually in combination with an androgen inhibitor such as spironolactone, would be appropriate. The use of progesterone in these patients varies depending on the patient and the physician and may lead to

unwanted weight gain.¹⁷ The benefits of cross-gender hormone use must be weighed carefully against the potential adverse effects, including the consideration that very little is known about the use of hormones in this population. Patients and families must be given explicit information about what is known and what is not known to ensure a genuine consent process for treatment.

In patients transitioning from male to female (transgender females), ideal treatment would start early enough to bypass the development of male secondary sexual characteristics and allow individuals to progress through puberty on a female trajectory. If a patient begins treatment after puberty is complete, or near complete, administration of estradiol and androgen blockers will not affect voice pitch, laryngeal prominence, height, or facial hair growth. Administration of cross-gender hormones in transgender female patients would be expected to induce breast growth (irreversible), change body fat composition (reversible), and decrease facial and body hair (reversible). Adverse effects might include development of deep venous thrombophlebitis, prolactinoma, hypertension, liver disease, decreased libido, and increased risk of breast cancer. Androgen blockers can cause hyperkalemia and decreased blood pressure. Most transgender females receiving cross-gender hormones will experience a decrease in testicular mass, penis size, and fertility (irreversible).²⁹ Estradiol is available in intramuscular injection, oral, and transdermal formulations. Transdermal and injectable forms of estradiol have been demonstrated to have lower adverse effect profiles in adults. However, our experience is that adolescents tolerate oral estradiol well and it is commonly the most cost-effective of these formulations.

In patients transitioning from female to male (transgender male), ideal treatment would start early enough to bypass the development of female secondary sexual characteristics; however, the guidelines recommend starting GnRH analogues at Tanner stage 2 or 3. Some natal females may have started menses, and most will have started breast tissue development. The use of GnRH analogues may lead to the regression of the early stages of puberty,²⁶ but large-scale studies are needed before definitive statements can be made about this aspect of treatment. The administration of testosterone in transgender male patients will induce a drop in the voice, clitoral enlargement (irreversible), facial and body hair growth, cessation of menses, redistribution of fat (all reversible), and increase in lean muscle mass (reversible). Potential adverse effects might include hyperlipidemia, polycythemia, male pattern baldness (if a genetic predisposition exists), acne, and infertility.²⁹

Adolescents undergoing cross-gender hormone therapy need ongoing care, including monitoring for potential medical complications as well as an assessment of success in masculinization or feminization. In the first year of therapy, patients should be monitored every 3 months, particularly while their hormone dosages are being adjusted, to maximize desired effects and minimize negative effects. If patients achieve stability in their dosing regimen and the transitioning process is progressing adequately, they can be monitored less often. More frequent monitoring should be considered in patients who

are younger or have medical or mental health conditions that might be exacerbated by cross-gender hormone use. Specific dosing and monitoring guidelines are beyond the scope of this article; interested individuals should refer to the American Endocrine Society guidelines or the Vancouver protocols.^{17,26,27}

Irreversible Phase

Several sexual reassignment surgical procedures are available to create a more masculine or feminine appearance. These include vaginoplasty, labioplasty, tracheal shave, liposuction, breast implants, jaw shaping, and orchiectomy for transgender females; for transgender males, mastectomy, construction of neoscrotum, metoidioplasty, or phalloplasty can be performed.³⁰ Female to male patients also may choose hysterectomy and oophorectomy later in adulthood. It is difficult to get surgeons to perform sexual reassignment operations in patients younger than 18 in the United States, although mastectomies in transgender males younger than 18 are becoming more common.

HEALTH CARE PROFESSIONALS' SUPPORT OF TRANSGENDER YOUTH

There is a great need for broad-based education of health care professionals on gender identity issues in adolescents. A recent qualitative study examining transgender youths' concerns and health care needs concluded that, to reduce vulnerability and meet the needs of transgender youth, all health care and social service professionals' training must include education about transgender persons.³¹

Primary care physicians are likely to be the first health care professional that a family comes to for help for their gender-variant child or adolescent. Health care professionals are in a unique and powerful position to promote health and positive outcomes for transgender youth. The first step is to take the initiative to learn about transgender youth and issues. It is very important for primary care physicians to examine their own feelings, attitudes, and beliefs about gender-variant persons and consider how these affect their work with youth. Using supportive, affirming language with gender-variant youth, such as using the patient's preferred name and pronouns, can make all the difference between a trustworthy physician and one that makes a youth feel misunderstood, rejected, and unwelcome. In addition, medical professionals can be effective advocates for their transgender patients' needs and rights in settings outside of the home, such as clinics and schools.

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