Breast Reconstruction – A guide for women

Breast reconstruction is often a sequence of operations rather that a single procedure.

WHY DO WOMEN CHOOSE TO HAVE BREAST RECONSTURCTION?

- Re-establish body symmetry
- Breasts look balanced when wearing clothing
- Convenience of not requiring an external prosthesis
- Increase feelings of attractiveness, femininity and self-esteem
- Resolution of breast cancer treatment

CHOICES TO MAKE DURING RECONSTRUCTION

- Timing of reconstruction
    - Immediate
    - Delayed
- Type of reconstruction
    - Implant reconstruction
    - TRAM flap ('tummy tuck' flap)
    - Latissimus Dorsi Flap (' back flap')

Immediate or delayed reconstruction?

An **immediate reconstruction** is performed at the same time as the mastectomy. An immediate reconstruction may be able to preserve some of your breast skin to provide a more natural appearance and means one less operation. Immediate reconstruction will increase the operating time, time in hospital and recovery time, compared to mastectomy alone.

Delayed reconstruction occurs after all treatment for breast cancer is complete. This may be advised if you are likely to have radiotherapy or chemotherapy following your reconstruction. One of the possible complications of reconstruction are wounds that take longer to heal than we expect; we do not want you to have any delay in beginning adjuvant treatment (chemotherapy and radiotherapy) due to late-healing wounds.

Having to cope with breast cancer AND make decisions about breast reconstruction is a lot to deal with; sometimes "getting the cancer treatment over" and then, when you are recovered, thinking about reconstruction, can be the best option.

Type of reconstruction

IMPLANT RECONSTRUCTION

Implant reconstruction is often considered the 'simplest' method of breast reconstruction but it is technically very demanding. It is not suitable if radiotherapy treatment will be required or has been given; radiotherapy will eventually create much scarring around the reconstruction and make the reconstruction un-natural, tight and uncomfortable.

Sometimes an implant reconstruction can be performed in one stage (usually for an immediate reconstruction), but if there is insufficient skin then two stages (operations) are required as the skin and soft tissue needs to be gently stretched to accommodate the implant (usually for a delayed reconstruction).

Implants are made of silicone and placed beneath the pectoralis muscle of the chest wall, recreating the breast mound.

Acellular dermal matrix (ADM) is a tissue substitute that is sometimes used to help create the pocket for the implant. The original tissue comes from specially prepared animal skin (pig or calf) that is chemically stripped of all cells so the body accepts it; the result is a soft, supportive tissue that helps support the implant and hold it in the correct place. The ADM is incorporated into the body over time.

Immediate reconstruction – One stage techniques

- Small-Moderate Breasts
    - A pocket is created to hold the implant; the upper half of the silicone implant is placed under the pectoralis muscle and the lower half under the ADM. Your original breast volume should be retained.
- Moderate-Larger Breasts
    - Reconstructing a very large breast is difficult. A somewhat smaller and more youthful breast is created by using your own skin to help in forming the lower half of the pocket for the implant.

Delayed reconstruction – Two Stage technique

- Skin expansion is required to replace the skin lost after a mastectomy and an expander (silicone balloon) is placed beneath the pectoralis muscle (first stage). Once the wound is healed, there is a 'port' within the expander that can be accessed via a small needle through the skin. Saline is then injected into the expander over a number a clinic visits. This is not especially painful as the skin of the site of a mastectomy is usually numb. The skin is gently stretched until the correct volume is achieved. Then it may be stretched a little more to provide a degree of natural droop / softness. At a second operation, 3-6 months later, the expander is exchanged for a silicone implant (second stage).

- Operation duration: 2-3 hours
- Hospital stay: 2-4 days
- Assistance with childcare, shopping, housework: about 3 weeks
- No driving: 3-4 weeks
- Time off work: Depending on your occupation 3-6 weeks
- Return to full function: 6 weeks

Advantages of Implant based reconstruction

- Simple and flexible technique
- Short operation time and hospital stay
- Shorter recovery time
- Easy to detect local recurrence
- Can be used for bilateral reconstruction

Disadvantages of Implant based reconstruction

- Expansion process of two-staged reconstruction can be inconvenient
- Difficult to achieve a 'natural' look - the gentle natural softness that occurs with aging
- Difficult to achieve symmetry
- The reconstructed breast will always have a very pert and youthful appearance and will not age like a natural breast
- Not suitable if radiotherapy has been performed or is expected

LATISSIMUS DORSI (LD) FLAP + IMPLANT RECONSTRUCTION

Good at creating a large volume, natural type breast. The flap consists of muscle (latissimus dorsi), skin and blood vessels from your back. The flap is tunneled under the skin and around to the front of the chest. The flap and an implant are used to create a breast mound. In an immediate reconstruction the flap and implant are placed behind your breast skin. In a delayed reconstruction some of the skin of your back forms the skin of the new breast.

