GENDER AFFIRMING CARE CONSIDERATIONS FOR TRANSGENDER AND NONBINARY ADULTS

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Learning Objectives

- Define evidence-based best practices for managing diseases seen at NJH.
- Critically analyze current practice patterns and research findings, and understand how these impact current practice.
- Identify changes that healthcare practitioners intend to implement to improve patient care.

Accreditation

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Disclosures

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DISCLAIMER

There will be discussion of off-label use of FDA approved medications.

LEARNING OBJECTIVES

01

Review affirming language for care of transgender and nonbinary adults

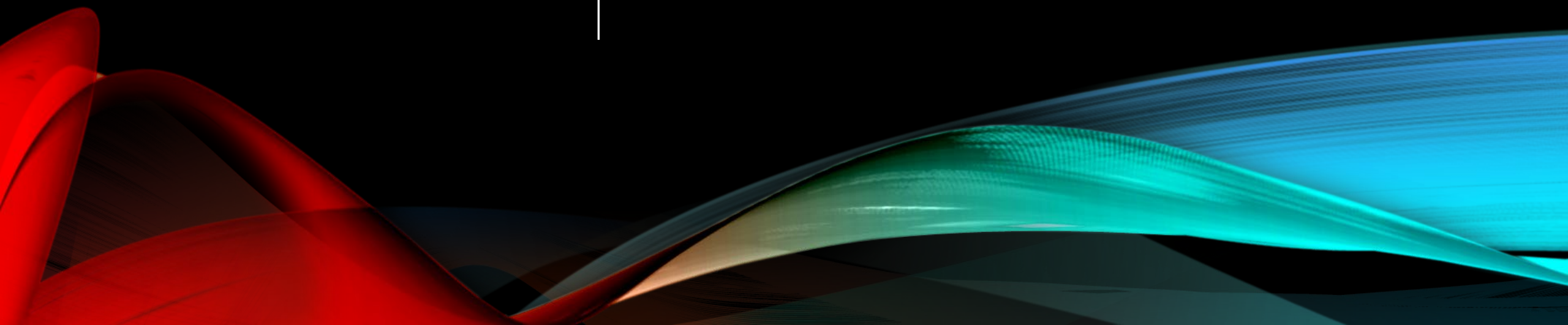
02

Understand medical and surgical options for gender affirmation, including risks and benefits

03

Employ a harm-reduction approach to considering risks and benefits of hormone therapy in setting of complications

TERMINOLOGY



WHAT IS AFFIRMING CARE?

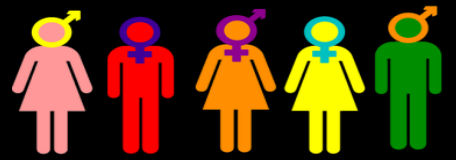
LANGUAGE

KNOWLEDGE

DOCUMENTATION

CLINIC ENVIRONMENT

POLICY



TERMINOLOGY

SEX ASSIGNED AT BIRTH
Male
Female
Intersex

GENDER IDENTITY
Man
Woman
Non-Binary

GENDER EXPRESSION
Masculine
Feminine
Androgynous

SEXUAL ORIENTATION
Heterosexual
Lesbian
Gay
Bisexual
Queer
Pansexual
Asexual

Understanding Gender

SEX ASSIGNED AT BIRTH

- Male
- Female
- Intersex

GENDER IDENTITY

- Man
- Woman
- Non-Binary

The sex that someone is labeled at birth, usually based on the appearance of their genitals.

A persons deep-seated, felt sense of gender, or how a person feels on the inside regardless of what their body looks like.

Cisgender, adj.
(pronounced /sis-gender/)

Transgender, adj.
(pronounced /trans-gender/)

HOW DO I KNOW WHAT TO USE?

- What are your pronouns?
- What pronouns do you use?

GENDER IDENTITY TERMINOLOGY

USE

- Transgender/trans man/woman
- Sex designated/assigned at birth
- Gender affirming hormone therapy (GAHT)
- Genital gender affirming surgery
- Nonbinary, genderqueer, bigender, agender, pangender, gender fluid, transfeminine, transmasculine

