What is Metoidioplasty?

Te Whatu Ora
Health New Zealand

Introduction:

This booklet explains what metoidioplasty is, how these surgeries are done, what the risks and side effects are, and what you need to do to prepare and recover well from surgery. Please remember the information provided here does not replace the information you receive from your surgeon. We are constantly working to improve our resources to better suit your needs, this resource will continue to be updated.

Acknowledgements:

The primary sources of information in this decision booklet have been derived from OSHU, Trans Care BC and Cadogan and the London clinic's patient information.

What is metoidioplasty surgery?

Metoidioplasty is a series of complex reconstructive procedures carried out on those undergoing masculinising gender affirming surgery, often involving multiple steps and a series of staged surgeries over up to two years. The primary goal is to create a small phallus with full sensation. This involves using the body's existing genital tissue, including the clitoris, labia, and the vaginal wall.

To make the new phallus, we release your clitoris from its attachments and make it more visible. Metoidioplasty is sometimes referred to as 'meta'. A large part of its success depends on your preparedness. This means being in the best possible physical and mental health before the surgery. Above all else, it is critical to have reasonable expectations about what is possible for your body and what your surgeon can realistically accomplish.

Some patients may also opt for other procedures to take place alongside their metoidioplasty surgery, such as the removal of the vagina (vaginectomy) or creating a scrotum using the labia majora, with artificial testicles to create a natural feel. Often these surgeries are carried out with six months (or more) between each one, allowing the body time to recover.

Patients may choose to have their urethra lengthened and placed in the phallus which for some people may give them the ability so they can urinate from their phallus while standing up, although not to extent of being able to urinate through their zipper or the use of public urinals.

Your ability to stand to pee depends on the length of your phallus and your body shape. Some people may not have their clitoris grow enough to allow standing urination. If you are heavier or have a higher BMI (body mass index) then your phallus is more likely to be buried, making it difficult or not possible for you to pee standing up. Some people may not have enough inner labial skin to lengthen the urethra and cover the shaft of the phallus.

You are not likely to have a noticeable bulge in your clothing after metoidioplasty. If a bulge is important to you, you may want to consider phalloplasty.

You will be able to discuss the options with the surgeon at your first specialist assessment consultation.

What are the benefits of metoidioplasty?

Metoidioplasty is much more straightforward than phalloplasty, with a lower chance of side effects and complications than phalloplasty. (Phalloplasty is a procedure that constructs a penis using skin taken from the arm, leg or side/back). Metoidioplasty allows you to keep full sensation when creating the glans of your phallus.

What is the preparation needed for metoidioplasty surgery?

- If you are eligible for surgery, you will have your appointments and surgery in Wellington.
- Your surgeon must be satisfied that you are in good mental health ahead of surgery.
- Any person undergoing metoidioplasty must have realistic expectations of what can be achieved through surgery.
- Due to the nature of this surgery people will need to have been taking testosterone as part of their gender affirming healthcare for a minimum of one year. A year or two of testosterone therapy typically causes the clitoris to grow, sometimes to between 2.5cm to 5cm.
- You need to be able to tolerate a general anaesthetic and lay on an operating table for up to eight hours.

WPATH Eligibility for Gender Affirming (genital) Surgery (GAgS) Service:

To be eligible for GAgS you must meet the following criteria from WPATH Standards of Care (Version Seven):

- Persistent, well-documented gender dysphoria for at least two years.
- Undergone a physical and psychological assessment by qualified gender specialists.

- Demonstrate that you have been living as your chosen gender for at least one year prior to surgery.
- Capacity to make a fully informed decision and to consent for treatment.
- Age of consent in the given country. In Aotearoa New Zealand, you need to be aged 18 or over.
- If significant medical or mental health concerns are present, they must be reasonably well controlled.

Weight:

Being overweight is a risk factor for complications and delayed healing. The GAgS service accepts people with a BMI less than 35 on to the wait list, with the expectation that patients with a BMI 30-35 will be working with and supported by their general practitioner on a healthy weight loss programme to reduce and maintain their weight to a BMI of 30 or less in a safe and managed way prior to being seen for a First Specialist Assessment (FSA), to decrease general surgery risk. If your BMI is over 30 you are encouraged to speak to your GP to see if you are eligible for the Green Prescription as part of a healthy weight management program. For some people, metoidioplasty may not be possible because of their body shape and weight.

Smoking and vaping:

Smoking and nicotine-based vaping, interferes with the healing process and you are required to be a non-smoker (including nicotine-based vapes) to be eligible for metoidioplasty. Referrals to the GAgS service are not accepted unless you are a non-smoker and nicotine free. Nicotine can cause complications, including poor wound healing, delayed wound healing and graft failure.

