BAPRAS
British Association of Plastic Reconstructive and Aesthetic Surgeons

ABS
ASSOCIATION OF BREAST SURGERY

Your Guide to breast reconstruction

Contents

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Foreword

This aim of this guide is to give you useful general information about breast reconstruction to add to the information discussed with you by the surgical team looking after you. The guide has been compiled jointly by breast and plastic surgeons specialising in breast reconstruction and will hopefully help you to make the right choice for you.

The decision to have breast reconstruction following a mastectomy can be a difficult and complex one for any woman. This is often the case when being considered at the same time as being given the diagnosis of breast cancer. The guide contains a lot of information about different timings of breast reconstruction, the various types of breast reconstruction that are available, and their potential advantages and disadvantages.

If you are thinking about breast reconstruction it is important that you have a consultation with a breast or plastic surgeon specialising in breast reconstruction. They will take account of a number of factors about you and your breast cancer treatment before advising you. It is very important to remember that you may not be suitable for all of the types of breast reconstruction described in this guide, and that certain options may be more likely to achieve a better result for you. Your surgeon will help you decide what would be best for you, as well as advising on the likely outcome you can expect, the time you will probably spend in hospital, and the probable recovery period afterwards.

We hope that you find this guide helpful in making your choices. You may find it useful to refer to the guide when talking to your GP or breast care nurse about breast reconstruction.

You may wish to share it with your family or close friends, or to refer back to it from time to time. You will find links to other recommended useful sources of information regarding breast reconstruction at the end of the guide.

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Introduction

1.2 Who is this guide for?

This guide is for women seeking more information about breast reconstruction either at the time of cancer treatment (immediate reconstruction) or once this has been completed (delayed reconstruction). It aims to give an overview of the options available and provides pointers to more detailed information on the internet and from other sources.

We realise that this may be a difficult time for you but hope this guide will help you to make some of the decisions that you are facing. It should also be helpful when you are talking to your GP, breast care nurse or family about the choices you wish to make.

1.2 What is breast reconstruction?

If you need to have surgery to remove a breast cancer, reconstructive surgery aims to restore your breast, either completely or partially and to match the normal breast in both shape and size as far as possible. It also aims to help with your body image and self-esteem at a difficult time, aiding the process of recovery on a physical, emotional and psychological level.

According to the National Institute for Health and Care Excellence (NICE; www.nice.org.uk), all women facing a mastectomy should be offered a high-quality breast reconstruction and, when appropriate, this should be offered at the same time as your cancer surgery – taking into consideration your general health and the need for additional cancer treatments.

Current evidence suggests that breast reconstruction, either done at the same time or after cancer treatment has been completed, does not increase the risk of the cancer returning.

There are several surgical ways to reconstruct a breast, some relatively simple and some quite complicated. It is essential that you are assessed and informed of the technique that would be suitable for you by someone who knows about all the options.

Breast cancer treatment in the UK is delivered by a multidisciplinary team of surgeons, nurses, oncologists, radiologists and psychologists. Your surgery may be carried out by a general surgeon or a plastic surgeon with a special interest in breast surgery or by an oncoplastic breast surgeon (a surgeon specifically trained and dedicated to managing your breast cancer treatment as well as your breast reconstruction). Whichever type of surgeon you meet, you should still be fully informed of all the choices available to you for a breast reconstruction. You should be able to choose your preferred option, even if it means travelling to another hospital to have it carried out.

1.3 What is a mastectomy?

This is the surgical removal of the entire breast. About 30% of women diagnosed with breast cancer require or choose to undergo a mastectomy. The breast is positioned between the skin of the chest and the chest wall muscles, and consists of milk ducts, glands, fat and some connective tissue holding all of these components together. The glands produce milk, which runs via the ducts to the nipple. As the nipple is connected to the entire breast and the cancer can involve the ducts, the nipple may need to be removed as part of the mastectomy surgery. However, it is not always necessary to remove the nipple at the time of the mastectomy. Your surgeon will be able to discuss this with you.

Mastectomy is still the best treatment for women with certain types of breast cancer. Your surgeon will discuss this with you, but generally a mastectomy is recommended if:

- Cancer is present in two or more areas of the breast
- The breast has been treated in the past with radiotherapy
- A large tumour is found in a small breast
- A genetic abnormality has been identified that indicates a very high risk of developing breast cancer in the future.

About 70% of women do not require a mastectomy and the cancer can be removed by a technique called a 'lumpectomy' or a 'wide local excision'. For many patients this will not have a significant effect on the shape of the breast. However, in some women partial removal of the breast may affect the shape of the breast quite significantly. If this is anticipated, your surgeon will discuss options of partial breast reconstruction with you.

1.4 How will this guide help me?

The purpose of this guide is to provide you with information about the available techniques for breast reconstruction so that you can make an informed decision. Every woman is different and not all techniques will be suitable for you. In general, the more complicated techniques using only your own tissues will create a breast that is a better shape and looks more natural in the long term. However, these reconstructions involve a bigger operation with a longer recovery time. Some women will choose something simpler or may even decide not to have a reconstruction at all. The choice is yours to make.

Although this guide gives you general information, it is intended to complement a consultation with your surgeon who can explain to you which techniques are appropriate for you and the type of result you might expect. There are links to more information on the internet if you wish to research further or to check the latest information.

1.5 What is my next step?

Sometimes there is really only one option that can be recommended, but usually you will have a choice. This depends on how much of the breast skin and volume needs to be replaced after the cancer is removed.

Other factors that are taken into consideration include:

- Your general fitness, including smoking and weight or Body Mass Index (BMI)
- Preferences in terms of risk, outcome and scarring
- Any possible interactions with other treatments you might need such as radiotherapy

Another important consideration is whether your other breast can be matched by the reconstruction or if it would be better to adjust it by lifting it, making it smaller or making it larger. All of these things will be taken into account by your surgeon before a final decision is made about which options are available for you to choose from.

