

Information for patients about

# Glasgow Limb Reconstruction Service



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## Contact Information

### Team Members:

**Orthopaedic Consultant:** [Mr Angus Maclean](#) and [Mr Colin Drury](#)

**Limb Reconstruction Clinical Nurse Specialist:**

### Contact Details:

0141 201 6636 or 07814314386

**Mobile:** 07814314386

### Email:

**Limb Reconstruction Secretary:** [Tracey Wilson](#)

**Telephone:** 0141 201 3723 (answer machine available)

There is a Specialist Registrar appointed to work with the team. These doctors change every six months.

In the unlikely event of an emergency, please contact:

- Your nearest Emergency department
- Your own GP for advice
- NHS 24 on 111



## About the Limb Reconstruction Service

Glasgow Royal Infirmary is a specialist centre for Limb Reconstruction in Scotland. Specialist surgery includes treatment of severe joint injuries, fractures of the lower limbs, injuries requiring application of an external fixator (frame) or correcting a deformity.

The unit receives referrals from hospitals all over the West of Scotland and the majority of surgery at Glasgow Royal Infirmary is for major trauma and post traumatic complications.

The Limb Reconstruction Clinic is held on a Friday Morning.

There are four orthopaedic wards in Glasgow Royal Infirmary and these are Ward 61, 62, 26 and 27.

Ward and clinic staff (e.g. doctors and nurses), physiotherapists and occupational therapists play a large part in the care of a Limb Reconstruction patient.

### Theatre Days:

Mondays:	Mr Drury – every 3rd Monday. (Emergency and urgent cases)
Tuesdays:	Mr Maclean – every 3rd Tuesday (Emergency and urgent cases)
Wednesdays:	Mr Drury's Elective Theatre (Non Emergency)
Thursdays:	Mr Maclean's Elective Theatre (Non Emergency)

Theatre slots are allocated according to:

- priority,
- urgency of care and
- waiting list times.



**This booklet will give you and your family information about external fixators.**

### **What is external fixation?**

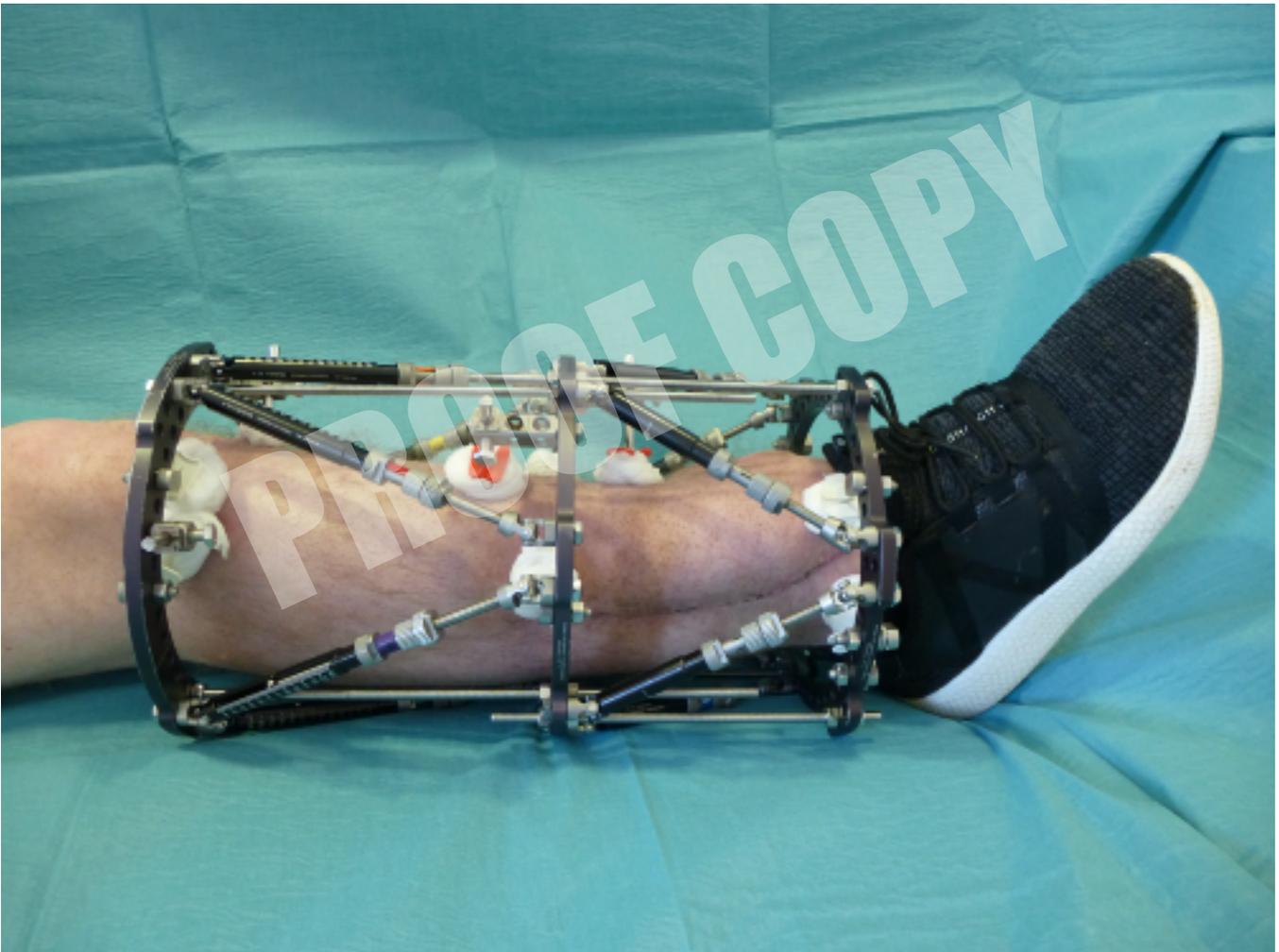
This is a method of holding broken bones in place. There are different types of external fixators. Some fractures are difficult to treat and need a circular external fixation (we sometime call these circular frames).

