



T.O.P. EDUCATION

Tools Of Practice

Our Mission:

To provide reliable education, resources and tools of practice

To advance your clinical expertise, business development, and professional growth.

Taking a Good X-Ray:

Step By Step:

You should have a procedure to indicate those cassette that are not exposed, from those that are exposed, e.g.

- *unexposed cassettes left of the control panel,*
- *front forward*
- *exposed cassettes to the right*
- *backs forward.*

4. Place the Cassettes in their designated location to indicate whether not exposed.
5. Decide on the speed of the Film. This is determine by the DC in advance.
6. Select the Cassette for the first view to be taken.
7. Select necessary Markers. (Mitchell Markers are best.) Unless otherwise indicated use the marker on the side without the ID Identification Block
8. Select all Filters and Shielding

Taking a Good X-Ray:

Step By Step:

9. If female ask: “Is there any chance you are pregnant?” Ask DLMP (Date of start Last Menstrual Period) Follow the Ten Day Rule. Enter into log and if procedure, on the Flashcard.
 - If there is a chance patient is pregnant:
 - Notify doctor to determine urgency, if necessary use lead apron to complete studies in other areas.
 - Postpone study until pregnancy test completed within Ten Days of Last Period.
10. If necessary have them evacuate bladder as this could obscure anatomy.
11. Have patient change into gown, shorts (or both).
 - Instruct them to remove all objects (potential artifacts) that are removable.
 - If taking cervical film this include full and partial dentures. You will receive resistance here, they must understand they may block anatomy. You can offer to have them take them out only for the views necessary and they can put them back in for the others.
10. Instruct as to placement of Gonad Shielding if required.

Taking a Good X-Ray continued:

Step By Step:

13. Explain the procedures and what will happen.
14. Further explain why you (or anyone else) will not be in the room.
15. Measure the patient at the thickest part of the anatomy to be imaged
16. Determine Techniques and log results.
17. Turn X Ray Machine on and confirm Processor is ready (If CR or DR disregard).
18. Enter Technique in the below order:
 - I. mA
 - II. kVp
 - III. Time

Taking a Good X-Ray continued:

Step By Step:

19. Set SID
20. Set tube and tilt if required
21. Place any other Filter if necessary
22. Place Cassette in Bucky, (If DR disregard)
23. Place Marker(s) in a neutral spot not over desired anatomy. On Lateral views the Marker used indicates part closest to Film/Detector.

Taking a Good X-Ray continued:

Step By Step:

24. Set Tube crosshairs (height) center of Cassette, push Tray in if it was necessary to pull out.



Taking a Good X-Ray continued:

Step By Step:

25. Position patient. Always attempt to get the patient closest to the Bucky/Detector.
26. Place any Shielding or supplemental Filters necessary.
27. Refine positioning. Use your foot to indicate amount to move if necessary
28. Verify Central Ray, Markers position and Cassette positions
29. Collimate

Taking a Good X-Ray continued:

Step By Step:

30. Final position check
31. Go to control panel, instruct patient

Taking a Good X-Ray continued:

Step By Step:

32. Take exposure as quickly as possible (remember on some exposure breathing is suspended)
33. After each exposure place the cassette in a designated place to indicate the cassette has been exposed.
34. Complete other views.
35. If using a Conventional X Ray system follow *How to Process An Exposure* procedures previously discussed.

Study Guide

Spinal Views:

SID

84"

AP Full Spine

72"

All Lateral Cervical (Neutral-Flexion-Extension)
Cervical Obliques

40"

All others

Cassette/Film:

14" x 36"

AP Full Spine

8" x 10"

All Cervical
Lumbosacral Spots
Lateral Sacrum
All Coccyx

10" x 12"

Swimmers
Lumbar Obliques
AP Sacrum

14" x 17 "

All others

Study Guide

Spinal Views:

Cassette Orientation:

Only the AP Pelvis/Bilateral Hip cassette

Horizontal

All others vertical

Tube Tilt:

Cephalad

15 degrees

AP Cervical

Cervical Obliques

AP Sacrum

Caudal

30 to 40 degrees

10 degrees

Cervical Pillars

AP Coccyx

No Tilt

All others

Instructions:

"Take a deep breath in and hold"

Thoracic

AP Full Spine Optional

"Deep Breath in, blow it all the way out and hold"

Lumbar

"Breath out and hold"

All others

Full Spine Positioning

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Full Spine |
| Film Size: | 14" x 36" placed in Bucky vertically (Differs from text) |
| SID: | 84" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders parallel to Bucky – Arms by your side- top of film just below eyes Option 1 - slight chin up –mouth closed Option 2 – slight chin down – mouth opened Depending on the option the opposite separate film should be taken |
| Central Ray: | Centered to film approximately the Xiphoid process of Sternum |
| Collimation: | Just below eyes and above symphysis pubis and to exclude shoulders |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 134 |
| Notes: | Should use wedges at the tube Lateral Spine Full Spine view are not recommended Should only be used if necessary. Lateral regional films are still required If patient measures in excess of 27 cm this view should not be used |

AP Full Spine



***This is Allen the Alien.
Remember his name.***

Full Spine Views

Full Spine Studies:

Minimum Study:

- (AP) Anterior to Posterior Full Spine
- Option 1 or 2 supplemental view
- Lateral Cervical
- Lateral Thoracic
- Lateral Lumbar

Alternate Minimum Study:

- Minimum Study Cervical
- Minimum Study Thoracic
- Minimum Study Lumbar

Full Spine Positioning

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Full Spine |
| Film Size: | 14" x 36" placed in Bucky vertically (Differs from text) |
| SID: | 84" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders parallel to Bucky – Arms by your side- top of film just below eyes Option 1 - slight chin up –mouth closed Option 2 – slight chin down – mouth opened Depending on the option the opposite separate film should be taken |
| Central Ray: | Centered to film approximately the Xiphoid process of Sternum |
| Collimation: | Just below eyes and above symphysis pubis and to exclude shoulders |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Take a deep breath in and hold" (don't move) |
| Text: | Page 134 |
| Notes: | Should use wedges at the tube Lateral Spine Full Spine view are not recommended Should only be used if necessary. Lateral regional films are still required If patient measures in excess of 27 cm this view should not be used |

AP Full Spine



Full Spine Views

Full Spine Studies:

Minimum Study:

- (AP) Anterior to Posterior Full Spine
- Option 1 or 2 supplemental view
- Lateral Cervical
- Lateral Thoracic
- Lateral Lumbar

Alternate Minimum Study:

- Minimum Study Cervical
- Minimum Study Thoracic
- Minimum Study Lumbar

Cervical Spine Views

Cervical Studies:

Minimum Study:

- (AP) Anterior to Posterior Cervical
- (APOM) Anterior to Posterior Open Mouth Cervical
- Lateral Cervical

In addition to Minimum Study-either or both:

Optional Routine Series Minimum:

- Forward Flexion Cervical
- Extension Cervical

Optional Routine Series Minimum:

- Right Oblique Cervical
- Left Oblique Cervical

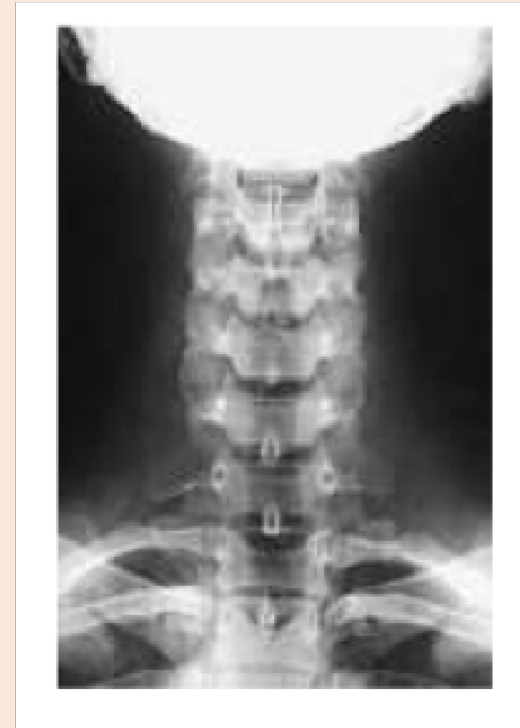
Special Views:

- Lateral Flexion (Right and Left side bending) Cervical
- Rotational Cervical (Right and Left)
- Pillar: frontal
- Pillar: semioblique
- Verticosubmental

Cervical Spine Positioning

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | 15 degrees cephalad |
| Patient Position: | Chin slightly up Naso-Medial (nostrils to ear canal) line parallel to floor |
| Central Ray: | CR through apex of thyroid cartilage/prominence (mid-cervical/Adam's Apple) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-128 |

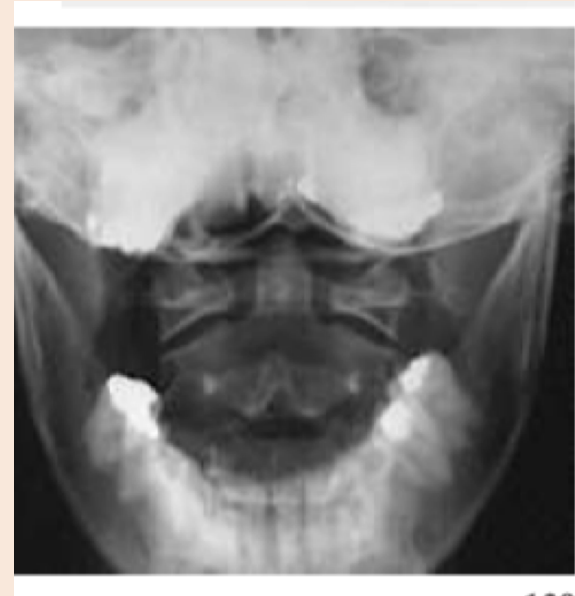
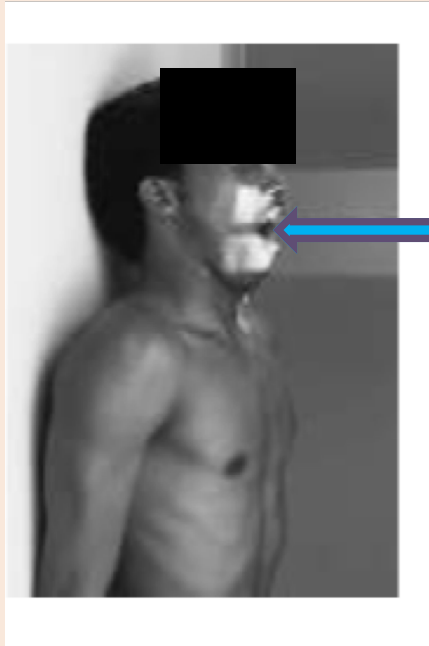
AP Cervical



Cervical Spine Positioning

| | |
|-------------------|---|
| View: | (APOM) Anterior to Posterior Open Mouth |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tube tilt |
| Patient Position: | Front tooth lined up with base of occiput parallel to floor |
| Central Ray: | CR through angles of the mouth |
| Collimation: | Just below eyes |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-128 |

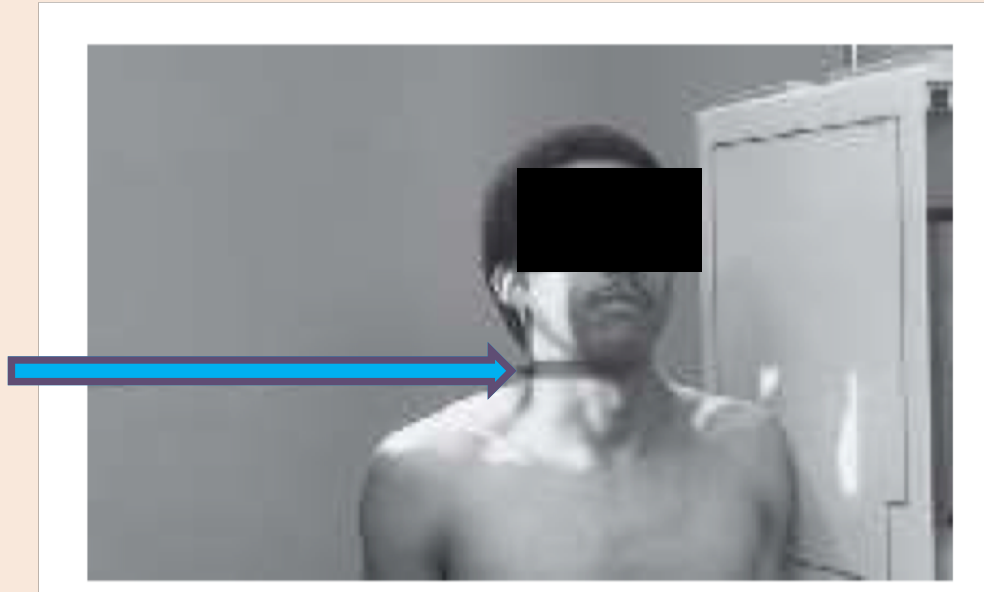
APOM Cervical



Cervical Spine Positioning

| | |
|-------------------|---|
| View: | Neutral Lateral Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 72" |
| Tube Angle: | No tube tilt |
| Patient Position: | Shoulders perpendicular to film Naso-Medial line parallel to floor |
| Central Ray: | CR through midpoint SCM (C4 level) - Sandbags optional |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-128 |

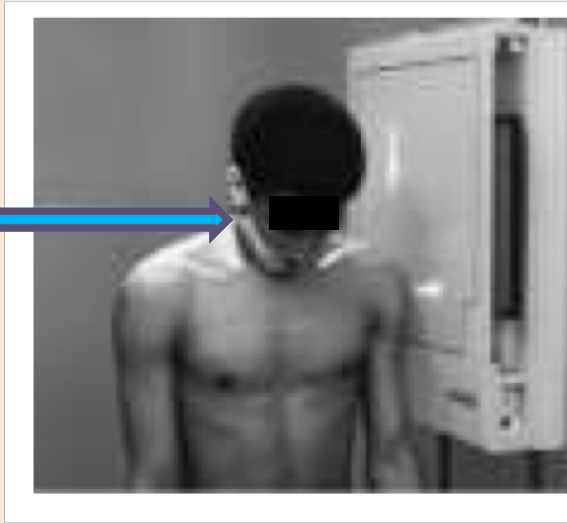
Neutral Lateral Cervical



Cervical Spine Positioning

| | |
|-------------------|---|
| View: | Flexion Lateral Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 72" |
| Tube Angle: | No tube tilt |
| Patient Position: | Tuck chin-flex neck forward to limitation Shoulders down |
| Central Ray: | CR through midpoint SCM (C4 level) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L and FLEX |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-128 |

Flexion Lateral Cervical



Cervical Spine Positioning

| | |
|-------------------|--|
| View: | Extension Lateral Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 72" |
| Tube Angle: | No tube tilt |
| Patient Position: | Head tilted back to limitation Shoulders down |
| Central Ray: | CR through midpoint SCM (C4 level) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L and EXT |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-128 |

