Gender Reassignment Surgery - Female to Male

Due to hormonal imbalances (as mentioned in MtF GRS), transgenders feel that their identity is different from the gender of the body they occupy. Here we will talk of the TG female. At some point of time in their lives, these females feel the urge to become males. This may happen due to one or more of the following factors.

1. Such females are not fully females. They have a partly functional vagina or a smaller vagina which may either be penetrated with great difficulty or may not be penetrated at all.
2. Internal female organs are either absent or are non/partially functional.
3. From the inside of their body and mind, they feel a male soul is trapped in a female body.
4. They have an intense desire to urinate while standing.
5. They have female friends who they are attracted to. Both want to live together for the rest of their lives. Dominant in the relationship one of them has great desire to get transformed into a male.
6. They feel it is a male dominated society and becoming a male makes one more empowered person in the eyes of society.

When one or more of the above mentioned factors are strong enough, such women or those who wish to feel empowered, have male attitude, behaviour etc. choose to become male through female to male GRS. Gender reassignment surgery from female to male includes surgical procedures that will reshape a female body into a body with a male appearance.

Through the construction of penis, chest reconstruction surgery, the use of hormone implants etc, a female gets transformed to a male.

For this, a medical team composed of psychiatrists, a sexologist, endocrinologists, gynaecologists, urologists and plastic surgeons work together.

The protocol for this surgery is similar to the MtF GRS.

1. Counselling
2. Hormone treatment
   Breast reduction
3. Changing gender role
   Female friends become former friends and new male friends are made
   Voice training – changing the tone and pitch of the voice
   Real life experience – living and passing as male
4. Counselling and referral

Methods of Surgery

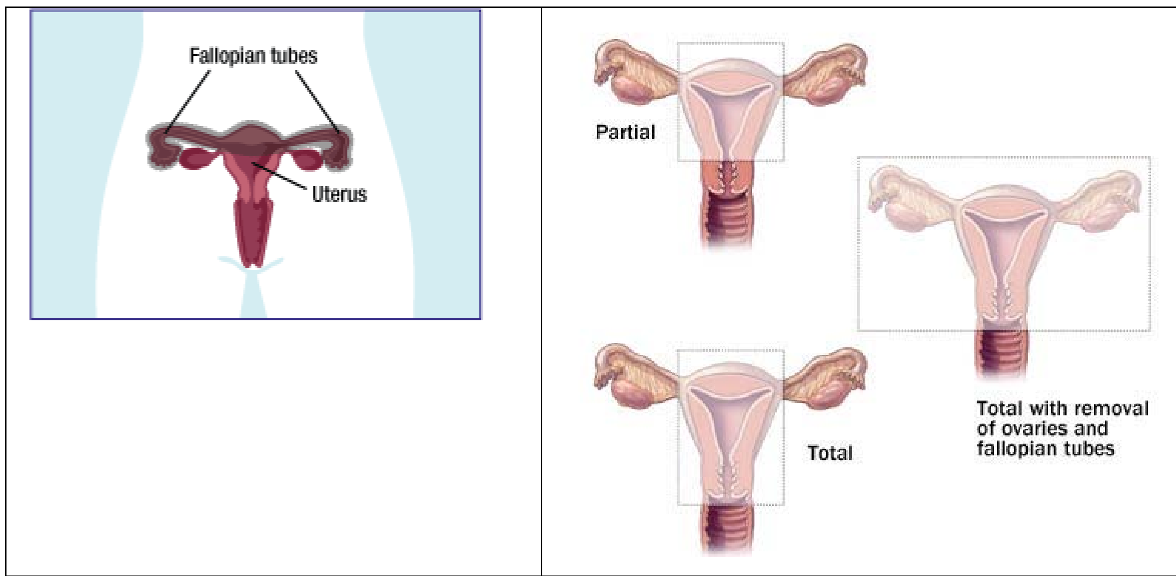
For the FtM, a two-stage conversion is applied. In the first operation, salpingo-oophorectomy, hysterectomy, colpectomy, metoidioplasty and mastectomy are performed. A free flap phalloplasty with the deltoid flap is planned as the second stage.