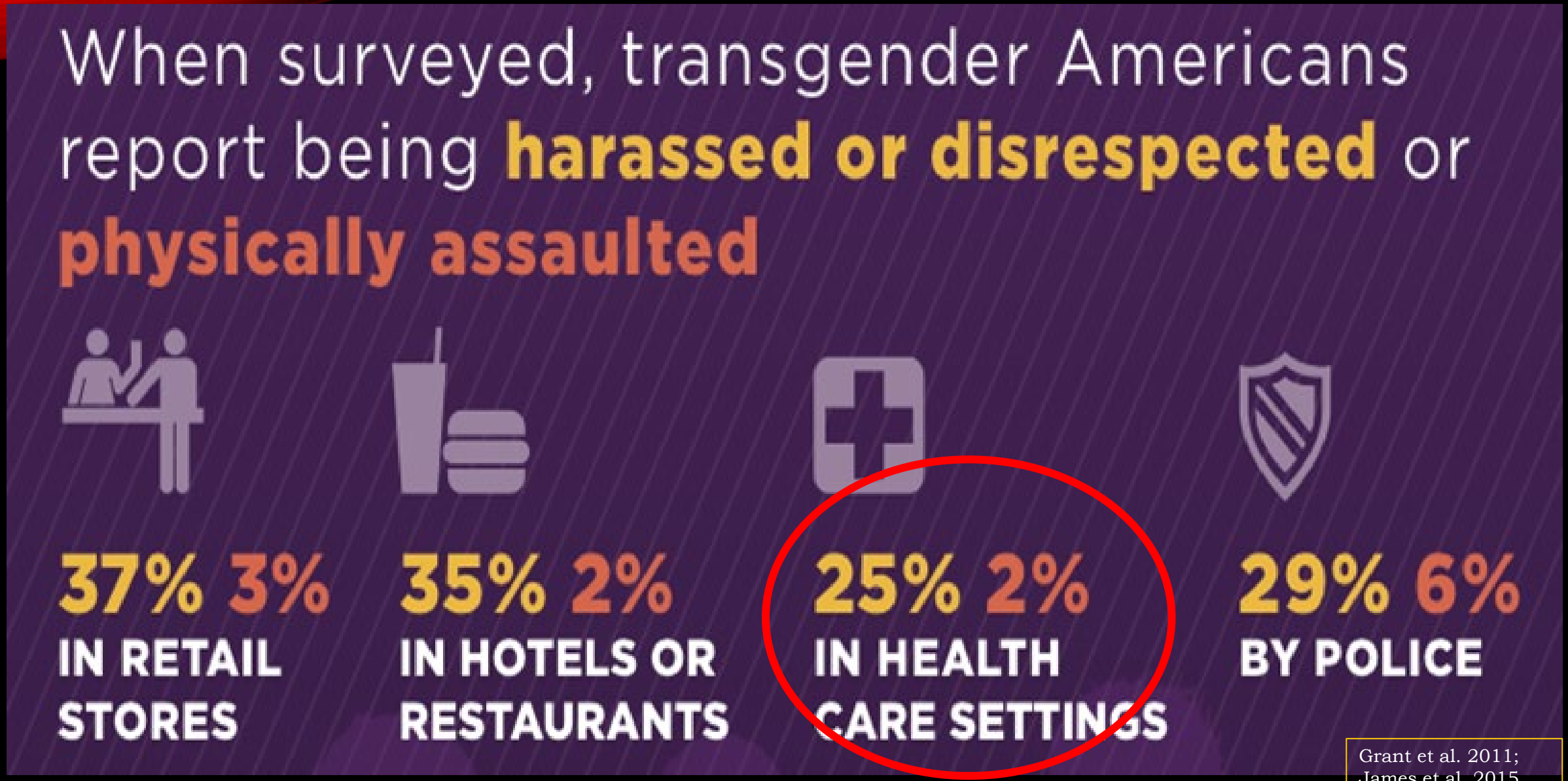
AVOID

- FTM/ MTF, M-F, F-M, transfemale, transmale
- Natal/biological sex
- Cross-sex hormone therapy
- Sex reassignment surgery
- Gender nonconforming

STIGMA AND DISCRIMINATION

Grant et al. 2011;
James et al. 2015

STIGMA & DISCRIMINATION



Grant et al. 2011;
James et al. 2015

STIGMA & DISCRIMINATION

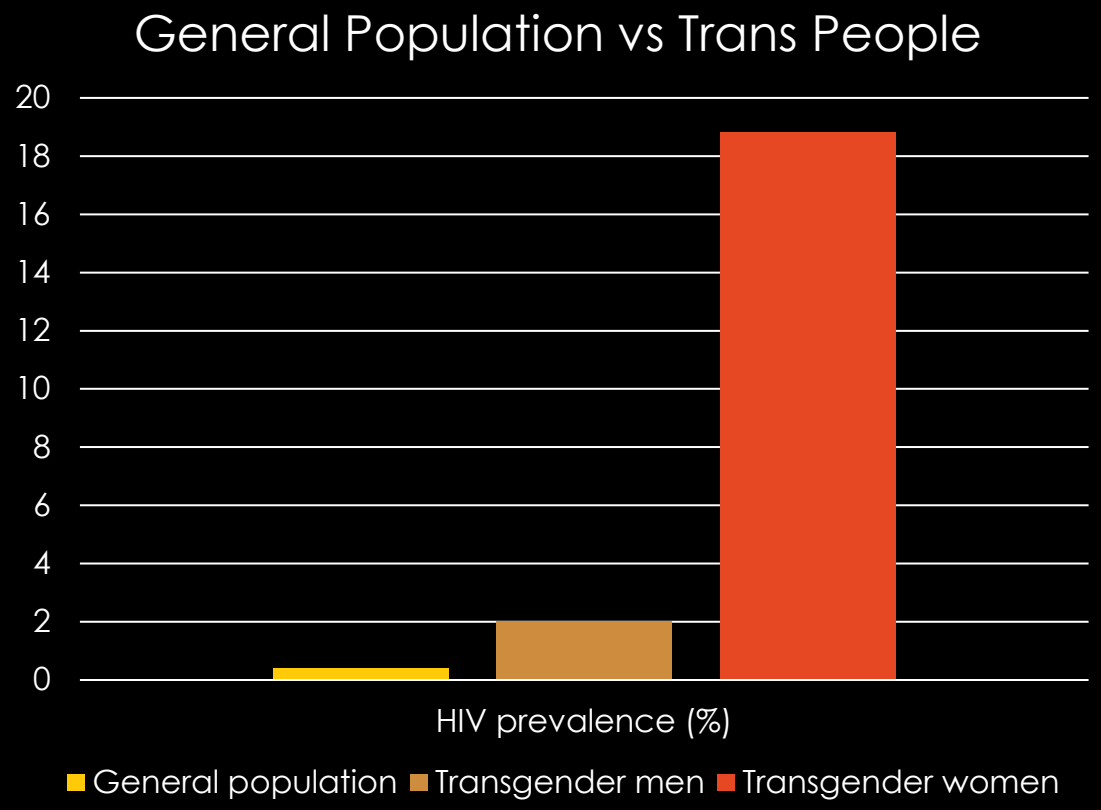
Because of fear of discrimination, **one-in-five** transgender people postponed or did not try to get health care in the past year.[2]

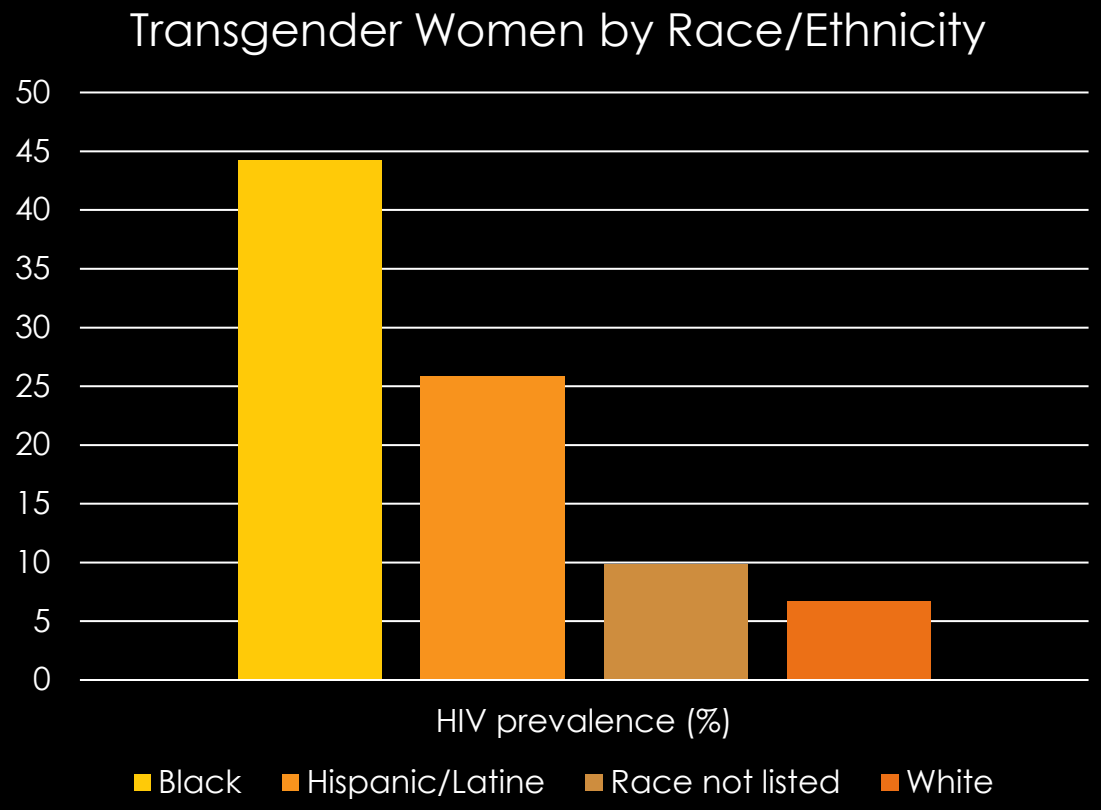
29%

of trangender people reported having to teach their health care provider about transgender health issues.[2]

Grant et al. 2011; James et al. 2015

HIV PREVALENCE IN THE US





(Becasen et al 2019)

NONMEDICAL GENDER AFFIRMING INTERVENTIONS

BINDING

Binding best practices (click here!)

