



BAPRAS

British Association of Plastic
Reconstructive and Aesthetic Surgeons

The Voice of Plastic Surgery

Your Guide to breast reconstruction



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Foreword

This booklet is to help women make the right choice when facing a mastectomy and considering breast reconstruction. It contains information about all the latest techniques. We hope that you will refer to it before your consultation with a reconstructive plastic surgeon, but will also find it helpful after that consultation to refer back to.



It is quite detailed and we don't expect that you will read it from cover to cover to start with. When given a diagnosis of breast cancer we know that there is much to take in, fears and concerns to overcome and treatment options and outcomes to consider.

Having to think about breast reconstruction at the same time can be confusing, so we have tried to lay out the information clearly to help you in the choices that you will make with your surgeon.

If you are thinking about having a reconstruction you may have heard that there are several ways of making a new breast. You may only be suitable for one type or you may have a choice of several options.

The best way to find out what might be possible for you is to have a consultation with a plastic surgeon specialising in breast reconstruction, who will take account of many factors before advising you.

They will have as their aim to make a breast that looks the same as the other one when you are undressed. This is not possible for all women, but modern techniques have made it achievable for some. They will help you decide what would be best for you and what outcome you can expect. They will then describe what would be involved.

We hope you find this booklet helpful and that it provides valuable support for you as you make your choices. You may wish to share it with your family or close friends and to refer back to it from time to time. You will also find links to other sources of information.

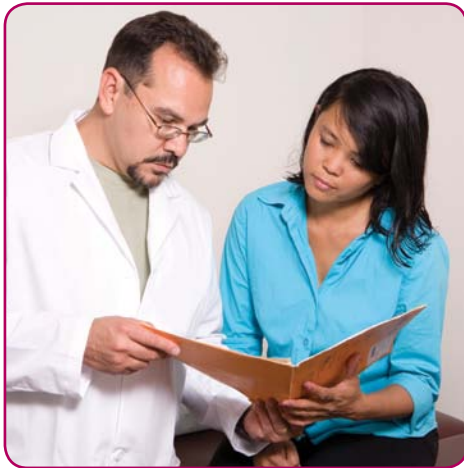
Eric Freedlander
President, BAPRAS

Introduction

Who is this booklet for?

This booklet is for women looking for more information about breast reconstruction – either before or at the time of cancer treatment. It aims to give an overview of the options and provides pointers to more detailed information on the internet.

We realise that this is a difficult time for you, with much to take in, and hope this booklet will help you make some of the decisions that you are facing. It will also be helpful when you are talking to your GP, breast care nurse or family about the choices you need to make.



What is breast reconstruction?

If you need to have surgery to remove a breast cancer, reconstructive surgery aims to rebuild your breast, either wholly or partially, to match the normal breast in both shape and size. It also aims to improve your body image and self-esteem, helping the process of recovery on a physical, emotional and psychological level.

According to the National Institute for Health and Clinical Excellence (NICE) www.nice.org.uk, all women should be offered the chance of high quality breast reconstruction at the same time as their mastectomy – this is known as “immediate reconstruction”.

Current evidence suggests that breast reconstruction, either at the same time or after cancer treatment, does not in any way increase the chances of the cancer recurring.

There are several surgical ways to reconstruct a breast, some relatively simple, some quite complicated. It is essential that you are assessed and informed of the technique that would be best for you by someone who knows about all the options. You should be able to choose your preferred option, even if it means travelling to another hospital to have it carried out.

As awareness of the range of choices and benefits of breast reconstruction grows, there is more demand for it: as a result, plastic surgeons have become an integral part of the teams treating women with breast cancer.

What causes breast cancer?

Breast cancer is the most common form of cancer affecting women in the UK, with 40,000 new cases diagnosed every year.

