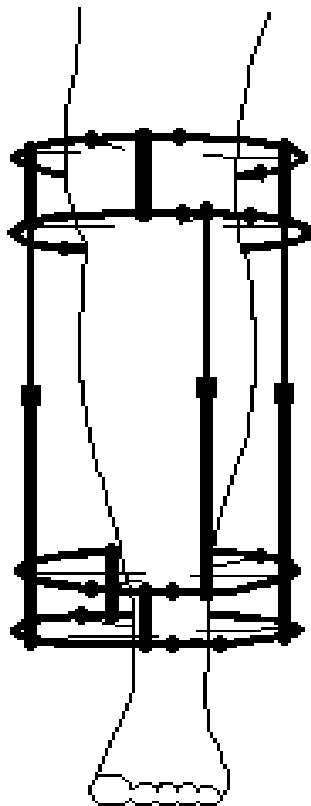


**Ilizarov Fixation for Bone Reconstruction
Treatment of Osteomyelitis
with
Plastic Surgery Reconstruction**

(Adults) Pre-Operative Patient Information





About this Booklet

This Information Booklet has been produced to help you gain the maximum benefit after your operation.

It is not a substitute for professional medical care and should only be used in association with treatment at the Nuffield Orthopaedic Centre. Individual variations requiring specific instructions not mentioned here may be required.

This booklet was compiled by:
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Ilizarov Clinical Nurse Specialist

Last updated February 2008

Version Six

Grateful thanks to the Ilizarov Multidisciplinary Team and patients who helped with the development of this booklet.



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The Ilizarov Surgical Team

Mr Martin McNally	Consultant Orthopaedic Surgeon
Mr David Stubbs	Consultant Orthopaedic Surgeon
Mr Andy Wainwright	Consultant Orthopaedic Surgeon
M	Orthopaedic Registrar
Dr	Senior House Officer

Ilizarov Nursing Team

Maz Sutherland	Ilizarov Clinical Nurse Specialist
Kim Stephenson	Ilizarov Link Nurse Bone Infection Unit

Ilizarov Physiotherapy Team

Laura Streeton	Paediatric Physiotherapist
Liz Ellis	Adult Physiotherapist
Jackie Halliday	Ilizarov Aftercare

Ilizarov Occupational Therapy Team

Jackie Sherwood	Paediatric Occupational Therapist
Alison Henderson	Adults Occupational Therapist

Infection Medical Team

Dr Tony Berendt	Consultant Physician
Dr Ivor Byron	Consultant Physician
Dr Bridget Atkins	Consultant Physician
Dr.....	Medical Registrar
Dr.....	Medical Senior House Officer

Plastic Surgical Team

Mr Paul Critchley	Plastic Surgery Consultant
Mr Henk Giele	Plastic Surgery Consultant
Mr.....	Plastic Surgery Registrar
Dr.....	Plastic Surgery SHO

Pre-operative Preparation

Your treatment at the Nuffield involves a large multidisciplinary group of professionals who aim to give you a high standard of health care. Education and support are offered long before the date of your operation, usually beginning in the Out-Patients Department. At this appointment you are given the telephone number of the “Ilizarov Mobile” which you can use to contact the Ilizarov Team 5 days a week via the Nurse Specialist.

You are encouraged to use this for any questions or advice relevant to your admission, operation or pre-operative support or if your health status has changed. Information offered at the clinic appointment is supported with written information for you to take home.

A couple of weeks before the date of your surgery, you will be asked to come to a Pre-Admission Clinic. Expect to be at the clinic for most of the day as at this clinic you get the opportunity to meet the other professionals in the Ilizarov Team.

Ilizarov Office:




01865 737626

Ilizarov Mobile:



0782 5861951

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**What is
Osteomyelitis?**

Osteomyelitis is the medical term for infected bone. Infected bone can occur in any bone in the body, but is more commonly associated with an area of bone near a site of previous injury or surgery. It can also occur spontaneously without known injury or disease.

Osteomyelitis is treated in the same manner as other body infections, that is, using antibiotics. However, the treatment of bone infection may also involve surgery. Infection of bone may render the bone weak or may even cause the infected area of bone to die. Antibiotics are delivered to infected areas of the body by the blood circulation. Dead bone has an impaired or absent blood supply. It can therefore be difficult to treat bone infection with antibiotics alone if the blood supply does not penetrate the diseased area. This may mean that to treat your bone infection, we may need to remove dead or infected bone and improve the circulation to the diseased area.

**What does Soft
Tissue Infection
mean?**

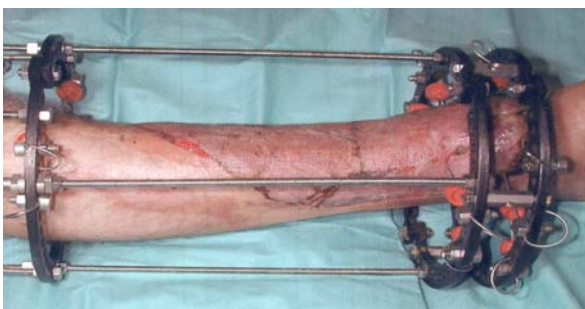
Soft tissue infection may also be present with bone infection. When we talk about soft tissue, we are generally referring to skin, fat, muscle and their connective tissues. Soft tissue infection may be obvious as with an open wound or a hole in the skin (called a sinus). Sometimes soft tissue infection is not obvious until the time of surgery.

How does Plastic Surgery help?

If a large area of Osteomyelitis or soft tissue has to be removed during the surgery, then a second procedure may be required to fill the space left by the surgery and also improve the blood circulation. Dependant on the bone and soft tissue area involved and the strength requirements of the bone affected, a variety of methods may be used.

