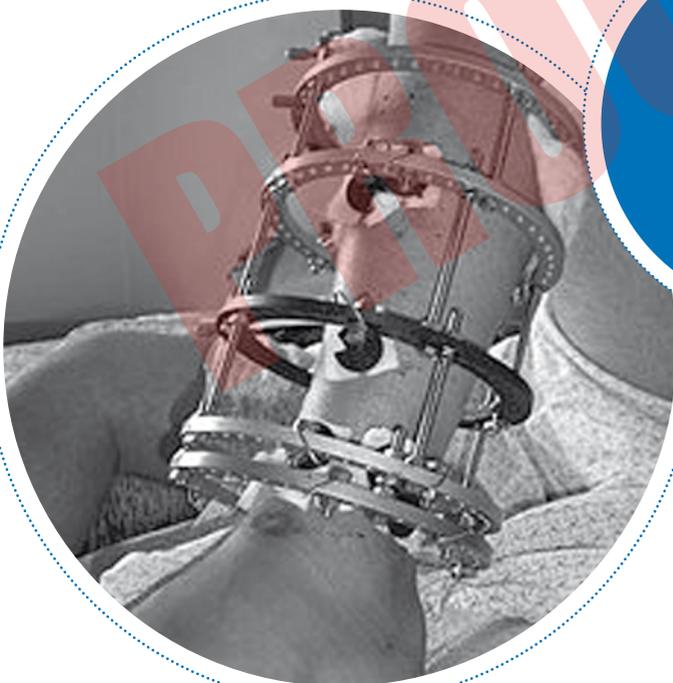


Treatment with a circular frame

Patient Information



Trauma and
theatres
centre

Contact numbers for advice

Hospital name:

The James Cook University Hospital,
Marton Road, Middlesbrough TS4 3BW

Switchboard telephone number:

01642 850850

Ward:

Specialist nurse:

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Hospital occupational therapist:

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Limb reconstruction physiotherapist:

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Types of circular frames



TL-HEX frame



Taylor Spatial frame (TSF)



Ilizarov frame

Introduction

This booklet has been written to help you and your carer to cope with your circular frame / fixator. There is a lot of information available on the internet but some of the treatment information will differ depending on the injury/ deformity of the person being treated so please be careful when reading online. Websites may also be out of date and not contain current treatments.

A normal lifestyle is possible if you are willing to make minor changes to your daily routine. Work/school and social life can be planned and discussed before your operation, and talking to people who have had this treatment can be helpful.

How the frame works

- Your frame may often require gradual alterations of the alignment and/or the length. This is done by a gradual adjustment (distraction) using numbered rods / struts. Different frames use slightly techniques, but don't worry, the way to work with your frame will be explained to you fully. The way the frames work will be explained to you by the consultant and also by the specialist nurse both before and after your operation.
- These numbered rods/struts allow controlled adjustment in millimetres each day.
- You will be told how often and how many times to turn the rods/struts. (A pair of 10mm spanners may be required if the rods are difficult to move.)

- These instructions are specific to your frame and what we hope to achieve from your treatment.
- If you have any difficulties with your adjustments or your frame please contact your specialist nurse on telephone number **01642 854179** (Monday, Tuesday and Thursday) or contact your consultant's secretary by ringing the switchboard telephone number 01642 850850.

Your healthcare team

Consultant

Your consultant will:

- see you before your operation in clinic to discuss your treatment plan which will include any other surgical or non-surgical options with their benefits and risks.
- explain the aims of, and targets for the treatment and what will be expected of you to maximise its benefits and success.
- supervise your treatment, but other members of the limb reconstruction team i.e. the specialist registrar, specialist nurse and physiotherapist can be involved on a day to day basis.

Specialist nurse

Their role involves:

- teaching patients and carers about frame treatment, before surgery, and how it can affect their daily lives.
- visiting you during your stay on the ward to advise you and carers on how to look after yourself, your fixator and pin-site care.
- seeing you in the outpatient clinic to follow your progress and advise on pin-site care etc.

