PEDIATRIC RADIOGRAPHIC PROJECTIONS

MEDFORD RADIOLOGY GROUP

GENERAL INFORMATION

- Up to age 12 for males and females. 13 and above, follow adult protocols.
- If views are not specified on requisition, obtain films according as listed below.
- For traumatic injuries, the part to be examined should not be excessively manipulated.
- Shield gonads in all cases, except when shield covers specific part to be examined radiographically.
- In any questionable case, check with the radiologist.

ROUTINE PROJECTIONS

Skull and face

- **Routine skull**: posteroanterior (PA) [anteroposterior (AP) if unable to take PA], Towne, cross-table lateral.
- **Internal auditory canals**: Stenver, Towne, AP transorbital.
- **Sinuses:** Caldwell, Waters, Lateral (upright when possible) or as requested by ordering physician. If not done upright then at least one film should have a horizontal beam. A brow-up lateral will suffice.
- **Facial bones**: Waters, Caldwell, Lateral (upright when possible).
- **Nasal bones**: Waters, lateral on detail film (upright when possible).
- **Mandible**: PA, Both obliques, and Towne.
- **Temporomandibular** (TM) joints.
    - **Routine**: Towne, both TM joints laterally with open and closed mouth.
- **Orbits**: Caldwell, Waters (upright when possible).
- **Optic foramina**: Both obliques, Rhese views.

Neck and upper airway

- **Adenoids**: Lateral of nasopharynx and neck during inspiration with mouth closed.
- **Upper airway**: Magnification high-kV AP and Lateral airway during inspiration with mouth closed
- **Croup series:** 4 views
    - PA and LATERAL Chest
    - AP neck. Take film during phonation or crying (infants).
    - LATERAL neck. Extend neck. Take film during inspiration with mouth closed.
    - Label films

Spine

- **Cervical**: AP, lateral and odontoid
- **Thoracic**: AP and lateral.
- **Lumbar:** AP and lateral (oblique views if requested)
- **Sacrum and coccyx:** Angled AP and lateral.

- **Scoliosis films**: PA thoracolumbar spines from iliac crests to cervical spine. Lateral erect if requested. Side bending if requested.

Extremities:

- **Hand, foot, ankle**: AP or PA, oblique, lateral.
- **Evaluation of Congenital Anomaly (Clubfoot) (Newborn or older child)**
  - Standard AP and LATERAL views of both feet.
  - Supplemental standing views – AP and LATERAL
  - For infants who cannot weight bear
    - AP – obtained with the leg vertical and perpendicular to the imaging plane
    - LATERAL - a Plexiglas (or other radiolucent surface) should be pressed against the foot for LATERAL view, which should be obtained in maximal dorsiflexion.
    - Align CR with the ankle, not the foot.
  - AP view needs to be dark enough to visualize the talus and calcaneus.
  - Show to MSK radiologist
- **Finger:** PA, oblique, and lateral.
- **Humerus**, **femur, wrist, tibia-fibula, and forearm**: AP and lateral.
- **Elbow**: four views of affected side, two views (AP & Lateral) contralateral side for comparison
- **Knee**: AP and lateral. Merchant or sunrise view if requested or age 8 and older.
- **Infant upper extremity**: ("INFANT" is defined as under 1 year old only) AP and lateral of entire arm (shoulder to wrist). True positioned films are necessary, especially at wrist and elbow. No elbow comparison needed.
- **Infant lower extremity**: ("INFANT" is defined as under 1 year old only) AP and lateral hip to ankle (include entire pelvis on AP to provide comparison view of opposite hip). True positioned films are necessary, especially at knee and ankle.
- **Scapula:** AP and lateral,
- **Shoulder:** AP Int & Ext rotation, axillary view if requested or age 8 and older.
- **Clavicle**: AP, Axial 15-degree upshot.
- **Pelvis:** AP
- **Hips:** AP neutral and AP frog-leg lateral. Use lead shield on frog-leg view.
- **Hips for DDH**: Notify radiologist for positioning (or preference for ultrasonography) for possible congenital hip dislocation.
  - Newborn: AP pelvis – no shielding
  - 18 months or less – AP pelvis and AP with Hip abduction (Andren-von Rosen**):** Abduct legs 45 degrees each (total of 90 degrees) and then internally rotate feet. Do not bend knees. Shield on Andren-von Rosen view.
  - Over 18 months – AP pelvis and frog-leg bilateral hips. Shield on frog-leg
- **Calcaneus**: Lateral, AP tangential.
- **Bone age**

- **Below 1 year**: Left hemiskeleton (to include frontal view of one shoulder, elbow, wrist, and hand; one of mid-thigh, knee, ankle, and foot).
- **Above 1 year**: PA left hand and wrist included in one view. Include birthdate and age of patient.

- **Routine skeletal survey or metastatic series**:
  - Lateral skull to include cervical spine
  - AP long bones including hands and feet
  - Lateral thoracic and lumbar spine
  - AP abdomen to include pelvis and lumbar spine (bone technique)
  - AP chest (bone technique).
- **Skeletal survey for Possible Child Abuse.**
  - Appendicular Skeleton
    - Arms (humeri) (AP)
    - Forearms (AP)
    - Hands (PA)
    - Thighs (femora) (AP)
    - Lower legs (AP)
    - Feet (PA) or (AP)
  - Axial Skeleton
    - Thorax (AP and Lateral), to include thoracic spine and ribs
    - LPO & RPO Ribs (1 view per side to include all ribs)
    - AP Abdomen, lumbosacral spine, and bony pelvis
    - Lumbar Spine (Lateral)
    - Cervical Spine (AP and Lateral)
    - Skull (Frontal and Lateral)
  - Check with Radiologist, if available, for additional views.
  - Attending physician will occasionally order additional films after viewing initial exam.
- **Long bones**: AP upper and lower extremities.
- **Bow-legs**: AP erect of lower extremities (lateral views if requested).

Chest

- **Routine chest**: PA or AP and left lateral, supine in infants, upright in children or when requested.
  - **Nursery Routine:** AP supine and lateral cross-table
  - **Newborn Initial Chest:** If exam is the initial chest image, please include the following in tech comments: Birth Weight, Gestational Age, and Vaginal or Cesarean.
- **Chest for foreign body**: PA or AP during inspiration and expiration, lateral during inspiration (check with radiologist for possible fluoroscopy or decubitus films).
- **Chest and abdomen for swallowed foreign body**: AP chest/abdomen (films to include nasopharynx to anus). If F.B. is seen (or requested by MD), lateral view including FB.

- **Ribs**: AP and oblique of involved side.
- **Sternum**: Oblique (LPO) and lateral.

Abdomen

- **Abdomen, single view**: AP supine diaphragm to pubic bone.
- **Abdomen, two views:** AP supine and upright or decubitus or lateral.
- **Abdomen, three views**: PA chest, AP supine abdomen, and upright abdomen or left lateral decubitus.
- **Pneumocolon**: AP, PA, both lateral decubitus views, upright, and cross-table prone lateral of rectum.
  - **Infants (for UA line placement etc.)**: AP