

Gender Affirming Care:
Medical Interventions, Mental Health, Barriers to Care
and the Impact of Current Events

04/21/2026

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We have no disclosures.

What is gender?

WHO: Gender refers to the socially constructed characteristics of women, men, girls and boys. This includes norms, behaviours and roles associated with being a woman, man, girl or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time.

Gender identity refers to a person's deeply felt, internal and individual experience of gender, which may or may not correspond to the person's physiology or designated sex at birth.

Cambridge Dictionary; a group of people in a society who share particular qualities or ways of behaving which that society associates with being male, female, or another identity:

Miriam-Webster: sex as the preferred term for biological forms, and **gender limited to its meanings involving behavioral, cultural, and psychological traits.**

OED: *gen.* Males or females viewed as a group; = [sex n.1 1](#). Also: the property or fact of belonging to one of these groups. Originally extended from the grammatical use at sense [1](#) (sometimes *humorously*), as also in Anglo-Norman and Old French. In the 20th cent., as *sex* came increasingly to mean sexual intercourse (see [sex n.1 4b](#)), *gender* began to replace it (in early use euphemistically) as the usual word for the biological grouping of males and females. It is now often merged with or coloured by sense [3b](#). **3.b. 1945–** *Psychology and Sociology* (originally *U.S.*). The state of being male or female as expressed by social or cultural distinctions and differences, rather than biological ones; the collective attributes or traits associated with a particular sex, or determined as a result of one's sex. Also: a (male or female) group characterized in this way.

Sex (biology)

Assigned at Birth

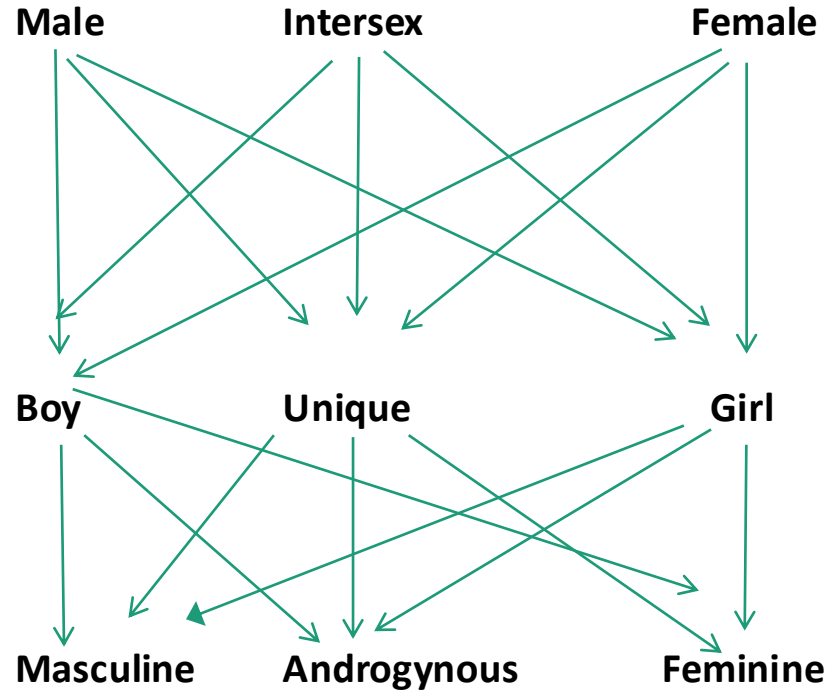
chromosomes (genes), gonads, hormones, hormone receptors, genitalia, secondary sex characteristics..

Gender Identity

Self Concept: "I am..."

Gender Roles

Social expression: Dress, posture, actions...



Gender identity matches assigned sex = cisgender

Gender identity does not match assigned sex = transgender

Sexual Orientation

Attracted to...

Straight- Gay/Lesbian – Bisexual – Asexual – Pansexual -
Sciosexual - Sapiosexual

Gender Incongruence in Adolescents & Adults

2 of the following 6

- Marked incongruence between experienced gender and primary +/- secondary sex characteristics
- Strong desire to be rid of one's primary +/- secondary sex characteristics
- Strong desire to have the primary +/- secondary sex characteristics of the other gender
- A strong desire to be of the other gender
- A strong desire to be treated as the other gender
- A strong conviction that one has the typical feelings and reactions of the other gender

Not all individuals with gender incongruence experience gender dysphoria.

