Transgender Medicine

Medications, Surgery and What Practitioners Need to Know

Its not about being a *New* person, or
becoming someone else.
Its about showing the world who you really
are inside.

Corie Beniasians PA-C, MS-PA

…a little about me…

LOS ANGELES LGBT CENTER®

Research → Implementation

Site Update: LAGLC

- First screening occurred 5/17/2013
- First participant enrolled 5/28/2013
- Approximately 5 participants have enrolled in the study each month
- LAGLC's current monthly goal is to enroll between 10 and 15 participants each month
- Scale up is in progress with a goal of 20-25 per month

LAGLC

Site Medical Director: Dr. Robert Bolan	Site Executive Research Director: Risa Flynn
Site Project Director: Glenn Gaylord / *Corinne Beniasians*	
Site Provider: Corinne Beniasians / *Everado Mejia*	Site Care Navigato: Henry Meraz / *Glenn Gaylord*
Designated Lab Tech: Marysol Gonzalez / *Corinne Beniasians* / *Ruben Rivera* / *Raymundo Mercado*	Site Pharmacis: Kevin Marx

Key: Study Role — Staff Member — *Backup/Alternate*

Sex Transm Infect. 2018 Sep;94(6):457-462. doi: 10.1136/sextrans-2017-053377. Epub 2018 Feb 27.

Does HIV pre-exposure prophylaxis use lead to a higher incidence of sexually transmitted infections? A case-crossover study of men who have sex with men in Los Angeles, California.

Beymer MR[1,2], DeVost MA[2], Weiss RE[3], Dierst-Davies R[4], Shover CL[2], Landovitz RJ[1,5], Beniasians C[2], Talan AJ[2], Flynn RP[2], Krysiak R[2], McLaughlin K[2], Bolan RK[2].

Author information

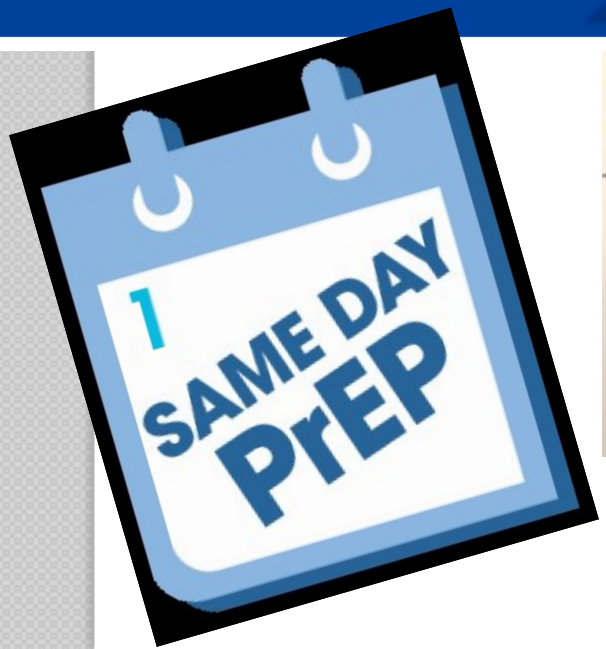
Abstract

BACKGROUND: Pre-exposure prophylaxis (PrEP) is an effective method for reducing HIV incidence among at-risk populations. However, concerns exist over the potential for an increase in STIs following PrEP initiation. The objective of this study is to compare the STI incidence before and after PrEP initiation within subjects among a cohort of men who have sex with men in Los Angeles, California.

METHODS: The present study used data from patients who initiated PrEP services at the Los Angeles LGBT Center between October 2015 and October 2016 (n=275). A generalised linear mixed model was used with a case-crossover design to determine if there was a significant difference in STIs within subjects 365 days before (before-PrEP period) and 365 days after PrEP initiation (after-PrEP period).

RESULTS: In a generalised linear mixed model, there were no significant differences in urethral gonorrhoea (P=0.95), rectal gonorrhoea (P=0.33), pharyngeal gonorrhoea (P=0.65) or urethral chlamydia (P=0.71) between periods. There were modest increases in rectal chlamydia (rate ratio (RR) 1.83; 95% CI 1.13 to 2.98; P=0.01) and syphilis diagnoses (RR 2.97; 95% CI 1.23 to 7.18; P=0.02).

CONCLUSIONS: There were significant increases in rectal chlamydia and syphilis diagnoses when comparing the periods directly before and after PrEP initiation. However, only 28% of individuals had an increase in STIs between periods. Although risk compensation appears to be present for a segment of PrEP users, the majority of individuals either maintain or decrease their sexual risk following PrEP initiation.



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GILEAD

TERMS

- Hormone Therapy (HRT/HT)
- Assigned female at birth (AFAB)
- Assigned male at birth (AMAB)
- Cismales/Cisfemales
- Transfemales
- Transmales
- Gender Nonconforming

TG/GNC

*not all terms

Definition, WPATH

- **Gender nonconformity** refers to the extent to which a person's gender identity, role, or expression differs from the cultural norms prescribed for people of a particular sex (Institute of Medicine, 2011).
- **Gender dysphoria** refers to discomfort or distress that is caused by a discrepancy between a person's gender identity and that person's sex assigned at birth (and the associated gender role and/or primary and secondary sex characteristics)
- **Bigender, or genderqueer** –the concept or identification with that which lies outside the male/female binary understanding of gender

First and Foremost

- A clinician should collaborate with a mental health specialist who has extensive experience with the diagnosis of such Individuals to avoid mistreatment with hormones or sex-reversing surgical procedures
  - For the purpose of exploring gender identity, role, and expression
  - May involve family, partners, etc
  - To support during the transition process, improve body image; or promote resilience.

You already know 90% of what you need to know

- 100% of the medical treatments and most of the surgeries are used in cisgender patients
- Most medical care of transgender patients has nothing to do with being transgender
- MTF/FTM total mortality no higher than general population
  - Largely, observed mortality not r/t hormone treatment
  - Although VTE was the major complication in MTFs, increased morbidity linked to HIV.
- An examination should only be performed of those body parts that pertain to the reason for a specific visit.

- When conducting a physical exam, providers should use a gender affirming approach.
- **Gender affirmation** is when an individual is affirmed in their gender identity through social interactions.
  - Referred to by the correct name and pronouns during the entire visit.
  - Using general terminology for body parts, or asking patients if they have a preferred term to be used.

What is Hormone Therapy?

- Providing individuals with a treatment regimen utilizing hormones which are identical to those within our bodies.
  - Birth control
  - Post-menopausal HRT
  - Testosterone deficiency (cis males)
  - Post cancer treatment
  - Cross Hormone Therapy for Transindividuals
  - ..can also be any other exogenous hormone necessary for successful functioning, steroid, thyroid, etc.