Specialist physiotherapist

Your physiotherapist will:

- help you to increase your mobility in preparation for your return home.
- arrange out-patient physiotherapy appointments during your treatment.
- give specific exercises which are to be practised every day however, it is helpful to be as fit as possible before surgery. Your joints and muscles can be stiff if you have been immobile for a long time, and strong muscles are valuable to your treatment as they help to make movement easier when using crutches or a wheelchair.
- You can contact your hospital-based physiotherapist in the JCUH gym on telephone number 01642 835593

Orthotist

Whilst not being directly involved with the team they:

- are someone trained in the measurement and manufacture of splints and braces (orthoses).
- may be asked to provide additional attachments for your frame, which will give support to your toes or help to support your limb following removal of the frame.

Your hospital stay

You will need a small bag with toiletries, nightwear, comfortable clothing, for example, shorts or wide-legged tracksuit bottoms (those that have zips almost to the knee are ideal) to fit over your frame and, where appropriate, non-slip shoes such as trainers.

Generally your stay in hospital is approximately one week, although in some circumstances this may need to be increased.

You will be given regular painkilling tablets / liquid during your stay and extra supplies can be obtained through your GP.

On discharge from hospital a limb reconstruction outpatient appointment will be either given to you or sent in the post.

How you can prepare for your treatment

Most people having circular frame treatment can prepare in advance, although a small number of people have a frame applied following an accident.

Before surgery we can show you a model of a frame, discuss its care and put you in contact with patients who are undergoing or have completed the same treatment.

Smoking: Smoking can be damaging to anyone's health, but there is a particular risk for anyone who smokes and has a circular frame fitted, as it can result in delayed healing of the affected bone and cause wound problems.

You should try to stop smoking as soon as the decision is made to have surgery. If the frame is applied after an accident you are advised to stop smoking as soon as possible.

Alcohol: It is advised that alcohol intake is reduced to no more than two units per day. This is the equivalent of one pint of beer or cider, half a pint of strong lager, two glasses of wine, two small glasses of sherry, or a double whisky or other spirits.

Movement and co-ordination are impaired due to excessive alcohol intake and a fall could result in further damage to the particular limb and/or damage to the fixator.

It is likely that you will be taking medication during your treatment and some drugs are dangerous when mixed with alcohol.

Patient responsibilities, co-operation and commitment

- Maintenance of good general health
- Weekly pin site cleaning/daily general frame observation
- Clinic and physiotherapy attendance, with exercises continued at home
- Carrying out frame adjustments as taught (no subtractions from or DIY additions to frame please!)
- Do not grind down the ends of pins, the heat will travel down the pin causing pain as well as damaging the bone.

Failure to follow any of the above advice will have a negative affect on your treatment time and may increase number of complications or the end result. The treatment may fail altogether if the guidance is not followed.

Complications, pain and inconveniences

Pin site infection

The commonest 'complication' from frame treatment is pin-site infection, although improved surgical techniques and pin-site cleaning have been effective in reducing this risk. We often refer to infection as a *consequence* of having a fixed frame in place rather than a *complication*.

A regular, good cleaning technique is one way to help prevent this happening, but sometimes infections cannot be avoided.

If an area surrounding a pin becomes sore and/or red, the first step would be to increase the frequency of attention to that pin-site. If this fails, then usually a course of oral antibiotics helps to settle the pain / inflammation.

Very occasionally things do not settle and you may require intravenous antibiotics (in hospital).

Even less commonly, the bone itself may become infected which can require removal of the pin and possibly local surgery to clear the infection.

Wound infection

Infection of the surgical wound is a different thing and not common, but again usually responds to a course of antibiotics.

Pain

Pain is a common feature due to the tissues being stretched at first, but usually pain becomes less, further into the treatment. It will settle once movement of the frame is stopped.

However, pain and stretching of the muscles and ligaments can lead to tightness, stiffness and difficulty in straightening neighbouring joints therefore physiotherapy is important to keep these joints supple.

Pin and/or wire breakage or loosening

This is less common nowadays, but pin breakage or loosening can occur, as metal against bone may cause weakness.

This is resolved by a simple process of changing the broken or loose pins under general anaesthetic.

The chances of this happening increases, the longer the frame is in place.

Failure of treatment

This is always a possibility, although it is uncommon.

The possibility of failure and how likely or unlikely it is will have been discussed with you in the outpatients department.

It is less likely to happen if you follow the instructions you have been given regards stopping smoking, doing exercises as instructed, and careful and regular pin-site care.

Physiotherapy

The aim of physiotherapy is to maximise function and to minimise loss of joint range and muscle strength.

