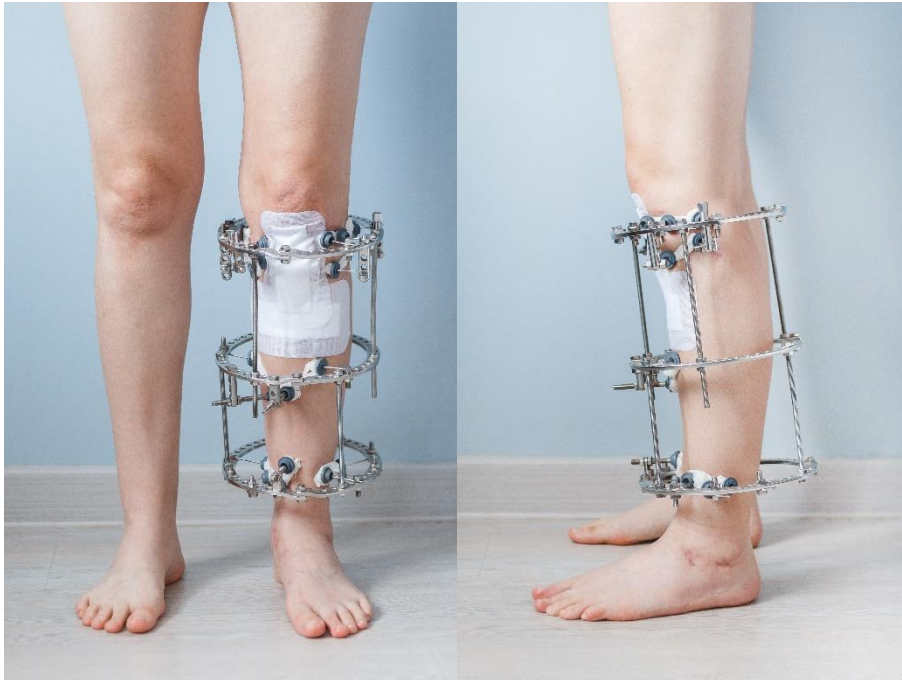


Care of Your External Fixator

What is an External Fixator?



An external fixator is a device that helps to keep a particular part of your body in place. You may need an external fixator if you:

- Are seeking treatment for bone fractures (partial or complete break in a bone)
- Experience deformities after complicated treatment for serious physical injuries
- Have bone and soft tissue complications caused by neurological injuries (e.g. stroke)

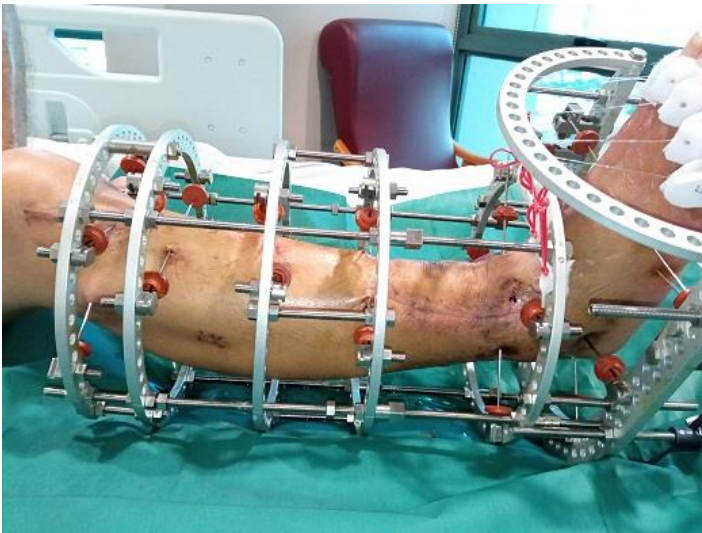
An external fixator is worn outside of the body and it is called a fixator because it is connected to your bones with bone screws, also known as pins or strong wires.

These pins/wires will pass through your skin and muscles to connect the fixator to your bone. This ensures that your bone will be held in place and the fixator is secure.