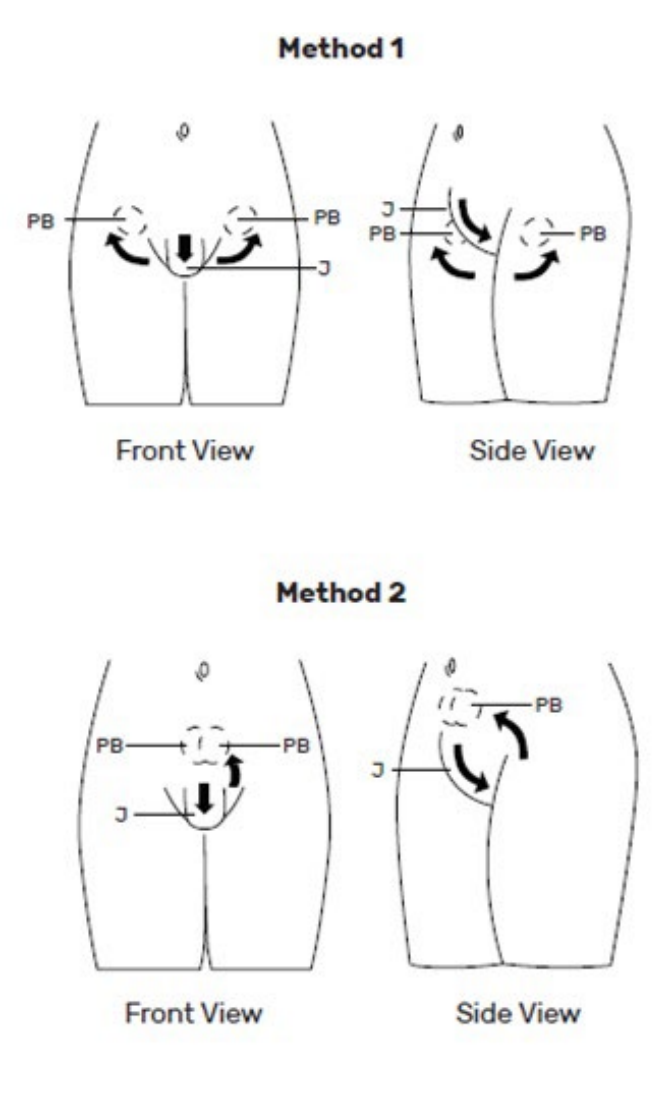
GENDER AFFIRMING TOOLS

- ‘Packing’ for penile prosthetics and stand-to-pee devices
- Risks: Blistering, vaginal infections, and abscesses, contact dermatitis.

- Risks for silicone breast inserts: skin breakdown if taping, acne, contact dermatitis.

Reynolds & Goldstein (2014)

TUCKING/GAFFING

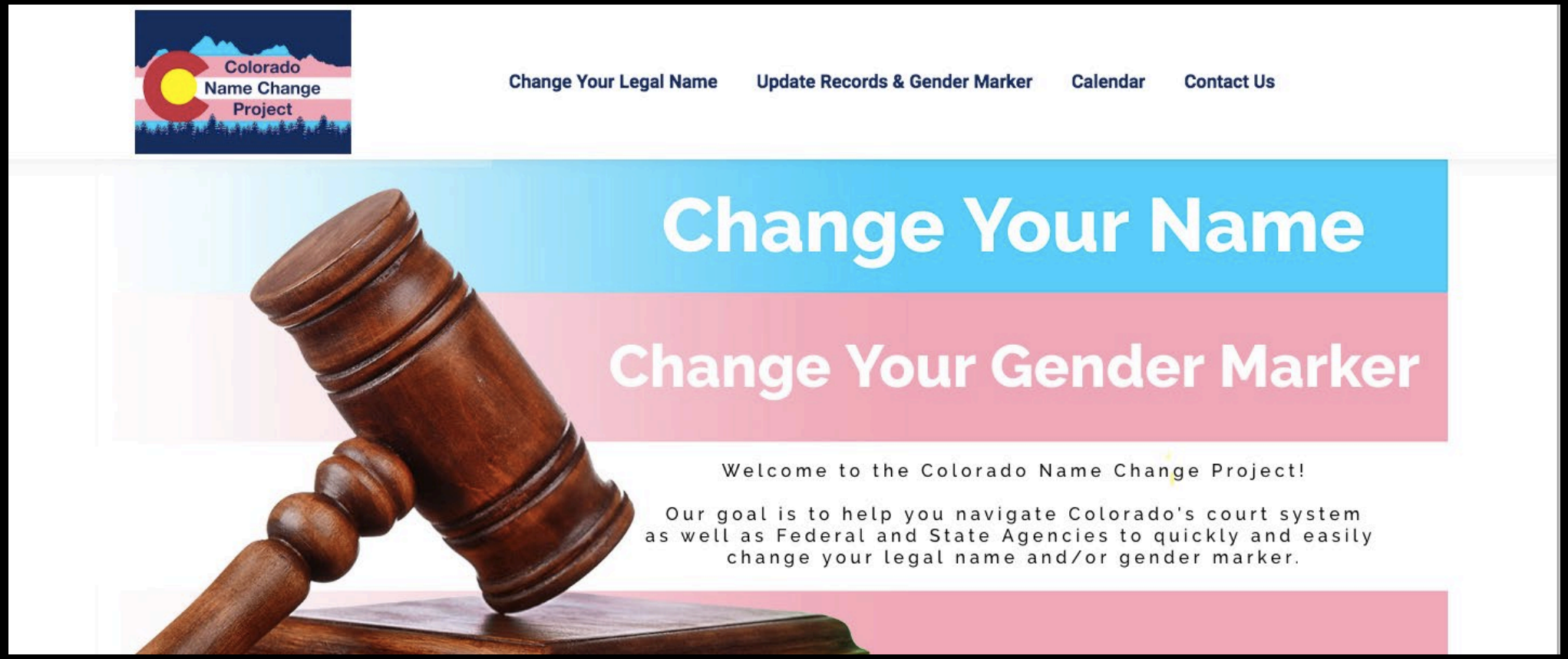


[Patient Guide to Tucking (Callen-Lorde

Reynolds & Goldstein (2014)

COLORADO NAME CHANGE PROJECT:

www.namechangeproject.org/



VOICE TRAINING

- For all gender identities
- Local voice therapy resources
- Denver Health, UCH and Kaiser offer voice therapy
- Apps available for voice coaching online

Gray et al 2019

SILICONE INJECTIONS

- Often done in "pumping parties" or in some salons by unlicensed people, using non-FDA approved materials, like industrial grade silicone. Inexpensive way to obtain feminine curves
- In several studies, 16.7-29% of trans women undergo illicit filler injections.