Examples of this second procedure involving plastic surgery are:

1. Small areas with surrounding healthy tissue can be left and will fill and heal eventually with no other intervention required.
2. Muscle flaps can be used to fill and correct both soft tissue and bone gaps within the body. These flaps are not visible externally on the limb. They improve the circulation to the area therefore assisting the antibiotics to penetrate the area. Your surgeon will remove a muscle from another area of your body, usually from an area local to the surgical area. (The surgeon always attempts to transfer a muscle that by its removal alone should not affect your day-to-day performance)
3. Muscle flaps can be used to fill soft tissue gaps in a limb where infected skin and muscle have had to be removed. This not only improves the circulation but ensures that the operated area is completely protected with the new soft tissue, improving the blood supply, filling the gap and preventing secondary infection from the outside (atmosphere) into the surgical area. When used this way the muscle flap is covered with a layer of skin graft. The skin graft is usually taken from your thigh. The surgeon tries to take into account the final resulting shape and appearance of the area of the limb but it often takes a few months for the muscle flap to flatten to the same shape as your limb.



Muscle Flap and Skin Graft.

4. Plastic Surgery may also involve using bone transferred from one area of your body to another to fill a gap in the bone.

This may involve using bony chips usually taken from the part of your hip called the iliac crest. This is the area of your hips that stick out at the front, above your groins. The bony chips are then used to fill small gaps in bone.

5. The second procedure involves using larger sections of bone.

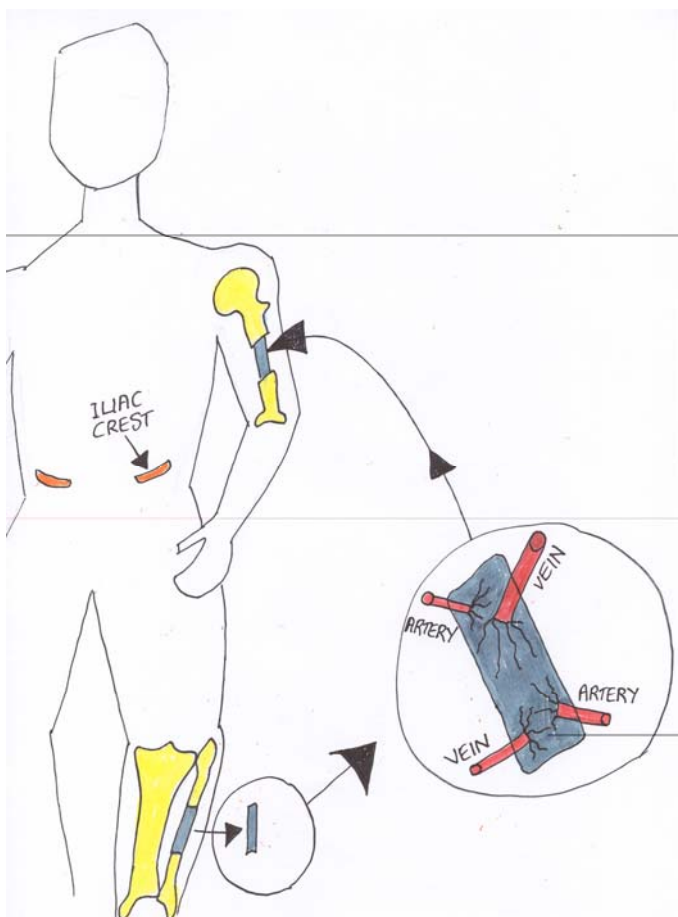
This procedure is used in limb reconstruction when the amount of lengthening required is more than we can offer by using the frame alone.

An example of this procedure is explained.

A larger piece of bone is taken (usually from the fibula, the smaller leg bone, below the knee) and transferred with its own blood supply into the area of your limb where you need living bone. This is called live bone transplant.

It involves “plumbing” the transplanted bone (usually the fibula) arteries and veins together into the new area requiring bone.

In the picture the transplant bone is the fibula and it is “plumbed” into the upper arm (or humerus’) arteries and veins.



Bone Transplant



What are the Risks of Surgery?

Your surgeon will explain your operation in full and will outline the benefits and risks of surgery.

All operations involve an element of risk. We do not wish to overemphasise them but you should be aware of them.

At the Nuffield, we do believe that our patients should be as fully informed as possible about their treatment, including the risks.

We therefore encourage our patients to ask questions at any period of their treatment.

1. Anaesthetic complications:

The most common of which is nausea and vomiting. To discuss this topic further please speak to your anaesthetist.

2. Infection:

At some stage you may experience a pin tract infection. Normally a short course of tablet antibiotics will treat this problem. However occasionally, patients may have to be re-admitted to hospital to have a course of intravenous antibiotics or have a minor operation to move one or more of the pins. Please discuss the other risks of infection with your doctors or surgeons.

3. Nerve problems:

Vary rarely due to the application of fixator or the operation you may experience some nerve damage.

4. Blood vessel problems:

Rarely due to the operation but more likely due to immobility a patient may experience blood clots in their legs. This can become a serious life threatening risk.

5. Joint or Muscle Problems:

Joint and muscle stiffness can be a common problem in patients who are undergoing limb lengthening. It is essential that you perform exercises to help prevent these problems.

6. Wire or Pin Breakage:

Very occasionally, a wire or pin may break due to the continual stresses applied from your limb. In this case, the wire or pin may be removed or replaced, dependant on how far you are through treatment and how strong the new bone is.

Tell me about the different aspects of my surgery?

1. Removal of Metalwork at Infected Non-union sites

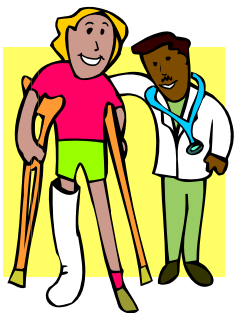
A non-union site is where your original fracture (sometimes held with metalwork) has not healed. This may be due to a variety of reasons, but at the time of surgery your surgeon will take samples of the bone at the non-union site to look for signs of infection.

If the non-union site has metalwork present, your surgeon may need to remove this metalwork at the time of surgery.