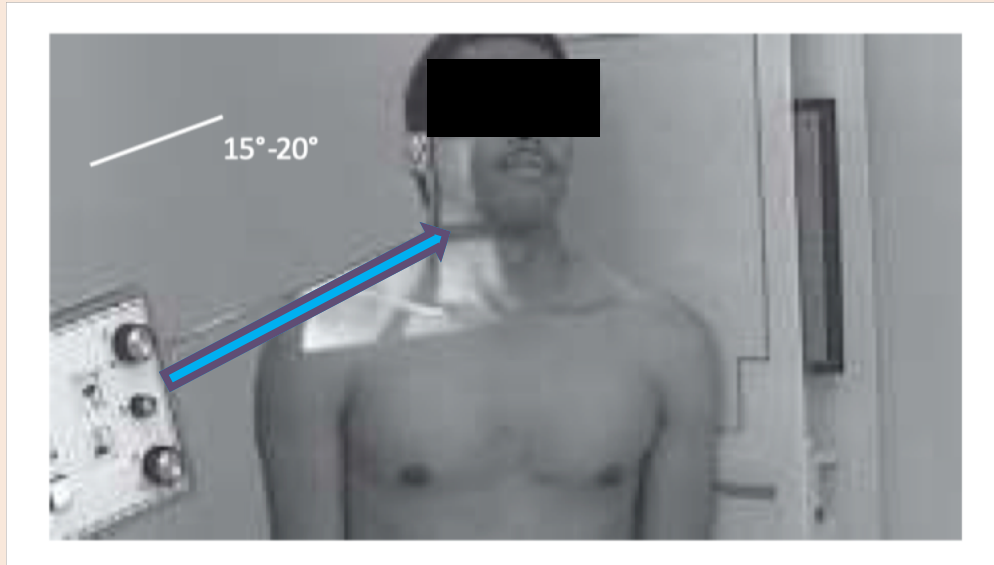
Extension Lateral Cervical



Cervical Spine Positioning

| | |
|-------------------|---|
| View: | (RPO – LPO) Right and Left Posterior Obliques Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 72" |
| Tube Angle: | 15 – 20 degrees cephalad |
| Patient Position: | Patient's shoulders 45 degrees from board Head turned to profile |
| Central Ray: | CR through midpoint SCM (C4 level) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | RPO – LPO |
| Instruction: | "Breath out and hold" |
| Text: | Page 127-129 |

RPO & LPO Cervical



Cervical Spine Positioning

| | |
|-------------------|---|
| View: | Right and Left and Bilateral Pillars Cervical |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | Right or Left – 30 to 40 degrees caudal Bilateral no tilt |
| Patient Position: | Right or Left –Back flat to Bucky Head rotated fully R or L with slight flex |
| Central Ray: | CR through midpoint SCM (C4 level) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 129 Caution this is generally a trauma view |

Thoracic Spine Views

Thoracic Studies:

Minimum Study:

- (AP) Anterior to Posterior Thoracic
- Lateral Thoracic

Special Views:

- Semioblique (Swimmers View) Thoracic

Thoracic Spine Positioning

| | |
|-------------------|---|
| View: | Swimmers Lateral View Thoracic |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | Bilateral no tilt |
| Patient Position: | Shoulders perpendicular to Bucky Arm closest to Bucky up behind head |
| Central Ray: | CR through C7-T1 interspace. Base of the neck |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | This differs from text - Page 130 |

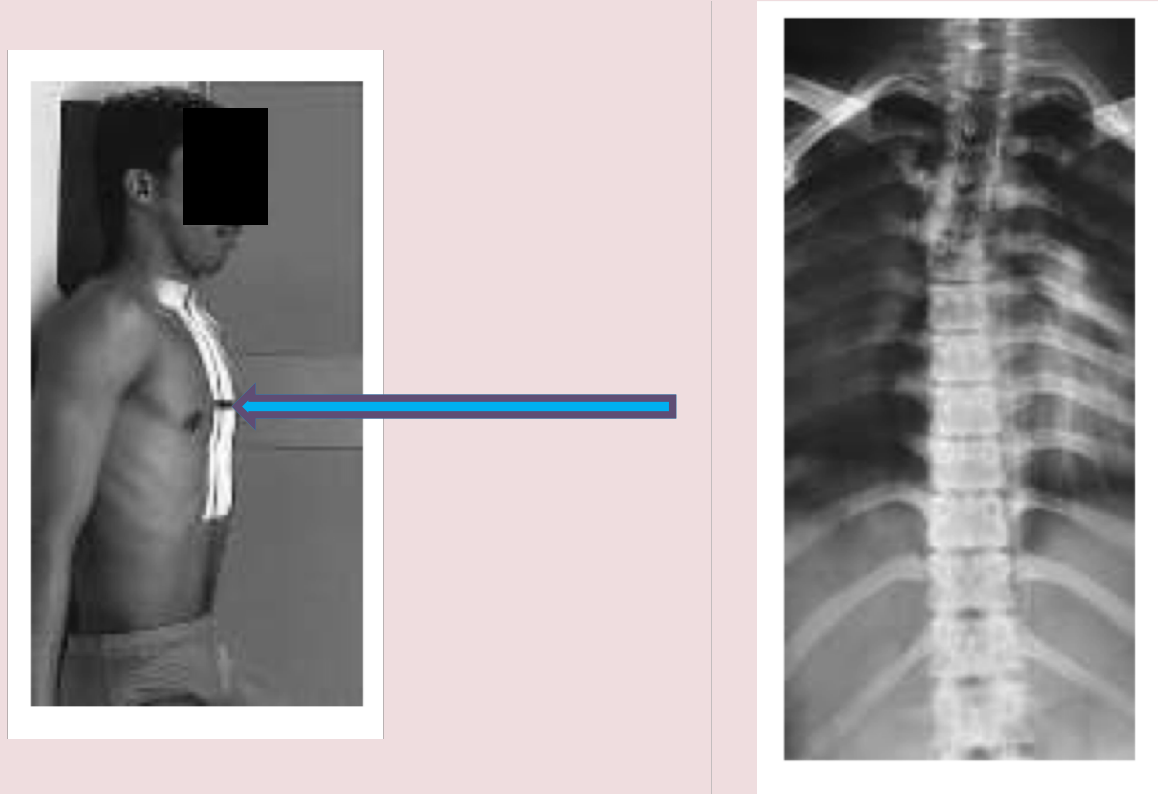
Swimmers Cervical



Thoracic Spine Positioning

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Thoracic |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back to the Bucky Shoulders parallel to film. |
| Central Ray: | Top of film 2 inches above shoulder, CR to center of film (approx. T6) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 130 |

AP Thoracic



Thoracic Spine Positioning

| | |
|-------------------|--|
| View: | Lateral (R or L) Thoracic |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulder perpendicular to Bucky. Arms in prayer or up on a pole. Apex of curve 3 inches posterior to vertical midline. |
| Central Ray: | Top of film 2 inches above shoulder, CR to center of film (approx. T6) |
| Collimation: | To tissue line |
| Shielding: | Apron in areas outside field |
| Marker: | R or L, NEUT |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 130 |

Lateral Thoracic



Lumbar Spine Views

Lumbar Studies:

Minimum Study:

- (AP) Anterior to Posterior Lumbar
- Lateral Lumbar

In addition to Minimum Study-either or both:

Optional Routine Series Minimum:

- Right Oblique Lumbar
- Left Oblique Lumbar

Optional Routine Series Minimum:

- (AP) Anterior to Posterior Lumbosacral Spot
- Lateral Lumbosacral Spot

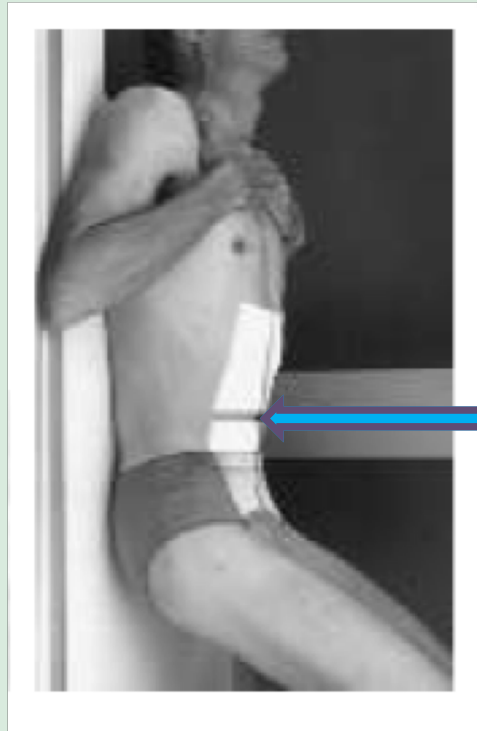
Special Views:

- AP Lateral Flexion (Right and Left) Lumbar
- Lateral Forward Flex Lumbar
- Lateral Extension Lumbar

Lumbar Spine Positioning

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back to the Bucky Shoulders parallel to film. |
| Central Ray: | 1 inch <u>below</u> Iliac Crest Center of film |
| Collimation: | To tissue line |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

AP Lumbar-Lumbosacral



Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Lumbar-Lumbosacral |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders perpendicular to film. Arms crossed and hands on shoulders. Apex of curve 3 inches posterior to vertical midline. Convexity closest to film (CR into Concavity) |
| Central Ray: | 1 inch <u>above</u> Iliac Crest Center of film |
| Collimation: | To tissue line |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

Lateral Lumbar-Lumbosacral



Lumbar Spine Positioning

| | |
|-------------------|---|
| View: | AP(R & L) Lateral Flexion Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | AP (R or L) Lateral Flexion Lumbar Shoulder parallel to Bucky Lean to marked side |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R L Flex |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Forward Flexion Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Lateral Forward Flexion Lumbar Shoulders perpendicular to Bucky Arms crossed Bend forward |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R Flex |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

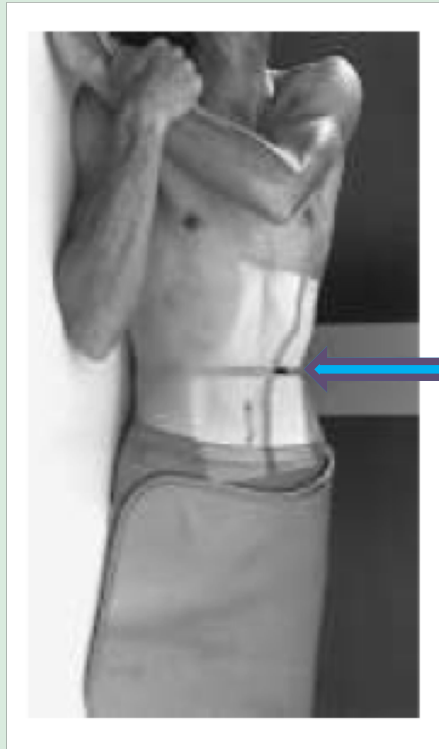
Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Extension Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Lateral Extension Flexion Lumbar Shoulders perpendicular to Bucky Arms crossed Bend backwards |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R Ext |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | (RPO – LPO) Right or Left Posterior Obliques Lumbar |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | RPO: facing tube with right side against Bucky and left side angled 20-30 degrees away from Bucky. A point 2 inches medial to left Anterior Superior Iliac Spine (ASIS) Should be on midline of Bucky, and patient's Spinous Processes (SP) should be 1 inch to the left of midline of Bucky. LPO: opposite of RPO. |
| Central Ray: | Level with Iliac Crest - center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | RPO or LPO |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

RPO & LPO Oblique Lumbar



Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | (AP L5/S1) Anterior to Posterior Lumbosacral Spot |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Low back parallel to film Arms crossed and hands on shoulders |
| Central Ray: | 2 inches <u>below</u> Iliac Crest Center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 Alternate procedure Page 133 |

AP L5 Lumbosacral Spot



Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral (L5/S1) Lumbosacral Spot |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders perpendicular to film Arms crossed and hands on shoulders Apex of curve 3 inches posterior to vertical midline |
| Central Ray: | 2 inches <u>below</u> Iliac Crest Center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 Alternate procedure Page 133 |

Lateral L5-S1 Spot



Lumbar Spine Positioning

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back to the Bucky. Shoulders parallel to film. |
| Central Ray: | 1 inch <u>below</u> Iliac Crest Center of film |
| Collimation: | To tissue line |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Lumbar-Lumbosacral |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders perpendicular to film. Arms crossed and hands on shoulders. Apex of curve 3 inches posterior to vertical midline. Convexity closest to film (CR into Concavity) |
| Central Ray: | 1 inch <u>above</u> Iliac Crest Center of film |
| Collimation: | To tissue line |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

Lumbar Spine Positioning

| | |
|-------------------|---|
| View: | AP(R & L) Lateral Flexion Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | AP (R or L) Lateral Flexion Lumbar Shoulder parallel to Bucky Lean to marked side |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R L Flex |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Forward Flexion Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Lateral Forward Flexion Lumbar Shoulders perpendicular to Bucky Arms crossed Bend forward |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R Flex |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | Lateral Extension Lumbar |
| Film Size: | 14" x 17" placed in Bucky vertically (Differs from text) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Lateral Extension Flexion Lumbar Shoulders perpendicular to Bucky Arms crossed Bend backwards |
| Central Ray: | 2 inches above crest |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R Ext |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 132 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | (RPO – LPO) Right or Left Posterior Obliques Lumbar |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | RPO: facing tube with right side against Bucky and left side angled 20-30 degrees away from Bucky. A point 2 inches medial to left ASIS should be on midline of Bucky, and patient's SPs should be 1 inch to the left of midline of Bucky. LPO: opposite of RPO. |
| Central Ray: | Level with Iliac Crest Center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R RPO or L LPO |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 |

Lumbar Spine Positioning

| | |
|-------------------|--|
| View: | (AP L5/S1) Anterior to Posterior Lumbosacral Spot |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Low back parallel to film Arms crossed and hands on shoulders |
| Central Ray: | 2 inches <u>below</u> Iliac Crest Center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 Alternate procedure Page 133 |

Lumbar Spine Positioning

| | |
|-------------------|---|
| View: | Lateral (L5/S1) Lumbosacral Spot |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulders perpendicular to film. Arms crossed and hands on shoulders Apex of curve 3 inches posterior to vertical midline |
| Central Ray: | 2 inches <u>below</u> Iliac Crest Center of film |
| Collimation: | To film size |
| Shielding: | Gonad Shielding |
| Marker: | R or L |
| Instruction: | "Deep Breath in, blow it all the way out and hold" |
| Text: | Page 131 Alternate procedure Page 133 |

Pelvis (Bilateral Hip) Views

Pelvis Studies:

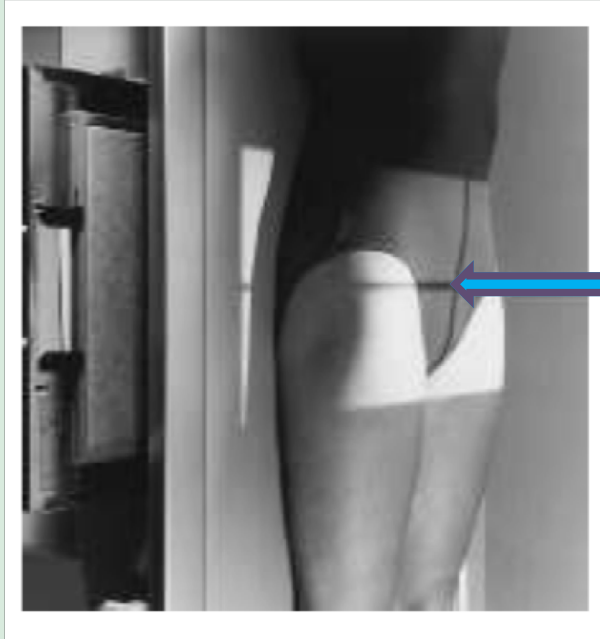
Minimum Study:

- (AP) Anterior to Posterior Pelvis

Pelvis and Bilateral Hip Positioning

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior (Pelvis) Bilateral Hip |
| Film Size: | 14" x 17" placed in Bucky horizontally |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back to the Bucky - Parallel to film Arms crossed and hands on shoulders. |
| Central Ray: | 1 ½ inches above superior margin of Symphysis Pubis Alternate 1 to 2 inches above Iliac Crest |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 135 |

AP Pelvis (Bilateral Hip)



Sacrum Views

Sacrum Studies:

Minimum Study:

- (AP) Anterior to Posterior Sacrum
- Lateral Sacrum

Sacroiliac Studies:

Minimum Study:

