Te Whatu Ora
Health New Zealand

What is Vaginoplasty?

Introduction:

This booklet helps explain what vaginoplasty 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 which will be tailored to your individual needs. We are constantly working to improve our resources to better suit your needs, this resource will continue to be updated.

Acknowledgements:

The primary source of information for this decision support booklet has been derived from the patient information from the London Transgender Clinic, OHSU, and Trans Care BC.

What is vaginoplasty surgery?

Vaginoplasty itself is a series of complex reconstructive procedures to create a clitoris, labia majora, and labia minora and a vagina with a vaginal cavity using your existing genital tissue. A large part of its success depends on your preparedness. This means being in the best possible physical and mental health before the surgery.

The appearance of the genitals will be very different from one woman to another. Some people have a more rounded mons pubis, a less prominent clitoris, fuller labia majora or labia minora of different sizes.

There are two choices available to you:

- **Vaginoplasty** (with a vaginal cavity)
- **Minimal Depth Vaginoplasty** (which has a minimal, or very shallow vaginal cavity.)

This leaflet provides information on **Vaginoplasty**, please also see our **Minimal Depth Vaginoplasty** booklet.

For people wanting vaginoplasty with a vaginal canal, our surgeon uses a '**penile inversion**' method, in which the skin on the outside of the penis is used to create the lining of the vagina. This procedure is effective regardless of whether or not you have had an orchiectomy in the past. Removal of the testicles is required as a part of vaginoplasty, along with the penis and scrotum.

What is the preparation needed for vaginoplasty 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 vaginoplasty must have realistic expectations of what can be achieved through surgery and can collaborate with the treatment team.
- Due to the nature of this surgery people will need to have been taking oestrogen as part of their gender affirming healthcare for a minimum of one year.
- You need to be able to tolerate a general anaesthetic and lay on an operating table for up to eight hours.

Note: We do not routinely recommend stopping estrogen (E-GAHT) before your surgery.

WPATH eligibility for gender affirming (genital) surgery (GAgS):

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

- Persistent, well-documented gender dysphoria
- 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
- Be on gender affirming hormone treatment (GAHT) for over 12 months
- 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 (GP) on a healthy weight management 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, vaginoplasty 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 vaginoplasty. Nicotine can cause complications, including poor wound healing, delayed wound healing and increases the risk of 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 as people need to be a minimum of 12 weeks nicotine free.

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.
- Your mental health and psychosocial supports. Having good mental health and psychosocial support is crucial for optimal healing.

Mental health and psychosocial/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 vaginoplasty surgery and to help navigate this challenging and exciting period of your life.

Hair removal (essential with penile inversion):

Scrotal skin has lots of hair follicles and this hair needs to be removed before the skin is transferred to the vagina. This is to make sure you do not have hair inside your vagina and to reduce the risk of infection. Electrolysis and / or laser hair removal is needed to provide hair-free tissue for this procedure. For adequate hair removal to occur the process can take over one year.

Here are some factors for consideration:

- Your desire to have sex with vaginal penetration.
- Your willingness to perform the care required after surgery.

For Vaginoplasty (with a vaginal cavity) these include dilations, douching, and sitz baths. It may take more than an hour, and up to four times a day, for the first few months. Dilation and douching will continue for the rest of your life, but at a lower frequency. The sitz bath consists of cleaning the genital area by immersion in warm soapy water. You will need to take two sitz baths a day for the first two months. At the third month, you can usually stop.

- Your ability to access essential postoperative care supplies such as personal lubricant for vaginal dilation, douching, etc.

Some additional physical factors to consider:

- If your prostate has been only partially removed following a diagnosis of benign enlargement (prostate enlargement or BPH), you will be able to choose vaginoplasty with or without a vaginal cavity; and
- If your prostate has been completely removed, you will have to opt for minimal depth vaginoplasty because of the high risk of permanent urinary problems.
- Having had an orchiectomy previously does not affect your suitability for surgery.
- Having previously had circumcision does mean more skin graft is required to line the vaginal canal.
- If you have had inguinal hernia surgery repair that may affect wound healing.

Important considerations:

If you opt for vaginoplasty with a vaginal cavity, the surgeon will make sure there is enough skin on the penis and scrotum to create a vaginal cavity deep enough.

If the total amount of skin from the existing genitals is not enough to line the inner wall of the vaginal cavity, the surgeon may have to remove a thin layer of skin from another part of your body to build the vaginal cavity. Without this skin graft, the depth of the vaginal cavity would be smaller and may cause difficulty during penetration or even prevent penetrative sex.

