

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



# **Radiography Positioning (Lect 2)**

## **Chest Imaging Projections**

By

**Dr. Ahmad Mokhtar Abodahab**

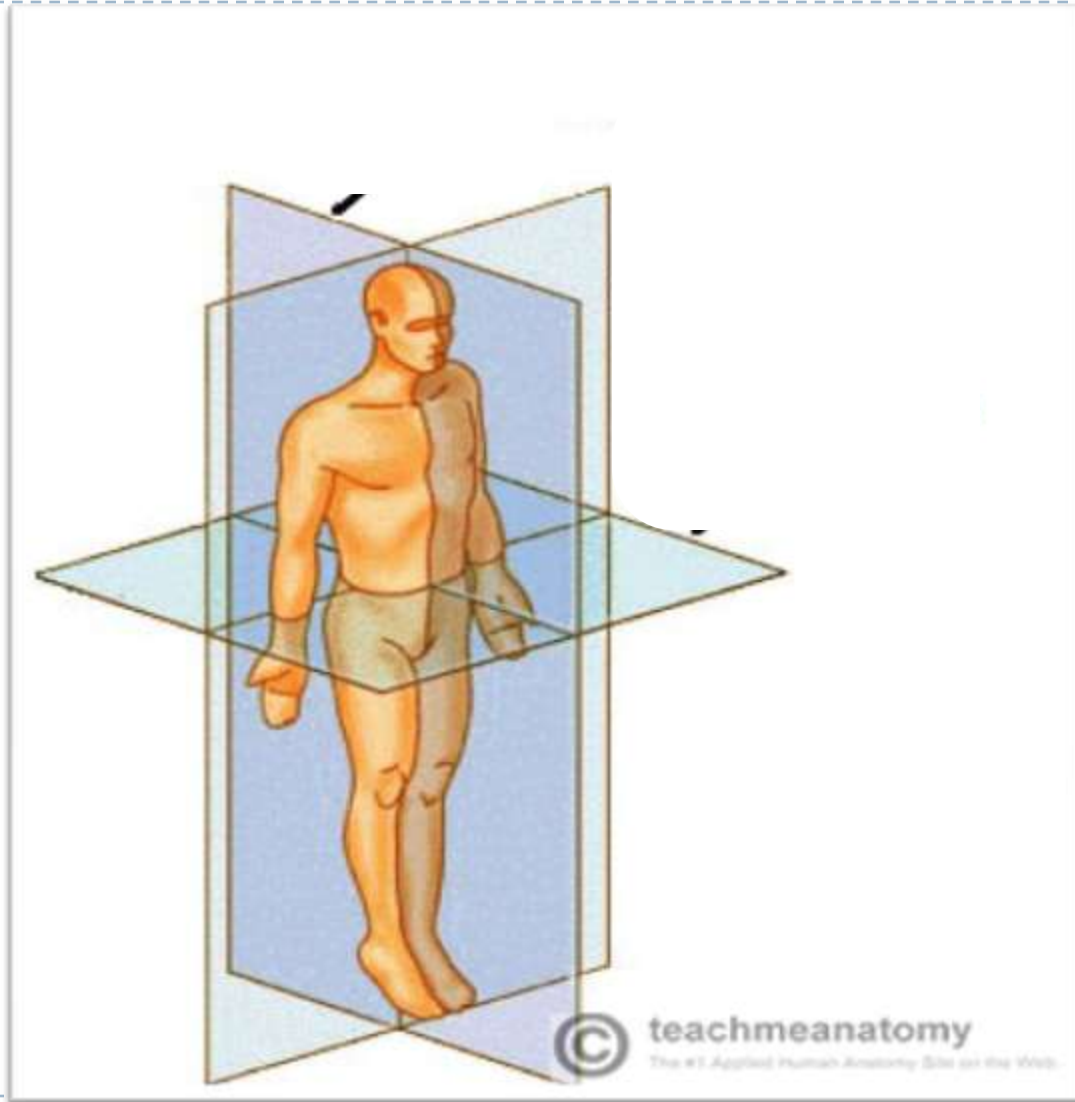
# Review Of Previous Lecture (**10 min**)

