Akron Radiology Inc. Technique Manual For Radiography

Version 2020

Summa Health System
CCOC
Western Reserve Hospital
Summa Rehab Hospital
Affiliated Imaging Centers: Green, Hudson, White Pond, Medina

Version 2015 – 1/2015
Version 2015b – 5/2015
Version 2015c – 8/2015
Version 2016 - 8/2016
Version 2017 – 2/2017
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Version 2018b – 8/2018
Version 2019, 2020 - no changes

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NOTES:

- **Technologist should include any appropriate history available with images.**

- **Contralateral comparison view of extremities in pediatric examinations may be performed if requested by the clinician or at the discretion of the technologist.**

- **Please attempt to remove all overlying radiopaque structures, especially including EKG lead pads**

- **Please note that the following protocols are the recommended standards agreed upon by our group practice, but we approve requests for any variation of less views, or more views if medically appropriate**

SKULL
- PA Caldwell
- Left Lateral
- Right Lateral
- Townes

FACIAL BONES
- AP
- Waters
- Lateral
- Submental vertex – if necessary for zygomatic arches
- Bilateral nasal bones

NASAL BONES
- Waters (Modified)
- Left and Right Lateral

ORBITS
- AP
- Waters
- Lateral
- Submental Vertex
- Optic foramina views – if fracture suspected

ORBITS FOR METALLIC FOREIGN BODY
- Waters
- Lateral

SINUSES
- PA
- Waters
- Lateral
- Submental Vertex

MANDIBLE
AP
Bilateral Obliques
Townes

PANOREX

TMJs
AP
Schuller's views bilateral open and closed
And/or Panorex
Optional Lateral open mouth/closed mouth

CERVICAL SPINE
AP
Lateral
Open Mouth
Bilateral Oblique *see diagram at end of document. Oblique views can be taken AP or PA but PA views need to be flipped horizontally to be viewed in anatomic position. Place L label on view of left foramina and R label on view of right foramina)
Flexion/Extension – only if requested

THORACIC SPINE
AP
Lateral
Swimmers

LUMBAR SPINE
AP – supine knees flexed
Lateral
Lateral Cone down L5-S1
Bilateral Oblique (included as default unless number of views is otherwise specified) – collimate to spine

SCOLIOSIS SERIES (all weight bearing)
- AP Thoracic
- Lateral Thoracic
- AP Lumbar
- Lateral Lumbar
- Long Cassette (if available) – AP and Lateral

SOFT TISSUES NECK
- AP
- Lateral

SHOULDER
- Grashey
- Transcapular Y
- Axillary or Valpeau

CLAVICLE
- AP
- AP with 30 degrees cephalad angulation

AC JOINTS
- Both joints AP
- Both joints AP with suspended weights hanging from wrists

SCAPULA
- (posterior oblique 30 degrees)
- AP
- Lateral

HUMERUS
- AP
- Lateral
- Transthoracic (optional)

ELBOW
- AP
- Lateral with 90 degree flexion
- Internal Oblique

FOREARM
- AP
- Lateral

WRIST
- PA
- Lateral
- Oblique
- Navicular – optional for pain or injury near base of thumb

HAND
- PA
- Lateral
- Oblique

THUMB
- PA entire Hand
- Lateral
- Oblique

FINGER(S)
- PA Hand
- Lateral
- Oblique

CHEST

(Note: EKG pads not being used for active monitoring should be removed)

Two view

PA with arms elevated or AP when necessary

Lateral

Portable

AP

Decubitus

Left and/or Right

Lordotic – AP if requested

RIBS – UNILATERAL

PA Chest

Oblique (two views if larger patient or pain below nipple line)

AP lower ribs

RIBS - BILATERAL

PA Chest

AP lower ribs

Two oblique views of each side

STERNUM

Lateral

Right anterior oblique

ABDOMINAL SERIES FOR ACUTE ABDOMEN

Chest – AP or PA
Abdomen – Supine
Abdomen – Standing upright or Left lateral decubitus (No sitting views)

ABDOMEN

A. Two view
    Supine
    Standing Upright or Left lateral decubitus (No sitting views)
B. Supine ("KUB")
    AP

PELVIS

AP
Optional Inlet/Outlet (caudad/cephalad) or Judet (45 degree oblique) views

SACRUM AND COCCYX

AP – 15% up tilt
AP – 10% down tilt
Lateral – can be done with two views if needed

SI JOINTS

AP
Bilateral posterior oblique
Ferguson view – 35 degree upward angle (if requested only)

HIP

AP Pelvis
AP Hip
Lateral Hip or Frog-leg or Modified Dunn view

FEMUR
- AP (proximal and distal)
- Lateral (proximal and distal)

KNEE
- AP
- Lateral (cross-table if necessary)
- Tunnel AP
- Sunrise

TIBIA/FIBULA
- AP
- Lateral

ANKLE
- (All weight-bearing unless the patient cannot tolerate)
- AP
- Lateral
- Oblique

FOOT
- (All weight-bearing unless patient cannot tolerate)
- AP
- Lateral
- Oblique