- Operation duration: 4-6 hours
- Hospital stay: 4-7 days
- Assistance with childcare, shopping, housework: about 3 weeks
- No driving: 4 weeks
- Time off work: 6-8 weeks
- Return to full function: 8-12 weeks

Advantages of LD flap reconstruction

- Reliable, low rates of failure (<1%)
- Can produce a natural feeling breast
- Large volume reconstruction possible
- Can be used for a bilateral reconstruction

Disadvantages of LD flap reconstruction

- Scar on the back
- Back skin may have a colour mis-match with the natural chest wall skin
- Difficult to achieve symmetry
- Weakness of the shoulder muscles. This usually responds well to physiotherapy and strengthening exercises and by 2-3 months most women are back to their usual activities. However for athletes or women whose occupations or hobbies depend on shoulder girdle strength e.g. rowing, swimming or mountain climbing, then other reconstructive options may be considered
- Not suitable if you have had a thoracotomy on that side.

TRAM Flap

Many women have some excess abdominal tissue that is perfect for making a breast. A very natural breast can be created without the need for an implant or expander. The tissue is harvested from the abdomen, in a similar way to a 'tummy tuck' and leaves a long scar over the lower portion of the abdomen. The tummy button is preserved and repositioned at the end of the operation. The flap includes one of the rectus abdominus muscles (one of the 'six pack' muscles) that provides blood supply to the flap and keeps it alive. The entire flap (rectus muscle, fat and skin) is rotated up through a subcutaneous tunnel to create the new breast.

Loss of one of the rectus muscles could create weakness of the anterior abdominal wall, however post-operative physiotherapy and exercise programmes will usually ensure good recovery. Patients are often concerned that their core strength will be reduced. Women who ski, horse ride and cycle will usually get back to these activities. We replace the rectus muscle with mesh to reduce the chance of hernia formations or a bulge in the abdominal wall following surgery.

To improve blood supply to the flap a short operation is performed in the month leading up to the operation to divide one of the blood vessels that supply the flap. This is called a 'delay procedure' takes about an hour and can be performed as a day case or requiring a one night stay. This helps enhance the blood supply within the tissue that will be transferred.

- TRAM Operation duration: 6-8 hours
- Hospital stay: 4-7 days
- Assistance with childcare, shopping, housework: about 4 weeks
- No driving: 4 weeks
- Time off work: 6-8 weeks
- Return to full function: 2-3 months

Advantages of TRAM reconstruction

- Large volume, natural feeling breast
- No implant required
- Ages in a similar fashion to the remaining breast

Disadvantages of TRAM reconstruction

- Not suitable if both breasts require reconstruction
- Fat necrosis (fat dies due to poor blood supply) may cause lumpiness or discharge of fatty fluid from the new breast. Usually settles over time.
- Abdominal wound and tummy button wounds may take a long time to heal
- Tummy button may be lost
- Hernia or abdominal wall weakness (extremely rare)

What is a DIEP flap?

In a DIEP (deep inferior epigastric artery perforator) flap the rectus muscle is spared and the blood vessels are divided and re-anastomosed, using a microscope, to vessels in the chest beside the sternum. The benefit of this operation is that more of your abdominal tissue can be taken for reconstruction (it may be possible to reconstruct both breasts) and your abdominal muscles are spared (reducing the risk of hernia). However the operation is much longer, the need to return to theatre is greater and if the operation fails then the entire flap is lost. They also require very specialized post-operative care. We do not provide this procedure in Dunedin but can refer you to Christchurch if it is something you would like to consider.

How do surgeons make the decision which reconstructive options are available to you?

- your overall health and fitness for long anaesthesia
- your weight
- whether you smoke
- risk factors for complications: diabetes, steroid use
- the size and shape of your natural breasts
- the size and stage of your breast cancer; whether you will need additional chemotherapy or radiotherapy
- whether you require bilateral reconstructive surgery

FURTHER PROCEDURES

Procedures on the remaining breast

An operation may be required on your remaining breast to optimize symmetry between both breasts. This may involve a reduction or an augmentation.

Nipple reconstruction

This will hopefully be your final operation! A nipple is created out of your breast skin; small flaps are elevated and folded to create the nipple. When it is healed then the nipple and areola are tattooed to match your natural breast.