Gender Incongruence in Children

6 of the following 8

- A strong desire to be of the other gender or an insistence that one is the other gender
- A strong preference for wearing clothes typical of the opposite gender
- A strong preference for cross-gender roles in make-believe play or fantasy play
- A strong preference for the toys, games or activities stereotypically used or engaged in by the other gender
- A strong preference for playmates of the other gender
- A strong rejection of toys, games and activities typical of one's assigned gender
- A strong dislike of one's sexual anatomy
- A strong desire for the physical sex characteristics that match one's experienced gender

(truncated) Evidence of Gender-diverse people through time

12,000 yrs ago: Art depictions and artifacts of TNB people (Mesopotamia)

4,500 yrs ago: Sumerian/Akkadian texts refer to Inanna saying:

'The power to turn a man into a woman and a woman into a man are yours, Inanna.'



Seal of Inanna, 2350-2150 BCE

3,000 yrs ago: (Iran) gendered artifacts found with skeletons in a large gravesite: ~20% were “a third gender”

Duane Brayboy: *Indian Country Today*

Digital.Indigenous.News.

“All native communities acknowledged gender roles of:
Female, Male, Two-Spirit Female, Two-Spirit Male and Transgendered [sic].”

- Navajo: *nádleehí* (Two-Spirits or one who is transformed)
- Lakota: *winkté* (male who has compulsion to behave as a female)
- Ojibwe: *niizh manidoowag* (Two-Spirit)
- Cheyenne: *hemaneh* (half man, half woman [sic])
- Iroquois and Cherokee: (‘women who feel like men’ and vice versa)
- Crow: *bate* (Two-Spirit [spiritual leader])

Human Rights Campaign: >150 different pre-colonial Native American peoples acknowledged third genders in their communities.

Winter, S et al.
Lancet 2016, 388:390-400.

	Sample	Measure	Prevalence of transgender people by birth-assigned sex		
			Male	Female	All
Conron et al (2012), USA ¹⁴	28 176 adults	Identification as transgender	0.5%*	0.4%*	0.5%
Glen and Hurrell (2012), UK ¹⁵	9950 adults	Identification as other gender or in another way	0.6%†	0.4%†	0.5%†
Clark et al (2014), New Zealand ¹⁶	7729 high-school students	Identification as transgender	1.3%‡	1.2%‡	1.2%
Kuyper and Wijsen (2014), Netherlands ¹⁷	8064 adults	Identification on gender spectrum	1.1%	0.8%	0.9%¶
Van Caenegem et al (2015), Belgium ¹⁸	1832 adults	Identification on gender spectrum	0.7%	0.6%	0.6%

*Extrapolated from table 1 in article. †Extrapolated from annex B in paper. ‡Extrapolated from table 1 in paper.

¶Extrapolated from table 3 in article.

Table: Population studies yielding prevalence data for transgender people

Prevalence of Gender-Diverse Youth in an Urban School District.

Pediatrics June 2021:e2020049823

Youth Risk Behavior Survey (mod'd)
9th-12th graders in 13 High Schools
mid-sized city school district in
northeast

*“What is your sex (sex assigned at
birth, on your birth certificate)?”*
[options **“female”** and **“male”**]

*“Which of the following best
describes you (select all that apply)?”*
[options: **“girl,” “boy,” “trans girl,”**
“trans boy,” “genderqueer,”
“nonbinary,” and **“another identity.”**]

