

Transsexualism: Clinical guide to gender identity disorder

Treatment needs include psychiatric comorbidities

Kari Ann Martin, MD

Instructor of psychiatry
Department of psychiatry and psychology
Mayo Clinic, Scottsdale, AZ

A dults with gender identity disorder (GID)—commonly termed transsexualism—may seek psychiatric assessment and treatment for a variety of reasons. Some—but not all—might be candidates for hormone replacement therapies or sex reassignment surgery (SRS). For those with gender dysphoria, psychological assessment and psychotherapy are suggested and sometimes required.

Your role in the GID patient's gender exploration and transition must be tailored to his or her gender identity and individual circumstances. For patients who are not candidates for surgery or cannot afford it, you may assist in exploring options for living with one's gender identity.

WHAT IS GID?

Gender identity disorder is a rare, complex condition in which individuals of unambiguous genotype and phenotype identify with the opposite gender. One in 54,000 individuals are estimated to have GID:



© 2007 IMAGES.COM/CORBIS

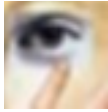


Table 1

DSM-IV-TR criteria for gender identity disorder

Criterion A	A strong and persistent cross-gender identification defined as the desire to be or the insistence that one is of the other sex (must not be merely a desire for any perceived cultural advantages of being the other sex)
Criterion B	Persistent discomfort with one's assigned sex or a sense of inappropriateness in the gender role of that sex
Criterion C	The disturbance is not concurrent with a physical intersex condition (such as partial androgen insensitivity syndrome or congenital adrenal hyperplasia)
Criterion D	The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

Source: Reference 2

- 75% are biologic males desiring reassignment to female gender (MTF)
- 25% are females desiring to be male (FTM).¹

Persons with GID who undergo sex reassignment surgery represent the severe, dramatic end of a wide spectrum of cross-gender identifications and behaviors that DSM-IV-TR (Table 1)² and the International Classification of Diseases (Table 2, page 84)³ have attempted to classify. GID does not describe intersex conditions such as incomplete masculinization or feminization syndromes with ambiguous genitalia.

Persons with GID may find ways of living with nontraditional or cross-gendered identities that do not involve altering their bodies. Others feel they must create a physical body that reflects their core gender identity.

Epidemiologic studies of GID are rare, but in a survey by Rachlin et al⁴ of 23 MTFs and 70 FTMs:

- most underwent hormone therapy (64% of MTFs, 80% of FTMs) and/or name change (45% of MTFs, 72% of FTMs)

- none of the MTFs had breast augmentation, whereas 52% of FTMs had undergone mastectomy and reconstruction and another 33% were actively planning it

- 3% of FTMs had genital surgery, 16% were planning it, and 29% had decided definitely not to have it

- 9% of MTFs decided definitely not to have genital surgery; 23% had undergone genital surgery, and another 35% were actively planning it.

The MTF/FTM differences may reflect the efficacy of cross-hormone therapy in inducing breast growth in MTFs and the cosmetic disappointment, risks, and costs of phalloplasties for FTMs.

For patients who pursue genital surgery, the incidence of postoperative regret is low: <1% of FTMs; 1% to 1.5% of MTFs.⁵

Biologic basis. GID's cause remains unknown. Organic differences in brain anatomy have been identified in patients with GID. Zhou et al⁶ showed that the volume of the central subdivision of the bed nucleus of the stria terminalis (BSTc)—a brain area essential for sexual behavior—is larger in men than in women. A female-sized BSTc was found in MTF GID patients.

Research, mainly on biologic boys, indicates that GIDs are usually associated with behavioral difficulties, relationship problems with peers and parents, and—most notably—separation anxiety disorder.⁷ An audit of the files of 124 children and adolescents with GID showed that 42% experienced loss of one or both parents, mainly through separation.⁸

Psychiatric comorbidity. Studies using standardized diagnostic instruments to assess psychiatric comorbidity in GID are rare. A study of 31 patients with GID found that many met diagnostic criteria for lifetime psychiatric comorbidity, including:

- 71% for Axis I disorders (primarily mood and anxiety disorders)
- 42% for comorbid personality disorders, primarily a cluster B diagnosis
- 45% for substance-related disorders
- 6.5% for psychotic disorders
- 3.2% for eating disorders.⁹

Persons with GID transgress the traditional binary gender system and as a consequence experience discrimination in employment, social services and housing.¹⁰ Jones and Hill¹¹ have proposed that these experiences result in vulnerability to Axis I disorders.