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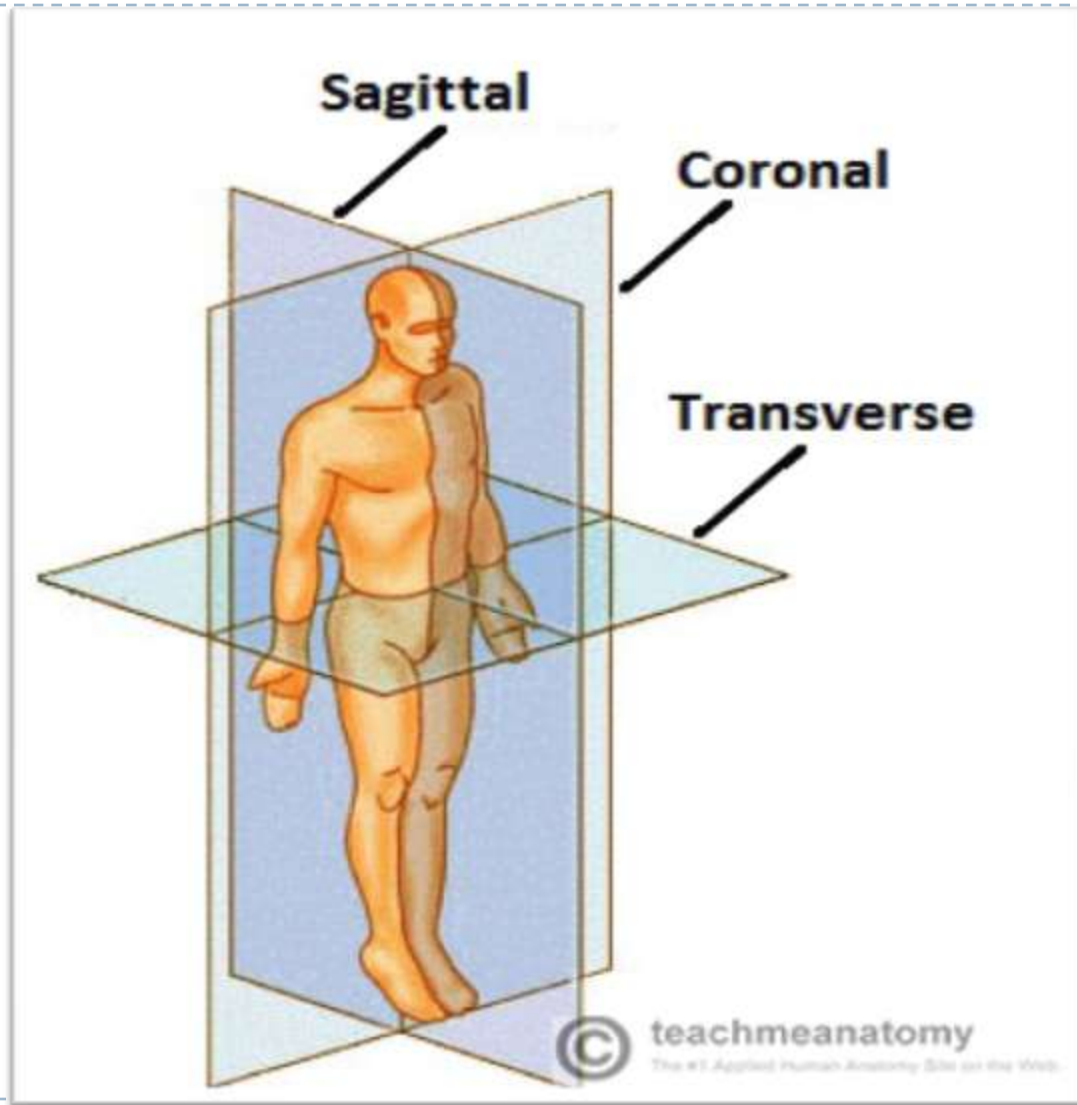


