

Ministry of Higher Education and Scientific Research
Al-Mustaqbal University College
Radiology Techniques Department



Radiography of the chest

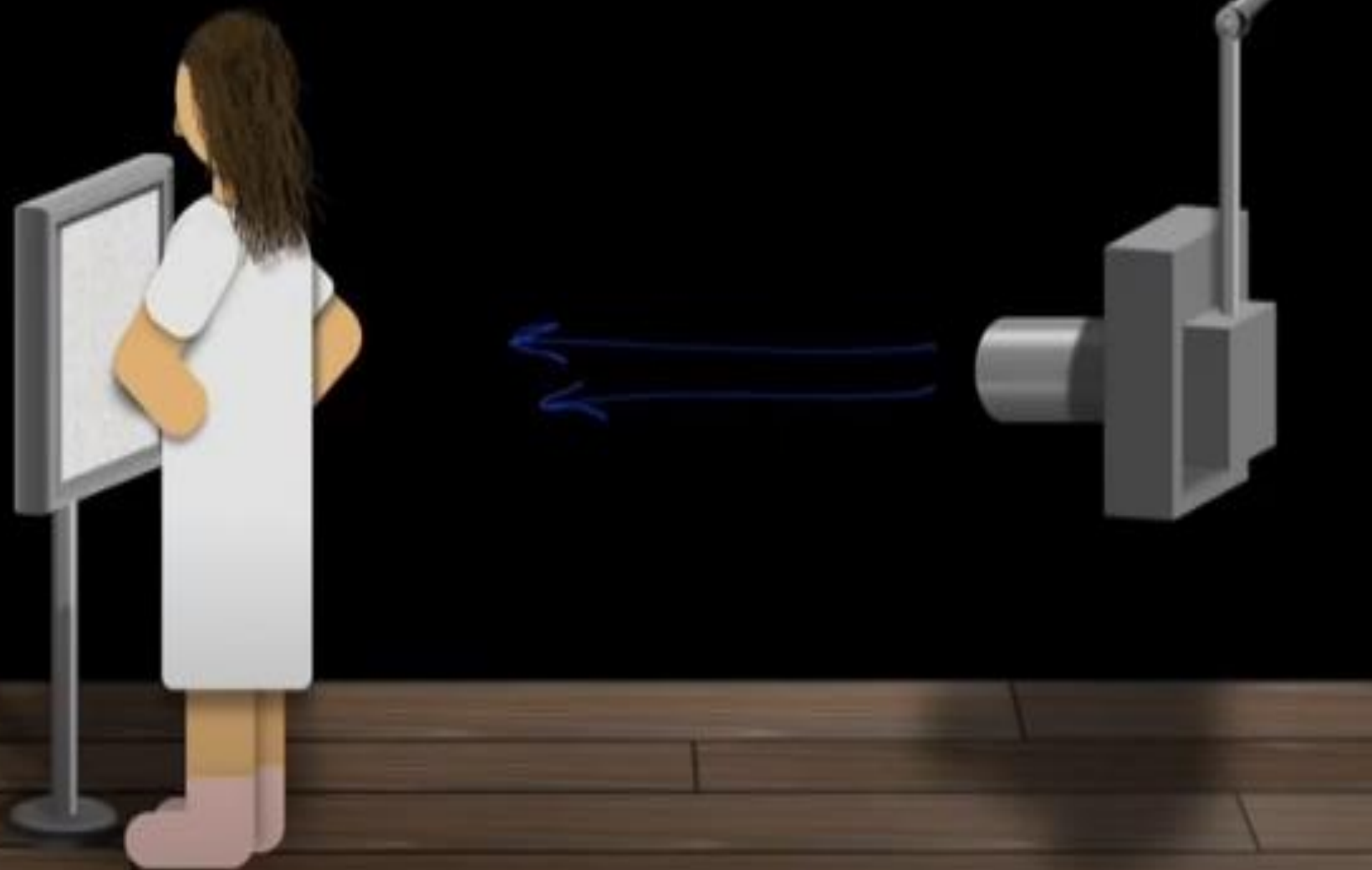
