Fracture treatment with external fixation

Broken bones have a remarkable ability to heal, but it is important that they are held in the correct position during the healing process.

In your case, your surgeon has chosen an external fixator to hold the fracture in position while it mends. This leaflet explains quite a bit of what is involved, and the importance of taking an active role in your treatment. However, these can only be general guidelines, and you should always follow the instructions of your surgeon.

What is external fixation?

An external fixator is a device fitted to the outside of the limb, and is fixed securely using pins or wires to the bone fragments. The external fixator is used to support the bone while it is healing.

External fixation usually allows joints to move normally while the bone is healing. This can make your initial stay in hospital shorter, and help you get back to your normal life as soon as possible. The amount of mobility or weightbearing of the operated limb depends on which bones are affected and the type of fracture.
Cleaning your pin sites

The pin site is where each pin of your fixator goes through your skin. Infection of a pin site can cause pain and swelling and might stop the fixator from working properly. So your pin sites need to be kept clean.

During your hospital stay you will become increasingly involved in the process of keeping your pin sites clean, to the extent of taking complete responsibility for this by the time you go home from hospital. You will be advised while you are in hospital how often to clean your pin sites. This can take a little getting used to, but the nurses will be there to reassure and teach you. This leaflet will provide you with a reminder of the important steps in pin site care.

1 Wash your hands

Before each cleaning session, wash your hands thoroughly. Only use soap that is reserved for you, and use a clean towel every day. Don’t touch anything else before starting the cleaning procedure (for example, wheelchair tyres or crutches), and if you have to remove dressings from the pin sites, wash your hands again. Wash them again afterwards, as well.
2 Prepare your cleaning materials

Your cleaning materials will consist of:

- Cleaning solution (as instructed by your surgeon)
- Disposable cups to hold the cleaning solution
- Sterile cotton buds
- A bag for removing all waste material

When you have collected your cleaning materials wash your hands again before proceeding.

3 Fingertip massage

Gently massage the skin around each pin with the tips of your fingers, to make sure that the skin is free to move slightly all around the pin. This encourages any drainage to come up to the surface where it can be cleaned away, reducing the risk of infection.
4 Clean the pin sites

It is important to use a sterile cotton bud for each pin site and to not clean more than one pin site with each cotton bud. This helps to reduce the chance of spreading an infection from one pin site to another.

Dip your cotton bud briefly in the cleaning solution. Then clean in a circular motion all around the first pin site, making sure to remove any crusting. Use new cotton buds until the site is completely clean. Then dry the pin site with a dry cotton bud.

Repeat this process for every pin site, using a clean cotton bud for every pin. Do not use the same cotton bud for cleaning further pin sites.

5 Clean the pins

Next, using a fresh cotton bud for each pin, carefully clean the exposed metal, particularly the threaded areas. Wires only need cleaning if there is some discharge.
Cleaning the fixator

Use a damp cloth or cotton buds to keep the whole fixator free of dust, grease or dirt. When advised, you will be able to have a regular shower. In the shower, gently clean the fixator with soap and water, drying it afterwards with a clean towel. You will need to clean the pin sites after you have showered.

Warning signs

If any of your pin sites become painful, swollen or red, or if you notice an unusual amount of discharge, try cleaning the affected site more frequently and contact your doctor for further advice. If there’s no improvement after two days, or if the discharge becomes thick or coloured, you should contact the hospital or your General Practitioner again. Swabs may then be taken to identify the infection, and you may be prescribed antibiotics.

Antibiotics

If you are prescribed an antibiotic to fight infection, keep taking the dose regularly, until you have finished the whole course. Don’t forget, you still have to clean your pin sites!
Living with your fixator

For however long you wear it, your fixator should provide firm but comfortable control. During your treatment, you should find that the fixator does not interfere too much with your normal life. As soon as your fixator is no longer needed, it can be removed quickly and easily, probably as an out-patient.

More information

Hospital staff, including your surgeon, nurses and physiotherapists, will help you with every aspect of care and recovery. They are there to inform, prepare and support you through the treatment procedure. You may also find it invaluable to talk to patients and their families who have undergone this process. They may be able to give you practical ideas, solutions and suggestions.
Physiotherapy exercises may start the day after your operation. The exercises are important to make sure that your bone is surrounded and supported by healthy muscles, and also to ensure that your joints function well. Your surgeon, nurses and physiotherapists will plan an individual programme of care with you, and your physiotherapy treatment will alter as you progress through your treatment.