Hormones for TG/GNC

- Maximize the congruency between one's internal gender identity and their physical identity
  - Changing the physical appearance in order to "pass" [as their identified gender]
- Emotional well-being
- Allows for minimization of existing secondary sex characteristics
  - Reduce bothersome erections in transwomen
  - Eliminate menstruation in transmen

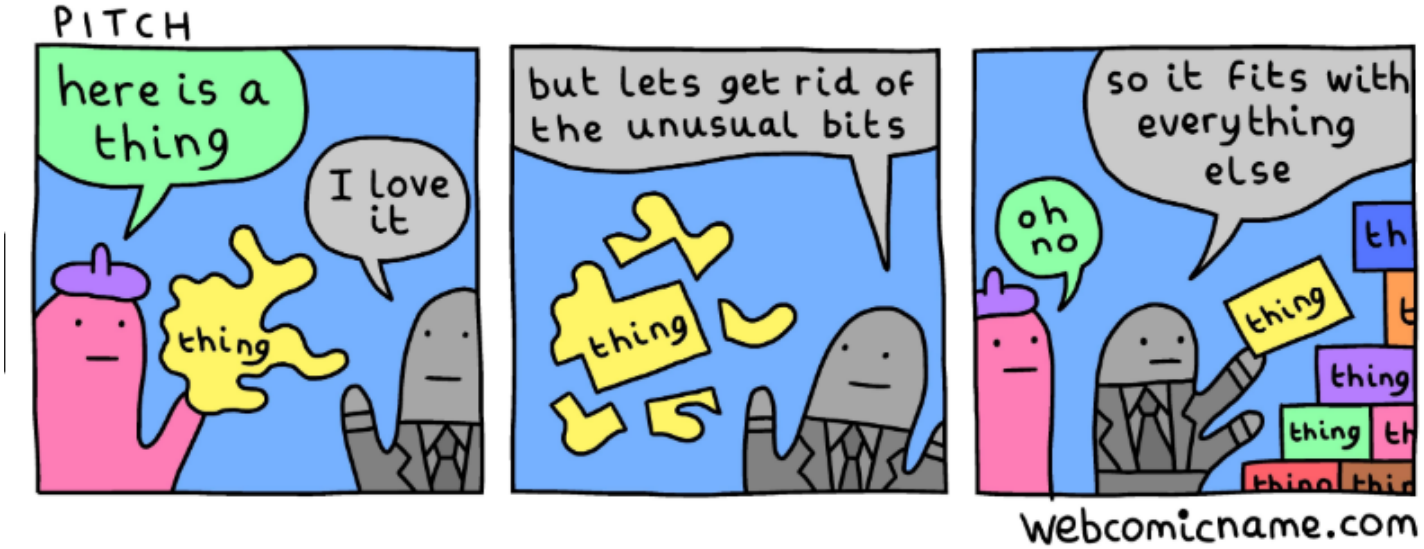
- First chance to express their gender identity*

*Some changes are irreversible

One and the Same?

- Every individual's treatment will be tailored to them uniquely based on
  - Goals
  - Risk/benefit ratio
  - Medical conditions
  - Social and economic issues

  - Not a one size fits all



Similar to many practices of medicine, not everyone fits into the same regimen, and so we cannot push our goals to fit them into such a conceptualized process.

Different than most practices of medicine, because we must hear what the patient's goals are (somewhat patient directed care) in order to proceed with a regimen that will achieve these goals with the least side effects and risks.

Realistic Expectations part 1

- Everyone's results will be different, based on:
  - Goals
  - Therapeutic regimens (doses, hormones used,etc)
  - Lifestyle
  - Medical conditions
  - Age and timing
  - …and most importantly Genetics

The process before it begins…

- Capacity to make a fully informed decision and to consent for treatment;
- True Gender dysphoria, NOT just a fad
- If significant medical or mental health concerns are present, they must be reasonably well-controlled and addressed
- Has clear and realistic expectations;
- Commitment to follow ups and protocols
- Has considered the psychosocial implications*
  - Ready to face the world
- ***Reproductive options*** are explored *before* initiating hormone therapy.

Reproductive Options

- Why is this important?
  - Hormones can cause infertility in both sexes*
  - Give opportunity to have children which are genetically/biologically "their own"
  - ❑ Sperm banking
  - ❑ Egg harvesting
  - ❑ Embryo banking
- Not cheap, but worth considering

Who Can Prescribe Hormones?

- Endocrinologist
- Primary care/Internist/Family Practitioner
- LGBT Clinic ^
- Gynecologist
- Urologist
- Reconstructive surgeons
- Psychiatrists

Why are WE so hesitant?

- Off-label administration of medications
  - Medications not used for the purpose we give it
  - Serious complications
- Limited medical studies and literature
  - Lack of education
- Lack of clinical experience
- Fear of getting sued
- Personal discomfort/Religious, cultural prohibitions

Who should NOT be prescribing Hormones?

- Patient
- Family
- Friends
- Google
- Internet "buddies"
- "Urgent care" physicians*
- "On-line" doctors
- "On-line" pharmacies

WARNING

- Do **NOT** buy Hormones from black market or off a friend.
  - May be impure
  - Contaminated
  - Old (less effective)
  - Not FDA regulated
  - Not the hormone at all

Ladies first

Male to Female Hormone Therapy

- Antiadrogen
  - Spironolactone
  - Dutasteride/Finasteride
- Estrogen
  - Oral/Transdermal/Injection
  - Multiple formulations
- Progestagen
  - Medroxyprogesterone Acetate (synthetic)
  - Micronized Progesterone

**Progesterone* is umbrella term for the hormone

- Progestin – synthetic= risky
- Progesterone – bioidentical = safer

~More hormones is not beneficial nor more effective
Will not work faster or better – natural course

Medication	Starting dose	Maintenance dose	Max dose
Anti-Androgen			
Spironolactone	50mg QD-BID	100mg BID	400mg daily
Finasteride*	5mg QD	5mg QD	5mg daily
Finasteride (Hair)	1mg QD	1mg QD	5mg daily
Dutasteride	0.5mg QD	0.5mg QD	0.5 mg daily
Estrogen			
Estradiol oral/SL	1mg QD-BID	2-4mg BID	8mg daily
Estradiol Transdermal	50mcg	100mcg	100-400mcg
Estradiol Val IM	5-20mg IM QOW	20mg IM QOW	40mg IM QOW
Estradiol Cyp IM	0.5-2mg QOW	2mg IM QOW	5mg IM QOW
Progestagen			
Medroxyprogesterone Acetate	2.5mg qHS	2.5mg-5mg qHS	5mg-10mg qHS
Micronized Progesterone	100mg qHS	100mg qHS	100-200mg qHS

Contraindications in MtF HRT

- Absolute
  - Hx of Blood clots (thromboembolisms)
  - Hx of Pituitary tumor
  - Hx of Breast Cancer
- Relative
  - Heart Dz, Stroke
  - Liver dysfunction or tumor
  - Uncontrolled High blood pressure
  - Poorly controlled cholesterol or diabetes
  - Heavy tobacco use

RISKS

- CisWomen/ Synthetic hormones
- Similar to Oral Birth Control pills/ Postmenopausal HT

Risk Level	Disease process
Likely increased risk	Venous thromboembolic disease Gallstones Elevated liver enzymes Weight gain Hypertriglyceridemia
Likely increased risk with presence of additional risk factors	Cardiovascular disease
Possible increased risk	Hypertension Hyperprolactinemia or prolactinoma
Possible increased risk with presence of additional risk factors	Type 2 diabetes
No increased risk or inconclusive	Breast cancer

Realistic Expectations part 2

- Feminizing Hormones do NOT:
  - cause the voice to increase in pitch (need voice training)
  - dramatically change the shape or size of ***bone structure***, ie skull shape, facial features, size of hands, nose, feet, teeth, jaw.
  - Reduce waist size – diet and exercise
  - dramatically reduce facial hair growth in some people (will need laser or electrolysis)
  - Work instantly /overnight

What we CAN expect…

- Physical changes may start to be noticeable around 3 months
- Sexual changes can occur as soon as 1 month (↓ libido, erections, semen production)
- Irreversible effects settle in within 6 months
- Most changes have reached maximum effect by 3 years
  - Feminization continues at a decreasing rate during that last year and bursts of other changes maybe experienced after orchiectomy

