

Paediatric Radiography

- To like them
- To be understanding
- To be patient
- To communicate at eye level
- Description must be honest
- Parent's help and cooperation is highly recommended

Infants up to 6 months

- They do not make a sharp distinction among persons.
- They are often playful or sleepy.
- The pain stimulates total body movement and loud crying.

From 6 months to 3 years old

Stress factors:

- Pain
- Separation from parents
- Limitation of motor skills

This age group should be approached:

- Smiling, friendly manner, talk to them with gentle voice
- Some form of immobilisation is necessary

From 3 to 6 years old

- They can understand instructions and explanations
- Praise must be given if they are cooperative

School-aged

- Explain to gain their confidence
- Ensure they are not embarrassed by a lack of respect for their privacy

Radiation Protection

Because of the immature growing tissues, most organs are more sensitive than adults.

Radiation dose can be kept to minimum by:

- Avoiding repeats
- Close collimation

- Gonad shielding

Neonatal chest

PA erect is not considered absolutely essential.

AP supine is usually taken.

The baby lies supine on the cassette.

The parent holds the baby's arms and legs.

Childs chest

Erect film is preferred, if the child is not afraid.

PA or AP film can also be obtained with or without the help of parents.

Advantages of AP:

It is easier for radiographer to catch the breathing action.

It degrades the frightening level.

In PA, the child may always be straining to see what is happening behind.

Inhaled foreign body

It is important not to upset or struggle with the child during positioning as total airway obstruction may result.

CXR is compulsory film. OM view may be required if the FB is still inside the nasal cavity.

Ingested foreign body

CXR and AXR on one single film if the child is young enough. Otherwise, two separate films may be required.

Oesophageal atresia

Type I - complete absence of esophagus.

Type II - both segments ending in a blind loop.

Type III – with tracheoesophageal fistula.

CXR are taken with the upper abdomen included as the presence or absence of air in the stomach indicates whether there is a fistula connecting the esophagus to trachea.

Imperforate anus

It is usual to take inverted views of the infant to demonstrate the blind end of the bowel.

AXR will also be taken to demonstrate secondary conditions such as sacral abnormalities or perneal fistula (air in the bladder).

A lateral inverted pelvis film is taken to demonstrate the level of the blind pouch. The baby should be at least 18 hours old, to ensure air has traveled to the distal portion of the bowel. Baby should be inverted for 10-15 minutes prior to the examination. Anal dimple is localised.

Congenital hip dysplasia

Pelvis x-ray and Von Rosen's projection.

Baby supine, both femora are abducted 45° with appreciable inward rotation of the femora.

Perthe's disease

Vascular necrosis of the femoral epiphyses. It may result in subluxation of the affected hip and is sometimes bilateral.

Pelvis x-ray and 'Frog' view of hips.

Slipped femoral epiphysis

It is due to a combination of repeated low grade trauma and hormonal predisposition.

Pelvis x-ray and 'Frog' view of hips.

Osgood Schiatter's disease

Osteochondrosis of the tibial tuberosity. A condition of unknown origin.

Lateral of both knees centring on tibial tuberosity

Osteochondritis dessicans

Part of the femoral articular surface and a fragment of underlying bone dies and becomes separated. If the separation is partial, the bone fragment remains in place.

If it is total the bone fragment becomes a loose body. This is a condition affecting adolescents and the medial condyle of the femur is a common site.

AP, lateral, and Tunnel's view of knee.

Pes planus (flat-feet)

Talipes

Congeniatl club foot.

Typically this condition shows three deviations from the normal alignment of the foot in relation to the weight-bearing axis of the leg.

- Plantar flexion
- Inversion of the calcaneum

- Medial displacement of the forefoot

Scoliosis

For the first examination a PA projection of the whole spine erect is taken. It is important to demonstrate the iliac crests as the fusion of the epiphyses of the iliac crests occurs at the same time as the completion of vertebral growth. Lateral projection may be included if a kyphosis is present.

Follow up films must include from C7 to S1 and the iliac crests.

Assessment of bone age

Long bone x-ray.

Different age groups have different regions to be taken.

Battered child syndrome (non-accidental injury) (child abuse)

A type or site of fracture which is unusual for the child's age.

The presence of several fractures at different stages of healing.

A skeletal survey is undertaken.

- Lateral skull
- CXR
- Upper limbs
- Lower limbs
- AXR and pelvis (not always included unless internal haemorrhage is suspected)