YOUR OPERATION – WHAT YOU CAN EXPECT

Pre-assessment clinic

This assesses your general health and fitness before surgery. You will meet an anaesthetist and discuss your anaesthetic. Please bring a list of all your regular medication. Blood tests, an ECG and sometimes a chest x-ray are taken.

You will see your surgeon again, discuss your operation in detail and sign the consent form.

Please allow a few hours for this to be completed.

Smoking cessation

Reconstructive surgeons will not proceed with reconstructive surgery while patients are smoking or on nicotine replacement therapy. Smoking cessation will greatly improve the healing and recovery from your operation and ensure that you have the best outcome possible.

Before your operation

You must consume no food by mouth for 6 hours before the operation. This includes sweets and chewing gum. Any food in your stomach could cause choking and damage to your lungs under anaesthetic.

It is permissible to drink clear fluids such as water, black tea or black coffee for two hours before your operation.

Take your normal medications the morning of surgery.

Should you become unwell near the time of surgery, please contact us, as it may be safer to postpone your operation.

Day of surgery and your post-operative recovery

After your operation you will wake up in the recovery area and then will be transferred back to the ward. The nursing-staff are very experienced and will ensure your post-operative course is as straight-forward and comfortable as possible. They will monitor your new breast to check all is well.

Drains will be placed around the breast and donor site to allow any excess fluid to drain away. The drainage is measured.

We like you to keep you new breasts warm and covered with a fleecy blanket (passive heating rather than active heating) at all times. If you become too hot, feel free to stick you feet out from under the blanket, but keep your breasts toasty and warm at all times!

You may have a catheter (a tube that runs into the bladder to drain urine) for few days.

You will have pain relief to make you are comfortable as possible; there will be some discomfort but it should be manageable. If your pain is not well controlled we would like to know as occasionally some women have nerve mediated pain (complex regional pain syndrome – see complications) that requires special medicine for control. This type of pain is often described by patients has being burning, throbbing or like an 'electric shock'. It is very unpleasant, but responds well to medication.

You will have an injection into your tummy or thigh to thin your blood and prevent clots developing. You will also wear compression stockings and may have compression pumps on your calves, also help to prevent clots developing.

Physiotherapists will visit you and provide you with exercises to optimise your recovery.

You will be able to shower 48-72 hours following your operation.

After you go home

- You will need to rest and take it easy. Make plans to have people around who can look after you, take over child-care, prepare meals and look after your house. There will be a period of some weeks before you can drive again.
- Supportive bra: Sometimes your surgeon will recommend a non-wired supportive bra for 23/24 hours for six weeks.
- Supportive knickers: If you have had a TRAM reconstruction you will need supportive or 'shaper' knickers to wear for six weeks. These should be firm and come up to under your bust. They help your tummy heal.
- Blood thinning injections: If you have a TRAM type reconstruction it is likely you will need 28 days of blood thinning injections. The nurses on the ward will teach you how to administer these injections at home. Alternatively district nurses may visit at home to do this for you.
- Scar optimisation: Wounds should be taped for six weeks following surgery; either Micropore or Hypafix are suitable and can be purchased from your local pharmacy. After six weeks, and when the scar is healed, it may be massaged for 5 minutes twice a day with a plain, unscented, hypoallergenic moisturizing cream. It is very important to avoid exposure to UV light for two years following the operation – a high factor sun block should be used or sun exposure avoided.
- Sexual activities: Your breasts will feel tender and you may not feel up to physical contact initially - resume sexual activities as you feel comfortable. Your partner may be afraid of hurting you, and woman may interpret reticence as a lack of desire; couples need to talk over their fears and feelings.

POSSIBLE RISKS & COMPLICATIONS

All surgery and anaesthesia carries some uncertainty and risk; we do our best to minimize untoward events and serious complications are fortunately rare.

General complications:

- Haemtoma (bleeding): Bleeding may require a second operation to control the point of bleeding and remove the collection of blood. If this happens a blood transfusion may be required. *If you have strong philosophical objections to receiving a blood transfusion please let your surgeon know.*
- Infection: Wound infection can occur after any surgical procedure. An infection will often require antibiotics. This may be associated with wound breakdown (see below). Smoking increases the risk of infection.
- Wound breakdown (wound healing problems): Wounds may not heal in a straightforward fashion. The area may 'breakdown', meaning it takes longer to heal; the area may require regular dressings or even a return to theatre to remove dead or infected tissue. Areas of wound breakdown often result in thicker, more obvious scars. Smoking and obesity increase the risk of wound breakdown.
- Scars: Any operation leaves permanent scars. Most scars will eventually settle to become pale, fine lines – this may take up to 12 months. Some people develop hypertrophic or keloid scars, which are raised, thickened, itchy or red – these may need steroid injections and silicone therapy to improve. If you have a tendency to poor scarring, please tell your surgeon. Sometimes scars need a further small operation to improve their appearance.
- Seroma: Sometimes a collection of fluid occurs following the operation, either around the reconstructed breast or in the area that was harvested to create the new breast.
- Deep Vein thrombosis (DVT): A blood clot in the legs is a serious complication following surgery and bed rest. A clot in the leg can break off and pass to the lungs (a pulmonary embolism or PE) which maybe life threatening. Some people have a familial tendency towards having DVT and it is more common in people taking hormone therapy or the oral contraceptive pill. We will ask you to stop all forms of hormone replacement therapy, including Tamoxifen, for about 4 weeks around the time of your operation. You will wear compressive stockings and receive blood-thinning injections to reduce the risk of DVT and PE.
- Chest infection: A general anaesthetic carries a small risk of post-operative chest infection. Smoking increases the risk of chest infection.
- Symmetry: Your surgeon will make every effort to optimize the symmetry of your breast reconstruction to your remaining breast, however there may be differences in the size, shape and appearance of your breast. Your reconstructed breast and remaining breast may age differently, this is due

their different compositions. Implant based reconstructions tend to be gravity and age resistant.

- Complex regional pain syndrome: Is a condition that we do not understand fully. It seems to be a nerve mediated pain; the pain is more than we expect and poorly controlled by usual analgesia. The pain may be described as burning, throbbing or electric-shock like and patients find it distressing. Please let us know if your pain is poorly controlled as there is a medication called Gabapentin that works well for this condition.
- Further surgery: Sometimes further surgery is required to improve the symmetry of your breasts. This may occur some years after your initial operation.
- Psychological aspects: Women usually find breast reconstruction a positive event. Occasionally women will be disappointed with their reconstruction and feel their reconstructed breast is as they had imagined. This is certainly more common in women who have suffered a complication. Your surgeon and breast care nurse will be there to provide support.

Implant specific complications:

- Infection around the implant: This is very serious and requires the implants are removed for a minimum period of 3 months
- Capsular contracture: The body will form a scar around the implant and this is a normal process. In some women the scar may become very thick and then contract; overtime this process can distort the implant, causing a high and tight look to the reconstructed breast. This may require further surgery.
- Exposure of the implant: If the wounds should break down and the implant is visible at the base of the wound then the implant must be removed temporarily.

Flap specific complications:

- Flap failure: Sometimes there is a problem with the blood supply to the flap and part or all of the flap may die. This becomes apparent between 24-48 hours following the operation. If this happens you will need another operation to remove the dead parts of the flap. If the entire flap dies then you may require another reconstruction. Complete loss of the flap is devastating and extremely uncommon.
- Fat necrosis: This is occurs when a pocket of fat cells die (although the majority of the flap is fine and has a good blood supply) leaving a hard area within the reconstruction. Sometimes the fatty area swells and releases a greasy fluid. Fat necrosis tends to settle overtime and occasionally needs antibiotic and dressings. Surgery is only rarely required.

QUESTIONS AND ISSUES TO CONSIDER

You will have many questions to ask of your surgeon before having a breast reconstruction

Bringing a support person and writing the questions down may help you to make decisions.

- What kind of reconstruction is best for me? Why?
- Will the reconstructed breast match my remaining breast? Will I need an operation on my remaining breast to improve symmetry?
- What are common risks and complications?
- How long is the recovery time?
- How will the breast change over time?

Important factors to consider

- Your body image and self-esteem may improve after reconstruction, but this is not always the case. Breast reconstruction does not fix things you were unhappy about before your surgery.
- The difference between a reconstructed breast and the remaining breast can be seen when you are nude; the reconstructed breast will not feel the same sensations as a normal breast
- Surgeons may suggest you wait for various reasons – this is usually to improve the outcome of the reconstruction. Waiting until after radiotherapy and chemotherapy will mean there is no chance of delay in your cancer treatment. Weight loss will reduce the risk of anaesthetic and wound healing complications.
- Smoking cigarettes (nicotine) precludes breast reconstruction. Breast reconstruction is not undertaken until 3 months following cessation of all forms nicotine consumption.
- Your final reconstruction may require three – four operations: the initial reconstruction, surgery to improve symmetry between the breasts and then the nipple reconstruction. The initial operation tends to have the longest recovery time; the others are progressively less.