Many transsexual women considering the surgical option do not opt for genital reassignment surgery, though some do undergo a bilateral mastectomy, the removal of breast and shaping of a masculine chest and hysterectomy, the removal of internal female sex organs, along with hormone treatment with testosterone.

Hysterectomy and bilateral salpingo-oophorectomy

Hysterectomy is the removal of the uterus. Bilateral Salpingo-oophorectomy (BSO) is the removal of both ovaries and fallopian tubes. Hysterectomy without BSO in transgendered women is sometimes erroneously referred to as a 'partial hysterectomy' and is done to treat uterine disease while maintaining the female

hormonal milieu until natural menopause occurs. A 'partial hysterectomy' is actually when the uterus is removed, but the cervix is left intact. If the cervix is also removed, it is called a 'total hysterectomy.'



Some transsexual men desire to have a hysterectomy/BSO because of a discomfort with having internal female reproductive organs despite the fact that menses usually cease with hormonal therapy. Some undergo this as their only gender-identity confirming 'bottom surgery'.

For many transsexual men however, hysterectomy/BSO is done to decrease the risk of developing cervical, endometrial, and ovarian cancer. Like breast cancer, the risk does not become zero, but is drastically decreased. It is unknown whether the risk of ovarian cancer is increased, decreased, or unchanged in transgender men compared to the general female population. The risk will probably never be known since the overall population of transgender men is very small; even within the population of transgender men on hormone therapy, many patients are at significantly decreased risk due to prior oophorectomy (removal of the ovaries). While the rates of endometrial and cervical cancer are overall higher

than ovarian cancer, and these malignancies occur in younger people, it is still highly unlikely that this question will ever be definitively answered.

Decreasing cancer risk is however, particularly important as transsexual men often feel uncomfortable seeking gynecologic care, and many do not have access to adequate and culturally sensitive treatment. Though ideally, even after hysterectomy/BSO, transsexual men should see a gynecologist for a check-up at least every three years. This is particularly the case for transsexual men who:

- retain their vagina (whether before or after further genital reconstruction),
- have a strong family history of cancers of the breast, ovary or uterus (endometrium),
- have a personal history of gynecological cancer or significant dysplasia on a PAP smear.

One important consideration is that any transsexual man who develops vaginal bleeding after successfully ceasing menses on testosterone, must be evaluated by a gynecologist. This is equivalent to post-menopausal bleeding in a transgendered woman and may herald the development of a gynecologic cancer.

Metoidioplasty

Metoidioplasty is phallic clitoral enlargement, enabling urinating while standing. It is derived from the Greek words, ‘meta’ meaning toward, ‘oidion’ meaning male organs and ‘plasty’ meaning formation. A metoidioplasty is based upon the surgical release of a clitoris that has been primed on testosterone. A patient going in for the surgery can reasonably anticipate the outcome of the transgender surgery based upon the length of the clitoral body and size of her glans clitoris pre-operatively. One can expect a juvenile sized phallus at best, without it having the ability to penetrate. Overweight patients may achieve greater length with pubic lipectomy which recesses the body surface line.

The procedure confers the advantage of minimal surgery with preservation of natural sensation and erectile function.

How is Metoidioplasty Done?

First, the gynecologists perform a ovariohysterectomy. Then they elevate the anterior vaginal flap through the abdominal approach. The elevation is completed transvaginally, just to the dorsal part of the urethral orifice, by plastic surgeons. The vaginal mucosa is restructured and colpocleisis (surgical closure of the vaginal canal) is accomplished. After the abdominal wall is closed, the surgeons perform a metoidioplasty. By restructuring of the chordee, the clitoral shaft is released and abdominally advanced. The neourethra is constructed by suturing the vestibular skin, the vaginal mucosal flap and the labial flap around the urethral catheter in a watertight fashion. A suprapubic cystostomy is performed and the urethral catheter is removed.