Changes…

- Decreased fertility (maybe permanent)
- Decreasing genitalia size (both penis and scrotum)
- Decreased body and facial hair, lighter in color but improvement in thickness and texture of scalp hair
- Softer thinner skin, nails more brittle
- Cold intolerance
- Leg Cramps (electrolyte and water)
- Need for more sleep

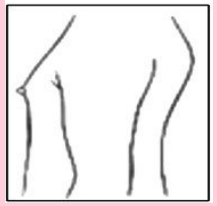
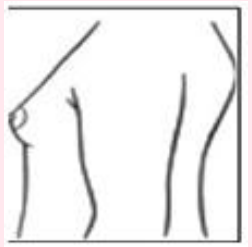
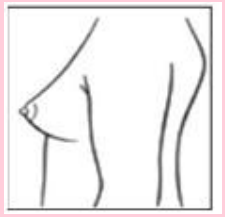
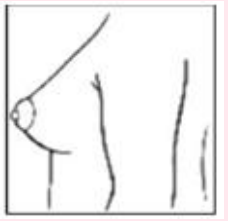
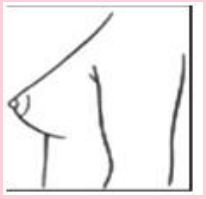
- Redistribution of body fat
  - Face starts to look more feminine, fuller cheeks, reduced angularity
  - Hips and butt
- Heightened sense of touch and smell
- Emotionally more labile, more sensitive
- Decreased energy, strength, loss of muscle mass

Should NOT experience Galactorrhea, breast milk production

- Elevated Prolactin levels
- Pituitary tumor or growth

Effect	Expected Onset[B]	Expected Maximum Effect[B]
Body fat redistribution	3-6 months	2-5 years
Decreased muscle mass/ strength	3-6 months	1-2 years[C]
Softening of skin/decreased oiliness	3-6 months	unknown
Decreased libido	1-3 months	1-2 years
Decreased spontaneous erections	1-3 months	3-6 months
Male sexual dysfunction	variable	variable
Breast growth	3-6 months	2-3 years
Decreased testicular volume	3-6 months	2-3 years
Decreased sperm production	variable	variable
Thinning and slowed growth of body and facial hair	6-12 months	> 3 years[D]
Male pattern baldness	No regrowth, loss stops 1-3 months	1-2 years

[A] Adapted with permission from Hembree et al. (2009). *Copyright 2009, The Endocrine Society.*
[B] Estimates represent published and unpublished clinical observations.
[C] Significantly dependent on amount of exercise.
[D] Complete removal of male facial and body hair requires electrolysis, laser treatment, or both.

Tanner Stage	Description as applied to TransFemales	Example
Stage I Pre-Hormone	Pre-adolescent, pre-hormone type breast. Small elevated nipple only. No underlying breast tissue	
Stage II Hormone started	Within 6-8 weeks of hormones, painful nodules/bumps can be felt. Nipples can become very sensitive. After 3 months breast buds start to form –elevation of the breast and nipple as a small mound. Areola diameter begins to enlarge.	
Stage III	Between 6 months to 1 year of continuous treatment, there is further enlargement and elevation of the breast and areola. Areola gets darker	
Stage IV	1- 2 years of continuous hormone therapy, there is projection of the areola and nipple above breast, "mound on a mound"	
Stage V	Very few will reach this stage, perhaps after 2 years, breasts fully filled out, areola recessed into becoming part of the breast contour with only nipple projecting	

- ***Note about Breasts:***

- *Can take years to fully develop >3 years*
- *Final size maybe 1-2 cup sizes smaller than*
- *close family relatives*
- *Only 1/3 reach a full B cup*
- *Growth is not always symmetrical – Welcome to Womanhood*

Surgeries

- Breast Augmentation (Implants)
- Facial Feminization Surgery
  - Brow lift, Rhinoplasty, Cheek implantation, and Lip augmentation
- Liposuction
- Butt Implants
- Orchiectomy/Penectomy
- Neo-Vaginoplasty

Neo-Vaginoplasty

Main goal of these surgeries is to create a functionally and aesthetically acceptable vagina and vulva, permit normal voiding function and allow for satisfactory sexual function

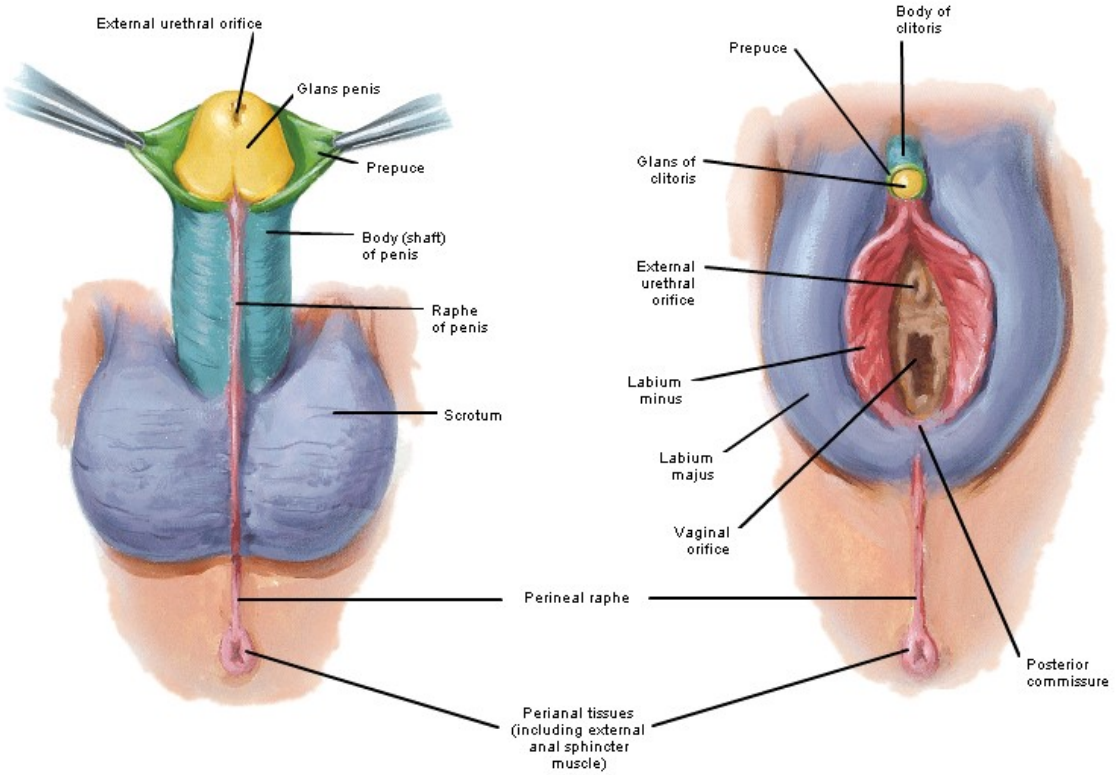
- Inversion Vaginoplasty
  - Preferred and most widely used
  - Utilizes penile-scrotal tissue
    - Limited depth
  - Needs lifelong dilation to prevent vaginal stenosis
  - May have hair growth intra-vaginally