**& Home Work**

# Q 1 Mention Body Planes

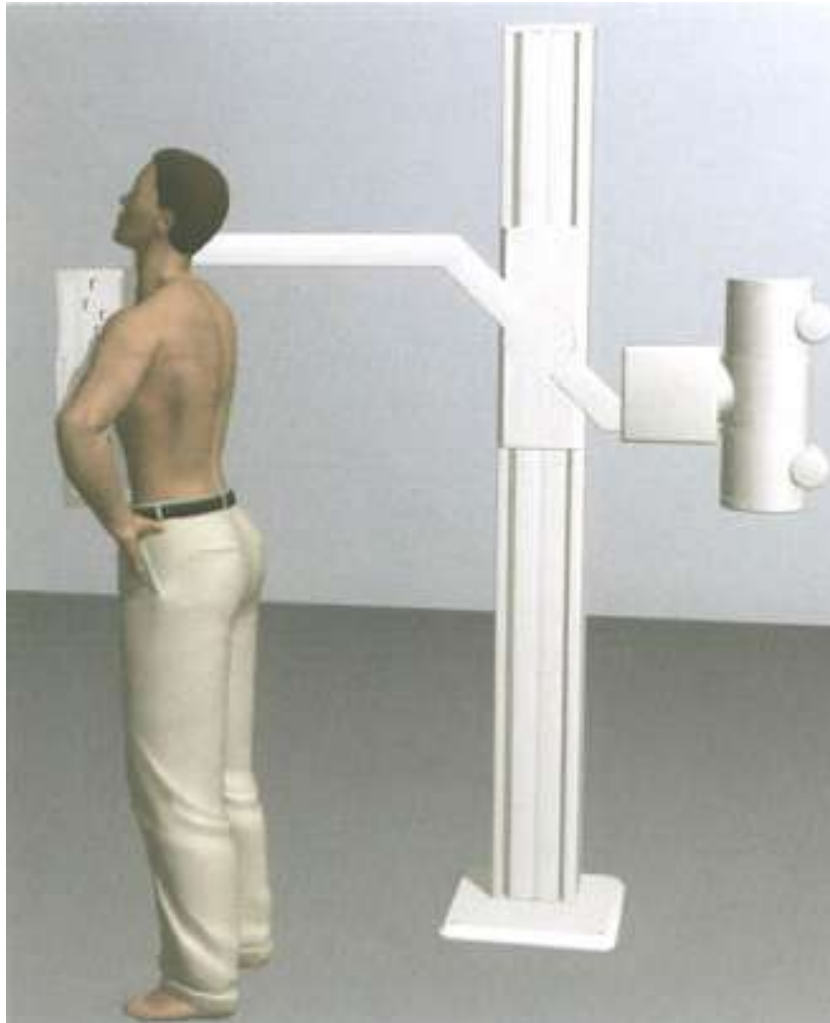


# A 1



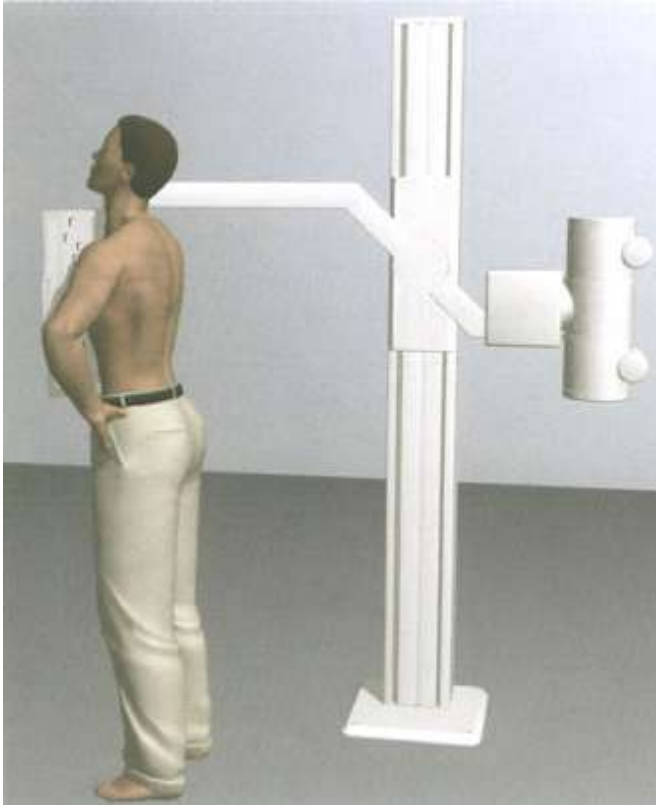
## Q 2 What is this projection ?