Breast reconstruction involves recreating the breast to match the remaining natural breast as closely as possible. For women who are facing or have had a double mastectomy, surgery can rebuild both breasts.

The main aim is to recreate the breast shape and volume. Depending on when this happens, this is known as:

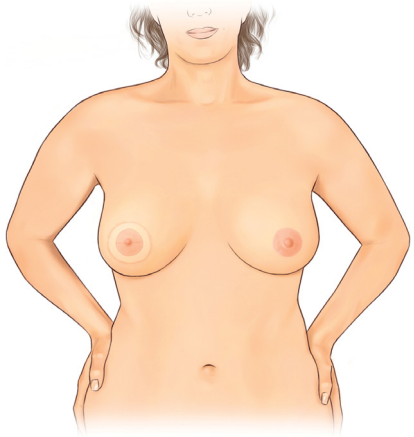
- Immediate reconstruction – when it happens at the same time as your mastectomy
- Delayed reconstruction – at a later date when your cancer treatment has been completed.

So one of the first choices you will need to make is whether to undergo immediate or delayed reconstruction or no reconstruction at all.

2.1 Immediate reconstruction

The benefits of immediate reconstruction are:

- The cosmetic results are usually better
- More of the skin of your breast can be preserved
- The nipple can sometimes be preserved
- The scarring on the breast itself is usually less obvious
- You will only usually need one major anaesthetic and recovery period
- It will involve only one stay in hospital
- You will not have to spend any time without a breast.



In immediate breast reconstruction it is often possible to preserve most of the breast skin. In this case only a small disc of skin, including the right nipple and areola, has been removed at the mastectomy. This skin disc and the breast volume has been replaced using a flap. A nipple areola reconstruction has also been done.

Figure 1

2.2 Delayed reconstruction

The benefits of delayed reconstruction are:

- Your cancer treatment can proceed without delay
- The surgery is carried out in two stages, resulting in an easier and shorter recovery following each procedure
- There is time to consider whether reconstruction is right for you
- There is also more time for you to consider which reconstruction you would prefer
- There is less for you to deal with all at once.

Sometimes immediate reconstruction is not recommended or possible. This could be because of your health status, the type of tumour or the need for further treatments such as radiotherapy. For a small number of women facing mastectomy, their general health status means that prolonged operations for reconstructive surgery may not be advisable or safe. If this is the case, your surgeon will discuss if there are any modifications you can make to your health that may make reconstructive surgery feasible.

2.3 No reconstruction

Finally, you may choose not to have your breast reconstructed at all. Many women feel radically changed by their cancer experience, and some feel that a flat chest is an apt acknowledgement and expression of their post-cancer persona. Others are satisfied choosing to wear a prosthetic breast in their bra rather than have to undergo more surgery.

The important thing is that it is your choice.

Talking to other women who have undergone treatment can often help you decide whether or not breast reconstruction is the right option for you. Many breast cancer centres now have patient support groups specifically for newly diagnosed patients who wish to discuss the experience of breast reconstruction with other women who have gone through the process.

Remember: Even if you choose not to have a reconstruction initially, you can consider a delayed reconstruction at a later date if you change your mind. Deciding not to have an immediate reconstruction does not prevent you from accessing reconstructive services in the future.

Where can you have breast reconstruction?

Breast cancer treatment and reconstruction is available on the NHS and your initial contact with the hospital will usually be through a breast clinic.

The following process is likely to be put in place:

- You will usually meet a surgeon and other team members who specialise in treating diseases of the breast
- Diagnostic tests including mammograms, ultrasound and possibly MRI scans, along with biopsies, are done to help plan your treatment
- When discussing your surgery, your surgeon will discuss the impact the planned cancer surgery is likely to have on your breast. It is possible you will have options in terms of how the cancer is removed
- The type of reconstructive surgery will depend on which option you choose for your cancer surgery (mastectomy or wide local excision)
- Where possible you will meet with a reconstructive nurse specialist/breast care nurse to further explain the reconstructive options available to you, to view photographs and discuss the pre and post- surgical care.

Remember:

- Do not be afraid to ask lots of questions, including who will be doing your operation, what is the surgeon's experience of doing this operation, and what are the surgeon's complication rates and outcomes
- If you are unsure, do not be afraid to ask for a second opinion from another surgeon on the team
- Most breast cancer patients are now managed within a large team, including surgeons who come from different training backgrounds who often work together (Plastic Surgery and General Surgery).
- Some surgeons will have particular expertise in certain reconstructive operations and you should be referred to the most appropriate surgeon for your operation
- If the operation you are considering is not available in the hospital you are attending then you should be referred to the nearest specialist breast centre where those operations are performed routinely

Both BAPRAS and ABS are working with the various training bodies and NHS service providers to help build more integrated surgical teams in which general breast surgeons, plastic surgeons and oncoplastic breast surgeons work much more closely together. Evidence tells us this is better for patient care and recovery and that patients are more satisfied with their long-term results when they feel well-informed and are actively involved in their own reconstruction process and decision-making.

Operations to make a new breast

The sections below describe many different ways of rebuilding the breast.

These fall into two main groups:

- Techniques that depend on a breast implant to recreate the volume of the missing breast
- Techniques that use a "flap" of your own tissues from elsewhere.

Implant-based reconstructions are the most commonly performed techniques. However, in recent years, own tissue or "autologous" reconstructions have become popular with patients because the breast can appear more natural looking with better long-term results. This tissue is usually taken from the lower abdomen ("tummy") or back, but sometimes from the buttocks or inner thighs. Other areas in the body are rarely used.