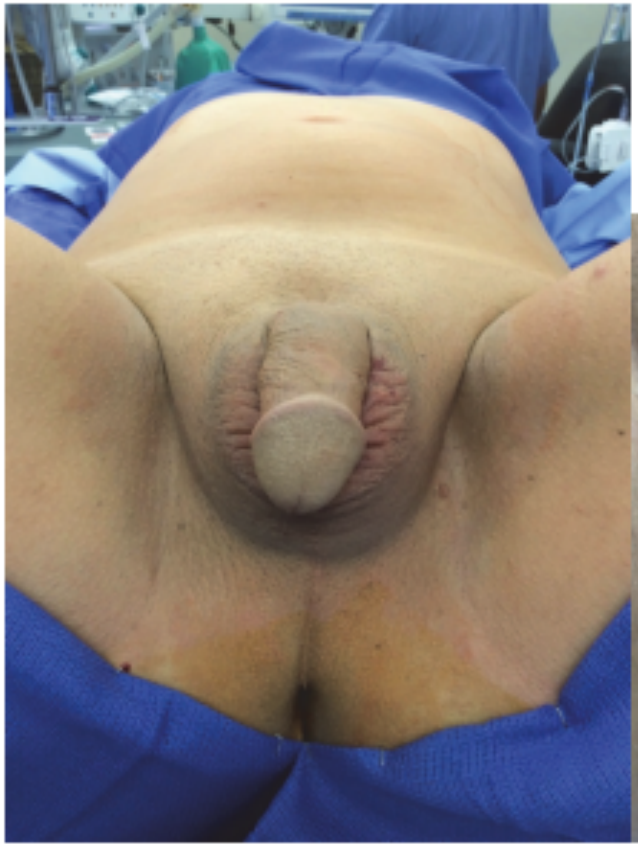
Neo-Vaginoplasty, cont'd…

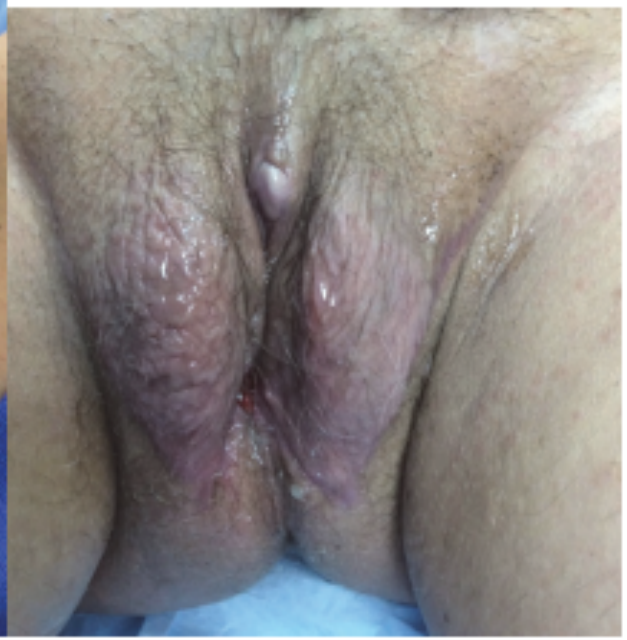
- Sigmoid Vaginoplasty
  - Newer procedure
  - Utilizes segment of sigmoid colon released from its mesentery on the distal sigmoid arteries, and inset in an isoperistaltic fashion anastomosed to the penile-scrotal elements of the neovaginal canal
  - Self-lubricating
  - Provides for intra-vaginal mucosa similar to that of ciswomen
  - Increased depth, better for penetrative sex
- Peritoneal Vaginoplasty
- Zero-depth Vaginoplasty

Inversion Procedure

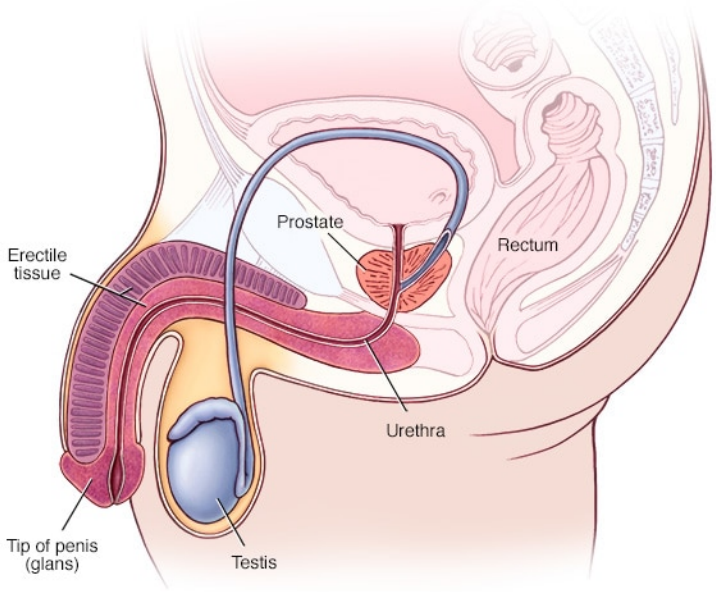
Original Genitals	New Genitals
Penile/perineal skin	Labia majora, vaginal opening, clitoral hood
Glans penis (tip of penis)	Clitoris
Urethra	Labia minora, inner lining of vulva (vestibule)
Scrotum	Vaginal cavity, labia majora