- Right and Left Oblique SI

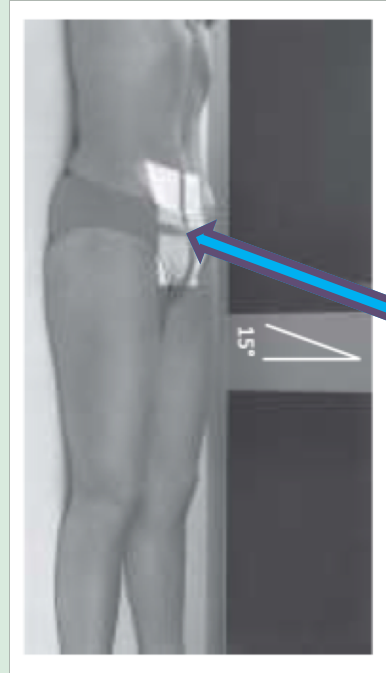
In addition to minimum routine study

- (AP) Anterior to Posterior Pelvis

Sacrum Positioning

| | |
|-------------------|---|
| View: | (AP Sacrum) Anterior to Posterior Sacrum |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | 15 degrees cephalad |
| Patient Position: | Pelvis parallel to Bucky |
| Central Ray: | Halfway between Symphysis Pubis and ASIS |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 136 |

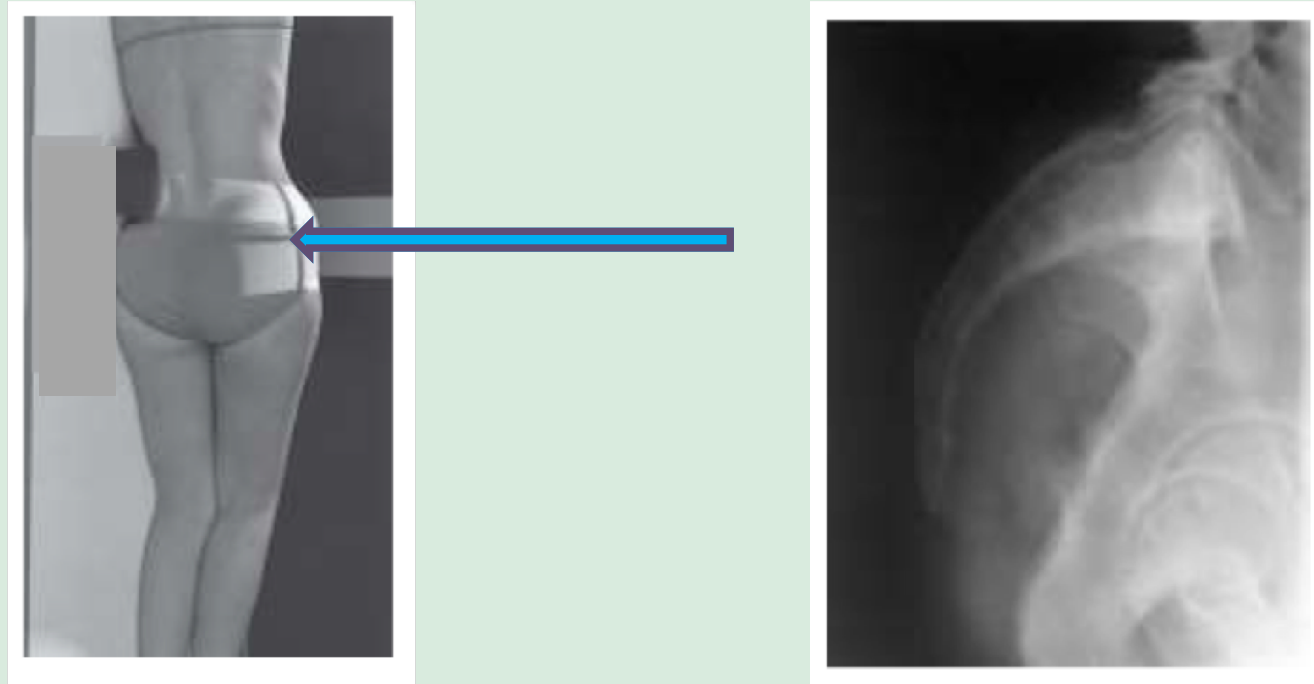
AP Sacrum



Sacrum Positioning

| | |
|-------------------|-------------------------------------|
| View: | Lateral Sacrum |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Pelvis perpendicular to the Bucky |
| Central Ray: | 3 inches below Iliac Crest |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 136 |

Lateral Sacrum



Coccyx Views

Coccyx Studies:

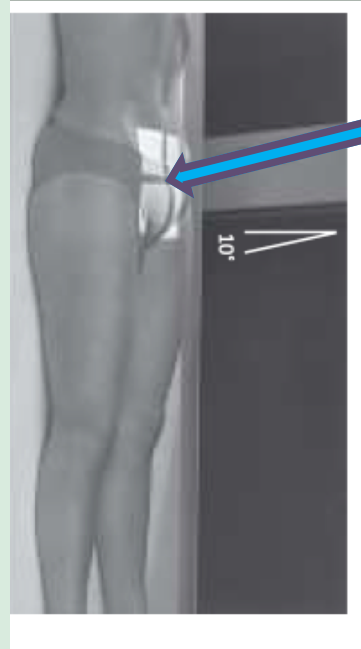
Minimum Study:

- (AP) Anterior to Posterior Coccyx
- Lateral Coccyx

Coccyx Positioning

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Coccyx |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | 10 degrees caudal |
| Patient Position: | Pelvis parallel to Bucky |
| Central Ray: | Approximately 2 inches superior to Symphysis Pubis |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 136 |

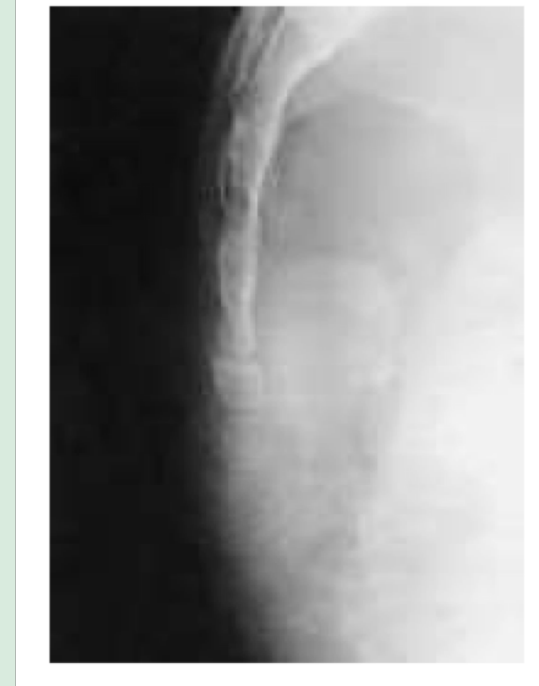
AP Coccyx



Coccyx Positioning

| | |
|-------------------|-------------------------------------|
| View: | Lateral Coccyx |
| Film Size: | 8" x 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Pelvis perpendicular to Bucky |
| Central Ray: | 5 inches below Iliac Crest |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Breath out and hold" |
| Text: | Page 136 |

Lateral Coccyx



Study Guide

Upper Extremity Views:

SID

40"

All

Cassette/Film:

14" x 17 "

AP Forearm SPLIT
Lateral Forearm SPLIT

10" x 12"

AP Shoulder

AP Elbow SPLIT
Olecranon SPLIT
Lateral Wrist and Hand SPLIT
Medial Oblique Wrist and Hand SPLIT

8" x 10"

Ulna Deviation SPLIT
All Digits SPLIT
All Others

Study Guide

Upper Extremity Views:

Cassette Orientation:

Bucky - Only Shoulder views
No Bucky (On a Table)

All Vertical
All Others

Tube Tilt:

Caudal
45 Degrees
No Tilt

2 CTS Only
All Others

Instructions:

"Don't Move"

All

Upper Extremity Positioning

SHOULDER:

View: **(AP) Anterior to Posterior (R or L) Shoulder**

Film Size: 10" x 12" placed in Bucky vertically

SID: 40"

Tube Angle: No tilt

Patient Position: Shoulder flat to Bucky

Palm flat to Bucky

Central Ray: Through Coracoid Process

Collimation: Include lateral aspect of clavicle

Shielding: None

Marker: R or L and NEUT

Instruction: "Do not move"

Text: Page 144

AP (R or L) Shoulder



Upper Extremity Positioning

SHOULDER:

| | |
|-------------------|---|
| View: | (AP) Internal Rotation (R or L) Shoulder |
| Film Size: | 8" x 10 " placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulder to Bucky Arm flexed to 90 degrees Palm flat to abdomen |
| Central Ray: | Through Coracoid Process |
| Collimation: | Include lateral aspect of clavicle |
| Shielding: | None |
| Marker: | R or L and INT |
| Instruction: | "Do not move" |
| Text: | Page 144 |

AP (R or L) Internal Rotation Shoulder



Upper Extremity Positioning

SHOULDER:

| | |
|-------------------|--|
| View: | (AP) External Rotation (R or L) Shoulder |
| Film Size: | 8" x 10 " placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulder flat to Bucky Arm flexed to 90 degrees Palm out to the side |
| Central Ray: | Through Coracoid Process |
| Collimation: | Include lateral aspect of clavicle |
| Shielding: | None |
| Marker: | R or L and EXT |
| Instruction: | "Do not move" |
| Text: | Page 144 |

Upper Extremity Positioning

SHOULDER:

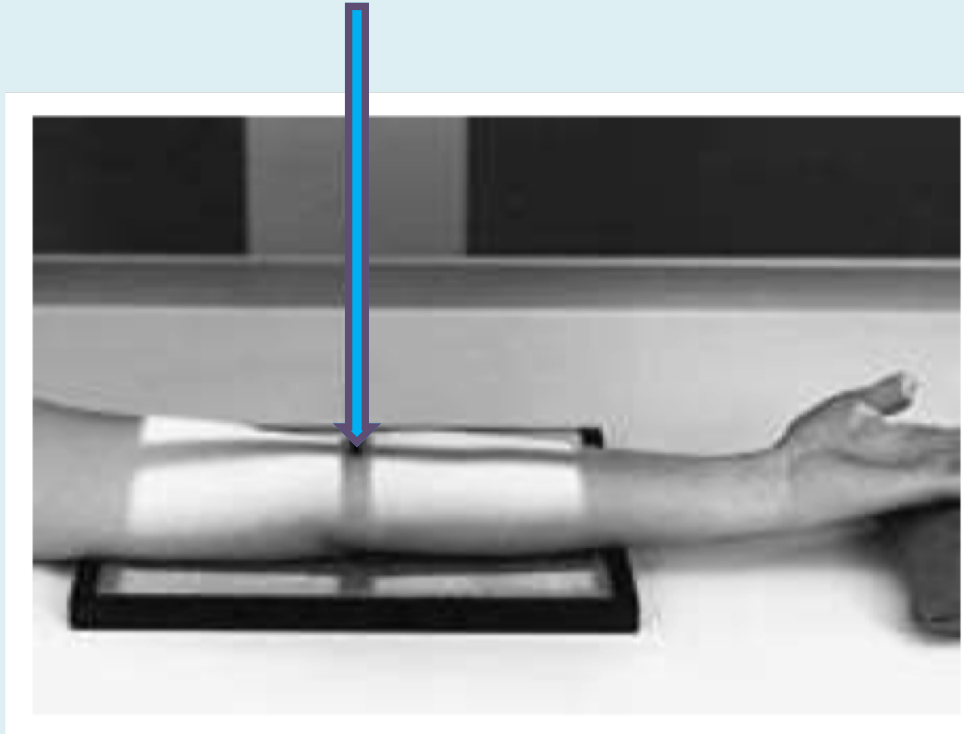
| | |
|-------------------|--|
| View: | Baby Arm Shoulder |
| Film Size: | 8" x 10 " placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Shoulder to Bucky Arm abducted to 90 degrees and flat to Bucky Forearm flexed to 90 degrees as flat to Bucky as possible Palm upward |
| Central Ray: | Through Coracoid Process |
| Collimation: | Include lateral aspect of clavicle |
| Shielding: | None |
| Marker: | R or L ABD |
| Instruction: | "Do not move" |
| Text: | Page 144 |

Upper Extremity Positioning

ELBOW:

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Elbow |
| Film Size: | 10" x 12 " cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Elbow fully extended Palm upward |
| Central Ray: | Center of elbow joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 145 |

AP Elbow



Upper Extremity Positioning

ELBOW:

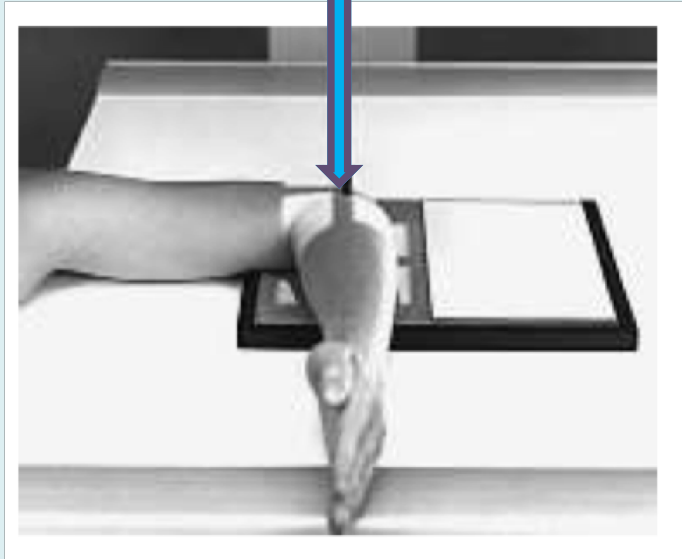
| | |
|-------------------|---|
| View: | Olecranon - (Jones') - (Tangential) Elbow |
| Film Size: | 10" x 12 " cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Elbow fully flexed Palm on shoulder |
| Central Ray: | 1 ½" - 2 " proximal to the tip of the olecranon process |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 145 |

Upper Extremity Positioning

ELBOW:

| | |
|-------------------|--|
| View: | Lateral Elbow |
| Film Size: | 8" x 10" " cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Elbow flexed to 90 degrees Thumb pointed upward |
| Central Ray: | Center of elbow joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 145 |

Lateral Elbow

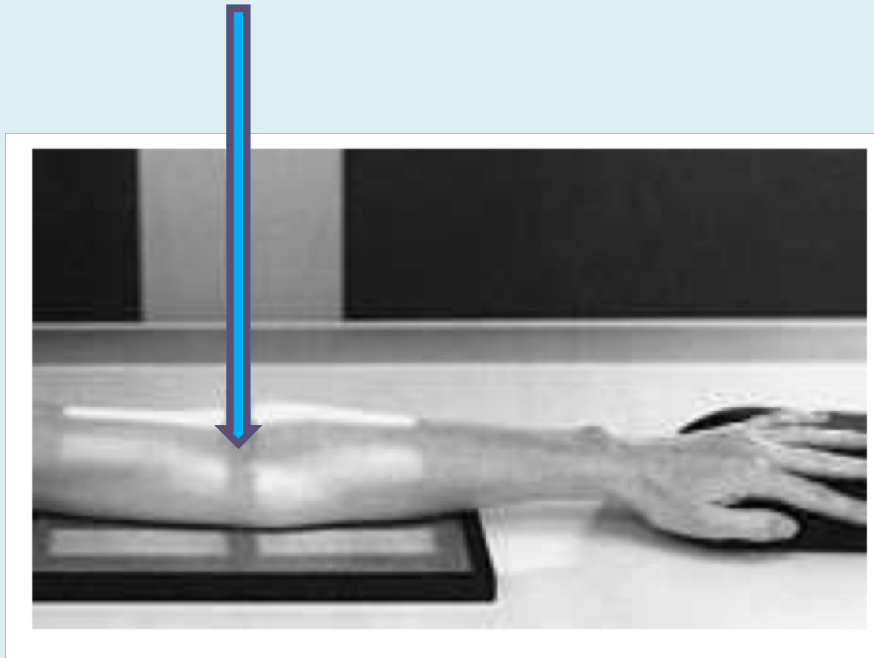


Upper Extremity Positioning

ELBOW:

| | |
|-------------------|---|
| View: | Medial Oblique Elbow |
| Film Size: | 8" x 10 " cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Elbow fully extended on cassette Palm down |
| Central Ray: | Center of elbow joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 145 |