There are many brands of frames available. In Glasgow Royal Infirmary, we are currently using the Taylor Spatial Frame made by Smith and Nephew.

### **Taylor Spatial Frame**

This frame is based on the same principles of the Ilizarov Frame. This consists of two rings connected by six struts which are attached to the rings by universal joints, allowing them to turn freely.

### **An Example of the Taylor Spatial Frame**



## What do we use circular frames for?

We use circular frames for:

1. Bone defects
2. Fractures (e.g. intra-articular; non union fractures)
3. Deformities
4. Leg lengthening

## Surgery

You will need surgery to have your circular frame fitted. Your surgery takes place in an operating theatre. Usually we will give you a general anaesthetic which means you will be asleep. The anaesthetist will discuss your anaesthetic options with you.

The Consultant, their Specialist Registrar and a team of theatre nurses will apply your circular frame. The surgery usually takes around 3 hours in total. Following this you will spend a short period of time in the theatre recovery area before returning to your ward. You will be drowsy following your anaesthetic and this will last for several hours after you return to the ward.

We usually advise only one or two visitors attend the ward on the evening of your surgery.

### 1. Bone defects

There are different types of bone defects. These can be a result of a bone infection (osteomyelitis) or bone disease (e.g. osteoporosis) or in some cases the bone defect may be caused by a type of bone cancer (tumour).

The most common type of bone defect we see at the Limb Reconstruction clinic is due to infection. This may be due to previous surgery to the limb or because the bone punctured the skin at the time of injury and was exposed to the elements which led to an infection.

## Osteomyelitis

Osteomyelitis is an infection that most often causes pain in the long bones in the legs. Other bones, such as those in the back and arms can also be affected. Anyone can develop osteomyelitis. You're more at risk of getting an infection in a bone if you have:

- Recently broken (fracture) a bone
- Been injured or have a wound
- An artificial hip, or a screw in a bone
- Recently had surgery on a bone
- A weakened immune system – e.g. due to chemotherapy or you have another serious illness
- Had osteomyelitis before
- Diabetes, especially if you have a foot ulcer.

You will need antibiotics to treat the infection and surgery is often also required. If the infection has damaged the bone, you will need surgery (known as debridement) to remove the damaged part. Sometimes more than one surgery is needed to treat the infection. Your surgeon may use muscle and skin from another part of the body to repair the area near the affected bone.

## Surgery for bone defects using a circular frame

We usually remove bone defects i.e. we remove the infected bone and then we can join two healthy sections of bone together and allow them to heal. In these circumstances, it is common to break the same bone (osteotomy) in a healthy part of the bone and then slowly pull the ends away from each other to lengthen the bone. This procedure is called **Distraction Osteogenesis**. This allows you to gain the length back in your leg to prevent having one leg shorter than the other.