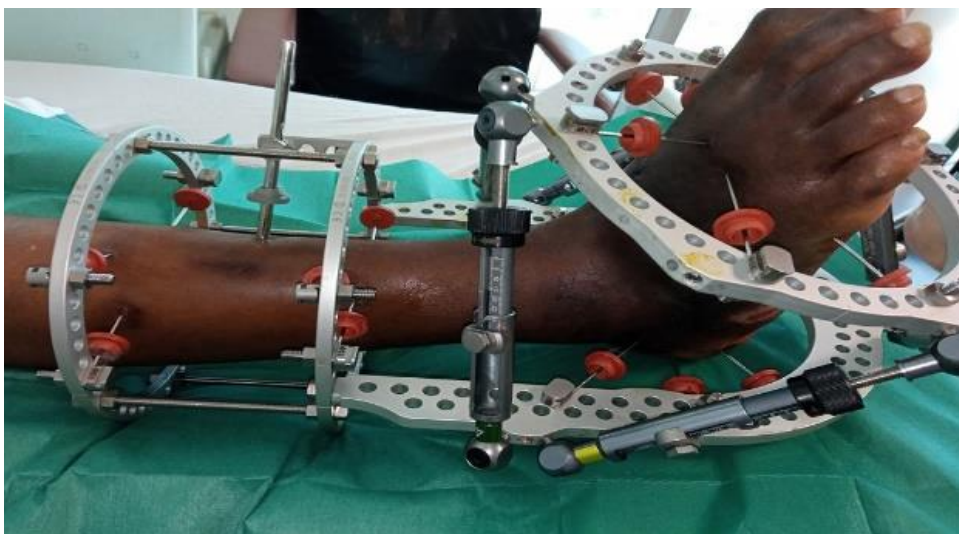
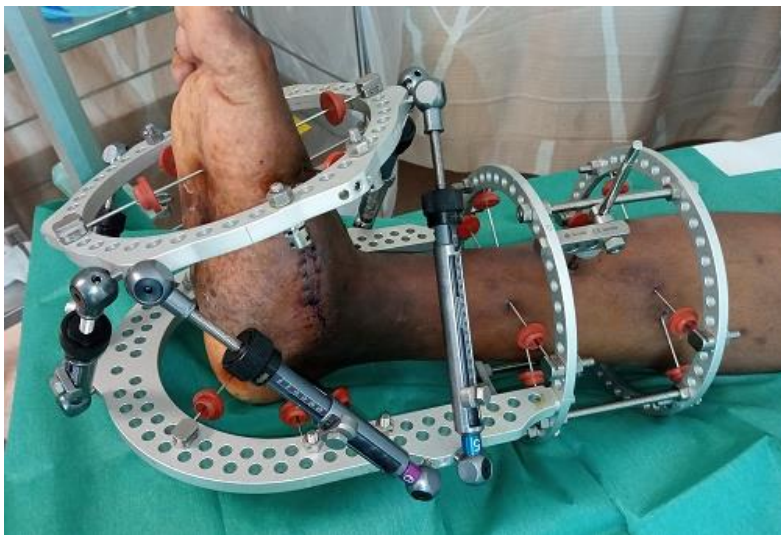
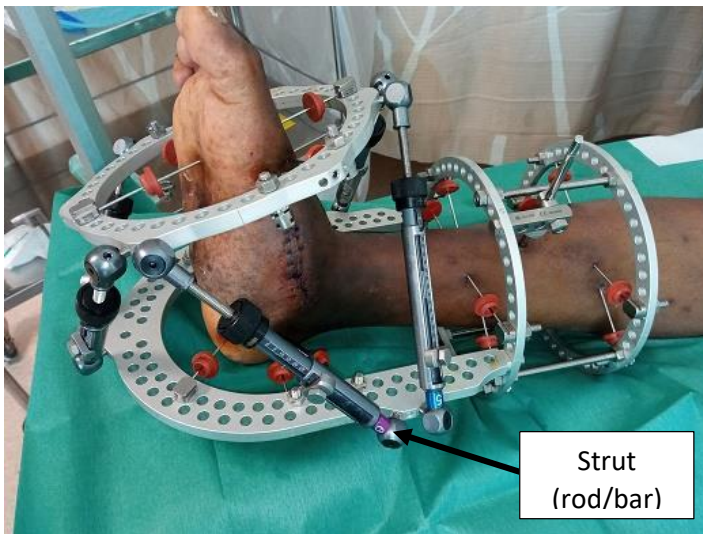
The fixator can be adjusted from the outside to ensure that your bones remain in the best position during the healing process. Adjustments can be done by the patient or caregiver, but please seek your healthcare professional's advice on how often the external fixator should be adjusted.

