

# St Vincents / Optimal Imaging Pediatric Xray Protocols

Updated  
11/10/2023

EXAM	VIEWS/SID	FOV	NOTES
<b><u>XR Chest 2 Views</u></b>	PA or AP Left lateral 72 inch SID	Entire lung fields and costophrenic angles	Perform AP if patient is <4 years of age
<b><u>XR Chest 1 View</u></b>	AP	Entire lung fields and costophrenic angles	
<b><u>XR Chest Decubitus</u></b>	Side down as ordered 40 SID	Lung fields in profile	Mark side up
<b><u>XR Chest Lordotic</u></b>	AP lordotic 72 inch SID	Lung fields with clavicles above lung apices	
<b><u>XR Abdomen KUB</u></b>	Supine (unless ordered otherwise) 40 inch SID	Diaphragm to pubic symphysis No rotation	On expiration (when possible) Remove diaper
<b><u>XR Abdomen Series</u></b>	AP/PA chest at 72 inch SID AP erect at 40 inch SID AP supine at 40 inch SID Left lateral decubitus (if no erect)	Diaphragm to pubic symphysis Erect to include top of pelvis	Position patient decubitus for 5 mins to allow free air to rise and fluid to settle
<b><u>XR Foreign Body</u></b>	Lateral soft tissue neck AP chest AP abdomen/pelvis	AP chest, abdomen & pelvis in 1 image as size allows	Includes orders for soft tissue neck, one view chest & KUB
<b><u>XR Ribs Bilateral</u></b>	PA chest at 72 inch SID AP bilateral ribs at 40 inch SID		Rib detail 1 through 12
<b><u>XR Sternum</u></b>	RAO Lateral sternum 40 inch SID		Sternum projected onto the heart shadow Use breathing technique on RAO when possible
<b><u>XR SC Joints</u></b>	Bilateral obliques (RAO/LAO) AP sternum 40 inch SID		Shallow RAO/LAO angles Collimate to SC joints
<b><u>XR Shoulder</u></b>	AP external rotation AP internal rotation Scapular/lateral "Y" view 40 inch SID	Entire shoulder girdle & clavicle	
<b><u>XR Scapula</u></b>	AP Scapular/lateral "Y" view 40 inch SID		Elbow flexed & arm abducted 90° for AP view
<b><u>XR Clavicle</u></b>	AP AP axial 40 inch SID		30° cephalic angle Perform bilateral xrays if <4 months of age
<b><u>XR AC Joints</u></b>	Bilateral AP AC joints without & with weights (5-10 lbs)	Includes both shoulders	

<b><u>XR Humerus</u></b>	AP Lateral 40 inch SID	Entire humerus (joint to joint)	
<b><u>XR Elbow</u></b>	AP External oblique Lateral 40 inch SID	Rotate wrist thumbs up for lateral	Shoulder, elbow & wrist should be done in the same plane
<b><u>XR Forearm</u></b>	AP Lateral 40 inch SID	Rotate wrist thumbs up for lateral	Shoulder, elbow & wrist should be done in the same plane
<b><u>XR Wrist</u></b>	PA Oblique Lateral Navicular (scaphoid) 40 inch SID	Cone down for the navicular view	Curl fingers for PA view
<b><u>XR Hand</u></b>	AP Oblique Lateral 40 inch SID		
<b><u>XR Finger</u></b>	PA hand PA affected finger Oblique affected finger Lateral affected finger 40 inch SID	Cone down to the affected finger	
<b><u>XR Upper Extremity</u></b>	AP/lateral humerus AP/lateral forearm AP/lateral hand 40 inch SID		Includes individual orders for humerus, forearm & hand
<b><u>XR Pelvis</u></b>	AP pelvis 40 inch SID	Entire pelvis	Remove diaper Minimum to no rotation Internally rotate feet
<b><u>XR SI Joints</u></b>	AP Bilateral obliques 40 inch SID		AP 30° cephalic angle Obliques 25-30°
<b><u>XR Sacrum/Coccyx</u></b>	AP sacrum AP coccyx Lateral sacrum/coccyx 40 inch SID		AP sacrum 15° cephalic angle AP coccyx 10° cephalic angle
<b><u>XR Hip</u></b>	AP pelvis Bilateral frog leg laterals 40 inch SID	Internally rotate both feet for AP pelvis Include entire pelvis for frog leg laterals	Frog leg lateral of both hips for comparison (even if unilateral ordered)
<b><u>XR Femur</u></b>	AP Lateral 40 inch SID		Diaper off Perform cross table if fracture suspected