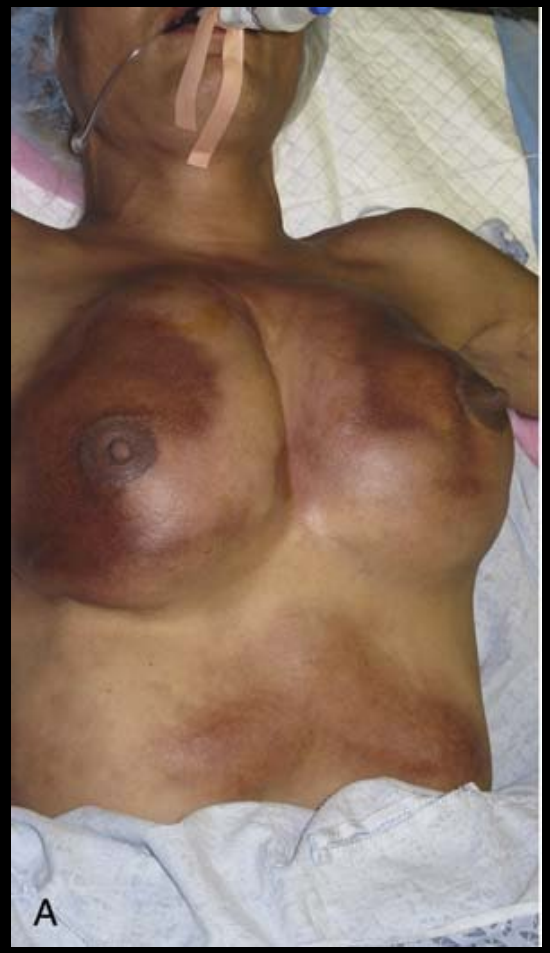
Marks et al 2019;
Wilson et al 2014

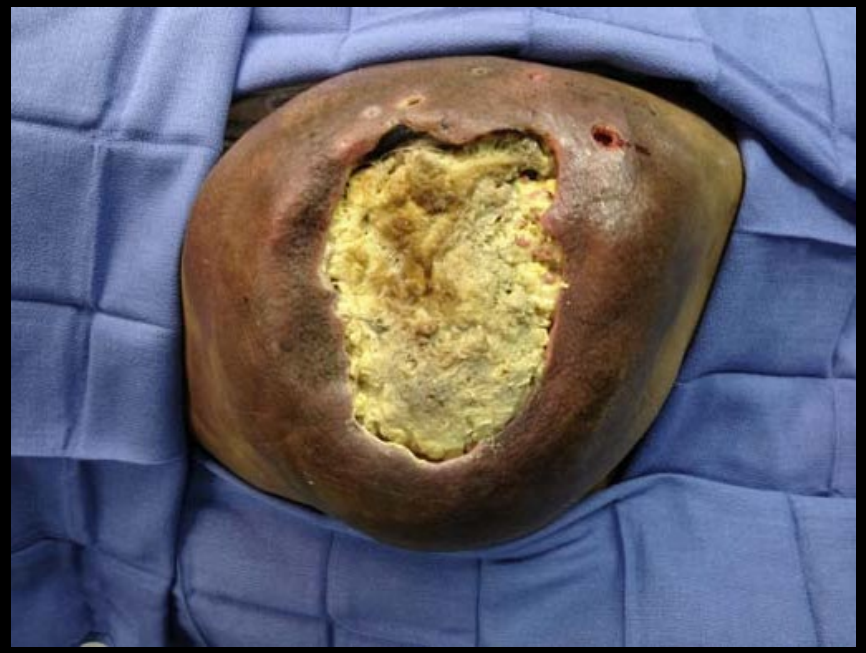
SILICONE INJECTIONS

- **Acute Effects:** Local necrosis/ulceration, abscess/cellulitis, emboli (proximal and distal), angioedema, sepsis, ARDS, and death.
  - Hepatitis/HIV transmission with shared needles
- **Chronic Effects**: ulcerative granulomas, inflammatory nodules, sterile abscesses, lymphedema, silicone migration, chronic granulomatous pneumonitis, skin changes including scarring, hyperpigmentation, telangiectasia
- *Could impair absorption of injectable medications if injecting at a site where silicone is located*

