

Chest PA & Lateral X-Ray Key Terms

1. Positioning Terms

PA (Posteroanterior) Projection – X-ray beam enters through the posterior (back) and exits through the anterior (front).

Lateral Projection – X-ray beam passes from one side of the body to the other (usually left lateral).

Mid-sagittal Plane (MSP) – Imaginary line dividing the body into right and left halves; used to center the body for PA projection.

Mid-coronal Plane (MCP) – Divides the body into anterior and posterior halves; used to center for lateral projection.

Erect Position – Standing or sitting upright; preferred for chest to visualize air-fluid levels and diaphragm movement.

Recumbent Position – Lying down; used if patient cannot stand.

Lordotic Position – Used to visualize apices of lungs without clavicular superimposition.

2. Anatomical Landmarks

Vertebral Prominence (C7) – Used to locate the top of the lungs for centering (7" for female, 8" for male).

Xiphoid Process (T9–T10) – Approximate level for inferior margin of the lungs.

Scapulae – Rotated out of lung field by rolling shoulders forward in PA view.

Costophrenic Angles – Lowest corners of the lungs; should be visible on image.

Apices – Topmost portions of the lungs above the clavicles.

3. Radiographic Terms

SID (Source-to-Image Distance) – Standard for chest: 72 inches to minimize heart magnification.

CR (Central Ray) – Directed at T7 (inferior angle of scapula).

IR (Image Receptor) – 14 x 17 inches, portrait or landscape depending on body habitus.

Marker Placement – “R” or “L” placed above shoulders or anterior side (for lateral, mark the side closest to IR).

Exposure on Inspiration – Full inspiration (2nd breath) to expand lungs fully.

4. Image Evaluation / Criteria

PA Chest Criteria

- Entire lungs visible (apices to costophrenic angles).
- Scapulae outside lung fields.
- 10 posterior ribs visible above diaphragm.
- No rotation (sternal ends of clavicles equidistant from spine).
- Sharp outlines, proper density and contrast.

Lateral Chest Criteria

- Posterior ribs superimposed.
- No tilt or rotation (costophrenic angles superimposed).
- Entire lungs from apices to costophrenic angles visible.
- Hilum region and heart clearly visible.

5. Clinical / Diagnostic Key Points

- Air-Fluid Levels – Seen best with patient erect.
- Pneumothorax – Air in pleural cavity; affected lung appears more radiolucent.
- Pleural Effusion – Fluid in pleural space; shows as blunting of costophrenic angle.
- Atelectasis – Collapse of lung or portion of lung; appears as increased density.
- Cardiomegaly – Enlarged heart; evaluated on PA view.

6. Technical Factors

kVp – 110–125 kVp (high kVp for chest).

mAs – Low (short exposure time to reduce motion).

Grid – Used for chest to improve image quality.

AEC (Automatic Exposure Control) – Center and side chambers commonly used.