<b><u>XR Knee</u></b>	AP Lateral Sunrise 40 inch SID		AP 5-7° cephalic angle
<b><u>XR Tibia/Fibula</u></b>	AP Lateral 40 inch SID	Entire tibia/fibula (joint to joint)	
<b><u>XR Ankle 3 Views</u></b>	AP Mortise Lateral 40 inch SID		Lateral in dorsiflexion
<b><u>XR Calcaneus</u></b>	AP AP axial Lateral 40 inch SID		AP axial 40° angle towards heel
<b><u>XR Foot</u></b>	AP Oblique Lateral 40 inch SID		Lateral in dorsiflexion
<b><u>XR Toe</u></b>	AP foot AP affected toe Oblique affected toe Lateral affected toe 40 inch SID		Cone down to the affected toe
<b><u>XR Lower Extremity</u></b>	AP pelvis AP/lateral femur AP/lateral tibia/fibula AP/lateral foot 40 inch SID		Includes individual orders for pelvis, femur, tibia/fibula & foot
<b><u>XR Cervical Spine</u></b>	AP at 40 inch SID Odontoid at 40 inch SID Lateral at 72 inch SID Swimmer's at 72 inch SID	AP 15° cephalic angle	Odontoid if ≥5 years of age  Perform Swimmer's as needed
<b><u>XR Cervical Spine w/ Flexion/Extension</u></b>	Lateral neutral position Lateral in flexion Lateral in extension Swimmer's at 72 inch SID		Usually performed for Down Syndrome screening for dynamic instability
<b><u>XR Thoracic Spine</u></b>	AP Lateral Swimmer's 40 inch SID	Swimmer's 5-7° caudal angle	Use breathing technique on lateral when possible
<b><u>XR Lumbar Spine</u></b>	AP Lateral Spot L5 to coccyx 40 inch SID		Obliques only if requested

<b><u>XR Skull Trauma</u></b>	AP or PA Lateral Towne's 40 inch SID	Entire skull Towne's 37° caudal angle No rotation	
<b><u>XR Skull Craniosynostosis</u></b>	AP or PA Bilateral lateral Towne's 40 inch SID	Entire skull Towne's 37° caudal angle No rotation	For craniosynostosis, head shape, asymmetry & sutures
<b><u>XR Orbits</u></b>	PA Caldwell PA Waters Bilateral laterals 40 inch SID		Perform erect when possible
<b><u>XR Facial Bones</u></b>	PA Caldwell PA Waters Bilateral laterals 40 inch SID		Perform erect when possible
<b><u>XR Zygomatic Arches</u></b>	PA Caldwell PA Waters SMV arches 40 inch SID		Perform erect when possible
<b><u>XR Nasal Bones</u></b>	PA Waters Bilateral laterals 40 inch SID		Perform erect when possible
<b><u>XR Sinuses</u></b>	PA Caldwell PA Waters Lateral (to include neck) 40 inch SID	Collimate PA Caldwell & Waters to exclude skull	Perform erect when possible
<b><u>XR Mandible</u></b>	PA mandible Towne's Bilateral axiolateral obliques 40 inch SID	Towne's 37° caudal angle  Obliques from true lateral extend chin, rotate head 10- 15° toward image receptor with 25-35° cephalic angle	Perform erect when possible
<b><u>XR TMJs</u></b>	Bilateral laterals open mouth Bilateral laterals closed mouth 40 inch SID		
<b><u>XR Neck Soft Tissue</u></b>	AP at 40 inch SID Lateral at 72 inch SID	Open collimation to include entire airway	Erect if possible Hyperextend chin on lateral
<b><u>XR Shunt Series</u></b>	AP/lateral skull AP/lateral chest AP/lateral abdomen		Images should overlap so that shunt is viewed without interruption
<b><u>XR Bone Age</u></b>	PA left hand (to include wrist)		