2. Osteomyelitis Surgery

The infected portion of bone is either Debrided or Removed completely. Debridement of bone involves scraping away diseased bone until healthy bone is reached. Dead or infected bone may need to be removed completely. Depending on the bone involved and the strength requirements of the bone, the limb may need to be supported, protected or held in a secure position after the operation.

1. You may be asked not to put any weight through the limb for a period of time. If your surgery is on your leg, you may be asked to use elbow crutches or another walking aids. If your surgery is to your arm, you may be asked not to carry anything heavier than a piece of paper.



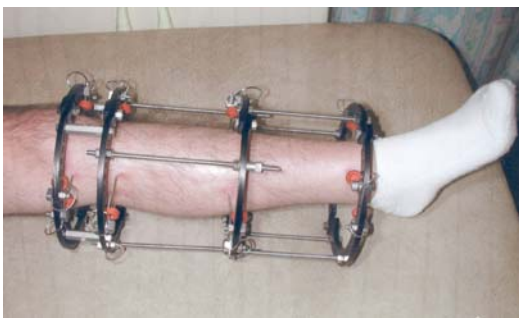
2. You may need to wear a plastic splint on your limb or a specially made plaster of Paris cast.
3. If the bone is unstable or requires complex reconstruction your surgeon will apply an **external fixator** device to your limb.

What is an External Fixator?

The external fixation device may be used for other purposes as well as securing the unstable bone.

It may be used for limb lengthening or correcting bony deformity.

The Ilizarov Fixator



The Ilizarov Fixator is a circular frame that surrounds the limb. It may have a combination of wire pins and thicker pins called half pins. It can be used in a variety of different ways to perform a variety of functions.

It may be used to correct a deformed limb. It may be used to mend a fracture or lengthen a short limb or correct a bony deformity. It may be used to increase the blood circulation to the limb.

The advantage of the Ilizarov Frame is that it can be used to do all of the above at the same time.

What are Wire Pin's?



These are narrow lengths of stainless steel wire that go through the bone and soft tissues of the limb. These wires are attached on each side of the external rings of the Ilizarov Fixator under high tension and then secured.

What are Half Pin's?



These are stainless steel pins which are secured into one side of the bone. These pins are thicker than the wire pins and are only attached on one side of the frame. These are used when a higher strength of fixation is required.

How do you lengthen bone?

Dependant on the amount of bone removed at the time of surgery, you may be left with a shorter limb. If required, this frame can be used to regain the length of bone you have lost from surgery.

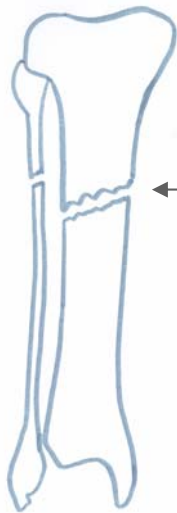
This is achieved in the first part, by your surgeon creating a “**corticotomy**”.

What is a corticotomy?

A corticotomy is a fresh break in a bone.

A corticotomy can be made in 2 ways.

1. Your surgeon can use your old fracture site as the corticotomy after “freshening-up” the ends of the bones during surgery.
2. The second way, (more commonly) is that your surgeon will create a corticotomy by making a new and separate break in the bone.



A example
Corticotomy

The freshly broken bone at the corticotomy will attempt to heal using new bone cells. Using a spanner to adjust the frame, we make tiny movements each day to open up the gap at the corticotomy site and grow new bone. The adjustments to the frame are made slowly each day achieving a rate of 1mm of new bone each day.



One Quarter turn equaling one quarter of a millimeter

**How does the
frame correct a
deformity?**

The method is similar to leg lengthening. Using spanners to make tiny movements to the frame the angle of deformity decreases with each day. Your nurse or surgeon will teach you (or your carer) how to make the adjustments to your frame.

What is a Mono-lateral fixator?



The Mono-lateral Fixator is a fixator device that is applied along the limb, not around the limb.

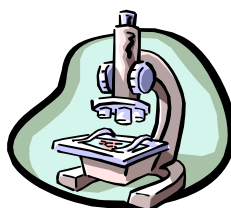
It can be used for a variety of conditions.

It may be used to mend a fractured limb or lengthen a limb. It is composed only of half pins. The principles of limb lengthening are the same as for the Ilizarov Fixator, but the method differs. With the Mono-lateral fixator a tool called an Allen Key is used to make the frame adjustments.

How do you know if there is an infection present?

During your operation, your surgeon may take some tiny samples of bone and tissue. These are sent to the Bacteriology laboratories.

The Bacteriology Laboratory uses the samples taken by your surgeon and through various means of equipment will attempt to determine whether there is a bacteria growing in the samples and if so, the type of bacteria.



Once this information is known, the medical team can determine which antibiotic is required, which route of administration is required and the length of the course.

The length of your course of antibiotics will depend on the results from the Bacteriology laboratory.

It will take 5 to 7 days for the results to be final and during this time your doctor may prescribe a broad-cover antibiotic for you.

When the final culture results are known, your antibiotics will be prescribed specifically to treat the bacteria grown in the surgical samples.

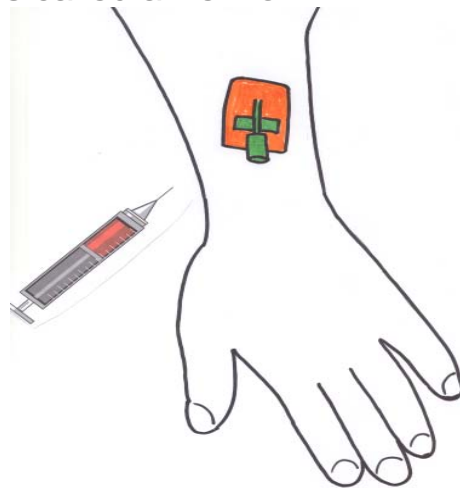
The length of the antibiotic course can vary.

