

# DIEP and MS-TRAM Flap Breast Reconstruction Surgery

DIEP - Deep Inferior Epigastric Perforator  
TRAM - Transverse Rectus Abdominus Myocutaneous

## Introduction

This information booklet is supplementary to information you will have already been given by your reconstructive surgeon and breast reconstruction specialist nurse. The section ***'What problems can occur after the operation?'*** describes these, and we would particularly ask you to read this. The headings from this section will also be included in the consent form you will be asked to sign before your operation. You can help to reduce certain risks by closely following the advice of your surgeon both before and after surgery. You will be provided with an additional post-operative care information booklet which will include physiotherapy advice and recommended post-operative exercises.

## Why choose to have a breast reconstruction?

For some women, the loss of a breast can reduce their feelings of femininity and make them feel less whole. An external prosthesis can go some way to improving how you feel, especially when clothed, but may be heavy and restrict what clothes you can wear. Having breast reconstruction surgery allows you to return to a similar physical appearance from before your breast cancer surgery. The aim of breast reconstruction is to create a breast mound that will restore the cleavage area and give you symmetry in clothing. However, the new breast that is created will not move or feel like the breast you currently have or had.

## What is a - Deep Inferior Epigastric Perforator (DIEP) flap

The term flap is used to describe the piece of tissue that is moved from your abdomen to your chest wall to reconstruct your breast.

A DIEP flap is used to recreate a breast mound by using only an elliptical piece of skin and fat from your abdomen. It uses small blood vessels, known as perforators, that are dissected out from the underlying rectus muscle to provide the blood supply to the flap and keep it alive. The rectus muscle is preserved and this helps retain abdominal strength. Blood vessels running along your breast bone or sternum in your chest are found and accessed by removing a small piece of the 3rd rib. The blood vessels from the flap are then sutured to the blood vessels within your chest using a microscope and microsurgery techniques. The flap is then moulded into a breast shape and secured on the chest wall, thus creating your reconstructed breast.

## What is a MS TRAM flap

A Muscle Sparing Transverse Rectus Abdominus Myocutaneous (MS-TRAM) flap is similar to a DIEP but with a MS-TRAM a section of the underlying rectus muscle containing the blood vessels is also removed with the overlying ellipse of skin and fat. A strip of the muscle is retained in a muscle sparing TRAM. If the entire width of muscle is harvested it is called a TRAM flap.

## What will my 'new breast' be like?

The aim of this operation is to create a breast mound that matches the size and shape of your remaining natural breast, so that you are symmetrical in a bra. However, it is important to realise that your reconstructed breast will not be an identical match and that perfect symmetry when you are naked would be difficult to achieve. The reconstructed breast will not move or feel like the natural breast either.

## When should I have my breast reconstruction operation?

The timing of the operation is an individual decision, determined by you and your surgeon. It can sometimes be done during the same operation as the mastectomy (immediate) or at least 6 months after the mastectomy (delayed), when any necessary treatment has been completed. Radiotherapy treatment may have a negative impact on the appearance on the reconstructed breast so for this reason some patients will wait to have their reconstruction until their cancer treatment is completed.

Some women find that immediate reconstruction helps them to cope with the emotions associated with the loss of a breast; they want to wake up after surgery with a breast mound. Other women may find it impossible to make decisions about breast reconstruction when they are coming to terms with a cancer diagnosis, and others simply don't want any more surgery than is absolutely necessary.

If you are a gene carrier, you may be considering having both breasts removed to reduce your risk of getting breast cancer. Again, breast reconstruction can be done during the same operation as the mastectomy (immediate) or at least 6 months after the mastectomy (delayed).

## Before the operation

### Is there anything I should do to prepare for my operation?

Your surgeon may recommend that you lose weight if your body mass index (BMI) is over 30 as this may result in problems after surgery; such as delayed wound healing and increased risk of complications following general anaesthetic.

We strongly recommend that you give up smoking at least 6 months before surgery and avoid any nicotine substitutes during that time and in the initial post-operative period. Smoking can risk the loss of flap loss, delay healing of the surgical wound, make scarring worse and increases the risk of complications following surgery and general anaesthetic.

If you take the combined oral contraceptive pill or HRT, you will be asked to stop it for 6 weeks pre-operatively (and use other contraceptive methods) since it increases the risk of blood clots forming in the general circulation during the operation. This also applies to Tamoxifen and we ask that you stop taking it 4 weeks before surgery. Once you are fully mobile again postoperatively you can restart these medications.