**Rickets Series**

PA bilateral wrists

AP bilateral knees

40 inch SID

PA wrists to include distal  
thirds radii/ulna

AP knees to include distal  
thirds femurs and proximal  
thirds tibia/fibulas

Includes orders for bilateral  
wrists and bilateral knees

## Trauma Skeletal Survey

VIEWS	Infant / Smaller Toddler	Larger / Older Child	NOTES
Skull AP	3.2 @ 58 kVp	phototimed @ 60 kVp	omit if CT head present
Skull lateral	2.5 @ 58 kVp	phototimed @ 60 kVp	omit if CT head present
C spine lateral	2.5 @ 58 kVp	3.2 @ 62 kVp	
T spine AP	2 @ 60 kVp	phototimed @ 66 kVp	open collimation
T spine lateral	3.2 @ 60 kVp	phototimed @ 66 kVp	open collimation to include sternum
Ribs obliques	2.5 @ 60 kVp	phototimed @ 66 kVp	bilateral obliques with open collimation
L spine AP	3.2 @ 60 kVp	phototimed @ 66 kVp	open collimation to include abdomen/pelvis
L spine lateral	4 @ 62 kVp	phototimed @ 66 kVp	collimate down to L spine
AP humeri	1.5 @ 56 kVp	1.5 @ 58 kVp	
AP forearms	1 @ 52 kVp	1.25 @ 54 kVp	
AP hands/wrists	1 @ 52 kVp	1.25 @ 54 kVp	
AP femurs	2.5 @ 58 kVp	2.5 @ 62 vKp	
Lateral knees	1.5 @ 54 kVp	2.5 @ 58 kVp	
AP tibias/fibulas	1.5 @ 56 kVp	1.5 @ 60 kVp	
Lateral ankles	1.25 @ 52 kVp	1.5 @ 56 kVp	
AP feet	1 @ 52 kVp	1.25 @ 54 kVp	

## Complete Bone Survey

Skull AP	3.2 @ 58 kVp	phototimed @ 60 kVp	omit if CT head present
Skull lateral	2.5 @ 58 kVp	phototimed @ 60 kVp	omit if CT head present
C spine lateral	2.5 @ 58 kVp	3.2 @ 62 kVp	
T spine AP	2 @ 60 kVp	phototimed @ 66 kVp	open collimation
T spine lateral	3.2 @ 60 kVp	phototimed @ 66 kVp	open collimation to include sternum
L spine AP	3.2 @ 60 kVp	phototimed @ 66 kVp	open collimation to include abdomen/pelvis
L spine lateral	4 @ 62 kVp	phototimed @ 66 kVp	collimate down to L spine
AP humeri	1.5 @ 56 kVp	1.5 @ 58 kVp	
AP forearms	1 @ 52 kVp	1.25 @ 54 kVp	
AP hands/wrists	1 @ 52 kVp	1.25 @ 54 kVp	
AP femurs	2.5 @ 58 kVp	2.5 @ 62 vKp	
AP tibias/fibulas	1.5 @ 56 kVp	1.5 @ 60 kVp	
AP ankles	1 @ 52 kVp	1.25 @ 54 kVp	
Lateral ankles	1.25 @ 52 kVp	1.5 @ 56 kVp	
AP feet	1 @ 52 kVp	1.25 @ 54 kVp	
Lateral feet	1.25 @ 52 kVp	1.5 @ 56 kVp	