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**A 2**

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**CXR**

**Postero – Anterior View**

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## **Q 3 Imitate Rt Posterior Oblique**

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**A 3**

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**Rt Posterior Oblique**

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**Patients able to stand**

1. Chest **PA**,
2. Chest **lateral**,

**Patients unable to stand  
but able to sit**

3. Chest **AP**,
4. Chest **lateral**, page 9.

**Patients lying down,  
unable to stand or sit**

5. Chest **AP**, page 10.

**Other additional views**

6. Chest apical (lordotic) **AP**,
7. Chest lateral decubitus **AP** or **PA**,

**RIBS**

A Chest **PA** 1, or a Chest **AP** 3, or a Chest **AP** 5, as described above must always be taken first.

**Patients able to either stand or sit**

8. Ribs oblique **AP**,
- Two views to be taken

**Patients lying down, unable to stand  
or sit**

9. Ribs oblique **AP**,

**INFANTS (10-15 kg ) LUNGS AND HEART**

10. Chest **AP** erect,
11. Chest **AP** supine,

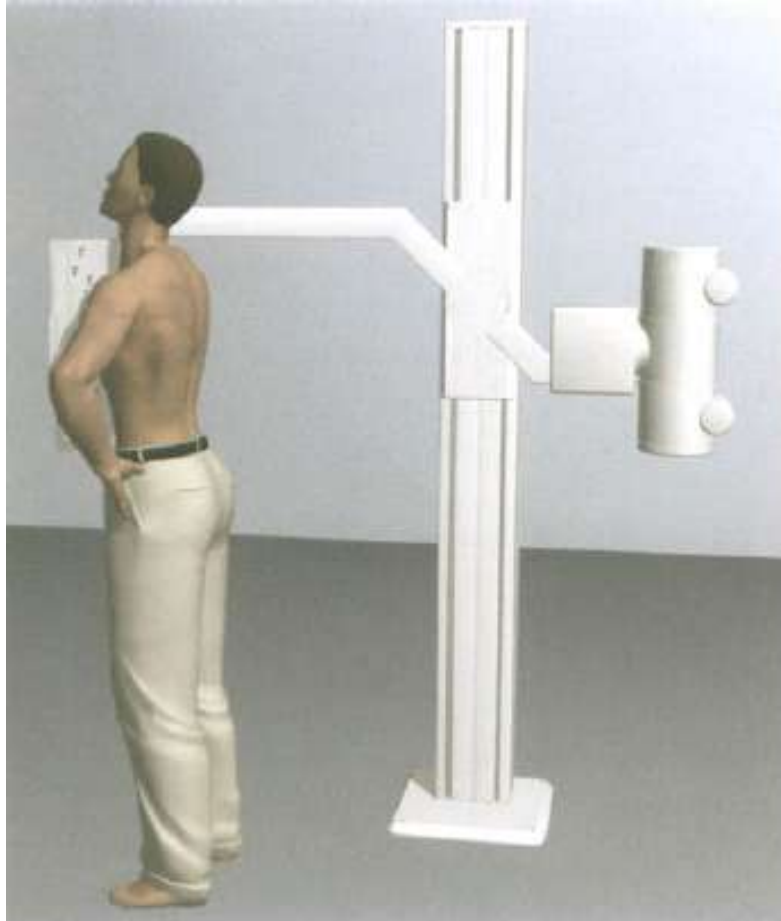
# Chest X ray Projections

Mandatory	Additional
1-	1-
2-	2-
3-	3-
4-	4-
5-	5-



# 1111111- CXR PA Erect

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# CHEST PA      Standing erect      BASIC

