Medical Care for Gender Expansive Youth

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Disclosures

- I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.

- The use or indication of various commercial products such as hormone therapies used in this population is not currently approved by the FDA for labeling or advertising.

Objectives

- Describe an affirmative, culturally humble, and trauma informed clinical approach to the care of gender expansive youth
- Discuss clinical guidelines for gender affirming interventions, including puberty suppression, cross gender hormonal therapy

The U.S. Transgender Population

- **0.6% prevalence among individuals >18 years**
- **1.4 million US adults**
- **0.7% among youth 13-17**
- **150,000 adolescents**

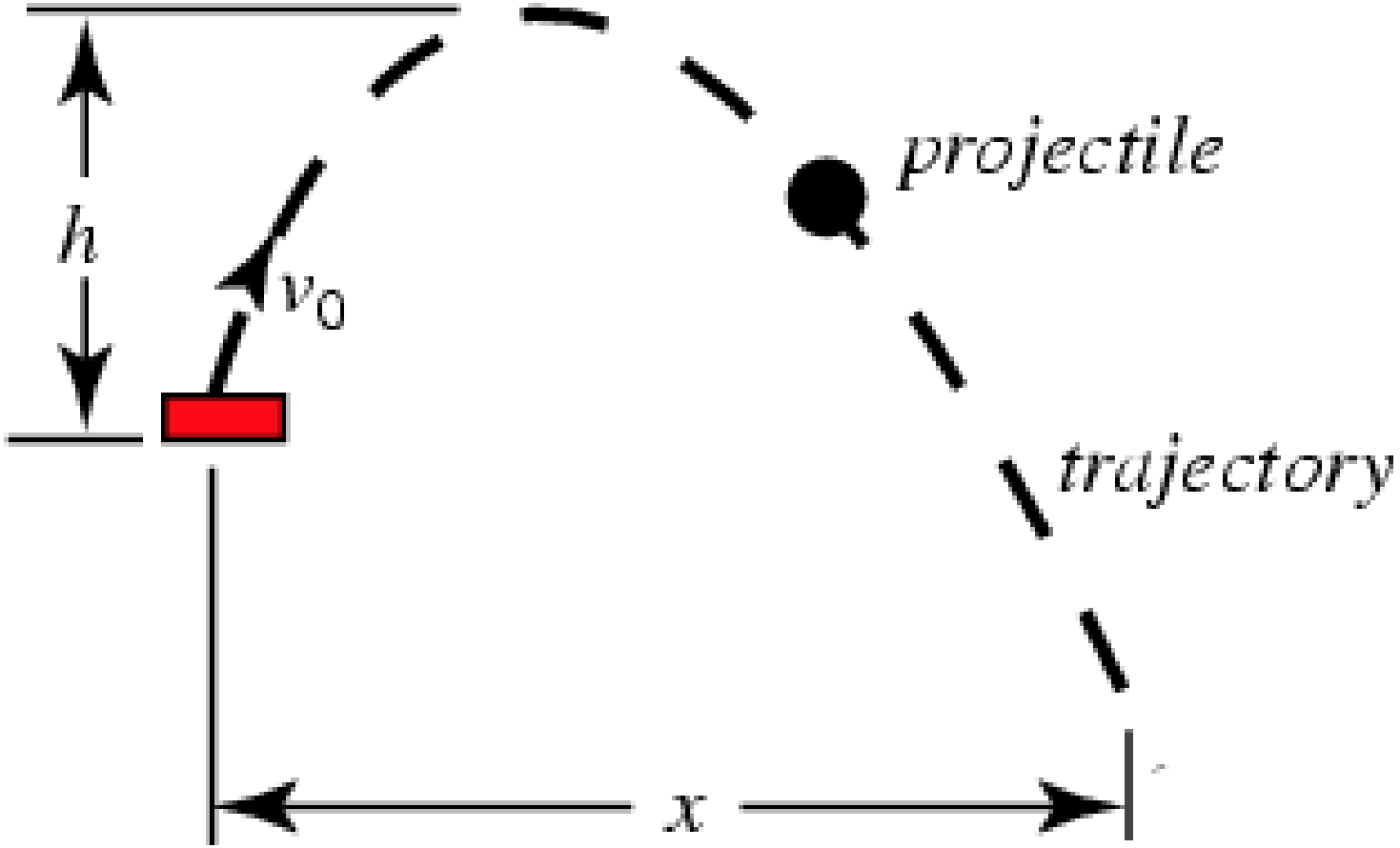
- Flores, A.R, Williams Institute, 2016

Phases of Transition

Reversible	• Clothes, hair, shoes, toys, GnRH analogues