Read on to learn about the different types of external fixators.

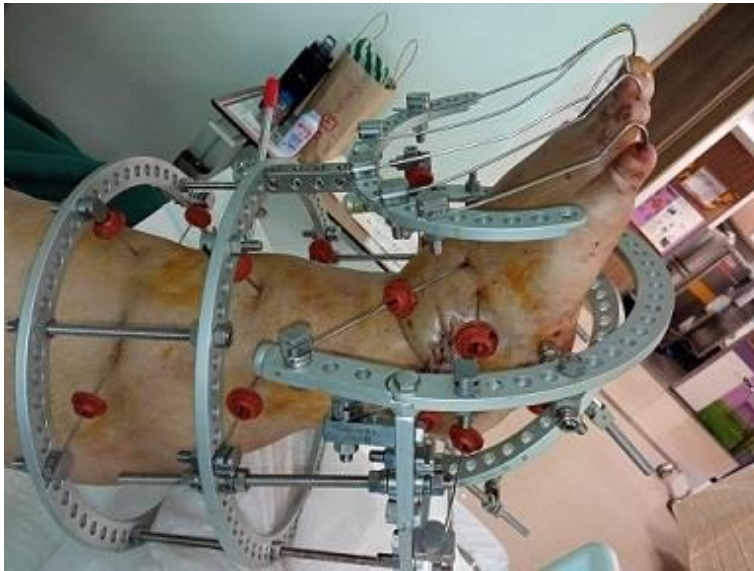
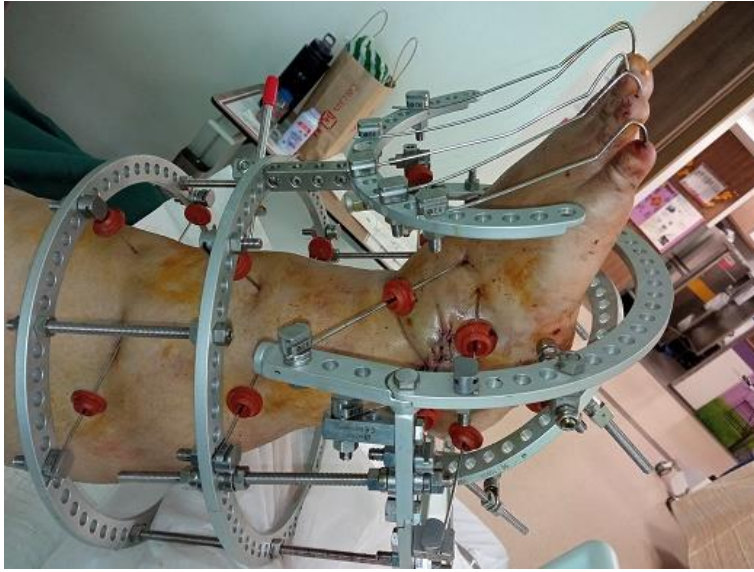
1) Full Ring