It is not always possible to do this type of surgery as you must have a good blood supply to the leg in order to grow new bone. If the surgeon feels this surgery is too risky they will discuss other options.

The lengthening process is very slow and is tightly controlled. If the bone is lengthened too slowly, it may heal before lengthening is completed. If the bone is lengthened too fast, the new bone that forms may not be good quality bone and may fracture easily. Children and young adults can lengthen more quickly than adults as their bones heal quicker. Adults with other health issues such as diabetes or smoking will heal slower as the blood supply is not as good as a healthy adult.

### Arthrodesis:

Arthrodesis is a type of surgery which involves the fusion of a joint whereby the surgeon joins two sections of healthy bone together. This surgery is mainly for pain control reasons (e.g. severe arthritic joints causing extreme pain) but it can also be used if you have an infection.

You would make adjustments to the circular frame to compress (squeeze together) the two ends of bone. This makes the joint stiff and you will be unable to flex or bend the joint. This is permanent and you would need to learn to cope with not being able to bend the joint.

## 2. Non Healing Fractures

A fracture that has not healed is called a Non-Union. There are many reasons why a fracture may not heal:

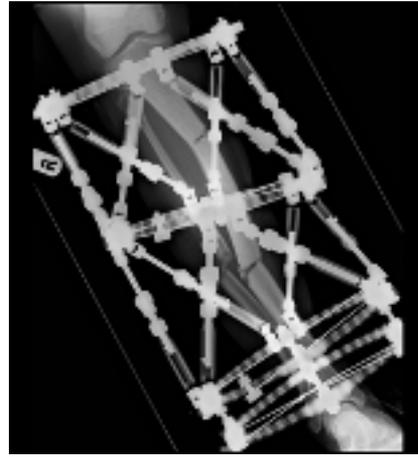
- It may be that the current fixation method has broken
- There may be impaired blood supply due to vascular disease
- There may be infection present
- Smoking and excess alcohol consumption can delay healing in a bone

Treatment usually involves removing the two ends of damaged bone and then joining the two healthy ends together and holding them in place with either a frame or other internal metalwork.

## 3. Correcting Deformities:

Deformities can occur either from a mal-united fracture (where a fracture has healed, but in the wrong position or at the wrong angle) or because of a congenital condition (a condition you were born with). It is possible to correct most deformities using a circular frame, for example the Taylor Spatial Frame.

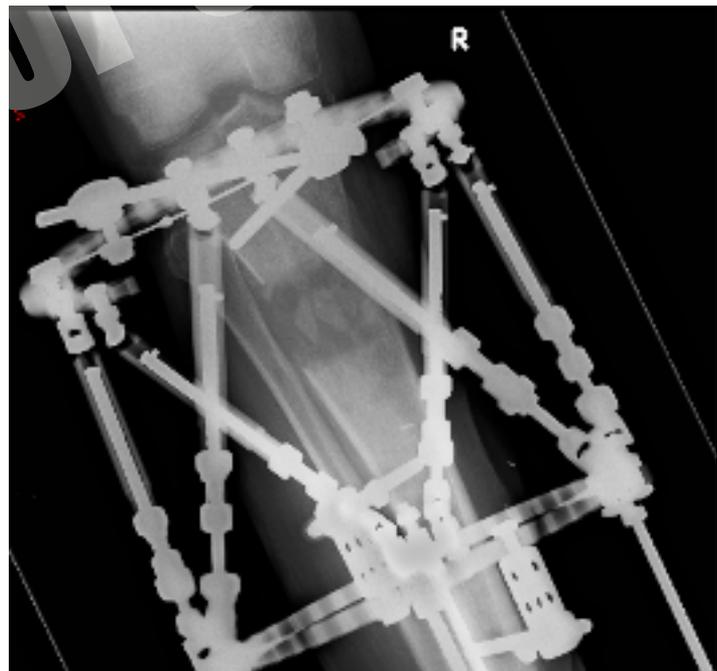
The correction can take place during your surgery or when we apply your frame or both. Your surgeon will give you instructions about adjusting your frame. (Please see page 11) This can take days or weeks depending on the initial level of deformity.



#### 4. Limb Lengthening:

We can use circular frames to lengthen your lower limbs. A congenital condition or a traumatic incident involving your growth plates can cause one limb to be shorter than the other. You may also lose some limb length if we remove any damaged bone when in theatre e.g. if you are having infected bone removed.