The most common length of a course of antibiotics to treat osteomyelitis is a 6 weeks course given intravenously followed by a long course of tablet antibiotics. Antibiotic therapy can be administered orally, that is by taking tablets or can be administered intravenously, that is, given directly into your veins.

Your team of doctors will advise you on the best possible course of treatment tailored to your individual needs and results.

Following your surgery, you may be started on intravenous antibiotics. These are given through a plastic intravenous cannula placed into a small vein in the back of your hand or lower forearm.

The cannula used is called a Venflon.



Venflons tend to only last for a day or so of treatment.

Each time another venflon is required, we will insert a new venflon in a different area that you can continue to take your course of intravenous antibiotics.

When we are sure that you require a long course of intravenous antibiotics we will advise you to have a central intravenous line inserted.

The most common type of central line that is used is called a **PICC** line.

This is inserted by a specially trained doctor or nurse.

A local anesthetic cream is applied over the veins in your elbow crease.

This will numb the skin. A venflon is then inserted into the vein in the elbow crease.

Using the venflon as a hollow tube, the nurse or doctor will insert the PICC line through the venflon. The line follows the inside of the vein into a central vein. (Central veins are located in your chest.) The venflon is then removed.

A chest x-ray is then performed to ensure the PICC line is in a central vein. Once verified by your doctor, the PICC line is ready for use. These PICC lines are designed to last for periods lasting up to 6 months.

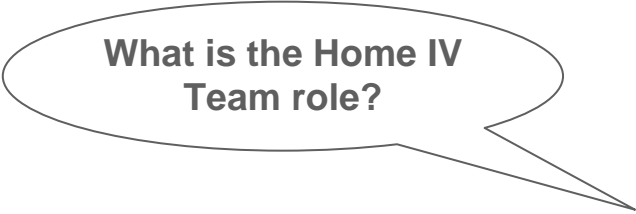


If we were unable to insert a PICC line, alternative types of central line can be used. This can be discussed with you on the ward if this situation occurs.

Can I go home if I am taking IV antibiotics?

Once you have a PICC line in place and have had at least 3 doses of your final antibiotic, we can then begin to plan your discharge home. We try to help all our patients get home (or nearer home) to receive the remainder of their Intravenous antibiotics at their own home. Most courses of antibiotics given intravenously are 6 to 8 weeks long. To allow your antibiotic treatment to continue safely at your home, we involve a team called the **Community (or Home) Intravenous Team**.

The Home Intravenous Team will visit you on the ward and communicate your needs to your GP and District Nurses. They ensure that everyone involved in your care is trained to the same high standard as at the Nuffield. On occasion, the District Nurses may not be able to help administer your antibiotics at your home. In this instance the Home Intravenous Team may suggest that you or a close friend or carer learn to prepare and administer the antibiotic.



**What is the Home IV
Team role?**

“We are a team of 4 nurses, employed by Oxfordshire Community Health NHS Trust.

Once a referral is made to us, we visit you on the ward to:

- Read your medical notes
- Introduce ourselves
- Discuss with you and your family about home / community hospital IV Therapy
- Discuss arrangements for discharge home (if appropriate)
- Liaise with your GP and District Nurses
- Discuss who will give the IV therapy (this may include training yourself or a Carer if needed)

Once a discharge plan has been agreed we will do the following:

- Organise all your IV medications and supplies
- Negotiate a discharge date that fits in with everyone involved
- Organise follow-up appointments with your Infectious Diseases Consultant and ourselves at the Nuffield Orthopaedic Centre
- Complete and discuss with you your patient held Record Booklet

Once you are home, we provide back-up support and advice for any questions, problems or any other issues that you may wish to discuss.

All the community nurses in Oxfordshire are trained to give IV therapy. However, they do not do this every day and have a few months gap between patients receiving this treatment. Therefore, part of our role is to provide training and support for the Community Nurses / Community Hospital Nurses, and this may mean we do a joint visit with them at your home / community hospital when you are discharged. If you live outside of Oxfordshire we may need to contact the Community Nurses if they are required to administer IV therapy. Their level of IV therapy experience and training may vary and therefore we would arrange to meet them at your home for a joint visit to provide practical training and support.”

**Who will look
after my
wounds?**

At the beginning of your hospital stay your nurses will care for your wound and pin sites.



Pin sites are the area of skin around the pin or wire where it leaves the skin. We teach you how to clean these pin sites during your hospital stay.

The Ilizarov Clinical Nurse Specialist will visit you regularly on the ward and will teach and support you, your family, and the ward nursing staff. We strongly advise that you learn how to perform your own pin care routine.

Even if you are physically incapable of actually performing the care, you can then safely advise your District Nurse or Relative on our protocol for care, reducing the incidence of complications leading from lack of knowledge.

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A Separate Booklet is available which explains in detail about Pin Site Care.

All pin sites need to be checked every day, but if clean and healthy, no other care is required.

If the pin site is “clogged-up” from dried up leakage, the site will need to be cleaned. We usually encourage you to perform pin site inspection and care after you daily shower.

After you have finished washing your body and hair in the shower, we ask you to direct the shower-head at the frame and pin sites to clean them.

This is usually all the care that is required.

You are allowed to bathe with this frame and can submerge the framed limb.

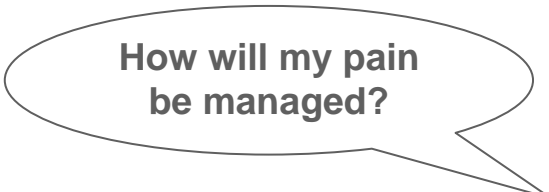
However, we ask you to shower the bath water off the pin sites and frame after you have finished your bath.

A speech bubble with a tail pointing to the right.

Will this operation be painful?

At the Nuffield, we are fortunate to have a Multidisciplinary Team who specialise in the management of pain. During your hospital stay we aim to keep you as comfortable as possible. In order to do this we will be assessing your pain with you & also asking you to describe it. Although we appreciate it is sometimes difficult to describe your pain it will help us choose the most appropriate treatment & pain-killers to give you.

