## Feedback

We appreciate and encourage feedback. If you need advice or are concerned about any aspect of care or treatment please speak to a member of staff or contact the Patient Advice and Liaison Service (PALS):

**Freephone:** 0800 183 0204
**From a mobile or abroad:** 0115 924 9924 ext 65412 or 62301
**Deaf and hard of hearing:** text 07812 270003
**E-mail:** pals@nuh.nhs.uk
**Letter:** NUH NHS Trust, c/o PALS, Freepost NEA 14614, Nottingham NG7 1BR

www.nuh.nhs.uk

The Trust endeavours to ensure that the information given here is accurate and impartial.



NHS
Nottingham University Hospitals NHS Trust

# Free Flap and Local Flap Reconstruction

Information for patients

**Trauma and Orthopaedics**
**Plastics Surgery**

This document can be provided in different languages and formats. For more information please contact:

Limb Reconstruction Service
07875 165 691
0115 924 9924 ext 62472

We Listen We Care

## Introduction

This leaflet is aimed at patients having soft tissue reconstruction to a limb with the plastics surgical team as a result of trauma or to cover a defect following planned surgery.

## Why do I need a flap?

Your limb injury / planned reconstructive surgery has left you with an open wound with exposed bone or metalwork. The flap will be used to cover the wound because it cannot simply be stitched together.

## What is a flap?

A flap is the movement of your tissue along with its blood supply from one part of your body to another. A flap may be composed of skin, fat, fascia (fibrous layer), muscle or a combination of these.

The most common types of flap used are fasciocutaneous flaps composed of skin, fat and fascia. Other flaps such as muscle flaps require a skin graft over the top of the muscle.

## What is a free flap?

A free flap is the movement of tissue from one part of your body to another. The tissue together with its blood supply is removed from its original location and transplanted to an area on your body where there is the injury / defect. The free flap has its blood supply re-established in this new location.

The plastic surgeon and specialist nurse practitioner will discuss with you the options of where this tissue will be moved from. Common sites include the thigh, calf and back.

Your reason for free flap ……..…..

Your location on body for harvesting free flap……..



## Notes

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## Useful contact numbers after discharge

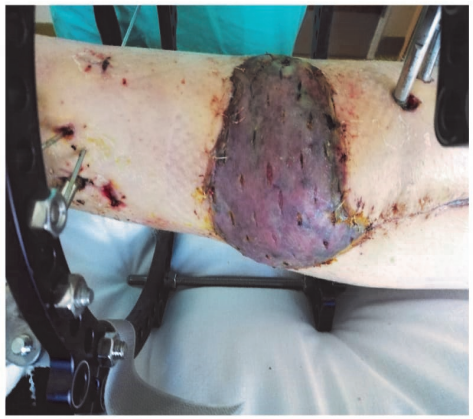
| | |
|---|---|
| Advanced Nurse (Clinical) Practitioner for Limb Reconstruction | 07875 165 691 (Mon-Fri) |
| Trauma Co-ordinator | 07812 275 693 (Mon-Sun) |
| Fracture Clinic (plaster room) | 0115 9249 924 ext 61037 (Mon-Sun) |
| Fracture Clinic Reception | 0115 924 9924 ext 83040 (Mon-Fri) |
| Gilles plastics dressing clinic City Hospital | 0115 969 1169 (Mon-Fri) |

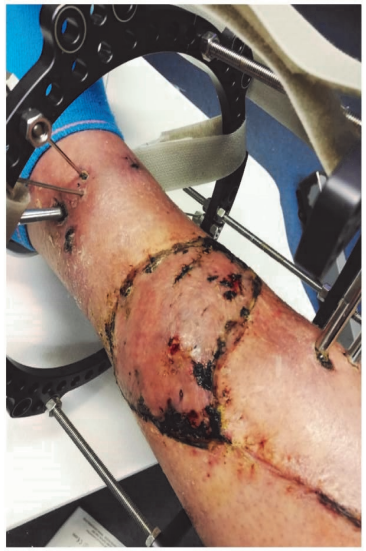
For urgent problems with you flap or skin graft
out of hours please attend the Emergency Department
for medical review.

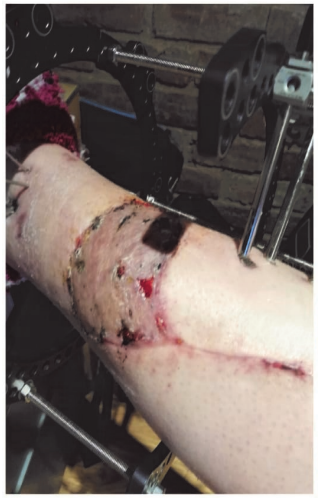


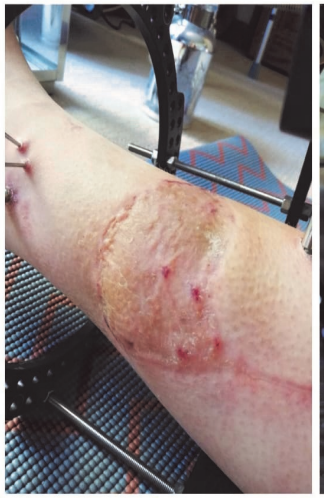
## Example of a free flap maturing post surgery

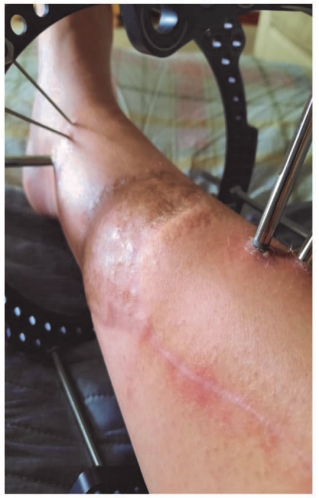
**Week 1 after surgery to 5 months**











## What is a local and pedicled flap?

- A local flap is tissue harvested next to the area of soft tissue loss.
- A pedicled flap is when the harvested tissue is left attached to the donor site via a pedicle that keeps its original blood supply. Referred to by your surgeon as its ‘pedicle’.