3.1 Reconstruction using an implant

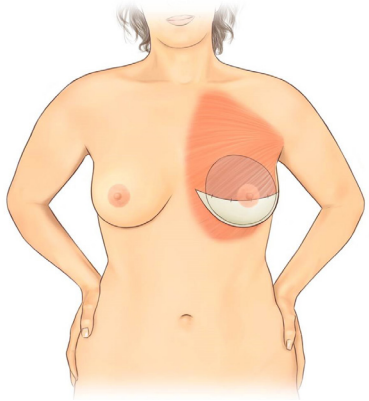
If your breast is reconstructed using an implant on its own, a silicone prosthesis is inserted under the skin and muscle of the chest to replace the volume of breast tissue that has been removed at the timeof mastectomy. This is quite a simple operation that does not involve scars elsewhere on your body. The implant will be very like one that is used in cosmetic breast enlargement surgery. In many cases a permanent implant can be placed at the time of the reconstruction. In such cases your surgeon may also use an Acellular Dermal Matrix (animal-derived products) or a mesh (non-animal derived products) to support the implant like an internal bra, helping to prevent migration or rotation of your implant after surgery (see figure 2).

Sometimes a device called an 'expander-prosthesis' or 'adjustable implant' may be used. These devices contain silicone gel but can also have their volumes adjusted by injections of salt water (saline) in the outpatient clinic in the weeks after the operation. This can sometimes help give the best match for your other breast (see figure 3).

In women who choose to have a delayed reconstruction with an implant, it is usually necessary to insert a tissue expander first. Expanders do not contain silicone gel and are replaced by the definitive implant or a flap some months later in a second operation when the skin envelope has been stretched up enough by the expander. Like the expander-prosthesis the expander is inflated in the outpatient clinic by injecting saline at regular intervals. Newer devices in which patients can control their own expansion at home are also becoming available.

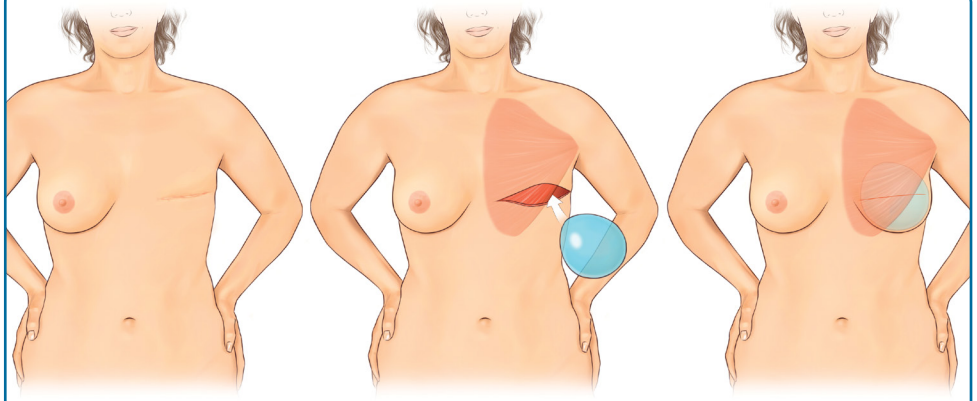
Implants may be offered to you if you are unsuitable for reconstruction using your own tissue. This might be for a variety of reasons, such as:

- You have no spare tissue to use
- Your health does not permit a larger operation
- You do not wish to have the additional scars associated with a tissue reconstruction.



Implant reconstruction with an Acellular Dermal Matrix sling to control the lower pole of the implant.

Figure 2



In implant-based reconstruction a silicone implant is inserted behind the chest wall muscles. Sometimes an inflatable tissue expander-prosthesis is used to stretch the overlying tissues and allow adjustablity after the operation.

Figure 3

Considerations

Look and feel: It can be difficult to achieve a natural breast shape with an implant alone and so these kinds of reconstructions are best for women with relatively small breasts that do not droop significantly, or for those patients having both breasts removed at the same time.

The main disadvantages of implant-based breast reconstruction are that it is impossible to create a breast with an entirely natural shape and feel. They also do not age naturally like the other breast and therefore tend to remain higher on the chest when compared to the position of the opposite natural breast.

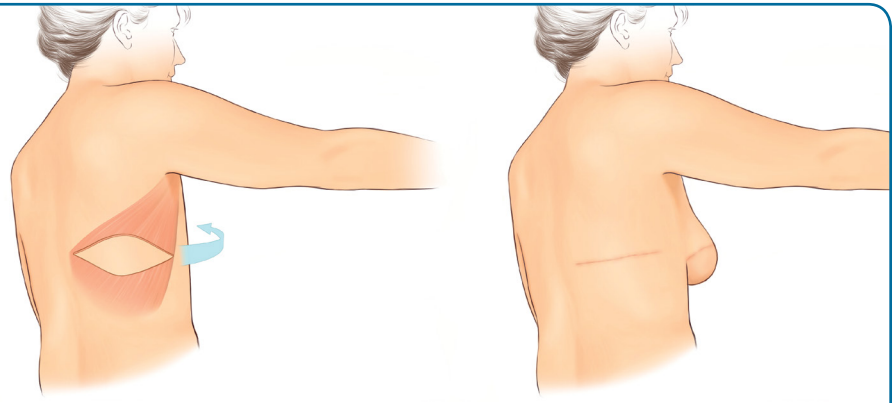
Matching: Many women choosing an implant-only reconstruction will need to have the other breast adjusted to improve the shape, size and position match. Although the breasts can look a good match when dressed they will usually be different shapes when undressed. If you choose an implant-based reconstruction you should expect to have further surgery in the future to adjust or exchange the implant or to improve the symmetry with the other breast.

