

Tibia/Fibula Fracture Open Reduction and Internal Fixation

REVIEWED*By Chris Tighe at 10:31 am, Aug 08, 2016*

What is tibia/fibula fracture open reduction and internal fixation?

Open reduction and internal fixation (ORIF) is a type of surgery used to stabilize and heal a broken bone. You might need this procedure to treat your broken shin bone (tibia) or your fibula.

The tibia, or shin bone, is the larger bone in your lower leg. Beside it, more toward the outside of the leg, is the fibula. The tibia forms part of the knee joint. The ends of the tibia and the fibula both form part of the ankle joint.

Different kinds of injury can damage the tibia or the fibula, causing them to break into one or more pieces. This might happen in the part of the bone near the knee, near the middle long part of the bone, or in the bone near part of the ankle. (A fracture here might be called a "broken ankle.") Only one of these bones might break, or you might have a fracture in both bones. In certain types of fractures, your bone breaks, but its pieces still line up correctly. In other types of fractures, the injury moves the bone fragments out of alignment.

If you fracture your tibia or fibula, you might need ORIF to bring your bones back into place and help them heal. During an "open reduction," orthopedic surgeons reposition your bone pieces during surgery, to put them back into their proper alignment. In a "closed reduction," a doctor physically moves the bones back into place without surgically exposing the bone.

"Internal fixation" refers to the method of physically reconnecting the bones. This might involve special screws, plates, rods, wires, or nails that the surgeon places inside the bones to fix them in the correct place. This prevents the bones from healing abnormally. The entire operation usually takes place while you are asleep under general anesthesia.

Why might I need a tibia/fibula fracture open reduction and internal fixation?

Certain medical conditions may make tibia or fibula fractures more likely. For example, osteoporosis increases the risk of fracture. Motor vehicle or cycling accidents, contact sports, falls, and repetitive impact activities are common sources of injury that can lead to a tibia or fibula fracture.

You might not need ORIF if you fracture your tibia or your fibula. Many people don't. If possible, your doctor will treat your fracture with more conservative treatments, like pain medications, casts, or braces.

You probably won't need ORIF unless there is some reason your fracture might not heal normally with these conservative treatments. You are more likely to need ORIF if:

- The pieces of your leg are significantly out of alignment
- Your broken tibia or fibula pierced through the skin
- Your tibia or fibula broke into several pieces
- Your fracture involves the knee joint
- Your bones haven't healed normally after undergoing treatments that are more conservative

In these cases, ORIF can place your bones back into their proper configuration, increasing the chance that your bone will eventually heal completely. You might need ORIF for a fracture that occurs anywhere along your tibia or fibula, including portions that form part of your knee or ankle joint.

What are the risks for tibia/fibula fracture open reduction and internal fixation?

Most people who have ORIF for their tibia or fibula fracture do very well. Complications, although rare, can sometimes happen. Possible complications include:

- Infection
- Bleeding
- Nerve damage
- Blood clots
- Fat blood clot
- Bone misalignment
- Irritation of the overlying tissue from the hardware

There is also the risk that the fracture won't heal properly, and you'll need repeat surgery.

Your own risk of complications may vary according to your age, the anatomy of your fracture, and your other medical conditions. For example, people with low bone mass or diabetes may be at greater risk of some complications. Smokers may also have an increased risk. Ask your doctor about the risks that most apply to you.

How do I prepare for a tibia/fibula fracture open reduction and internal fixation?

ORIF often takes place as an emergency procedure. Before your procedure, someone will take your medical history and perform a physical exam. You'll need imaging of your tibia and fibula, either an X-ray or computed tomography scan (CT). Tell your doctor about all the medications you take, including over-the-counter medications like aspirin. Also, let your doctor know the last time you ate.

In some cases, your doctors might perform your ORIF a little later. You might have your leg held immobile while you wait for your

surgery. Talk to your doctor about how to prepare for the surgery. Ask whether you should stop taking any medications ahead of time, like blood thinners. You'll need to avoid food and drink after midnight the night before your procedure.

What happens during a tibia/fibula fracture open reduction and internal fixation?

Your doctor can help explain the details of your particular surgery. These details will depend on the location and severity of your injury. An orthopedic surgeon and a team of specialized health care professionals will do the surgery. The whole operation may take a few hours. In general, you can expect the following:

You will receive a general anesthesia. This will make you sleep through the operation so that you won't feel any pain or discomfort during the operation. (Or, you may receive local anesthesia and a medication to help you relax.)

A healthcare professional will carefully monitor your vital signs, like your heart rate and blood pressure, during the operation.

After cleaning the affected area, your surgeon will make an incision through the skin and muscle of your leg.

Your surgeon will bring the pieces of your tibia or fibula back into alignment ("reduction").

Next, your surgeon will secure the pieces of your tibia or fibula to each other ("fixation"). To do this, he or she will use tools like screws, metal plates, wires, or pins. For a fracture in the middle part of the tibia, doctors often use a specially designed long metal rod that passes through the middle of the bone.

Your doctor will make other repairs, if necessary.

After the team has secured the bone, your surgeon will close the layers of skin and muscle around your leg.

What happens after a tibia/fibula fracture open reduction and internal fixation?

Talk to your doctor about what you can expect after your surgery. You may have some pain after your procedure, but you can have pain medications to help relieve the pain. You should be able to resume your normal diet quickly. You will probably have some sort of imaging procedure, like an X-ray, done to see how your surgery went. Depending on the extent of your injury and your other medical conditions, you might be able to go home the same day.

For a while after your surgery, you may need to keep your leg immobile. This usually means wearing a brace, perhaps for several weeks. You may need to protect your leg from water. You'll receive instructions about how you can move your leg and whether you can put weight on it.

Follow all your doctor's instructions carefully. You might need to take medication to prevent blood clots (a blood thinner) for a little while after your surgery. Your doctor might not want you to take certain over-the-counter medications for pain, because some of these can interfere with bone healing. Your doctor may advise you to eat a diet high in calcium and vitamin D as your bone heals.

You may have some fluid draining from your incision site. This is normal. Let your doctor know right away if there is an increase in redness, swelling, or draining from your incision site. You should also inform your doctor right away if you have a high fever, severe pain that does not improve, or any loss of feeling in your leg.

Make sure to keep all of your follow-up appointments. You may need to have your stitches removed a week or so after your surgery.

At some point, you may need physical therapy to restore strength and flexibility to your muscles. Doing your exercises as prescribed can improve your chances of full recovery. These fractures often take several months to heal completely, but you should be able to resume many of your activities before this time.

Next steps

Before you agree to the test or the procedure make sure you know:

The name of the test or procedure

The reason you are having the test or procedure

The risks and benefits of the test or procedure

When and where you are to have the test or procedure and who will do it

When and how will you get the results

How much will you have to pay for the test or procedure

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