We use a procedure called a corticotomy or osteotomy (surgical bone division) to restore limb length. It is common to break the same bone (osteotomy) in a healthy part of the bone and then slowly pull the ends away from each other to lengthen the bone. This division is distracted or pulled apart after a period of approximately 10 days by externally adjusting the frame. New bone then forms in the gap produced.



## Pin Site Care

Pin sites are the areas where pins or wires come through the skin and it is very important to keep these clean. While you are in hospital, the nursing staff will look after your pin sites. However, when you go home you may need to do this yourself. The Limb Reconstruction Nurse will show you how to do this. If this is not possible, we may contact the district nurses for assistance.

### The aim of pin site care is to:

- Prevent or minimise infection
- Prevent overgrowth of skin from around the pin or wire

### To help you care for your pin sites, we will give you

- A bag containing dressing packs, gauze swabs and foil bowls
- Chlorhexidine – for cleaning the sites
- Information on how to care for your pin sites.

### How to care for your pin sites:

For the first three days after your surgery, the nurses will clean the pin sites and change the dressing every day. You should then clean and change the dressings every 7 days. However, if any of the individual pins or wires are leaking or show signs of infection, you must clean and change the dressings more often, which in some cases will be every day.

- You may want to take pain killers 30-40 minutes before you change your dressings.
- Perform pin site care in a methodical fashion. This means firstly, washing your hands, washing the limb, secondly, cleaning all the individual sites and thirdly changing the dressings on the sites.
- Only apply enough pressure with the plastic clips to keep your dressings in place. The clips can cause a pressure sore. If you have an awkward angled wire, you may need an extra layer of the dressing.

### Showering:

You may shower with a frame on however we advise you not to have a bath. Bathing can increase the risk of pin site infections. On the day your pin site dressings are due to be changed, you should remove all your pin site dressings before showering. You may use any shower gel or soap. It is not necessary to use antibacterial soap. After the shower, you must dry your frame and leg using a clean towel. You should apply your new pin site dressings immediately after your shower.

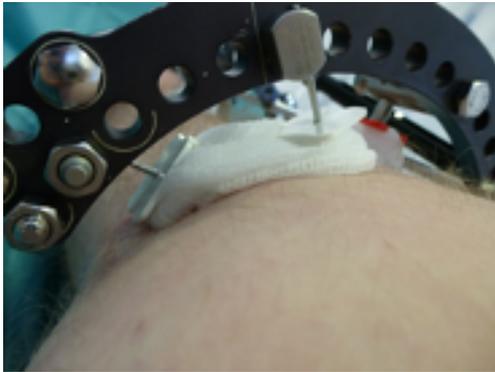
If you wish to shower on days where your pin site dressings are not due to be changed, you should cover your frame with a plastic bag to keep the dressings dry.

### Tips:

- Avoid over-compression. If you remove the previous dressing and there is a significant dip in the skin around the pin, then the clips have been pressed down too hard. This can lead to pressure sores.
- Make sure the surrounding skin is clean.
- Use a moisturiser such as E45 on dry, flaky skin but do not apply around the pin sites.

- Make sure the frame (rings and rods) is clean as well, as this can prevent infection in the pin sites. You can clean it when you are in the shower. You can shower on the day you change your pin site dressings. Remove all old dressings and wash the frame and your skin including pin sites with warm non- perfumed soapy water. Do not immerse your frame in a bath as this can cause pin site infections. Showers are advised.
- Please access the teaching video on pin site dressings at the following website: [www.youtube.com](https://www.youtube.com) in the search box type "NHS GGC pin site"

### Example of a well dressed pin site



### Signs of an infection:

The following are signs of an infection:

- Increased pain
- Redness and swelling
- The skin feeling hotter in comparison to the other limb
- Yellow or green discharge from around a pin
- Flu-like symptoms

If you have any of these symptoms please contact the Limb Reconstruction Nurse Specialist or see your GP urgently. If out of hours or at weekends, contact NHS 24 on 111.

### How we treat an infection:

If you have an infection around a pin site, we will give you antibiotics. You will also need to clean the pin site each day and change the dressings. Only change the dressing of the affected pin site. Do not change the other pin sites until their scheduled day.

If you have persistent problems with a particular pin site, we may have to admit you into hospital to give you antibiotics through a drip (IV) and change the wire.

## How to manage your pain

### Before surgery:

For acute fractures you will need regular painkillers and probably morphine (only when needed) during the initial period before you go to theatre. Raising your limb and correct positioning can also help to relieve discomfort or pain.

You may already be on a programme of pain control from your GP but this may need altering once we admit you and later when you go home from hospital.