Potential problems: Implants can become hard (called a capsule contracture), they can leak or they can develop visible folds and creases. Radiotherapy can also badly affect the result. If an infection occurs around the implant or there are problems with wound healing, you may need to have the implant removed altogether, at least temporarily. A rare condition called anaplastic large cell lymphoma (ALCL) has been reported in the scar tissue (capsules) surrounding implants in a small number of women with breast implants. The link between the use of breast implants and developing ALCL many years later is not fully understood. This condition most commonly presents several years later with a sudden swelling in the breast due to fluid accumulation (a seroma) around the implant and is normally treated by complete removal of the capsule (capsulectomy). Some patients have presented with a lump within or outside the breast and have required additional treatment. Further information about Breast Implant Associated-ALCL can be found by searching 'Breast implants and Anaplastic Large Cell Lymphoma (ALCL)'"on www.gov.uk. Your Surgeon should be able to discuss this condition with you.

3.2 A flap of tissue from your back – with or without an implant

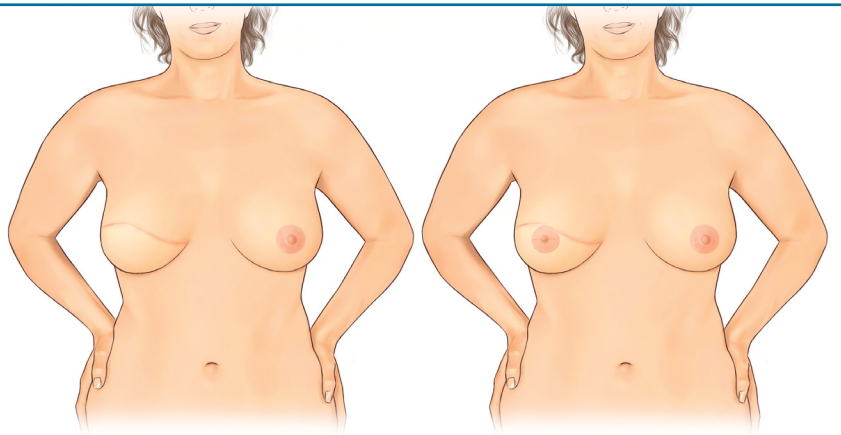
One type of flap transfer for breast reconstruction uses the latissimus dorsi muscle from the back along with an overlying patch of skin. This muscle has a good blood supply from the vessels emerging from the armpit, which makes it extremely useful for breast reconstruction (see figures 4 and 5).

In this procedure, the muscle and overlying fat is transferred to the breast area by swinging it around the ribcage so that it lies at the front of the body. This procedure means that the skin removed at the time of mastectomy can be replaced, along with some volume. Some women will also need an implant to further supplement the



In latissimus dorsi breast reconstruction a flap consisting of the latissimus dorsi muscle along with a patch of overlying skin is taken from the back and rotated around to the front in order to recreate the breast. An implant is sometimes needed beneath the flap.

Figure 4



The first picture shows the expected result of a delayed latissimus dorsi breast reconstruction. The flap has replaced the skin that was removed at the time of the mastectomy. The volume is replaced either with just the muscle and fat of the back, but if this is insufficient an implant is also used. The second picture shows the final result after nipple areola reconstruction.

Figure 5

volume of the breast, but it is often possible to remove enough fat from the back along with the flap of skin and muscle to replace the missing breast volume without the need for an implant. This is called an autologous latissimus dorsi reconstruction. If the volume in the flap isn't quite big enough, but not small enough to warrant an implant then additional fat can be added to the reconstruction. This is usually taken from your thighs or tummy by liposuction and injected into the flap – this is called lipomodelling.

A latissimus dorsi flap is a larger operation than using an implant alone, but it will usually give a more natural result, particularly if an implant is not required.

It should also be noted:

- It does result in quite a long scar on your back, but this can usually be positioned to be concealed by most clothing and underwear
- Losing the muscle from the back does not seem to cause any restriction of shoulder movement or strength in most patients
- Latissimus dorsi flap reconstruction is most suitable if you do not need too much skin replacement
- It can be ideal for relatively heavily built women who have small- to medium-sized breasts.

Types of lower abdominal free flaps

Free TRAM flap – In this operation a small piece of muscle is taken along with the blood vessels, skin and fat

Free DIEP flap – this variant uses the same blood vessels as the TRAM flap, but they are carefully dissected out from the muscle when the flap is removed and DIEP flap contains no muscle

Free SIEA flap – In this operation some of the more superficial blood vessels on the tummy are used and no muscle is dissected or transferred

Table 1

3.3 Flaps taken from the lower tummy (abdomen)

The skin and fat of the lower tummy is often the ideal tissue for breast reconstruction because a large amount of skin and volume can be replaced to achieve a very natural look and feel. Removal of excess skin and fat can often be a welcome bonus, resulting in a 'tummy tuck'. Historically, this operation involved moving the lower abdominal flap with the underlying muscle (rectus abdominis) through a tunnel beneath the skin of the upper tummy to the chest – a so-called 'pedicled' flap. Although this technique is still used sometimes today, most surgeons have found that transferring this tissue as a 'free' flap is more reliable. Free flaps are entirely disconnected from their original blood supply during the operation and are reconnected to a new blood supply in the chest or armpit using a microscope and fine stitches to join the very small arteries and veins together. In free flap breast reconstruction, skin, fat and sometimes muscle from one part of the body is transferred to make a new breast (see figure 6). A latissimus dorsi flap (described previously) is a pedicle flap, not a free flap.