Research shows that the risk of surgery failure increases 10 times for people who smoke even one cigarette a day. All products that contain nicotine including vapes and gum, although healthier alternatives to smoking tobacco, all still have the same negative effect on wound healing (Source: OSHU Transgender Health Program and Department for Urology).

You are encouraged to speak with your GP regarding nicotine cessation support. Smoking cannabis, just as for smoking tobacco, contributes to the deterioration of your respiratory system and may interfere with your postoperative recovery.

What to consider

We encourage you to:

- Consider your surgical goal and priorities and balance these with the risks.
- Vaginectomy is required for urethral lengthening. You will need to have had a hysterectomy prior to metoidioplasty when urethral lengthening is included.
- If keeping your vaginal canal or reproductive organs is important to you, we urge you to consider metoidioplasty without a new penile urethra.
- Your mental health and psychosocial supports. Having good mental health and psychosocial support is crucial for optimal healing.

Mental health and psychological / social support:

Gender affirmation surgeries generate multiple changes in the life of the patient. To successfully adapt to all these changes, it may be necessary to seek the help of healthcare professionals in addition to that of your friends, loved ones or support people. Please keep in mind that each person's surgical plan and experience are unique. It is recommended you engage with a counsellor or therapist before surgery, to develop strategies to prepare and respond to the challenges of metoidioplasty surgery and to help navigate this challenging and exciting period of your life.

Fertility:

- If keeping your vaginal canal or reproductive organs is important to you, we urge you to consider simple metoidioplasty without a new penile urethra. We recommend that you have a discussion and reflection on this subject before proceeding with metoidioplasty.
- If you have a hysterectomy that includes oophorectomy you will be permanently sterile as this surgery results in the inability to conceive/produce offspring.

What are the various types of metoidioplasty surgeries?

Metoidioplasty WITHOUT lengthening of the urethra - expected and desired results:

- A masculine appearance of the genitals by lengthening the clitoris, which forms the penis.
- An erogenous, erectile organ, with the possibility of sexual pleasure.

Limits of the surgical technique:

- Does not allow for urination while standing since the urethra remains in its current location.
- May not allow for sexual relations with penetration with the penis.

Metoidioplasty WITH lengthening of the urethra – expected, desired and possible results:

- A masculine appearance of the genitals thanks to:
    - lengthening of the clitoris, which forms the penis.
    - lengthening of the urethra to the tip of the penis.
    - a scrotum with a more natural appearance for a metoidioplasty with scrotoplasty, otherwise a scrotum with a bifid appearance for a metoidioplasty without scrotoplasty.
    - Rarely, for some people, the possible ability to urinate standing up.
    - An erogenous, erectile organ, with the possibility of sexual pleasure.

Limits of the surgical technique:

- May not allow sexual relations with penetration with the penis.
- The length of the penis will not allow urination through the zipper or the use of public urinals. If you are heavier or have a higher BMI (body mass index) then your phallus is more likely to be buried, making it difficult or impossible for you to pee standing up. Some people may not have enough inner labial skin to lengthen the urethra and cover the shaft of the phallus.

Note that due to the high risk of complications such as vaginal entrance stenosis and urinary fistula, urethral lengthening is **not** an option when preserving the vaginal cavity.

It is possible to achieve a natural erection after a metoidioplasty, without the need for penile prosthesis or implants. Because this micro-penis is created from the clitoris, the sensitivity and ability to experience sexual pleasure and orgasm is maintained.

Because of the size of the phallus created by metoidioplasty, it is not always possible to have penetrative sex. If the ability to have penetrative sexual intercourse is important to you, then you should discuss the pros and cons of phalloplasty with your surgeon.

What different types of metoidioplasty are performed here?

Simple:

A simple metoidioplasty involves releasing the clitoris by severing the ligament which attaches it to the pelvic bone. This pushes the clitoris forward, making it more exposed, and gives the appearance of a circumcised penis. This type of metoidioplasty results in a penis that is between four and ten centimetres long, with the average being 4.6cm.

- We will not lengthen the urethra, so you will not be able to stand to pee.
- A vaginectomy is not required, but you can choose to have one if you wish.
- A prior hysterectomy is not required if you do not have a vaginectomy.
- You will not have a bladder catheter after surgery.