مختبر تقنيات التصوير الشعاعي

المرحلة الثانية

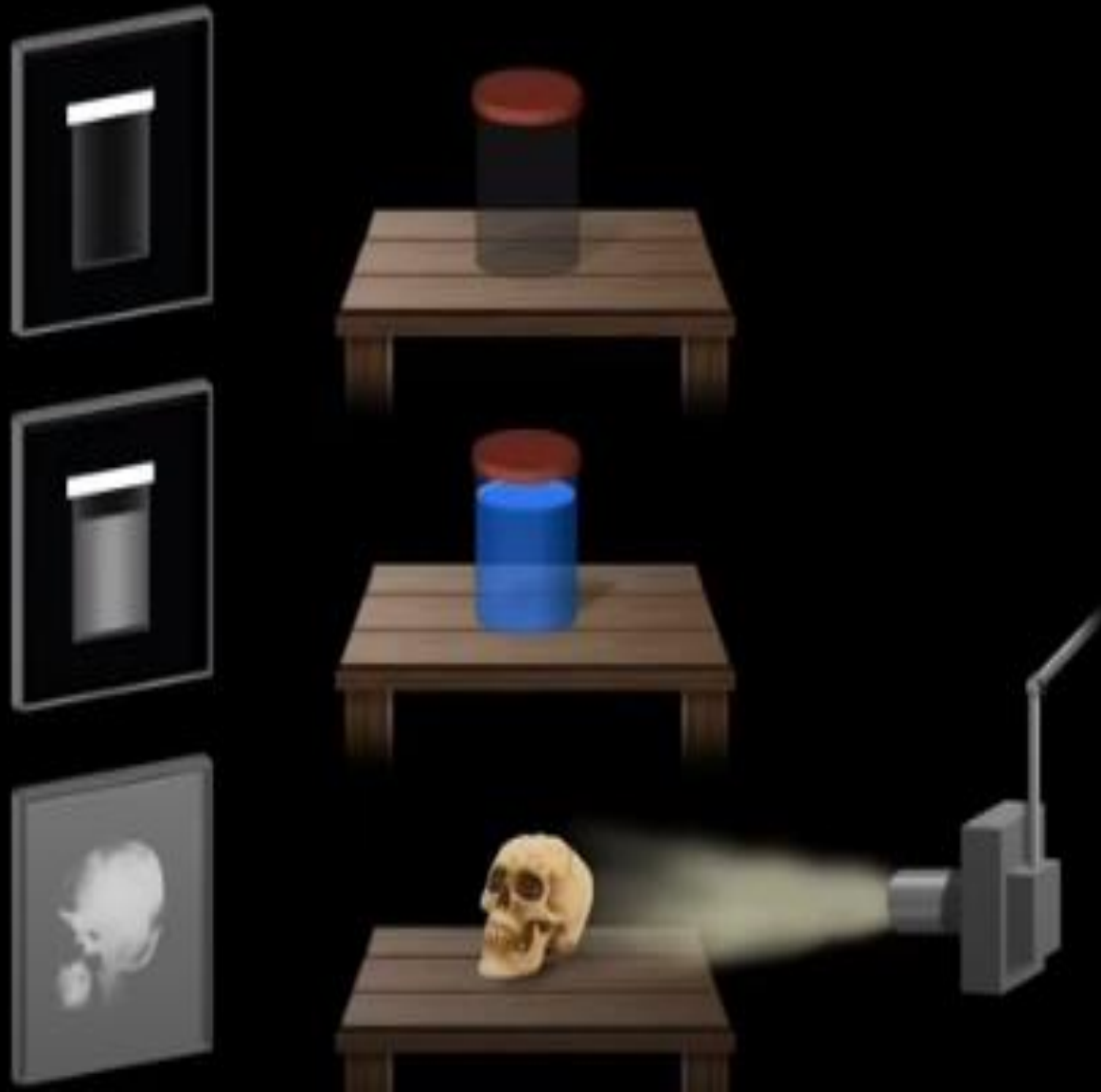
By

Karar Haider

How Does The Chest X-Ray Work?



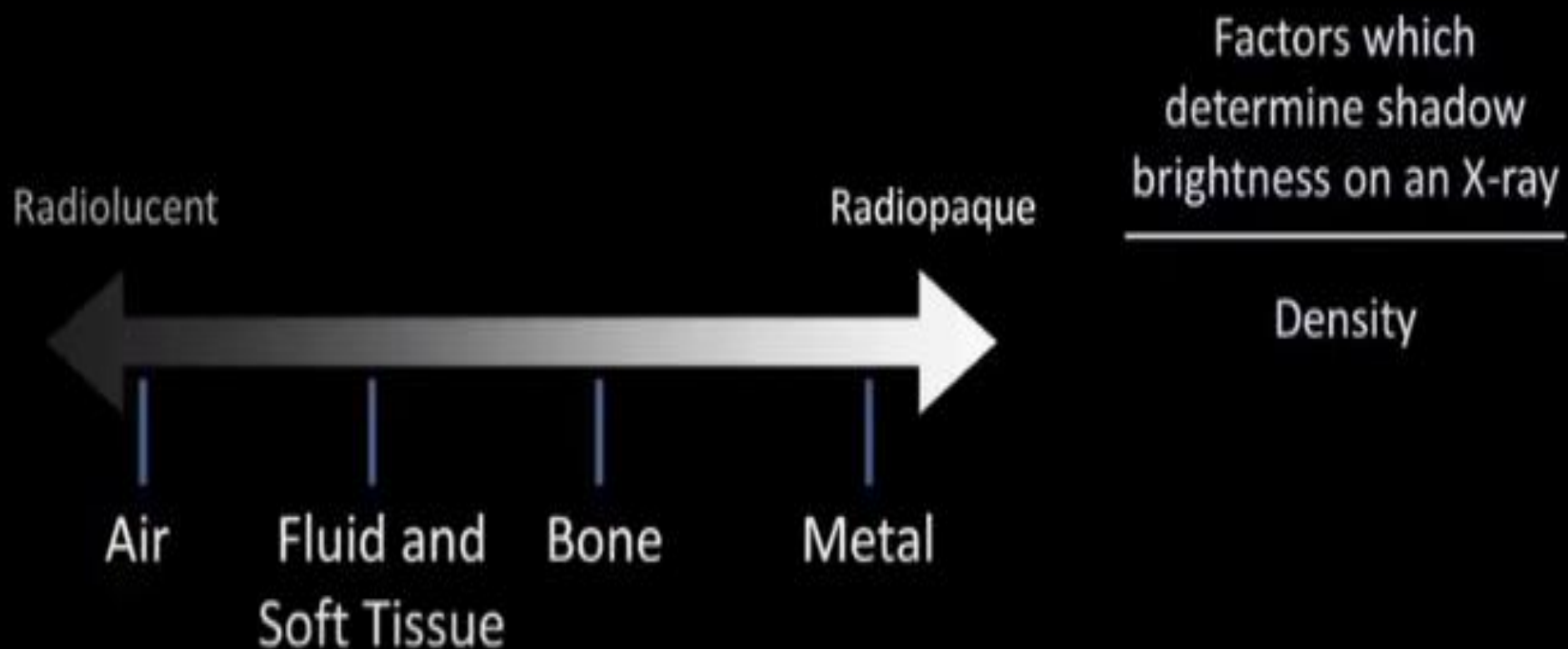
How Does The Chest X-Ray Work?