There are several types of lower abdominal free flap, depending on which blood vessels are used and whether any muscle is transferred. See table 1:
Each of these flaps can achieve the same thing in terms of the eventual reconstruction, but the DIEP and SIEA flaps involve less or no interference with the function of the tummy muscles. Some surgeons have a particular

preference and experience with one or other type. Although specialised scans such as MR and CT angiograms can be used to help plan which flap to use, it should be noted that it is not always possible to decide before your operation exactly which flap your surgeon will use. You should discuss this with your surgeon when thinking about having a tummy flap reconstruction as each flap can have different effects on your tummy and overall recovery.

Although abdominal flap reconstruction can give the best long-term results, this is a major operation:

- You spend about a week in hospital and will undergo a recovery period lasting several weeks
- There will be scars on the breast and a long scar across the lower tummy as well as around the tummy button (umbilicus)
- You may have some difficulty sitting up from lying down initially, if your tummy muscles are used
- This surgery has particular risks not seen in implant reconstructions, which your surgeon will discuss with you
- Previous operations and scars on your tummy are not an absolute barrier to this surgery but they may make use of your tummy more difficult, with complex microsurgical techniques needed to overcome the scarred areas.

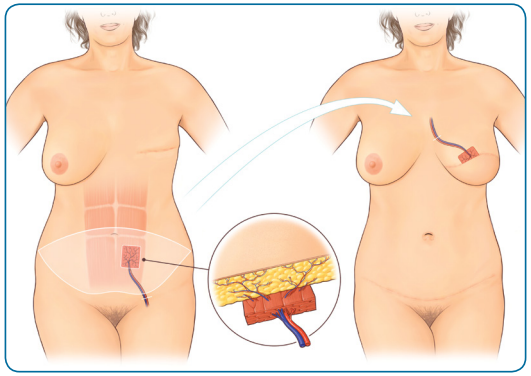


Figure 6

This illustrates a breast reconstruction using a free lower abdominal flap. A large flap of skin and fat from the lower abdomen is raised along with the blood vessels that keep it alive. In this case a small portion of muscle has also been taken (TRAM flap). In some cases it is possible to take blood vessels without taking any muscle (DIEP flap). The flap is transferred to the chest to replace the missing skin and volume. The blood vessels of the flap are joined microsurgically to blood vessels in the chest to restore the blood supply to the flap.

3.4 Other types of flaps that can be used

If your tummy is not suitable as a source of tissue, a flap can be taken from the buttocks or upper inner thighs. These flaps are much less commonly used and not all breast reconstruction centres offer these techniques. You might have to travel to see a suitable expert if this is the best option for you. Buttock flaps are based on one or other of the blood vessels emerging from the buttock muscles and the flaps are named after them: the SGAP flap or IGAP flap. Flaps from the upper inner thighs are known as TUG, DUG or PAP flaps (see figure 7).

Flaps containing muscle are named after the muscle:

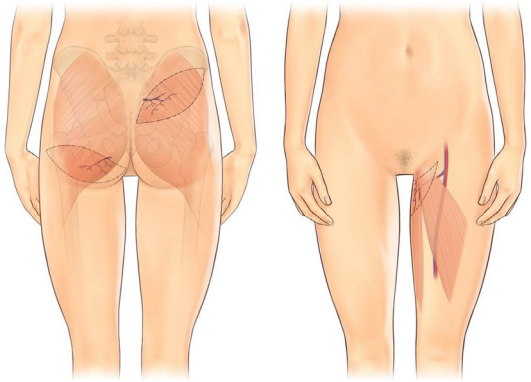
Table 2

Flap type	
TRAM	Transverse rectus abdominis muscle from the abdomen
Latissimus dorsi	Latissimus dorsi muscle from the back
TUG	Transverse upper gracilis muscle from the upper inner thigh
DUG	Diagonal upper graclis muscle from the upper thigh

Perforator flaps are free flaps that only contain skin and fat and are named after the delicate perforating artery that supplies blood to the area:

Flap type	
DIEP	Deep inferior epigastric perforator from the abdomen
SIEA	Superficial inferior epigastric artery from the abdomen
IGAP	Inferior gluteal artery perforator from buttock crease
SGAP	Superior gluteal artery perforator from the upper buttock
PAP	Profuda artery perforator from upper inner thigh

Table 3



The first figure on the left illustrates the positions on the buttocks from which an IGAP and SGAP flap are taken along with their blood vessels. The second figure on the right illustrates the position on the inner thigh from which a TUG or PAP flap is taken along with its blood vessels.

Figure 7

Your Notes:

Reconstruction in other situations

Some women do not need to have the whole breast removed to treat their cancer, whereas some women are advised to have an unaffected breast removed in order to reduce the risk of getting cancer in the future. Different reconstructive techniques may be needed in these situations.

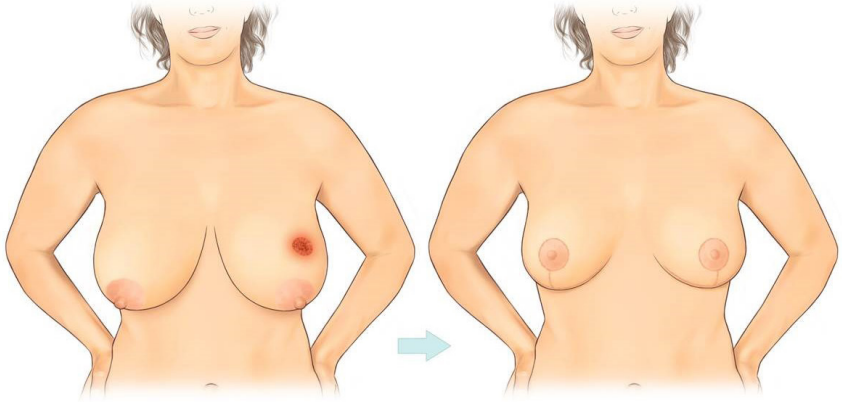
4.1 Breast conserving surgery (wide local excision)

If only part of your breast needs to be removed ('lumpectomy' or 'wide local excision'), there is often no need to have a reconstruction. Wide excision of the cancer is usually followed by radiotherapy and, once things have settled down, an acceptable degree of symmetry can be achieved without the need for further surgery.