TREATING PATIENTS WITH GID

Psychotherapy. GID treatment decisions are made without clear prospective data. Standards of care are determined by the World Professional Association for Transgender Health (WPATH).¹² Psychotherapy is often given before SRS but is not required. The therapist is left to determine the treatment terms and goals.

Your role in treating patients with GID goes beyond making an accurate diagnosis, identifying comorbid psychopathology, and instituting a treatment plan. Other tasks include:

- counseling the patient about the range of treatment options and their implications
- engaging in psychotherapy
- ascertaining eligibility and readiness for hormones and surgical therapy
- making formal recommendations to medical and surgical colleagues
- documenting the patient's relevant history in a letter of recommendation
- educating support systems
- being available for follow-up.

continued

WORKING TRUTHS

JOB
PLACEMENT
AGENCY

Adults with ADHD
were 3X more likely
to be unemployed*¹

The consequences may be serious.
Screen for ADHD.

Find out more at
www.consequencesofadhd.com
and download patient support materials,
coupons, and adult screening tools.

*Data compiled from a study comparing the young adult adaptive outcome of nearly 140 patients (ADHD and non-ADHD control) followed concurrently for at least 13 years.

Reference: 1. Barkley RA, Fischer M, Smallish L, Fletcher K. Young adult outcome of hyperactive children: adaptive functioning in major life activities. *J Am Acad Child Adolesc Psychiatry.* 2006;45:192-202.

Shire

Shire US Inc.
...your ADHD Support Company™

©2006 Shire US Inc., Wayne, Pennsylvania 19087

A1408

10/06

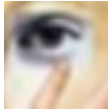


Table 2

ICD-10 diagnoses for gender identity disorder in adults

Diagnosis	Criteria
Transsexualism	<ol style="list-style-type: none"> 1. Desire to live and be accepted as a member of the opposite sex, usually accompanied by the wish to make his or her body as congruent as possible with the preferred sex through surgery and hormone treatment 2. Transsexual identity has been present persistently for at least 2 years 3. Is not a symptom of another mental disorder or a chromosomal abnormality
Dual-role transvestism	<ol style="list-style-type: none"> 1. Individual wears clothes of the opposite sex to experience temporary membership in the opposite sex 2. No sexual motivation for cross-dressing 3. Individual does not desire a permanent change to the opposite sex
Other gender identity disorders	No specific criteria; could be used for persons with an intersexed condition
Gender identity disorder, unspecified	No specific criteria; could be used for persons with an intersexed condition

Source: Adapted from *International Classification of Diseases*, 10th ed. (ICD-10)

Because these tasks may be daunting for one clinician, you might consider referring the patient to a gender disorder clinic (see *Related resources*, page 91).

Candidates for triadic therapy. For appropriately screened adults with severe GID, the therapeutic approach relies on triadic therapy:

- a 3-phase approach centered around real-life experience in the desired role
- hormones of the desired gender
- and surgery to change the genitalia and secondary sex characteristics.

HORMONE THERAPY

WPATH has established eligibility and readiness

criteria for HRT in patients with GID (Table 3). Administering cross-sex hormones (testosterone in women; estrogens in men) brings about important physical changes as well as psychological relief. The prescribing physician need not be an endocrinologist but should become well-versed in relevant data.

Options include oral, injectable, and transdermal formulations (Table 4, page 86); physician discretion and patient preference determine the formulation used.

IM testosterone therapy (standard dose 200 to 250 mg/2 weeks) is complicated by fluctuating serum testosterone levels. Fatigue or irritability can occur when serum testosterone levels are low (on

days 10 to 17). Oral testosterone suppresses the menstrual cycle in only 50% of FTMs.

Transdermal testosterone is an option for biologic females who are leery of injections.¹³ Patches result in stable testosterone levels in the male range but may cause skin irritation in >50% of patients. Use transdermal estrogen in males with clotting abnormalities or who are age >40.

Medical work-up. Basic medical monitoring includes serial physical examinations, vital signs, weight measurements, laboratory assessment, and screening for pelvic malignancies.

