

## Introduction

An Open Reduction Internal Fixation (ORIF) is surgical procedure to fix a severe fracture, or break in bone or joint. “Open Reduction” (as opposed to a closed reduction performed without surgery). means surgery is needed to open up the procedure field and to realign the bone fracture into the normal position. “Internal Fixation” refers to the steel rods, screws, or plates, put internal to skin cover, used to keep the bone fracture stable in order to heal the right way and to help prevent infection.

ORIF is performed under general anaesthesia. An incision is made at the site of the break or injury. The fracture is carefully re-aligned or the joint replaced. The hardware is installed, and the incision is closed with staples or stitches. The steel rods, screws, or plates can be permanent or temporary (solely to support the bone during healing) and removed when fracture is healed.

A cast is usually applied after ORIF. In the case of an ankle fracture the first cast is non-weight bearing, and crutches can be used to help keep weight off the healing bones. Later, this cast will be replaced with one that can bear weight. Eventually, after a period of some weeks, the cast will be removed.

While there have been significant advances in orthopedic surgery and ever-increasing rates of success, recovery is largely dependent on the severity of the break, the type of bone involved, the extent of post-operative rehabilitation, and the age of the individual.

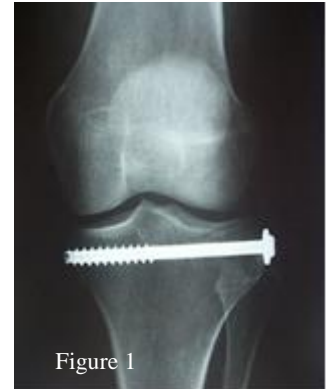


Figure 1

## The Operation

1. The first stage “fracture reduction” aims to reposition the broken bones to restore their normal alignment. Every effort is made to ensure the bones are set at the correct angle with as few gaps and surface irregularities as possible.
2. The second stage “internal fixation” involves the use of different types of implants to hold the broken bones together and provide reasonable stability during the healing process, metal plates and screws, stainless steel pins or K-wires, and stabilizing rods (intramedullary nails) forced into the cavity of the bone.
3. A cast is typically applied after surgery.

## Preoperative Preparation

1. Admit 1 day before this “elective” operation.
2. Blood tests, X ray.
3. Anaesthetic assessment. **Inform your doctors** about drug allergy, regular medications or other medical conditions. e.g. diabetes, asthma.
4. Keep fast for 6 to 8 hours before operation.
5. Empty bladder and change to operation clothes before transfer to operating room.
6. Pre-medication, antibiotic prophylaxis intravenous line may be required.

## Postoperative Instruction

### A. General

1. Mild throat discomfort or pain because of intubation.
2. Mild discomfort or pain over the operation site. Inform nurse or doctor if pain severe.
3. Nausea or vomiting are common; inform nurses if symptoms severe.
4. Diet as tolerated when fully conscious, usually normal diet by 24 hours.

### B. Wound care

1. Oral, IV or IM analgesic as required. Pain usually settle down quickly after 1 to 3 days.
2. Avoid NSAIDs, which can slow down the healing process.
3. If there is a drain, it will usually be removed after 1 to 3 days
4. Most patients can weight bear with or without support, immediate post operation.
5. Most patients can be discharged home after 1 to 2 days. Braces are occasionally prescribed.

**C. Diet**

Resume diet, usually 4 hours after anaesthesia, and when taking sips of water well.

**D. Physical therapy**

Appropriate physical therapy is required since immobilization will inherently lead to some degree of muscle atrophy and the weakening of ligaments and tendons.

**Common Risks and Complications** (not all possible complications are listed)**A. Anesthesia related complications**

1. Cardiovascular: myocardial infarction or ischaemia, stroke, deep vein thrombosis, pulmonary embolism, etc.
2. Respiratory: atelectasis, pneumonia, asthmatic attack, exacerbation of chronic obstructive airway disease.
3. Allergic reaction and shock.

**B. Procedure related complications**

1. Bacterial infection
2. Audible snapping and popping
3. Nerve damage
4. Arthritis
5. Loss of range of motion
6. Shortening of a limb and deformity.

**Things to take note after discharge**

1. Contact your doctor or a nearby Accident & Emergency Department if you find increasing discharge, pain or redness and swelling around the wound or fever.
2. Take analgesics prescribed by your doctor if required.
3. You should keep your wound clean and dry, see the doctor as scheduled.

**Remarks**

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

**Reference**

Verywellhealth: "Repairing Broken Bone With ORIF" (2022)  
<https://www.verywellhealth.com/orif-fracture-open-reduction-internal-fixation-2548525> (24-07-2023)