AP Oblique Medial Rotation Elbow

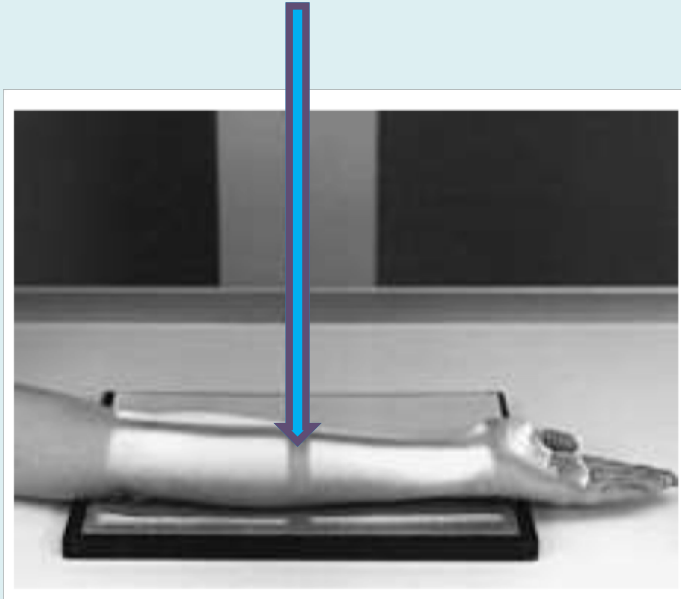


Upper Extremity Positioning

FOREARM:

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Forearm |
| Film Size: | 14" x 17 " cassette on table (text advocates using half the film – If available 7" x 14" is best) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Arm flat to cassette palm up – include joint closest to injury |
| Central Ray: | Center of forearm |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 146 |

AP Forearm

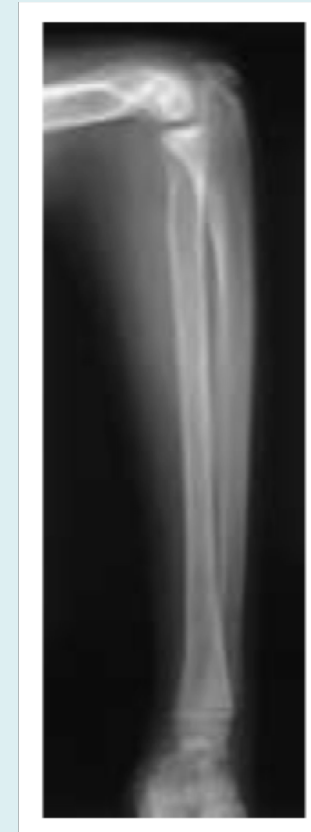
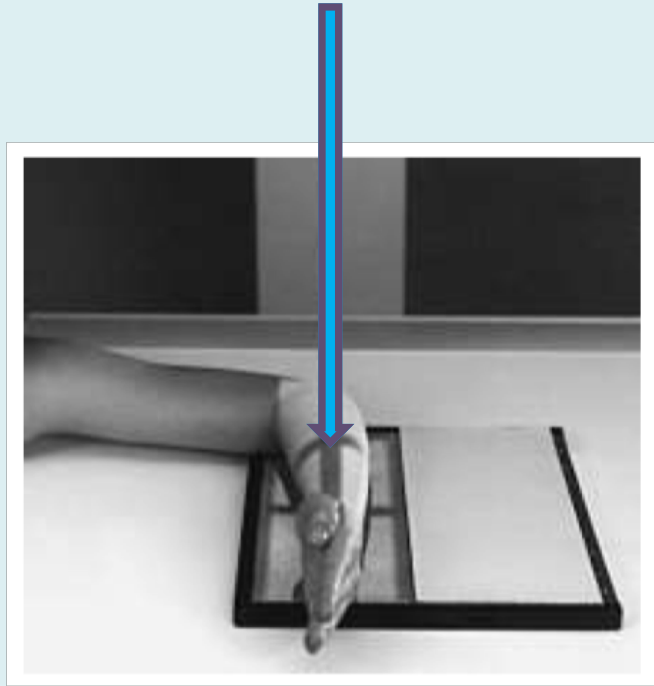


Upper Extremity Positioning

FOREARM:

| | |
|-------------------|---|
| View: | Lateral Forearm |
| Film Size: | 14" x 17 " cassette on table (text advocates using half the film – If available 7" x 14" is best) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Lateral - Elbow flexed to 90 degrees Thumb up - include joint closest to injury |
| Central Ray: | Center of forearm |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 146 |

Lateral Forearm



Upper Extremity Positioning

WRIST:

View: **(PA) Posterior to Anterior Wrist**

Film Size: 8" x 10" cassette on table

SID: 40"

Tube Angle: No tilt

Patient Position: Flat to cassette palm down

Fingers flex to fist

Central Ray: Center of wrist

Collimation: To just outside skin line

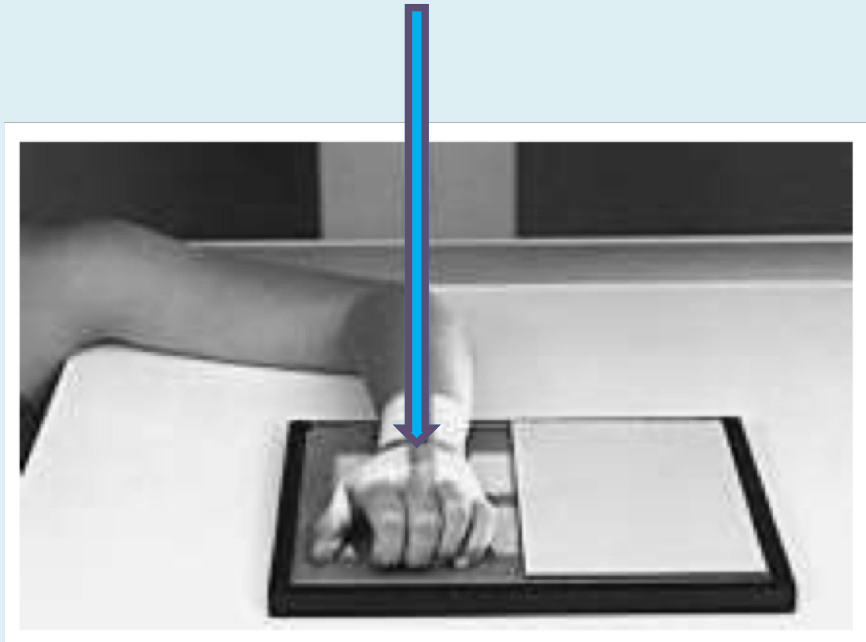
Shielding: None

Marker: R or L

Instruction: "Do not move"

Text: Page 147

PA Wrist

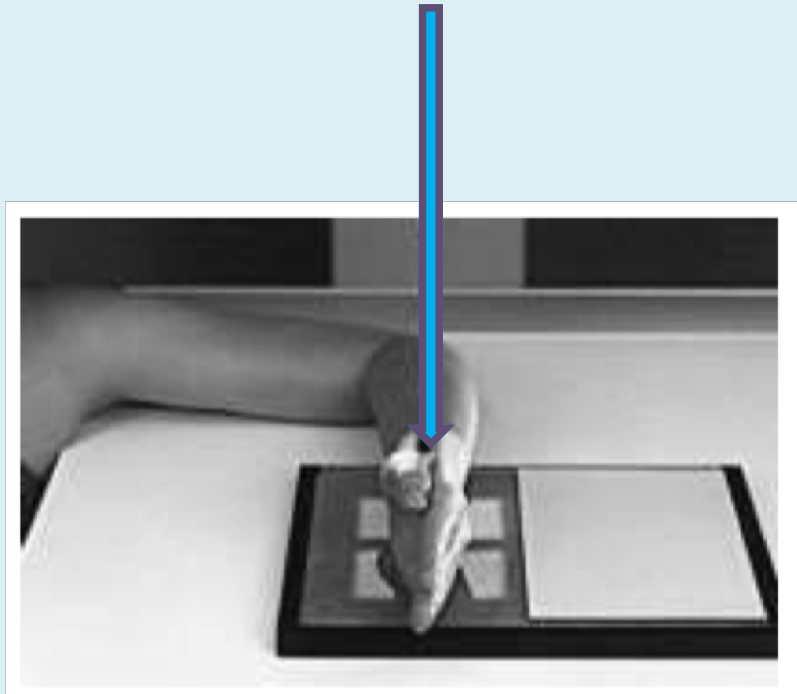


Upper Extremity Positioning

WRIST:

| | |
|-------------------|--|
| View: | Lateral Wrist |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Wrist on cassette Thumb up Fingers flexed |
| Central Ray: | Center of wrist |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 147 |

Lateral Wrist

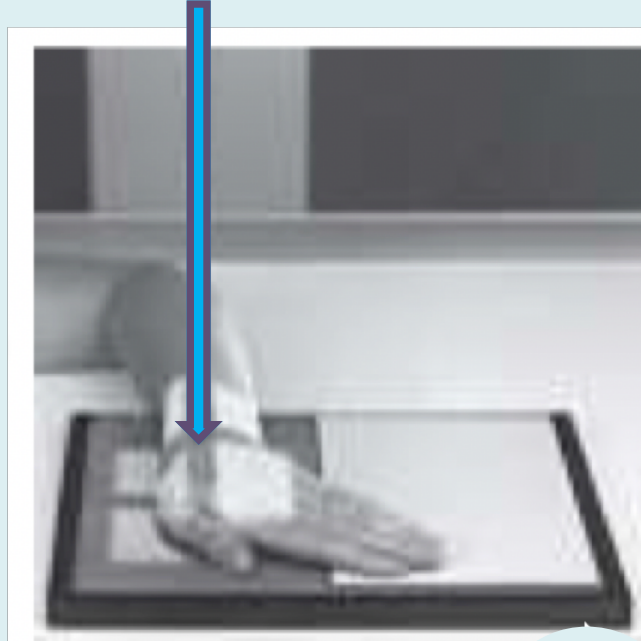


Upper Extremity Positioning

WRIST:

| | |
|-------------------|--|
| View: | (PA) Posterior to Anterior Ulna Deviation Wrist |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Elbow flexed to 90 degrees Palm flat down in ulna flexion (fingers away from midline) |
| Central Ray: | Center of wrist |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 147 |

PA Ulna Deviation Wrist

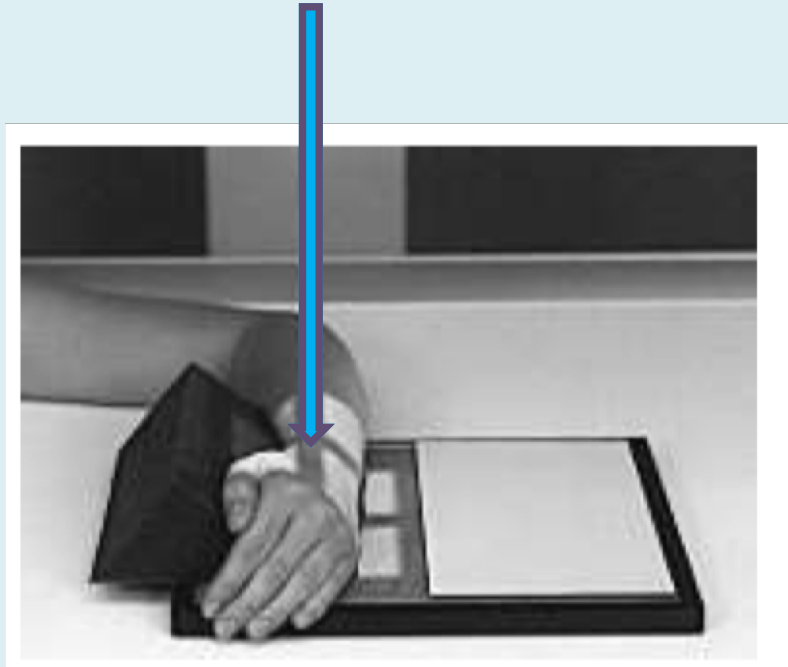


Upper Extremity Positioning

WRIST:

| | |
|-------------------|---|
| View: | Medial Oblique Wrist |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Wrist partially palm down 45 degrees fingers to cassette and slightly curved Thumb pointing upwards Positioning foam support recommended |
| Central Ray: | Center of wrist |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 147 |

PA Oblique Wrist

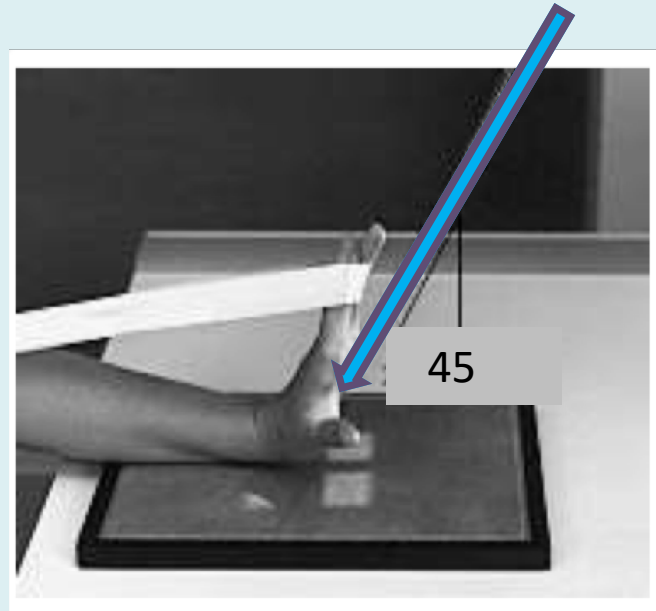


Upper Extremity Positioning

WRIST:

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior Carpal Tunnel View |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | 45 degrees caudal |
| Patient Position: | Hand flexed and held to as close to 90 degrees as possible Wrist as flat to cassette as possible May use a strap to stabilize |
| Central Ray: | Through tunnel |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 148 Alternate view is PA |

AP Carpal Tunnel Syndrome View (Tangential Wrist)



Upper Extremity Positioning

WRIST:

| | |
|-------------------|---|
| View: | (PA) Posterior to Anterior Carpal Tunnel View |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | 45 degrees caudal |
| Patient Position: | Hand flat on Cassette Flex to 90 degrees or as close as possible |
| Central Ray: | Through tunnel |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 148 |

Upper Extremity Positioning

HAND:

| | |
|-------------------|---|
| View: | (PA) Posterior to Anterior Hand |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Flat to cassette palm down Fingers slightly spread |
| Central Ray: | Center of distal part of 3 rd metacarpal |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 149 |