For biologic males receiving estrogen, pre-treatment laboratory assessment includes free

testosterone, fasting glucose, liver function tests, and complete blood count, with reassessment at 6 and 12 months and annually thereafter. Obtain pretreatment prolactin levels and repeat annually. If hyperprolactinemia fails to develop within 3 years, no further measurements are necessary. Monitor for breast and prostate cancer, and instruct patients to perform self-breast exams. Following orchiectomy, estrogen doses can be reduced by one-third to one-half.

For biologic women receiving androgen, obtain pretreatment liver function tests and complete blood count, then reassess at 6 months, 12 months, and annually thereafter. Do yearly liver palpation examinations.

Physiologic changes.

Biologic males treated with estrogens can expect breast growth, redistribution of fat in keeping with female habitus, decreased upper body strength, decreased body hair, retardation of male pattern balding, diminished testicular size, and decrease in erection firmness and frequency. MTF transsexuals require electrolysis to remove facial hair, as HRT does not do this.

Biologic females treated with testosterone can expect deepening of the voice, clitoral enlargement, mild breast atrophy, increased facial and body hair and male-pattern baldness, increased

upper body strength, weight gain, and decreased hip fat.

With effective and continuous dosages, most changes begin in 2 to 4 months, start becoming irreversible in 6 to 12 months, start to level off in 2 years, and are mostly complete in 5 years. Men with insufficient breast growth following HRT may pursue breast augmentation surgery.

Voice changes. Hormone therapy generally is presumed to “masculinize” the voice of FTM transsexuals. In one series, after initiation of hor-

continued

Table 3
WPATH criteria for hormone replacement therapy*

<p>Eligibility criteria 3 criteria exist</p>	<ol style="list-style-type: none"> 1. Patient is at least age 18 2. Patient understands what hormones medically can and cannot do and their social benefits and risks 3. Patients has had either: <ol style="list-style-type: none"> a. Documented real-life experience of 3 months before the administration of hormones; or b. Psychotherapy after initial evaluation of a duration specified by the mental health professional (usually 3 months) <p>Providing hormones to patients who have not fulfilled criterion 3 can be acceptable in selected circumstances, such as to facilitate monitored therapy using hormones of known quality as an alternative to black-market or unsupervised hormone use</p>
<p>Readiness criteria All 3 must exist</p>	<ol style="list-style-type: none"> 1. Patient has had further consolidation of gender identity during the real-life experience or psychotherapy 2. Patient has made some progress mastering other identified problems leading to improving or continuing stable mental health (this implies satisfactory control of problems such as sociopathy, substance abuse, psychosis, and suicidality) 3. Patient is likely to take hormones in a responsible manner

Source: World Professional Association for Transgender Health (WPATH)

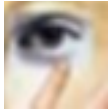


Table 4

Sample hormonal regimens for transsexual patients*

	Medication	Starting dose	Subsequent dose	When to change doses
Female to male	Testosterone enanthanate or testosterone cypionate	200 mg IM every 2 weeks	100 to 150 mg IM every 2 weeks	After masculinization complete and/or oophorectomy/hysterectomy
	Transdermal testosterone	5 mg to skin every day	Usually stays the same	Little data exist on efficacy; effective for maintenance, and may be less efficacious during transition
Male to female	Conjugated estrogens	1.25 mg/d (or 0.625 mg/d for smokers)	2.5 mg/d (Do not increase in smokers)	To obtain best clinical results, or if testosterone is not suppressed After sexual reassignment surgery, dose may be decreased without losing secondary sexual characteristics
	OR oral estradiol	1 mg/d	2 mg/d	
	OR transdermal estradiol	0.1 mg patch/week	Two 0.1 mg patches/week	
	Spironolactone	200 mg/d	May discontinue	After sexual assignment surgery
	Medroxyprogesterone†	10 mg/d	May increase to 20 to 40 mg/d (usually not needed)	If testosterone is not suppressed and patient/doctor does not want to increase estrogen
	OR micronized progesterone	100 mg bid	May discontinue after breast development is complete	Micronized progesterone is more costly but may lessen side effects of anxiety, as compared with medroxyprogesterone

* Professional consensus does not exist regarding the most efficacious and safest dosing regimens for gender transition. This table reflects reasonable starting and maintenance doses that are supported in the (admittedly less than optimal) medical literature, and reflect the author's opinion and practice. This table is not meant to include all possible hormone regimens, only several of the most commonly used medications.