Sometimes, if the treated breast ends up rather smaller but has a good shape, you may want the other breast adjusted to match. Although adjusting a breast that has had radiotherapy is possible, there are particular risks that your surgeon will need to make you aware about.

For some women, particularly those with large breasts, it is possible to carry out a wide excision of the breast cancer and reshape the breast making it smaller than before. The opposite, unaffected breast is also reduced in size usually at the same time. This technique is called a 'therapeutic mammaplasty' and is similar to the techniques used in cosmetic breast reduction with similar scar patterns (Figure 8).

Sometimes, removal of the cancer can result in loss of a large volume of breast tissue relative to the breast size. If it is not possible to reshape the breast like a therapeutic mammaplasty you may be at risk of developing a significant deformity after radiotherapy. Correction of these deformities after radiotherapy is difficult and often unsatisfactory. Preventing the deformity from developing by doing a partial breast reconstruction is often highly advantageous. This is usually done using a chest wall perforator flap located on the ribcage around the breast area (Table 4). These are pedicle flaps and do not require any microsurgery. Your surgeon should be able to discuss these flaps with you and whether the reconstruction should be done at the same time or a couple of weeks after your cancer surgery but before your radiotherapy, thus ensuring that the cancer has been adequately removed before doing the reconstruction. The choice of which chest wall perforator flap to use will depend on the location of the cancer within your breast. Use of chest wall perforator flaps can result in additional visible scarring outside the breast area. Your surgeon will be able to explain this to you.



The first figure shows a cancer in the upper outer quadrant of the left breast. The second figure shows the result after the removal of the cancer using a breast reduction technique with a simultaneous breast reduction on the right side.

Figure 8

Other Perforator flaps located around the rib cage near the breast area can be used for partial breast reconstruction:

Flap type	
TDAP	Thoraco dorsal artery perforator flap
LTAP	Lateral thoracic artery perforator flap
LICAP	Lateral Intercostal artery perforator flap
AICAP	Anterior intercostal artery perforator flap
MICAP	Medial intercostal artery perforator flap

Table 4

4.2 Risk-reducing mastectomy

Although the vast majority of breast cancers are not inherited, some women are at particular risk of getting breast cancer. If you have several close relatives who have also had breast cancer, particularly occurring at a young age, it is possible that there is an underlying inherited genetic basis for your breast cancer.

Some women carry gene mutations such as BRCA 1 and 2 or other genetic abnormalities that are known to be associated with an increased risk of developing breast cancer. Sometimes patients can be at increased risk of getting breast cancer because of previous radiotherapy treatment for something else many years previously, such as lymphoma.

Some women who have had breast cancer on one side are at particularly high risk of developing cancer on the other side if they are subsequently found to be carrying a known genetic abnormality that is associated with developing breast cancer.

In each of these situations you may be offered a 'risk-reducing' mastectomy with an immediate reconstruction before the breast cancer develops. Such surgery does not completely eliminate the risk of getting breast cancer, but it does reduce the risk by more than 90%.

You will be advised by your breast care team if you are thought to be at increased risk. A consultation with a clinical geneticist can be arranged for you to explore this further. In most situations you will be given a statistical probability – this does not mean that breast cancer will definitely occur, but that your risk may be higher than the average woman.
If you are thought to be at a very high risk of developing breast cancer, you can choose to have close surveillance using scans or mammograms or to reduce the risk by taking medications such as tamoxifen or, alternatively, opt for risk-reducing mastectomy. In this situation immediate reconstruction will almost always be possible and any one of the reconstructive techniques described in this guide might be appropriate.

4.3 Reconstruction for non-cancer breast problems

Some women who do not have breast cancer will need operations similar to those described in this guide. Typical examples are women with very marked underdevelopment of one or perhaps both breasts, or patients with abnormal development of the chest wall.

Further operations to adjust your breast reconstruction

If you choose to have a breast reconstruction it is normal to need a further adjustment procedure at some point after the initial operation.

The aim of such adjustments is to further improve the size and shape match (symmetry) of the breasts. These are usually more minor operations than the first one.

Various adjustments can be carried out and these include:

- Inserting or exchanging a breast implant to improve the shape or size match
- Reducing, enlarging or reshaping your opposite breast to match the reconstructed breast
- Reducing the size or reshaping a flap reconstruction
- Adding fat to your reconstructed breast using lipomodelling
- Adjustments to scars on donor areas following flap reconstructions
- Nipple and areola reconstruction.

5.1 Nipple Reconstruction

In spite of having a breast reconstruction, you may not think it looks like a breast until there is a nipple and some pigmentation around it. Nipple reconstruction is usually done at a later stage following reconstruction of the breast.

The reason for the wait is to allow the swelling in the reconstructed breast to settle down and the breast mound to become supple. This allows for more accurate placement of the new nipple in comparison with the opposite natural breast.

If you are having any radiotherapy or chemotherapy, then your surgeon will usually allow at least three months from the time of completion of these treatments before performing the nipple reconstruction. Sometimes surgeons will offer an immediate nipple reconstruction and you can discuss this with your surgeon. If you decide to have a nipple reconstruction, it's important to be realistic about what the surgery can offer. It will restore the look, but not the feel or sensation of the nipple. The nipple which is reconstructed may also flatten a little over a period of time.