## After your surgery:

Due to anaesthetic nerve blocks, patients often are not in a huge amount of pain immediately after surgery. However, as these blocks wear off, you will feel an increase in pain. We will prescribe a strong painkiller (oramorph) that you can request from the ward nurse. This is a liquid and you should request this when ever you feel the pain increasing.

**It is important to be aware that you are unlikely to be pain free, especially in the first few weeks, sometimes months. We aim to have you at a level of pain that you can tolerate (cope with).**

We will prescribe you pain killers to take home. These will be in tablet form and we will give you a 7 day supply. Therefore you will need to request repeat prescriptions from your GP. We advise you to contact your GP as soon as you get home to tell them of your current situation. This will allow time for your surgery to prepare for repeat prescription requests.

**You should not take anti-inflammatory painkillers such as aspirin, diclofenac (Voltarol) and ibuprofen as this can delay your bone from healing.**

**Caution:** There are certain painkillers that may cause constipation. If you are taking painkillers that contain codeine, you may require a mild laxative if you become constipated.

## Reducing your pain killers

If you are taking strong opiate based pain killers such as morphine (Longtec or Shortec) and Tramadol, you will need to start a reducing regime. You will do this with the guidance of your GP. **You must not stop taking these tablets at once as you will suffer from withdrawal symptoms.**

We usually advise commencing a reducing regime after you have completed any strut adjustments as this process can be painful. If you do not require strut adjustments, you should commence a reducing regime as soon as possible usually within 6 weeks of having your frame applied.

Most patients can manage their pain on a simple co-codamol or paracetamol regime by 3 months after frame application.

## Other Methods of controlling your pain:

- Distraction techniques such as reading, watching TV etc. may take your mind off your pain
- Positioning of your limb – raising your limb
- Relaxation techniques and reassurance – e.g. listening to music, reading and deep breathing exercises. You may also telephone the limb reconstruction nurse for help and advice.

## Adjusting your Frame

You may need to adjust your frame. Adjusting your frame allows:

- Deformity Corrections
- Lengthening of a limb
- Assistance with fractures that have had difficulty in joining or healing

Your surgeon will explain why, how and when to make adjustments to your frame.

You may need a pair of **10mm** spanners to adjust your frame. The Limb Reconstruction Nurse will give you these spanners. We will teach you how to adjust the frame and tell you how often to adjust it. We will give you as much help and support as you need.

**You may want to take painkillers before adjusting your frame as it can be painful.**

## How to adjust the Taylor Spatial Frame:

- On the Taylor Spatial Frame there are 6 telescopic, numbered and colour-coded struts. These are marked rather like a ruler.
- At the end of the strut there is an adjustment knob and when turned, it moves a marker up or down the 'ruler' section.
- A 'click' can usually be felt when a whole turn is made, however the struts can become quite stiff to move and in this instance the 'click' will not be felt. Use the markings for guidance and also a spanner if they do stiffen.
- Each strut is adjusted to a specific number as advised by your surgeon.
- The strut adjustments should be done slowly throughout the day and **not** all at once.
- Wires and pins will be dragged through the skin during the adjustment process. These sites will develop a 'track-like' mark and may become inflamed and at greater risk of infection. If they start to leak you will need to clean them more often and apply an extra layer of dressing where possible.

**Please Note:** The struts come in different lengths and may need to be changed according to your individual needs. The Limb Reconstruction Nurse Specialist in the clinic will carry out these strut changes.

## Rehabilitation

### Physiotherapy

Physiotherapy is an important part of this process and the physiotherapist will teach you specific exercises that will stretch your muscles and soft tissues. The aim of physiotherapy is to maintain and improve movement, strength and function. It is important to continuously assess and evaluate treatments and to monitor and highlight concerns, i.e. developing any stiffness around a joint or a sudden increase in pain. We will refer you to an outpatient physiotherapist local to you before you go home from hospital. **It is vitally important that you attend these appointments.** Your physiotherapist will follow a set of guidelines provided by the Limb Reconstruction Team. This includes aiming to progress with full weight bearing and weaning you off crutches as soon as possible.

### Occupational Therapy

An occupational therapist may review you by whilst you are an inpatient if necessary. They will discuss and assess your Activities of Daily Living i.e. managing to get dressed, managing to have a shower and preparing food etc. If you need any assistance with such activities, the occupational therapist will arrange and send any appropriate equipment to your home. If you need any input from social services, such as home help, they will arrange this before you go home.