† Professional consensus does not exist regarding progesterone's role in MTF transition.

Adapted and reprinted with permission from Table VII in Oriol KA. Medical care of transsexual patients. *J Gay Lesbian Med Asso* 2000;4(4):193.

mone therapy, 12 of 16 (75%) FTM transsexuals believed they had a voice that always would be considered masculine.^{14,15}

For MTF transsexuals, no surgical technique of pitch elevation is satisfactorily safe and effective. The most widely used—cricothyroid

approximation—may not be long-lasting and can decrease range, loudness, and vocal quality.¹³

HRT COMPLICATIONS

Medical complications. Biologic males treated with estrogens and progestins may be at

increased risk for blood clotting, benign pituitary prolactinomas, infertility, weight gain, liver disease, gallstones, somnolence, hypertension, and diabetes mellitus.

Biologic females treated with testosterone may be at increased risk for acne, cardiovascular disease from shifts of lipid profiles to male patterns, benign and malignant liver tumors, and hepatic dysfunction.

Psychiatric issues. Physical masculinization occurs much more rapidly and results in a more convincing opposite sex appearance in FTMs than feminization does in MTFs.^{16,17} Behaving masculine may be more socially acceptable for women and therefore easier than it is for men to behave convincingly feminine without being characterized.

Cross-sex hormones contribute to the expression of sex-dimorphic behaviors in adulthood.^{18,19} Estrogen appears to influence affect intensity, whereas androgens influence aggression and sexual motivation. Earlier studies established that untreated MTFs and FTMs do not differ in sex hormone levels from their biologic counterparts.^{20,21}

After 3 months of HRT, transsexuals' sex hormones are in the range of their identified sex. FTMs treated with androgens become more prone to aggression and exhibit increased sexual motivation and arousability associated with an overall dampened affect. MTFs treated with estrogen show decreased irritability and sexual arousability.²²

SEX REASSIGNMENT SURGERY

The cost of SRS often is prohibitive. Patients may turn to the Internet or foreign venues for hormone therapy and surgical procedures. Thailand is a popular overseas destination, where the average cost for MTF surgery is approximately \$6,000 to \$9,000. In the United States the cost of counseling, hormones, electrolysis, and surg-

continued

"I'm Depressed..."

Could it be ADHD?
ADHD was found in
1 out of 3 adults with a
depressive disorder*¹

Look for ADHD in
patients who present
with depression.

Visit www.depressionandadhd.com
for patient education kits
and adult screening tools.

*From a retrospective survey assessing the prevalence, comorbidity, and impairment of adult ADHD in 3199 adults, age 18 to 44. Depressive disorder includes major depressive disorder and dysthymia.

Reference: 1. Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. *Am J Psychiatry*. 2006;163:716-723.

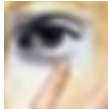
Shire

Shire US Inc.
... your ADHD Support Company™

©2006 Shire US Inc., Wayne, Pennsylvania 19087

A1413

11/06



Gender identity

eries is typically \$30,000 to \$40,000.²³

Surgical options are not limited to genital reassignment but include mammoplasty (breast augmentation for MTF), chest reduction surgery (FTM), trachea shave surgery, forehead/brow ridge contouring, chin and jaw contouring, scalp advancement surgery, cheek implant surgery, alarplasty (nasal base resection to narrow a nose), and chin contouring.

Some insurance companies assert that transsexual procedures are not medically necessary and are declining coverage. WPATH contends that sex reassignment is effective and medically indicated in severe GID.

Postsurgical outcomes. Patients who are emotionally healthy, have adequate social support, and attain reasonable cosmetic results are most satisfied with life after SRS.²⁴ In studies of GID patients, the best predictor of postoperative psychopathology was poor surgical results.²⁵

FTMs are transformed through the use of hormones and generally are not perceived as visibly different from other men. Genital surgery is often seen as a final step in completing the transition to the identified gender.