5.2 The process

Nipple reconstruction is usually done awake, using local anaesthesia. There are two main methods of nipple reconstruction:

- Either flaps of tissue are raised up on the reconstructed breast and sewn together to make a nipple shape; or
- A portion of the opposite nipple is transferred to the reconstructed breast.

At a further separate stage, a tattoo is applied of appropriate colour to mimic the areola. Some women choose to have a tattoo without a nipple reconstruction. This is a simple outpatient procedure. If you choose not to have a permanent nipple reconstruction, you can be supplied with a stick-on nipple prosthesis made from silicone rubber, matched in colour and size to the other side.

5.3 Lipomodelling

Lipomodelling is a technique where fat is removed by liposuction, refined and then transferred to another area with a special grafting tube ('cannula') to add volume and thus increase size and improve shape and profile. It has proved particularly useful to help improve results in breast reconstruction:

- Fat is taken from an area where there is plenty, such as the hips or tummy
- It can then be used either to increase the size of a previous reconstruction or correct a contour dip on the breast or chest wall
- It is a relatively non-invasive procedure and can be done on its own or at the same time as other adjustments
- Either local or general anaesthetic can be used depending on the size of the area to be treated
- Lipomodelling may need to be repeated if the first treatment does not fully correct the problem.

Breast reconstruction and recovery

Deciding whether or not to have breast reconstruction can be a stressful experience, as you will need to take in complex information at what is already a difficult time for you. It is impossible to know exactly how a reconstructed breast will look and feel in the future.

Experience shows that many women find that breast reconstruction offers many positive psychological benefits including improved quality of life, body image, confidence and self-esteem, and a restored sense of wholeness and femininity. However, the personal impact of the surgery varies from one woman to another and it isn't a complete remedy for the distress associated with a diagnosis of breast cancer and the subsequent treatment. Regardless of whether or not you have reconstruction surgery, feelings of anxiety and depression are not uncommon but typically improve during the first year after diagnosis and treatment. Your breast care nurse should be able to help you deal with these feelings and emotions and if necessary refer you to the team psychologist.

Women who choose reconstruction will need to adjust to changes in the appearance and sensation of their reconstructed breast. Depending on the type of procedure carried out, you may also be faced with changes to other parts of your body (for example, scarring on the back or abdomen). It is not unusual for this process of adjusting to an altered appearance to take a year or more.

Some women feel self-conscious about their reconstructed breast. It is not uncommon to feel anxious about how other people (especially a partner) will respond, and to worry whether intimate relationships will be affected. Partners may also have concerns about this and will be going through a period of adjustment themselves.

Some women also worry whether the cancer could return in the reconstructed breast and how this would be detected.

Ultimately, most women report being satisfied with their choice about whether or not to have reconstructive surgery and those who do choose it are typically pleased with the outcome. On some occasions, however, reconstructive surgery does not meet a woman's expectations. This can lead to feelings of regret, anger and disappointment, and frustration at any need for further surgery. Overall, women who are most satisfied with their decision and the outcome of surgery tend to be those who have taken time to carefully consider the options. It is therefore important to:

- Read all the information about the options that are available to you
- Weigh up the pros and cons in relation to your own personal values and priorities
- Have clear and realistic expectations of the likely outcome
- Discuss your options with your breast care team and people who are close to you
- To discuss and understand the risks and potential complications of surgery with your surgeon.

6.1 What is involved in the surgery?

The detail of the process varies depending on the technique used. This will be discussed with you before the operation so you will know what to expect.

- Once you have decided to proceed with surgery you will have a preadmission assessment and clinical photographs
- All breast reconstruction surgery is done under general anaesthesia
- When you come round you will have some dressings and drains that remove excess fluid
- Various anaesthetic techniques are used to make the process as painless as possible
- With free flap breast reconstruction you will have a period of careful monitoring for the first day or so after the operation to make sure that the blood is flowing freely into and out of the flap.

6.2 Will it be painful?

Although you are in hospital you will be given medication and possibly nerve blocks for pain control. We know that patients recover better after surgery if their pain control is good. Everything possible will be done to make the process as comfortable as possible.

6.3 What is the recovery and aftercare?

Once you go home from hospital you will feel very tired initially, and should have someone around to help you. The recovery period depends on which of the operations you have had done. As a general rule:

- After the first week you should be starting to look after yourself and begin to resume some light activities dependent upon the complexity of the surgery
- A few weeks after the operation you will be seen again in a clinic to check how you are doing and make sure all your wounds are healing well
- You will then be seen a few months later to assess the outcome and decide if any adjustments are needed and when they should be carried out.

6.4 Will there be scars?

All operations result in scarring of some sort and the position and size of scars after breast reconstruction depends entirely on the technique used. In general, implant techniques give shorter scars confined only to the breast, whereas flap techniques give longer scars, which will be on the breast and where the tissue has been taken from (back, tummy, etc.). All scars can be expected to be lumpy at first and will go through a period of being pink, red and raised. They will usually then gradually become flat and pale. This process can take as long as two years to happen.

In some people scars will not remain narrow, but will stretch and widen. In some people scars will remain red and raised and not become pale or flat. The exact type of scar any individual gets is not always possible to predict and can depend on your skin type.

6.5 What complications might occur?

With any operation there are some risks, although of course steps are always taken to minimise these.
The most frequent problem is delayed wound healing:

- This risk is greatest in some of the larger flap operations where the incisions are longer
- If there is a wound problem it is usually minor, but more major wound-healing problems can occur such as infection, skin loss, and wound separation, and may require re-operation
- Very occasionally, soon after the surgery, bleeding can occur that may necessitate a return to the operating theatre to stop it. Blood transfusions are rarely necessary in breast surgery.
- Sometimes patients can collect fluid beneath the operation site after the drains have been removed (a 'seroma'), and this may need to be drained off in a clinic or by the radiologist.