- Cancers occur when normal cells stop responding to the control systems used to co-ordinate the function of cells.
- These rogue cells start to multiply faster than they should, forming cancerous tumours. Why this happens is the subject of much research and debate, but is probably a combination of environmental, lifestyle and genetic factors.
- The treatment of breast cancer is based on the elimination of these cells, whether through surgical removal or by killing them with radiotherapy and/or chemotherapy.
- The type of treatment you will be offered depends on the exact type of breast cancer you have, and if any cancerous cells have spread within and beyond the breast.
- Your breast surgeon or breast care nurse will discuss the treatment options available for you and will help guide your decision.

What is a mastectomy?

This is the surgical removal of the entire breast. About 40% of women diagnosed with breast cancer require or choose to undergo 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 must usually be removed as part of the mastectomy surgery.

Mastectomy is still the best treatment for women with certain types of breast cancer. Your breast cancer 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;
- the tumour is likely to recur.

On discovering cancer within one breast, many women prefer to have that entire breast, or even both breasts, removed to reduce the risk of getting another breast cancer in the future.

Introduction

How will this booklet help me?

The purpose of this booklet is to tell you 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, that use only your own tissues, will give a breast that is a better shape and looks more natural. However, these involve a longer and bigger operation. Some women will choose something simpler or even not to have a reconstruction at all.

Whilst this booklet gives you general information it is intended to complement a consultation with a surgeon who can explain to you what techniques are appropriate for you and what 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.



What is my next step?

Sometimes there is really only one type of procedure that can be recommended, but usually you will have a choice to make. This depends on how much of the breast skin and volume needs to be replaced after the cancer is removed and how much spare tissue is available in the various areas of the body it can be taken from.

Other factors are also taken into consideration, such as:

- Your general fitness
- Preferences in terms of risk, outcome and scarring
- Any possible impact with other treatments you might need

Another important consideration is whether your other breast can be matched as it is or if it would be better to adjust it, perhaps by lifting it or making it smaller.

All of these things will be taken into account by the plastic surgeon before a decision can be made as to what options are available for you to choose from.

When to have breast reconstruction

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.

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 scarring on the breast itself is usually less
- 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



Figure 1

When to have breast reconstruction

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 less for you to deal with, all at once

Sometimes immediate reconstruction is not recommended or possible, usually because of the type of tumour or the need for further treatments such as radiotherapy. If immediate reconstruction is an option for you, then the pros and cons will be discussed with you to help you make a decision.

Techniques

The favoured technique amongst many plastic surgeons is to use your own tissue from elsewhere on the body to reconstruct the breast. In recent years, own tissue or “autologous” reconstructions have become more and more popular with patients because the breast can appear more natural looking. This tissue is usually taken from the abdomen (“tummy”) or back, but sometimes from the buttocks or thighs.

For some patients, however, reconstruction using an artificial breast implant is more appropriate.

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 very satisfied choosing to wear a prosthetic breast in their bra rather than have to undergo more surgery, although some women find it restricts their choice of clothing.

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. We hope that this booklet will help you discuss it with other women, your friends, family and the health professionals looking after you so that you can make a decision.

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.



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

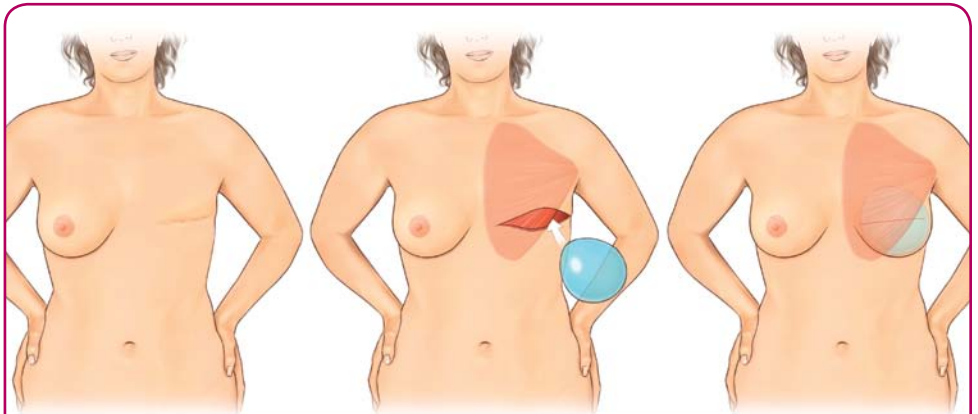
Reconstruction using only an implant

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 time of 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

surgery. Sometimes an implant called an “expander-prosthesis” might be used, which can have its volume adjusted by injections of salt water (saline) which can be done in the outpatient clinic in the weeks after the operation. This will help give the best match for your other breast.