2) Full Ring with Strut



3) Full Ring with Half Ring Constructs



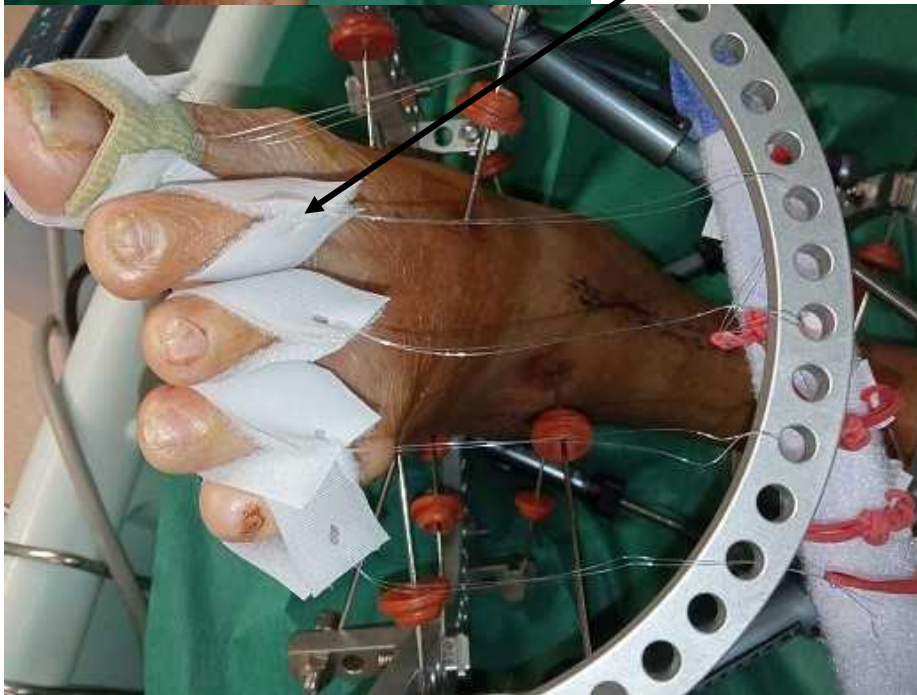
Please remember to keep your toes extended to prevent them from curling up.

If your toes become curled, you will need toe loops (continue to the next page for reference images).

Toe Loops:



Toe loop



Toe Loop

Full Ring



Half Ring



During Pre-surgery

Your surgeon will explain:

- The reason why you have been recommended to use an external fixator
- The technical details of the surgery and post-operative care
- The benefits and risks of the surgery
- The expected treatment plan and outcomes of surgery

Here are some risks that you should be aware of:

- **Anesthesia** (medicine to prevent pain during surgery) may result in problems such as nausea and vomiting
- **Infections** (invasion of germs) commonly occur at the pin/wire site (where the pins are inserted into the skin) but it can be treated with antibiotics
- **Nerve problems** are rare but may occur
- **Blood vessel problems** are rare but may occur and it is usually due to the person's inability to move and not the fixator or surgery
- **Joint or muscle problems** such as muscle stiffness are common and can be managed with walking or exercises, following your surgeon's instructions
- **Wire/pin may break** but they can be repaired, removed or replaced
- **Blood clots** in the leg may lead to thrombotic diseases (e.g. blood clumping together in the lungs) but please note that this can be a risk you face in any operation

Care During Post-surgery

Please ensure that your fixator continues to feel secure but comfortable while you are wearing it.

During treatment, there may be some modifications to your daily activities, but it should not greatly affect your normal life.

Your surgeon will explain the fixator adjustment schedule (if you require one) and how many visits you are required to make during post-surgery.

Before your discharge, your healthcare professional will inform you of the following:

- Your weight bearing status (the amount of weight that can be safely placed on one part of your body):
 - i. Partial weight bear
 - ii. Full weight bear
 - iii. Non-weight bear
- Your mobility level

Please take note the following during post-surgery:

- You may require a wheelchair or crutches depending on the treatment method
- Your physiotherapist will teach you how to use these devices and he/she will advise you on how to reduce difficulties of moving about at home



Care of Pin/Wire Sites

Prior to your discharge from the ward, your loved ones, caregiver or you will be taught how to clean the pin sites. Please take note of the following:

- It is normal to have some drainage leaking around the pin sites
- Please seek medical treatment immediately if:
 - You have bloody drainage that does not stop or
 - The drainage is thick and pale yellow or smells bad
- You can clean the fixator with alcohol wipes to keep it free of dust, grease/oil or dirt
- All pin sites are to be checked every day following your healthcare professional's instructions
- If the pin sites become clogged from dried leakage, please clean the pin site with Chlorhexidine or Iodine
- You should change the injury dressing every two to three times a week
- Check the attachment of pins/wires to the rings/rods at least twice a week and inform our medical staff if they are loose