The estimated blood loss is 500 ml and the total operating time is 6 hours. The postoperative course is completely uneventful. The suprapubic catheter (a urine drainage catheter which is inserted into the bladder so that urine can be drained out, usually when the normal way out for the urine is blocked) is left in place for 7 days. The total hospital stay required for the patient is about 14 days.

For those patients who desire to urinate while standing after this sex change procedure, the urethra is extended into the neo-penis. This may be accomplished simultaneously or performed secondarily using either a vaginal flap or buccal mucosal (mucous membrane of the inside of the cheek) graft.

A free-flap phalloplasty is the second stage of the conversion.

Phalloplasty

Phalloplasty is penile implantation for the Neo-Phallus patient and can be performed with procedures such as a sensate radial forearm graft, or a lower abdominal flap, or a latissimus dorsi (muscle and skin) graft. All these procedures leave disfiguring harvesting scars. A follow-up procedure called a M inverted V glansplasty is used to create a rim or corona. It derives its name from the initial M-shaped incision that reconfigures during the course of the procedure

into an inverted V. The procedure was designed to address the factors leading to meatal retraction and the abnormal glans shape sometimes seen after the MAGPI (Meatal Advancement and Glanduloplasty). This process of constructing a penis is tedious and more expensive, as compared to metoidioplasty but is the more effective of the two.

An ideal phalloplasty will produce a phallus that on close inspection looks to be a penis with good glans (head) formation and a corona (rim). The phallus must be completely sensitive to touch as well orgasm. Within the phallus, a urinary channel of decent calibre is fitted, so that the patient can urinate from the glans like normal males. Urethroplasty (insertion of a tube within the phallus) permits extension of the urethra for standup urination.

A penile prosthesis confers the wherewithal to penetrate which may be the defining moment for a successful conclusion to gender reassignment surgery. Clearly the intimacy of complete sexual contact is sought equally by patients and their partners. Capability to penetrate can be provided with a bacculum stent which is inserted into a grooved space within the phallus only during intromission or via penile prosthesis affording the patient a controllable erection or a permanent semi rigid (malleable) erection. Additionally, an artificial mechanism is fitted for producing a penetrable erection. An inflatable penile prosthesis or semi-rigid prosthesis or a silicon rod is inserted into a special channel just for sex.

With phalloplasty, the necessity for staged procedures is predictable and the revision rate is often quite high.

How is phalloplasty done?

There are basically two surgical procedures involved here and they are:

1. **Penis girth enhancement** (thickening of the penis)**:**

Girth enhancement is done by sucking fat from patient's pubic mound, abdomen and waist and injecting this fat underneath the skin of his penile shaft. Due to advances in surgical methods today, penis girth enlargement tends to be permanent with no lumps or ugly patches.

2. **Penis lengthening** (making the penis longer):
   Penis lengthening procedures basically involve dividing the hidden ligaments suspending the penis from the underside of the pubic bone. This will cause the penis to protrude roughly an inch and a half forward. This increase is permanent provided he wear the penis stretcher for at least 4 months for 4 hours a day.

Penis Stretcher – Since its introduction to the market in 1970's, the vacuum penis pump has proved to be a popular and efficient solution for erectile problems and even for penis size and performance improvement. However, nowadays, there are better, newer, far more effective devices available for those looking for a means to get rid of erectile problems and improve the penis size and its performance.

'Penis Traction Device' (picture shown) represent a veritable quantum leap forward in the world of mechanical gadgets. Through careful clinical research and testing it was discovered that it is possible to efficiently increase the volume of the corpus cavernosa. This part of penis structure answers for erection, its quality and duration.

Some users have reported changes from 4.0 inches flaccid, 5.9 inches erect and 4.4 inches in girth to 5.8 inches flaccid, 7.7 inches in length and 5.0 inches in girth after the use of 'Penis Traction Device' for two weeks daily for ½ hour.