Partially reversible	• Masculizing and Feminizing Hormone Therapy
Irreversible	• Gender Reassignment Surgery (GRS)

Practice Guidelines

- **World Professional Association for Transgender Health**
  - **Standards of Care, version 7, 2011**
- **Endocrine Society**
  - **Clinical Practice Guideline: Endocrine Treatment of Transsexual Persons, 2009, 2017**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The Clinical Approach

- **Affirmative**
- **Culturally humble**
- **Trauma-informed**
- **Strength-based**

Review Gender Experience

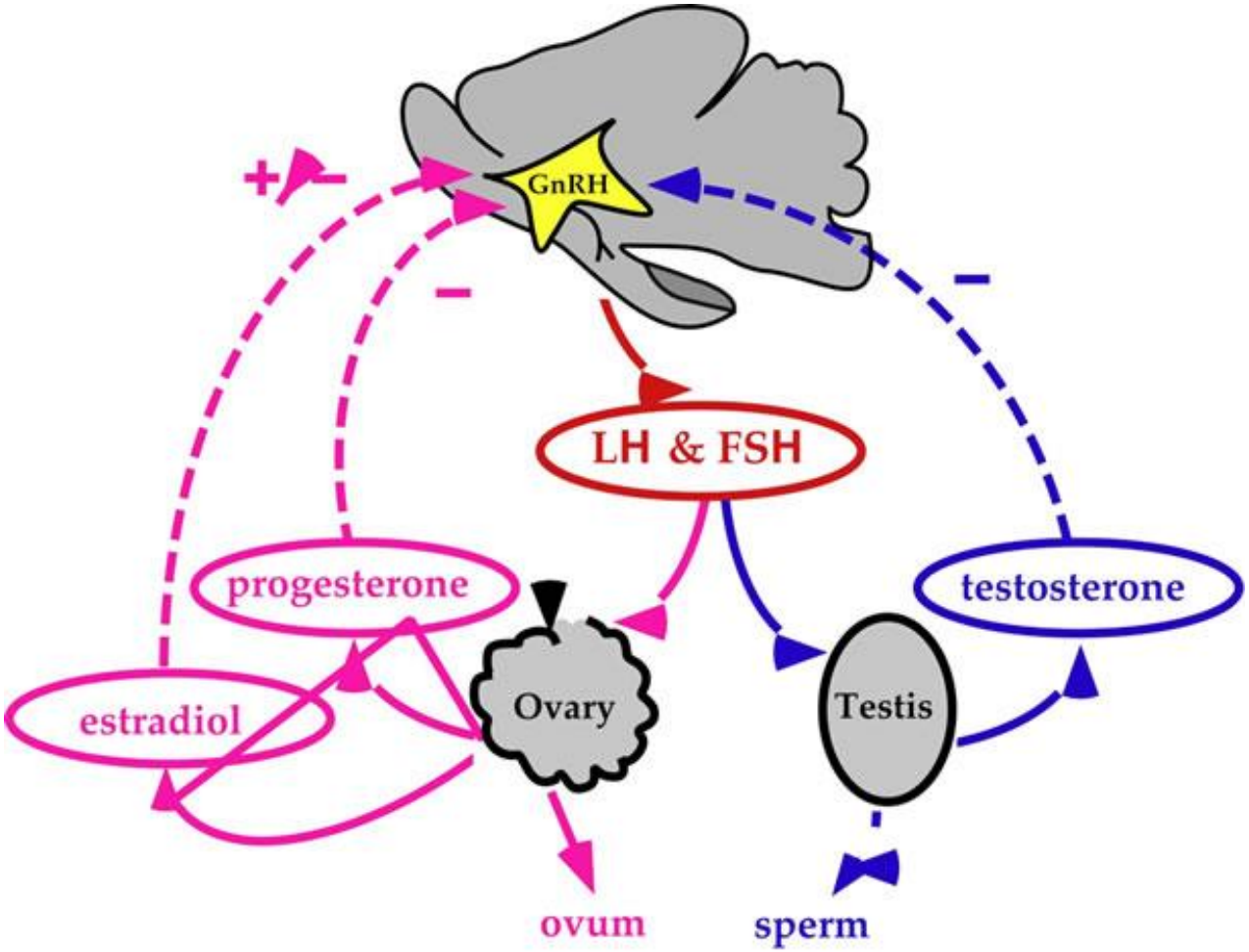
- Review history of gender experience
- Review prior efforts to adopt asserted gender
- Discuss patient goals
- Assess for trauma/behavioral health history/coping
- Assess family and social support and resources
- Establish expectations for all stakeholders
  - Incorporate patient goals, with parental expectations, and management options