Full:

This type of metoidioplasty includes clitoral release, a scrotoplasty and the creation of a new urethra. The urethra is created by using tissue taken from either the vaginal lining, labia minora or the mouth. A catheter is put in place during the operation and is left in place for two weeks after surgery to help keep the new urethra open.

- During the clitoral release, the labia majora descend from their normal position and tissue expanders are used to create enough room to allow scrotal implants to be implanted into the newly created scrotal sac. These procedures may be carried out at the same time or spread out over a period of time.

Metoidioplasty surgery with urethral extension at the same time can take up to five hours to complete.

Ring:

Unlike a full metoidioplasty, ring metoidioplasty does not use tissue from the mouth, instead utilising tissue from the anterior vaginal wall and labia minora to create the urethral extension.

- Ring metoidioplasty does not include vaginectomy (removal of the vagina) although associated procedures, such as scrotoplasty, can be carried out later.

Centurion:

This type of metoidioplasty surgery helps to add girth to the micro-penis by using the labia minora, the lips that sit around the entrance to the vagina. The surgeon releases the ligaments that run between the labia minora and labia

majora and brings both sides together to add bulk to the penis. No skin grafts are required.

You will be able to discuss these options with your surgeon at your initial consultation in order to identify which type of metoidioplasty is best for you.

What surgery can I get alongside metoidioplasty?

There are several surgeries that you can get alongside a metoidioplasty. You may opt for one or more of the following:

Vaginectomy:

This surgery removes the vaginal cavity and closes the vaginal opening, making it impossible to have vaginal sex. A hysterectomy including removal of the cervix must be performed at least six months before a vaginectomy. A vaginectomy is mandatory for surgeries with urethral lengthening and optional without it.

Reasons include:

- Reduced risk of developing an unwanted connection between the urethra and vagina (Fistula).
- We use a portion of the vaginal lining to create the new section of urethra.
- The vaginal lining makes secretions. Removing it reduces the risk of needing an additional surgery to fix trapped secretions (mucocele).

Urethroplasty:

This creates a urethral canal through the penis to allow you to urinate standing up.

Note: The length of the penis will not allow urination through a zipper or use of public urinals.

Scrotoplasty:

A scrotum can be created using labial tissue. Small silicone testicular implants are inserted into each side of the newly created scrotum which will result in a natural feel and appearance.

- You must wait at least six months after your first surgery before the implants can be inserted.

Monsplasty / mons resection:

- The mons is the natural fat pad over the pubic bone. If it is large, we may discuss removing some of the skin and fat to put the phallus in a more masculine, forward, visible position.

- Liposuction can be used to remove fat cells from the mons pubis, the fatty mound that sits just above the clitoris. The skin is then pulled upwards, making the penis look longer and giving the pubic area a more masculine appearance.
- If we do monsplasty you will have a long thin scar where the skin was removed.

Does metoidioplasty add length?

- A metoidioplasty creates a micro-penis which is unlikely to be any more than 10 centimetres long, with 4.6cm being the average.
- Once the clitoris has been released by the severing of the ligaments that anchor it to the labia, you can expect to gain at most a maximum of three to four centimetres in length.

Can you keep your vagina with metoidioplasty?

Yes, it is possible to keep your vagina after metoidioplasty if you so wish. You may also choose to keep your uterus (womb). It is an entirely personal choice, and we will respect your decision.

However, one important thing to bear in mind is that if you do choose to keep these, you remain at risk of certain gynaecological conditions and cancers. If you keep your cervix, you will still need to have regular cervical screening (smear tests).

Note: Due to the high risk of complications such as vaginal entrance stenosis and urinary fistula, urethral lengthening is not an option when preserving the vaginal cavity.

What complications may arise during surgery?

It is important that you understand that there are possible risks linked with any major operation such as metoidioplasty. All surgical procedures involve some risks, including negative reactions to anaesthesia, blood loss, blood clots and infection. These complications can, in extreme cases, result in death. It's important to discuss these risks in detail with your surgeon.

What happens after the operation?

- When you wake up after surgery you will feel tired, and your energy level will be decreased. You will be kept in a recovery area, where specialised staff will take care of you until you are fit to return to your hospital room. Pain medication will be administered to alleviate you having any discomfort before you wake up.

- You will have a catheter in your bladder so the nursing staff can accurately monitor your urine output. This will have been inserted while you are under general anaesthetic.
- Spend three to five days in hospital recovering before being discharged.
- It can take up to a year to recover fully from surgery.
- It can take between 4 – 12 (or more) weeks to recover from each stage of metoidioplasty surgery, depending on which type is carried out. You should expect to take at least six weeks off work and avoid heavy lifting and exercise during the recovery period.
- The surgeon will see you two weeks after surgery, to approve your travel to your home area.
- Partial funding is available to arrange accommodation near the hospital if your home is out of Wellington.