FTMs may elect to have their female reproductive organs removed, along with construction of male external genitalia through phalloplasty

or metoidioplasty. The decision to pursue surgery and the type of procedure depend on peer influence.²⁶ Although a phalloplasty does not provide a fully functioning and completely authentic-appearing penis, most FTMs report being satisfied with life after surgery and have few regrets.²⁷⁻³¹

Long-term postoperative follow-up by the surgeon and mental health professional is associated with good psychosocial outcome.

Legal considerations. An individual's new surgically-created gender can cause legal complications in jurisdictions that do not recognize the new gender. Some states are amending laws to make allowances for these advances in medical science.³²

References

1. Landen M, Walinder J, Lundstrom B. Prevalence, incidence and sex ratio of transsexualism. *Acta Psychiatr Scand* 1996;93(4):221-3.
2. *Diagnostic and statistical manual of mental disorders, 4th ed, text rev.* Washington, DC: American Psychiatric Association; 2000.
3. World Health Organization (WHO). The ICD-10 classification of mental and behavioural disorders: diagnostic criteria for research. Geneva; 1993.
4. Rachlin K. Transgender individuals' experiences of psychotherapy. *Int J Transgender* 2002;6:1.
5. Pfäfflin F, Junge, A. *Thirty years of international follow-up studies after sex reassignment surgery: a comprehensive review, 1961-1991.* Dusseldorf: Symposium Publishing; 1998.
6. Zhou, JN, Hofman MA, Gooren LJ, Swaab DF. A sex difference in the human brain and its relation to transsexuality. *Nature* 1995; 378(6552):68-70.
7. Coates S, Pearson ES. Extreme boyhood femininity: isolated behavior or pervasive disorder? *J Am Acad Child Psychiatry* 1985;24(6):702-9.
8. Zucker, KJ. Associated psychopathology in children with gender identity disorders. In: DiCeglie D, Freedman D, eds. *A stranger in my own body: atypical gender identity development and mental health.* London: Karnac Books; 1998.
9. Hepp U, Kramer B, Schnyder U, et al. Psychiatric comorbidity in gender identity disorder. *J Psychosom Res* 2005;58(3):259-61.
10. Cole S, Denny D, Eyler A, Samons S. Issues in transgender. In: Szuchman L, Muscarella F, eds. *Psychological perspective on human sexuality.* New York: John Wiley; 2000.
11. Jones B, Hill M. Mental health issues in lesbian, gay, bisexual, and transgender communities. *Rev Psychol* 2002;21:15-31.
12. *Harry Benjamin international gender association standards of care for gender identity disorders, 6th version.* Minneapolis, MN: The Harry Benjamin International Gender Dysphoria Association; 2001.
13. Asscheman J, Gooren LJG. Hormone treatment in transsexuals: interdisciplinary approaches in clinical management. *J Psychol Human Sex* 1992;5(4):39-54.

Gender identity disorder is rare and has powerful psychological components. Hormone therapy and surgical interventions may alleviate gender dysphoria in appropriately screened patients. For help with the many tasks required, consider referring the patient to a gender disorder clinic.