Vaginoplasty:

The penile inversion technique produces very satisfactory aesthetic and functional results. These results may vary depending on the age, weight, quality and elasticity of the skin, and the overall health of the patient.

Expected results:

- a vaginal cavity of a depth that allows for penetrative sex
- a clitoris constructed from the sensitive skin of the glans
- a hood covering the upper part of the clitoris
- a vulva with labia majora and labia minora located in the central portion of the vulva (between the hood and the urinary meatus); and
- erogenous zones (clitoral and vaginal) with the possibility of sexual pleasure.

Vaginoplasty with a vaginal cavity requires care that you will have to integrate into your daily routine for the rest of your life. This care involves a protocol of vaginal dilations and genital hygiene.

The compliance with this protocol will have a significant impact on the functional results of your intervention.

Failure to follow the protocol could result in the closure of the vaginal cavity as well as several postoperative complications (infection, sores and chronic discharge, abnormal communication between the vaginal and rectal cavities, etc).

If closure of the vaginal cavity is desired postoperatively, you should be aware that this is a long process that requires frequent dilations during this process to ensure that the vaginal cavity closes without complications. Abruptly stopping the dilations can also lead to significant complications.

What are the benefits of the penile inversion technique?

- A surgical technique performed in one single surgery.
- A skin graft may be taken from an internal site if there is not enough skin available from the penis and scrotum to create the vaginal cavity.
- A deeper vaginal cavity can be created when using both the skin of the scrotum and penis.
- There is less strain on the tissue forming the new genitals, when existing tissue is used to construct the minutiae of the vulva (labia, clitoris, clitoral hood).
- You can also do everyday things that people with vulvas do, like peeing while sitting down. These simple, everyday changes may help you feel more comfortable in your body.

Fertility:

Vaginoplasty is a gender affirmation surgery that will permanently and irreversibly eliminate your reproductive capacity. You will be permanently sterile as this surgery results in the inability to induce conception/produce offspring. We recommend that you have a discussion and reflection on this subject before proceeding with vaginoplasty.

What happens during/after vaginoplasty?

During the operation:

Vaginoplasty is a long and complex reconstructive procedure. You need to be able to tolerate a general anaesthetic and lay on an operating table for up to eight hours.

The results of the surgery may vary depending on your age, weight, skin quality and elasticity, circumcision/ scars, and overall health.

During a vaginoplasty surgery, the surgeon creates both an outer and inner vagina by using skin and tissue from a penis and scrotum. This will involve:

- Using skin from the penis and scrotum to build the **inner and outer labia** of the vagina.
- The skin of the penis is inverted and grafted with the skin of the scrotum to create a deeper vaginal cavity.
- Blood vessels and nerve endings from the glans are preserved to create a sensitive clitoris.
- Using your own tissues to recreate the delicate details of the vulva (labia minora and labia majora, clitoris, hood) helps eliminate tension on the tissues forming the new genitalia.
- Creating a **new opening for the urethra** (so you can urinate/pee)
- Using tissue from your foreskin to build the **new opening of the vagina** (also called the introitus)
- Creating a fairly deep **vaginal cavity** if there is enough skin from the penis and scrotum.
- If the amount of skin from the current genitals is not enough to line the inner wall of the vaginal cavity, an additional skin graft may need to be taken from another body and grafted into the vagina. Your surgeon will advise you following your physical examination if it will be necessary to have a skin graft. With some external donor sites, the area of the skin graft may show slight discolouration once healed.
- Removal of the testicles is required as a part of vaginoplasty, along with removal of the penis and scrotum.
- The prostate is left in place to avoid complications as removing it can cause irreversible urinary incontinence.

Due to multiple factors that are unique to each individual (e.g., quantity and quality of genital skin, body mass index, circumcision, scars, etc.), results may vary from one person to another.

What complications may arise during surgery?

It is important that you understand that there are possible risks linked with any major operation such as vaginoplasty. 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 spend up to six (or more) days in hospital recovering before being discharged.
- A urinary catheter will be in place for at least the first five days after surgery, to allow you to pass urine while your urethra heals and to allow staff to accurately monitor your urine output. The catheter will have been inserted while you are under general anaesthetic.
- During surgery, a vaginal pack will be inserted into the vaginal cavity and fixed with sutures at the entrance of the vaginal cavity. The genital bandage, made of gauzes, will be attached with sutures to the labia majora. These dressings will exert pressure on your wound to prevent bleeding and will be removed during your hospital stay.
- You will be on strict bed rest in hospital for five days until your vaginal pack is removed.
- Once the packing is removed you will be able to move around gradually until you leave the hospital.
- During these five days of strict bed rest TED stockings and venaflow foot pumps will remain in place throughout to reduce your risk of deep vein thrombosis.
- You will remain initially on a clear, decaffeinated fluids only diet. We encourage you to drink as much as possible to remain hydrated.

