NATIONAL LGBT HEALTH EDUCATION CENTER
A PROGRAM OF THE FENWAY INSTITUTE

Project ECHO®
The National LGBT Health Education Center - Fenway Health
Boston, MA

TRANSECHO

Surgical Options for Gender Affirmation

Danielle O'Banion, MD
Fenway Health
12/18/2019

Disclosures

- NONE

Learning Objectives

1. Participants will be able to identify and broadly define surgical options available both to transmasculine and transfeminine people.

2. Participants will be able to identify potential surgical complications for major gender affirming surgeries.

3. Participants will be able to discuss consequences of or alternatives when surgery is not available or desired.

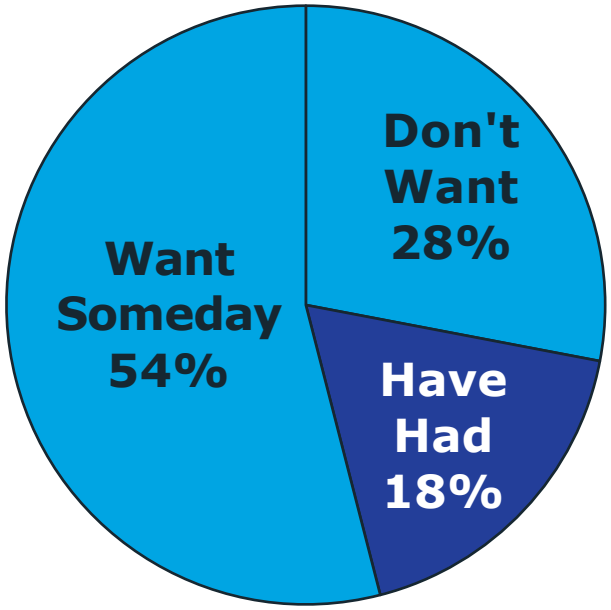
Gender Affirming Surgery

- AKA:
  - SRS= Sexual reassignment surgery
  - GAS= Gender Affirming surgery
  - GRS= Gender Reassignment surgery
- Benefits
  - Effective in decrease of gender dysphoria
  - Decreased gender dysphoria improves social and psychological well being
  - High patient satisfaction
- Keep in mind:
  - Not in a bubble- needs good before, during and after surgery care
  - Not for everyone!
  - Insurance coverage historically has been difficult to obtain.

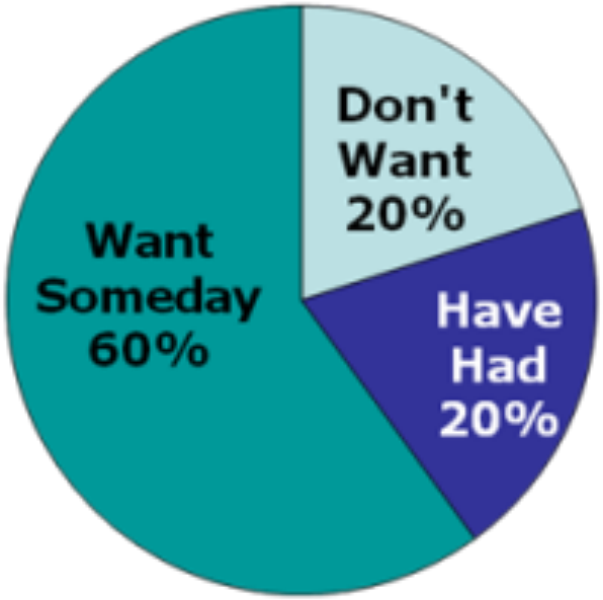
Lawrence, A. A. (2003). Factors Associated With Satisfaction or Regret Following Male-to-Female Sex Reassignment Surgery. *Archives of Sexual Behavior*, *32*(4), 299–315.

Utilization of Surgery

Breast Augmentation



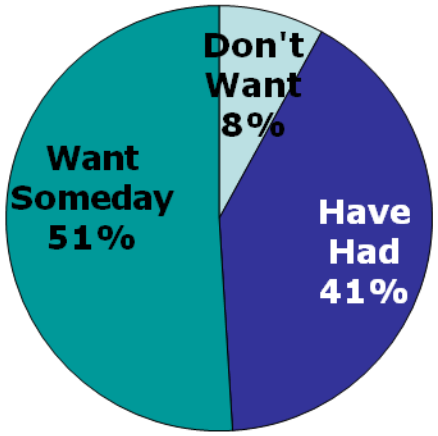
Vaginoplasty



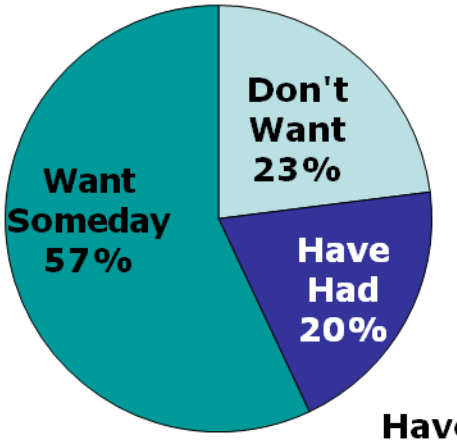
Grant, J. M., Mottet, L. A., Tanis, J., Harrison, J., Herman, J. L., & Keisling, M. (2011). *Injustice at every turn: A report of the National Transgender Discrimination Survey.* Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force.

Utilization of Surgery

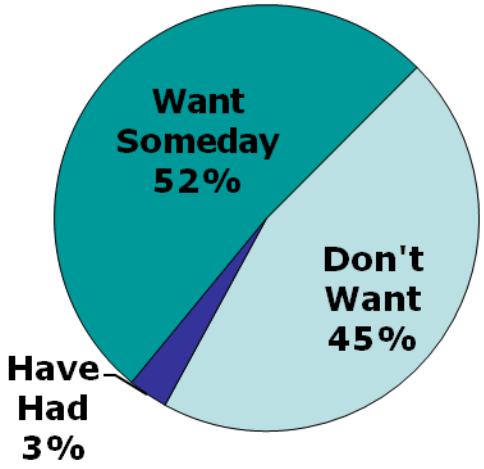
Transmasculine Chest Surgery



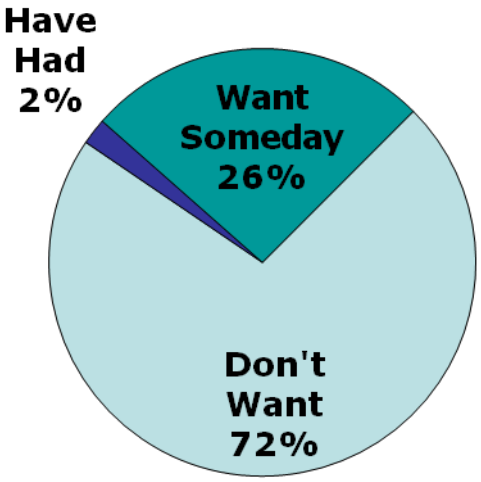
Hysterectomy



Metoidioplasty



Phalloplasty



Language

- Non-judgmental

  The majority of transgender people who have had surgical or medical alterations of their bodies are very satisfied with the results

- Devaluing

  Sadly, health care providers often use disparaging language or tones of voice when talking to clients about the clients' surgical or medical body alterations or desires for body alterations

Psychotherapy is not an absolute requirement for hormone therapy and surgery

WPATH, *SOC, v.7*, 2011

Criteria for Surgical Referrals (WPATH)

Mastectomy & creation of a flat chest in transmasculine and non-binary people (typically requires using ”masculinizing” in the letter) (one referral)

1. Persistent, well-documented gender dysphoria
2. Capacity to make a fully informed decision and give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled

Hormone therapy is not a prerequisite per WPATH but may be required by insurance plans

Criteria for Surgical Referrals (WPATH)

Breast augmentation in transfeminine and non-binary people (typically requires using “feminizing” in the letter) (one referral)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled

It is recommended that MTF patients take feminizing hormones for a minimum of 12 months, and preferably for 24 months, prior to augmentation for better results.

Criteria for Surgical Referrals (WPATH)

TAH-BSO or Orchiectomy (two referrals)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 months continuous hormone treatment (unless not clinically indicated for the patient)

The aim of prior hormone treatment before gonadectomy is to have a reversible treatment before a permanent and irreversible one., but this does not take into account the needs of many patients. The more important consideration is the need for all people to have hormones in the body to maintain health.

Criteria for Surgical Referrals (WPATH)

Genital Affirmation (two referrals)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 continuous months hormone treatment (unless not clinically indicated for the patient – see prior slide)
6. 12 continuous months of living in a gender role that is congruent with the person's identity

Additional Recommendations (WPATH)

-It is recommended that patients having genital affirmation surgery have regular visits with a mental health or other medical professional following surgery.