## Cassette size

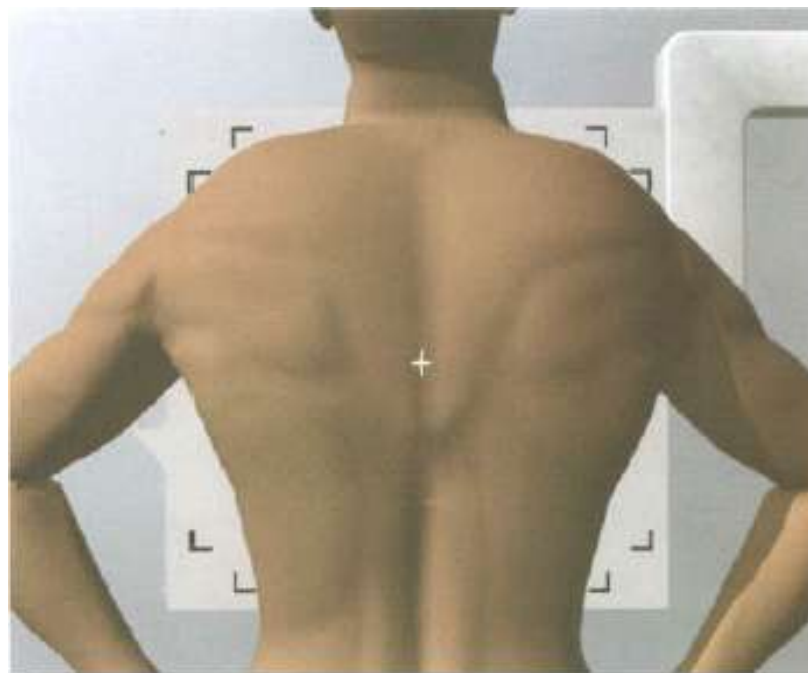
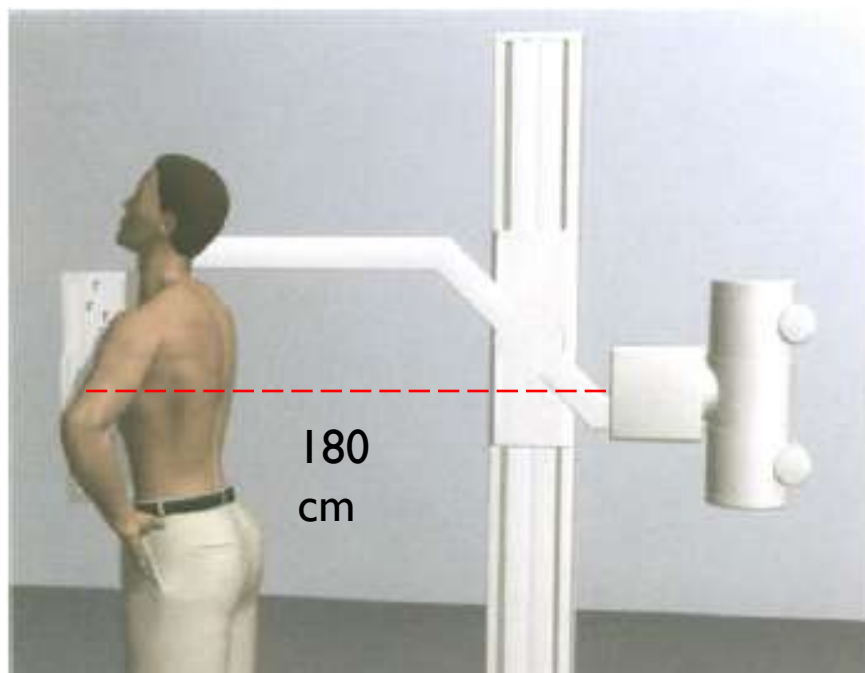
35×43 cm (14×17 inches)