Factors which
determine shadow
brightness on an X-ray

Density

How Does The Chest X-Ray Work?



How Does The Chest X-Ray Work?



Factors which
determine shadow
brightness on an X-ray

Density

Thickness



How Does The Chest X-Ray Work?



Short exposure



Medium exposure



Long exposure

Factors which
determine shadow
brightness on an X-ray

Density

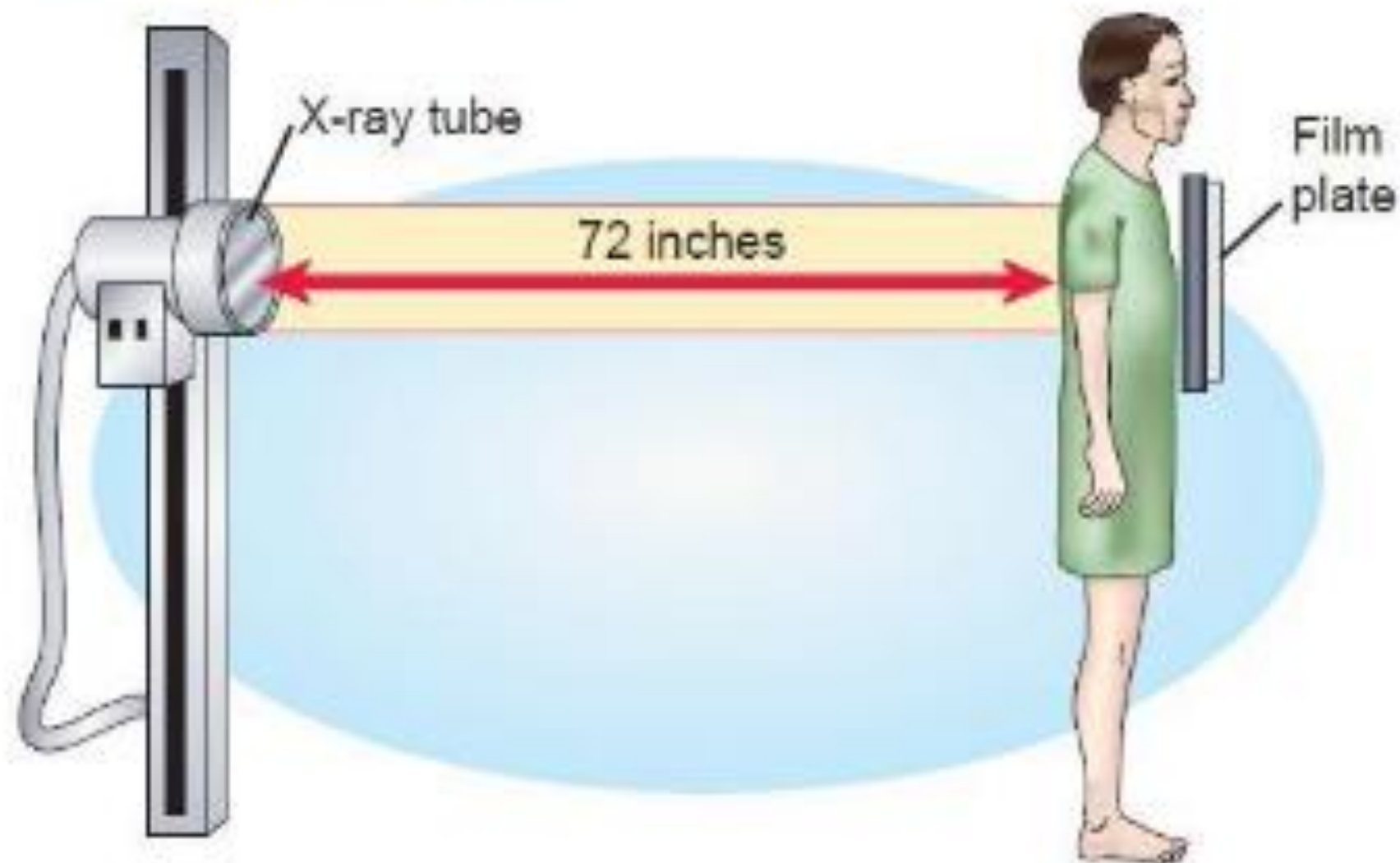
Thickness

Duration of Exposure



Common Radiographic Views

Posterior–Anterior (PA)