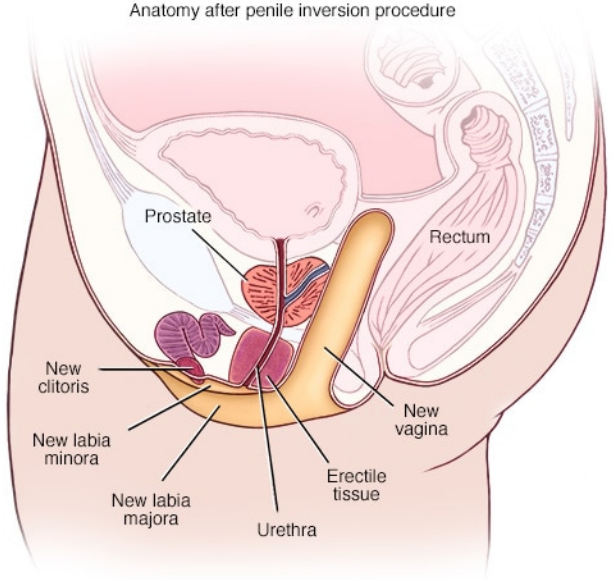


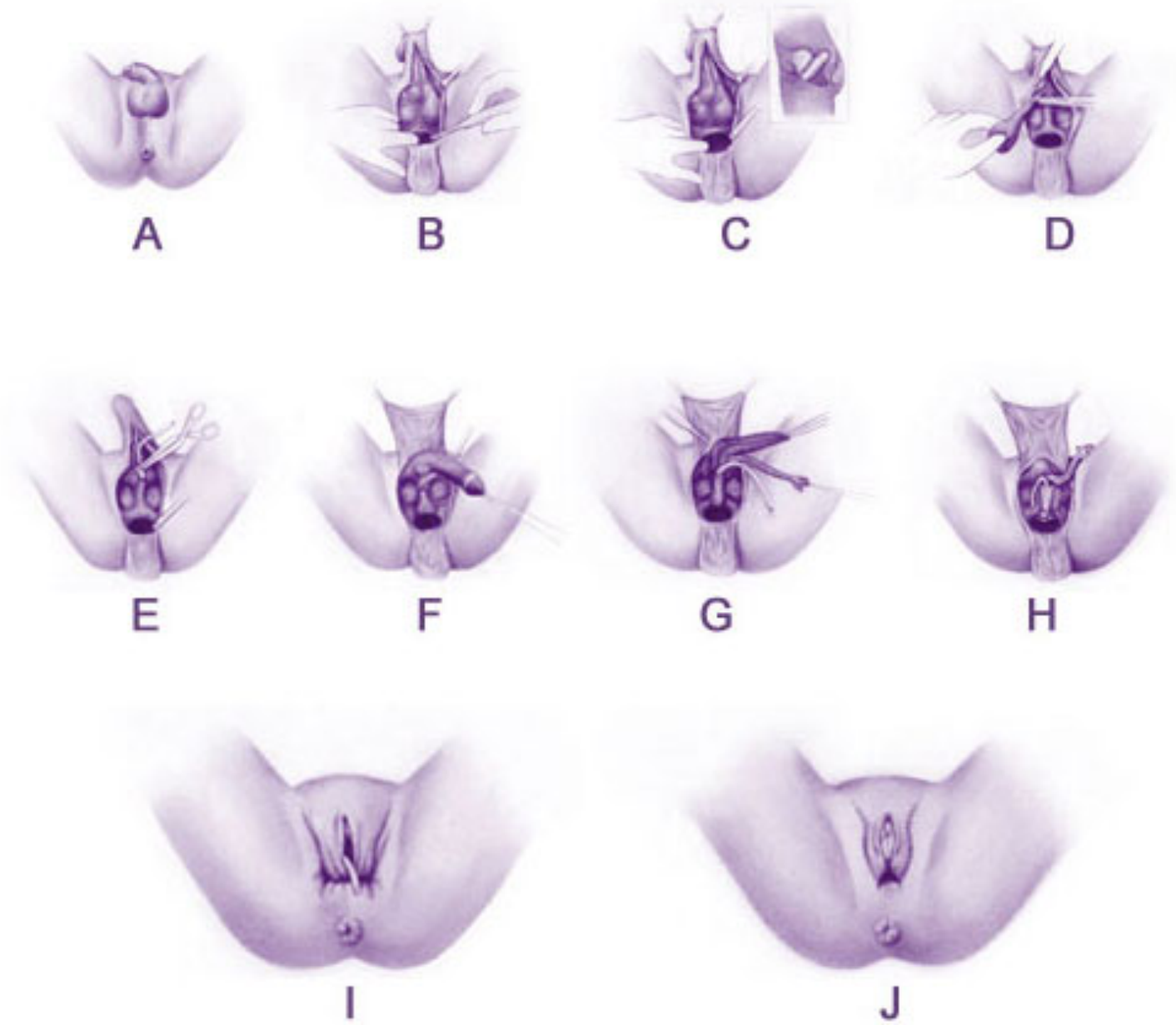


Anatomy before procedure



Anatomy after penile inversion procedure





Step-by-Step SRS Male to Female Penile Skin Inversion Procedure

Preventative actions

- Biggest Concern is **Blood Clots**
  - 12% > 40yo
  - 20 fold increase in MtF
  - Risk > oral hormones vs transdermal
  - Estrogen and Progesterone* trigger the clotting mechanism and pathways thus increasing likelihood for clots
    - Don't smoke
    - Exercise
    - Eat right
    - Drink plenty of water
    - Know your family history
- Follow ups
- Communication
- Be patient

MtF Follow Ups and Labs

	ALL	Look for:	Age >40	Age >50	Based on Risk
Baseline	CBC, CMP, Prolactin, Testosterone, Lipids, BP, Physical Exam				STI Screen
2-3 mo p start or dose change	CBC, CMP, Testosterone, BP	K+, Cr			Prolactin
Q 6 mo	CBC, CMP, Lipids, Testosterone, BP, Breast Exams	K+, Cr; <50 Testost			STI Screen, Prolactin
Q 12 mo	CBC, CMP, Lipids, Testosterone, BP	K+, Cr; <50 Testost	Mammogram	Digital Rectal Exam* Mammo, Dexa scan	STI Screen PAP Smear Proalctin

*Estradiol level- insensitive assay, will not direct therapy.

Hold Patient Accountable

- Live healthy for better results
  - Quit smoking
  - Exercise
  - Hydrate
  - Well Balanced nutrition
  - Routine follow ups
    - Blood pressure
    - Evaluation for blood clots, legs, breathing, etc
    - Vision
  - Address any and all other health (mental or physical) concerns

…Final Thoughts…

- Hormones may not be enough to achieve the look or image
  - Consider feminization procedures/surgeries
    - Breast Agumentation
    - Facial Feminization Surgery
    - Tracheal shave
    - Electrolysis/Laser
    - Liposuction
    - Neo-Vaginoplasty
- Sexual Health and Safe Sex Practices
  - Highest mortality rates are related to
    - HIV
    - Lifestyle/Drug use
  - Must discuss sexual practices
    - Routine STI testing
    - Offer PrEP

MtF vs. FtM

MtF	FtM
Bodies already differentiated through puberty	Puberty occurs again as Androgen receptors are activated
Cannot undo pre-existing pubertal effects	Experience changes of genetic males during puberty

***Consider hormone blockers (GnRH agonists) for Trans or GNC individuals during adolescents, before puberty to prevent secondary sex characteristics and physical changes from developing.**

- **Gives time for individual to truly assess their gender identity without the concern for irreversible changes or prevention of other growth factors.**
- **Lupron, Goserelin, Nafarelin, Leunrorelin**
- **Expensive**

FtM journey

Female to Male Hormone Therapy

- Testosterone
  - Injectable
    - Cypionate – cotton seed
    - Enanthate – sesame seed
  - Topical
    - Testim
    - Androgel
    - Axiron
    - Compounded – cost effective
  - Pellets – rare use

*Progesterone Therapy –first 2 years to shed endometrial lining

↓ spotting

↓ uterine cancer

Testosterone	Start	Maintenance	Max
Testosterone Cyp. IM/SQ	0.25mL/wk	0.5mL/wk	1mL/week
Testosterone Enanth. IM/SQ	0.25mL/wk	0.5mL/wk	1mL/week
Testosterone Topical 1%	12/5-25mg qAM	50mg qAM	100mg qAM
Testosterone Topical 1.62%	20.25mg qAM	40.5-60.75mg qAM	103.25mg qAM
Testosterone Patch	1-2mg qPM	4mg qPM	8mg qPM
Testosterone Cream	10mg	50mg	100mg
Testosterone Axillary gel 2%	30mg qAM	60mg qAM	90-120 mg qAM
Testosterone Undecanoate	just got approved in US as injectable in office procedure at 750mg IM, repeat in 4 weeks, then q 10 weeks ongoing, oral must take BID-TD with food		
Testosterone Pellets	depends*	depends	450mg q3-4, prn

* Patient should first achieve maximum virilization with alternative form of Testosterone, then use pellets for maintenance

*Max of 6 pellets can be implanted to release over 3-4 months

Realistic Expectations

- Masculinizing hormones do NOT:
  - dramatically decrease breast size
    (Fat turns into muscle)
  - change the shape or size of ***bone structure***
  - grow a penis
  - work instantly/overnight

What we CAN expect…

- Most FtM changes are irreversible
- Physical changes may start to be noticeable around 3 months
- Deeper voice
- Cessation of menstrual cycle (up to 6mo*)
  - Atrophy of uterus and ovaries
- Enlarged clitoris (<3 inches)
  - Increased libido
- Increased facial and body hair
  - Male pattern baldness
- Increased muscle mass/strength