BottomLine

continued on page 91

continued from page 88

14. Van Borsel J, De Cuypere G, Van den Berghe H. Physical appearance and voice in male-to-female transsexuals. *J Voice* 2001; 15(4):570-5.
 15. Van Borsel J, De Cuypere G, Rubens R, Destaerke B. Voice problems in female-to-male transsexuals. *Int J Lang Commun Disord* 2000;35(3):427-42.
 16. Spiegel J, Jalisi S. Contemporary diagnosis and management of head and neck cancer. *Otolaryngol Clin North Am* 2005;38(1):xiii-xiv.
 17. Meyer WJ 3rd, Webb A, Stuart CA, et al. Physical and hormonal evaluation of transsexual patients: a longitudinal study. *Arch Sex Behav* 1986;15(2):121-38.
 18. Archer J. The influence of testosterone on human aggression. *Br J Psychol* 1991;82(Pt 1):1-28.
 19. Van de Poll ME, Van Goozen SHM. Hypothalamic involvement in sexuality and hostility: comparative psychologic aspects. In Swaab DF, Mirmiran M, Ravid R, Van Leeuwen FW, eds. *The human hypothalamus in health and disease, progress in research*. Amsterdam: Elsevier; 1992;343-61.
 20. Spijkstra JJ, Spinder T, Gooren LJ. Short-term patterns of pulsatile luteinizing hormone secretion do not differ between male-to-female transsexuals and heterosexual men. *Psychoneuroendocrinology* 1988;13(3):279-83.
 21. Spinder T, Spijkstra JJ, Gooren LJ, Burger CW. Pulsatile luteinizing hormone release and ovarian steroid levels in female-to-male transsexuals compared to heterosexual women. *Psychoneuroendocrinology* 1989;14(1-2):97-102.
 22. Slabbekoorn D, Van Goozen S, Gooren L, Cohen-Kettenis P. Effects of cross-sex hormone treatment on emotionality in transsexuals. *Int J Transgender* [serial online] 2001;5(3). Available at: http://www.symposion.com/ijt/ijtv05no03_02.htm. Accessed January 11, 2007.
 23. Conway L. Vaginoplasty: male to female sex reassignment surgery: historical notes, descriptions, photos, references and links. Available at: <http://ai.eecs.umich.edu/people/conway/TS/SRS.html>. Accessed January 12, 2007.
 24. Bodlund O, Kullgren G. Transsexualism-general outcome and prognostic factors: a five-year follow-up study of nineteen transsexuals in the process of changing sex. *Arch Sex Behav* 1996;25(3):303-16.
 25. Ross MW, Need JA. Effects of adequacy of gender reassignment surgery on psychologic adjustment: a followup of fourteen male-to-female patients. *Arch Sex Behav* 1989;18(2):145-53.
 26. Rachlin K. Factors which influence individual's decisions when considering female-to-male genital reconstructive surgery. *Int J Transgender* [serial online];1999;3(3). Available at: <http://www.symposion.com/ijt/ijt990302.htm>. Accessed January 11, 2007.
 27. Lundstrom B, Pauly I, Walinder J. Outcome of sex reassignment surgery. *Acta Psychiatr Scand* 1984;70(4):289-94.
-
- Related resources**
- ▶ World Professional Association For Transgender Health. (formerly the Harry Benjamin International Gender Dysphoria Association [HBIIGDA]). www.hbigma.org. Includes a directory of transgender organizations.
 - ▶ North American gender programs and service centers
 - CAMH Gender Identity Clinic. Toronto, Ontario, Canada
 - Gender Identity Project, New York, NY
 - Gendercare Gender Clinic (Web clinic for gender variance). www.gendercare.com.
 - Ingersoll Gender Center, Seattle, Washington
 - Johns Hopkins Center for Sexual Health & Medicine, Baltimore, Maryland
 - Program in Human Sexuality, Transgender Services at the University of Minnesota
 - ▶ Sexology organizations and information
 - American Association of Sex Educators, Counselors, and Therapists. www.aasect.org.
 - Kinsey Institute at Indiana University. www.indiana.edu/%7Ekinsey.
 - Sexuality Information and Education Council of the United States. www.siecus.org.
 - Social Science Research Council. www.ssrc.org.
 - Society for the Scientific Study of Sexuality. www.sexscience.org.
-
- DRUG BRAND NAMES**
- | | |
|--------------------------------------|----------------------------|
| Conjugated equine estrogens • | Medroxyprogesterone (IM) • |
| Premarin | Depo-Provera |
| Estradiol (oral) • Estrace | Micronized progesterone • |
| Estradiol (transdermal) • Climara | Prometrium |
| Medroxyprogesterone (oral) • Provera | Spirolactone • Aldactone |
-
- DISCLOSURE**
- The author reports no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.
-
28. Kuiper B, Cohen-Kettenis P. Sex reassignment surgery: a study of 141 Dutch transsexuals. *Arch Sex Behav* 1988;17(5):439-57.
 29. Green R, Fleming D. Transsexual surgery followup: status in the 1990s. *Ann Rev Sex Res* 1990;7:351-69.
 30. Tsoi WF. Follow-up study of transsexuals after sex-reassignment surgery. *Singapore Med J* 1993;34(6):515-7.
 31. Tsoi WF. Male to female transsexuals: a comparison. *Singapore Med J* 1992;33(2):182-5.
 32. Harish D, Sharma BR. Medical advances in transsexualism and the legal implications. *Am J Forensic Med Patol* 2003;24(1):100-5.