

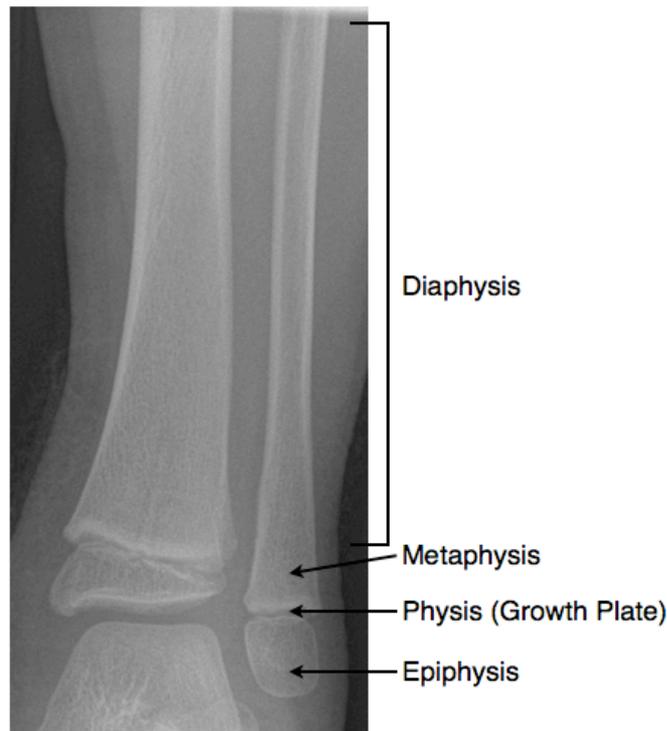


Common Traumatic Injuries (Paediatric)

Tim Coughlin

Paediatric trauma is common (particularly in warmer weather) and the management of injuries in childhood significantly differs from similar injuries in adults. One of the main reasons for this is the ability of the immature skeleton to remodel to a far greater degree than the adult skeleton.

When looking at x-rays of the immature skeleton it is a common mistake to think the physis (growth plate) is in fact a fracture. It is also important to be able to recognise and name the various parts of a long bone in children.



The diagram above shows the parts of the fibula in the immature skeleton. These labels apply to all long bones. In the adult skeleton the physis is closed and so is no longer visible.

Fractures around the Physis (Growth Plate)

Fractures around the physis are common, particularly at the wrist and ankle in children. They are classified according to the salter harris classification as shown in the diagram below.



The diagram shows the classification from Type I to Type V from left to right.

- Type I - through the physis
- Type II - through the physis with a metaphyseal extension
- Type III - through the physis into the epiphysis
- Type IV - through the metaphysis, physis and epiphysis
- Type V - crush injury to the physis



The x-ray above shows a type II injury to the thumb of a 13 year old. This is the commonest type of injury pattern.

Greenstick Fractures

Greenstick fractures are fractures which only occur in immature bone. They derive their name from the way that young tree twigs snap; namely that one side of the twig breaks whilst the other side is left intact. The x-ray below shows a typical greenstick fracture of the wrist.



The arrow signifies the intact cortex of the volar side of the radius whilst if you look closely at the other side of the radius you can see that the dorsal cortex is disrupted.

The management of these injuries depends on the level of deformity. The older the child the lower the remodeling potential of the bone so the lesser the angulation which is accepted. Where intervention is needed the management of choice is a manipulation under anaesthetic. This involved bending the bone back into a straight alignment and then applying a moulded plaster to hold the reduction in place. The plaster remains usually for between 2 and 4 weeks again depending on the age of the child.

Supracondylar Fractures

The supracondylar fracture is a common injury in children and it is often quite a significant injury. When it is relatively undisplaced it can be managed conservatively but when there is significant displacement it should be managed surgically in a short timeframe to prevent neurovascular complications. The ulnar nerve is particularly at risk in this injury which gives rise to altered or absent sensation over the pulp of the little finger and an inability or loss of power in finger abduction.

These injuries are classified by the Gartland classification as shown in the x-rays below.



A Gartland Type I fracture (left) is defined as undisplaced.

A Type II fracture (middle) is displaced but with an intact posterior cortex.

A type III fracture (right) is displaced with both cortices disrupted.