**Example of a gastrocnemius (pedicled) muscle flap**



**Appearance of flaps and skin grafts**

Over the first month or two, the free flap can be slightly bulky in appearance. This usually settles within the first year and will gradually change colour and reduce in size.

After this time, if you are still concerned about its appearance, you will have the opportunity to discuss this with your plastic surgeon in the out-patient clinic.

**Infection**

Infection will be treated with antibiotics. On discharge if you have any concerns about infection, contact the numbers at the end of this booklet or attend the Emergency Department.

## Compression bandaging

Your plastics team may wrap your flap with a compression bandage (e.g. Coban) a few days or week after your free flap surgery.

The timing of this is dependent on the appearance of your free flap and will occur under their guidance.

Compression bandaging is helpful in reducing flap swelling and assists in flap maturity.

## Problems you may experience after your surgery

**Failure of the flap or skin graft**

The blood supply to your flap may be interrupted causing some of the components (skin, fat or muscle) to die. This may be due to ‘external’ compression of the flap (e.g. tight dressings) or ‘internal’ compression such as bleeding or a ‘clot’ which has blocked the flow of blood to your flap.

This risk is higher within the first 72 hours of surgery and early recognition is valuable in order to preserve the flap. Further surgery may be required if this happened.

Failure of the skin graft is usually due to infection and bleeding at the wound site. This can often be managed conservatively with dressings and antibiotics. Your plastic surgeon or clinical nurse specialist will regularly keep you updated about this.

**Loss of sensation (numbness)**

The majority of free flaps do not have any sensation when you touch them and this is normal. If you have had trauma to your limb you may also have injured nerves. This numbness may improve over time (with varying degrees) but it can take 12 - 18 months to do so.



## What happens before your surgery?

Before your surgery to cover your wound, the plastic surgeon will outline the proposed procedure, discuss the complications that may occur will answer any questions that you might have about your injury.

You may need to have a pre-operative scan of your injured limb to assess the blood supply to and from the limb. This will help with planning the operation.

## What happens after your surgery?

After your surgery your flap will be monitored regularly by the ward nurses and doctors. After having a free flap, you may be transferred to a high dependency ward for the first 48 hours after surgery. Your plastic surgical team will make this decision.

It is important that you are kept warm for the first few days after your surgery so that the blood flow in and out of your new flap is maintained. You will also have a warmer on top of your limb for the first few days called a ‘Bair Hugger’. This is to keep the new free flap warm. Your plastics surgeon will let you know when the Bair Hugger can be removed when they come to review your flap.

Your vital signs such as heart rate, blood pressure and temperature will be checked regularly as well as the urine output. A urinary catheter may be needed to help monitor this.

After your surgery It is important that the you have the right amount of fluids to keep your heart rate / blood pressure stable to keep your flap healthy. You may require fluids to be administered via a drip.

Your limb will be bandaged but a ‘window’ left in order for the nurses and doctors to monitor your flap.

## Skin grafts

You may require a skin graft at the same time as your flap surgery. This involves taking a thin layer of your skin and moving it to the new site on your limb. The area where the skin is removed from is called a ‘donor’ site. When the skin graft is moved to its new location, it takes up a blood supply from the wound bed beneath.

Common areas for skin grafts to be taken include the thigh and occasionally the lower leg. This will be discussed with you prior to your surgery.

The dressing of a skin graft will stay in place for 5 - 7 days. If there is any leakage through this dressing before that time, the plastics team will be contacted to review your skin graft sooner.

The donor site for your skin graft will have a dressing and this stays in place for up to 14 days to ensure it has fully healed. This will be removed either on the ward or at your first clinic appointment depending on when you are ready to be discharged. Your plastics surgery team will let you know.

Over the weeks and months the donor site colour will change, becoming more skin coloured.

During hot weather it is important to cover this area with clothing as it will always be prone to sun burn.



# Rehabilitation after a free flap

## Physiotherapy

After your free flap surgery you will have up to four days bed rest before you are able to start standing and transferring into a chair.

Before you start walking with a frame, it is important that the flap is given time to adjust to it’s new position and blood supply so it doesn’t become congested which means accumulation of blood.

You will start by dangling your leg with the physiotherapists for short periods gradually increasing to longer periods over six days as indicated below:

- **Day 4 post surgery** - 5 minutes every hour if tolerated
- **Day 5 post surgery** - 10 minutes every hour if tolerated
- **Day 6 post surgery** - 15 minutes every hour if tolerated
- **Day 7 post surgery** - 20 minutes every hour if tolerated
- **Day 8 post surgery** - 25 minutes every hour if tolerated
- **Day 9 post surgery** - 30 minutes every hour if tolerated

Sometimes the free flap becomes swollen as you start to increase dangling. In this instance, you will be advised to reduce the time dangling and elevate.

## When can I weight bear?

The time you can start to weight bear will be dependant on:

- Your free flap tolerating the dangling regime
- Orthopaedic surgery post-operative instructions