Marks et al 2019; Hariri et al 2012; Leonardi et al 2016; Styperek et al 2013

SILICONE INJECTIONS



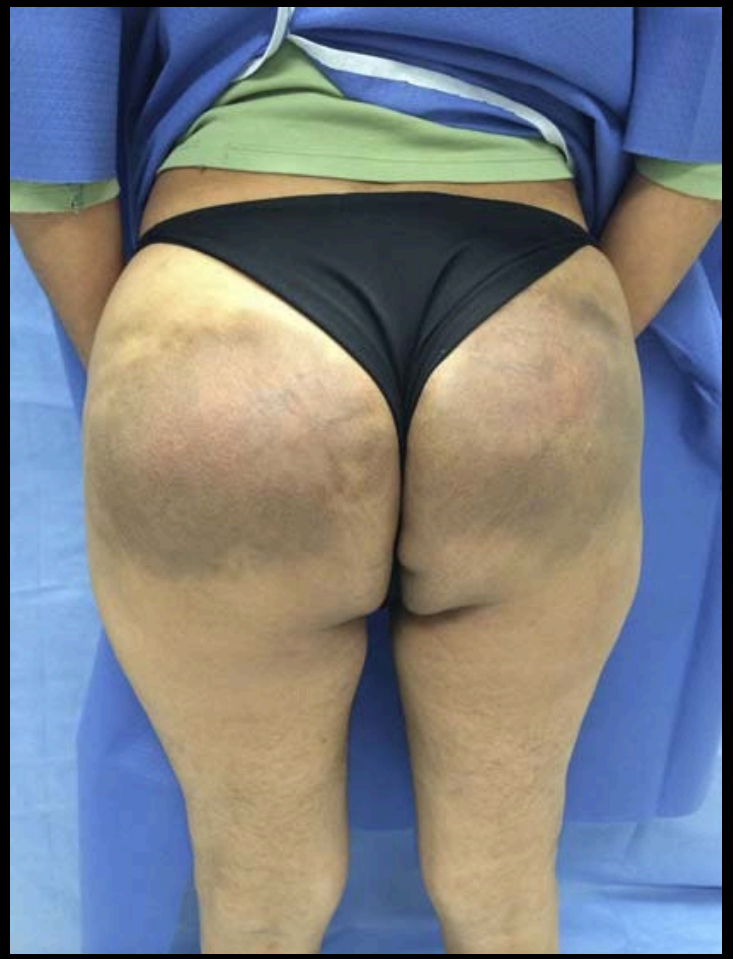


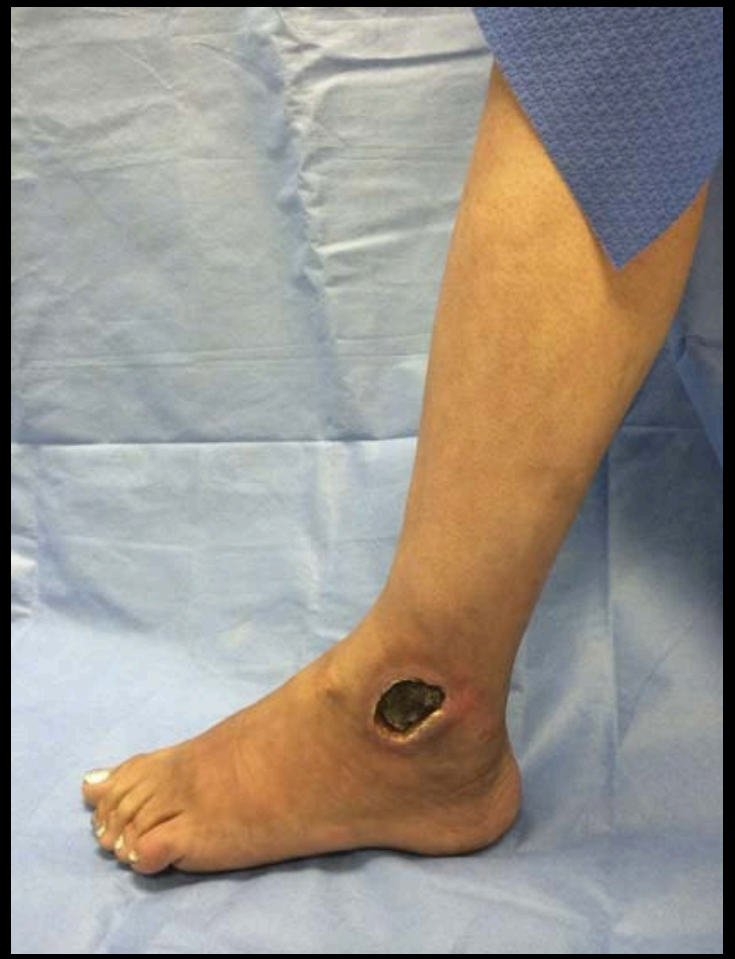
Preoperatively

Postoperatively

Leonardi et al 2016

SILICONE INJECTIONS





Leonardi et al 2016

SILICONE INJECTIONS

Treatment considerations:

- Important to document, but typically surgical excision is usually not possible or safe and often leads to worse cosmetic outcomes.
- Antibiotics
- NSAIDs + tetracyclines, intralesional steroids can help with inflammation of granulomas/nodules.
- Alternate proposed treatments: steroids, imiquimod, etanercept, tacrolimus, allopurinol, laser treatment

Marks et al 2019; Leonardi et al 2016; Styperek et al 2013

GENDER AFFIRMING HORMONE THERAPY (GAHT)

GUIDELINES

- Fenway Institute Guideline (2021)
- UCSF Guidelines (2016)
- World Professional Association of Transgender Health (WPATH) - Standards of Care version 8 (2022)
- Endocrine Society Guidelines (2017)

HORMONE THERAPY: INDICATIONS AND CONTRAINDICATIONS

Indications

- Treating and alleviating symptoms of Gender Dysphoria

Absolute Contraindications

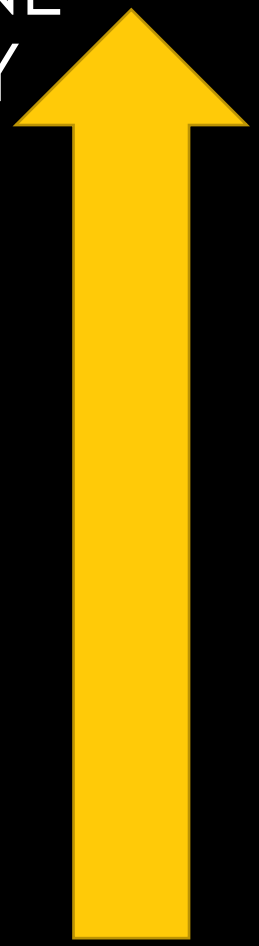
- Hormone-sensitive cancers
- Pregnancy
- End-stage liver disease
- Inability to consent

REASONS TO CONSIDER TEMPORARILY HOLDING GAHT

- Acute thromboembolic condition, e.g. ACS, pulmonary embolism
- Acute condition for which thrombotic risk is elevated, e.g. sepsis, severe Covid
- Acute organ failure, e.g. kidney, liver

Stabilize the patient, treat the underlying condition, mitigate ongoing risks for complications, then re-start GAHT when safe with shared-decision making between the patient and medical team

RISK LEVEL OF GENDER AFFIRMING HORMONE THERAPY



RISK LEVEL	Testosterone-based Regimens
Likely increased risk	• Polycythemia • Infertility • Acne • Androgenic Alopecia • Hypertension • Sleep Apnea • Weight Gain • ↓ HDL cholesterol and ↑ LDL cholesterol
Likely increased risk with presence of additional risk factors	• Cardiovascular Disease Hypertriglyceridemia
Possible increased risk with presence of additional risk factors	• Type 2 Diabetes • Cardiovascular Disease
No increased risk or inconclusive	• Low Bone Mass/ Osteoporosis • Breast, Cervical, Ovarian, Uterine Cancer

WPATH SOC v 8
Coleman, et al. 2022

RISK LEVEL OF GENDER AFFIRMING HORMONE THERAPY

RISK LEVEL	Estrogen-based regimens
Likely increased risk	• Venous Thromboembolism • Infertility • Hyperkalemia • Hypertrigyceridemia • Weight Gain
Likely increased risk with presence of additional risk factors	• Cardiovascular Disease • Cerebrovascular Disease • Polyuria/Dehydration • Cholelithiasis
Possible increased risk	• Hypertension • Erectile Dysfunction
Possible increased risk with presence of additional risk factors	• Type 2 Diabetes • Low Bone Mass/ • Osteoporosis • Hyperprolactinemia
No increased risk or inconclusive	Breast and Prostate Cancer

WPATH SOC v 8
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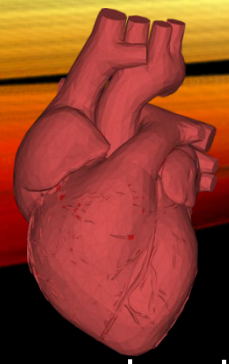