Gender Dysphoria in Early Adolescence

Puberty Suppression: Endocrine Society

- **Fulfill criteria for Gender Dysphoria**
- **Pubertal changes resulted in an increase gender dysphoria**
- **At least Tanner stage 2**
- **Coexisting comorbidities are addressed/stable so as not to interfere with treatment**
- **Demonstrate knowledge and understanding of expected outcomes of treatment/informed consent**

GnRH Analogues



GnRH Analogues

- GnRHa -Leuprolide Acetate Depot
  - IM Monthly
    - <25kg 7.5mg Q4 weeks
    - 25-37kg 11.25mg Q4 weeks
    - >37.5kg 15mg Q4 weeks IM Q 3 monthly
    - 11.25mg Q3 monthly
    - 30mg Q3 monthly
- GnRHa –Triptorelin
  - IM 22.5mg every *6 months
- GnRHa - Histrelin Implant
    - 12 months

Pubertal Suppression: Considerations

- Delay irreversible secondary sex characteristics
- May prevent medical interventions and surgeries
- Cognitive development and informed decision making
- Development of social support systems
- Addresses parental reluctance, especially with partially irreversible effects in minor
- Facilitates psychotherapy when distress is eased

Pubertal Suppression: Considerations

- Reduction in bone mineral density
  - Reversible with cross gender hormone initiation
- Height
  - Height increase in FTM
  - Height reduction in MTF
  - Generally desirable to both populations
- Delay in development of secondary sex characteristics relative to peers
- Fertility preservation
- Cost

Baseline and Follow-Up Protocol During Suppression of Puberty

- Every 3–6 months
  - Anthropometry: height, weight, sitting height, blood pressure, Tanner stages
- Every 6–12 months
  - Laboratory: LH, FSH, E2/T, 25OH vitamin D
- Every 1–2 years
  - Bone density using DXA
  - Bone age on X-ray of the left hand (if clinically indicated)