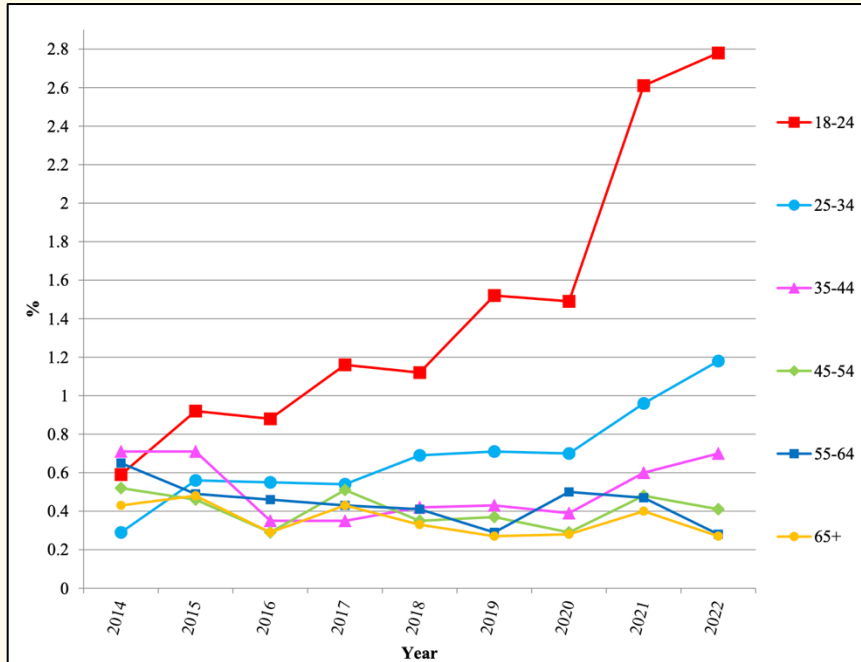
TABLE 1 Gender by Race and/or Ethnicity

	Total (N = 3168), n (%)
Cisgender youth	2877 (90.8)
GDY ^d	291 (9.2)

TABLE 2 GDY by Gender Identity and Race and/or Ethnicity

	Total GDY (n = 291), n (%)
Binary ^d transmasculine youth	87 (29.9)
Binary ^d transfeminine youth	113 (38.8)
Nonbinary youth ^e	91 (31.3)

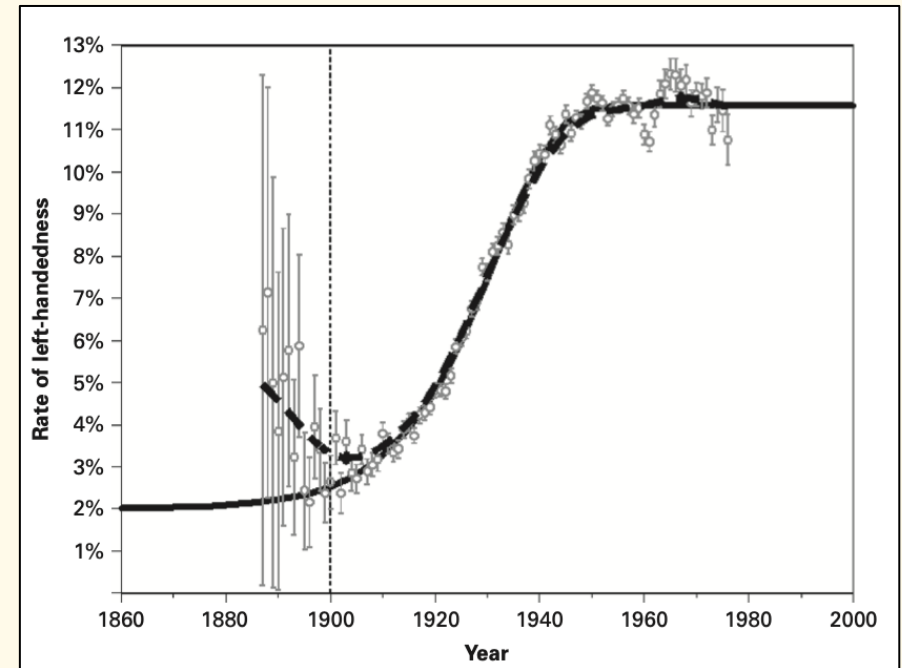
Changing Prevalence of Trans-identities



Sexuality Research and Social Policy (2025) 22:755–773

BRFSS 2014-2022
n=1.9 million responses

and left-handedness



Language Lateralization and Psychosis, 2009

Hx left handedness <https://doi.org/10.2298/SARH190522095M>

What is Gender-Affirming Care?

Family support

Community support (schools, religious institutions)

Mental health support

Social transition

Medical interventions

Surgical interventions

Vocal training, electrolysis

Typical preventive healthcare

In youth, interventions are dependent on age and pubertal stage.

Pre-Pubertal Children

- Assessment and allow exploration
- Support (family/community/providers)
- Social transition
- Assessment of safety

Social transition: change name, clothing, haircut, pronouns

At times, at home only.

Then with extended family.

Then with school, church, clubs/organizations as deemed safe or comfortable for the child.

School records, state and federal documents.



“Mom, I’m not a boy; I’m a girl in my heart and my brain.”

Impact of social transition in prepubertal youth

Mental Health of Transgender Children who are Supported in their Identities. *Pediatrics* 2016, 137(3):1-8.

n=73 (3-12 y.o.) trans children
n=73 age-matched controls
plus, n=49 siblings – closest in age

Socially transitioned transgender children who are supported in their gender identity have developmentally normative levels of depression and only minimal elevations in anxiety...