35×35 cm (14×14 inches)

24×30 cm (10×12 inches) for a child

Use a **R**ight or **L**eft marker

Exposure values	kV	mAs average	mAs range
Adult	120	2–2.5	1–12
Child	90	1.6–2	1–4

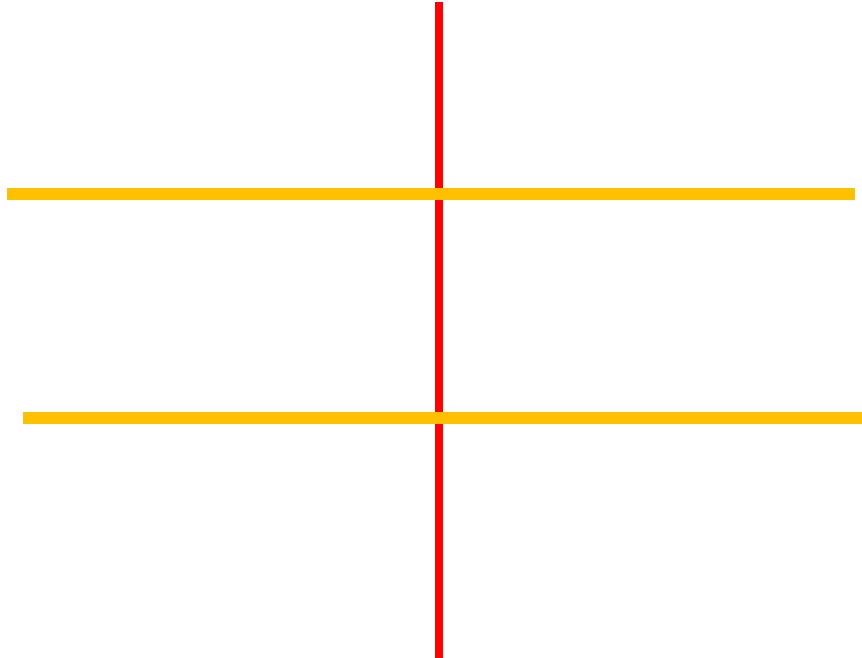


# Anatomical Lines

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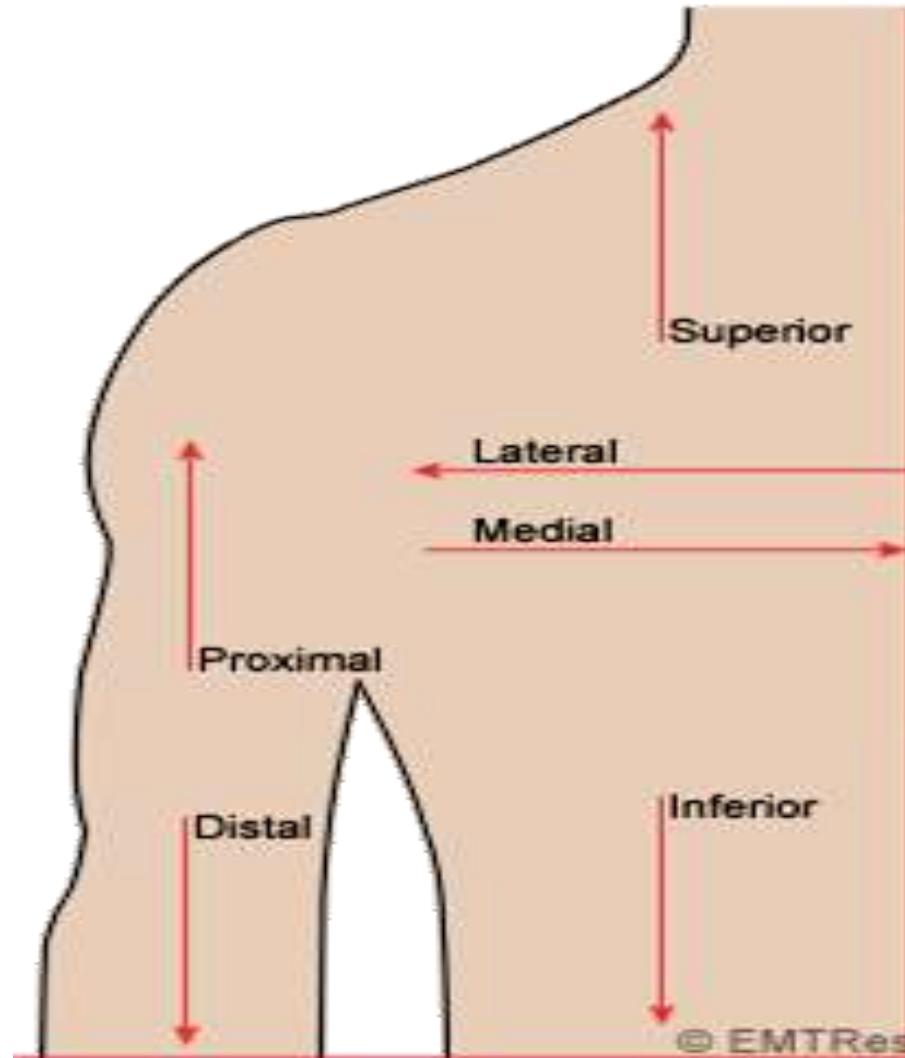
**Vertical**