PA Hand

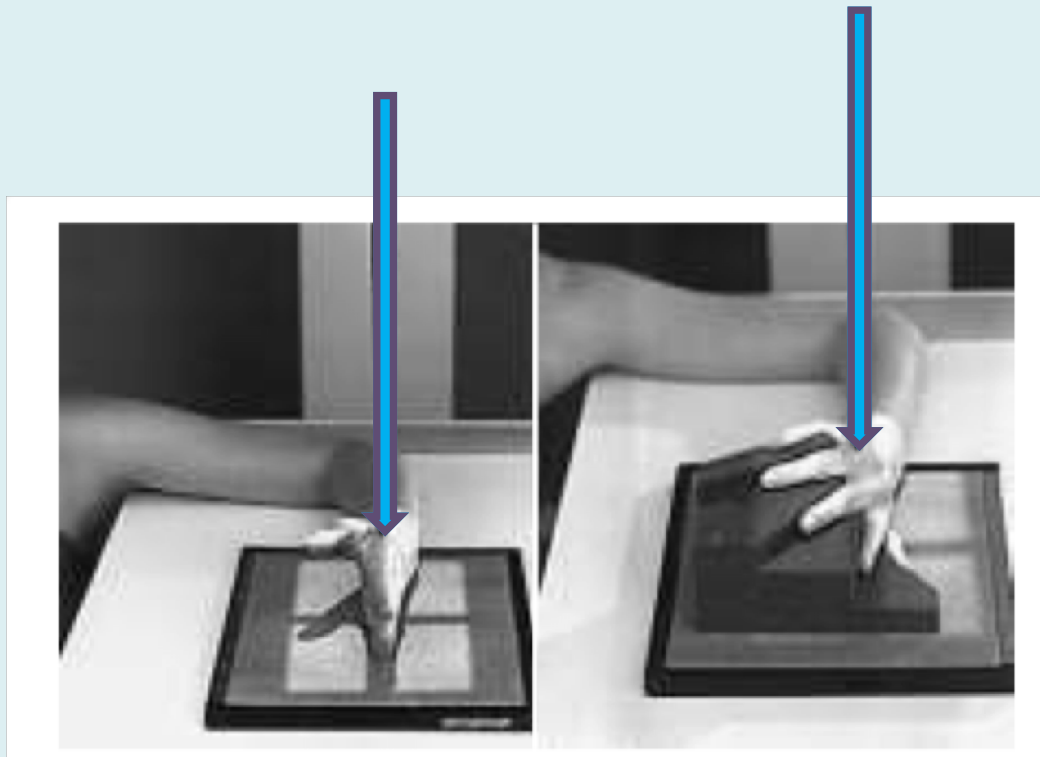


Upper Extremity Positioning

HAND:

| | |
|-------------------|--|
| View: | Lateral Hand |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Hand on cassette Thumb up Fingers extended |
| Central Ray: | Distal metacarpals |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 149 |

Lateral Hand

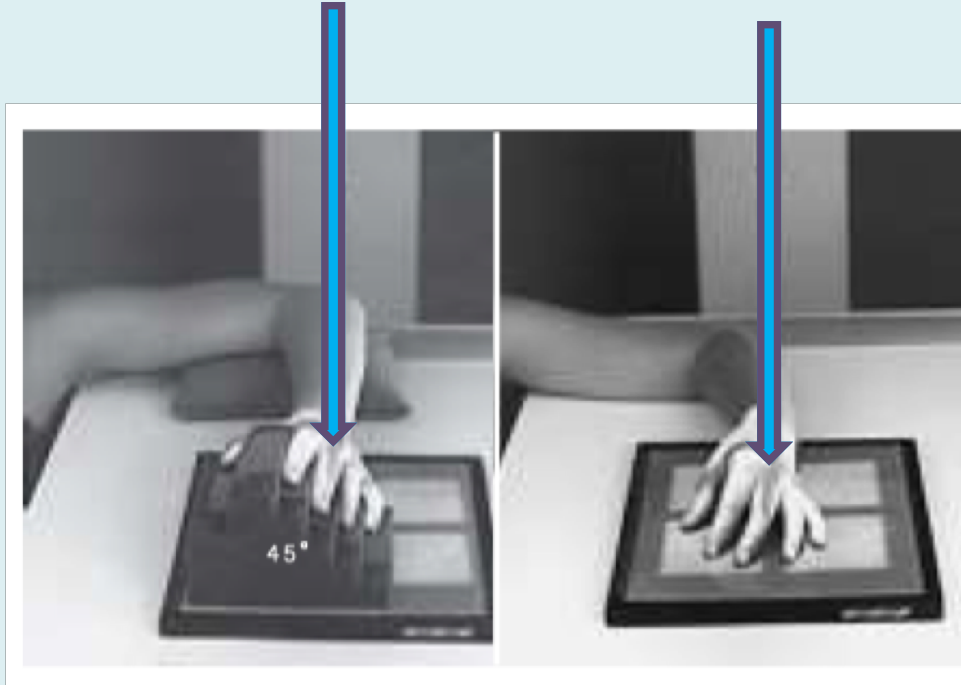


Upper Extremity Positioning

HAND:

| | |
|------------------|--|
| View: | Medial Oblique Hand |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position | Hand partially palm down 45 degrees fingers to cassette and slightly curved Thumb slightly touching cassette Positioning foam support recommended |
| Central Ray: | Distal 3 rd metacarpal |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 149 |

PA Oblique Hand

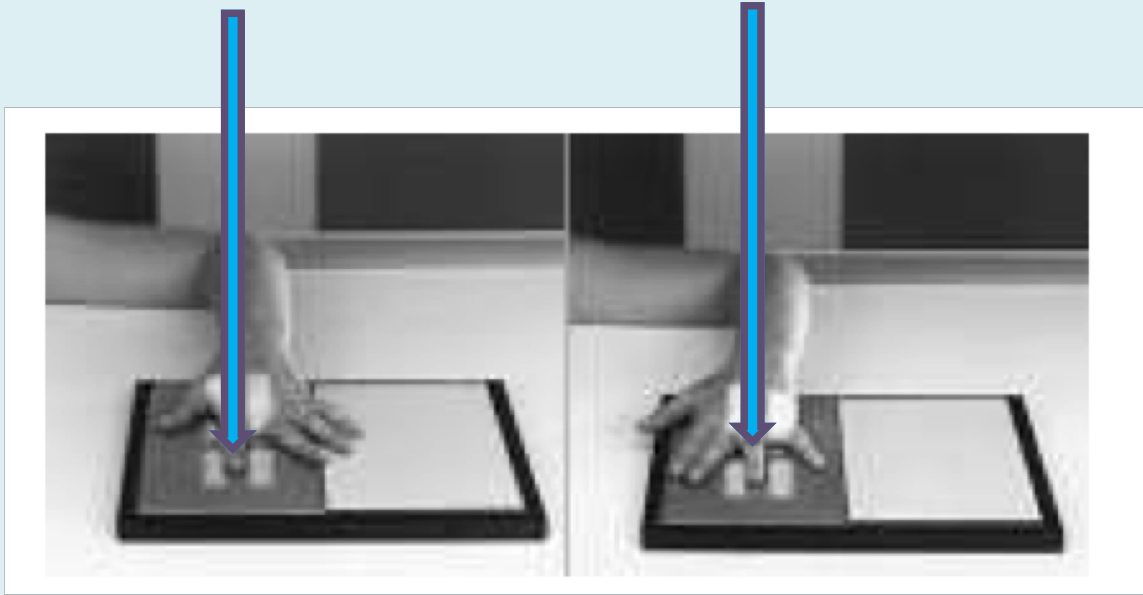


Upper Extremity Positioning

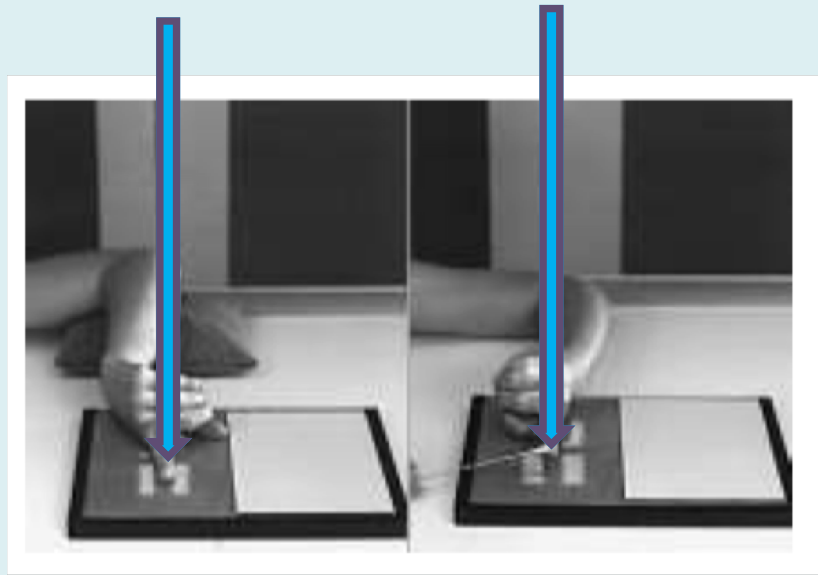
DIGITS:

| | |
|-------------------|---|
| View: | (PA) Posterior to Anterior Digits |
| Film Size: | 8" x 10" cassette on table (text advocates using half the film) |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Isolate finger to be imaged |
| Central Ray: | Center of digit to be imaged |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 150 |

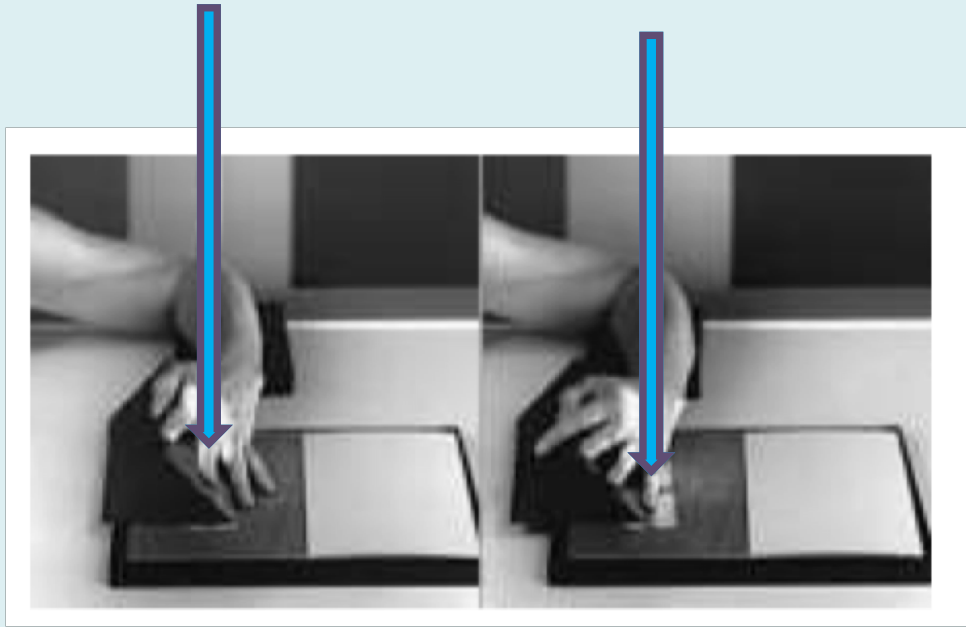
PA 2nd – 5th Digits



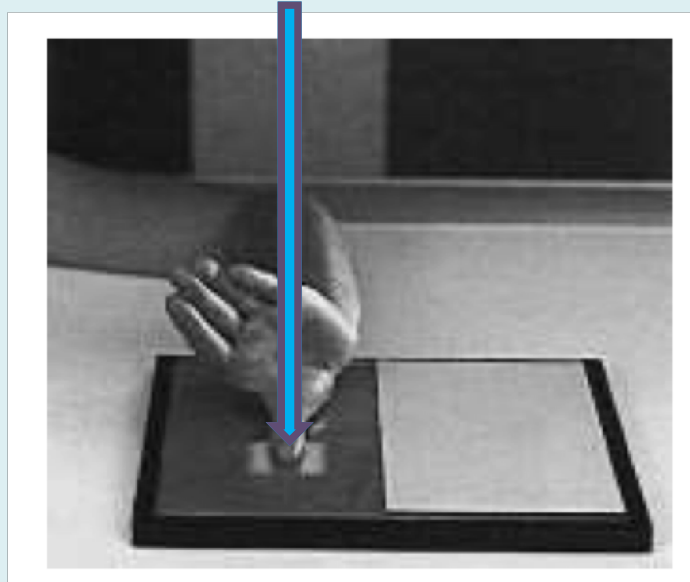
Lateral 2nd – 5th Digits



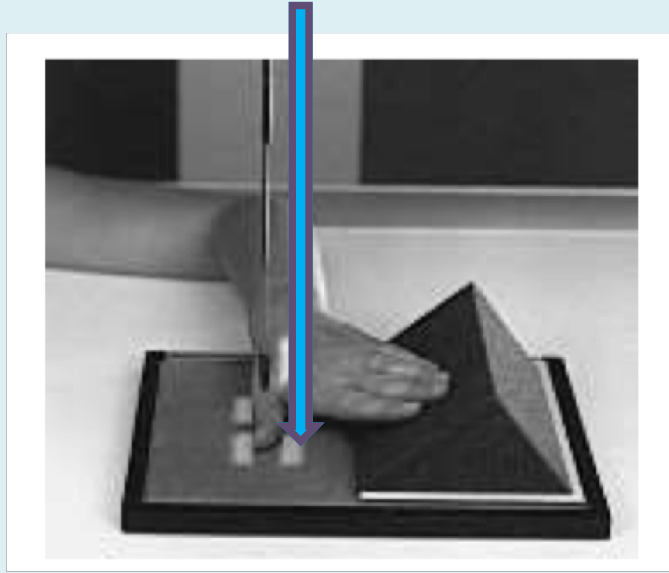
PA Oblique 2nd – 5th Digits



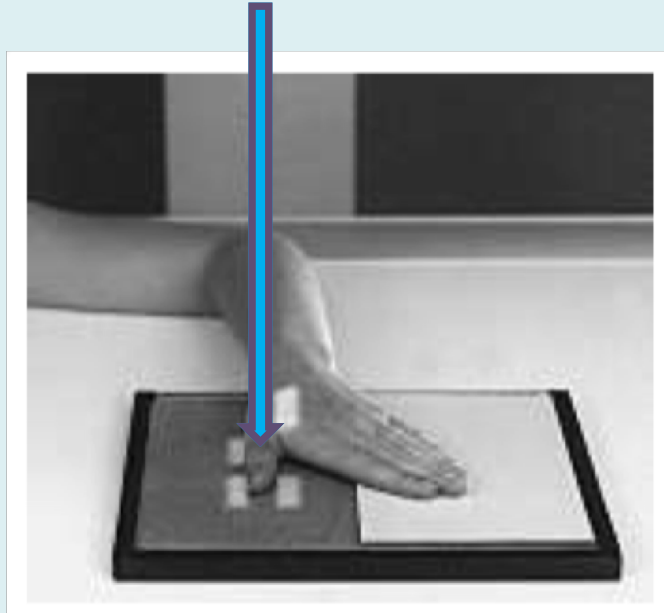
AP 1st Digits



Lateral 1st Digits



PA Oblique 1st Digits



Study Guide

Lower Extremity Views:

SID

40"

All

Cassette/Film:

14" x 17 "

AP Bilateral Hip (HORIZONTALLY in Bucky)

AP and Lateral Leg

10" x 12"

AP Ankle SPLIT

AP Foot

if too large for 8" x 10"

Medial Oblique Ankle SPLIT

Medial and Lateral Oblique Foot

if foot too large for 8" x 10"

8" x 10"

All Others

Study Guide

Lower Extremity Views:

Cassette Orientation:

Bilateral AP Hip

Horizontal

All Shoulder views use a Bucky

All Vertical

No Bucky-On a Table

All Others

Tube Tilt:

Cephalad

5 Degrees

AP Knee

45 Degrees

Sunrise Knee

5 – 10 Degrees

AP Foot

40 Degrees

Tangential Calcaneus

Caudal

45 Degrees

Tunnel Knee

No Tilt

All Others

Instructions:

“Breath out and hold”

AP Bilateral Hip

“Don’t Move”