Post-surgery complications are a possibility, but these will be managed closely by the surgeon and the GAgS service. Although most urethral complications occur in the immediate and intermediate postoperative period, complications can occur at any time.

Physical restrictions after surgery:

After surgery you are encouraged to avoid any strenuous activity. Once you are released from hospital, anticipate restricted physical activity for up to a further 6 weeks. We recommend finding ways to function within these physical limits before surgery, while you are feeling well.

What to expect in your recovery

Bruising and swelling:

Moderate pain and swelling are expected for up to seven days after your surgery, and pain medication will be prescribed for you. Swelling may be worse after sitting or standing for a long time.

Scarring:

Scars will occur as part of the surgery. The surgeon will try to minimise the scars and place them where possible in natural folds, so they are not so visible. You will be advised how to care for your scars as they heal, for up to one year after surgery.

Altered sensation and numbness:

It can take time to heal, recover and adjust to sex and intimacy after gender affirming surgery. It may take a while to get used to your new body, so although

you can participate in and enjoy sexual activity from six weeks post-surgery, it is also perfectly natural to want to take things slowly.

You may experience a shooting or tingling sensation as the nerves regrow, which can take three to six months to return to normal, and sometimes for as long as a year.

Pain:

Pain following surgery is inevitable, and everyone's experience is unique. Patients feel different levels and types of pain for varying lengths of time. Patients may report pain at some surgical areas and none at others. While most pain subsides over the first four to six weeks following each stage, minor discomfort or pain is normal even beyond the normal healing period. It usually subsides within a year after surgery.

While uncommon, it is possible for patients to have long-term chronic pain. Persistent pain, especially a burning or shocking type of pain, can be caused by types of nerve pain at the surgical site. If you have persistent pain, let your surgical team know. There are both therapy and surgical options available to manage these complications.

Post operative expectations

Possible Complications:

Our goal is to prevent complications. We do this by using careful surgical techniques, completing metoidioplasty in multiple stages, helping you to be in the best health, and ensuring that you have a safe plan for your recovery. However, this is a very complex surgery, and complications are common. We recommend that you prepare yourself both emotionally and practically for the possibility of complications. Our team is here to help you with anything that may arise. We do everything we can to ensure your surgery and recovery are as smooth as possible.

Infection:

Infection is a frequent and common risk to many surgeries. An infection occurs when tissues are affected by microorganisms such as bacteria and/or other pathogens. An infection can be treated with antibiotic ointment or with antibiotics taken orally or intravenously.

Hematoma:

Hematoma is a collection of blood. Surgical site hematomas occur from a blood vessel that is actively bleeding following a surgery. Small hematomas typically heal on their own. Large hematomas may need to be drained or the patient may need to return to the operating room to stop the blood vessel from bleeding, however this is rare. Hematomas are most likely to occur within the first few days following surgery.

Remember, you will have a lot of swelling at the surgical site. This is normal.

Granulation tissue:

This is an area of bright red or pink tissue around an incision where healing is not complete. It can sometimes show up as painless bleeding or spotting. It is quite common and can be easily treated during follow up appointments.

Graft failure:

Sometimes a skin graft is used from your inner cheek to help strengthen your urethra. Total failure of the graft is rare. It is more common for small areas to fail. These typically resolve on their own or with nonsurgical intervention. Graft failure may also result in urethral fistula or stricture, discussed further down.

Wound separation, reopening of wounds and/or slow healing:

This is one of the more common complications after surgery. The healing process is influenced by a series of factors: oedema, infection, strain on wounds, deficient blood circulation, alcohol use, smoking, poor nutrition, etc. These factors can slow healing and cause the reopening of wounds that require a longer healing period. Generally, this does not affect the final appearance of the operated area. Wound separation occurs when two areas of skin have been stitched together, but the skin edges pull apart after surgery. This typically heals on its own if the suite is kept clean and dry. This is one of the more common complications after surgery.

Loss of sensation and hypersensitivity:

Following surgery there may be areas of numbness due to swelling and stretching of the tissue. You may have small areas of numbness that takes three and six months to return to normal. The perineal area may not regain sensitivity or, on the contrary, some areas may remain hypersensitive and painful. This can affect sexual response and alter the ability to experience pleasure. This situation should return to normal after a few months. However, numbness in some areas may persist and the sensation may not return completely. Should this occur,

your ability to achieve orgasm could decrease. Loss of clitoris tissue is a remote possibility.