- To reduce the risk of haematoma or build-up of serious fluid to the surgical site, two small drains will be inserted into each labia. These are removed around day two post operatively as long as you are healing as expected and the amount of fluid draining from the site is minimal.
- Dressings are applied to your surgical incisions for protection. In order to minimise swelling and reduce the risk of bleeding, a supportive, adjustable underwear garment will be worn. This will be applied in theatre by your surgeon. You will continue to wear this garment post-operatively for six weeks (day and night), and then for another six weeks during the day. Two garments will be provided to you as part of your surgical package so you can change and wash them regularly.
- The surgeon will see you two weeks after surgery, to approve your travel to your home area.
- It takes 12 (or more) weeks to recover initially from vaginoplasty surgery. You should expect to take at least six weeks off work and avoid heavy lifting and exercise during the recovery period.

Note: This procedure does not remove your prostate. You are recommended to have ongoing monitoring of your prostate health with your primary care provider (GP) lifelong.

Physical restrictions after surgery:

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

Post-surgery complications are a possibility, but these will be managed closely by the surgeon and the GAgS service.

What is the recovery time?

It can take up to one year (or more) to recover fully from the surgery and the following activities are required:

- Dilation is an important part of recovery. Dilation involves inserting a medical dilator into the vagina to keep it from closing. The process can be painful, messy, and time consuming.

- You will need privacy to dilate three times a day every day for the first three months, and then the amount of time spent dilating will be gradually reduced over the first year.
- Avoid strenuous exercise and activity for six (or more) weeks following your vaginoplasty and avoid swimming and bike riding for three months.
- Abstain from intercourse until your surgeon is happy you have recovered, which is generally around three months after surgery.
- Avoid smoking, vaping, or using any nicotine products, as this decreases blood flow to the area around your genitals and will make it harder for you to heal after your surgery.

Vaginoplasty requires care that you will integrate into your daily routine for the rest of your life. This care includes a regular routine of vaginal dilations and hygiene. Following this routine will have a significant impact on the results of your procedure.

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.

Labial swelling is normal and will gradually go away 3 months after surgery. Swelling may be worse after sitting or standing for a long time. You may have spraying or dribbling when you pee. This should get better in time, as your wounds heal.

The penile inversion vagina does not self-lubricate (produce lubrication), the use of an unscented, alcohol-free water-based lubricant is required for dilation or penetrative sex.

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/numbness:

It may take a while to heal, recover, get used to your new body, and adjust to sex and intimacy after gender affirming surgery. 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 as long as a year. The removal of the testes during surgery may result in a decline in libido for some patients. Although you can participate in and enjoy sexual activity from twelve weeks post-surgery, it is also perfectly natural to want to take things slowly.

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, 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. This pain can occur both at the donor sites as well as the groin. 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, 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.

Infection is possible at the vaginoplasty site. Signs of infection generally include spreading redness, pus discharge, odour, swelling, warmth to touch, red streaking, or fever. If you are concerned about a possible infection, contact our office immediately and your GP or local hospital.

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.

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 such as:

- oedema
- infection
- strain on wounds
- deficient blood circulation,
- alcohol use
- smoking
- poor nutrition.

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 site is kept clean and dry.

Wound problems commonly occur in the labia/vaginal/clitoral area. This may be in the form of granulation tissue, wound separation, or minor wound infection. The clitoris could have insufficient blood supply and may fail.

Bleeding:

Sudden bleeding can happen. This often can be controlled with local pressure to the area. If local pressure does not control the bleeding, then putting in a urethral catheter may stop the bleeding. Bleeding in the early days after surgery may require further surgery to remove clots, control bleeding and rarely, a blood transfusion may be needed.

It is not unusual for localized hematomas (collection of blood) to spontaneously drain through the vagina or suture line. This usually occurs a week or more after surgery.

Bowel Injury:

There is a small risk (less than 1.0%) that during the operation, whilst creating the space between the prostate and rectum either the urethra or rectum may be damaged. This could cause difficulty with control of the bladder or bowels or could lead to fistula (hole or opening) between the rectum and vagina, allowing leakage of the bowel contents (poo) into the new vagina.