-Genital affirming surgery criteria of 12 continuous months of living in a gender role congruent with one's identity is based on outdated assumptions that someone must experience living in their gender identity before undergoing irreversible surgery. This overlooks critical concerns for many patients including the reasonable urgency for pursuing surgery, that many people need to be affirmed in their gender physically before feeling safe affirming their gender socially, and many other concerns.

Trans Feminine Spectrum Surgeries

Facial Feminization Surgery
($2,600-$40,000)

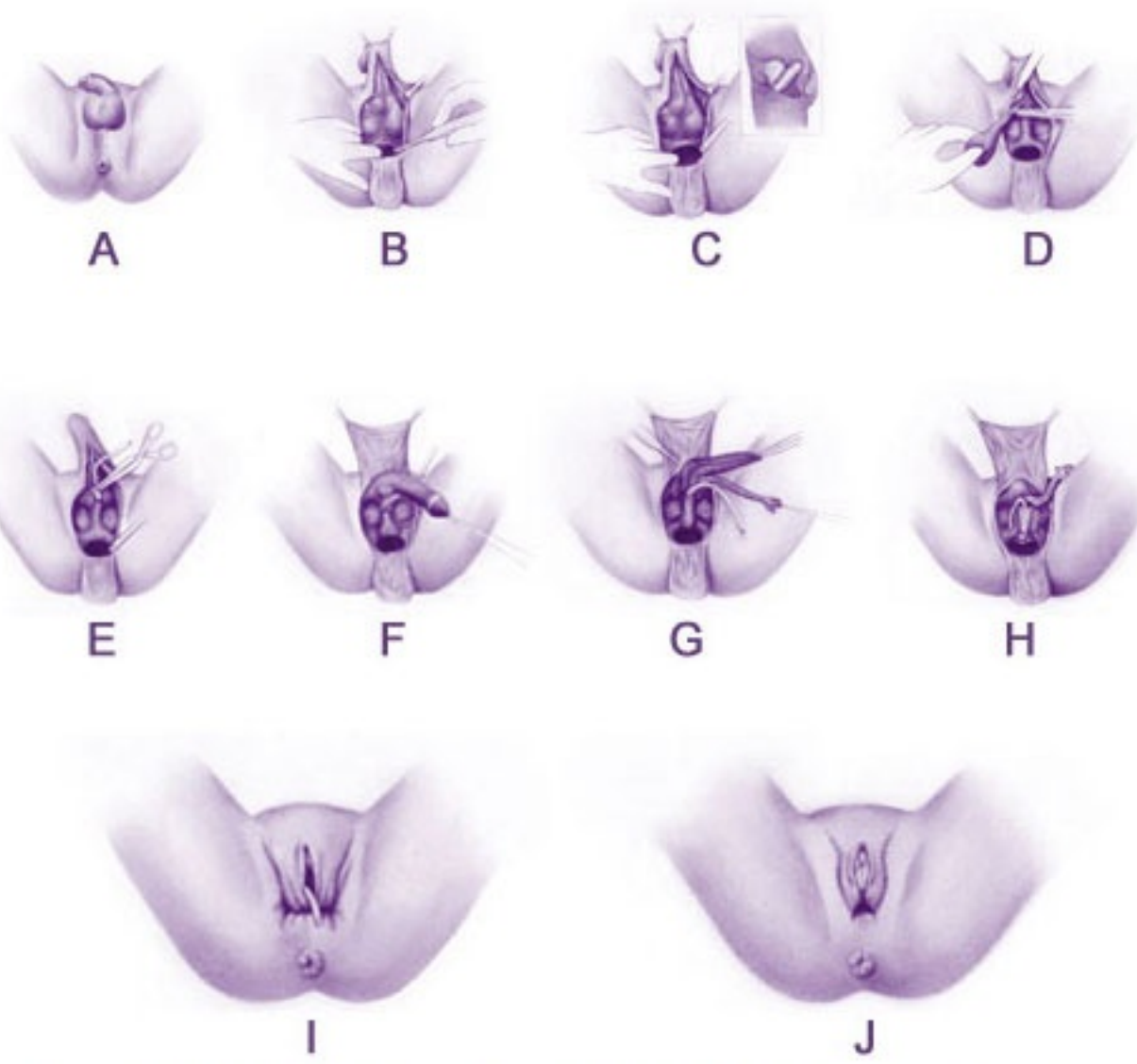
- Mandible Contouring
- Forehead Contouring
- Tracheal Shave
- Rhinoplasty

Before & After FFS

Trans Feminine Spectrum Surgeries

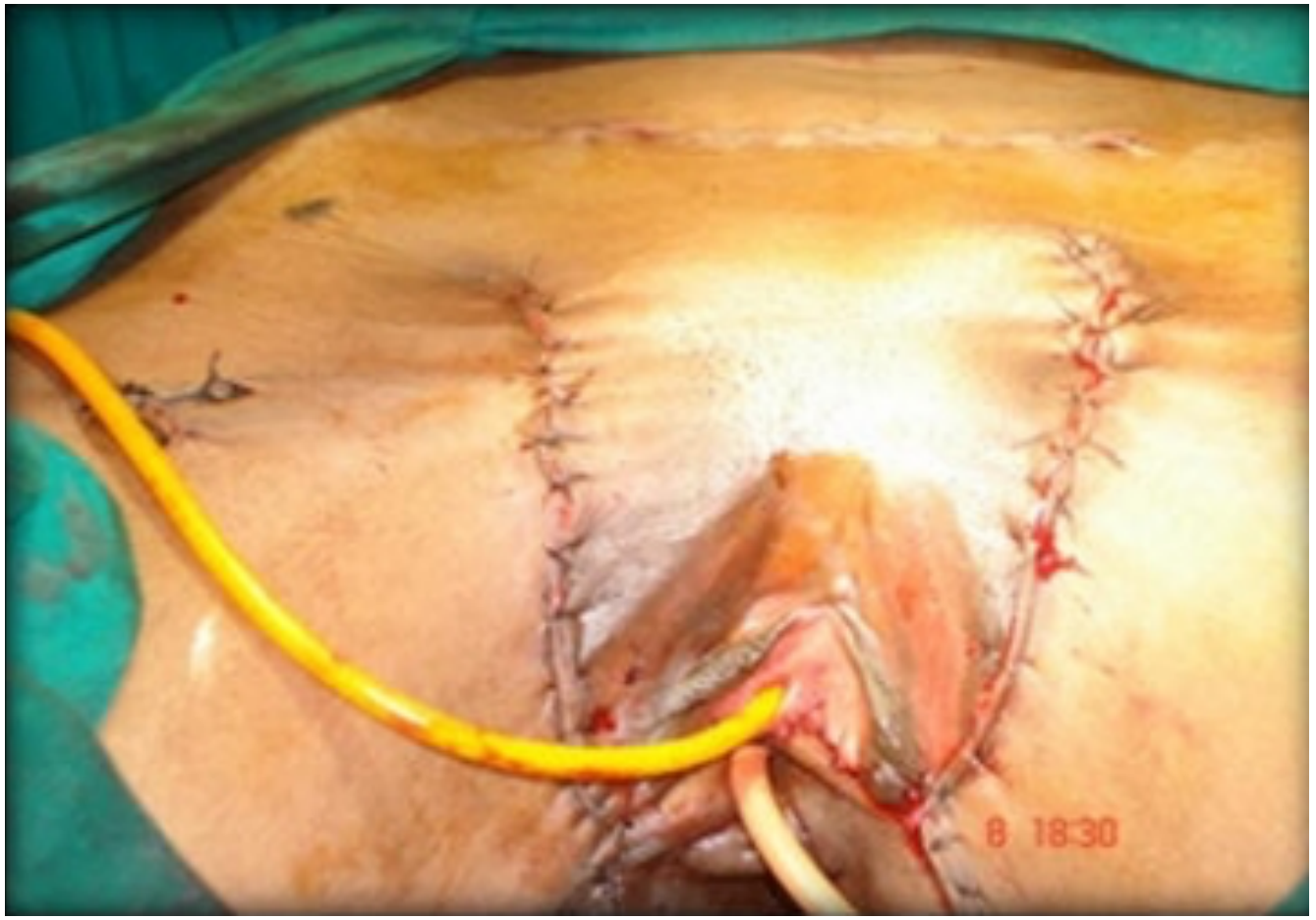
- Liposuction & Fat Injection ($2,000-$10,000 per procedure/area)
- Gluteal & Hip Implants ($9,000-$10,000)
- Breast Augmentation ($5,000-$10,000)
- Orchiectomy ($4,000-$6,000)
- Vaginoplasty ($15,000-$30,000)
- Labiaplasty ($3,000-$4,000)