You will require a supportive sports bra to wear after surgery, which we ask that you bring in to hospital with you. This can be front or back fastening with adjustable straps and a deep band. It should be non-wired and avoid 'racer back' style sports bras that you need to be put on over the head. It is recommended that the sports bra is worn for 6 weeks day and night so it is worth purchasing two bras. They will give you comfort and support and help mould the breast reconstruction into a good shape. A bra extender is also advised which will make the bra more comfortable if you have bruising and swelling post-operatively. We ask you to purchase and bring into hospital a pair of high waisted support pants which will need to cover the whole abdominal area. You will need to start wearing these on discharge and for 6 weeks post operatively. Use your hip measurements to buy the right size.

The Breast Reconstruction Specialist Nurse will give you advice on where to purchase support pants and bras locally.

## What happens before the operation?

You will need to meet with a breast reconstruction nurse specialist at the Royal Devon and Exeter Hospital. This will allow you to talk through your operation in more detail and view photographs of what can be achieved with breast reconstruction. They will discuss what to expect during your stay in hospital and once you have been discharged home. They will ask you to have medical photographs of the chest area taken for your medical records with your written consent. You will be asked to complete a breast questionnaire (BreastQ) which asks you about how you feel about your breast prior to surgery. The purpose of this is to improve our breast reconstruction outcomes and you will be asked to complete a questionnaire at various points through the breast reconstruction process.

You will also be given information about The National Flap Registry but your surgeon will discuss this with you further.

Your breast surgeon will arrange for a CT angiogram scan prior to the operation. This allows the surgeon to assess the blood vessels/perforators that will provide the blood supply to the piece of abdominal tissue and see if they are large enough to carry out a DIEP. If they are not then your surgeon will discuss a Muscle Sparing TRAM instead.

## Pre-operative assessment

You will be asked to attend the hospital a few weeks before your surgery where you will meet a pre-operative assessment nurse (please allow approximately 2 hours for this appointment). You will also have a blood sample taken along with other tests such as an ECG (heart tracing) and. They will talk you through eating and drinking prior to surgery. It is important that you adhere to this or there will be a risk that your operation will have to be postponed.

## The day of the operation

You will be admitted on the day of your operation to Knapp Ward. A nurse will admit you to the ward and go through an individual plan of care with you and answer any questions you might have. A member of your consultant's team will discuss the operation details again and you will be required to sign a consent form, if you have not done so previously. You will also meet the anaesthetist at this point who will discuss putting you to sleep with a general anaesthetic and your Intra and post-operative pain relief.

## The operation itself

The operation will be performed under general anaesthetic in the operating theatre. The surgery itself usually takes approximately 6-10 hours, but may take longer in some cases. If you are having both breasts reconstructed the operation will be longer. We aim for there to be a team of two senior surgeons present during your operation. While one surgeon is raising the flap from your abdomen, the other will be accessing the blood vessels in the chest to which the flap will be connected. There may be a third senior surgeon in the operating theatre if you are having your surgery in the immediate setting; they will be responsible for removing your nipple and the breast tissue (mastectomy).

## After the operation

### How much does it hurt afterwards?

You will feel moderate pain and discomfort, especially when you move around or cough. It is important that you are as comfortable as possible so that you can carry out the necessary physiotherapy, move around regularly, and breath/cough properly, preventing post-operative complications, such as blood clots and chest infections.

You will be given regular oral analgesia by your nurse and you may have a pump system called a Patient Controlled Analgesia (PCA) attached to a drip in the back of your hand. The PCA comes with a hand set which you will have control over and allows you to manage any breakthrough pain you may get.

You may have a local anaesthetic block using for the first 2-3 days post-operatively. A rectus sheath catheter is a single thin, plastic tube which is placed in your abdomen, running along the scar line at the time of your surgery. This leaves a plastic filter close to your abdominal scar. The nursing staff can then administer local anaesthetic, via the filters, which will infiltrate your abdomen helping to keep it numb and help manage your pain.

You may find it uncomfortable moving the arm on the side where the surgery has been carried out, but it is important you continue using your arm, carefully, and carry out the exercises suggested by the physiotherapist as it prevents your shoulder from becoming stiff. You will find bending and stretching uncomfortable for a few weeks after surgery. Bending your knees and supporting your tummy with your hands when you bend or cough should help ease the discomfort and protect the abdominal wound.