The pain caused by your operation will gradually improve as you recover from the surgery.

A speech bubble with a tail pointing to the right.

How will my pain be managed?

There are numerous different ways of managing your pain following your operation. These include tablets, suppositories, capsules, nerve blocks and pain pumps. Pain pumps allow you

to control the amount of pain-killer you receive as you need it.

These methods will be discussed & explained to you before your operation.

Do not worry if you are lengthening or shortening your frame & find the pain increases when you first start the turning.

You may need extra pain relief, but this should soon resolve and you must tell us so that we can change or increase pain-killers as needed.

What about my pain relief when I go home?

You may find you still experience some discomfort when you go home. This is normal & is nothing to worry about. It should gradually decrease over the next few weeks.

- Take the painkillers given to you for as long as you need them & if necessary obtain another prescription from your own doctor
- Take care to follow the Pharmacist's advice printed on the container.
- As the pain decreases you will find that you need to take fewer painkillers until eventually you can stop taking them altogether.

It is very important to report any changes in the severity or type of pain you experience to the ward nurses & doctors whilst in hospital or your GP when you go home.

Will I have to do many exercises?



As part of the Ilizarov treatment, you are expected to learn and perform certain exercises explained to you by the physiotherapist.

Limb lengthening does cause a lot of pressure on the surrounding joints. If you do not continue with your exercises, you can risk permanent joint stiffness or it may be necessary for us to stop the lengthening process to allow the joint to recover. This will increase the time that the frame is on. We will ensure that you receive support and help with physiotherapy in the community and will teach your family or friends how to help you with your exercises. Physiotherapy may need to be performed up to 4 times a day when performing limb lengthening.

This requires a lot of commitment from you and your family.

You will be expected to learn some exercises to help strengthen your muscles, joints and bones and prevent you from becoming stiff. A large part of the success seen with the Ilizarov fixator is because the normal bodily stresses which your skeleton undergoes every day (in normal circumstances) continue to be applied through the skeleton and muscles, whilst safely holding your fracture (or lengthening your limb) using the Ilizarov fixator at the same time. Physiotherapy is an extremely important aspect of your treatment. Complying with the physiotherapy will ensure that you gain the maximum benefit after your operation.

Will I be able to manage at home?

During your stay in hospital you will meet an OT (Occupational Therapist). The OT will help you to regain as many of your usual daily activities as physically possible. Getting on and off the toilet might cause you problems if your fixator extends on the thigh. Raised toilet seating is available with a special “cut out” section to comfortably accommodate the fixator whilst sitting on the toilet. Some people find it difficult to get in and out of the bath. Various aids are available to make this easier and safer. Various devices to make life easier are available to help you regain as much independence as possible. Examples of some of the equipment available are: Long handled sponges and shoe-horns, long-handled helping- hand and sock aids. You may find your standing ability is reduced for a while and a high stool may help both in the kitchen and bathroom. Most of these devices are available on short-term loan from the Occupational Therapy department. However, some devices do have to be purchased.

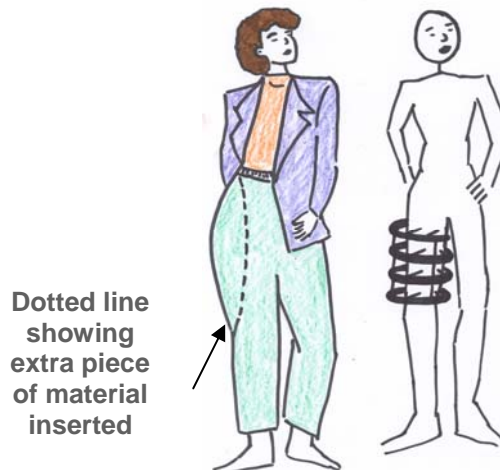
What advice do you have on clothing?



Arm Frames

Remember that the sleeve and armpit of the clothes will have to be large enough for your framed arm to fit through. Large-sleeved tops are ideal.

Shirts, blouses, sweatshirts or tops that you wish to adjust: Unpick the stitching from the wrist to the top of the arm. After tidying up these seams, Velcro fastening can be applied to close the top over the frame or a series of buttons, poppers or zip. Coats and Jackets are much more difficult, you may wish to talk to a dressmaker.



Leg Frames

There are track suits and jogging pants that either have “poppers” or zips along the outside of the leg.

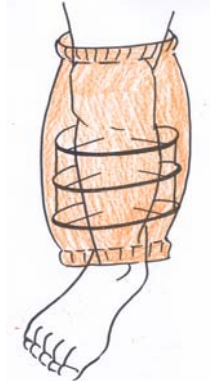
Extra material can be inserted into clothing to accommodate the frames size. Long skirts (or Kilts!) are useful with leg frames.

Some people find the appearance of their frame unpleasant or distressing. In this instance, “Leg-warmers” or Tubes of material can be used to hide or disguise the frame.

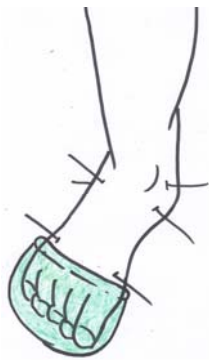
For ankle frames

For ankle frames or Foot Frames, we are able to supply a “plaster-boot” which is adjusted to fit your frame so that you can walk. This boot has a pliable but solid sole with a material upper. The fasteners on the boot are Velcro straps.

“Leg-warmers” can be made from the sleeves of old jumpers or the legs of jogging pants and fitted over the frame (under clothes) to keep your limb warm. Socks can be adjusted to fit, allowing you to keep your foot warm.