CARDIOVASCULAR RISK WITH FEMINIZING HORMONE THERAPY

- Increased rates of VTE:
  - Incidence rate 2.3-5.5 events/ 1,000 person years
  - 2- and 8-year risk differences of 4.1 and 16.7/1000 people compared to cis men (3.4 and 13.7/1000 people compared to cis women)
  - Higher likelihood with estradiol PO in first year of hormone therapy; other risk factors, e.g. older age, smoking, HIV, undiagnosed thrombotic disorder; use of ethinyl estradiol (not used any more!)
- Increased risk of CAD/CVD*
  - Increased deaths from ischemic heart disease OR 1.64 (1.43 – 1.87)
  - Ethinyl estradiol OR 3.64 (1.52 – 8.73)
  - Fatal stroke <65yo SMR 2.11 (95% CI: 1.32 – 3.21)
- Prevention: Avoid ethinyl estradiol and conjugated estrogens, use transdermal estradiol in high-risk patients, encourage smoking cessation, avoid supratherapeutic estradiol levels

Slide content credit: Tonia Poteat

Streed at al 2021; Weircx 2014; Asscheman 2011; Dhejne 2011; Wilson 2009; Khan et al 2019

INTERPRETING SEX-BASED RISK ESTIMATES

- ASCVD Risk
  - Consider age of hormone initiation and total length of hormone exposure
  - Can choose to estimate sex at birth, affirmed gender or average of the two
- Osteoporosis risk (e.g. FRAX tool)
  - BMD already attained if initiated hormones in adulthood
  - Expert consensus is to use sex at birth
- Renal impairment (estimated GFR)
  - Serum Cr increased in trans men and decreased in trans women after GAHT
  - Can consider cystatin C based eGFR

UCSF Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People

PULMONARY FUNCTION TESTING (PFT)

- Should gender or sex be used to calculate normative PFT values in transgender patients?
- American Thoracic Society guidelines recommend using sex assigned at birth as reference for normative values for PFT interpretation
- Potential impacts of GAHT on pulmonary function:
  - Increase or decrease in hemoglobin levels
  - Increase or decrease in muscle mass, strength and area that can impact forced inspiratory lung volume, expiratory flow rate and resting lung volume
    - max effect 1-2 years after initiation
- These changes could impact PFT interpretation and increase risk for misdiagnosis or inappropriate treatment in the setting of pulmonary disease
- Consider male and female normative predictive values when interpreting PFTs for trans patients and use an individualized approach with shared decision making for diagnosis and treatment options

Stanojevic et al 2022; Cortes-Puentes et al 2023

GAHT: TESTOSTERONE

EFFECTS OF TESTOSTERONE

Irreversible

- Deepened voice
- Increased coarse, thick hair
- Facial hair growth
- Possible hair loss
- Clitoromegaly

Reversible

- Amenorrhea
- Central weight gain
- Increased muscle mass/strength
- Increased physical energy
- Acne
- Increased libido
- Mood changes
- ?Fertility affected

Radix 2019; UCSF 2016

TESTOSTERONE PREPARATIONS

Medication	Dose Range
• Testosterone cypionate (cottonseed oil) • Testosterone enanthate (sesame oil)	50-100mg SC/IM weekly or 200mg every 2 wks
Testosterone gel	50-100mg daily, applied to upper arms or thighs

Thompson et al. 2021; UCSF 2016

LAB MONITORING

- Check Hb/Hct at 3-6 months, then q 6-12 mo
  - Interpret in normal ranges for cisgender men
- Consider lipids and HbA1c q 12 mo depending on risk factors
- Total testosterone level, goal 400-700ng/dL
  - Check midway between injections

Thompson et al. 2021; UCSF 2016

WHICH OF THE FOLLOWING IS FALSE REGARDING TESTOSTERONE AND PREGNANCY?

A. Testosterone reliably suppresses ovulation when administered regularly in people born with ovaries.
B. Transgender men treated with testosterone who are amenorrheic can still become pregnant.
C. Testosterone is teratogenic in pregnancy.
D. Non-hormonal and progesterone-based contraceptive methods will reliably prevent pregnancy in transgender men treated with testosterone and will not interfere with masculinizing effects.

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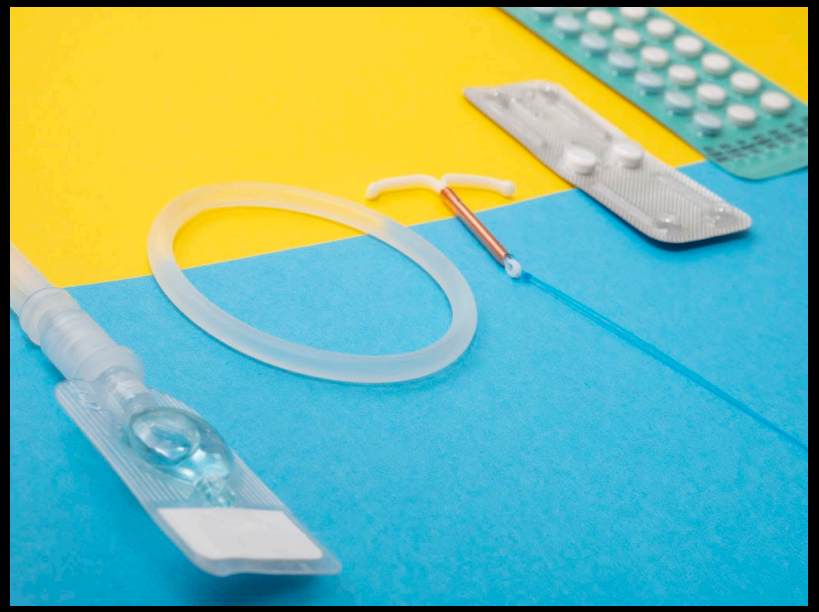
TESTOSTERONE AND PREGNANCY

- Light, et al., 2014: 41 trans men
  - 2/3 had planned pregnancy
  - 1/3 had unplanned pregnancy
- 61% used testosterone before pregnancy
  - 80% resumed menstruation after stopped testosterone
  - 20% conceived while still ameorrheic
- Only 15% had preconception counseling.
- Most common contraception: Condoms or none

(Light, A.D., Obedin-Maliver, J., Sevelius, J.M., & Kerns, J.L., 2014)

CONTRACEPTION & TESTOSTERONE



- *Testosterone is not birth control and it is harmful (teratogenic) in pregnancy.*
- Any method that is non-hormonal or progesterone-based method is acceptable and will not interfere with testosterone, including:
  - Etonogestrel implant
  - Levonorgestrel IUD
  - Copper IUD
  - Medroxyprogesterone injection

Krempasky 2019

PATIENT CASE #1

A 19yo nonbinary transmasculine patient (they/them) has been treated with testosterone and comes in for a physical. Their CBC shows Hb/Hct of 18.5/54.2 (normal range for cis men is Hb 13-18g/dL and Hct 38-52%). Testosterone level 700mg/dL. (Normal 300-700mg/dL).

Which of the following is in the differential diagnosis for this patient?