Mental health during transition in US and Canadian sample of early socially transitioned transgender youth. *Journal of Adolescent Health* 76 (2025) 228e237

Table 2

Raw mean PROMIS scores^a at different stages of medical transition

	Stage 0 (before beginning puberty blockers): M (SD)	
Self-reported anxiety	52.52 (9.28) ^b n = 96	
Self-reported depressive symptoms	47.41 (8.76) ^b n = 96	
Parent-reported anxiety	52.27 (8.27) ^b n = 161	Mean 50 SD 10
Parent-reported depressive symptoms	50.04 (6.87) n = 161	



Self-reported outcomes attributed to binding.

Health outcome (all that apply) Percent (n) (n = 1800)

Pain

Chest pain	48.8 (878)
Shoulder pain	38.9 (700)
Back pain	53.8 (969)
Abdominal pain	14.5 (262)
Any pain outcome	74.0 (1333)

Musculoskeletal

Rib fractures	2.8 (50)
Rib or spine changes	11.6 (209)
Bad posture	40.3 (726)
Shoulder joint 'popping'	12.3 (221)
Muscle wasting	5.4 (97)
Any musculoskeletal outcome	46.8 (843)

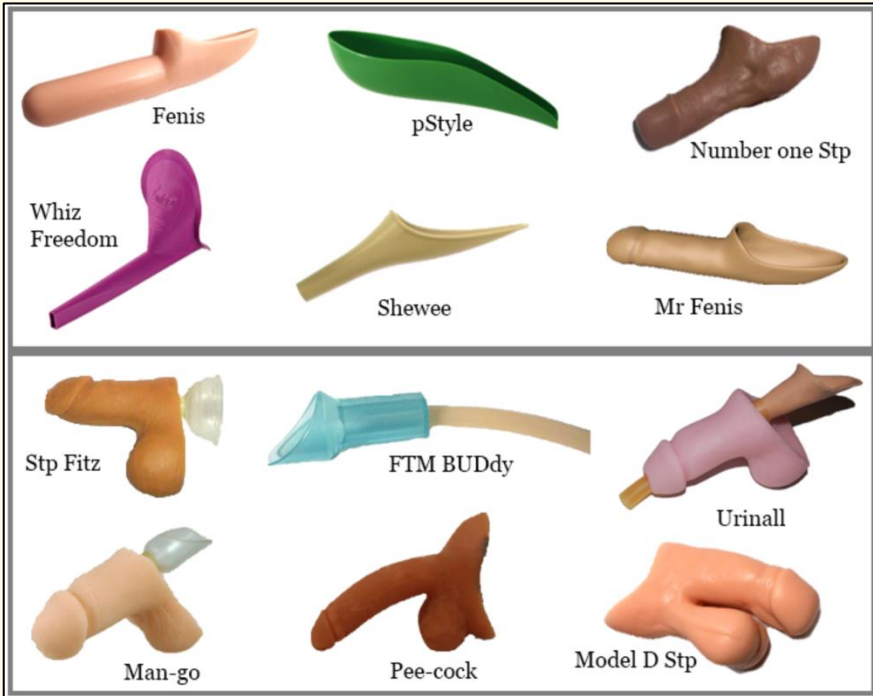
Neurological

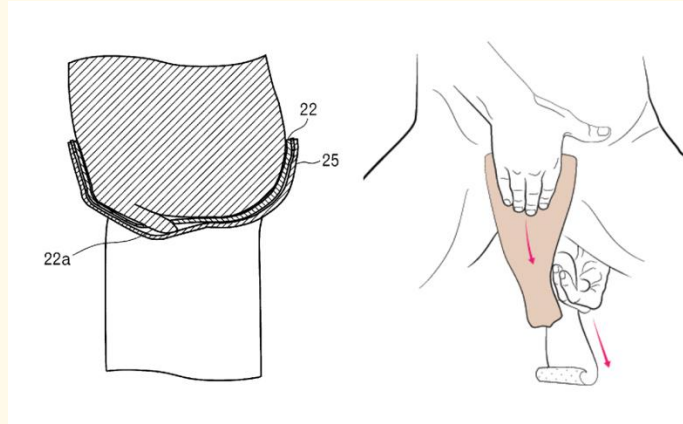
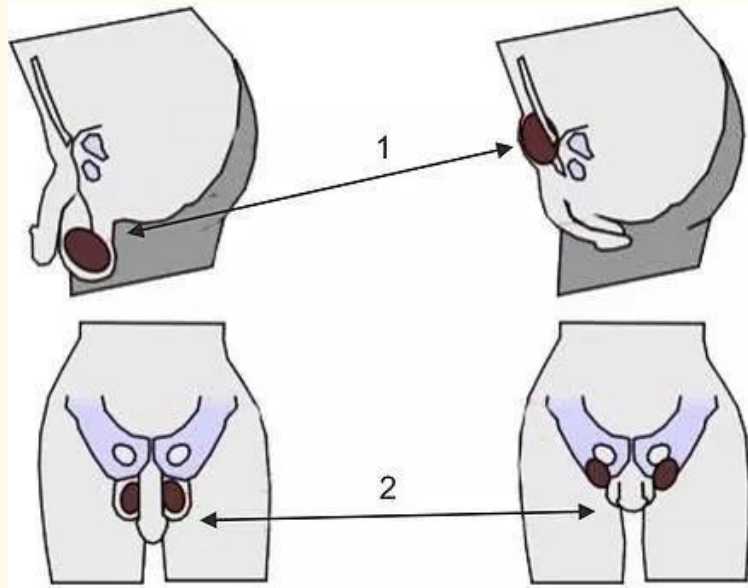
Numbness	15.7 (282)
Headache	19.1 (344)
Lightheadedness or dizziness	27.8 (500)
Any neurological outcome	41.0 (738)

