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Tibial and Fibular Fractures

What are tibial and fibular fractures?

The tibia is the "shinbone", the larger of the two bones in the lower leg. The top of the tibia connects to the knee joint and the bottom connects to the ankle joint. Although this bone carries most of the body's weight, it still needs the support of the fibula.

The fibula is smaller than the tibia and runs beside it. The top end of the fibula is located below the knee joint but is not part of the joint itself. The lower end of the fibula forms the outer part of the ankle joint. The fibula helps stabilize the tibia but doesn't carry much weight.

Although the tibia and fibula can break independently from each other, because they are so close together it is more common for both bones to break together. This is called a combined tibia-fibula fracture. Fractures of just one of the two bones may occur in children.

What causes a tibial and fibular fracture?

Tibia and fibula fractures are almost always caused by trauma. Some of the most common causes include:

- a fall
- a direct blow to the shin bone
- car accident
- violent twisting injuries (e.g. contact/impact sports)
- intense training leading to a stress fracture (e.g. runners, ballet dancers)

What are the symptoms of tibial and fibular fractures?

- severe pain immediately after the injury
- swelling and bruising soon after the injury and can be severe due to damage to the soft tissues as well as the bones
- deformity (e.g. the lower limb having an odd bend in it or appearing shorter than the other one)
- inability to bear weight on the limb
- weakness, numbness or tingling in the foot and toes

It is not uncommon for these fractures to be associated with broken bones poking through the skin. This is called a compound fracture.

Stress fractures may have more subtle signs because there is usually no displacement of the bones. Symptoms of stress fractures include pain initially after exercise and eventually all the time. Warmth, swelling and pain just over the area of the fracture may occur.

What does your doctor look for?

Your doctor will ask you about how the injury occurred, about your symptoms and about your general health (e.g. pre-existing conditions, previous injuries).
Your doctor will examine your leg looking for pain, swelling, deformity and for signs of blood vessel and nerve damage.

What investigations are needed?

The diagnosis is usually obvious on physical examination, although stress fractures are much less obvious. The most common investigation performed is an X-ray. A CT scan may be needed if X-rays aren't able to confirm the diagnosis or if more information is required. Bone scans and MRI scans tend to be better at picking up early stress fractures.

Xray- to confirm which bone/s in your lower leg are fractured and show if they are displaced.

CT- will give your surgeon a more detailed picture of your bones and the surrounding tissue.

MRI- your surgeon may request an MRI to obtain a comprehensive view of the damage to your bones and the surrounding area. This imaging will also reveal the condition of the tissue surrounding your bones, which is crucial for assessing the impact on your muscles and connective tissue following the trauma.

How are tibial and fibular fractures treated?

Treatment for these fractures depend on which bone is fractured, how severe the fracture, the degree of soft tissue damage and your age and general health.

In most cases involving adults, surgery is necessary to reposition the bones and secure them using screws and metal plates. Following surgery, you will typically wear a cast or brace for six weeks, during which you will be unable to put weight on the leg.

Prompt specialist treatment reduces the risk of complications such as serious/permanent blood vessel and nerve damage, infection and arthritis.