Vaginoplasty



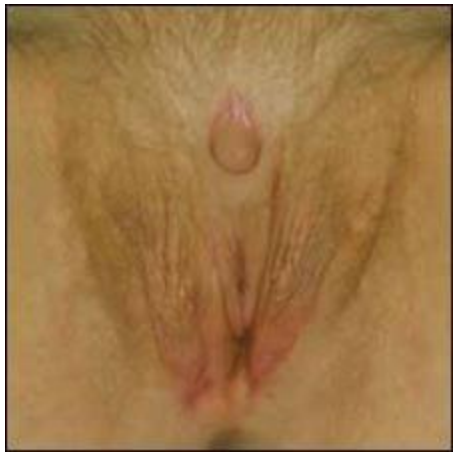
Step-by-Step SRS Male to Female Penile Skin Inversion Procedure

Immediately Post-op Vaginoplasty



Results of Vaginoplasty & Labiaplasty

Dr. Meltzer, Arizona



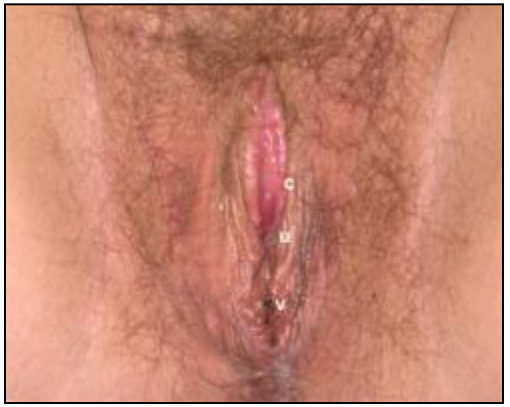
Vaginoplasty only

W/Labiaplasty 10 mos

Dr. Suporn, Thailand

5 months post op

Dr. Bowers, California



6 months post op

Dr. McGinn, Pennsylvania

Before After

Complications of Vaginoplasty

- Blood loss is generally minimal (avg 150 ml)

  Bowers (2014) 0.6% needed transfusion

- Venous Thromboembolism

  Stop or reduce estrogen prior to surgery

  Early mobilization

- Bowel, bladder or urethral injury
- Surgical site infections

  Reported rates vary widely 5 – 20%

Complications of Vaginoplasty

- Tissue necrosis

  Debridement, wet-to-dry dressings, time

- Clitoral necrosis

  1-3% in most series

  Most often partial

  Many patients may still achieve orgasm

- Labial wound dehiscence

  Generally focal and localized

  Local wound care and healing by secondary intention

Complications of Vaginoplasty

- Rectovaginal fistulas
  - Usually related to surgical injury
  - Dilation related injuries have been reported
- Urethral complications are uncommon
  - Adhesions causing deviation of urethral stream
  - Urinary incontinence is not seen
- Granulation tissue
  - Results late in healing from tissue non-union or dehiscence
  - Apply silver nitrate or excise and cauterize base

Complications of Vaginoplasty

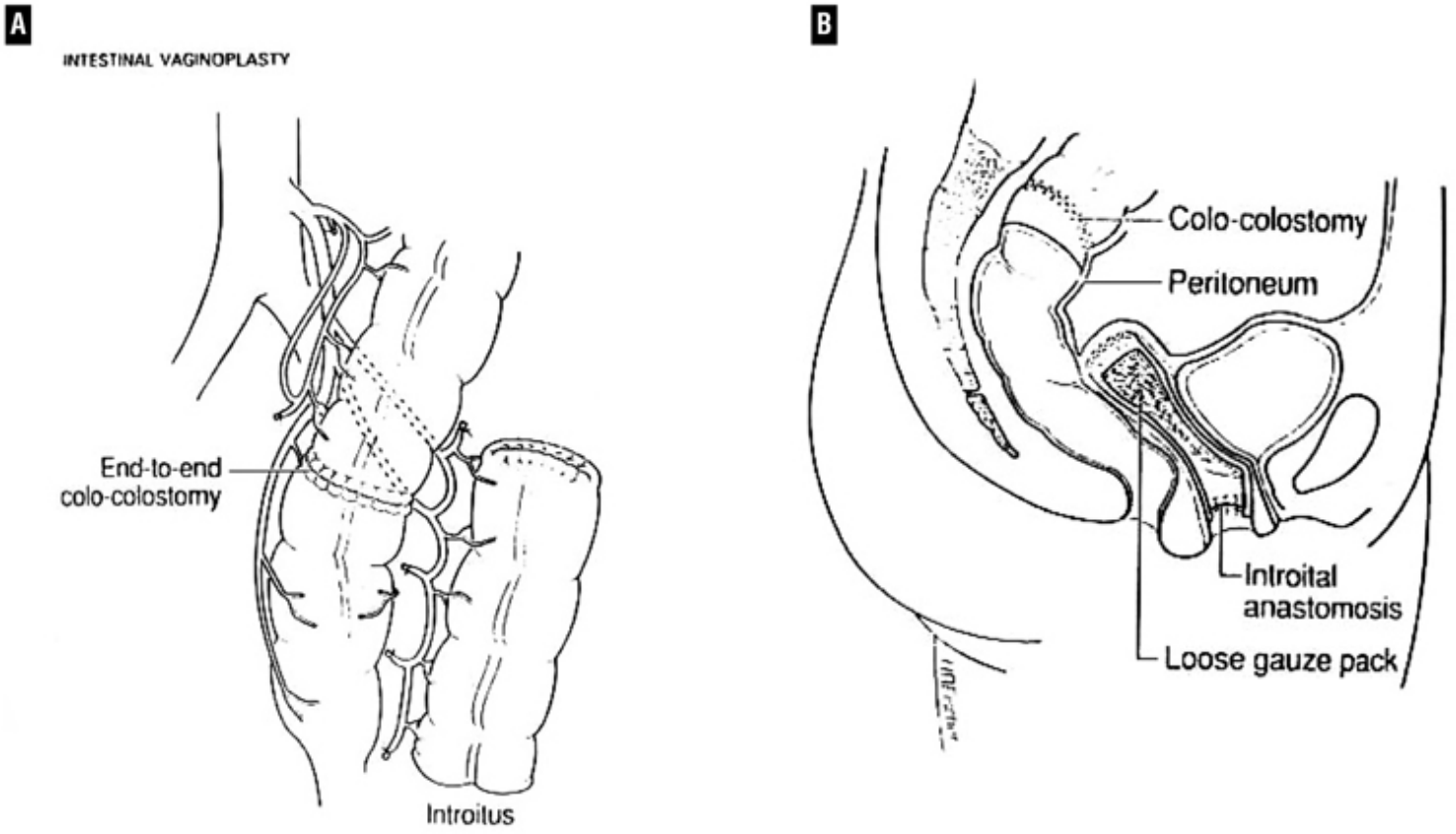
- Vaginal stenosis
  - Introitus narrowed by fibrosis and scarring
  - Due to surgical omission or, most often, failure to dilate (often related to infection, dehiscence or excess pain)
  - Re-engage patient in dilation regimen
  - Surgical release of scar tissue
  - Topical estrogen cream may help
  - Surgical re-opening or revision
- Regrowth of erectile tissue
  - Can obstruct vaginal canal or urethra
  - Surgical Excision

Sources of Postoperative Vulvar Swelling in Vaginoplasty

- **Induration**
  - Neolabial swelling unilateral or bilateral
  - Weeks to months in duration
  - Non-tender
  - *Self-limiting*
  - *Drainage unlikely*
  - Expectant management and/or pressure
- **Hematoma**
  - Neolabial swelling unilateral or bilateral
  - Weeks to months in duration
  - Moderately tender
  - Variable size to 20 cm or more
  - Can evolve to abscess or seroma if undrained
  - Spontaneous dark bloody drainage possible
  - Aspiration or incision and drainage or time and pressure for 5 cm or less
- **Seroma**
  - Neolabial swelling, tends to be unilateral
  - Weeks to months in duration
  - Non-tender unless large
  - Variable size corresponding to preexistent hematoma
  - Spontaneous clear amber fluid drainage possible
  - Aspiration or incision and drainage
- **Abscess**
  - Neolabial swelling, almost always unilateral
  - Weeks to months in duration
  - Extremely tender \
  - Usually small 2–5 cm
  - Spontaneous purulent drainage possible
  - Incision and drainage, packing and antibiotics, +/− culture

Sigmoid vaginoplasty

Figure 2 A and B - (A) Colocolostomy has been completed and the distal end of the colonic segment has been anastomosed to the opened rudimentary vaginal pit, (B): The peritoneum was closed above the transposed bowel and the neovagina was loosely packed with Vaseline gauze.