Outcomes of Puberty Suppression

- Behavioral and emotional problems and depressive symptoms decreased significantly
- General functioning improved significantly
- Feelings of anxiety and anger did not change between T0 and T1
- Gender dysphoria and body satisfaction did not change between T0 and T1
- No adolescent withdrew from puberty suppression, and all started cross-sex hormone treatment

de Vries AL, et al, 2010

Cross Gender Hormonal Therapy

Criteria for Cross Gender Hormonal Therapy

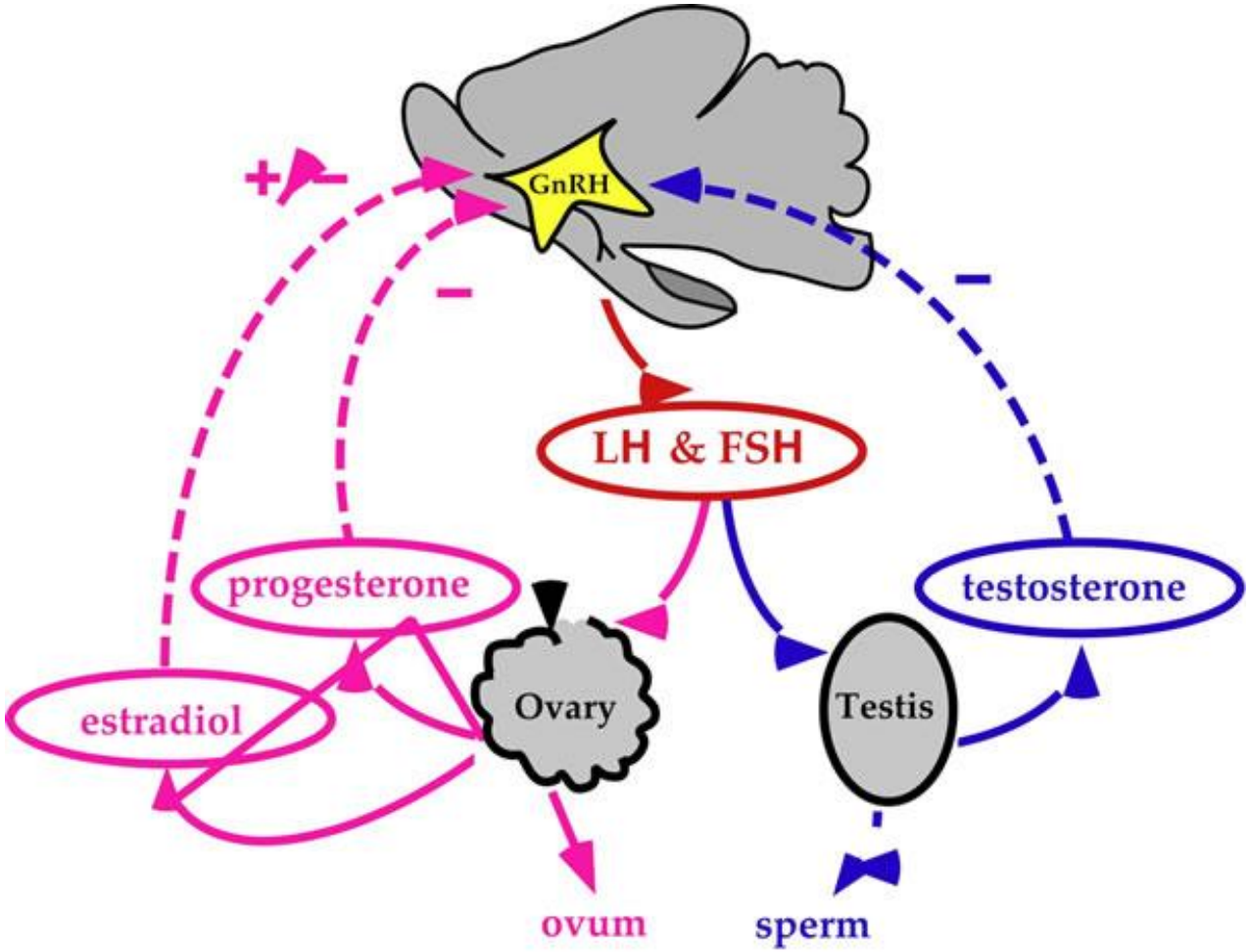
- Endocrine Society
  - Fulfill the criteria for GnRH treatment
  - ≥ 16 years
  - "there may be compelling reasons to initiate sex hormone treatment prior to the age of 16 years… limited published studies of treatments administered before age 13.5-14 years
- WPATH
  - No recommendation on timing of initiation
  - "Refusing timely medical interventions for adolescents might prolong GD and contribute to an appearance that might provoke abuse and stigmatization"