It is important to know that arranging these services does not usually delay your going home but if your situation is complex, this will need a lot of organising. We will ask you to remain patient with us while we make the arrangements.

Generally we do not advise using wheelchairs unless there are severe mobility issues. We advise patients to be as mobile as possible whilst the frame is on and this is an important part of your rehabilitation. If you need a wheelchair the occupational therapist will assist with organising this but you will need a home assessment to make sure the wheelchair fits in your home. This may delay your discharge by a day or two.

## Going home from hospital

We will give you:

- Painkillers to take home with you
- A bag containing enough dressing packs, gauze swabs for about 2-3 dressing changes
- Chlorhexidine 0.5 % solution to clean the pin sites and use on the dressings
- An outpatient appointment letter

### Follow up

Usually you will have a follow up appointment 2 weeks after you go home from hospital.

You will need to attend the clinic regularly for check ups and x-rays during this phase of treatment. This is to make sure the bone is responding to treatment.

### Patient Transport

If you need transport to attend your appointment you must organise this yourself. If you cannot make your own way to the hospital then you should telephone for hospital transport on **0300 123 1236**. This is a free phone number. If you come via this service then please bring a book and some lunch or refreshments!

### Coping at home

The ward physiotherapist and the occupational therapist will assess you whilst you are in hospital. If you require any special equipment to aid your recovery at home, this will be arranged for you.

### Washing

**You cannot have a bath whilst you are in a frame as this will increase the risk of developing a pin site infection.** The ward nurses will give you help and advice on showering. We will advise you to have a shower on the day your pin site dressings are due to be changed. If you wish to shower on a day that your pin sites are not due to be dressed, we advise that you cover your leg before entering the shower. This can be done by using a large bin bag and sealing it at the top with tape.

### Returning to School or Work

Many patients are able to return to work or school whilst in a frame. The advice is usually to take time off work or school whilst you are adjusting your frame. This is due to the fact you will be taking quite strong painkillers and are unlikely to be feeling up to returning to work or school. Once your adjustments have finished and your pain levels have eased off, it is possible that you return to work or school. The Limb Reconstruction Nurse may need to visit your school to make some arrangements for you; we can arrange this before your return.

### Driving

Many patients are able to drive whilst in a frame. However, this depends on the style of frame you have on i.e. **if you have a foot plate to immobilise your ankle, you will not be able to drive.**

If you drive an automatic car, it will be easier and quicker for you to return to driving.

You can usually start to drive once your adjustments have finished and your pain levels have reduced.

You must be able to carry out an emergency stop safely and always tell your insurance company.

## Dietary Advice

It is important that you eat a healthy, balanced diet. Whilst you have a broken bone you must eat calcium rich foods. Calcium is one of the key minerals in maintaining healthy bones. Calcium rich foods include

- milk, cheese and other dairy foods
- green leafy vegetables, such as broccoli, cabbage and okra, but not spinach
- soya beans
- tofu
- soya drinks with added calcium
- nuts
- bread and anything made with fortified flour
- fish where you eat the bones, such as sardines and pilchards

Adults need 700mg of calcium a day. You will be able to get all the calcium you need from your daily diet. If you take a calcium supplement you should not exceed 1500mg per day, as this may cause diarrhoea or stomach pains.

## Vitamin D

You need Vitamin D (or the Sunshine Vitamin) to help the body absorb calcium. Sunshine is where most of your Vitamin D comes from and as little as 15 minutes 3-4 times a week can produce enough Vitamin D to last a year. You do not need to sunbathe as long as your face, hands, legs or arms are exposed (before applying sunscreen). However there are foods that include Vitamin D and you can also include a supplement in your diet.

### Foods include:

- Oily fish such as salmon, sardines, pilchards, trout, and kippers contain reasonable amounts of vitamin D
- Cod liver oil contains a lot of vitamin D (don't take this if you are pregnant)
- Eggs, meat and milk contain small amounts but this varies during the seasons
- Margarine, some breakfast cereals, and some yoghurts have added or are 'fortified' with vitamin D

## Clothing Advice

Finding clothing that fits over the frame can be difficult. For women, it may be easier to wear long skirts. For me, or women who do not wish to wear a skirt, it is important wear baggy trousers or even shorts in milder weather. We advise you not to wear expensive clothing as sometimes the wires can tear clothing. Tracksuit bottoms with zips or buttons up the side are ideal, if you get them. You may wish to carry out some clothing alterations to suit your own needs.

