

Reading Hospital School of Health Sciences  
Medical Imaging Program  
MI 243 Clinical Seminar IV  
2022

**Sternum**

<b>Routine:</b>	RAO and Lateral
<b>Position/Projection:</b>	<b>RAO (PA Oblique)</b>
<b>Patient Prep:</b>	Remove everything from waist up, including bra and jewelry.
<b>Technique:</b>	<b>81 kVp <math>\text{O} \bullet \text{O}</math>: non AEC 3.2 mAs (Bucky)</b>
<b>SID:</b>	40" SID- RH Protocol Merrill's recommends a 30" SID to blur out the posterior ribs and lung markings over sternum.
<b>Collimation:</b>	11 x 14 Portrait (Lengthwise) Merrill's recommends 10 x 12 Portrait (Lengthwise)
<b>Patient Position:</b>	Patient is placed in the erect position. Rotate the left side away from IR about 15 - 20° to prevent superimposition of the vertebrae and sternum (RAO position). Align patient's body so that the long axis of the sternum is centered to the midline of the IR.
<b>Central Ray:</b>	Perpendicular to the IR. Enters the elevated side at the level of T7 and 1" lateral to the MSP.
<b>Marker Placement:</b>	Place the right marker in the upper corner on the right side of the patient. Marking the side against the IR.
<b>Shielding:</b>	Gonadal shielding not required at RH
<b>Breathing Instructions:</b>	Suspended expiration- RH Protocol Merrill's recommends slow shallow <u>breathing technique</u> to blur out the posterior ribs and lung markings over sternum.
<b>Purpose/ Structures:</b>	A slightly oblique projection of the sternum.

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**Evaluation Criteria:**

- Evidence of proper collimation and presence of side marker placed clear of anatomy of interest
- Entire sternum from jugular notch to tip of xiphoid process
- Sternum projected over the heart, but free from superimposition from the thoracic spine
- Minimally rotated sternum and thorax
  - Sternum projected just free of superimposition from vertebral column
  - Minimally obliqued vertebrae to prevent excessive rotation of sternum
  - Lateral portion of manubrium and sternoclavicular joint free of superimposition by the vertebrae
- Blurred pulmonary markings, if breathing technique is used
- Bony trabecular detail and surrounding soft tissues

**Merrill's Notes:**

- For recumbent patients and unable to lie prone, obtain this projection with the patient in the LPO position, resulting in an AP oblique projection.

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**Sternum**

<b>Routine:</b>	RAO and Lateral
<b>Position/ Projection:</b>	<b>Left Lateral (Lateral)</b>
<b>Patient Prep:</b>	Remove everything from waist up, including bra and jewelry.
<b>Technique:</b>	<b>81 kVp <math>\bigcirc</math><math>\bullet</math><math>\bigcirc</math>: non AEC 10 mAs (Bucky)</b>
<b>SID:</b>	72" SID
<b>Collimation:</b>	10 x 12 Portrait (Lengthwise)
<b>Patient Position:</b>	Patient is placed with their left side against the IR with the sternum perpendicular to the plane of the IR. Rotate the shoulders posteriorly, and have the patient lock the hands behind the back.
<b>Central Ray:</b>	Perpendicular to the center of the IR. Adjust the height of the IR so that its upper border is 1.5" above the jugular notch. CR perpendicular and enters the lateral border of the mid-sternum.
<b>Shielding:</b>	Gonadal shielding not required at RH
<b>Breathing Instructions:</b>	Suspended deep inspiration
<b>Marker Placement:</b>	Place left marker anterior to the sternum
<b>Purpose/ Structures:</b>	A lateral image of the entire length of the sternum shows the superimposed sternoclavicular joints and medial ends of the clavicles.

**Evaluation Criteria:**

- Evidence of proper collimation and presence of side marker placed clear of anatomy of interest
- Sternum in its entirety
- Manubrium free of superimposition by the soft tissue of the shoulders
- Sternum is free of superimposition by the ribs
- Lower portion of the sternum unobscured by the breast of a female patient
- Bony trabecular detail and surrounding soft tissue