Sigmoid vaginoplsty

- 42 transwomen, median age 19.1 years
  - Neovaginal depth at 1 year 16.3 cm
  - Similar complication rate as other elective colorectal surgery
  - Life satisfaction 8 on scale of 4 to 10
  - Functionality and aesthetics graded a median score of 8 out of 10 (WPATH 2018)

  - Diversion neovaginitis in 75% of patients at 2 years post-op, predominantly mild inflammation (WPATH 2018)

Zero Depth Vaginoplasty (Vulvoplasty alone)

- Survey of 100 transwomen
  - 73% said that removing male genitalia was more important than creating a normal vagina
  - 79% had not heard of zero-depth vaginoplasty
  - Not having to dilate reported as most important reason to choose ZDVP

(Maurice Garcia, WPATH 2018)

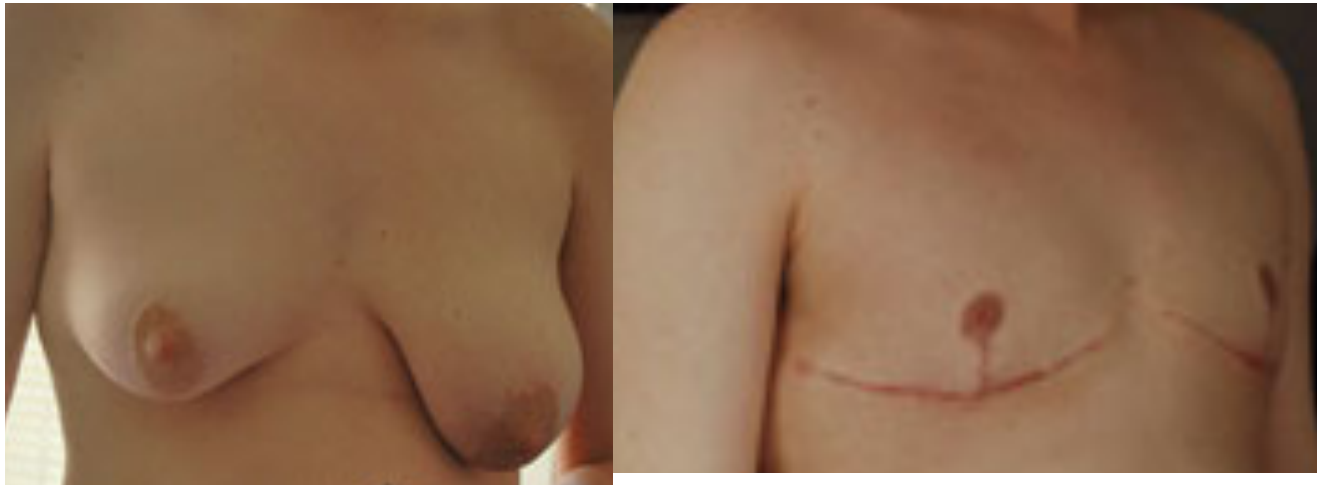
Consider ZDVP/vulvoplasty for patients at high risk: prior prostatectomy, prior anal surgery, s/p radiation

Trans Masculine Spectrum Surgeries

- Bilateral Salpingo-Oopherectomy ($4,000-$10,000)
- Hysterectomy – Vaginal/Abdominal ($11,000-15,000)
- Mastectomy & Chest Reconstruction ($8,000-$11,000)
  - Drawstring, Inverted-T, Pie Wedge
  - Keyhole – or – Peri-areolar subcutaneous
  - Lipo with revisions
  - Double-incision with nipple graft/relocation