Coming Out

Patients	Mean, (Age Range)	Biological Female	Biological Male
Age of Presentation	14.8 (4-20)	15.2 (6-20)	14.3 (4-20)
Tanner Stage	3.9 (1-5)	4.1 (1-5)	3.6 (1-5)
Total n, (%)	97 (100)	54 (55.7)	43 (44.3)

Spack N, GeMS Clinic, Boston Children's Hospital. *Pediatrics*, 2012

Cross Gender Hormonal Therapy



Masculinizing Hormonal Therapy

- Puberty induction
- (IM/SQ q 2 weeks q 6 months)
  - 25 mg/m^2
  - 50 mg/m^2
  - 75 mg/m^2
  - 100 mg/m^2
  - Continue GnRHa until serum testosterone > 100ng/ml
- Maintainance
  - Parenteral
    - Testosterone enanthate or cypionate IM/SQ weekly-q 2 weeks
  - Transdermal
    - Testosterone gel 1%, 1.62%
    - Testosterone patch

Predicting Effects of Masculinizing Hormones

Action	Onset	Max
Male pattern facial/body hair	6–12 mo	4–5 yrs
Acne	1–6 mo	1–2 yrs
Voice deepening	1–3 mo	1–2 yrs
Clitoromegaly	3–6 mo	1–2 yrs
Vaginal atrophy	2–6 mo	1–2 yrs
Amenorrhea	2–6 mo	
Emotional changes/ ↑ libido		
Increased muscle mass	6–12 mo	2–5 yrs
Fat distribution	1–6 mo	2–5 yrs

Risks of Masculinizing Hormones

- Acne
- Male pattern baldness
- Mood changes
- Polycythemia
- Weight increase
- Insulin resistance
- TG ↑ HDL ↓ LDL ↑

Feminizing Hormonal Therapy

- Estrogens
  - Oral, sublingual, transdermal. IM
- Anti-androgen
  - Spironolactone
  - Finasteride
  - Bicalutamide
- +/-Progestins for breast tissue development

Predicting Effects of Feminizing Hormones

Action	Onset	Max
↓ libido, ↓ erections	1-3 mo	3-6 mo
↓testicular volume	25% 1 yr	50% 2-3 yr
May ↓ sperm production	?	?
Breast growth	3-6 mo	2-3 yr
Body fat redistribution	3-6 mo	2-3 yr
↓ muscle mass	1 yr	1-2 yr
Softens skin	3-6 mo	?
↓ terminal hair	6-12 mo	> 3 yr
No change in voice		

Risks of Feminizing Hormonal Therapy

- VTE
- Decreased Libido
- Erectile dysfunction
- Liver dysfunction
- TG ↑ HDL ↑ LDL ↓
- Increased BP
- Increased Weight
- Glucose intolerance
- Gall bladder disease
- Pituitary adenoma
- Breast cancer
- Anti-androgens
  - ↑ K ↓ BP

Criteria for Surgical Care: Endocrine Society

- ≥ 18 or legal age of majority
- Persistent, well-documented gender dysphoria
- Successful continuous full-time living in the new gender role for 1 year
- At least 1 yr of consistent and compliant hormone treatment
- Demonstrable knowledge of all practical aspects of surgery
- If significant medical or mental health concerns are present, they must be well controlled

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Resources on Transgender Health Care

- World Professional Association for Transgender Health: www.wpath.org
- Transgender Law Center: Health Care Issues: www.transgenderlawcenter.org/issues/health
- National Center for Transgender Equality: www.transequality.org
- UCSF Center of Excellence for Transgender Health https://prevention.ucsf.edu/transhealth