A. *Obstructive sleep apnea*
B. *Erythropoietin-secreting tumor*
C. *Erythrocytosis secondary to testosterone*
D. *All of the above*

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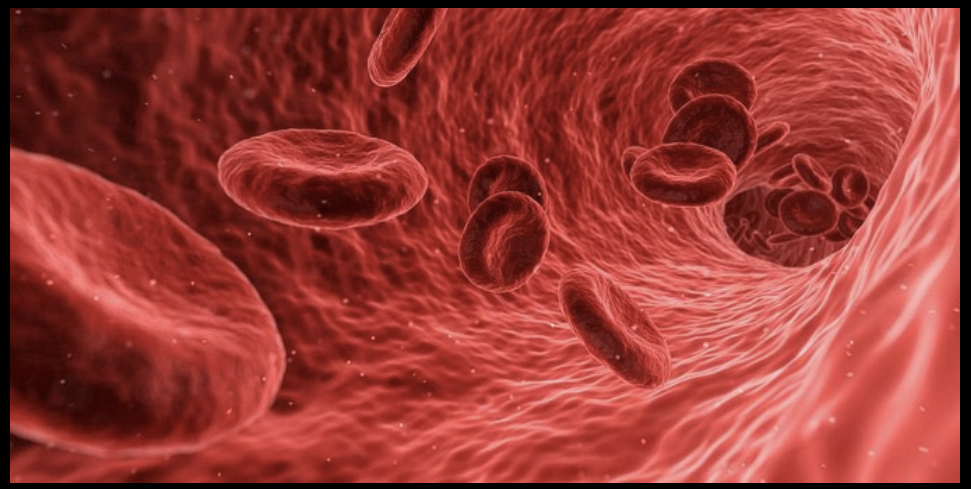
ERYTHROCYTOSIS AND TESTOSTERONE

- Differential diagnosis: Erythrocytosis secondary to testosterone, chronic hypoxia, OSA, smoking, polycythemia vera, EPO-secreting malignancy (rare)
- Risks: 2-5% risk of thrombotic event, depending on age.
- Management: Reduce testosterone dose or switch to topical formulation, sleep study (if risk factors), smoking cessation. If severe, consider phlebotomy or donate blood.



Bhasin et al 2018

PATIENT CASE #2

24yo trans man (he/him) who has been injecting testosterone he bought off the street and has had several recurrent inflammatory abscesses. He reports drinking up to a pint of liquor daily. Labs show ALT 110 and AST 150, total bilirubin 3.6, normal alkaline phosphatase, INR and platelets. He wants to be prescribed testosterone for gender affirmation.

The patient's transaminitis is most likely secondary to his non-prescribed testosterone use:

A. True
B. False

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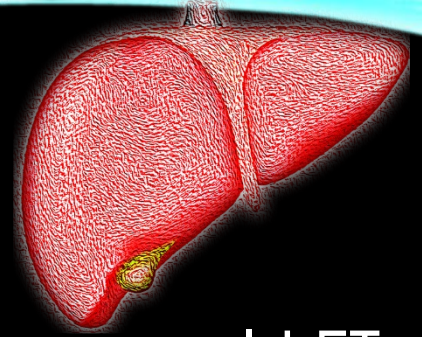
A. True

B. False

TESTOSTERONE THERAPY AND ABNORMAL LIVER FUNCTION TESTS



- Testosterone has not been associated with abnormal LFTs in GAHT.
- *Harm reduction approach encouraged.* Consider contaminants of non-prescribed testosterone and potential for shared needles.
- Workup abnormal liver function tests as with any patient (e.g. hepatitis B/C, HIV, ferritin, RUQ US, etc).
- If hepatic synthetic function is not impaired (e.g. elevated INR, low albumin) then testosterone can be continued, in safe dosages and with sterile injection supplies.
- If hepatic synthetic function is impaired, then testosterone is contraindicated.

Benotsch 2013; Lexicomp; Stangl et al 2021

GAHT: ESTRADIOL & ANTI-ANDROGENS

EFFECTS OF ESTROGENS AND ANTI-ANDROGENS

Irreversible

- Breast growth
- Testicular atrophy
- Oligospermia, eventual infertility

Reversible

- Loss of muscle mass/strength
- Wt gain (butt, hips, thighs)
- Softer skin
- Less facial/body hair
- Decreased libido
- Erectile dysfunction
- Mood changes

Radix 2019; UCSF 2016

ESTRADIOL

Medication	Dose Range
• Estradiol cypionate (cottonseed oil) • Estradiol valerate (sesame oil)	• 2.5-10 mg IM/SC q 2 wks • 10-40mg IM/SC q 2 wks
Estradiol tablet	2-8mg daily PO/SL
Estradiol patch	0.1-0.4mg patch twice weekly

Thompson et al. 2021; UCSF 2016

ANTI-ANDROGENS

Medication	Usual Dosage
Spironolactone	50-300mg PO daily (or div. BID)
• Finasteride • Dutasteride	• 5mg PO daily • 0.5mg PO daily
Leuprolide	11.25-22.5mg IM q 3 mo
Bicalutamide (infrequently used)	50mg PO daily

Orchiectomy

Thompson et al. 2021; UCSF 2016; Micromedex

MONITORING

- For spironolactone: check BMP 2-8 wks after starting or changing dose then q12mo
- Lipids, A1c q 12-24 months if risk factors
- Estradiol levels, target range 100-200 pg/ml and total testosterone <50mg/dl
  - Mid-way between injections or 4-6 hours after PO dose

Thompson et al. 2021; UCSF 2016

PROGESTERONE?

- Most protocols recommend against using, but patients often desire for breast growth and/or libido
- Can paradoxically increase androgenic effects
- Women's Health Initiative data (not high quality) in postmenopausal cis-women on use with conjugated estrogens showed an increased risk of VTE, CVA and MI
- Harm reduction approach if patients desire:
  - *Provera 2.5 to 10 mg daily*
  - *Prometrium 100-200 mg daily*

PRINCIPLES OF GENDER AFFIRMATION IN NONBINARY/ GENDERQUEER PEOPLE

Some nonbinary people may choose to do all, some or none of social, medical and surgical transition options available to them.

Important to support them in their goals to affirm their gender identity.

Document when medical or surgical treatments may be harmful or counteract gender transition goals.

Okay to start with lower doses of hormones and titrate to effect, or treat for desired period of time and discontinue per patient goals

CONSIDERATIONS FOR OLDER ADULTS

- Consider lowering doses of GAHT for maintenance therapy and avoid supratherapeutic ranges. Use lowest-risk formulation (e.g. estradiol patch)
- Okay to discontinue GAHT in middle-age if the patient desires
- Use shared decision-making around risks/benefits of continuation of GAHT based on what the patient's actual risk factors and life expectancy are compared to the emotional/psychological impact of GAHT discontinuation

PATIENT CASE #3

32yo trans woman who presents to establish care.

Past History:

- Pulmonary embolism three years ago after surgery for femur fracture, treated x 3 mo with AC.
- GAHT x 5 years, estradiol 6mg PO and spironolactone 100mg daily.
- No FH blood clots or d/o
- Smokes occ 2x/mo

Which of the following is **true** regarding this patient's hormone therapy?

A. Her estradiol should be stopped because of her recurrent VTE risk.

B. Her estradiol is safe to continue because her DVT was provoked in the setting of a fracture.

C. Transdermal estradiol has a superior safety profile to oral estradiol for patients with a history of VTE.

D. B&C

E. None of the above

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C. Transdermal estradiol has a superior safety profile to oral estradiol for patients with a history of VTE.