Top surgery optoins

Inverted-T

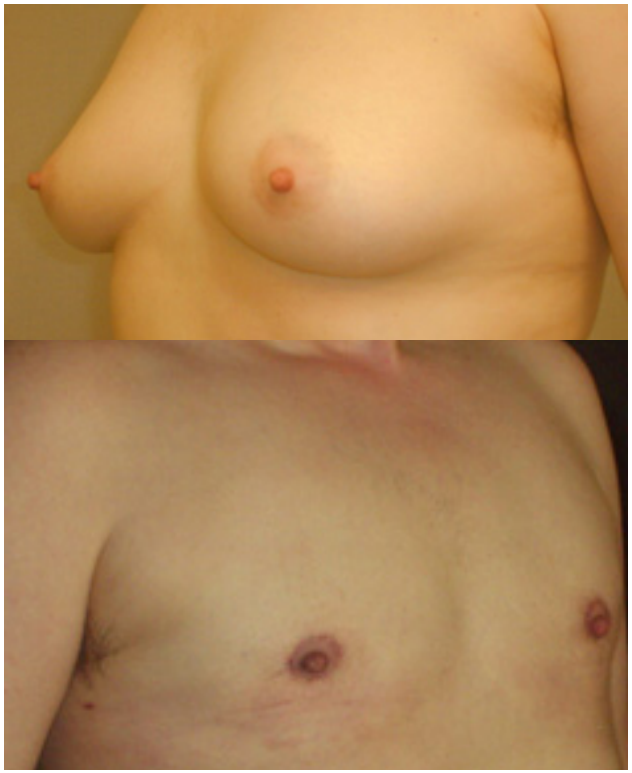


Before

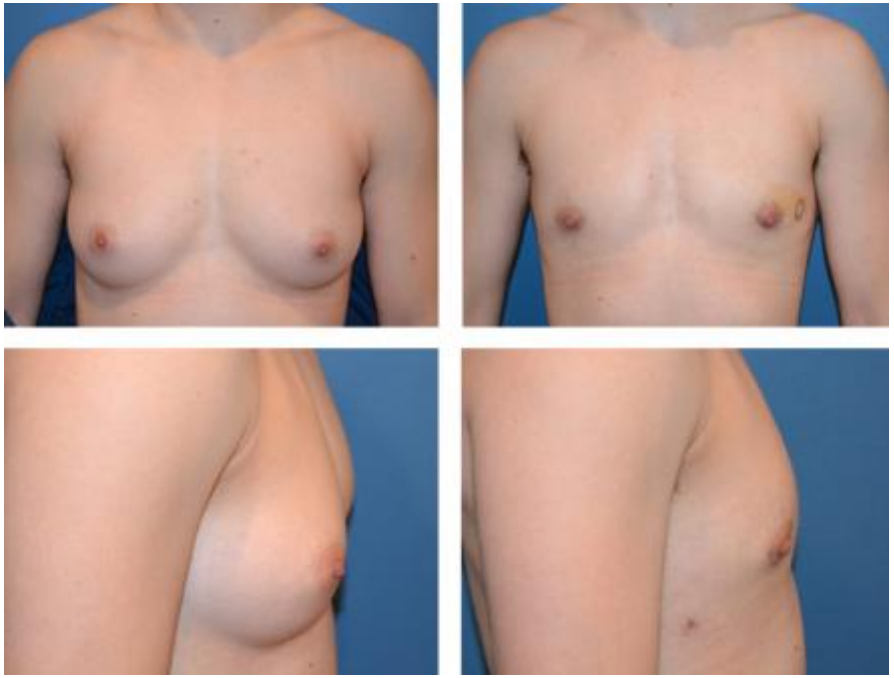
After

Keyhole/Peri-Areolar

Beverly Fischer, Maryland

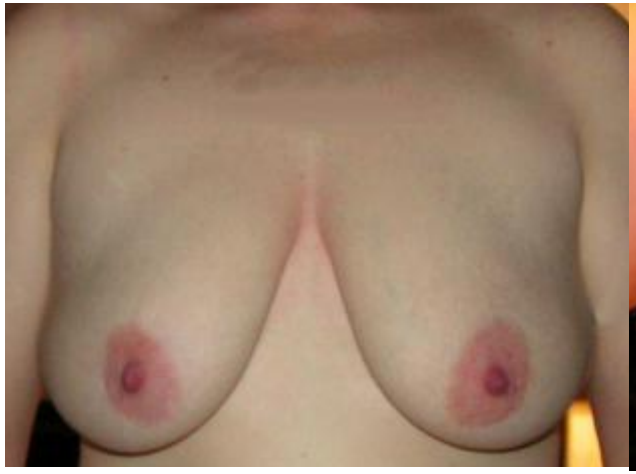


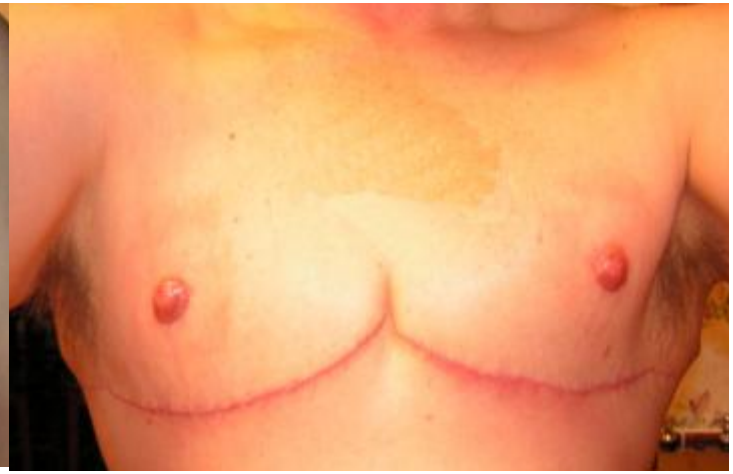
Dr. Johnson, Springfield, MA



Double Incision Nipple Grafts

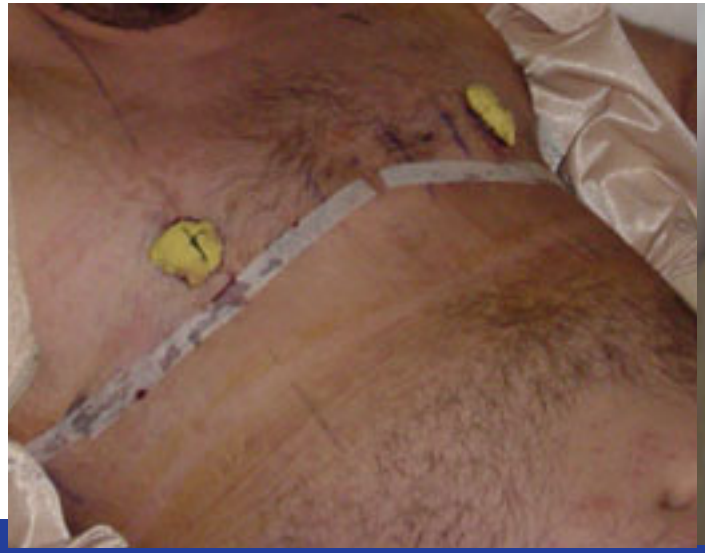
Dr. Charles Garramone, Florida

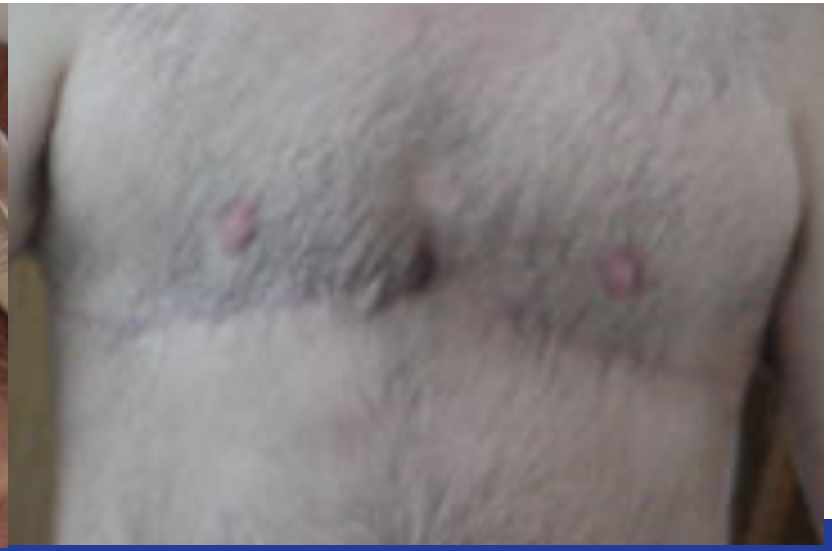




1 month post-op

Melissa Johnson, Springfield, MA

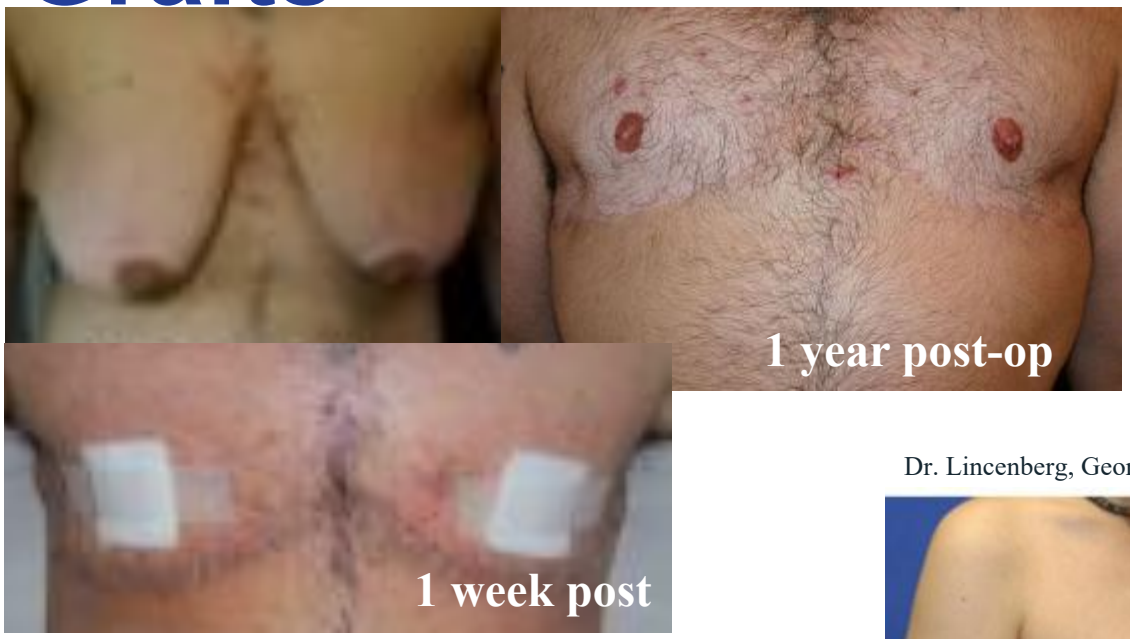




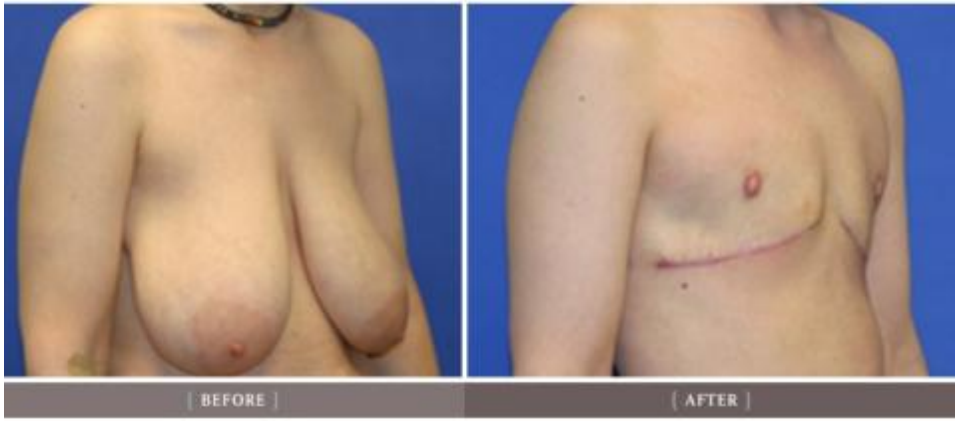
1 year post-op

Double Incision Nipple Grafts

Brownstein, San Francisco



Dr. Lincenberg, Georgia



Brownstein, San Francisco

Chest Reconstruction

- Complications may include hypertrophic scar formation or dog ears, nipple or areolar necrosis

- In one series from 2011, 23% of patients needed at least one further operation

Trans Masculine Spectrum Surgeries

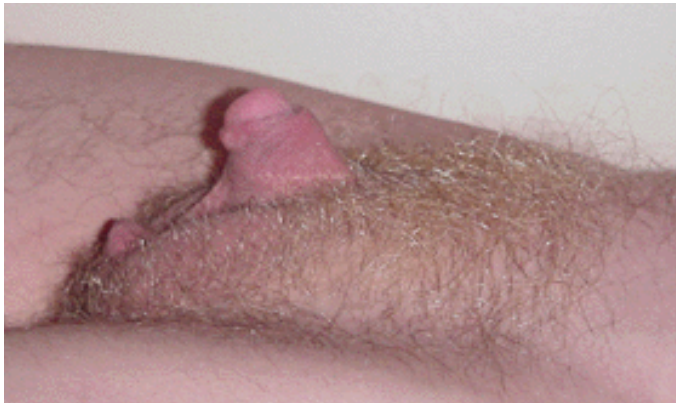
- Clitoral Release ($3,000-$8,000)
- Metoidioplasty ($25,000-50,000)
  - Urethroplasty – Urethral Lengthening (usually done with other procedures – adds $6,500-$10,000)
  - Scrotoplasty – creating testicles with implants (apx $4,000; incld. implants apx $750/each)
  - Vaginectomy – ablating (destroying the lining) & closing the vagina (usually done with other procedures – adds apx $3,000 to cost)
  - Hysterectomy during Meta – add apx $5,000