Changes…

- Acne
- Skin becomes thicker, less sensitive
- Increased metabolism/sweating
- Prominence of veins
- Body odor changes
- Feet may grow
- Redistribution of fat
  - To the belly/away from hips
  - Increased facial angularity
- More aggressive, difficulty with emotions

Effect	Expected onset	Expected maximum effect
Skin oiliness/acne	1–6 months	1–2 years
Facial/body hair growth	3–6 months	3–5 years
Scalp hair loss	>12 months	Variable
Increased muscle mass/strength	6–12 months	2–5 years
Body fat redistribution	3–6 months	2–5 years
Cessation of menses	2–6 months	n/a
Clitoral enlargement	3–6 months	1–2 years
Vaginal atrophy	3–6 months	1–2 years
Deepened voice	3–12 months	1–2 years

RISKS

- Ovarian /Endometrial Cancer
  - Hysterectomy w/i 10 years of HRT
- Polycythemia
- Hot flashes
- Aggressive Behavior
- Obesity
- Sleep Apnea
- Increased cholesterol
- Increased Blood pressure
- Liver dysfunction - ↑Liver enzymes
  - 15% occurence

Contraindications in FtM HRT

- Absolute
  - Pregnancy
- Relative
  - Hx of breast or uterine cancer
  - Heart Dz
  - Violent Behavior (unmanaged)
  - Androgen sensitive epilepsy
  - Liver dz or tumor

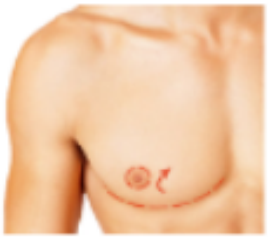
Preventative actions

- Be self-aware, be patient
- Stress management
- ‘Pump and Dump’
- Live Healthy
  - Quit smoking
  - Reduce alcohol use
  - Balanced nutrition
  - Exercise
  - Drink plenty of water
- Follow ups
- Communication

FtM Follow Ups and Labs

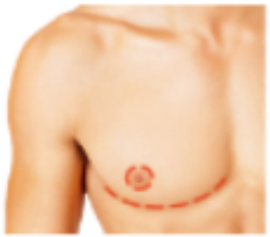
	ALL	Age >40	Age >50	Based on Risk
Baseline	CBC, CMP, Testosterone, Lipids, BP, Physical Exam	chest/breast exam, Mammo*		PAP, STI screen, HcG
2-3 mo p start or dose change	CBC, Testosterone, BP			
Q 6 mo	CBC, CMP, Lipids, Testosterone, BP			STI Screen
Q 12 mo	CBC, CMP, Lipids, Testosterone, BP	chest/breast exam, Mammo*	Dexa scan, chest/breast exam, Mammo	STI Screen PAP Smear

FtM Surgeries – Top Surgery



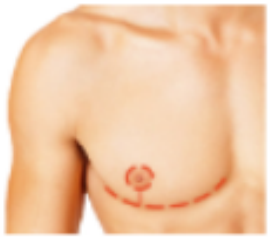
NEW! Buttonhole

Ideal for medium to large chested men who prioritize nipple-areola size, positioning, sensation and pigmentation.



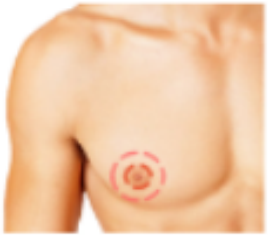
Double Incision

Ideal for medium to large chested men.



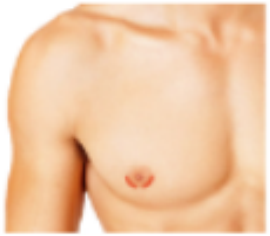
Inverted-T

Ideal for medium to large chested men who wish to retain more sensation in the nipple and areola.



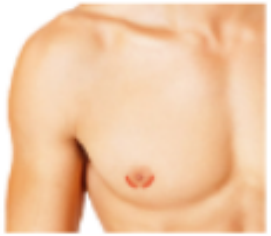
Peri-Areolar

Ideal for small chested men, or those with B-sized chests and good skin elasticity.



Keyhole

Ideal for small chested men.

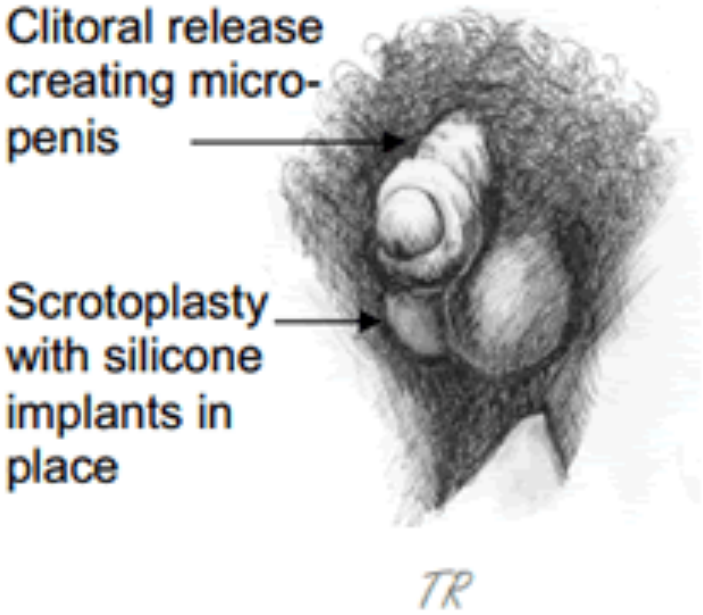


NEW! Minimal Scar

Ideal for small chested men with excellent skin elasticity.

FtM Surgeries- Bottom Surgery

- **Metoidioplasty-** transforms the clitoris into a small penis by releasing it from the hood and cutting the ligament (chordee) that holds the clitoris in place, giving it more exposure.
  - Additional length of up to 50% can be achieved.
  - Retains original tissue
  - Unassisted erections, but may not be able for penetration (length)
  - Cheaper