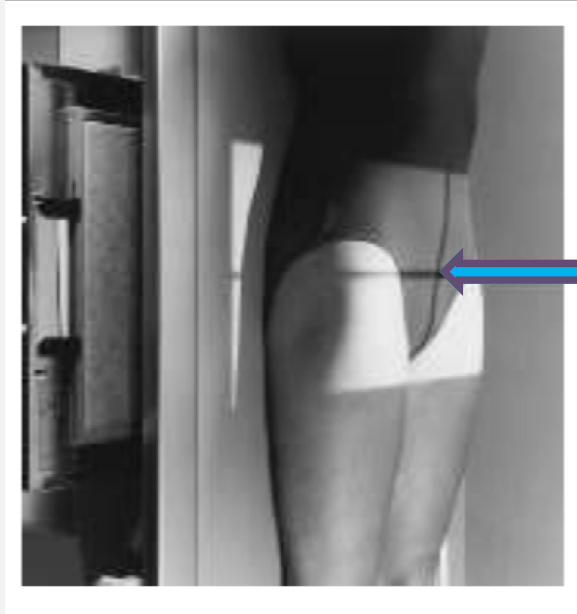
All Others

Lower Extremity Positioning

Bilateral Hip:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior (Pelvis) Bilateral Hip |
| Film Size: | 14" x 17" placed in Bucky horizontally |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back to the Bucky - Parallel to film Arms crossed and hands on shoulders. |
| Central Ray: | 1 ½ inches above superior margin of Symphysis Pubis Alternate 1 to 2 inches above Iliac Crest |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 135 |

AP (Pelvis) Bilateral Hip

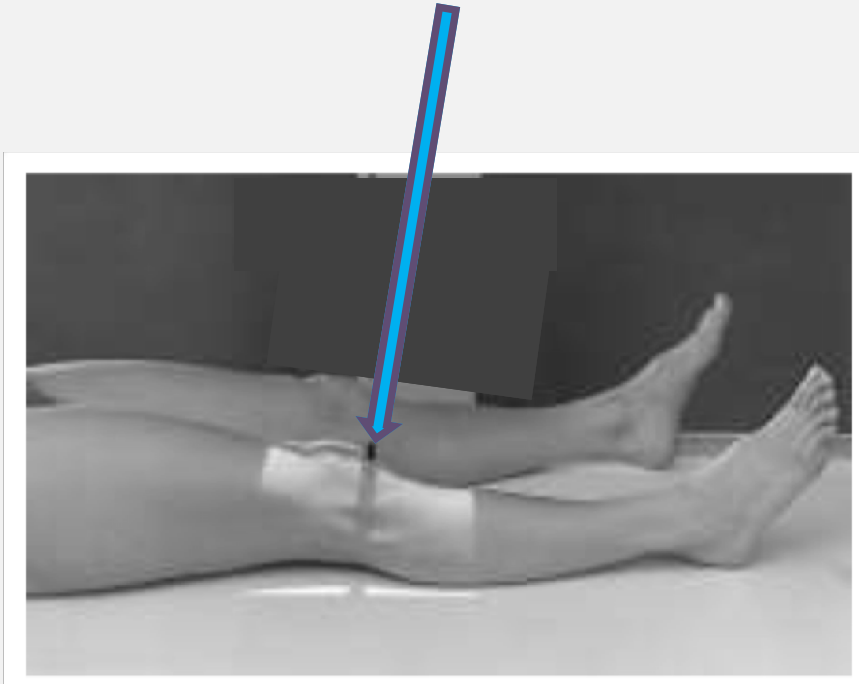


Lower Extremity Positioning

KNEE:

| | |
|-------------------|---|
| View: | (AP) Anterior to Posterior (R or L) Knee If unable to full extend use (PA) option |
| Film Size: | 8" x 10" cassette on table with Bucky (AP may be standing if Bucky and Tube go low enough) |
| SID: | 40" |
| Tube Angle: | 5 degree cephalad |
| Patient Position: | Fully extended knee PA option with foam Positioning Device |
| Central Ray: | ½ inch below patella |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 151 and 152 |

AP Knee



PA Option for Knee

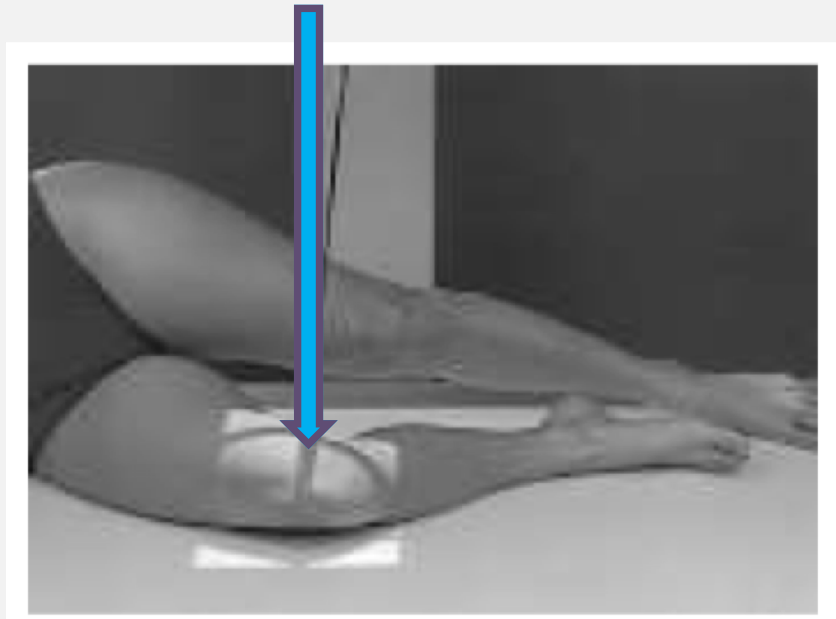


Lower Extremity Positioning

KNEE:

| | |
|-------------------|--|
| View: | Lateral (R or L) Knee |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient on side to be imaged Knee at 30 degrees Other leg back or forward depending on patient comfort |
| Central Ray: | Center to knee joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 151 and 152 |

Lateral (R or L) Knee

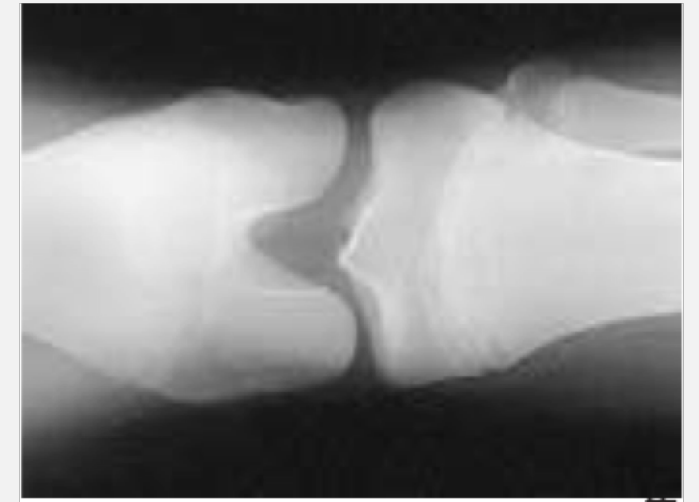
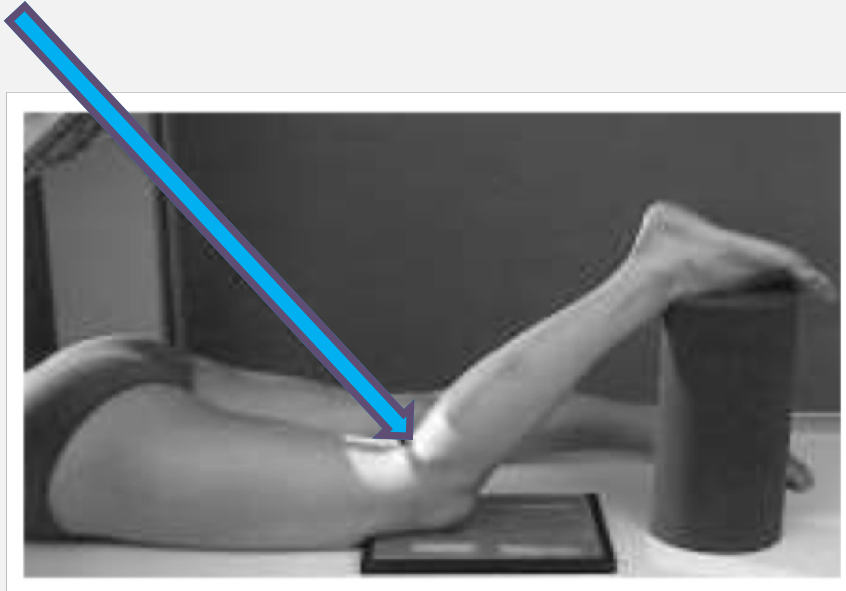


Lower Extremity Positioning

KNEE:

| | |
|-------------------|---|
| View: | (PA) Posterior to Anterior Intercondylar or Tunnel View Knee |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | 45 degree caudal |
| Patient Position: | Patient prone Knee flexed to 45 degrees Foot supported with foam Positioning Device |
| Central Ray: | Center to knee joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 151 and 152 |

PA Axial (Intercondylar or Tunnel View) Knee

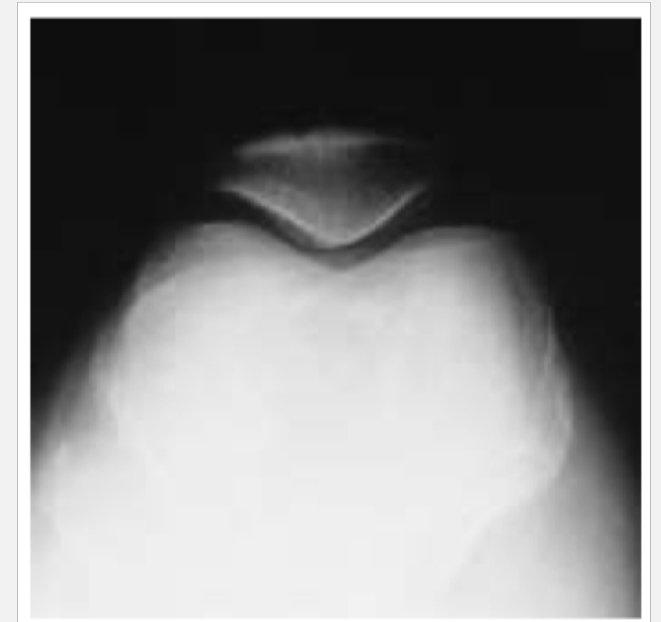
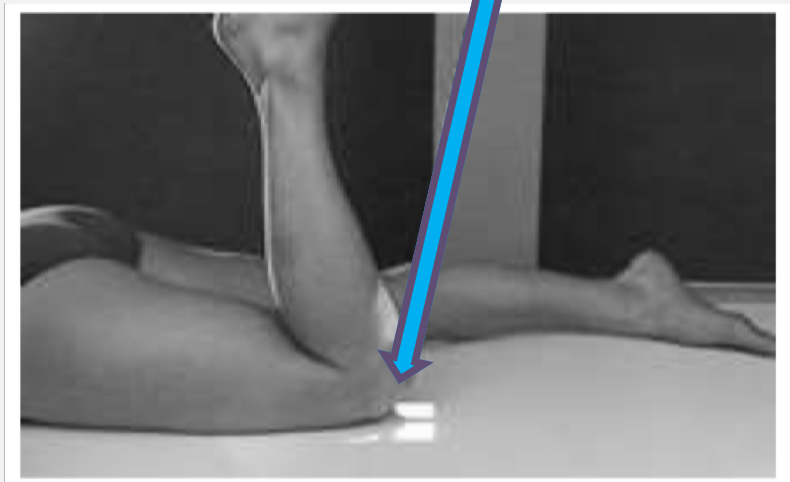


Lower Extremity Positioning

KNEE:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Axial Patella (Sunrise) (Hughston Tech) Knee Alternate Tech see page 151 |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | 45 degree cephalad |
| Patient Position: | Patient prone Knee flexed to 60 + degrees Leg held in flexion by belt |
| Central Ray: | Center to patellar |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 151 and 152 Alternate Axial view |

Patella (Sunrise)

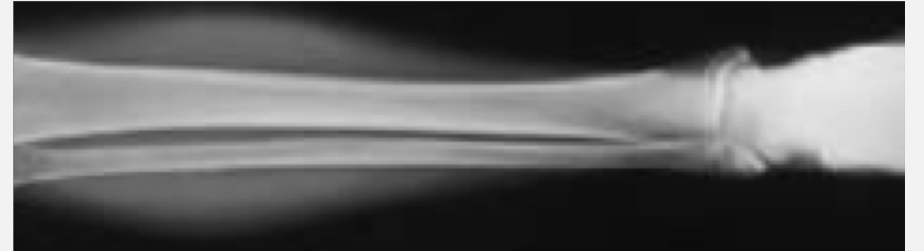
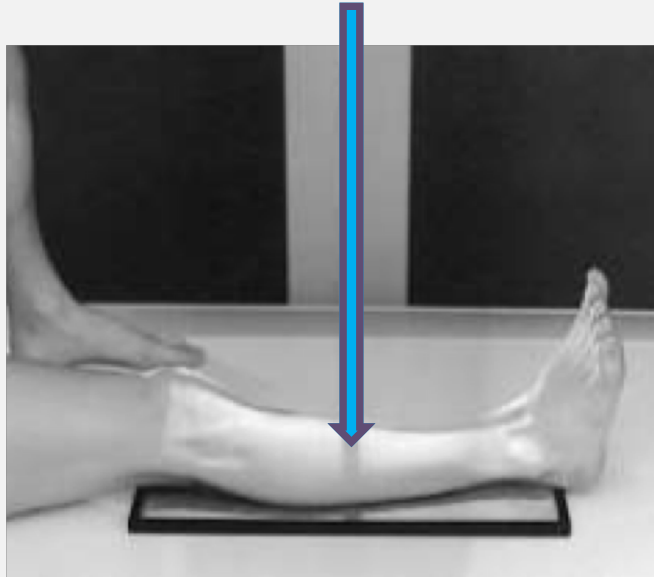


Lower Extremity Positioning

LEG:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior (R or L) Leg |
| Film Size: | 14" x 17 " cassette on table |
| SID: | 40" |
| Tube Angle: | No Tilt |
| Patient Position: | Fully extended knee |
| Central Ray: | Center to mid-line of leg |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |

AP Leg

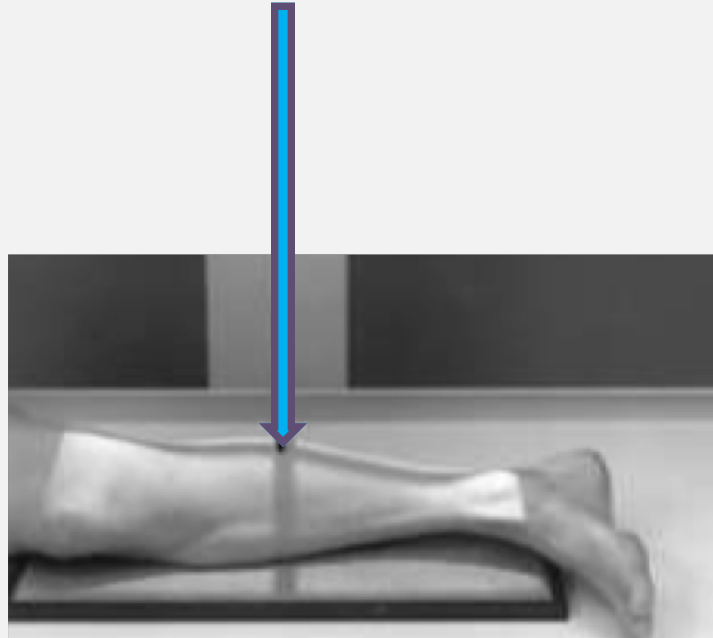


Lower Extremity Positioning

LEG:

| | |
|-------------------|--|
| View: | Lateral (R or L) Leg |
| Film Size: | 14" x 17" cassette on table |
| SID: | 40" |
| Tube Angle: | No Tilt |
| Patient Position: | Fully extended knee Lateral aspect of the leg to the Cassette |
| Central Ray: | Center to mid-line of leg |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |

Lateral Leg



Lower Extremity Positioning

ANKLE:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Ankle |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) Option is to use an 8" x 10" |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient supine Leg flat Foot pointing superiorly No rotation |
| Central Ray: | Center to ankle joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 153 |

AP Ankle

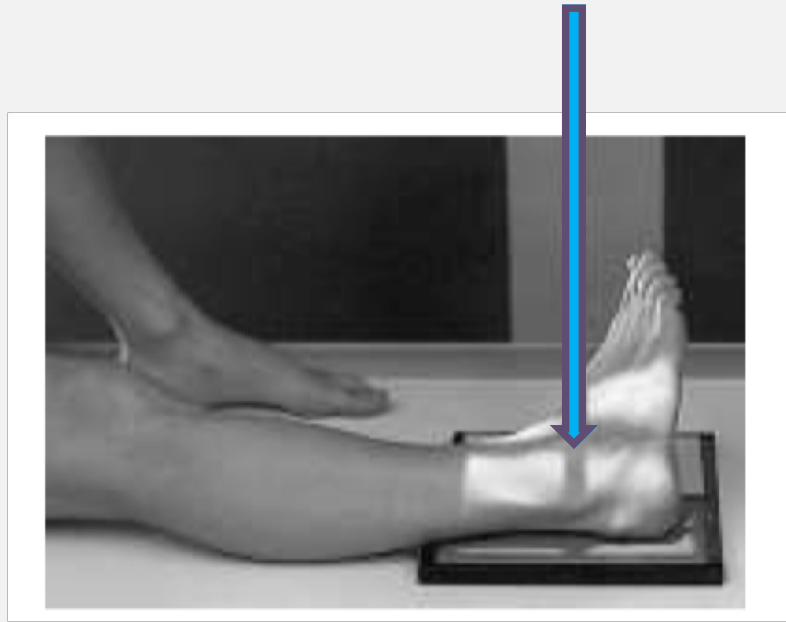


Lower Extremity Positioning

ANKLE:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Medial Oblique Ankle |
| Film Size: | 10" x 12" cassette on table (text advocates using half the film) Option is to use an 8" x 10" |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient supine Leg rotated medially 45 degrees |
| Central Ray: | Center to ankle joint |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 153 |

AP Oblique (Medial Rotation) Ankle

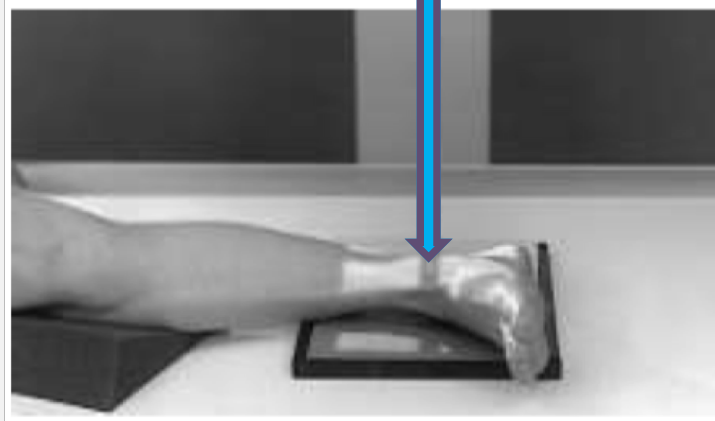


Lower Extremity Positioning

ANKLE:

| | |
|-------------------|---|
| View: | Lateral (R or L) Ankle |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient on side to be imaged Foot and leg flat on cassette |
| Central Ray: | Center of ankle (Inferior medial malleolus) |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 153 |

Lateral Ankle



Lower Extremity Positioning

FOOT:

| | |
|-------------------|--|
| View: | (AP) Anterior to Posterior Foot |
| Film Size: | 8" x 10" or 10" x 12" depending on foot size - cassette on table |
| SID: | 40" |
| Tube Angle: | 5 to 10 degrees cephalad |
| Patient Position: | Patient supine Knee flexed Sole of foot flat to cassette |
| Central Ray: | Center to foot |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 153 |

AP (or AP Axial) Foot

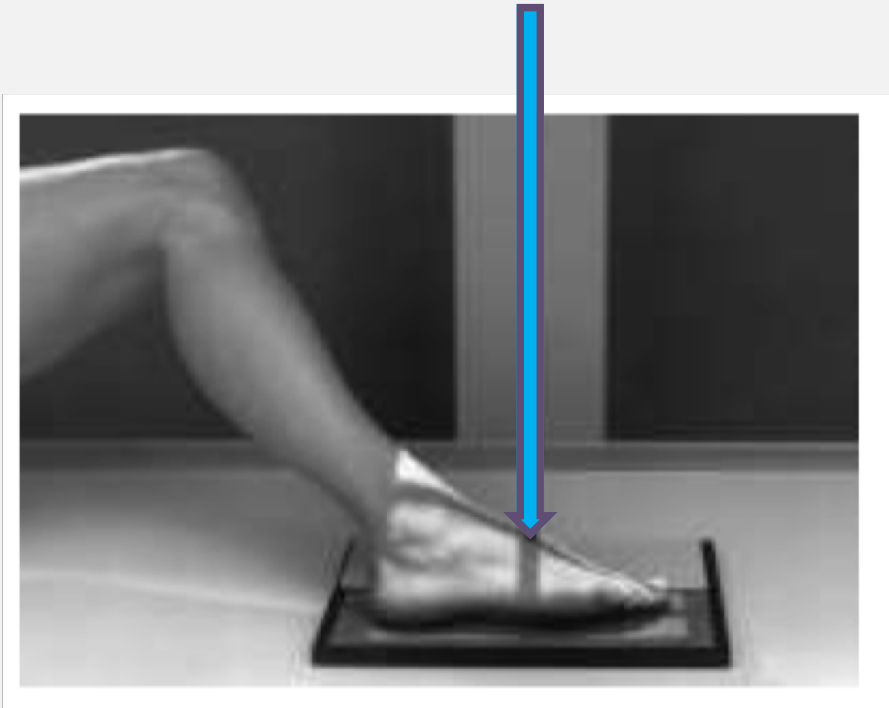


Lower Extremity Positioning

FOOT:

| | |
|-------------------|--|
| View: | (AP) Medial Oblique Foot |
| Film Size: | 8" x 10" or 10" x 12" depending on foot size - cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient supine Medial side to cassette Knee flexed and rotated <u>internally</u> placing sole at 45 degrees to cassette |
| Central Ray: | Center to foot |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 154 |

AP Oblique Medial Rotation Foot



Lower Extremity Positioning

FOOT:

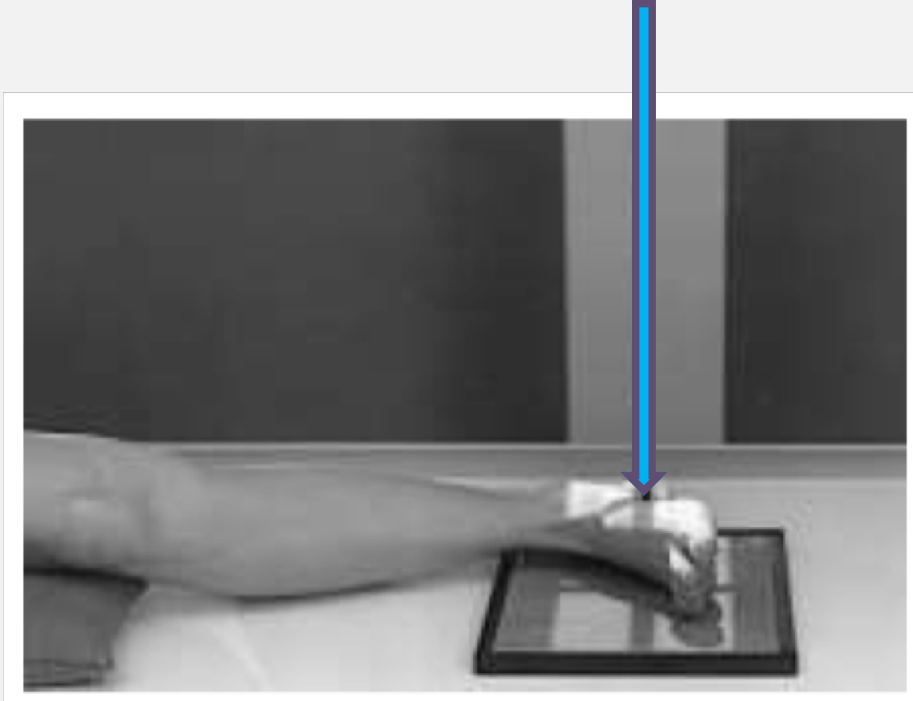
| | |
|-------------------|--|
| View: | (AP) Lateral Oblique Foot |
| Film Size: | 8" x 10" or 10" x 12" depending on foot size - cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient supine Lateral side to cassette Knee flexed and rotated <u>externally</u> placing sole at 45 degrees to cassette |
| Central Ray: | Center to foot |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 154 |

Lower Extremity Positioning

Foot:

| | |
|-------------------|---|
| View: | Lateral (R or L) Foot |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Patient on side to be imaged Foot and leg flat on cassette |
| Central Ray: | Center of foot |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 154 |

Lateral Foot

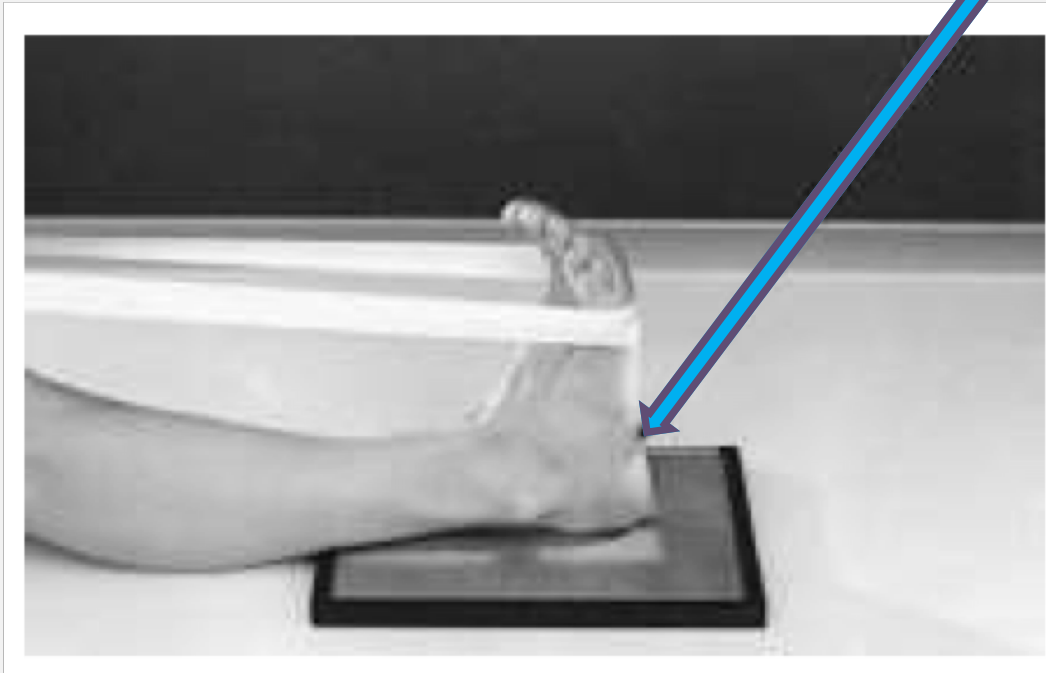


Lower Extremity Positioning

Calcaneus:

| | |
|-------------------|--|
| View: | Tangential (R or L) Calcaneus |
| Film Size: | 8" x 10" cassette on table |
| SID: | 40" |
| Tube Angle: | 40 degrees cephalad |
| Patient Position: | Patient supine leg fully extended Ankle flexed to 90 degrees on cassette held by a belt |
| Central Ray: | Arch - heel junction |
| Collimation: | To just outside skin line |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 154 |

Axial Calcaneus



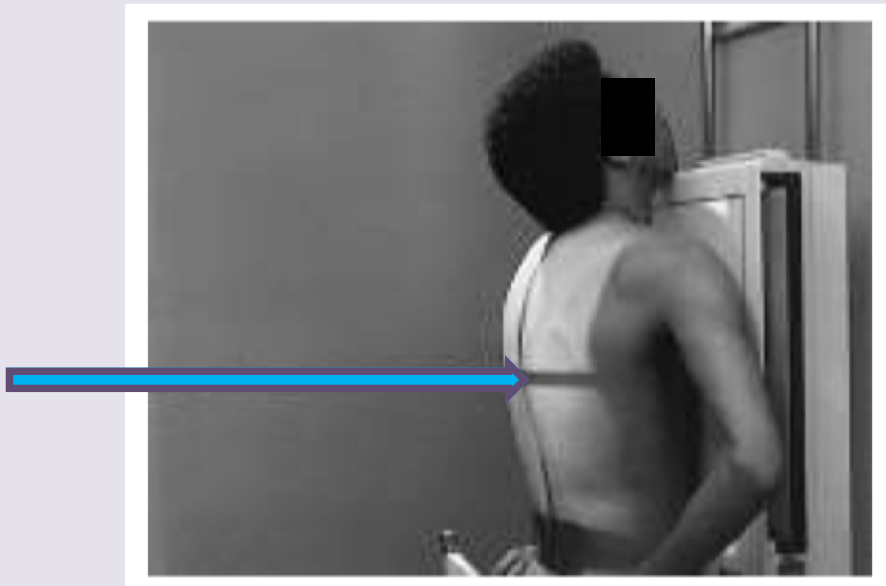
Ribs Positioning

| | |
|-------------------|--|
| View: | (AP or PA) Anterior to Posterior or Posterior to Anterior Ribs Position determined by rib in question |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Back or front to Bucky (AP or PA) Arms away from field |
| Central Ray: | Suspected rib above diaphragm (1-8) Cassette 1 inch above shoulders Suspected rib below diaphragm (8-12) Cassette bottom at Iliac Crest |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Take a deep breath in and hold" for ribs 1-8 "Deep Breath in, blow it all the way out and hold" for ribs 8-12 |
| Text: | Page 139 |