Implants will be offered to you if you are not suitable for reconstruction using your own tissue. This might be because of a variety of reasons, such as:

- You have no spare tissue to use
- You are not well enough for a larger operation
- You simply do not want a big operation involving cuts and scars elsewhere on your body



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 adjustability after the operation.

Figure 2

Operations to make a new breast

Considerations

Look and feel: It can be difficult to get 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 at all, or if both breasts are being removed.

The main disadvantage of implant-based breast reconstruction is that it is impossible to create a breast with an entirely natural shape and feel.

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

Potential problems: Implants are prone to hardening, deflation, visible folds and creases, and do not give good results if you have to have radiotherapy either before or after the reconstruction is carried out.

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

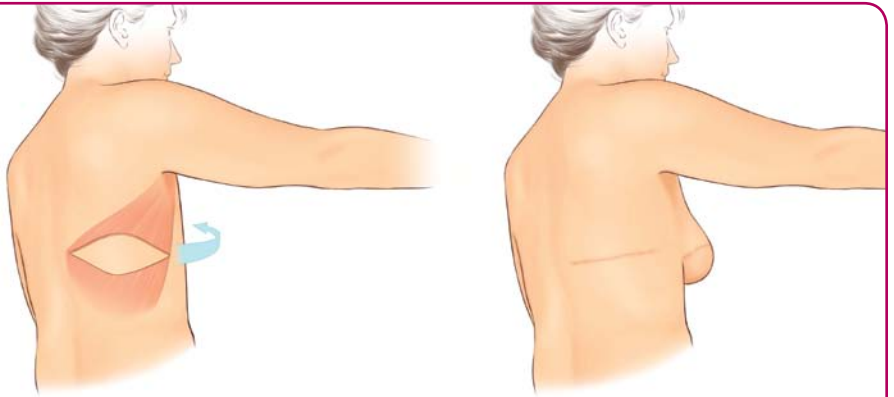
One type of flap transfer for breast reconstruction uses the latissimus dorsi muscle from the back along with an overlying patch of skin. This muscle has a good blood supply from the vessels emerging from the armpit which makes it extremely useful for breast reconstruction.

In this procedure, the muscle 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 is replaced along with some volume.

Many women will also need an implant to further supplement the volume of the breast, but sometimes it is 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.

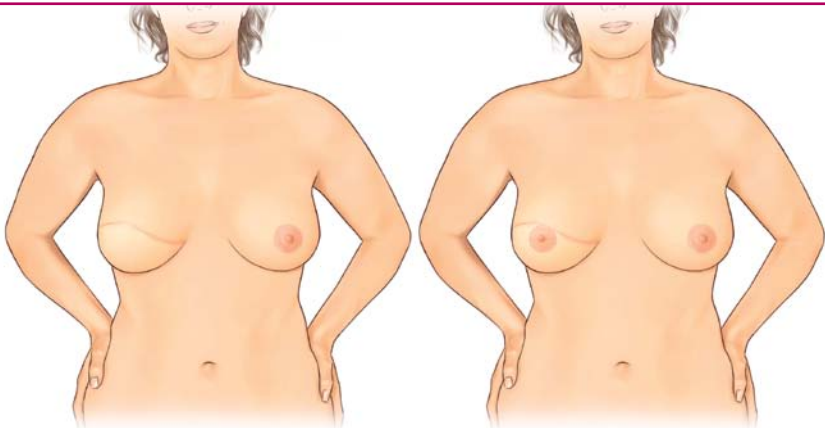
This procedure is a larger operation than using an implant alone, but it will usually give a more natural result, particularly if an implant is not needed. It should also be noted:

- It does result in quite a large 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 and your tummy is not suitable for flap transfer
- It can be ideal for relatively heavily built women who have small to medium sized breasts



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 3



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 4

Operations to make a new breast

Flaps taken from the 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”.