Gastrointestinal

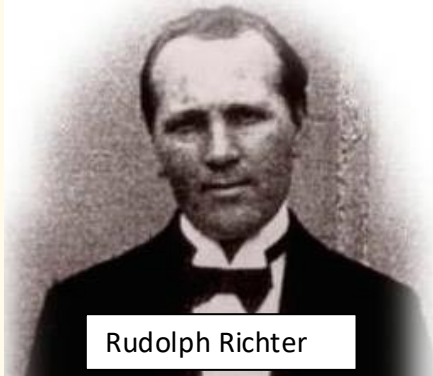
Digestive issues	11.3 (203)
Heartburn	11.1 (200)
Any gastrointestinal outcome	17.7 (318)

Stand to Pee (STP) devices





Early Medical and Surgical Intervention



Rudolph Richter



Dorchen Richter



Einar Wegener



Lili Ilse Elvenes

Dora - b 1891

Tried to tourniquet her penis at age 6.
Arrested several times for cross-dressing, referred to Hirschfeld Institute for Sexual Research

Orhiectomies in 1922

Penectomy and vaginoplasty in 1931
died 1933

Lili (The Danish Girl) b 1882

1930 first of 4 operations (Dresden Muni Women's Clinic)

Remove testes

Implant ovary

Remove penis and scrotum,

Transplant a uterus, vaginoplasty
died 3 months after 4th surgery

Medical Therapy

Goals:

Relieve gender dysphoria

Promote body congruence with gender identity

Decrease endogenous hormone secretion

- Gonadotropin releasing hormone agonist (GnRHa or “puberty blockers”)

Decrease endogenous hormone action

- anti-androgens

Induce desired secondary sex characteristics

- Hormone replacement therapy (HRT)

Personalize Therapy

Pubertal Children

If onset of puberty increases gender dysphoria:

- Consider puberty suppression

If no increase in gender dysphoria and youth not interested in slowing/inhibiting pubertal development along endogenous path:

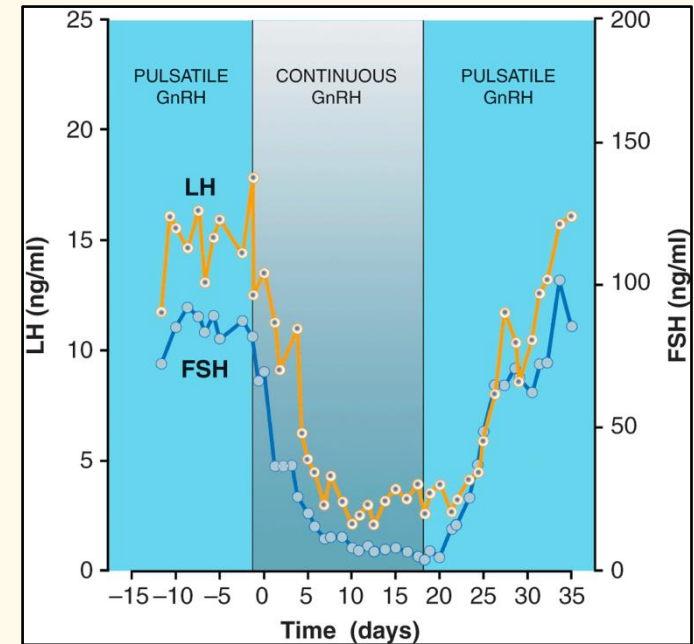
- Continued support of gender journey

Medical/Surgical Rx



1. GnRHa or “puberty blocker”
 - Tanner stage II-III puberty (early puberty)
 - can be used in older adolescents and adults
2. Affirming hormone replacement Rx
3. Gender-affirming surgeries
 - masculinizing chest surgery transmales
 - gender affirming “bottom surgery”
 - chest augmentation
 - facial feminization