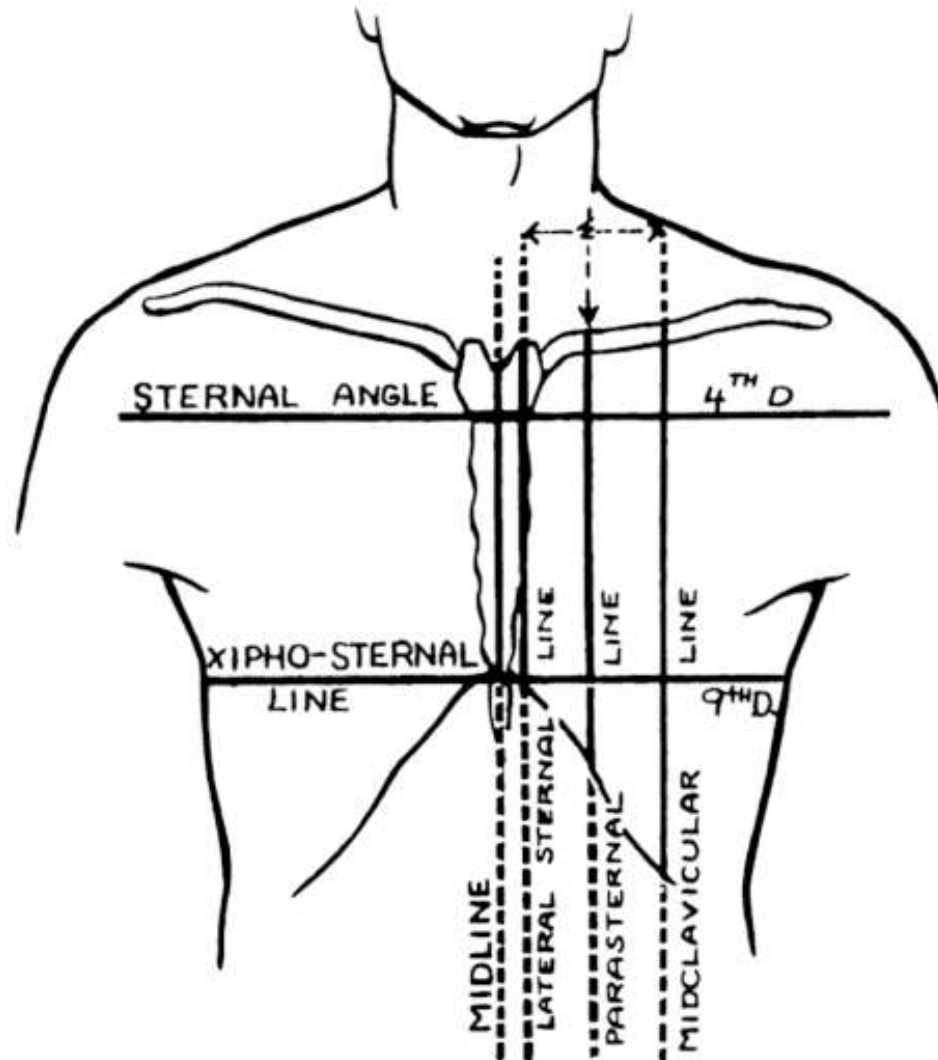
**Horizontal**