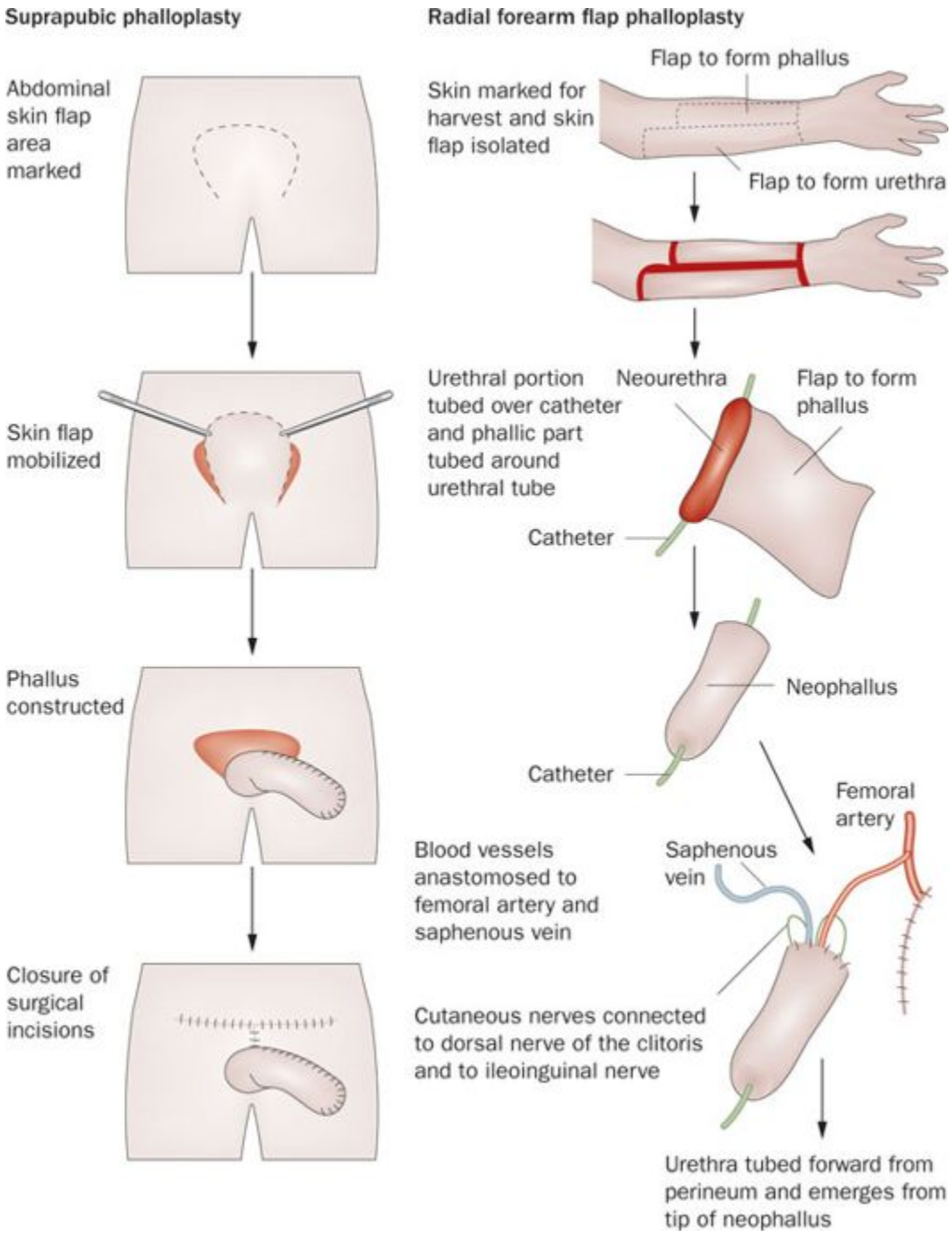
In typical males the testicles are slightly different sizes and one hangs lower than the other.

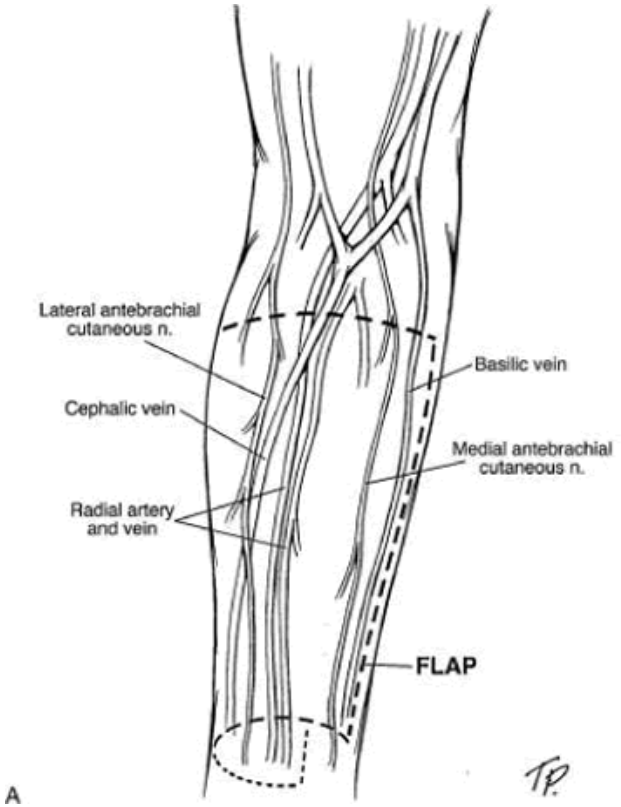
The decision regarding obliteration of the vaginal cavity should be considered if a scrotum is being created as once the scrotum is descended and has achieved its full size access to the area will be reduced especially if the two sides of the scrotum are joined.

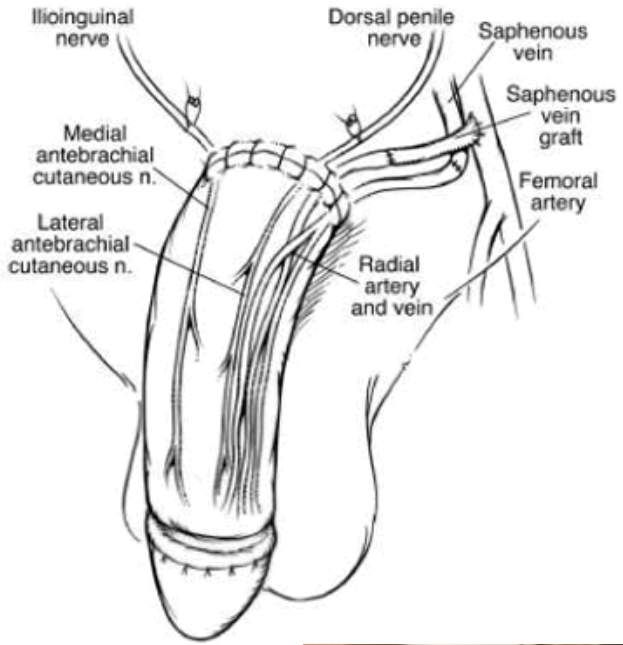
- Hysterectomy and PAP smears:
  - Encourage patient to undergo hysterectomy if no desire to bear child.
  - PAP smears can be very distressing and traumatizing.
    - Explain and talk through entire procedure
    - Refer to gender neutral anatomy (inner genitalia, reproductive organ, etc)
    - *Offer self swab*