Insertion of Testicular Implants into Labia

Testicular prostheses can also be inserted into the labia which may be joined from side to side to create the semblance of a scrotum. This should be performed as a procedure unto itself or with urethral extension to minimize complications. To prepare the labia majora for implantation, a tissue expander may be employed for a few months. This also creates a more pleasing scrotal appearance.

Male Chest Reconstruction

Male Chest Reconstruction usually precedes below the waist surgery for FTM patients as protruding breast contours are only necessary for MtF transitions.

There are three basic aims in female to male chest contouring surgery,

1. To resize the nipple-aureola complex to the male dimension.
2. To reposition the nipple-aureola complex, and
3. To create a natural male contour.

While for very small breasts a peri-areolar skin excision can be performed, the problem of maintaining an adequate pedicle to support the nipple areolar complex without protrusion of the pedicle through the skin becomes challenging. Bringing skin into the borders of a contracted areola will cause puckering which hopefully with time will smooth out. A permanent fixation suture is often required to prevent tension on the suture line from causing a slowly expanding scar.

A transverse inframammary incision with free nipple areolar grafts is the preferred approach. If there is too much blousing of the skin, the alternatives are to extend the incision laterally or to make a vertical midline incision (inverted T).

The areola is trimmed to a pre agreed upon diameter and the nipple sectioned with a pie shaped excision and reconstituted.

Although the patient must be cautioned that there may be varying sensory loss, though limited because of nerve disruption, overall experience has been favorable in this regard as distal nerves are known to regenerate.

Nipple areolar grafts must be kept wet with saline soaked gauze re-moistened every 3 hours for at least 5 days to maintain tissue viability until capillary buds grow into the graft.

Some crusting of the grafts is not unusual and will usually shed by the 3rd or 4th week after surgery. By all means do not lift or pick them off as the adherence of the graft may be very tenuous and its viability very fragile. After tissue settling some revision surgery may be required and is usually done.

Other Procedures Concurrent with Penile Surgery

Simultaneously during the penis construction surgery or sometime after the surgery, excess female fat deposited on the thighs, breasts, stomach, hips etc. is removed through liposuction to give the patient a more masculine look.

The male hormone, testosterone is frequently provided to produce secondary male sex characteristics, such as enhanced muscle mass, beard and a lower voice. Voice changes are considered to be irreversible. There should be monitoring of blood levels every three months, in order to pick up sub-clinical adverse reactions such as liver dysfunction and elevated blood viscosity, secondary to unduly high levels of red blood cell mass.

Post Surgical Complications

Metoidioplasty, phalloplasty, liposuction and other surgical procedures involved in female to male transgender surgery involve a fair amount of tissue transfer, therefore some degree of post-operative swelling is expected. Complications may include but are not limited to less than anticipated length, torquing of the clitoris (usually treated by release), loss of sensation, tissue necrosis, localized

infection, persistent tenderness or hypersensitivity, transient or permanent narrowing of the vaginal opening which may render the vagina incapable of penile penetration, urethral narrowing, urethral obstruction. Urethral fistula (leakage of urine anywhere along the pathway of urethral extension) although not common, may occur in few cases. Between the first and second stages leading to urethral extension, urinating patterns and trajectory may be forwards or backwards and may splash wetting perineal, labial and vaginal skin.

Frequently Asked Questions

1) Who can go for FtM surgeries?

   Anyone above 18 years of age and willing can go for this surgery. But she has to obtain some medical clearance before undergoing this surgery.

2) How long does it take to complete the transgender process?

   Anyone willing to undergo FtM transgender surgery must first undergo Real Life Test, which means living in the role of a male 24/7 (at work and play) for a minimum of one year. Once she has made her selection, accepts continuous cross-dressing for at least 1 year and has fulfilled the Harry Benjamin (see box below) requirements, she is all set for below the waist surgery. The male hormone testosterone is frequently provided during this period to produce secondary male characteristics. After completing this period, the actual surgical procedures are carried out. In all probability, if any complications do not arise, this whole transformation period will take about 1½ to 2 years.

3) How does one obtain hormones?

   Hormones assist in the real life test. If being passable is an important consideration in the decision to undergo transition, then patients' first step is to see a therapist.