If such damage was recognised at the time of operation a temporary colostomy (bringing part of the bowel to the surface of the tummy) might be performed, although it is usually possible to repair it at the time of surgery. If this unfortunate complication does occur the infection can damage the vagina and patients may lose vaginal depth. If the complication occurs later, further surgery may be needed including a colostomy.

Loss of sensation:

Following surgery, you may experience numbness due to swelling and stretching of the tissues. You may have small areas of numbness that takes three to six months to return to normal. It is possible the perineal area may not regain sensitivity or, on the contrary, some areas may remain hypersensitive and painful. This can affect the 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.

Sensitivity/hypersensitivity:

Most patients can enjoy sensation from the clitoris, but some may not have any sensation or be so sensitive as to be exceptionally painful, which could have an impact on your daily living. If this occurs, you may be offered medication to try to control the symptoms.

Some patients can experience chronic pain in the vagina, labia and clitoris that may persist and make sexual intercourse difficult. If this occurs, this pain may have to be controlled by medication or with specialist pain management to try to control the symptoms.

This can affect sexual response and alter the ability to experience pleasure.

Vaginal stenosis:

The skin lining the vagina, taken from the penis or scrotum may not have sufficient blood supply and may die or become infected and die, thereby causing the vagina to be too small. This may prevent satisfactory penetrative intercourse.

The basic shape of your pelvis is narrower, this may limit the size of the vagina and limit penetrative intercourse.

There can be a narrowing or closure of the vaginal canal due to scar tissue from a lack of dilation.

Vaginal prolapse:

Despite all postoperative care and precautions the vagina may prolapse, this is likely to occur with a penile scrotal inversion technique in the first three months post operatively, and this may require further surgery for functional or aesthetic reasons.

Loss of vaginal girth and/or loss of vaginal depth:

To survive, the graft used to construct the vaginal cavity must be kept in contact with an area with sufficient blood flow. In most cases, the graft takes very well. Sometimes, part of the graft may not cohere, may contract, and cause the vaginal cavity to lose girth or depth. The lack of or absence of vaginal dilation may also be a cause.

Appearance:

The appearance of the genital area depends on a number of factors which can affect the result, such as:

- the amount of fatty tissue beneath the skin
- the elasticity of the skin
- the amount of skin available

This makes predicting the appearance difficult. With aspects of the appearance and cosmetic result and whilst we can correct this with revision surgery it is not always possible to achieve the results that some patients want.

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.

Enlarged and thick scars (keloid):

The scarring process differs from person to person and scars may become larger and/or thicker on the arm, thigh, 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.

Hair growth in the vaginal canal:

You would have been advised to have hair removal from the scrotal skin or penis. Although the hairs on the graft were removed as part of the procedural work up to surgery and you and your hair therapist will need to have agree when adequate hair removal had been achieved, hair growth in the vagina after surgery may still occur and it is possible to notice hair regrowth inside the vaginal cavity. This may occur due to many factors, including age, hormonal changes, and certain health problems. Most of the time, the presence of hair can cause hygiene problems and increase the risk of infection. Some hairs can come off and form a ball that can end up at the bottom of the vaginal cavity. If the presence of hair causes side effects, there are different options available to remove it. Please contact us.

Urinary Problems:

Genital surgery can lead to complications in the urinary tract.

You will have a catheter that drains your bladder of urine for at least five days after the surgery. When the catheter is removed you may not be able to urinate. If this happens a period of catheterization for up to two weeks may be required.

When the urinary catheter is removed, the urinary stream may be erratic due to swelling and may take up to six months to recover. It may be weaker and less powerful. You may also experience urinary retention and have difficulty controlling the urge to urinate. This should generally improve within a few months after your procedure.

In shortening the urethra, a stricture (narrowing) may occur, or healing may be asymmetrical, and this will result in difficulty passing urine or the urine stream being at an awkward angle, this may require further surgery if the problem is sufficiently functionally persistent. Urinary infections are more common after surgery as with all females.

Urethral stenosis:

Occasionally, urethral stricture is a result of retained erectile tissue, you may experience intermittent swelling which obstructs the urinary flow. This will require further surgery. This can happen when the urethra (that passes urine) becomes narrow and needs to be dilated or have further surgery.

Additional risks:

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

Blood clots (sudden swelling in one leg or difficulty breathing) 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, including **Choosing your Support person** and **Fact Sheet for Caregivers**.