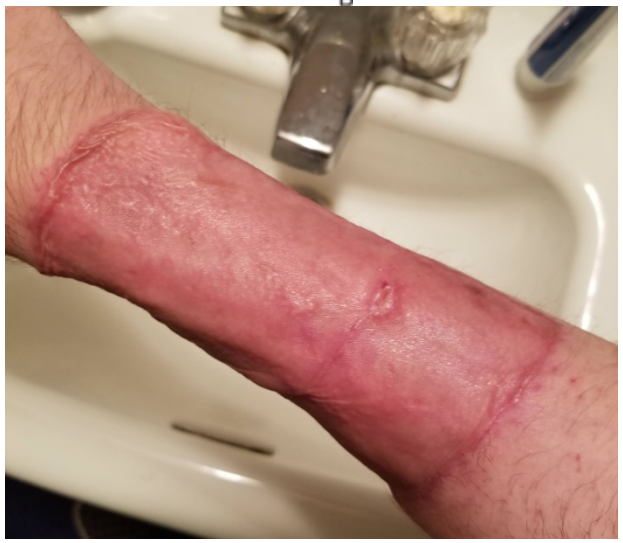
Phalloplasty

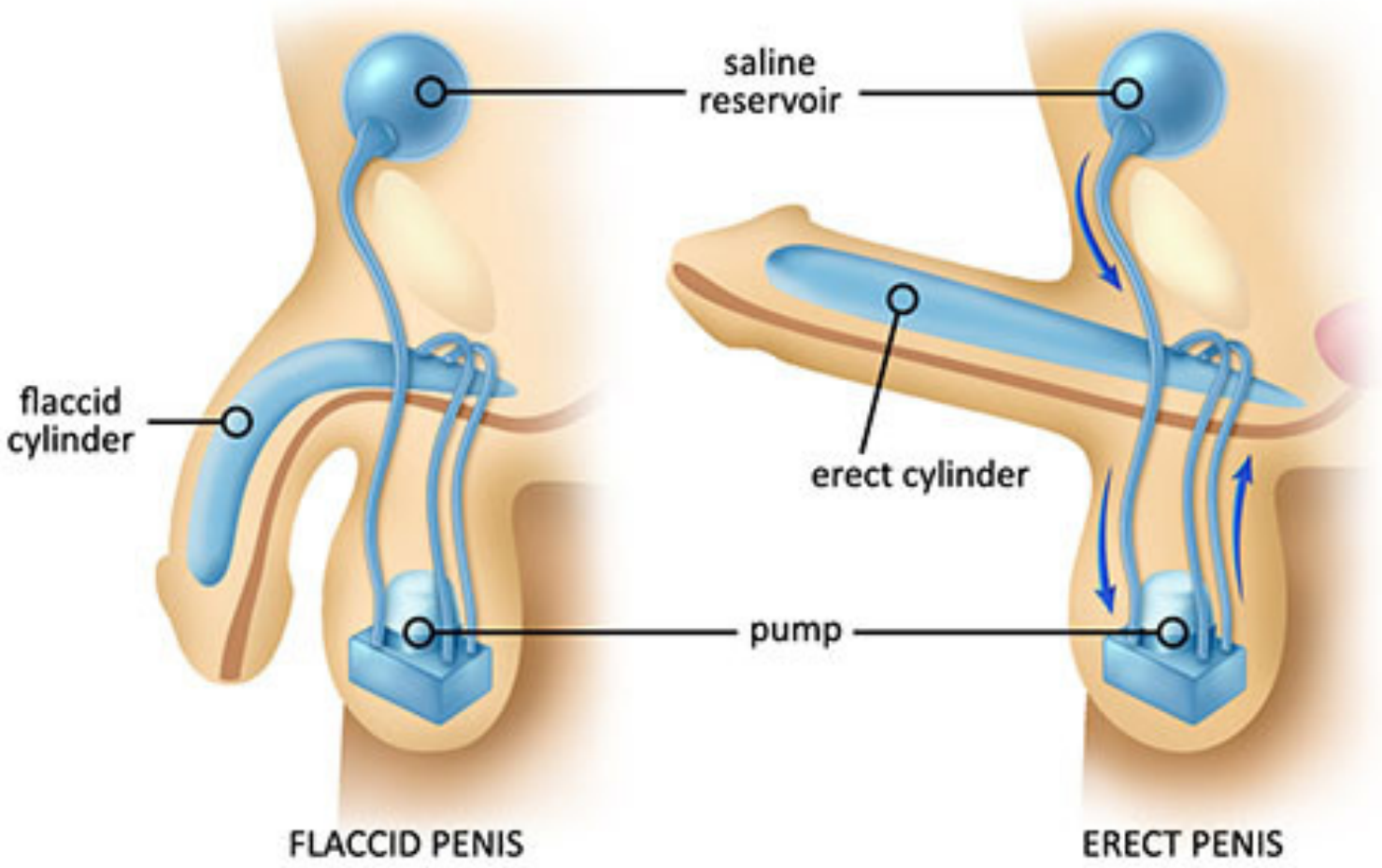
- Provide a sensate penis, with erotic and/or tactile sensation, as well as rigidity for sexual intercourse (usually with a penile implant) and the ability to stand to urinate.
- Requires skin graft- scar visible
- Risk of urinary complications
- Multi-stage procedure
- Expensive


Suprapubic phalloplasty
Abdominal skin flap area marked
Skin flap mobilized
Phallus constructed
Closure of surgical incisions
Radial forearm flap phalloplasty
Flap to form phallus
Skin marked for harvest and skin flap isolated
Flap to form urethra
Urethral portion tubed over catheter and phallic part tubed around urethral tube
Neourethra
Flap to form phallus
Catheter
Neophallus
Catheter
Femoral artery
Blood vessels anastomosed to femoral artery and saphenous vein
Saphenous vein
Cutaneous nerves connected to dorsal nerve of the clitoris and to ileoinguinal nerve
Urethra tubed forward from perineum and emerges from tip of neophallus


Lateral antebrachial cutaneous n.
Cephalic vein
Radial artery and vein
Basilic vein
Medial antebrachial cutaneous n.
FLAP
A


Ilioinguinal nerve
Dorsal penile nerve
Saphenous vein
Saphenous vein graft
Femoral artery
Medial antebrachial cutaneous n.
Lateral antebrachial cutaneous n.
Radial artery and vein
B




saline
reservoir
flaccid
cylinder
erect cylinder
pump
FLACCID PENIS
ERECT PENIS

- **Scrotoplasty and Testicular Implants** – to create scrotum and testicles, the labia majora are dissected, rotated and descended from their original position.
  - Pockets are incisionally created to insert testicular implants.
  - Expanders may be used to stretch the tissues prior to placement of implants. This adds an extra surgery stage but creates a bigger scrotum that can accommodate larger testicular implants.

Hold Patient Accountable

- Live healthy for better results
  - Quit smoking
  - Exercise-↓ stress, ↑muscle mass, Improve cardiovascular health
  - Eat right
  - Hydrate
  - Routine Follow ups
  - Address any and all other health (mental or physical) concerns

…Final Thoughts…

- Irreversible changes
- Potential for pregnancy
- More is not better, wont work faster
  - Excess Testosterone can lead to stroke or heart attack
  - Excess Testosterone can change into Estrogen
- May need surgeries
  - Mastectomy- removal of breast tissue
  - Metoidioplasty – elongation of the clitoris
  - Phalloplasty – creation of a phallus w/wo prosthetic
    - Skin graft
- Sexual Health and Safe Sex Practices
  - Can still potentially get pregnant
  - Must discuss sexual practices
    - Routine STI testing
    - Offer PrEP
    - Do Pregnancy testing (if sexual active with AMAB)

Final, Final Thoughts

- Don't believe everything you read on the Internet, blogs, chat rooms, boards, etc
  - Google research is NOT better than my medical degree
- Don't self adjust medications
- Don't take the max dosage or excess doses
- Improve your lifestyle and health choices
- HT provides a calmer sense of being, a sense of relief is often expressed.
  - Can worsen anxiety for those who are not 💯

BE.TRUE.TO.YOU!

Biological Sex/
Birth Sex:
FEMALE

Biological Sex/
Birth Sex:
FEMALE

Biological Sex/
Birth Sex:
FEMALE

Biological Sex/
Birth Sex:
FEMALE

Biological Sex/
Birth Sex:
MALE

Biological Sex/
Birth Sex:
MALE

Biological Sex/
Birth Sex:
MALE

Biological Sex/
Birth Sex:
MALE

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- Ettner, R, Monstrey, S., Coleman, E., **Principles of Transgender Medicine and Surgery**. NY, Routledge. 2016.
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Links to Videos

- Phalloplasty
  - https://youtu.be/fe4R8B4dIO8
- Metoidioplasty
  - https://youtu.be/ReqQA6xuhG0
- Penile Inversion NeoVaginoplasty
  - https://youtu.be/SH-j3r_Rwsw