   Ethical and responsible medical practice would suggest that hormones should only be prescribed by a knowledgeable doctor, such as an endocrinologist, who will request a letter of therapy clearance. Hormone changes may be irreversible and some very adverse effects may occur with improper use. She

will need to have a few baseline blood tests performed and be followed every so often, to be sure that she is achieving safe and effective hormone levels.

4) Would it be of normal size and look and feel real?
   To discerning people examining the TG in bright light, his neo-phallus will resemble a penis but subtle differences in skin pigmentation, texture and the presence of some incisional areas although well healed and perhaps ever so fine, will be apparent. The goal of FtM surgery is to create a sensate phallus at least as long as a real penis, with glans and rim formation, through which he can urinate and make erect for the purpose of penetration.
5) Will the TG person be able to penetrate during sexual relations?
   In patients who have a neo-phallus fashioned from a graft or flap, this can be accomplished with either a stent (bacculum) that can be inserted into a linear cavity within the phallus while having sex or via an inflatable penile prosthesis.
6) Will the TG person be able to produce sperm, impregnate a female and have kids? What are the chances of fertility?
   Genetic research technology is not that far advanced. The muscles and accessory sex glands (prostate and seminal vesicles especially) needed for ejaculation are not created in today's FTM surgical procedures. Let's hope for and follow future developments. Who knows, maybe in 20 years time it will be possible for primitive sperm material extracted from in situ (or excised and frozen) AIS testes to be used to fertilize a donor egg?

Harry Benjamin Standards of Care

The standards provide a description of the basic steps a transsexual person should follow in seeking hormonal and surgical treatment. This consists of the following five steps:

1. Diagnosis

The first step for a transsexual; seeking GRS is to see a licensed clinical behavioral scientist (psychologist, counselor, psychiatrist, or clinical social worker) with proven competence in the field. Evaluation must occur over a period of at least ninety days. During this period, the patient should talk about her feelings of gender dysphoria with the therapist and explore suitable options. After this ninety day period, she should ask the therapist for his diagnostic impressions.

2. Referral for hormonal therapy

At the end of the ninety day period, she can ask the therapist for a referral to an endocrinologist for hormonal therapy. An experienced therapist will have a referral network of endocrinologists and other professionals. Typically, therapists contact the endocrinologist on the patient's behalf.

3a. Consult an endocrinologist

The endocrinologist should have proven competence in working with transgender people, for improper dosages of hormones can be dangerous. Hormones will cause gradual but progressive changes in the patient's secondary sex characteristics (breast growth and lessening of body hair in MtFs and lowering of voice and increase in body and facial hair in FtMs), which will cause the patient to look more masculine or feminine over time. MtFs will additionally experience lowered libido and sterility, and FtM's will experience clitoral growth, increased libido, cessation of menses, and (sometimes) acne or male pattern baldness.

Hormones for MtFs consist of estrogens, and sometimes progestins. Anti-androgens may also be given. Route of administration may be oral, intramuscular (via injection) or transdermal (via patches). Androgens are given for FtMs, usually intramuscularly.

3b. Electrolysis (for MtFs)

M to F's will need electrolysis to remove facial hair. Body hair will decrease with time on hormones, but some electrolysis of the arms, legs, or torso may be desired. This procedure is more easily done while still living in the male role, as it requires a two-four day period of growth before treatment, and can result in skin inflammation. When living as a female, it is difficult to schedule enough time to allow facial hair to grow for treatment.

With sufficient time on hormones and (MtFs) electrolysis, appearance will change sufficiently to allow the patient to begin the real-life test.

4. Real Life Experience

A major requirement of the Standards of Care is to live and work (or go to school, if a student) full time in the new gender role in order to achieve candidacy for genital surgery. During this "real-life test" the patient must dress and function in the new role 24 hours a day, seven days a week.

5. Gender Reassignment Surgery

After the requirements of the real-life test have been met, the patient is eligible for evaluation for GRS. Two authorization letters from therapists are required for GRS.