You may benefit from a follow-up in physiotherapy for pelvic floor re-education.

Enlarged and thick scars (keloid):

The scarring process differs from person to person and scars may become larger and/or thicker on the phallus, or genital area. Your own scarring history should be a good indication of what you can expect. If your scars are large and/or thick, they can sometimes be corrected with medications such as steroid injections and silicone dressings.

Urinary problems following stage two/long term with urethral lengthening:

Genital surgery can lead to complications in the urinary tract. A urinary catheter is required for a minimum of three weeks following stage two of surgery for those receiving urethral lengthening. The bladder may produce spasms in response to the catheter that can cause urine leakage. Normally, the spasms stop when the catheter is removed.

Signs and symptoms of urinary tract infections should also be monitored. When the urinary catheter is removed, the urinary stream may be irregular and off-center due to changes in the anatomy of the urethra. Difficulty controlling your urge to urinate, and involuntary leakage of urine may occur following surgery. The causes are different from person to person and should be discussed with your doctor. A fistula, stenosis, or diverticulum may also form in the portion of the urethra that was lengthened during surgery. Long term you will need lifelong yearly ongoing urology follow up.

Urinary fistula:

During the healing process, it is possible for small openings in the urethra to appear, from which urine can leak. If your surgery involves lengthening of your urethra, fistulas most commonly form at the junction of the native and new urethra. They can also happen anywhere along the new urethral tube. Catheters are usually placed to divert urine way from the opening for several weeks, allowing for it to heal. Fistulas may close on their own over time. However, if no improvement is evident after 6 months, your surgeon may need to perform another surgery to close them.

Urethral stricture:

Urethral stricture is the narrowing of the internal circumference of the urethra (which passes urine). It can occur at any time during the healing process. Signs of urethral stricture can include:

- Decreased force of your urinary stream and slow urinary flow.
- The time it takes for the bladder to empty increases.
- The sensation of the bladder not being emptied completely.
- Frequent urge to urinate.
- Extra effort is necessary to urinate.
- Difficulty urinating

Recurrent urinary infections can be a sign of a stricture. Fixing a stricture may include:

- A suprapubic catheter to drain your bladder if you can't urinate.
- Cutting out a short segment of your urethra and closing it directly.
- If the stricture is in a longer segment, you may need two stages of surgery:

Stage 1: We take some tissue from inside your mouth to create a new section of urethra. This area is left open, and you will urinate sitting down.
Stage 2: A few months later this area is then closed over a catheter. You will have a suprapubic catheter for a few weeks to drain your bladder while it heals.

Urine stream irregularity:

You may have trouble urinating while standing up after urethral surgery. Sometimes inflammation and swelling can cause urine to spray or your stream to be unpredictable. The problem may be temporary or permanent. Your surgeon will do all they can to fix it.

Post-void dribble:

This is very common; and is where after you finish peeing some excess urine will come out of your new urethra. Everyone who has urethral reconstructive surgery experiences this post-void dribbling. It is very difficult to treat surgically. It may improve with time, or it may not.

Diverticulum:

A diverticulum is a cavity in the shape of a small "pouch" that can form in part of the urethral wall where urine can collect. Surgery is often needed to remove the diverticulum. A diverticulum may also form in the old vaginal cavity, which also requires surgery to remove it.

Narrow urethral opening:

The meatus (urethral opening) can narrow and may cause urinary spray. Usually, meatal revisions can be done in the clinic without need for a urinary catheter.

Implants (testicular implants) have potential for several complications:

They are foreign objects in the body and therefore have the potential to become infected. Some patients also experience chronic or situational pain from testicular implants, such as during intercourse or when riding a bike. Testicular implants can move to an undesirable location in the scrotum. Any of these complications could lead to implant removal and possible replacement.

Bladder and rectal injury:

These are rare but serious complications. There is a chance of accidental injury to the bladder or rectum during vaginectomy. If we see it right away, we can repair it during surgery. If we do not see it, you may have other complications, and we will fix it in another surgery.

Additional Risks:

Additional risks exist associated with other major pelvic operations such as chest infections, deep vein thrombosis and pulmonary embolism, post operatively and very rarely these can be life threatening.

Blood clots can form during and after surgery due to prolonged inactivity including being immobilized while under anesthetic. If you notice one of your legs swells suddenly or if you suddenly have a hard time breathing, you may have a blood clot, you should go to the emergency department straight away.

Please see our additional resources: **Choosing your Support Person** and **Fact Sheet for Caregivers**.