Your Limb Reconstruction Nurse can give you information on what clothing alterations may be suitable for you.

## Common complications

### Pin site infection

Looking after the pin sites plays an important part in the maintenance of your circular frame. You need to clean and dress these regularly as the wire or pin goes through skin, tissue and bone. Therefore if you get an infection around the pin or wire and do not treat this, there is a risk that this could track down towards the bone (osteomyelitis) creating further problems such as; increased pain and delaying your recovery

Pin site infections are quite common and it is usual to have one or two minor infections over the course of treatment. We can treat the vast majority of infections with antibiotics.

### Signs and symptoms of an infection:

- Increased pain, localised only around infected pin site
- Redness and swelling
- The skin feeling hotter in comparison to the other limb
- Yellow or green offensive discharge from around a pin
- Flu-like symptoms
- Increased pain when trying to weight bear

Therefore regular cleansing, dressing and checking is very important.

### Treatment:

- Antibiotics – either tablets or IV (depending on the severity or history of the infection)
- Changing the wire if there are persistent problems with infection
- Daily cleansing (with Chlorhexidine) and redressing
- We may take a swab to check what kind of infection you have

### Wire or pin breakage

Occasionally wires and pins can snap or break. If this happens please contact the Limb Reconstruction team.

If the wire or pin has snapped within the limb, you will need to come into hospital to have the wire or pin changed. However, if the wire has broken close to the ring, then we can usually re-attached and re-tension it in the Limb Reconstruction Clinic.

It is important that you tell us clearly what has snapped if you are phoning for advice.

## Frame Removal

Once your consultant decides it is time for you have your frame removed, we will give you a date to come into hospital. We usually aim to give you a date within a month. We aim to have you home on the same day, although some patients need an overnight stay following the procedure. This will depend on transport and medical condition.

The procedure takes place in theatre and we will give you a light general anaesthetic. During the procedure, the consultant uses x-ray screening to thoroughly assess the amount of healing that has taken place. Once full healing has been confirmed, the frame is removed. This whole process takes less than 30 minutes.

If the x-ray screening shows movement at the fracture site, this means your fracture has not healed. The consultant might leave your frame on in this case. This is a rare occurrence and is usually advised by the consultant before going into theatre. Some patients need a cast on their leg after frame removal and some patients manage to wear a removable walking boot. Your surgeon decides this at the time of frame removal. Your consultant decides which is appropriate to your condition. If you do not need a cast or boot, you will have a padded bandage over the leg which is protecting the dressings used to cover your pin site holes. You can remove this bandage after 2-3 days when at home. You can then remove the dressings covering the holes after a week. You do not normally need any further treatment for the pin site holes. If you need this you will see the limb reconstruction nurse.

## Commonly asked questions

### 1. Does the frame hurt?

The first 48 - 72 hours after your frame is applied is always the worst. Therefore, we will give you strong painkillers to help reduce the pain. The pain tends to ease but you will still need painkillers.

If you need to adjust your frame for any reason e.g. lengthening or correcting a deformity, then this may also be painful.

### 2. How long will the frame be on for?

For new fractures the frame will be on until the fracture heals! As a general rule of thumb this takes approximately 3-6 months in an adult.

If you have had a non union of an old fracture, this may take a little more time to heal. It is important to address the causes of the non union e.g. stopping smoking or treating the infection. Non-union patients are usually in a frame for approximately 6-9 months.

If you are having a bone transplant, then the 'bone growing' phase is generally a third of the whole time in the frame. For example, if it takes 40 days to grow new bone (regenerate) then it would take 80 days for it to harden (consolidate), making a total of 120 days in the frame. However, this is not always the case and depends on other factors such as general health.

### 3. How long does the surgery take?

Approximately 3 hours. However, this depends on the nature of your injury or condition.

### 4. How long will I be in hospital?

Approximately 3-5 days. Other injuries, uncontrolled pain and social circumstances can delay you going home.

### 5. Can I smoke?

The answer is no! Smoking delays bone and tissue growth and affects the circulation. If you would like advice and support about giving up smoking please ask the nursing staff. We advise that you should stop smoking before your surgery to improve the overall outcome of your surgery. There is further information on support to stop smoking in the Additional Advice section of this booklet.

## 6. What type of foods can I eat to aid my healing?

You should eat a well-balanced, high protein diet. Dairy foods are also important. It is important you make sure you have a sufficient intake of Calcium and Vitamin D. Depending on your diet, you may need to take a vitamin supplement. We will discuss this with you during your treatment.