Other more specific problems can include:

- If an implant is used there are some specific complications that can happen, such as deflation of an expander or rotation/migration of an implant. Infection around an implant could result in its removal, and long-term problems such as hardening around the implant (capsule contracture), visible folds and ripples can also occur.
- In free flap surgery there is a small risk the small vessels that have been joined together may become blocked. This will require a return to theatre to save the reconstruction. In a small number of cases this is not possible and the flap could be lost.
- In flap reconstruction the flap may appear to survive, but it develops into a hard lump several weeks later. This is called fat necrosis. This can become infected and can discharge fluid from the reconstruction but is uncommon.
- In some abdominal flap surgery there is a risk of abdominal muscle weakness resulting in a bulge or hernia, which would need to be repaired at a later date. The risk of this happening is low.
- There is a slight risk of blood clots after the operation occurring in the legs or lungs (venous thrombosis), and steps will be taken before, during and after the operation to minimise this risk.
- The chances of these various complications vary between operations and the likelihood of them happening in your operation will be discussed with you.

There is not much that you can do to minimise any of these risks but, in delayed reconstruction, patients may be advised to try to lose weight before the operation and all patients should stop smoking for as long as possible prior to surgery. Evidence tells us that patients who smoke and who are significantly overweight have a much higher risk of complications in all types of breast reconstruction surgery.

FAQs

7.1 Which types of breast reconstruction are available on the NHS?

All proven techniques of breast reconstruction are available on the NHS but some may not be available in your local hospital. Your surgeon or GP should refer you to a centre if a particular type of reconstruction is not available locally, even if you just want to find out more.

7.2 Do I decide which type of breast reconstruction I will have or is it up to my surgeon?

Not all types of reconstruction are suitable for everyone and there are pros and cons for each. You and your surgeon should discuss your choices and decide together which would be best for you. You should be offered all the options that might be possible for you, even if they cannot be carried out in your local hospital.

7.3 What is involved in a breast reconstruction?

This will depend on the type of reconstruction you choose and whether it is being carried out at the same time as your cancer surgery. Most women will have one major operation, but may then choose to have a nipple reconstruction at a later date, and it is quite common to need minor adjustments to the new breast or the opposite breast once everything has settled down.

7.4 Who can I speak to, to get more information on what's available for me?

The specialist nurse in the breast clinic and your surgeon will be able to give you advice about what is available locally for you, but you also may find it helpful to have a discussion with a plastic surgeon about some of the more complicated techniques. If there isn't a plastic surgeon in the breast clinic then you can ask to be referred to one. There are many excellent support groups and online resources for women with breast cancer and we have included their contact details in this guide. You have some big decisions to make and so you should make sure you should have all the information you need to help you with them.

7.5 What factors do I need to think about when making my decision on what type of reconstruction to have?

The first thing you need to decide is if you want a reconstruction at all and if so whether you would like it at the same time as your cancer surgery ('immediate reconstruction') or at a later date ('delayed reconstruction'). You should also consider if you would be happy with a reconstruction that uses a breast implant or if you would prefer to avoid that, even if it means having a bigger operation. Other considerations include your willingness to have a scar elsewhere on your body and if you would be ready to have the other breast operated on as well to help give you a better 'match' to your reconstruction. You may find it helpful to write down your personal list of reasons to help you discuss it with your family, friends and breast care team.

7.6 How long is the recovery period following a breast reconstruction?

This will depend very much on the sort of reconstruction that you have and how fit you are and what you need to be able to do afterwards. On average it takes about six weeks to recover from the more extensive operations. Your surgeon can advise on this once you have decided on which reconstruction you wish to have.

7.7 If I have an implant as part of my reconstruction, will it need to be replaced? Can this be done on the NHS?

The usual advice is that an implant is likely to be replaced at some point, although how soon is difficult to predict. Implants do not have a defined life expectancy. So if you are not having problems it doesn't need to be changed. However, there are many reasons why women seek further surgery several years after an implant reconstruction. At the current time, women having a breast implant inserted for reconstructive reasons on the NHS can have a replacement or any number of revisions carried out by the NHS, including conversion to a tissue reconstruction.

Further information

Organisations

BAPRAS
www.bapras.org.uk

Association of Breast Surgery
www.associationofbreastsurgery.org.uk

Irish Cancer Society
www.cancer.ie

Look Good…Feel Better
www.lookgoodfeelbetter.co.uk

The Center for Microsurgical Breast Reconstruction
www.diepflap.com

Department of Health- breast screening awareness leaflet
www.gov.uk/government/publications/nhs-breast-screening-awareness-leaflet

National Institute for Health and Clinical Excellence (NICE)
www.nice.org.uk/guidance/cg80

Publications

Breast Reconstruction: Your Choice
Rainsbury, D. & Straker, V. (2008), London, Class Publishing, ISBN: 978-1-85959-197-0

The Boudica Within
The extraordinary journey of women after breast cancer and reconstruction
Sassoon, E. (2007), Erksine Press, ISBN: 978-1-85297-097-0

Charities

Breast Cancer Now
www.breastcancernow.org

Breast Cancer Care
www.breastcancercare.org.uk

Macmillan Cancer Support- Breast Cancer
www.macmillan.org.uk/information-and-support/breast-cancer/understanding-cancer

Cancer Research UK- Breast Cancer
www.cancerresearchuk.org/about-cancer/type/breast-cancer

Maggie's Cancer Caring Centres
www.maggiescentres.org

Hereditary Breast Cancer Helpline
www.breastcancergenetics.co.uk

For further copies of this booklet or to download an electronic version, please go to www.bapras.org.uk

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