“Leg-warmer” to keep limb warm

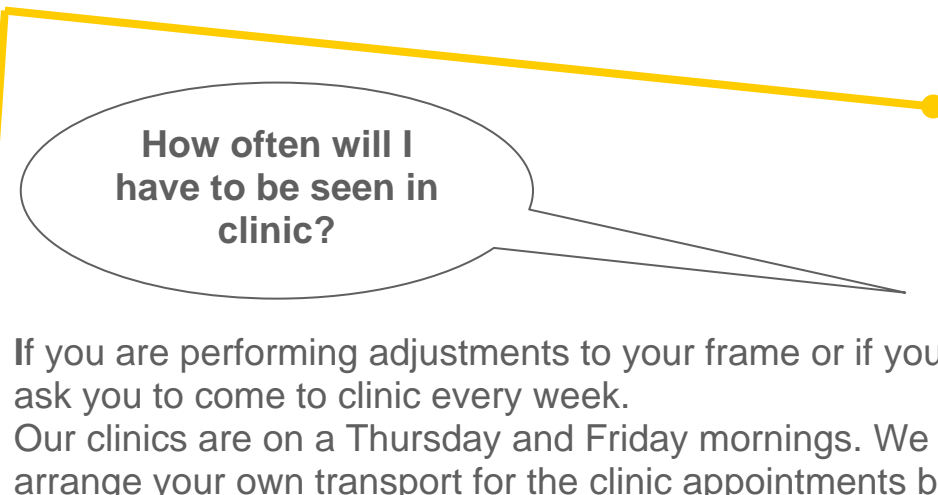


End-piece of a sock to keep toes warm



Sock adjusted to fit over a toe-lengthening frame. Centre held with ties or Velcro®



A yellow line starts at the top left, goes down, then right, then down again, ending in a yellow dot. It frames the first question.

How often will I have to be seen in clinic?

If you are performing adjustments to your frame or if you need weekly support, we will ask you to come to clinic every week.

Our clinics are on a Thursday and Friday mornings. We would urge you to try and arrange your own transport for the clinic appointments but we will organise hospital transport for you if required. Some patients will be entitled to claim for the costs of their transport. Some may be able to claim for other allowances whilst having this treatment. For advice or questions, please contact the Social Services Benefits Office, the telephone number is in the back of this booklet.

How long will the fixator be on?

Every individual case differs.

Factors such as your general health, your age or whether you smoke can all have a bearing on your healing ability. Please speak to your surgeon who can give you a more accurate approximation of the length of time in the frame. During your treatment you may experience one or more problems that may affect the length of your treatment and delaying removal of the fixator.

The time in your frame will be longer if you smoke as this is thought to delay bone healing.

The duration of treatments given below are approximate:

- **Fixator for Non-union:**

This can be anywhere from 3 months to 12 months or more.

- **Fixator for Limb Lengthening: Between 8 to 18 months.**

This depends on the amount of lengthening required and the problems encountered during treatment that may delay the lengthening.

- **Fixator for realigning a deformity: This can be between 3 and 12 months depending on the type of realignment required. Your frame may be treating all of the above conditions.**

What type of problems
can occur with this
treatment?

1. Pin site Infection

Infection at the pin site is a common problem. The pin site becomes sore. It may be slightly reddened or it may start to ooze. A pin site swab is taken to determine the type of infection.

Approximately 85% of pin tract infections are caused by the bacteria called *Staphylococcus Aureus*.

We therefore start you on an anti-staphylococcal antibiotic as soon as we have taken the swab. We ask you to clean the infected pin sites more often to ensure the skin at the site is not left moist for too long.

After 3 to 5 days on antibiotics the infected pin site should have resolved, however please continue to take the original course directed by the doctor.



Weeping Infected Pin Site



Reddened Infected Pin Site

2. Joint Stiffness or Muscle Contractures.

As your limb is being lengthened the bone grows.

Muscles have to be stretched and sometimes they can pull against the direction that you wish them to grow in.

If you do not follow the instructions given by the physiotherapist, you risk **permanent** joint stiffness because the muscle is not being stretched at the same rate that you are growing new bone.

This can cause joint contractures and joint stiffness.

Depending on the joint and the degree of contracture, we may on occasion, stop the lengthening procedure, so you can perform exercises on the joint and allow the muscle time to “catch-up”.

However, this does mean that the frame will be on for a longer period.

3. Wire or Pin Breakage.

Over time, wires or pins may fatigue from the great stresses or forces placed upon them from your limb. They can occasionally break during the treatment. In this case the broken wire may be repaired, removed or replaced dependent on what point you are of your treatment and dependent on how strong your new bone is at that time.



How do people usually progress through this treatment?

First Stage

During the first few weeks you are gaining confidence about your treatment. You are learning to adapt to the fixator and the changes in your normal routine. You begin to see progress, whether it is a lessening deformity or leg lengthening being achieved.

Middle Stage

At this stage you have adapted to the fixator and new routine, you seem to have more time on your hands and physio or exercises become tedious. You may have been off work for a long time and life may have become pretty boring.! You are half way through treatment and the end seems a long way off. You may have encountered a problem that has delayed your treatment by a few weeks.

You may feel despondent or depressed.

This is a completely normal response to the treatment at this stage and please remember that these feelings will pass.

At this stage it is extremely important to attend your clinic appointments.

Take the time to talk to other patients.

It may be useful to exchange telephone numbers with other patients who are going through the same problems.

Try and think about activities or people that usually cheer you up.

Take some time to organise one activity or visit each week.

Maybe taking up a new activity to occupy your time would help. Some examples are drawing, painting, writing or photography.

Final Stage



You are nearing the end of your treatment and removal of the fixator. The frame is driving you mad, but you are able to see the light! We begin to neutralize the frame in clinic so that more weight is being put through the bone and less through the frame.

The timing and actual removal of the frame will be discussed with you by your team of doctors at your clinic appointments.

Some parts of your frame may be able to be removed at a clinic appointment.

Removal of the frame occurs under a general anaesthetic.

This takes from 10 minutes to one hour.