AP Ribs



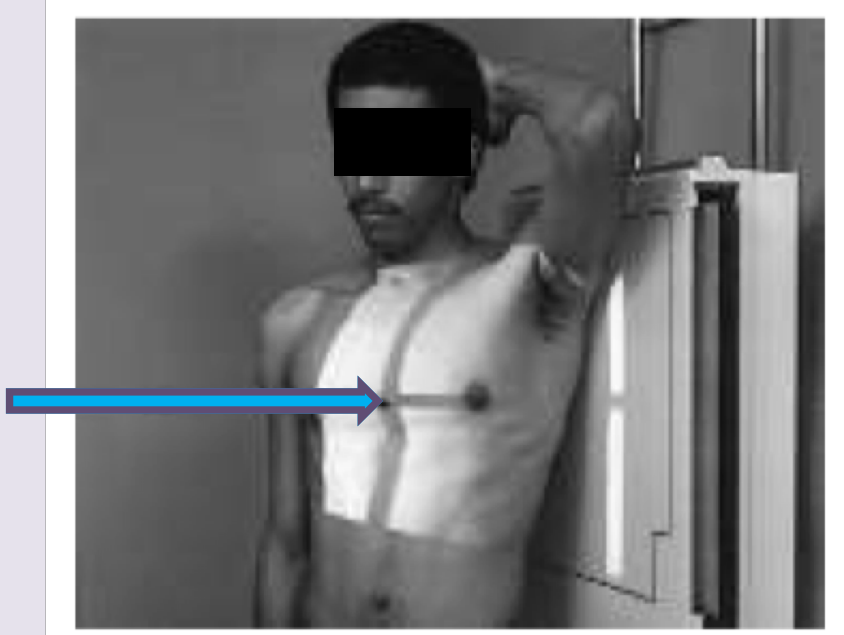
PA Ribs



Ribs Positioning

| | |
|-------------------|--|
| View: | (AP or PA) Anterior to Posterior or Posterior to Anterior Oblique Ribs |
| Film Size: | 14" x 17" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | 45 degree with affected area to Bucky raise arm nearest Bucky opposite hand on hip |
| Central Ray: | Above diaphragm ribs (1-8) place CR at T6 Above diaphragm ribs (8-12) place CR at T10 |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | RPO or LPO – RAO or LAO |
| Instruction: | "Take a deep breath in and hold" for above the diaphragm "Deep Breath in, blow it all the way out and hold" for below the diaphragm |
| Text: | Page 139 |

AP RPO and LPO Ribs



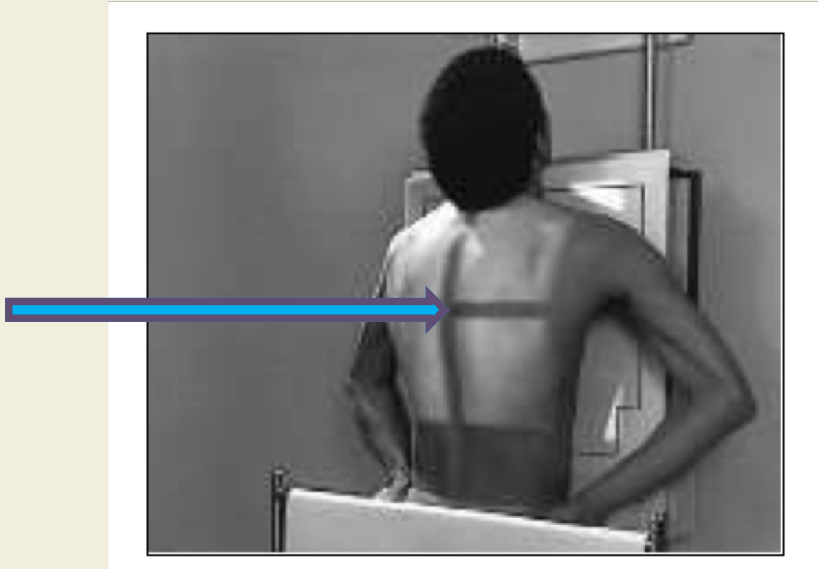
PA RAO and LAO Ribs



Chest Positioning

| | |
|-------------------|--|
| View: | (PA) Posterior to Anterior Chest |
| Film Size: | 14" x 17" Placed in film holder vertically - NO BUCKY |
| SID: | 72" |
| Tube Angle: | No tilt |
| Patient Position: | Chest against film- Chin over top of film Hands on hips –arms rotated forward |
| Central Ray: | Center to film |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R over right shoulder |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 137 |
| Note: | Generally 1/10 of a second or less exposure with 100 to 110 kVp |

PA Chest



Chest Positioning

| | |
|-------------------|---|
| View: | Lateral Chest (Left Lateral is routine (heart closet to to film) |
| Film Size: | 14" x 17" Placed in film holder vertically - NO BUCKY |
| SID: | 72" |
| Tube Angle: | No tilt |
| Patient Position: | Left Lateral Arms on head |
| Central Ray: | Top of film 2 inches above shoulders Center to film |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | L |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 137 |
| Note: | Generally 1/10 of a second or less exposure with 100 to 110 kVp |

Lateral Chest



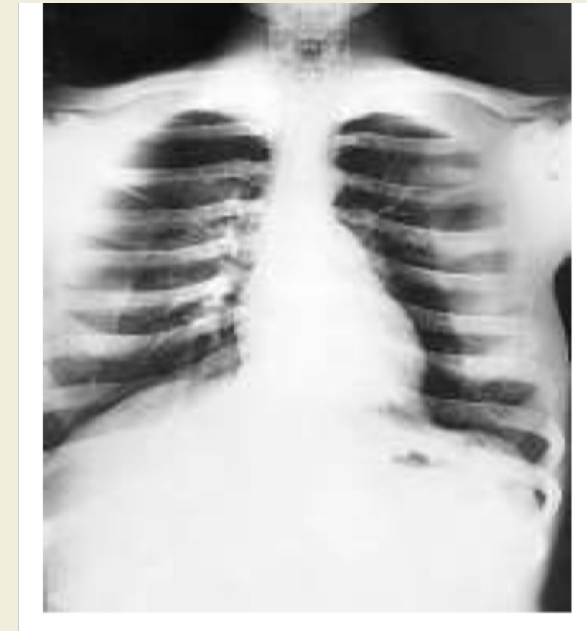
Chest Positioning

| | | | |
|-------------------|---|--------------------|--|
| View: | (RAO & LAO) Right or Left Anterior Oblique | | |
| Film Size: | 14" x 17" Placed in film holder vertically - NO BUCKY | | |
| SID: | 72" | | |
| Tube Angle: | No tilt | | |
| Patient Position: | Body turned | 25 degrees (Chest) | |
| | | 60 degrees (Heart) | |
| | Arm closest to film reaches down by side holding Bucky | | |
| | Arm away from Bucky over head | | |
| Central Ray: | Top of film 2 inches above shoulders | | |
| | Center to film | | |
| Collimation: | To film size | | |
| Shielding: | None | | |
| Marker: | RAO or LAO | | |
| Instruction: | "Take a deep breath in and hold" | | |
| Text: | Page 137 | | |
| Note: | Generally 1/10 of a second or less exposure with 100 to 110 kVp | | |

Chest Positioning

| | |
|-------------------|--|
| View: | (PA Apex) Posterior to Anterior Apex Lordotic |
| Film Size: | 14" x 17" Placed in film holder vertically (book states horizontally) NO BUCKY |
| SID: | 72" |
| Tube Angle: | 25 to 35 degrees cephalad (option lean patient) |
| Patient Position: | Back to film – arms by side |
| Central Ray: | Center of Sternum |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Take a deep breath in and hold" |
| Text: | Page 137 |
| Note: | Generally 1/10 of a second or less exposure with 100 to 110 kVp |

Apical Chest



Skull Positioning

| | |
|-------------------|--|
| View: | Submentovertical Skull (Axial or Base Vertex Skull) |
| Film Size: | 8" X 10" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | No tilt Alternate - tube tilt based on patient's extension capabilities |
| Patient Position: | Back flat to Bucky body Head in full extension Cantho-Meatal (CM) line as parallel as possible to Bucky Alternate - less extension-CR perpendicular to to CM line |
| Central Ray: | Center to film |
| Collimation: | To tissue line |
| Marker: | R or L |
| Instruction: | "Don't move" |
| Text: | Page 141 |

Submentovertical Skull



Skull Positioning

| | | |
|-------------------|--|---|
| View: | (AP) Anterior to Posterior Skull (Towne) |) |
| Film Size: | 10" x 12" placed in Bucky vertically | |
| SID: | 40" | |
| Tube Angle: | 30 to 35 degrees caudally | |
| Patient Position: | Back of head to Bucky | |
| | No rotation | |
| Central Ray: | Hairline (upper forehead) to External Occipital Protuberance (EOP) | |
| Collimation: | To film size | |
| Shielding: | None | |
| Marker: | R or L | |
| Instruction: | "Do not move" | |
| Text: | Page 140 | |

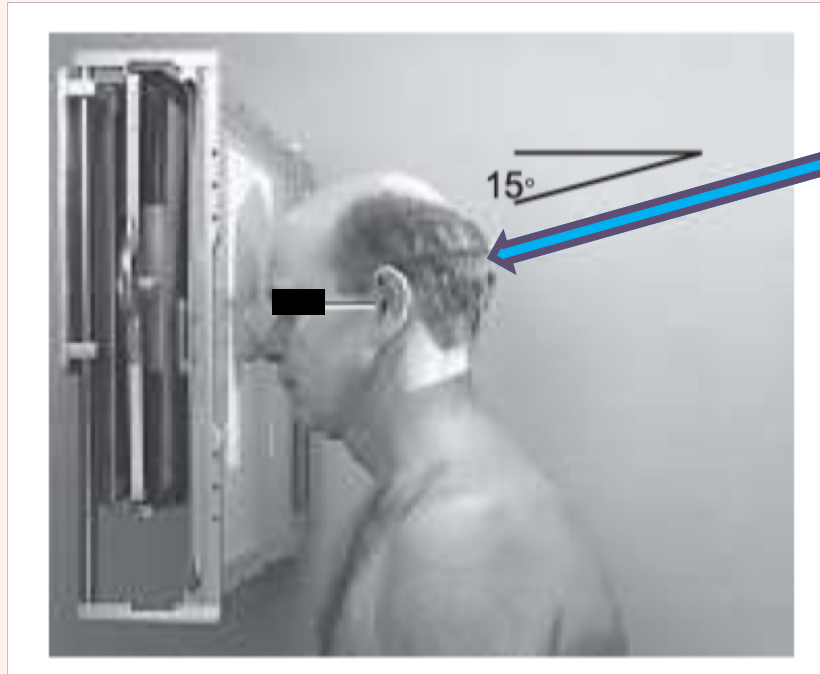
AP Axial Skull (Towne)



Skull and Sinus Positioning

| | |
|-------------------|--|
| View: | (PA) Posterior to Anterior Skull - Sinus (Caldwell) |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | 15 degrees caudally |
| Patient Position: | Forehead and nose to Bucky |
| Central Ray: | EOP to Glabella |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 140 |

PA Skull - Sinus (Caldwell)



Skull and Sinus Positioning

| | |
|-------------------|--|
| View: | Lateral (R or L) Skull – Sinus (both are required) |
| Film Size: | 10" x 12" placed in Bucky horizontally |
| SID: | 40" |
| Tube Angle: | No tilt |
| Patient Position: | Head turned to side to Bucky Cantho-Meatal CM) in line parallel to Bucky Perpendicular to midline of Bucky |
| Central Ray: | 1 inch superior to CM |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 140 |
| Note: | Caldwell, Towne and Laterals are considered a routine study |

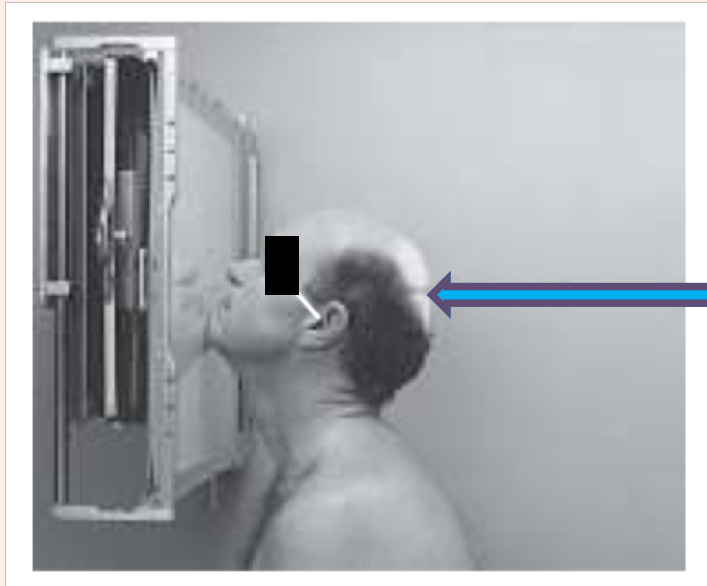
Lateral (R or L) Skull - Sinus



Sinus Positioning

| | |
|-------------------|--|
| View: | (PA) Posterior to Anterior Sinus (Waters) |
| Film Size: | 10" x 12" placed in Bucky vertically |
| SID: | 40" |
| Tube Angle: | 30 to 35 degrees caudally Alternate - no tilt-head in extension |
| Patient Position: | Facing Bucky – Chin to Bucky - |
| Central Ray: | Center to film |
| Collimation: | To film size |
| Shielding: | None |
| Marker: | R or L |
| Instruction: | "Do not move" |
| Text: | Page 140 |

PA Sinus (Waters)



Emergency Procedures:

Stroke Signs:

F.A.S.T.

- | | | |
|-----|-------------|---|
| "F" | face | = Ask person to smile |
| "A" | arms | = Ask person to raise both arms. Does one drift down? |
| "S" | speech | = Ask person to repeat a phrase to detect slurred speech. |
| "T" | time | = If any of the above call 911 immediately |
| "T" | also tongue | = Ask person to stick out tongue. Observe if it deviates to one side. |

Steps to Process an Exposure:

Cassette Positions Tells a Story:

Disclaimer...this procedure differs from the book

Outside the Darkroom:

- A point of procedure have a designated place to indicate those cassette that are not exposed, from those that are exposed, e.g. unexposed cassettes left of the control panel, front forward and exposed cassettes to the right backs forward.

Inside the Darkroom:

- Exposed Cassette are placed with lock bars or lock tabs facing up, hinge toward the wall.
This Position indicates film needs to be processed.
- After removing the exposed Film place the Cassette aside, leave the door ajar, not locked and fully opened.
This position indicate the Cassette is empty and needs Film.
- Once a new Film is placed inside, lock the Cassette and turn it over.
This position indicates the cassette has new film inside.

Steps to Process an Exposure:

Cassette Positions Tells a Story inside the Darkroom:

Cassette are placed with lock bars or lock tabs facing up, hinge toward the wall.

This Position indicates film needs to be processed.



Steps to Process an Exposure:

Cassette Positions Tells a Story inside the Darkroom:

Place Cassette aside but leave the door ajar but not locked or fully opened.

This position indicate the Cassette is empty and needs Film.



Steps to Process an Exposure:

Cassette Positions Tells a Story inside the Darkroom:

Once film is placed inside, lock the Cassette and turn it over.

This position indicates the cassette has new film inside.



Steps to Process an Exposure:

Chapter 2 - Sections 2-3-4 (with subsections)

1. Before taking any X Rays, turn the processor on.
2. Complete the ID Flasher Card.
3. Once all of the views have been completed, bring the exposed Cassettes to the Darkroom.
4. Cassette are placed on the counter with lock bars or lock tabs facing up, hinges toward the wall.
This Position indicates film needs to be processed.
5. Place the ID Flasher Card in the ID Flasher.
6. Run at least one blank Film through Processor.
7. Close the door, turn off the regular light and turn on the Safelight. (it will take a minute for your eyes to adapt)

Steps to Process an Exposure continued:

Chapter 2 - Sections 2-3-4 (with subsections)

8. Remove the Film from the Cassette by sliding it out with the cover partially open. Avoid touching the screens with your fingers. As you know, your oils and perspiration can mark the screen. (this differs from the book.)
9. Once the Film is out of the Cassette place it with the loosely closed cover to the side, do not lock it (this differs from the book.)

This position indicate the Cassette is empty and needs Film.

10. Align the proper corner of the Film in the ID Identification Flasher and “flash” the ID info onto the Film **BEFORE** processing.
11. Place Film onto the feeder tray of the Processor.
12. Open Film Bin and reload Cassette.
13. Once Film is placed inside the Cassette, lock the Cassette and turn it over.

This position indicates the cassette has new film inside.

14. Wait for the beep and/or light before feeding in the next Film.
15. Repeat as needed.