Weight bearing is an essential part of the success of this frame treatment, by stimulating bone growth and bone healing. Weight bearing done during walking is essential to rehabilitation, it is effective in loosening joints and maintaining muscle strength in the lower limb. Active movements of the upper limb with a circular frame work in the same manner.

Correct positioning of the limb involved, during the day and night, is essential to prevent joint stiffening and deformity (contractures). This will be taught to you by your physiotherapist.

Active exercises and stretches of **all** the joints of the affected limb are vital to maintain joint movement and keep muscles toned. To benefit from physiotherapy the frame wearer must fully comply with the exercise programme shown to them.

Patient support

It is more difficult to manage the manage frame treatment without support from family and friends.

Many times there are corrections to complete on the rods or struts when you may not be able to 'see or reach', and assistance may also be needed with pin-site care.

Psychological support (when feeling low), safety, transport, toileting, continuing the family routine, physiotherapy and personal relationships all need special consideration.

Pain and pain control

While your frame is in place, you will experience different types of pain and sensations. These can be treated in different ways as and when they occur.

- Aches and pains can be helped with the use of regular painkillers and ice packs.
- Some patients will have a burning sensation, which can be due to sensitive skin, nerve injury or pin-sites.
- Patients sometimes have spasms, especially at night. A muscle relaxant may be needed, as the spasms can be quite prolonged and painful.
- You may feel a 'background' aching at your pin-sites.
- You may hear a 'clicking' noise in your limb, which could be due to muscles moving around the pins. This is not uncommon.
- Most of the sensations that you feel are not serious and may be experienced by most people having the same treatment.
- If you feel that they are getting worse, then seek advice from your specialist nurse or contact your consultant's secretary.
- It can be helpful to support your frame on pillows/cushions when you are in bed or sat in a chair. This helps to keep the limb in a good position and relieves discomfort.
- You need to be honest about the amount of pain that you have to enable staff to do something about it, if it is not bearable.

Causes of pain

1. The painkillers are not suitable.
 2. There may be a problem with your fixator.
 3. You may have an infection.
- Always bring your medication with you when you are admitted to hospital or attend the outpatients clinic, as adjustments to the frame can sometimes cause discomfort.
 - Your medications will be supplied by the hospital until you go home and for two weeks after discharge, then your GP can give you further prescriptions.
 - Before surgery, the pain you have may be able to be controlled with ordinary 'over the counter' painkillers, but after the operation the pain can be quite severe.
 - Everyone can tolerate a different level of pain but it is important that you know it can be controlled.
 - Pain after surgery can last for two to three days before it starts to appreciably improve. Painkillers at this time can be given by painless injection directly into your bloodstream using a PCA machine (Patient Controlled Analgesia). A pain specialist sister and the ward nurses will show you how to use this machine and as your pain starts to lessen, the painkillers will be given in tablet form.
 - In the early stages you will find that moving around in general and having physiotherapy will cause you to have pain, so it is a good idea to have pain relief before any such treatment.

- It may be necessary to give you more than one painkiller during your treatment for different types of pain/sensation.
- Heat packs, change of position and elevating the limb can be helpful in easing discomfort, as can a short-term course of anti-inflammatory drugs.
- As your treatment progresses you will be made more aware of what makes your pain better or worse and how to cope with it.
- Non-steroidal anti-inflammatory drugs (NSAIDs) are drugs similar to aspirin. They should not be taken if pain relief can be achieved with other drugs such as Paracetamol or Codeine as they can have an adverse effect on bone formation.

Drugs to avoid:

Aspirin	Mefenamic Acid
Ibuprofen	Diclofenac
Indomethacin	Naproxen

- There are other NSAIDs less commonly used. If in doubt ask your doctor or nurse.

Note:

Check the real name on the bottle, not just the trade name.

Removal of your frame

It is impossible to give an exact length of time for the frame to be in place, but your consultant will discuss this with you during the course of treatment.

It is wise not to set too many targets dates as you can be left feeling disappointed, although you will feel enthusiastic if not a little apprehensive when the frame is removed.

The frame will be removed in the operating theatre, usually as day-case surgery. Your limb is sometimes protected by a plaster cast or brace for a few weeks afterwards. Although removal of the fixator is one-step nearer to the end of treatment, there could still be a long way to go before it is completed.

Obstacles and inconveniences

If you are in a wheelchair you may find entry to certain places is very limited, although most shopping areas and cinemas usually have very good facilities. If you have steps leading to your front door, these can be converted to ramps, or handrails can be fitted. Social services and an occupational therapist may need to be involved.