Goals of Masculinizing Genital Reconstruction

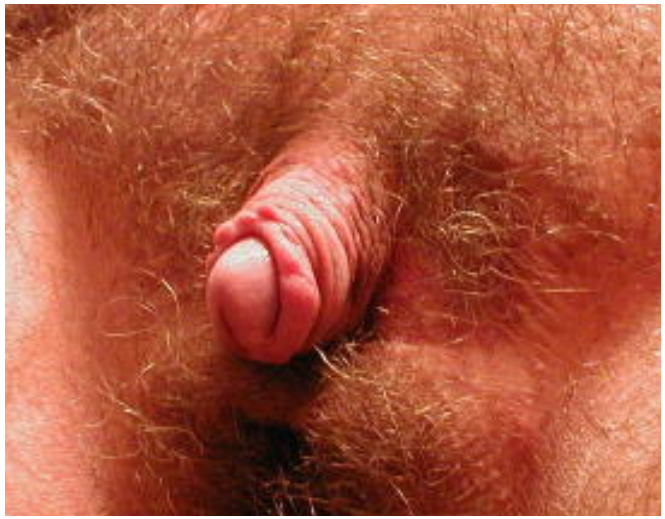
- Aesthetically pleasing phallus (and scrotum)
- Preservation or reconstruction of erogenous and tactile sensation
- Ability to urinate in a standing position
- Possibility of erectile function enabling penetrative sex

Clitoral Release/Free-Up

Dr. Brassard, Montreal



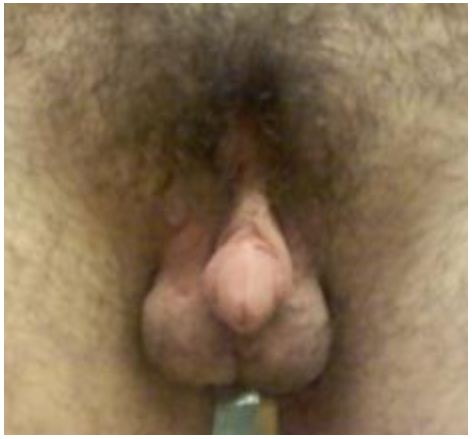
Dr. Meltzer, AZ



Metoidioplasty – Ring Flap w/o Scrotoplasty or Testicular Implants

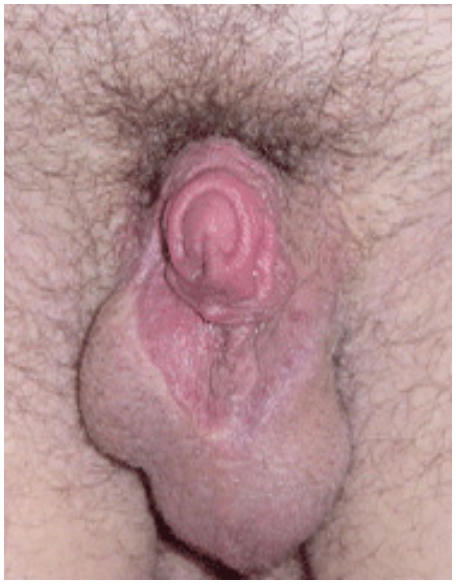
Metoidioplasty w/ Scrotoplasty & Implants

Dr. Meltzer, AZ



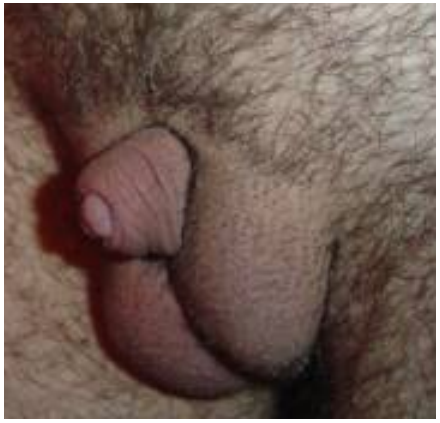
6 months post

Dr. Brassard, Montreal



3 years post

Dr. Perovic, Belgrade Serbia



2 months post

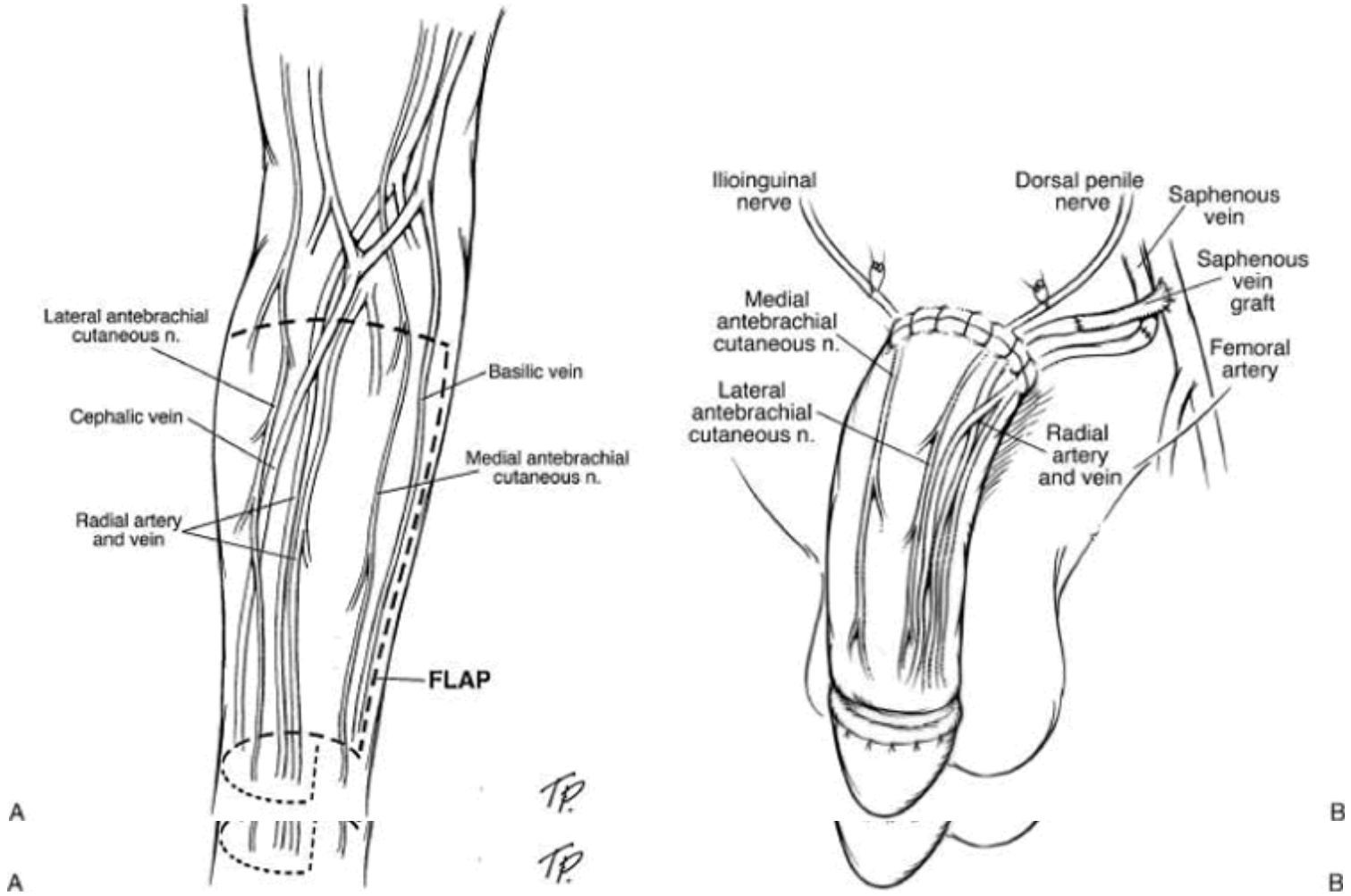
Complications of Metoidioplasty

- Urethral fistulas in 37% (Hage, 2006)
- Urethral stenosis in 35%
- Loss or dislocation of testicular prosthesis in up to 80%
- 25% of 70 patient cohort later desired phallic reconstruction
- Djordjevic and Biziz (2013) reported lower complication rate with buccal mocosal graft with labia minora flaps

Trans Masculine Spectrum Surgeries

- Phalloplasty ($50,000-$300,000)
  - Radial Arm Phalloplasty – Free microvascular flap
  - Abdomen/leg pedicled flap
  - MLD (*musculocutaneous latissimus dorsi*) Flap