### What should I expect in the first few days after the operation?

It is normal to feel exhausted and sometimes overwhelmed emotionally in the first few days following the surgery. The ward nurses will need to monitor the reconstructed breast closely, especially the first 24 hours, allowing early detection of any problems. This intense monitoring will leave you feeling sleep deprived. There will be a degree of post-operative swelling around the reconstructed breast and your abdomen.

Keeping you warm will assist blood circulation in your reconstructed breast. This will be done via a warming blanket called a Bair Hugger for the first 2-3 days. This can make you feel extremely warm and sometimes restless. The nursing staff will monitor the flap's blood supply every half an hour for the first 12 hours post-operatively. If there is a problem with the blood supply to the flap then you will need to be taken back to theatre to have this investigated with the aim to re-establish the blood supply. In 5% of patients, this may not be successful and the flap may die and need to be removed completely.

You will be given oxygen continually via your nose and fluids via a drip in your arm to replace any fluid that you need. You will have a urinary catheter so that we can monitor your urine output easily, and so that you do not have to keep getting out of bed whenever you need to pass urine. Preventative measures such as 'calf pumps' and small daily injections are used to protect you against the risk of blood clots post-operatively.

You will have a drain in the breast and one either side of the abdomen. This is so that any excess blood or fluid does not collect around the wound sites. You will be given antibiotics while you have the drains to help prevent any infection, as this can delay healing and risk the viability of the reconstructed breast.

Most of the first day will be spent resting in the bed. You will be encouraged to lie with your knees bent, supported by pillows behind your back and under your knees, to avoid tension on your abdomen. You will need to support your abdomen with your hands when coughing or moving.

The first day after surgery a physiotherapist will show you how to carry out deep breathing/ coughing, circulatory leg exercises and suitable arm/shoulder exercises. Once you are walking around and drains are removed you will need to wear support pants which provide support while your abdomen is healing and applies an even pressure on the wound to reduce any fluid collecting inside and help the appearance of your scar.

## When can I go home?

You should expect that under normal circumstances you will be discharged from the ward approximately 4 days after your operation when you are walking around easily, and are reasonably comfortable. Your breast and abdominal wounds will be checked and your dressings replaced prior to your discharge if necessary. We expect you to be discharged wearing support pants and a sports bra, which you will be expected to provide. It is also likely that you will be discharged home with some of your drains still in place. The district nurse will review this daily and remove it when appropriate. When travelling home in the car, you may find putting a small soft pillow beneath your seatbelt more comfortable and on other car journeys in the early stages of your recovery. It is essential to have help and support at home for the first 2 weeks as you will be restricted by what you can do. If you have young children you should arrange adequate child care during this time.

You will be sent home with a discharge summary and adequate analgesia. Your breast reconstruction nurse will contact you at home in the first few days after your discharge to see how you are.

## What problems can occur after the operation?

Below is a list of things that we ask you to be aware of once you have been discharged from hospital. If you are worried about any of them

then we would ask you to contact your breast reconstruction nurse as soon as possible.

- Severe pain in breast or abdomen
- Very high temperature (above 38°C)
- Redness/heat/excessive swelling of the breast or abdomen
- Fluid/pus/blood coming from the wounds
- Offensive smell from wounds
- Breast feeling very cold or looking very pale or if the flap is looking blue/purple in colour
- Pain/swelling in calves
- Sharp chest pain or shortness of breath

## What about follow up?

You will be seen by either your surgeon or a plastic surgery nurse approximately 7-10 days after going home. They will check your reconstructed breast and abdominal wounds, and re-dress them with supportive tape which they will ask you to carry on doing for a further 4-6 weeks.

From 4-6 weeks after your operation we will advise you to massage the skin over your reconstructed breast and all suture lines daily with moisturising or proprietary scar cream. This keeps the skin supple and in good condition and helps to flatten out scar tissue.

You will be seen again approximately 3 months after your operation by your surgeon. During this appointment you will be asked to complete another breast questionnaire and have a further set of medical photographs taken.

**If you have any questions please contact the breast reconstruction nurse specialists.**

Monday-Friday 09:00-16:30  
**01392 402707**

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by RD&E staff undertaking procedures at the RD&E hospitals.

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