When first conducted, the operation involved moving the lower abdominal flap with the underlying rectus abdominis muscle beneath the skin of the upper tummy to the chest – a so called “pedicled” flap. Whilst this technique is still sometimes used, most surgeons find that transferring this tissue completely as a “free” flap is more reliable.

Free flaps are entirely disconnected from their original blood supply during the operation and are reconnected using microsurgery and very fine stitches to join the arteries and veins to vessels near the breast area.

In free flap breast reconstruction, skin, fat and sometimes muscle from one part of the body is transferred to make a new breast. Blood vessels from the armpit, or near the breastbone, are used to create a new blood supply for the transferred tissue.

There are several types of lower abdominal free flap depending on which blood vessels are used and whether any muscle is transferred. See the following table:

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 raised 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

Each of these flaps can achieve the same thing in terms of the eventual reconstruction, but the DIEP and SIEA 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.

It should be noted that sometimes the exact flap used has to be decided during the operation, so it is not possible for you to pick one technique that will definitely be used. In these circumstances you would have to rely on the surgeon to use the most reliable technique.

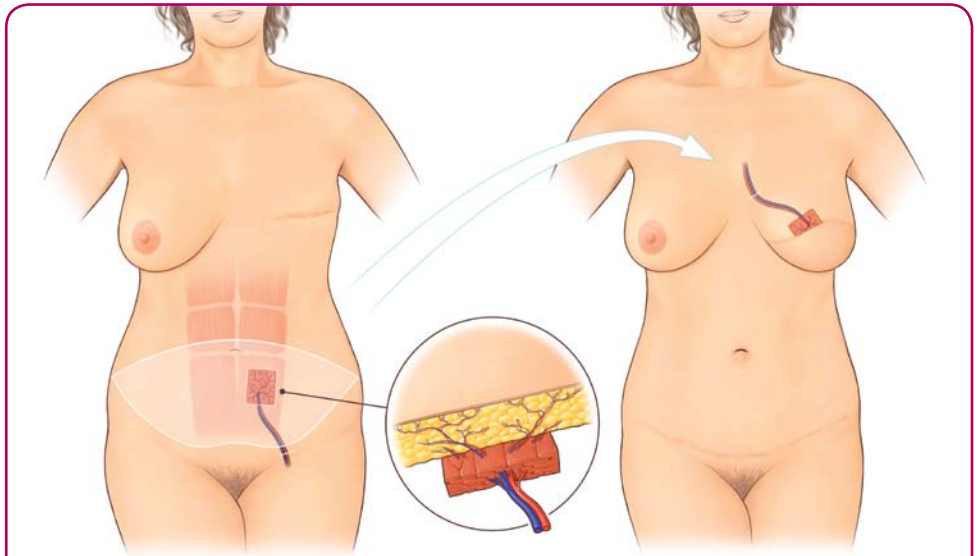
Whilst abdominal flap reconstruction can give the best results, this is a major operation:

- 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 large 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.

However, in the long term, most women notice no real problems in day-to-day activities.

Once the breast reconstruction process is complete then the shape and appearance are usually stable and permanent.



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.

Figure 5

Operations to make a new breast

Other types of flaps that can be used

If your tummy is not suitable as a source of tissue, a flap can sometimes be taken from the buttocks or upper inner thighs. These flaps are much less commonly used and not all breast reconstruction centres will offer these techniques, so 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 flaps.

In general these other flaps are used if you want reconstruction using only your own tissues and are very slim or have had previous tummy surgery.

Flaps containing muscle are named after the muscle:

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

Table 2

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

Table 3

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 of the breasts. These are usually more minor operations than the first one.