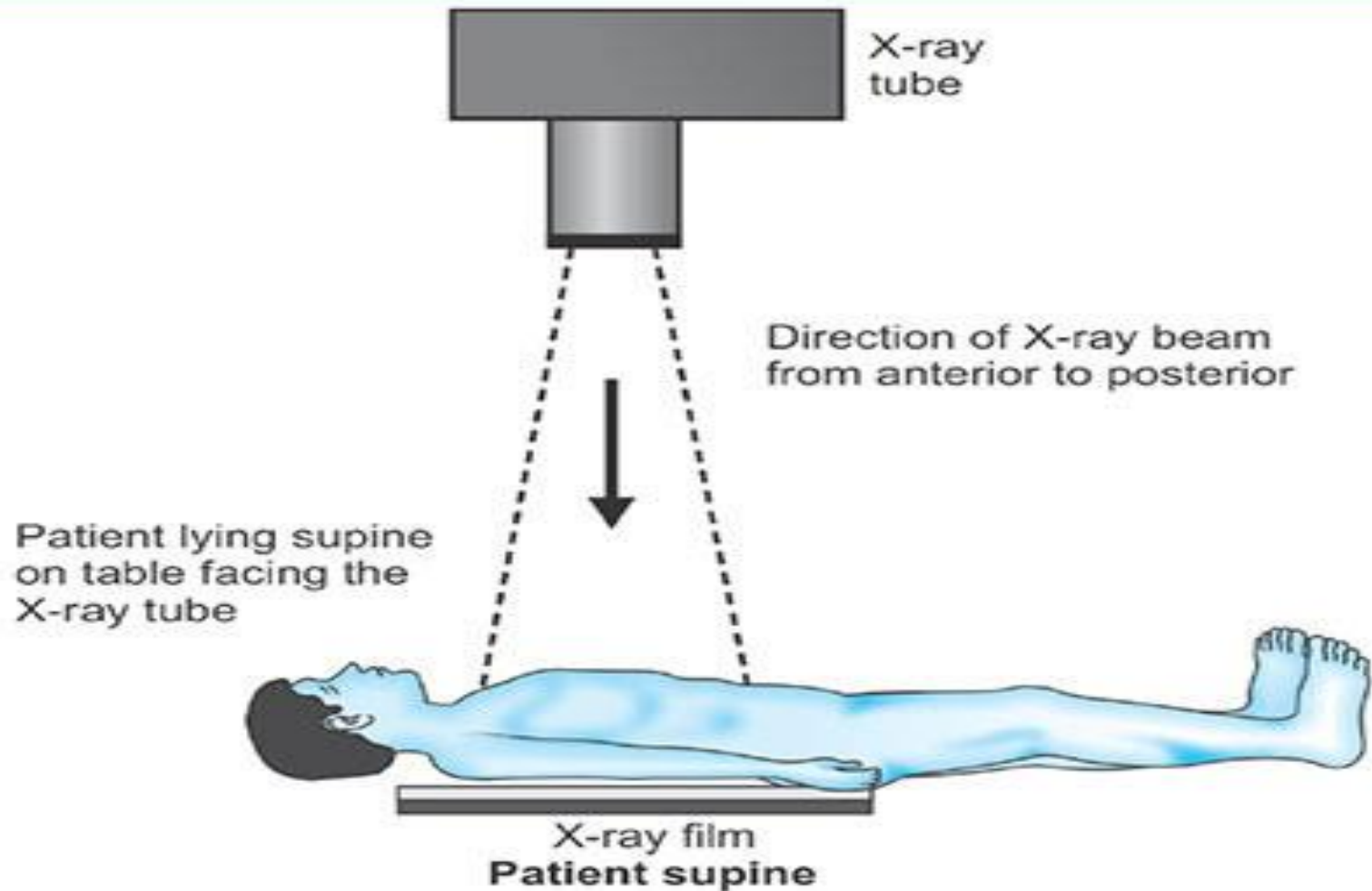


CXR _AP Erect



Normal antero-posterior radiograph of thorax

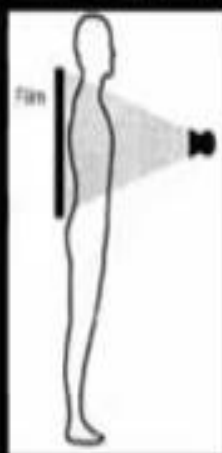
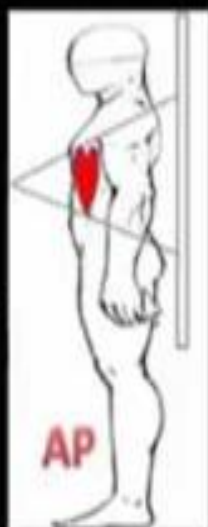
AP supine chest x ray





Normal supine
radiograph of thorax

PA versus AP chest X-rays



The ABCDEF System

(Assess the technical quality)

A – Airways

B – Bones (and soft tissue)

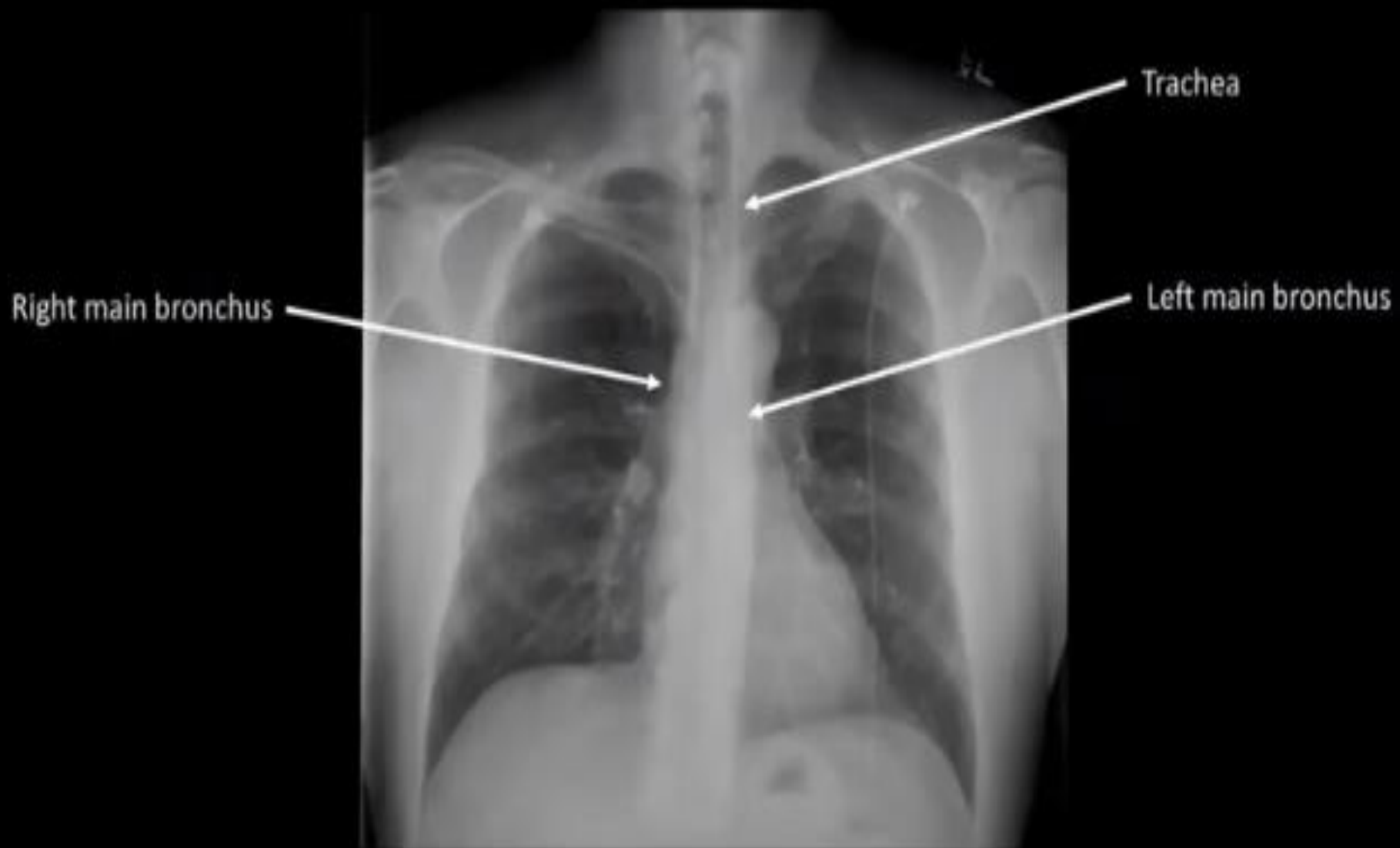
C – Cardiac silhouette (and mediastinum)