Radial Arm Phalloplasty Dissection & Transfer

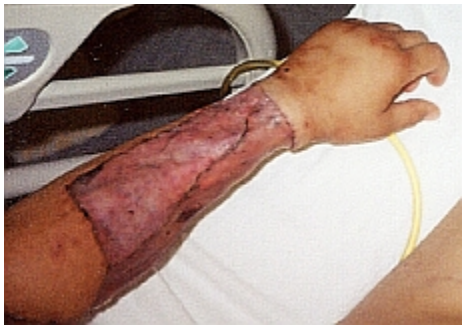


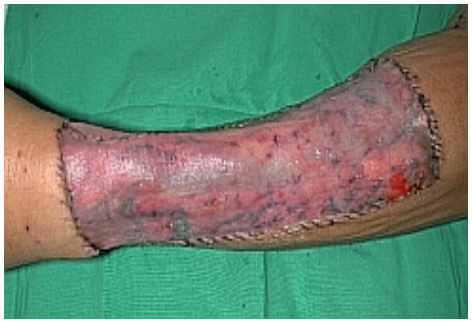
Phalloplasty

- 800+ cases of forearm flap procedure reported up to 2013
- Multi-stage procedure
- Surgical revision rates up to 60 to 70%
- In at least two series, 80% satisfaction with sexual intercourse (Doornaert, et al, 2011 and Sohn, 2013)

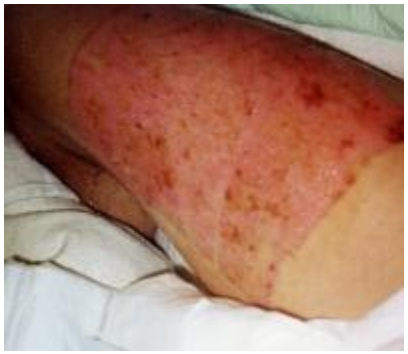
Radial Forearm Phalloplasty Donor Sites and Scarring

Dr. Monstrey - Belgium

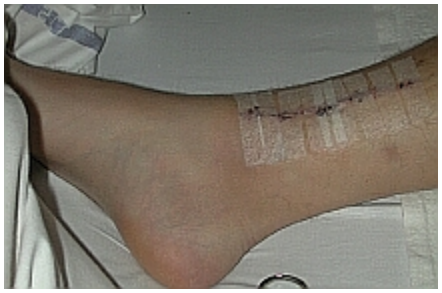




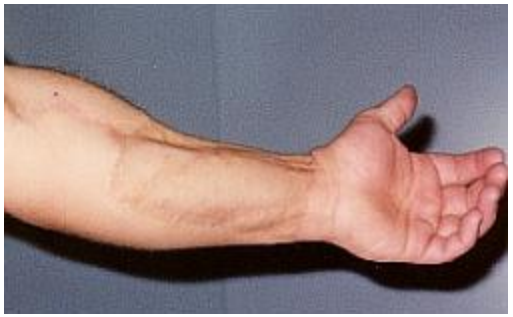
Forearm harvest Sites for graft & nerve



Inner thigh harvest Site for skin graft



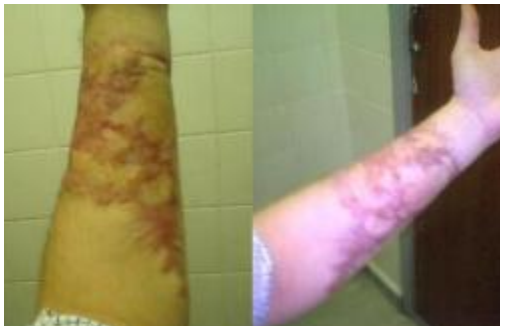
Ankle harvest Site for artery



2 years post op

Healed arm harvest Sites

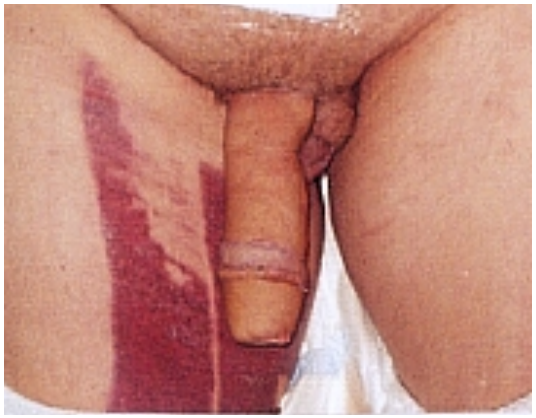
Dr. Ralph, London



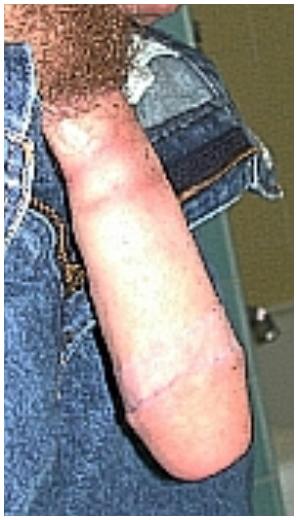
1 year post

Radial Forearm Phalloplasty Results

Dr. Monstrey - Belgium

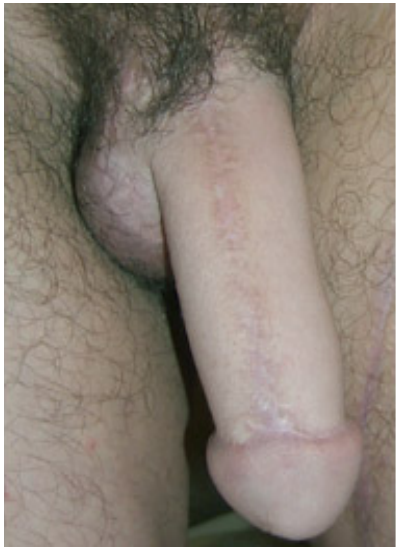


14 days post



4 months post

Dr. Gottlieb, IL



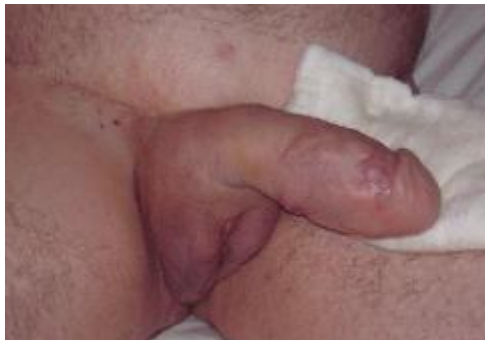
1yr post
($300K)

Dr. Daverio, Germany

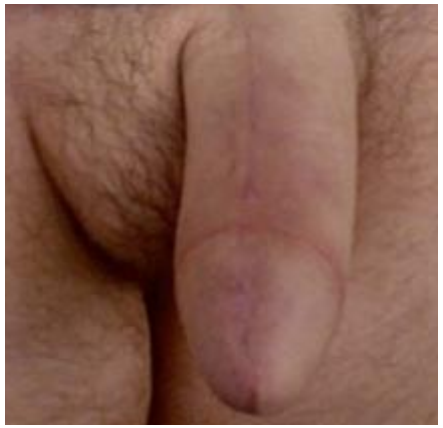
8 months post

Abdominal Flap Phalloplasty Results

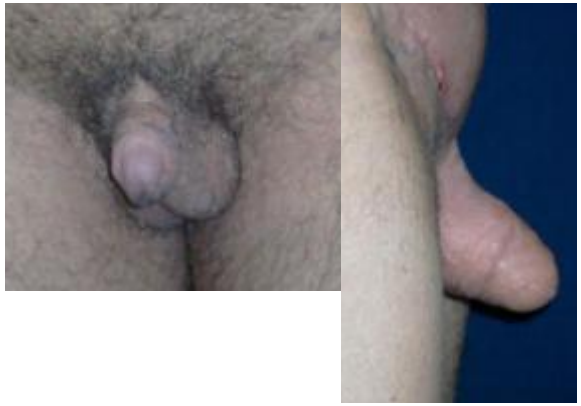
Charring Cross Hosp "Dr. C" & "Mr. R" - England