Various adjustments are carried out and these include:

- Inserting or exchanging a breast implant to improve the shape or size match
- Reducing or reshaping your opposite breast to match the reconstructed breast
- Reducing the size of or reshaping a flap reconstruction
- Adding fat to your reconstructed breast using fat graft or lipomodelling



Lipomodelling

Lipomodelling is a relatively new 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 as an adjunct to 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
- 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

Sometimes these operations will be combined with nipple reconstruction.

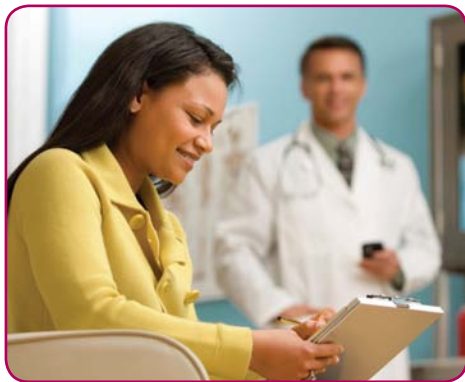
Nipple reconstruction

In spite of the breast mound being there, 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 nipple in comparison with the opposite natural breast.

If you are having any radiotherapy or chemotherapy, then the plastic surgeon will usually allow at least three months from the time of completion of this before performing the nipple reconstruction.

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.



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 this without nipple reconstruction. This is a simple outpatient procedure.

If you choose not to have a permanent reconstruction, you can be supplied with a stick-on nipple prosthesis (an artificial body part) made from silicone rubber, matched to the other side.

Reconstruction in other situations

Some women do not need to have the whole breast removed to treat their cancer. 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.

Options for patients with a partial mastectomy (wide local excision)

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

Sometimes, if the treated breast ends up rather smaller, you may want the other breast adjusted to match. Sometimes it is possible to add tissue to the treated breast using either a flap or lipofilling.

For some women, particularly those with large breasts, it is possible to carry out a wide excision of the breast tumour and reshape the breast making it smaller than before. At the same time the opposite, unaffected breast is also reduced in size to match. This technique is called “therapeutic mammoplasty”. This is ideal if you need a partial mastectomy and are prepared to have (or had always wanted) smaller breasts.

Risk-reducing mastectomy

Some women seem to be 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.

Often the genetic basis is unknown, but some women carry genes such as BRCA 1 and 2 that are known to be associated with breast and ovarian cancer. Sometimes you can be at increased risk of getting breast cancer because of previous radiotherapy to your chest for something else, such as lymphoma. Some women who have had breast cancer on one side are known to have a particularly high risk of developing cancer on the other side.

In each of these situations you may be offered a “risk reducing” mastectomy before the development of breast cancer, usually with immediate reconstruction.

You will be advised by your breast care team what your likely cancer risk is and you may be offered a consultation with a clinical geneticist to explore this further. In most situations you will be given a statistical

Reconstruction in other situations

probability – this does not mean that breast cancer will definitely occur, but that your risk may be higher than in the average woman.

You can choose to have close surveillance using scans or mammograms with the intention of detecting a cancer at an early stage or, alternatively, opt for risk-reducing mastectomy perhaps on both sides in order to minimise any risk. In this situation immediate reconstruction will almost always be possible and any one of the reconstructive techniques in this booklet might be appropriate.

Reconstruction for benign (non cancerous) breast problems

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



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.

Many women find that breast reconstruction offers many 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 breast cancer and mastectomy. Regardless of whether or not you have reconstructive surgery, feelings of anxiety and depression typically improve during the first year after diagnosis.

Women who choose reconstruction will need to adjust to changes in the appearance and sensation of their reconstructed breast(s) and, depending on the type of procedure carried out, may also be faced with changes to other parts of their body (for example scarring on their 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. Make sure you:

- 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 you are close to

REMEMBER: Ultimately, you must make the decision for yourself, and not for anyone else.

Breast reconstruction and recovery

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 which remove excess fluid from the wounds
- Various 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 tissues; but you will then be allowed gradually to get up and about

Will it be painful?

Whilst you are in hospital you will be given medication and possibly also 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.

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 normal activities
- 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

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.