D – Diaphragm (and gastric bubble)

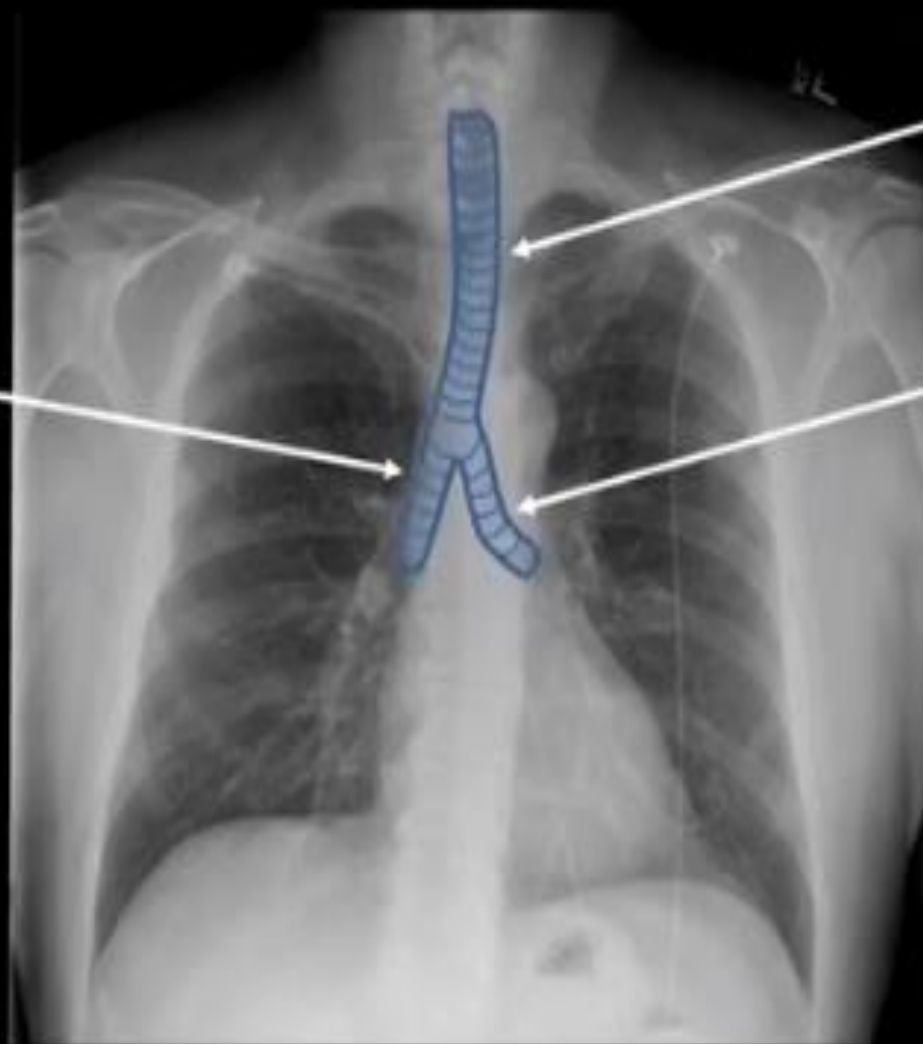
E – Effusions (i.e. Pleura)

F – “Fields” (i.e. Lung Fields)