Crutches will be given to you to increase your mobility and give you some independence. The amount of walking you can do and how much weight you can put through your affected leg will be discussed with you. This may alter as your treatment progresses.

As a passenger in a car you can travel in the front with the seat pushed back for extra room or sit in the back with your leg rested on the seat supported by pillows or cushions. Always make sure that the door is firmly closed.

Driving is not advised, for safety reasons, if you have a frame in place.

Parking badges may be available for you as a passenger. Apply to your local social services department. Other forms of transport may be available but these can vary, for example 'Dial-A-Ride' or there may be special taxi fare schemes. Trains and buses may have wheelchair access or low floors for patients walking with crutches.

Sleeping may be difficult due to the bulk of the frame itself, muscle spasms or pain. Finding a comfortable position, for example, slightly sat up in bed, lying on your side and/or supporting your affected limb on a pillow can be helpful. You may also find that taking painkillers just before going to bed and having a hot drink helps to encourage sleep. **(It may be wise to use old sheets on the bed as pins/wires can ruin good linen).**

Swimming is not advised whilst the frame is in place due to pin-sites being moist for prolonged periods of time.

Holidays long distances from either your home or hospital are not advisable while you have your fixator in place, especially in the early stages of treatment. Any holiday plans should be discussed with your consultant.

Skin grafts and donor sites must be protected from sun. Total sun block should be used for as long as two years after treatment and normal sun protection after that.

Clothing While your fixator is in place it is possible to wear your normal clothes, with minor alterations.

Some suggestions:

- Pants can be split along the side seam and Velcro or fastening tapes attached.
- Skirts usually do not need any alteration, but culottes and trousers can be split along the side seams, and Velcro, tapes or press studs can be applied, or a piece of matching material inserted. Jogging bottoms usually fit over the frame without any problems.
- It is advisable to keep the frame covered when you are outdoors to maintain an even temperature, and reduce exposure to contaminants.
- Leg fixators can be enclosed in a pillowcase with a drawstring top and bottom that can be left open in warm weather. Alternatively, your frame can be covered with a sheet, blanket or 'neck warmer' if preferred.
- Upper limb fixators (applied to the arm) give similar problems to those of a lower limb, although some situations are unique, for example, the amount of permitted movement of the hand, wrist and shoulder, also the amount of weight that you can lift. Skirts, blouses and T-shirts with loose sleeves should fit over your frame, sometimes with minor alterations. Shoes with laces may be more difficult for you to manage.
- If you need to use crutches or a wheelchair for another disability, the physiotherapist can advise. The occupational therapist can advise on one-handed equipment.

Toileting can be a problem when away from home, although most people with a fixator are able to use a toilet in the normal manner. Raised toilet seats and or/rails can be provided if necessary as well as a commode for night use.

- Bedpans and urinals can be obtained from mobility shops (males can improvise by using a screw top milk carton or fabric conditioner bottle and female equivalents are available).
- Taking these out with you can make life easier if you use a wheelchair. You can apply for a RADAR key, giving access to disabled toilets in public places. This is a national key scheme allowing the use throughout the country.

To apply for a key, contact:

- Middlesbrough Borough Council
 - Redcar and Cleveland Council
- OR Social Services in your area.

Returning to work or school can be discussed with your consultant.

Hygiene

While you have a fixator, a high standard of hygiene is essential. Showering/bathing is still an option but pin-site dressings need to be kept dry as increased moisture can increase the risk of localised infection.

Pin-site care: Pin-site cleaning is weekly and you will be given a copy of the care instructions to follow and refer to as needed. Use the contact numbers if you have any problems or queries.

Bathing and showering:

- If you are bathing, it is recommended that you rest your leg on the side of the bath ensuring that the frame is not immersed in water.
- The limb can be enclosed in a large, secured plastic sack or something similar that is specifically manufactured for the purpose.
- Bath boards and other equipment may be available from the hospital or local social services.
- If you normally have foot treatment by a chiropodist this can be continued while the frame is in place.

It is advisable to protect the bottom of the bath with towels when a leg/hip fixator is in place.

Diet

Where new growth of bone is needed your body will require extra nutrition. You should include one of the following at each meal time – meat, fish, eggs, cheese, milk, pulses (peas, beans, lentils), carbohydrates (starchy foods), cereals, fruit and vegetables. These are all needed to maintain a balanced diet and prevent constipation.