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 which may necessitate a return to the operating theatre to stop it
- Sometimes patients can collect fluid beneath the operation site (a "seroma"), and this may need to be drained off in a clinic

Other more general problems can include:

- If an implant is used there are some specific complications that can happen such as deflation of the implant, infection, hardening around the implant, visible folds and ripples

- In some abdominal flap surgery there is a risk of abdominal muscle weakness or perhaps even a bulge or hernia
- 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

Specifically, with regards to free flap surgery there is a risk that the circulation to the flap may become blocked:

- If this occurs, it is usually in the first day or so
- You will be monitored carefully to spot this and if it occurs you will need to go back to the operating theatre to remedy the problem
- The microsurgery may need to be redone, if so circulation will usually be restored. However there is a slight risk that it cannot and the flap will need to be removed

The chances of these various complications varies 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.

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 see a general breast surgeon who specialises in treating diseases of the breast
- The breast surgeon will arrange your diagnostic tests and biopsies and will be responsible for the surgical treatment of the cancer, be it by wide local excision or mastectomy
- Some breast surgeons will also offer some of the techniques of breast reconstruction in this booklet or will ask a plastic surgeon to help with the reconstruction
- In immediate reconstruction the surgeons will often work together at the same operation

At BAPRAS we encourage the involvement of plastic surgeons in this process. A plastic surgeon is trained specifically in reconstruction and many have specialised particularly in reconstruction of the breast. The plastic surgery service near you will usually be able to offer all of the available techniques including microsurgical reconstruction using free flaps such as TRAM or DIEP.

Ideally plastic surgeons would all work in the same hospital as the breast surgeons, but this is not always the case. Plastic surgery for breast reconstruction is freely available on the NHS and so if there is not a plastic surgeon in your breast clinic then the breast team can arrange for you to see a plastic surgeon in another outpatient clinic. This way, you can consider all the options for which you might be suitable, even if they are not available in your local hospital.



FAQs

What types of breast reconstruction are available on the NHS?

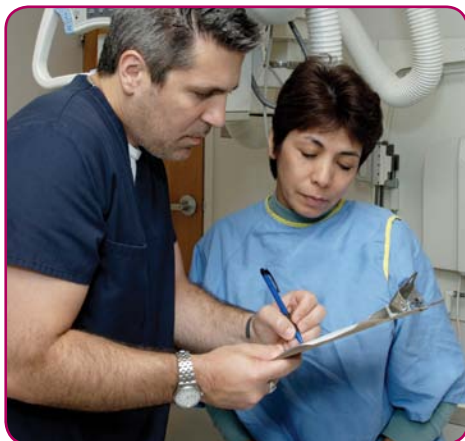
All proven techniques of breast reconstruction are available on the NHS but some may not be available in your local hospital. Your breast cancer surgeon or GP should refer you to a plastic surgery centre if a particular type of reconstruction is not available locally, even if you just want to find out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

Do I decide what 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 decide together what would be best for you and what your choices are. You should be offered all the options that might be possible for you, even if they cannot be carried out in your local hospital.

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 a more minor adjustment to the new breast once everything has settled down.



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

The specialist nurse in the breast clinic and your cancer surgeon will be able to give you advice about what is available locally for you, but you may find it helpful also 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 booklet. You have some big decisions to make and so you should make sure you have all the information that you need to help you with them.

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

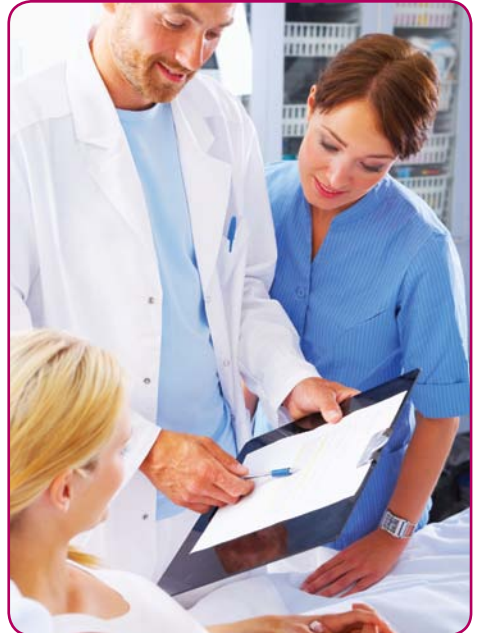
The first thing you need to decide is if you want a reconstruction at all and if so whether you would like it at the same time as your cancer surgery (“immediate reconstruction”) or at a later date (“delayed reconstruction”). You should also consider if you would be happy with a reconstruction that uses 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” with 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.