You usually go through our Day Surgery Unit and are able to go home the same day. Many patients require a plaster of Paris cast applied following removal of the fixator. (Some patients have light-weight splints) The length of time spent in this plaster varies depending on your condition, but most patients spend 4 to 6 weeks in the plaster cast.

All patient's experiences are different.

Everyone had different coping mechanisms.

We aim to support you throughout your treatment and offer advice and support on a daily basis, 5 days a week before and after surgery.

We are very interested in your comments and experiences during your fixator treatment. Please feel free to write down any information that you feel is important for us to know so that we can pass this information on to our future patients.

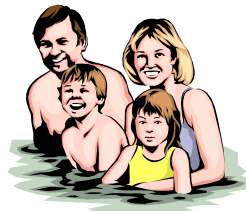
Frequently asked Questions

Am I allowed to drive my car with a fixator on?



Please ask your surgeon and physiotherapist as individual cases differ. If you are told that driving will not interfere with your fixator treatment then please contact your car insurance company and the DVLA to inform them before you begin driving.

Am I allowed to go swimming?



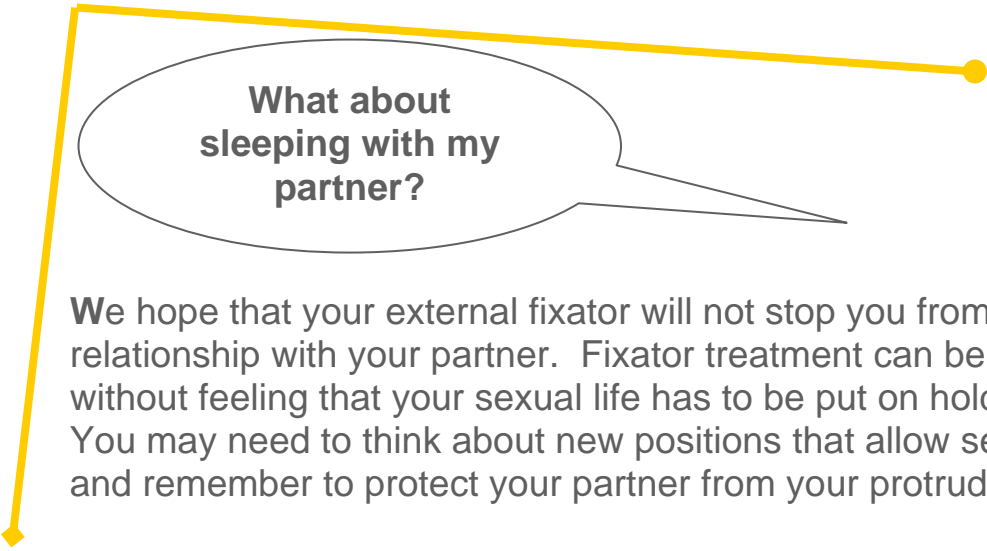
Yes, swimming is known to be a beneficial exercise. After swimming, please shower your frame with clean water and dry the frame and pin sites.

Am I allowed to Sunbathe?

It is extremely important to remember that when you sunbathe, you do not expose your fixator and pin sites to the sun. Remember that your wires and pins are made of metal which will heat up extremely rapidly if exposed to the sun and potentially burn the skin and soft tissues around your pin sites. Conversely, please remember to keep the fixator limb protected from extreme cold in the winter.

Can I continue to take the oral contraceptive pill or my HRT?

This depends on the type of pill or HRT. Please ask at your Pre-Admission Clinic appointment. You may be asked to refrain from taking the pill up to 6 weeks following surgery.



What about sleeping with my partner?

We hope that your external fixator will not stop you from continuing your normal relationship with your partner. Fixator treatment can be stressful enough on its own, without feeling that your sexual life has to be put on hold until your treatment is over. You may need to think about new positions that allow sex to be comfortable for you and remember to protect your partner from your protruding pins!!

When can I return to work?

Individual cases differ.

When you return to work depends largely on the type of work you do, the extent of your injury, the type of fixator and type of treatment you are undertaking. There may be health and safety reasons why you may not be allowed to return to work with the fixator, for example, in the food industry. Please talk to your employer before the surgery to anticipate any problems.

If you do have problems, please contact your local Disability Employment Advisor (DEA) for advice. The DEA is usually based at your local Job Centre.

When can my child go back to school?

Children with Ilizarov are encouraged to mobilise as much as possible and should return to school as soon as safely possible. As soon as the decision has been made to go ahead with the surgery, parents should contact the school or college to inform them and talk through the needs of the child and likely problems.

It is useful to have a picture of the apparatus when discussing this with the teachers. Check that the school or college is wheelchair accessible. (The OT can advise on this) Some schools require that an assistant should be provided to supervise breaks and toileting. This preparation will be useful in preparing class-mates and friends about the frame. You will need to consider transport to and from school. Some schools may prefer to arrange home tuition for Health and Safety reasons. Wheelchairs may be loaned from your local wheelchair service or Red Cross, but do check with the OT.

What if I can't afford the traveling costs?



Sometimes we are able to help with travel expenses. This will depend on your personal circumstances. It may be necessary that we book hospital transport for you (either a car or ambulance). Please ask the Ilizarov Clinical Nurse who will contact the Medical Social Worker on your behalf. You may also be eligible for Disability Living Allowance if you are aged less than 65 years of age, where the disability has persisted for more than 3 months and will continue for at least 6 months.

Please telephone the Benefits Office, telephone number at the back of the booklet.

Am I allowed to go on holiday?

This depends on the type of treatment you are having and whether you will be flying or not? Please speak to the Ilizarov Nurse or doctor. You may need a letter from your surgeon, for the airports if you are carrying a lot of drugs or medicines.

What if I can't afford the prescription costs?

If you are on income support, you can pay for a "certificate of Prepayment" which will cover all types of prescriptions. See your local chemist. If you are not on income support, you can pay for a 3 month pre-paid prescription form, which, for a one-off payment will cover all your prescriptions for the 3 month period.