Anatomy - Airways



Anatomy - Airways

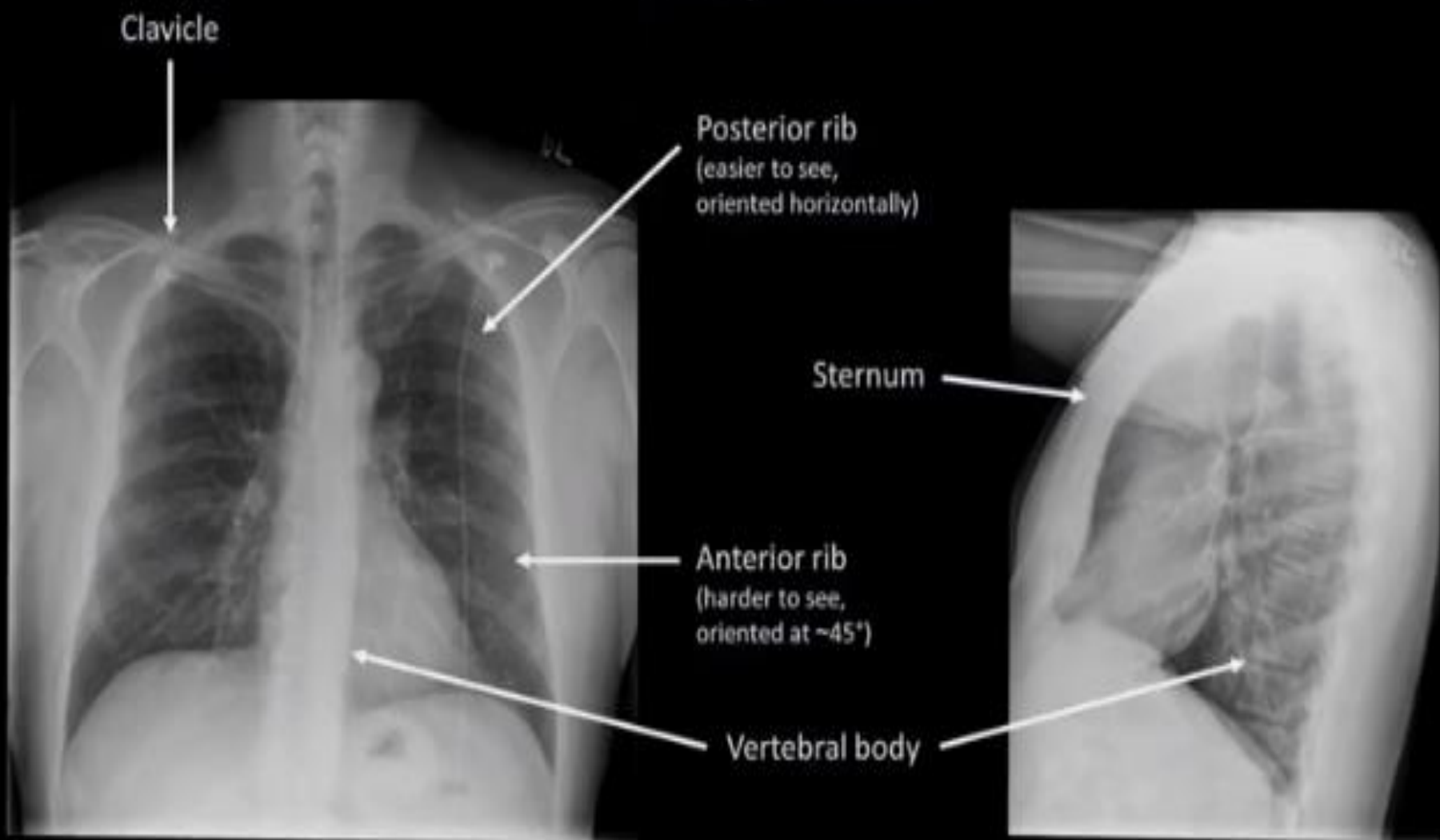


Trachea

Right main bronchus

Left main bronchus

Anatomy - Bones



Anatomy – Cardiac Silhouette and Mediastinum



Anatomy – Diaphragm and Pleura



Right hemidiaphragm

Left hemidiaphragm



Posterior costophrenic angle

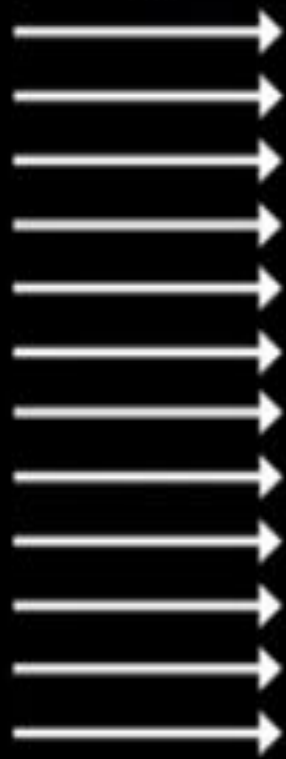
Factors Affecting Technical Quality

- Rotation
- Inadequate inspiration
- Suboptimal penetration

Relationship Between Clavicle and Lung Apex

Location of Medial
End of Clavicle

X-rays



Lateral View

X ray
film

Lung apex visible above medial clavicle



