

SHEFFIELD CHILDREN'S NHS FOUNDATION TRUST WHAT IS A FRACTURE?

What is a fracture?

A fracture is a medical name your doctor gives to a break in a bone. This can mean a complete break in the bone or to just a part of it. A fracture and a break are the same thing. Fractures can occur in any age group, but children are at risk because of their active nature. Fractures are normally caused by some force exerted on to the bone; usually there has been a history of direct or indirect injury. Sometimes fractures can be caused by repeated stress on a particular area of the bone.

What are the signs and symptoms of a fracture?

- & Pain - This is the most common feature. It varies with the site and type of fracture and with the individual child. The pain is often throbbing and localised. It is aggravated by movement.
- & Loss of Function - This is due to pain and instability of the fracture. The child may be unable to move the limb or can only use it with difficulty.
- & Swelling - Takes time to appear and increases over the first 12 to 24 hours after the injury.
- & Deformity - The limb may look bent, short or the wrong shape.
- & Tenderness - Is always present with a recent fracture.

In the Accident & Emergency department your doctor was able to diagnose a fracture from examining your child and from the history of your child's injury and he/she confirmed the fracture by an x-ray.

What are the different types of fractures?

There are many different names Orthopaedic (bone) doctors give to different types of fractures. The following are some you may hear –

- & Transverse Fractures - where the bone is broken crossways.
- & Burst Fractures - Usually where the bone has been subjected to strong direct pressure.
- & Crush Fractures- where the bone has been compressed.
- & Avulsion Fractures - where, during the injury a tendon or ligament pulls off a small piece of bone.
- & Fracture Dislocation - this is when a fracture involves a joint and makes it unstable.
- & Open Fractures - this is when the break in the bone links to the skin surface through a wound, and there is a route for the infection to get into the bone.

Fractures can be undisplaced, meaning the bone has no deformity and does not need repositioning by the doctor. These are placed in a cast until the fracture heals.

However, some fractures are displaced, meaning that during the injury the bone has moved out of alignment. The fractures may need to be put back into alignment depending on the amount of displacement. Usually, your child will be admitted to hospital and have a general anaesthetic for the doctor to be able to do this.

How do fractures heal?

Fractures heal naturally, bones usually repair themselves. The following conditions help bones to heal and ensure that they heal with minimal deformity –

- & Reduction or Realignment - the doctor ensures the bone is correctly aligned.
- & Restriction and (Immobilisation) - movement of the fracture is prevented, this is usually done with a cast.
- & Restoration - any joints not held in the cast should be exercised normally.
- & Rehabilitation - once the cast has been removed your child should sensibly exercise to regain their normal mobility. Most children will do this naturally. Occasionally Physiotherapy may be needed.

What are the important facts about children's fractures?

Because children's bones are still growing, they often break their bones in a way, which is like trying to snap a green twig, it doesn't break completely but only bends and tears at one side, this is known as "greenstick fracture". Usually these fractures heal well and do not require any repositioning by a doctor but may need to be held in a cast or a splint. Children's bones are still growing and this growth takes place at the end of the bones. It is important for the doctor to make sure the fracture has not disturbed

these growth areas. If the growth area has been affected then normal growth can be disturbed and deformity may occur. Therefore your child's fracture must be carefully assessed and reviewed by a doctor. Children's bones have one great advantage they have the ability to *remodel*. Fractures with little displacement therefore may not need repositioning because the bone will remodel itself naturally, but needs protection by a cast or splint for a period of time.

What can I do to control my child's pain?

Once your child's fracture has been stabilised in a cast their pain is reduced, but they may still require some simple pain relief, such as calpol/paracetamol, for a few days. Keeping the affected limb elevated will also reduce discomfort. If your child experiences prolonged severe pain you should contact the hospital.

Who will my child see at the hospital?

At the end of your child's initial visit to Accident & Emergency you will be given an appointment to be seen by the Orthopaedic doctors in the fracture clinic. Your child will be seen in this clinic to monitor fracture healing. Check X-rays may be required at different stages in the healing process to check progress.

What to look out for when your child is in a cast and what to do if problems occur?

Return to the hospital if any of the following occur-

- & Your child experiences pain at the fracture site.
- & Your child's fingers or toes start to swell.
- & You notice any blueness or discoloration.
- & Your child cannot move their fingers or toes.
- & Your child feels any numbness or "pins & needles"
- & Your cast cracks or goes soft, or becomes loose or uncomfortable.

If any of the following occur during office hours ring the following number, 0114 271 7000 and ask for bleep 033. {Outside office hours contact A & E department}. Your family GP may also be a useful source of support if problems occur.

PLEASE OBSERVE THE FOLLOWING RULES –

DO:

- ü Follow instructions given about when to weight bear.
- ü Exercise fingers and toes, shoulder and elbow joints when not using the limb.
- ü Observe for tightness or swelling.
- ü Elevate the limb in cast whenever possible
- ü If using crutches, use them only as you have been instructed to.

Don't:

- G Get the cast wet, cut or bump or knock your cast.
- G Poke anything down the cast as this may cause sores to develop under the cast.
- G Allow your cast to become too hot.
- G Write on the cast until it is dry.

WHEN AND HOW WILL THE CAST BE REMOVED?

Casts should remain in place until the orthopaedic doctor is satisfied that the fracture has healed. Casts are usually removed in the fracture clinic, often using a plaster saw. The saws are very noisy, but the cast can be removed without injuring your child.

WHAT TO LOOK OUT FOR AFTER CAST REMOVAL?

Once the cast has been removed the fracture although healed is not completely solid. This process may take several months. Your child must be sensible in their activities for a number of weeks to prevent the risk of refracture. Your doctor will give you guidelines about sensible activities.

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