How long is the recovery period following a breast reconstruction?

This will depend very much on the sort of reconstruction that you have, how fit you are and what you need to be able to do, but could be at least six weeks for the more extensive techniques. Your surgeon can advise on this once you have made your choice of reconstructive option.

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

The usual advice is that an implant is likely to need to be replaced at some point although how soon is difficult to predict. Some manufacturers say that the implant itself should last a lifetime, but there are other reasons why it might need changing. At the current time, women having a breast implant inserted for reconstructive reasons on the NHS can have any replacement carried out by the NHS, however if the initial surgery is carried out privately this is not the case and there would be costs involved.



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

Options for Breast Reconstruction:
www.optionsforbreastreconstruction.com

The Center for Microsurgical Breast:
Reconstruction: www.dieflap.com

Department of Health – Guide to breast:
screening: www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_076195

Department of Health – Be breast aware:
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_062697

National Institute for Health and Clinical
Excellence (NICE): <http://guidance.nice.org.uk/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 by Elaine Sassoon
published by The Erskine Press, 2007
ISBN 978-1-85297-097-0

Charities

Breakthrough Breast Cancer:
www.breakthrough.org.uk

Breast Cancer Care:
www.breastcancercare.org.uk

Breast Cancer Support Board:
www.breastcancersupport.co.uk

Macmillan Cancer Support – Breast
cancer: www.macmillan.org.uk/Cancerinformation/Cancertypes/Breast/Breastcancer.aspx

Macmillan Cancer Support – Coping
with body changes after cancer:
www.be.macmillan.org.uk
(available as a free download)

Cancer Research UK – Breast cancer:
www.cancerhelp.org.uk/type/breast-cancer/index.htm

Maggie's Cancer Caring Centres:
www.maggiescentres.org

Hereditary Breast Cancer Helpline:
01629 813000 (24 hour helpline)
Email: canhelp@btopenworld.com

Documentaries

BBC Radio 4 Woman's Hour
discussion of breast reconstruction:
www.bbc.co.uk/radio4/womanshour/04/2009_42_wed.shtml

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

Glossary of technical terms

Term	Description
Abdomen	The central part of your body containing the intestines and organs. In the context of breast reconstruction we mean the skin, fat and sometimes muscles of the lower part of the tummy.
Areola	The flat brown patch of specialised skin around the nipple.
Artery	A blood vessel that carries blood towards a body part.
BAPRAS	The British Association of Plastic Reconstructive and Aesthetic Surgeons. This is the specialist association that most trained plastic surgeons will be full members of. It exists to promote knowledge about plastic surgery – hence this booklet.
BRCA	BRCA is a tumour suppressor gene. We all have such a gene and it helps prevent us developing cancer. When a person has a faulty copy of that gene they are prone to certain cancers such as those of the breast and ovary.
Breast surgeon	A surgeon whose initial training has been in general surgery and who specialises in surgical treatment of breast disease.
Chemotherapy	The treatment of cancers with drugs.
Delayed reconstruction	Reconstruction (in this context – of the breast) done at some time after the initial treatment for the underlying condition (in this context – cancer).
DIEP	Deep inferior epigastric perforator. This is the name of a blood vessel that passes through the abdominal wall to supply the skin and fat of the lower abdomen. A DIEP flap is a flap of the lower abdominal skin and fat supplied by this blood vessel.
Flap	A portion of tissue that is transferred with a blood supply.
Genetics	The science of inheritance. This is based on the fact that we all have two copies of genetic material in every cell in our body. One copy is inherited from our father and one from our mother. Genetics can predict the likelihood that a characteristic or disease is passed from parent to child.