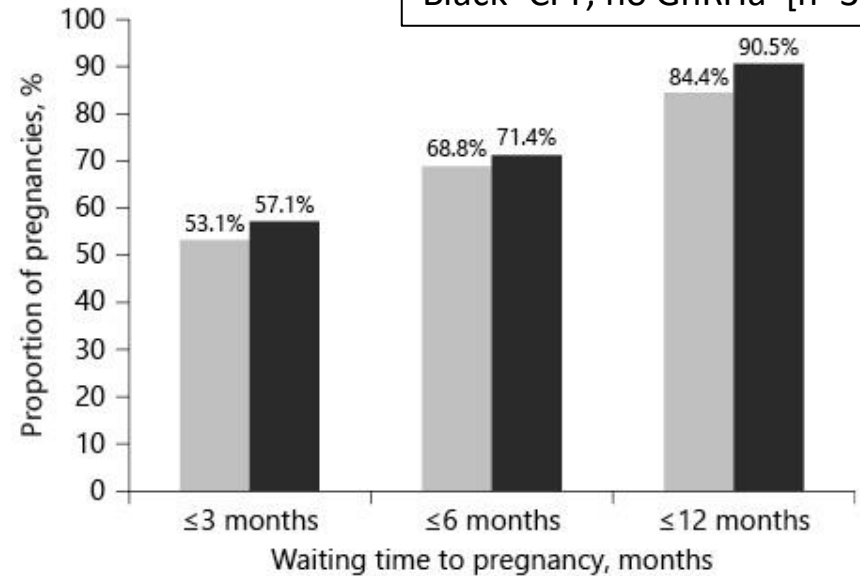
* Ongoing Mental Healthcare



GnRHa Rx is NOT new nor is it “chemical castration”

Therapeutic use of pituitary desensitization with a long-acting lhrh agonist: a potential new treatment for idiopathic precocious puberty

J Clin Endocrinol Metab 1981



Martinerie, *Horm Res Paediatr* 2021

Puberty Suppression in Adolescents with Gender Identity Disorder:
a prospective follow-up study. ALC de Vries, et al. *J Sex Med*, 2011;8:2276-2283

n=70: baseline before GnRHa (puberty blocker)
2 yrs later just **before** starting CHT

Significant decrease in

- total problem scale (44.4% vs. 22.2%)
- internalizing scale (29.6% vs. 11.1%).

Significant decrease depressive symptom score

Significant increase in global functioning ratings

No significant change in scores of anger or anxiety

Mental health during transition in US and Canadian sample of early socially transitioned transgender youth. *Journal of Adolescent Health* 76 (2025) 228e237

Raw mean PROMIS scores^a at different stages of medical transition

	Stage 0 (before beginning puberty blockers): M (SD)	Stage 1 (after beginning puberty blockers): M (SD)	
Self-reported anxiety	52.52 (9.28) ^b n = 96	51.08 (9.77) ^b n = 75	
Self-reported depressive symptoms	47.41 (8.76) ^b n = 96	47.87 (9.70) n = 75	
Parent-reported anxiety	52.27 (8.27) ^b n = 161	53.11 (9.19) ^b n = 144	mean 50 SD 10
Parent-reported depressive symptoms	50.04 (6.87) n = 161	52.39 (8.49) ^b n = 145	



“I was very aware that I was in a trial, but I was so happy with it ... I did not want anything to do with male puberty.”

Manon, now 31, who was among the first transgender children treated with puberty blockers and hormones in the Netherlands in the 2000s. She asked to use only her first name for privacy concerns.