CALCANEUS
- Lateral
- Os Calcsis

TOES
- AP distal foot
- Oblique
- Lateral

BONE AGE
- PA Left hand

BONE SURVEY – metabolic or metastatic
- AP and lateral skull
- PA chest for ribs
- AP thoracic spine
- AP lumbar
- AP pelvis
- AP femur
- AP humeri

SHUNT SERIES (Ventriculoperitoneal)
- AP skull
- Lateral skull
- AP chest
- AP abdomen

DXA (Dual Energy Xray Absorptiomety)

1. Lumbar spine L1through L4
   Exception - If hardware present in lumbar spine, must have two vertebrae to complete, otherwise image non-dominant wrist
2. Left hip – include all regions as suggested by equipment manufacturers
   Exceptions - If hardware is present in the left hip, then image right hip
   If hardware present in both hips, then image non-dominant wrist
3. Left wrist – Include if requested (including, but not limited to: Medina office patients and Summa patients with hyperparathyroidism)

Include FRAX (fracture risk assessment) data if available
Comparison data should include all available prior exams including baseline

INTERPRETATION:
Report should include:
- Type of imaging unit
- Bone density (g/cm3)
- T-score
- Z-score
- Statistically significant percent change from prior exam or baseline

1. Lumbar spine - sum of density of L1-L4 should be used.
   Exceptions - Anatomically abnormal vertebrae may be excluded from analysis if:
   There are clearly abnormal and non-assessable within the resolution of the system; or
   There is more than a 1.0 T-score difference between the vertebra in question and adjacent vertebrae; or
   Structural change is present related to surgery
2. Hip – femoral neck
3. Hip – total hip

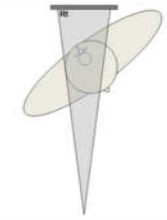
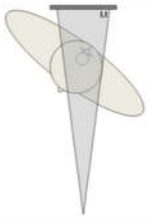
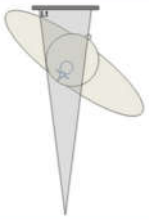
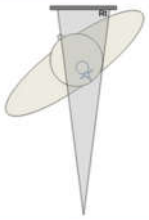
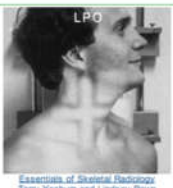
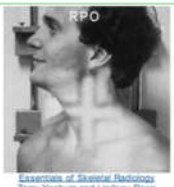
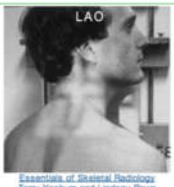
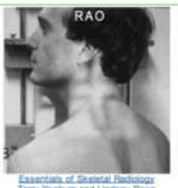
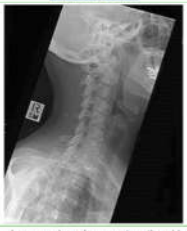
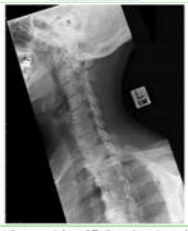
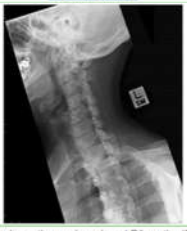
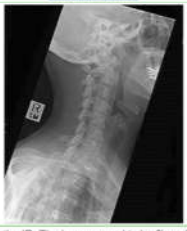
4. (If included) Wrist - use 33% radius data

WHO definitions:
- Normal bone: T-score higher than -1
- Osteopenia: T-score between -1 and -2.5
- Osteoporosis: T-score less than -2.5

Reference: http://www.iscd.org/official-positions/official-positions/

Oblique Cervical Spine Technique

Oblique cervical spine views can be performed erect or supine and AP or PA.

AP Technique		PA Technique	
LPO	RPO	LAO	RAO
			
 Essentials of Skeletal Radiology Terry Yochum and Lindsay Rowe 3rd Edition, Volume 1	 Essentials of Skeletal Radiology Terry Yochum and Lindsay Rowe 3rd Edition, Volume 1	 Essentials of Skeletal Radiology Terry Yochum and Lindsay Rowe 3rd Edition, Volume 1	 Essentials of Skeletal Radiology Terry Yochum and Lindsay Rowe 3rd Edition, Volume 1
			
The AP obliques have marker placement on the side away from the IR. Given that they are taken AP, they do not need to be flipped horizontally to be viewed		The PA obliques have the marker placed PA on the IR on the side touching the IR. The images need to be flipped horizontally to be viewed in the anatomical position.	

Reference:http://www.wikiradiography.net/page/Oblique+Cervical+Spine+Technique?t=anon

UPDATES:

Version 2015b Revisions – May 2015

Updated Unilateral and Bilateral ribs

Corrected sternum views

Added shunt series (ventriculoperitoneal)

Version 2015c Revision – August 2015

Lumbar oblique views included in all lumbar studies as default unless views are otherwise specified

Ankle and Foot – all views performed with weight bearing unless patient cannot tolerate

Version 2016

Add DXA protocol

Version 2017

Radiologists should report femoral neck, total hip and lumbar spine for DXA and only report when change is statistically significant

Include wrist in DXA exams when requested

Version 2017a

Change shoulder routine

Version 2018 – no changes

Version 2018b

Add statement on recommendations

Hip – add option for Modified Dunn view