

# Learning radiology

## chapter 2



**ASSIGN  
BUSTER**

Bronchi These are invisible on plain-film because they are thin walled, filled with air, and surrounded by air. Minor and major fissures These are formed by enfolding of the visceral pleura. Usually no thicker than a line drawn with the point of a sharpened pencil.

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Lateral Chest X-Ray The retrosternal clear space, hilar region, fissures, thoracic spine, diaphragm, and posterior costophrenic sulci are the five key areas of this imaging type. Retrosternal clear space Lucency behind the sternum and anterior to the aorta. Fills when mediastinal mass is present. No discrete hilar mass Normally, this is seen in a lateral chest x-ray. 5th thoracic vertebra, few centimeters behind the sternum on the diaphragm Boundaries of the major fissures are from this vertebra to what point? fluid or fibrosis Causes of thickening of the fissures on a chest x-ray. parallel The vertebral bodies in a lateral chest x-ray should be this. Becomes slightly taller or remains the same Each intervertebral disk does this when compared to the one above it on a lateral Chest x-ray. Right hemidiaphragm This hemidiaphragm is normally higher than the other and it extends all the way from anterior to posterior. Left hemidiaphragm This hemidiaphragm is silhouetted by the heart, so it doesn't reach fully anterior to posterior on lateral film. It's usually lower than the other hemidiaphragm. 75 cc or less Amount of fluid necessary to blunt the costophrenic angle on lateral film. 250-300 cc Amount of fluid necessary to blunt the costophrenic angle on frontal film. penetration, inspiration, rotation, magnification, angulation (PIRMA) The five technical factors affecting chest radiograph adequacy.

Penetration Adequate if the spine is visible through the heart.

Inspiration Adequate if at least eight to nine posterior ribs are visible.

Magnification Seen in AP films (portable chest x-rays), making the heart appear larger. Angulation Based on the S-Shape of the clavical which should superimpose on the 3rd or 4th rib. Posterior ribs Immediately more apparent to the eye on frontal chest radiographs. horizontal Orientation of posterior ribs. Vertebral bodies Each pair of posterior ribs attach to these. Anterior ribs More difficult to see on frontal chest radiographs. Downward toward the feet Anterior ribs are oriented this way. Sternum Anterior ribs attach to this or to each other with cartilage, which may not be visible until later in life when the cartilage may calcify. Compare to previous study What is the solution to interpreting a rotated chest x-ray image? AP view The heart is magnified in this type of chest x-ray. Closer to the cassette Objects in a chest x-ray are truer to their actual size if they are this. Portable chest x-rays These studies are almost always AP. less magnification How does greater distance affect magnification in a chest x-ray? Apical lordotic view Results from taking x-rays in hospitalized patients in beds. x-ray beam may enter the thorax with the patient's head and thorax tilted backwards. Anterior structures appear higher than posterior structures What does the apical lordotic view do to anterior and posterior structures?