AP View

Relationship Between Clavicle and Lung Apex

Location of Medial End of Clavicle

X-rays



Lateral View

X ray
film

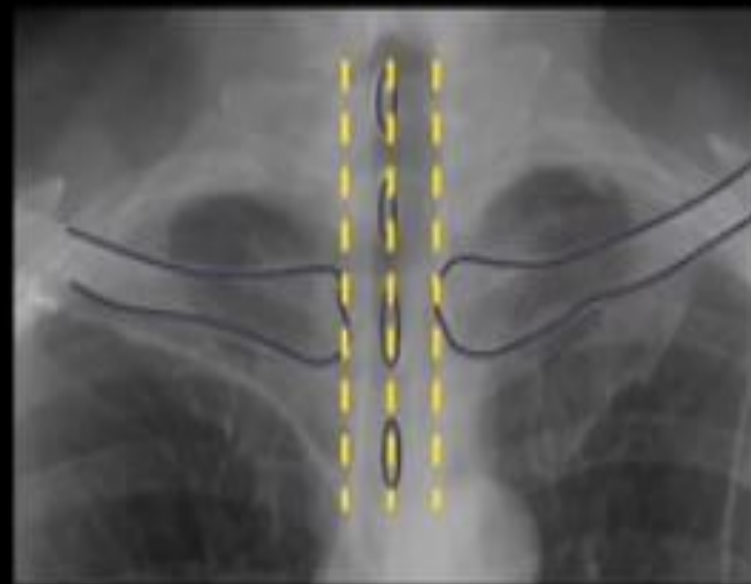
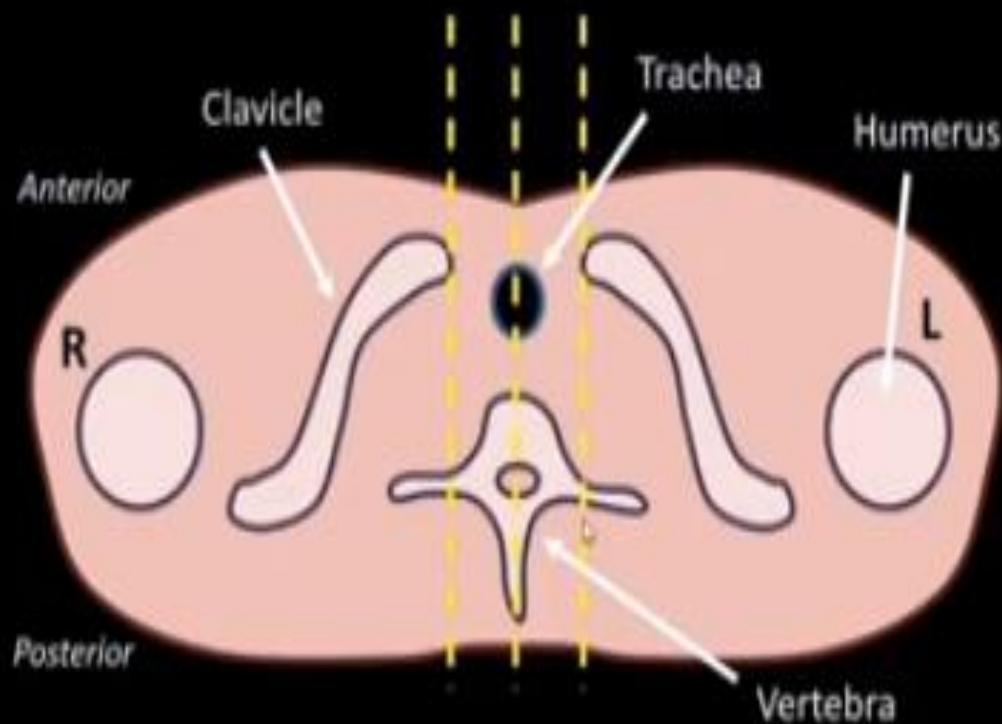
Lung apex is not visible above medial clavicle



"AP View"

Relationship Between Clavicle and Vertebral Spinous Processes

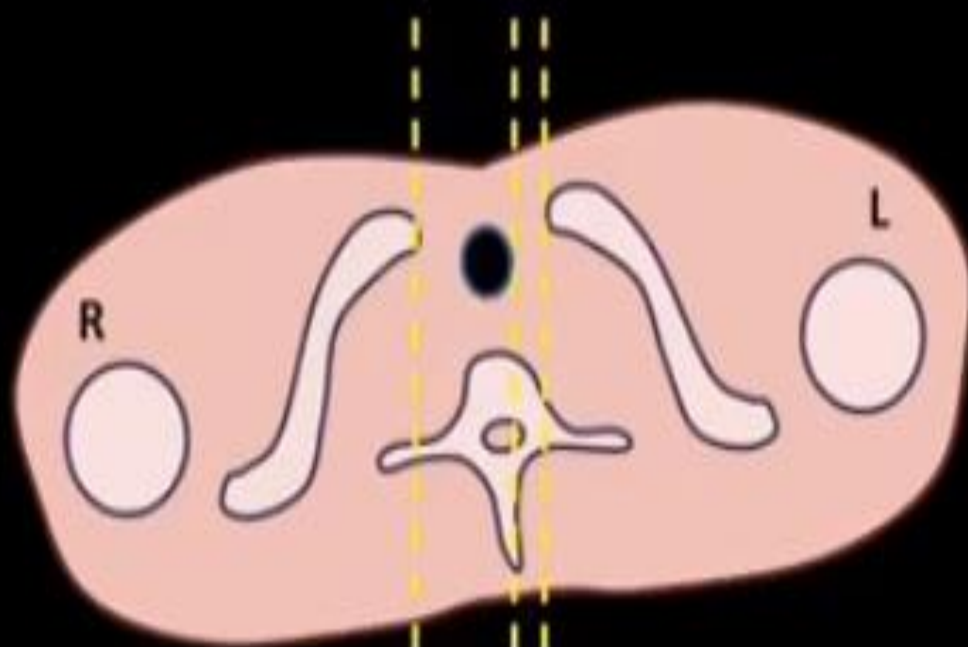
X ray film



X-rays

Relationship Between Clavicle and Vertebral Spinous Processes

X ray film



The spinous processes will be closer to the clavicle on the side that is rotated forward.



