

FOREARM FRACTURE

Forearm Fractures in Children

The bones of the forearm are the radius and the ulna. If a child falls onto an outstretched arm, he or she might break one or both of the bones in the forearm. Fractures of the forearm can occur near the wrist at the farthest (distal) end of the bone, in the middle of the forearm, or near the elbow at the top (proximal) end of the bone. Forearm fractures account for 40% to 50% of all childhood fractures. Fractures in a child's bones begin to heal much more quickly than an adult's bones. If you suspect a fracture, you should obtain prompt medical attention for the child so the bones can be set for proper healing.

Fracture Classifications

- **Physeal Fracture:** This fracture occurs at or across the growth plate affecting the layer of growing bone near the ends of the bones. Growth plates are the softest and weakest sections of the skeleton. Growth plate fractures can affect how the bone will grow.
- **Torus Fracture:** This is also called a “buckle” fracture. The topmost layer of bone on one side of the bone is compressed, causing the other side to bend away from the growth plate. This is a stable fracture and the broken pieces of bone have not separated apart or become displaced.
- **Metaphyseal Fracture:** The fracture is across the upper or lower portion of the shaft of the bone and does not affect the growth plate.
- **Greenstick Fracture:** The fracture extends through a portion of the bone, causing it to bend on the other side.
- **Galeazzi Fracture:** The injury affects both bones of the forearm. There is usually a displaced fracture in the radius and a dislocation of the ulna at the wrist, where the radius and ulna come together.
- **Monteggia Fracture:** The injury affects both bones of the forearm. There is usually a fracture in the ulna and the top (head) of the radius is dislocated. This is a very severe injury and requires urgent care.

Examination

- Any type of deformity about the elbow, forearm, or wrist
- Tenderness
- Swelling
- An inability to rotate or turn the forearm

The doctor will also test to make sure that the nerves and circulation in your child's hand and fingers have not been affected. The hand, wrist, and elbow can all be injured during a fall on an outstretched arm. To determine exactly what injuries have occurred, the doctor will want to see x-rays.

Non-surgical Treatment

The treatment depends on the type of fracture and the degree of displacement. Some mild fractures, such as a buckle fracture, may simply need the support of a splint or cast until it heals. For more severe fractures that have become angled, your doctor may be able to push (manipulate) the bones into proper alignment without surgery, as long as the bones have not broken through the skin.

A stable fracture, such as a buckle fracture, may require 3 to 4 weeks in a cast. A more serious injury, such as a Monteggia fracture dislocation, may need to be immobilized for 6 to 10 weeks.

Surgical Treatment

Surgery to align the bones and secure them in place may be required if:

- The skin is broken
- The fracture is unstable—the ends of the broken bones will not stay lined up.
- Bone segments have been displaced.
- The bones cannot be aligned properly through manipulation alone
- The bones have already begun to heal at an angle or in an improper position.

After the bones are aligned, the physician may use pins, metal implants, or a cast to hold them in place until they have healed.

Long-Term Outcome

When the cast is removed, the wrist and elbow joint may be stiff for 2 to 3 weeks. The forearm bones may temporarily be weaker due to the immobilization in the cast. Children should avoid playground structures, such as monkey bars, for 3 to 4 weeks after the cast is removed, in order to allow the bone to safely regain its normal strength.

If the fracture disrupts the growth plate at the end of the bone, the physician will want to watch it carefully for several years to ensure that growth proceeds normally.

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