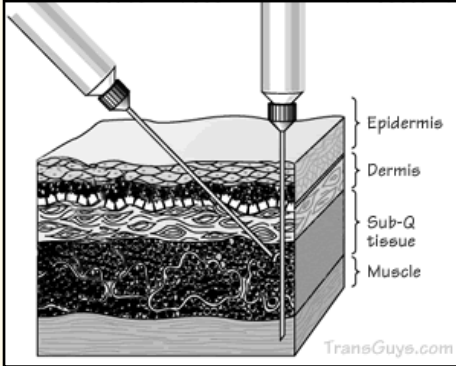
Transmale (AFAB): Testosterone Rx

Effect	Onset	Max Effect	Reversibility
Skin oiliness/acne	1-6 months	1-2 yrs	Yes
Cessation of menses	2-6 months		+/-
Vaginal atrophy	3-6 months	1-2 yrs	Yes
Clitoromegaly	3-6 months	1-2 yrs	No
Body fat redistribution	3-6 months	2-5 yrs	Yes
Facial/Body Hair	3-6 months	1-2 yrs	No
↑ muscle mass/strength	6-12 months	2-5 yrs	Yes
Deepening voice	3-12 months	1-2 yrs	No
Hair loss (genetics)	> 12 months	variable	No

Testosterone therapy

Injections

(once every 1-2 weeks)



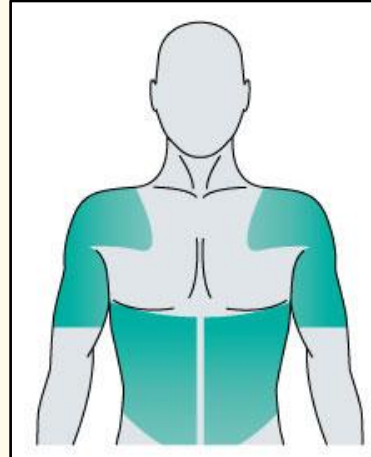
Gel (daily)



T pellets (every 3-6 months)



Capsules (twice a day)



Monitoring Testosterone Rx

Monitor:

Body response (having menses, voice changes, facial hair)

Patient's feelings re: body changes

Weight, BP

Testosterone level (+/- estradiol)

Hematocrit

Cholesterol levels

Screen for cervical/breast cancer as indicated.

Other general medical preventive care testing (colonoscopy, etc)

Transfemale (AMAB): Estrogen +/- Anti-androgen

Effect	Expected onset	Max effect	Reversibility
Breast growth	3-6 months	2-3 yrs	No
Body fat redistribution	3-6 months	2-5 yrs	Yes
↓ libido, erections	1-3 months	1-2 yrs	Yes
↓ muscle mass	3-6 months	1-2 yrs	Yes
↓ testicular vol, sperm prod'n	3-6 months	3-6 yrs	+/-
↓ body, facial hair	6-12 months	> 3 yrs	Yes
↓/(-) Male pattern baldness	No regrowth, loss stops 1-3 months	1-2 yrs	Yes

Anti-androgen and Estrogen therapies

Spironolactone (blocks testosterone receptor => blocks testosterone action)

Estradiol

Patches (1 or 2 times per week)

Oral/pills (daily)

Injections (once a week)

Monitor:

WT, BP

Hormone levels

(lower testosterone; increase estradiol)

Cholesterol

CV disease, VTE disease, prostate Ca (general preventive medical screenings).



Mental Health Outcomes in Transgender and Nonbinary Youths Receiving Gender-Affirming Care

JAMA Network Open. 2022;5(2):e220978.

n=104

Ages: 13-20, mean 15.8 yr

n=69 GnRH α , GAH or both

n=35 no medical Rx

PHQ-9 and GAD-7 at 0, 3, 6 and 12 months

12 months Med'l Rx vs. no Med'l Rx

60% lower odds of depressive symptoms

74% lower odds of suicidality

No association with Rx and anxiety.



Psychosocial Functioning in Transgender Youth after 2 Years of Hormones

N Engl J Med 2023;388:240-250

N=315

(24 GnRH α early puberty)

Increased:

appearance congruence

positive affect

life satisfaction

Decreased:

depression symptoms

anxiety symptoms

Emotional Health of Transgender Youth 24 Months After Initiating Gender-Affirming Hormone Therapy

J Adol Health 77(2025):41-50

N=315
NIH Toolbox Emotion Battery
Transgender congruence scale

Discussion: Emotional functioning after 24 months of GAH treatment significantly improved and was associated with an improvement in appearance congruence.