## 7. Will I be able to walk on my leg?

Yes. It is important to weight bear as soon as possible as this improves bone healing and your overall recovery. If you have an intra-articular fracture (breaks extend into a joint) you cannot weight bear (put weight on your limb) for 6 – 8 weeks after your surgery. Your surgeon will give you advice on how much weight you can put on your leg.

## Glossary

Here are explanations to some words we may use during your treatment.

<b>Angulation</b>	– A term applied to the deformity at fracture sites.
<b>Arthrodesis</b>	– An operation to produce fusion across a joint.
<b>Closed Fracture</b>	– A fracture whereby the skin remains intact. Opposite of <b>open</b> .
<b>Comminuted Fracture</b>	– A fracture in which there are many pieces.
<b>Compartment Syndrome</b>	– A complication of an acute fracture in which the compartments (containing muscle) in an affected limb are constricted by swelling or bleeding. The pressures in the compartments rise causing the death of muscle. Blood and nerve supplies are also damaged.
<b>Compression</b>	– Pushing together of bone.
<b>Corticotomy</b>	– Cutting of the outer edge of a bone yet preserving its blood supply.
<b>Delayed Union</b>	– A complication of a fracture where the bone ends join very slowly.
<b>Distraction</b>	– Pulling apart of bone.
<b>Equinus</b>	– A deformity where the foot points downwards.
<b>Extra-articular</b>	– Outside the joint. Opposite of <b>intra-articular</b> .
<b>Intra-articular</b>	– Within the joint, usually knee or ankle joints.
<b>Mal-union</b>	– A complication of a fracture where the bone ends join in an unacceptable position.
<b>Non-union</b>	– A complication of a fracture where the bone ends do not join.
<b>Osteomyelitis</b>	– A bone infection involving the bone marrow. Can be <b>acute</b> or <b>chronic</b> .
<b>Osteotomy</b>	– An operation to surgically break a bone.
<b>Reduction</b>	– Pulling a fracture or dislocation back in to its correct position.
<b>Shortening</b>	– Loss of length in a long bone.
<b>Valgus</b>	– A limb deformity in which the affected limb moves outwards, away from the midline of the body. Opposite of <b>varus</b> .
<b>Varus</b>	– A limb deformity in which the affected limb moves inwards, towards the midline of the body

## Useful Numbers

- Limb Reconstruction Nurse – 0141 201 6636 or 07814314386
- Limb Reconstruction Medical Secretary  
Tracey Wilson – 0141 232 0911
- Fracture Clinic (appointments and booking office) – 0141 201 3105 and 0141 201 3114
- Fracture Clinic Nurses Station – 0141 201 6417
- Ward 61 – 0141 451 5561
- Ward 62 – 0141 451 5562
- Ward 26 – 0141 211 4328
- Ward 27 – 0141 211 0418

## Additional Information

### Travel Expenses

**You are entitled to claim travel expenses if you receive:**

Income Support, Universal Credit, Income Related Employment and Support Allowance, Income Based Job Seeker's Allowance, Guaranteed Pension Credit or are named on a valid NHS Tax Credit Exemption Certificate.

To make a claim: You must provide proof of entitlement, your clinic appointment letter and all tickets for your journey. Mileage can be claimed and is calculated based on the postcode on your clinic letter. You should present these items to the cashier's office which is based on the ground floor of the Surgical Block (located directly behind the fracture clinic).

### Stopping Smoking

Stopping smoking before you go into hospital is one of the best things you can do to reduce the chances of anything going wrong. There will be less chance of complications and better bone healing. If you would like to make plans to stop smoking before you come into hospital, then please contact your local stop smoking service by going to [www.nhsggc.org.uk/smokefreeservices](http://www.nhsggc.org.uk/smokefreeservices) or speaking to your local pharmacist.

Alternatively, you can ask a member of staff when you come into hospital to refer you to the hospital stop smoking service. A trained stop smoking advisor will visit you at your bedside to guide and support you through your quit attempt – this may include organising NRT or Champix if you feel that this will help you. You will also go home with a supply of the product(s) you start and information on how to continue the product(s) through your local community pharmacy.'

**Glasgow Royal Infirmary Support and Information Service** is available to all patients and relatives. They provide support, information and direct referrals that include: Money Advice, Anxiety, stress and depression, health and well being, stopping smoking, alcohol and drugs, weight management and pet fostering among others.

**Contact this service on 07896937717**

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