



An ankle fracture (broken ankle) occurs when one or more of the bones that make up the ankle joint (tibia, fibula, and talus) are broken.

"Ankle fractures in children are more likely to involve the tibia and fibula (the long bones in the lower leg) than the talus (a smaller bone in the foot). Fractures at the ends of the tibia and fibula typically involve the growth plates. Growth plates are areas of developing cartilage tissue that regulate bone growth and help determine the length and shape of the adult bone. Growth plate fractures in the ankle often require immediate attention because the long-term consequences may include legs that grow crooked or of unequal length."¹

CAUSES AND RISK FACTORS

According to the American Academy of Orthopaedic Surgeons (AAOS), causes of a broken ankle in children can include:

Twisting Force: Ankle injuries in children typically occur during sports or vigorous play when a child's lower leg or foot twists suddenly. Sports involving lateral motion and jumping, such as basketball, may put children at higher risk for ankle injuries. For example, when jumping to defend, shoot, or rebound, a child may land on another child's foot, causing the foot to twist or roll to the inside or outside.²

Growth Plates: In children, the long bones of the body grow at each end around the growth plate. As children mature, the growth plates harden into solid bone. Growth plates are the last portion of bones to harden and are therefore vulnerable to fracture. In fact, the ligaments in children's ankles are usually stronger than the growth plates. Because of this imbalance, an ankle twist that might lead to a sprain in an adult might instead result in a growth plate fracture in a child. Pediatric ankle fractures account for 9% to 18% of all growth plate fractures.³

SYMPTOMS AND TYPES

A broken ankle can be as simple as a break in one bone, which may not prevent a child from walking. Or it can be as serious as several fractures, which can force a child's ankle out of place and may require that he not put weight on it for a several months.

In short, the more broken bones in the ankle, the more unstable it becomes. Ligaments, which hold the ankle bones and joint in position, may be damaged as well, but ankle sprains are more common in adults.

Unless your doctor takes an x-ray, it is often difficult to determine if an injury is an ankle sprain or a more serious ankle fracture. Both sprains and fractures may cause pain and swelling. An important sign of a fracture is that a child cannot put weight on the injured ankle.

DIAGNOSIS AND TESTS

Your child's doctor will obtain a history and do a thorough examination looking for:

- Swelling and tenderness
- Bruising
- A crooked appearance of the ankle

- Tears or openings in the skin
- Pulses
- Feeling and movement

The AAOS warns: "Skin wounds are a sign of a potential open fracture. This type of fracture is particularly serious because once the skin is broken through, infection in both the wound and the bone can occur. To prevent infection, open fractures require immediate treatment, including irrigation to clear the wound of debris and bacteria, and surgery to repair the fracture."

If the doctor suspects the child has a broken ankle, he will order additional tests:

- **X-rays:** An x-ray takes a picture of the child's ankle and can show if a bone is broken.
- **Magnetic Resonance Imaging (MRI):** The MRI scan creates an image of the ankle area using powerful magnets and a computer. The images produced show high-resolution pictures of both bones and soft tissues, like ligaments. This study is not usually needed for ankle fractures.
- **Computed Tomography (CT):** (CAT scan) - this examination tool can create a cross-sectioned image of the ankle. It can help determine the exact location of all fractures in complex cases.

TREATMENT AND CARE

Treatment usually involves:

- **Rest** – Avoiding running, jumping and other painful activity until the pain and swelling are gone. The patient may need crutches for a while.
- **Ice** – Applications of ice for 15 minutes at a time to help reduce the swelling and relieve the pain.
- **Compression** – Using an elastic bandage wrapped around the ankle can help keep the swelling down.
- **Elevation** – Elevating the ankle on a chair or pillow while the ankle is swollen can help reduce swelling.

Further treatment depends on the kind and severity of the fracture. If the broken bone is crooked, your doctor will straighten it. Your child will be given some medicine first so the straightening is not painful. Sometimes surgery is needed to put the bones back into the correct position.

In some cases, your doctor may put the child's ankle in a cast, splint, removable boot or Aircast to keep it from moving while it heals. Surgery is sometimes needed to align the bones and growth plates to position the bones for healing. Small incisions and percutaneous techniques are used whenever possible.

LIVING AND MANAGING

The AAOS recommends that growth plate fractures be watched carefully by a doctor to ensure proper long-term results. This is because these fractures can lead to ankle deformity if the growth is uneven. Parents should schedule regular follow-up visits to your doctor for at least a year after the fracture. Complicated fractures may need to be followed until the child reaches skeletal maturity.



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