X-rays

Assessment of Adequate Inspiration

In a patient with normal lung volumes, on a chest X-ray taken during full inspiration:

- 9-10 posterior ribs should be visible



Assessment of Adequate Inspiration

Same Patient



Assessing Exposure/Penetration



Good quality film



Too bright



Too much contrast

Lateral Positioning



LORDOTIC VIEW

- The **AP lordotic** chest radiograph demonstrates areas of the lung apices that appear obscured on the PA/AP chest views.
- used to evaluate suspicious areas within the *lung apices*

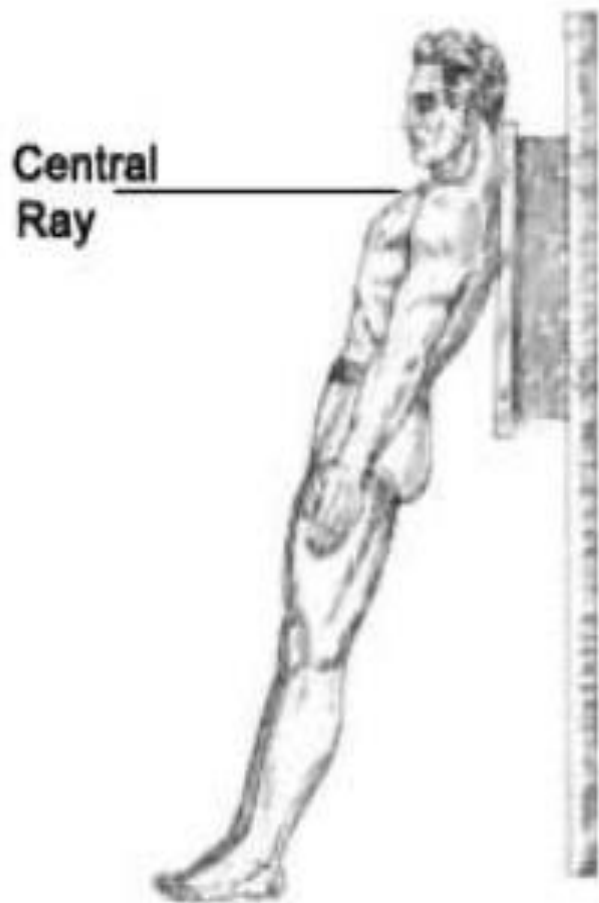
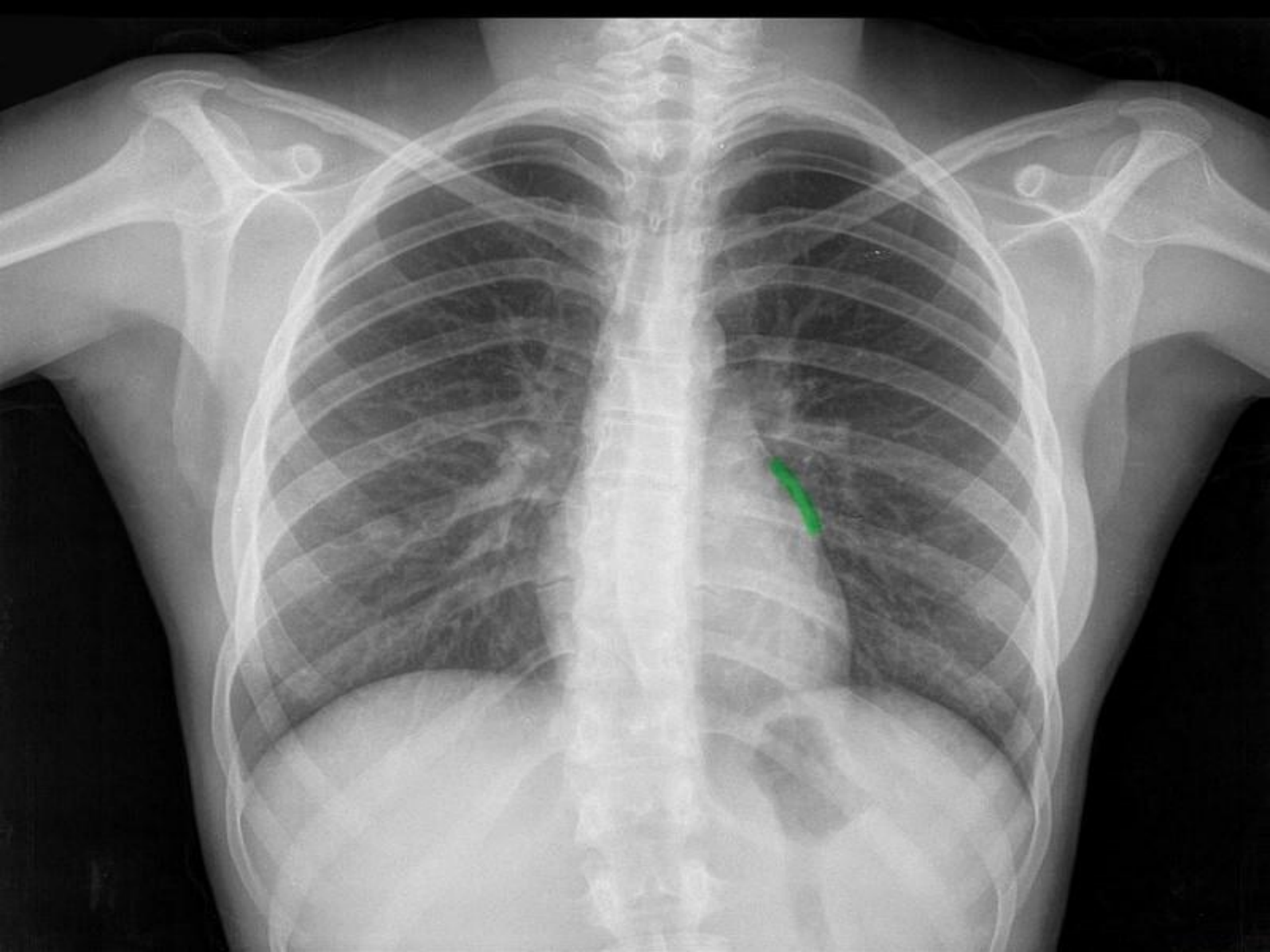




Fig. 2-70 AP lordotic.





An illustration on a light blue background showing two hands holding a rectangular orange banner. The banner has the words "THANK YOU" written in large, white, bold, sans-serif capital letters. The hands are light-skinned and are wearing dark suit sleeves with white cuffs. The banner is held up by two black vertical bars, one on each side.

**THANK
YOU**