Changes in Suicidality among Transgender Adolescents Following Hormone Therapy: An Extended Study

J Pediatr 2026;289:114883

n=432 (315 AFAB, 117 AMAB)
Age: 12.7 – 20.2 yr
HRT 679 days (91-1899 day)

Table II. Suicide attempt classification by timepoint and ASQ item responses

Category	Baseline	Follow-up
Total number of patients	432	432
All ASQ items negative	340 (78.7%)	400 (92.6%)
Endorsed one or more of ASQ items 1-3	92 (20.3%)	32 (7.4%)
Endorsed recent suicide attempt	13 (3%)	2 (0.46%)

Risks/side effects of medical interventions:

- Weight gain (overall ↑ ~4 lbs; baseline in TGGD is overweight)
- 3-4 fold increase risk of blood clots and strokes on estrogen therapy
- Increase in “bad” cholesterol on testosterone therapy
- Increase in reporting of heart disease in TGGD individuals
- Decrease in bone density with GnRHα therapy (improves on GAH)
- Changes in sexual function
- Possible impact on fertility
- Acne (on T; improvement with estrogen)
- Hair loss (on T; slowing of hair loss with estrogen)

Regret (0.3-3.8%)

Change in gender journey

Surgical Interventions

Affirmed Males

Chest reconstruction
Metoidioplasty
Phalloplasty
- Testicular prostheses
- Penile implant
Vaginectomy
Hysterectomy
Oophorectomy

Affirmed Females

Penectomy
Orchiectomies
Breast Augmentation
Vaginoplasty
Facial Feminization
Glottoplasty
Thyrochondroplasty

Young Adult Psychological Outcome After Puberty Suppression and Gender Reassignment. *Pediatrics* 2014;134:696-704

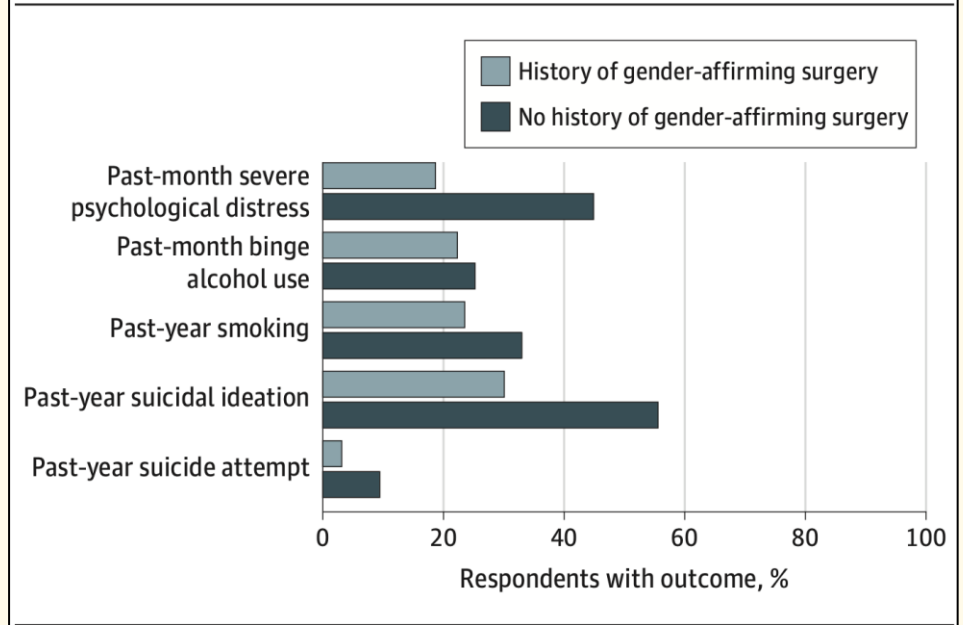
n=55
Tested at 3 time points:
Just before GnRHa
Just before CHT
1 yr after GAS.

RESULTS: ... Well-being was similar to or better than same-age young adults from the general population.

...

Association Between Gender-Affirming Surgeries and Mental Health Outcomes. *JAMA Surg.*2021;156(7):611-618

Figure 2. Comparison of Mental Health Outcomes Among Respondents Who Did and Did Not Undergo Gender-Affirming Surgery



2015 US Transgender Survey

n=27,715

n= 3,559 1+ affirming surgeries at least 2 yrs prior to survey



b 1915 AFAB always knew he was a man

1938 Heard an OB-GYN using testosterone in women.

Requested testosterone for masculinization

Was told to see psychiatrist first, became first individual to take T for gender affirmation.

1945 Medical School; requested Sir Harold Gillies perform phalloplasty (official Dx: hypospadias).

“where the mind cannot be made to fit the body, the body should be made to fit, approximately at any rate, to the mind, despite the prejudices of those who have not suffered these things”

Dillon, M. (1946). *Self: A study in ethics and endocrinology*