Your consultant needs to know of any dietary supplements you are taking.

Diabetic patients: It is important to keep your diabetes well controlled after surgery, particularly if you are using crutches or spend a lot of time alone.

If you are insulin-dependent and lose your appetite soon after the operation then it may be necessary for you to have a 'drip' until you can eat a proper diet. A dietician or diabetic nurse can be asked to give advice if needed.

Emotional problems

In the initial phase when everything is 'exciting' and 'new' there may be no problems but this can quickly change to a 'routine', 'boring', 'nothing happening', phase. This is probably the time when patients 'lose heart' and feel depressed, because this stage of treatment often lasts the longest. It can seem an endless round of pin site care, outpatient appointments and physio, but this gradually turns into 'light at the end of the tunnel' as the end of the treatment approaches.

Below are some of the most common problems that people experience. They might not all affect you, but if you think about how you would cope with them you are decreasing the chances of them happening.

- Feeling angry
- Feeling helpless
- Sleeping problems (inability to sleep can also be due to not being able to find a comfortable position)
- Feeling isolated

- Feeling anxious, worried
- Feeling 'hyped-up'
- Loss of interest

The listed problems are common to any 'normal' person. It is when they are combined with injury and lengthy treatment that they seem much worse than they are. It helps to have had time to prepare for the treatment, and good support from family and friends is essential. It also helps to share your experiences and talk to someone.

There is specific advice and self-help information available, but if these do not seem to work then you should ask your GP about speaking to a psychologist or counsellor.

Personal relationships

Throughout your treatment it is very important that you continue your life as normally as you can, ensuring a 'positive' relationship with your partner. With the frame in place, you may have to create a temporarily different life-style. It may include changes in who does household chores, who is to be the main breadwinner, or how these roles can be shared.

Changes in your personal relationship may be necessary and have to be tackled with sensitivity. Who does what is far less important than mutual enjoyment. Where problems do occur, they can usually be overcome, especially if you talk openly about them with your partner.

Benefits and allowances

Benefits and allowances may be available to you during your treatment.

Disability Living Allowance: This is a benefit for people who are aged under 65 and have difficulty looking after themselves and/or problems e.g. walking. You must have already needed help for three months, and be likely to need it for at least another six months.

The benefit can continue to be paid after the age of 65 so long as initial claim was made before your 65th birthday.

Disability Living Allowance is a benefit made up of two components – the care component, and the mobility component. Each has different rates according to the severity of disability. Telephone 0800 88 22 00 for a claim pack or obtain online at: <https://www.gov.uk/dla-disability-living-allowance> Advice is available for both children and adults.

Attendance Allowance: This benefit is payable to people who become ill or disabled after their 65th birthday. Only 'care needs' are taken into account (not mobility problems) and you must have been in need of help for at least the past six months.

Telephone 0800 88 22 00 for a claim pack or obtain online web site address as above.

The above benefits are ignored as income, for working out income support and jobseeker's allowance, and indeed should increase your 'applicable amount' for these benefits. This means that they will be increased by adding a disability or higher pension premium.

Disability Working Allowance: This benefit is for people who are receiving certain disabilities benefits (e.g. Disability Living Allowance), work over 16 hours a week and are on low income.

PLEASE NOTE: This is only a short description of some of the benefits that may be available to you. We recommend that you contact either your local Citizens Advice Bureau or Disablement Services Centre at The James Cook University Hospital (telephone: 01642 827471) which can refer you on to other specialist benefit advice services, such as Welfare Rights.

Comments, compliments, concerns or complaints

South Tees Hospitals NHS Foundation Trust is concerned about the quality of care you receive and strives to maintain high standards of health care.

However we do appreciate that there may be an occasion where you, or your family, feel dissatisfied with the standard of service you receive. Please do not hesitate to tell us about your concerns as this helps us to learn from your experience and to improve services for future patients.

Patient Advice and Liaison Service (PALS)

This service aims to advise and support patients, families and carers and help sort out problems quickly on your behalf.

This service is available, and based, at The James Cook University Hospital but also covers the Friarage Hospital in Northallerton, our community hospitals and community health services. Please ask a member of staff for further information.

Author: Specialist nurse in joint replacement and limb reconstruction

The James Cook University Hospital
Marion Road, Middlesbrough, TS4 3BW. Tel: 01642 850850

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