Term	Description
IGAP	Inferior gluteal artery perforator. This is the name of a blood vessel that passes through the buttock muscles to supply the skin and fat of the bottom. An IGAP flap is a flap of the skin and fat of the bottom supplied by this blood vessel.
Immediate reconstruction	Reconstruction (in this context – of the breast) done at the same time as the initial treatment for the underlying condition (in this context – cancer).
Implant	An artificial device that is inserted surgically into the body for the purposes of repair or reconstruction. Breast implants are made of a substance called silicone.
Latissimus dorsi	A large muscle of the back which along with overlying skin and fat can be moved to the chest to reconstruct a breast.
Lipofilling	This is using small grafts of fat taken from another part of the body using liposuction and injected beneath the skin to improve shape and contour.
Liposuction	This is removing fat from beneath the skin using a metal tube called a cannula and suction. This is used to reduce the amount of fat in that area. The fat that has been taken can be used for lipofilling.
Lumpectomy	An operation to remove a lump. In this context a lump in the breast.
Mastectomy	An operation to remove the entire breast usually including the nipple.
Microsurgery	A technique to join very small parts together using an operating microscope and very small stitches.
NICE	The National Institute for Health and Clinical Excellence. NICE is an independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health. It makes recommendations on best practice in medicine and surgery.

Glossary of technical terms

Term	Description
Oncoplastic surgeon	This is a surgeon who has trained and specialises in the surgical treatment of cancer, and who also has trained in reconstructive techniques – in this context of the breast. Most breast oncoplastic surgeons have a background in general surgery rather than plastic surgery.
Partial mastectomy	When only part of the breast is removed along with the cancer.
Perforator	A blood vessel that passes through, or perforates, another tissue to supply a flap.
Plastic surgeon	A surgeon who has trained and specialises in plastic, reconstructive and aesthetic surgery.
Prosthesis (external)	An artificial device attached to or placed on top of a body part to replace what is missing. In this context an external breast shape that is inserted inside a bra to mimic the breast in a patient who has had a mastectomy, but no reconstruction.
Prosthesis (internal)	Another name for an implant. An artificial device that is inserted surgically into the body for the purposes of repair or reconstruction. Breast implants are made of a substance called silicone.
Radiotherapy	The medical use of ionizing radiation as part of cancer treatment to control malignant cells.
Reconstruction	To rebuild a part of the body in order to achieve healing, restore function and improve appearance.
SGAP	Superior gluteal artery perforator. This is the name of a blood vessel that passes through the buttock muscles to supply the skin and fat of the bottom. An SGAP flap is a flap of the skin and fat of the bottom supplied by this blood vessel.
SIEP	Superficial inferior epigastric perforator. This is the name of a blood vessel that emerges from the groin and passes into the skin and fat of the lower abdomen. An SIEP flap is a flap of the lower abdominal skin and fat supplied by this blood vessel.

Term	Description
Tattooing	The implantation of pigment into the skin – in this context to recreate the colour in a reconstruction of the nipple and areola.
TRAM	Transverse rectus abdominis musculocutaneous. This is the name of a flap that consists of a portion of the rectus abdominis muscle of the abdominal wall and the skin and fat of the lower abdomen along with its blood supply. A TRAM flap is commonly used to reconstruct the breast.
TUG	Transverse upper gracilis. This is the name of a flap that consists of a portion of the gracilis muscle of the upper inner thigh along with the overlying skin and fat and its blood supply. A TUG flap is sometimes used to reconstruct the breast.
Vein	A blood vessel that carries blood away from a body part.
Wide local excision	An operation to remove a lump, usually a cancer, with an appropriate margin of unaffected tissue in order to ensure its complete removal and minimise the risk of the tumour coming back in that area. Wide local excision followed by radiotherapy is often used to treat breast cancer, thus avoiding a mastectomy.

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