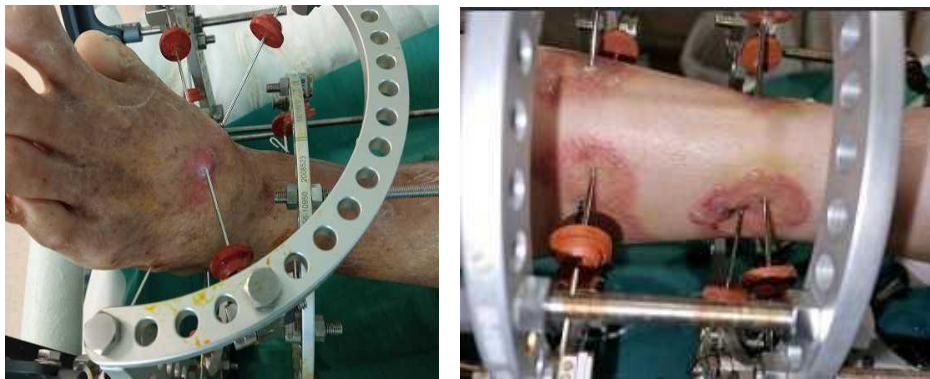
Potential Complications of Pin/Wire Sites

Even when you take good care of the pin sites, there is a chance that they may become infected or result in complications.

Signs and symptoms of infections include:

- Redness at the pin sites
- Swelling at the pin sites
- Thick or coloured discharge from the pin sites
- Loosening or movement of the pins/wires
- Persistent pain or soreness that does not go away at the pin sites

If you experience any of the above signs or symptoms, please contact our clinic immediately.



Pain Management

Pain will decrease over a few weeks. If you experience pain, please take the painkiller medications as given and instructed by your healthcare professional.

Please remember to take the painkiller medications before attending your therapy sessions.

Exercises and Physiotherapy

During your hospitalization period, your physiotherapist will teach you some exercises. It is important to do these exercises taught by your physiotherapist because it will help to:

- Prevent permanent joint stiffness (the feeling that the movement of a joint is limited or difficult)
- Prevent extending the duration of you wearing the fixator
- Strengthen your muscles, joints and bones

Please take note of the following when exercising:

- Exercises taught to you should be performed according to the instructions given by your therapist as it ensures that you get the full benefits of the surgery and the external fixator
- Always exercise in moderation as excessive exercise may be harmful to you

Fixator Adjustment

As there are different types of external fixators, your healthcare professional will:

- Show you or your caregiver how to adjust the motor/struts of the fixator frame
- Inform you of the number of times a day that you need to perform the adjustment – in complex cases, a schedule of corrections will be provided
- Inform you if there are potentially more complex changes to the frame during the course of treatment which would require a visit to the orthopedics clinic

How Long Will You Be on the External Fixator?

You will be on the external fixator for a minimum of three months depending on the treatment plan.

Things to Note When on the External Fixator

1. When bathing, please cover the fixator with a plastic bag to keep it dry
2. When toileting, use a raised toilet seat as getting on and off the toilet may be difficult if your fixator is extended upwards until your thigh
3. When sleeping, please use a pillow to elevate your leg and the external fixator, and do not cover your leg with a blanket as it may accidentally pull on the pins and cause pain or injury
4. When wearing clothes, choose or modify clothing that can fit over the ring of the fixator frame
5. Please take note of your weight bearing status (partial weight bear, non-weight bear, full weight bear) as informed by your healthcare professional
6. Please do not alter/change the fixator or frame in any way unless advised so by your healthcare professional
7. Please do not use objects like a pencil, ruler, chopstick or food item to scratch the area around the fixator or pin sites
8. You are not allowed to drive any motor vehicle (e.g. car, motorbike, etc.)
9. Please avoid applying cream onto the pin sites
10. Please look out for signs/symptoms that could indicate infection around the pin sites:
 - Skin redness
 - Pin site is warm
 - Swelling or hardening of the skin
 - Increased pain at pin sites
 - Drainage is yellow, green, thick or smelly
 - Numbness or tingling sensation at pin sites
 - Loosening of the pins
 - Others: fever
11. Please avoid Magnetic Resonance Imaging (MRI) procedures or procedures requiring the assistance of MRI capability
12. Eat foods that help with wound healing (e.g. leafy green vegetables, eggs, etc.)
13. Please do not smoke and drink alcohol