Post 2 years with internal pump

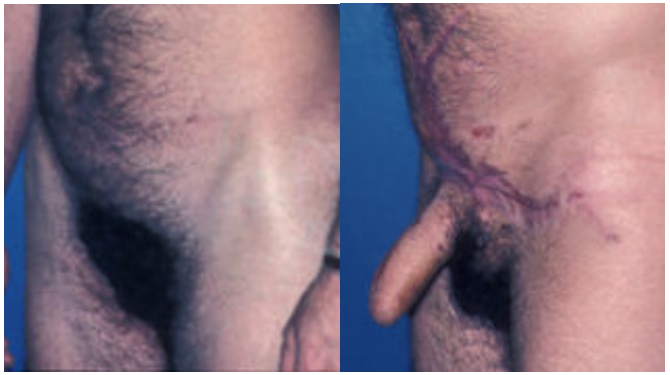


Pedicle Flap – with erectile implant – 1 yr post



Pre & Post – incorporated Meta

Dr. Sherman Leis, PA

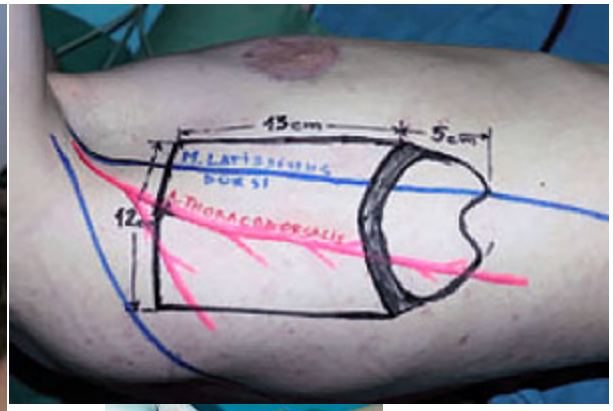


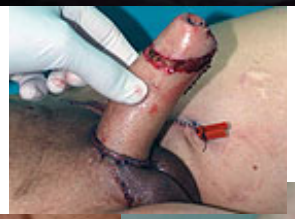
Pre & Post – Abdominal Flap

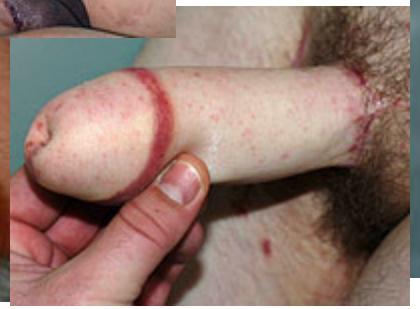
“Perovic Total Phalloplasty” (MLD flap)

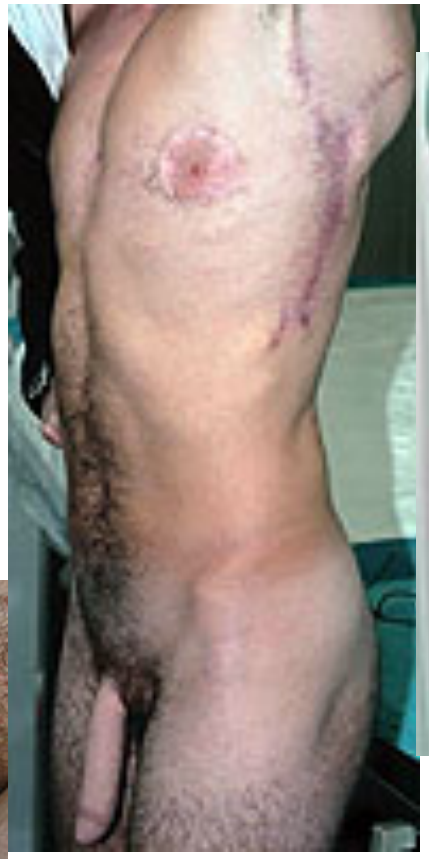
Dr Djinovic, Belgrade

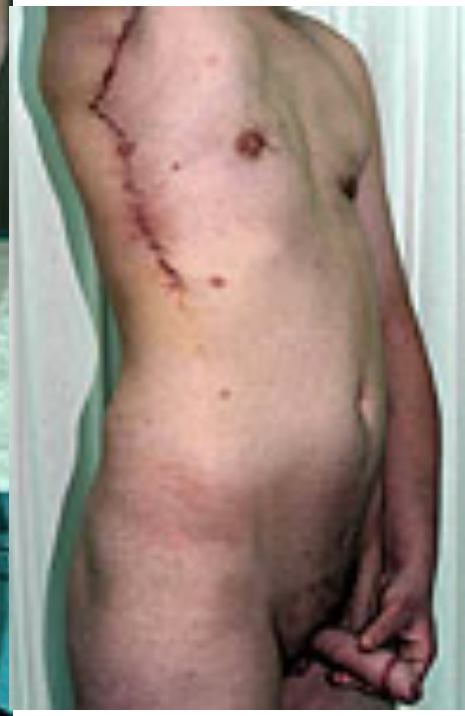
Dr Perovic (deceased 2010), Belgrade











This penile reconstruction has THREE stages.
Three to six months must be allowed between the first and second stages and again between the second and third stages to allow healing and get the best possible final surgical result.

Complications of Phalloplasty

- Partial or complete flap loss

  Smokers and obese patients at higher risk
- Donor site scarring

  Regrafting in up to 2.8%

  75% either satisfied or neutral (Van Caenegem, 2013)
- Local wound separation or endodermolysis

  Topical antibiotics and local wound care
- Tissue congestion

  Urgent surgical consultation

  Topical nitroglycerine may help

Complications of Phalloplasty

- Urethral strictures and fistulas

  Reported in 20-40%

  Some will close spontaneously after prolonged catheterization but most will require surgery

  79% ultimately with post-micturition dribbling and prolonged micturition time

- Intraurethral stones due to residual hair growth
- Prosthetic complicaitons

  Malpositioning, erosions, extrusions

  Use of tissue expanders in 2-stage process

Symptoms of strictures/fistulas

- Repeated UTIs
- Multiple streams
- Urine leakage proximal to tip
- Diminished stream or spraying
- Bladder fullness and over-flow incontinence
- Urethral urgency
- Post-void dribbling

Hair Treatment Costs

- Hair Transplants: $5.50-$9.50 per follicle (range is 600 to 3000 grafts for most people).
- Electrolysis: $50-150/hr taking 100-400hrs or 1-4yrs time on average. The face may cost $2,000-$20,000.
- Laser Hair Removal: Avg cost per session is $235 Range $75-$2,000). Treatment avg in US and Canada is $450-$12,000 for 6 sessions.

Alternatives to Surgery Options

- Binding by transmasculine and non-binary people
- Stand-to-pee devices
- Tucking by transfeminine and non-binary people
- Sex work or criminal activity to pay for surgery
- Injected silicone, "Pumping Parties", with potential for severe medical sequelae

Complications of Silicone Use

- Acute complications can include pain, redness, induration, infection, abnormal pigmentation, migration of injected material, embolization
- Severe local tissue reactions with local necrosis and ulceration
- Immunosuppression and illnesses
- Infections and arthritic-like symptoms

Complications of Silicone Use

- Acute silicone syndrome occurring hours to days after injection
- Dyspnea, cough, chest pain, hypoxia, hemoptysis, alveolar hemorrhage, fever
- Occasional neurologic sx and alteration of consciousness, hepatic, GI and cardiac involvement

Complications of Silicone Use

- Late complications:
  - Inflammatory nodules
  - Cellulitis with sterile abscesses
  - Siliconomas
  - Delayed-onset inflammatory nodules
  - Secondary lymphedema
  - Peristent erythema and telangiectasias

Surgery by unqualified persons or clinics

- In a 1984 survey of clients accessing services at a gender specialty clinic:
  - 9 % of transwomen had self-surgery on genitals
  - 2% of transmen had performed self-surgery on breasts
- In a 2013 survey of trans-identified persons in Ontario:
  - 1% had performed or attempted procedures on themselves

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- Jarolim, et al: Gender reassignment suregry in male-to-female transsexualism: A retrospective 3-month follow-up study with anatomical remarks; Journal of Sexual Medicine, 6: 1635- 44 (June 2009)
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Selected Web Resources

Website with T-male genital affirming surgery photos: http://www.thetransitionalmale.com/galleryindex.html

TransBucket: www.transbucket.com

Philadelphia surgeon – Sherman Leis: http://www.drshermanleis.com/transgender/femaletomale.htm

Loren Cameron "Man Tool" online book FTM GRS and stories: http://www.lorencameron.com/

Web site with multiple photos of FTM surgeries of all types: http://www.transster.com/

Web link site with multiple articles and papers: http://www.transgenderzone.com/library/pr.htm

Laura's Playground – an MTF website with links and info: http://www.lauras-playground.com/mtf.htm

Gender Clinic in Australia – MTF info: http://www.gendercentre.org.au/vaginoplasty_techniques.htm

Lynn Conway website on MTF SRS & more: http://ai.eecs.umich.edu/people/conway/TS/SRS.html

The Transsexual roadmap – web site with MTF info: http://www.tsroadmap.com/

Toby Meltzer, MD, PC's website (GRS surgeon): http://www.tmeltzer.com

Marci Bowers, MD website (GYN & GRS surgeon): http://www.marcibowers.com/

Monstrey Phalloplasty article online: http://www.thetransitionalmale.com/monstrey

Men's Ts Resources in Australia (& others): http://www.ftmaustralia.org/

Hair Removal Journal: http://www.hairremovaljournal.org/removalcosts.htm

Facial Feminization Links: http://beginninglife.com/FFS.htm

MTF Surgery Center in Bangkok, Thailand: http://www.mtfsurgery.com/

Jeffrey Spiegel, MD – FFS Surgeon @ BMC: http://www.drspiegel.com/facial_feminization.html

Hair Facts: http://www.hairfacts.com/medpubs.html