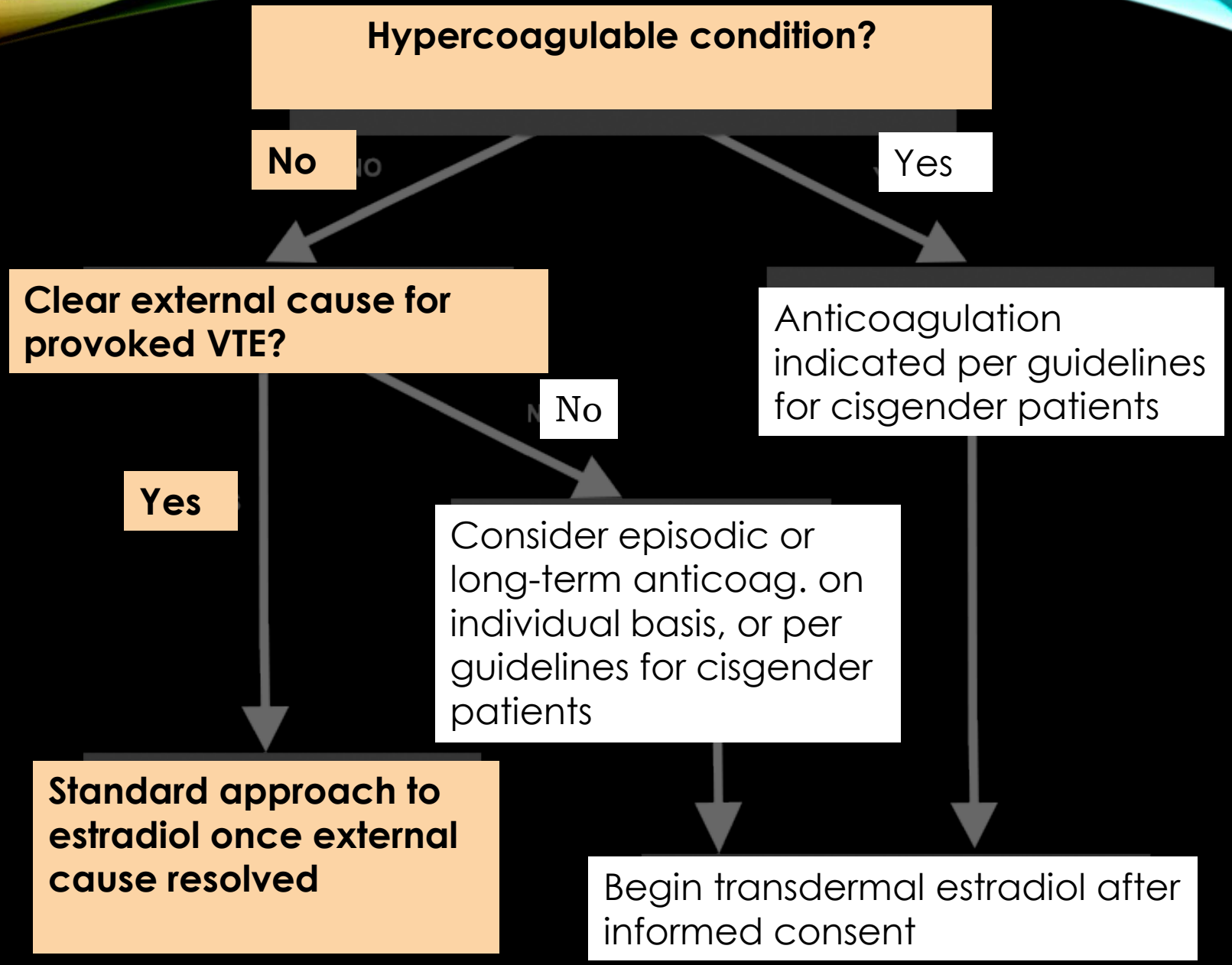
D. B&C

E. None of the above

ESTRADIOL THERAPY FOR TRANS PATIENTS WITH HISTORY OF VTE

For this patient:

- Likely no need for coagulability workup, ok to cont estradiol in setting of provoked VTE
- Encourage smoking cessation
- Consider switch to transdermal estradiol



UCSF 2016

GENDER AFFIRMING SURGERIES

GENDER AFFIRMING SURGERIES

Surgeries for Transfeminine People

- Orchiectomy
- Vaginoplasty
- Penectomy
- Breast Augmentation
- Reduction Chondrothyroidplasty (Tracheal shave)
- Body Contouring (facial feminization)

Surgeries for Transmasculine People

- Mastectomy/chest reconstruction
- Hysterectomy/BSO
- Metoidioplasty
- Phalloplasty
- Scrotoplasty (+ testicular implants)
- Urethroplasty
- Vaginectomy

UCSF, et al. (2016)

PREOPERATIVE CONSIDERATIONS

- No evidence supporting need to hold GAHT prior to surgery to reduce perioperative risk, though some surgeons still require this.
- Common pre-operative requirements:
  - Nicotine cessation at least 4 weeks before surgery. Many surgeons require negative nicotine testing.
  - BMI <35
  - A1c <8% (for diabetic patients)
  - HIV VL undetectable, CD4 count >200
  - Other medical conditions have been addressed. Any necessary preop cardiopulmonary testing has been performed/cleared.

POSTOPERATIVE CONSIDERATIONS

For transfeminine patients who undergo orchiectomy (alone or as part of vaginoplasty), anti-androgen therapy can be discontinued postoperatively.

For any patient undergoing gonadectomy at least low-dose hormone therapy should be continued until at least ~50 years old to maintain bone mineral density.

The prostate is still present in trans women s/p vaginoplasty and can be examined through the anterior wall of the neovagina.

The gynecologic examination of the transfeminine person after penile inversion vaginoplasty
Grimstad et al 2020

CARING FOR TRANSGENDER AND NONBINARY PEOPLE: SUMMARY

- Take into account stigma and discrimination that many transgender and nonbinary people face in health care settings
- Employ a harm-reduction approach to GAHT based on known and presumed risks an individual patient has
- ***Most of the care for transgender and nonbinary people has nothing to do with their gender identity***

RESOURCES

NATIONAL RESOURCES

- Fenway Institute (Harvard)
- National LGBTQIA Health Education Center – free CME webinars
- UCSF Center of Excellence for Transgender Health
- Callen Lorde Community Health Center
- World Professional Association of Transgender Health
- TS Roadmap: Resources for patients, especially on surgery (though caution- transgender woman-specific and uses outdated language)
- Transline: free online consultation

RESOURCES – COLORADO

- Transgender Center of the Rockies (Denver)
- Youth Seen (Denver/Boulder)
- The Center on Colfax (Denver)
- Out Boulder County
- Colorado Name Change Project
- One Colorado
- Colorado Crisis Services
- Colorado Statewide Resources
- Northern Colorado Resources
- Southern Colorado Resources
- Western Slope Resources

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