Are there any drugs I shouldn't take?

Yes, we generally advise that you try not to take Non-Steroidal Anti-inflammatory drugs when having this treatment. Examples of common ones are: Ibuprofen, Brufen, Volterol, Diclofenac, Athrotec, Nurofen, Ketoprofen, Oruvail, Indocid, Indomethacin, Mefenamic Acid, Ponstan, Aspirin. If you are taking any of the above, please speak to your surgeon before the operation. Do not stop taking Aspirin or Indomethacin (Indocid) before checking with your surgeon.

Tips and Advice from Previous Patients

- How to carry a your tea /coffee whilst on crutches
Use a Thermos Flask carried in an over-the-shoulder bag!
- Put a Beach Towel in your bath before you get in to prevent your frame from scratching the enamel!
- Wrap a thin pillow around your frame at bedtime to prevent your partner from bruises!
- You may find various Track Suits with “poppers” or “zips” along the legs, which are really useful to fit around leg frames
- **Some of our patients have suggested using a Haberdashery business located on Windmill Road where they have had clothing made or altered to fit around the external frame.**

Japlene Handmade Originals

6 Windmill Road

Headington

Oxford OX3 7BX

Tel 01865 764251

www.japlene.co.uk

Mon-Fri 0930-1730

Sat 0930-1400hrs

Please Note: We cannot be responsible for the quality or services provided by any business or service outside the Nuffield Hospital.

Alternatively, use your local business telephone directory to locate a dressmaker or haberdashery business nearer to your own address.

Contact Telephone Numbers

- Ilizarov Office Telephone: **(01865) 737626**
- Ilizarov Clinical Nurse Specialist Mobile Telephone
Telephone: **0782 5861951**

Please leave a message along with your name and telephone number and we will phone you back.

- Bone Infection Unit Telephone: **(01865) 737623**
- Mr Andy Wainwright
Medical Secretary Telephone **(01865) 738044**
- Mr Martin McNally & Mr David Stubbs
Medical Secretary: Telephone: **(01865) 738035**
- Mr Paul Critchley & Mr Henk Giele
Medical Secretary: Telephone: **(01865) 738050**
- Dr Berendt, Dr Byron & Dr Atkins
Medical Secretary Telephone: **(01865) 738029**
- Physiotherapy Department
Telephone: **(01865) 738074**
- Occupational Therapy Department
Telephone: **(01865) 737551**
- Community IV Team
Telephone: **(01865) 402706**
- Social Services Benefits Help Line
Telephone: **(0800) 882200**
- Community Legal Aid Line
Telephone **0845 3454345**

Other Useful Telephone Numbers and Web Addresses

Please note, we cannot be responsible for the content and accuracy of information on these sites.

NHS Direct Tel (0845) 4647 (Free phone)

NHS Direct:

www.nhsdirect.nhs.uk

Ilizarov Pages:

www.ilizarov.com

www.ilizarov.org.uk

www.groups.yahoo.com/group/ilizarovs-and-fixators

Advice on Medical Conditions:

www.oxmed.com

Nuffield Orthopaedic Centre Web Page:

<http://194.32.128.14/>

STEPS Organization:

www.steps-charity.org.uk

STEPS External Fixator Parent / Carer "Buddy" Support Group

This is where you can phone or email the STEPS Organization and the coordinator will put you in contact with another child or parent of a child who are having similar treatment with an external fixator.

Contact Telephone Numbers

- Ilizarov Office Telephone: **(01865) 737626**
- Maz Sutherland E-mail address: Marion.Sutherland@noc.anglox.nhs.uk
- Maz Sutherland
Ilizarov Clinical Nurse Specialist Mobile Telephone
Telephone: **0782 5861951**

Please leave a message along with your name and telephone number and we will phone you back.

If you require this document in another language, please call our PALS office on 01865 738126

Në se e doni këtë dokument në një gjuhë tjetër, ju lutem telefononi Zyren e Shërbimit Këshillimor dhe Ndërlidhës për Klientët (PALS) në: 01865 738126.

(Albanian)

আপনি যদি এই লেখাটি অন্য কোনও ভাষায় চান অথলে অনুগ্রহ করে আমাদের পালস অফিসে 01865 738126 নাম্বারে টেলিফোন করবেন।

(Bengali)

如果你需要這文件以別的語文提供，請致電我們的病人諮詢聯絡服務 (PALS) 電話：01865 738126。

(Traditional Chinese)

જો તમને આ દસ્તાવેજ કોઈ અન્ય ભાષામાં જોઈતું હોય તો મહેરબાની કરીને અમારો પાલસ ઓફિસને (PALS Office) 01865 738126 ઉપર ફોન કરો.

(Gujarati)

अगर आपको यह पत्रिका दूसरी भाषा में चाहिये कृपया हमारे पी ए लैस (PALS) ऑफिस के साथ 01865 738126 पर सम्पर्क लीजिये।

(Hindi)

W celu uzyskania niniejszego dokumentu w innym języku należy dzwonić do Biura Doradztwa i Pomocy Pacjentom (The Patient Advice and Liaison Service – PALS) pod numer 01865 738126.

(Polish)

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਦਸਤਾਵੇਜ਼ ਹੋਰ ਭਾਸ਼ਾ ਵਿੱਚ ਚਾਹੀਦਾ ਕਿਰਪਾ ਕਰਕੇ ਸਾਡੇ ਪੈਲਸ (PALS) ਦਫਤਰ ਨੂੰ 01865 738126 ਉੱਤੇ ਟੈਲੀਫ਼ਨ ਕਰੋ

(Punjabi)

اگر آپ کو یہ دستاویز کسی دوسری زبان میں درکار ہے تو براۓ مہربانی ہم سے پال (PALS) کے دفتر سے اس نمبر پر رابطہ کریں۔ 01865 738126

(Urdu)