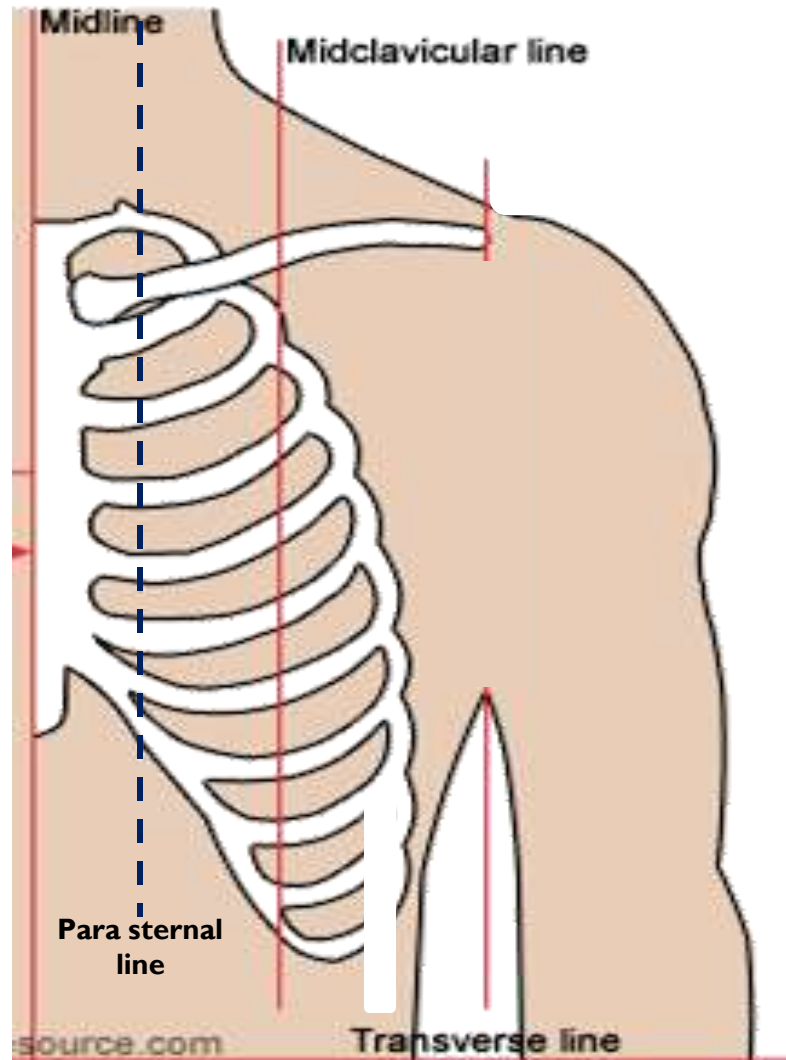
# Anatomical Directions

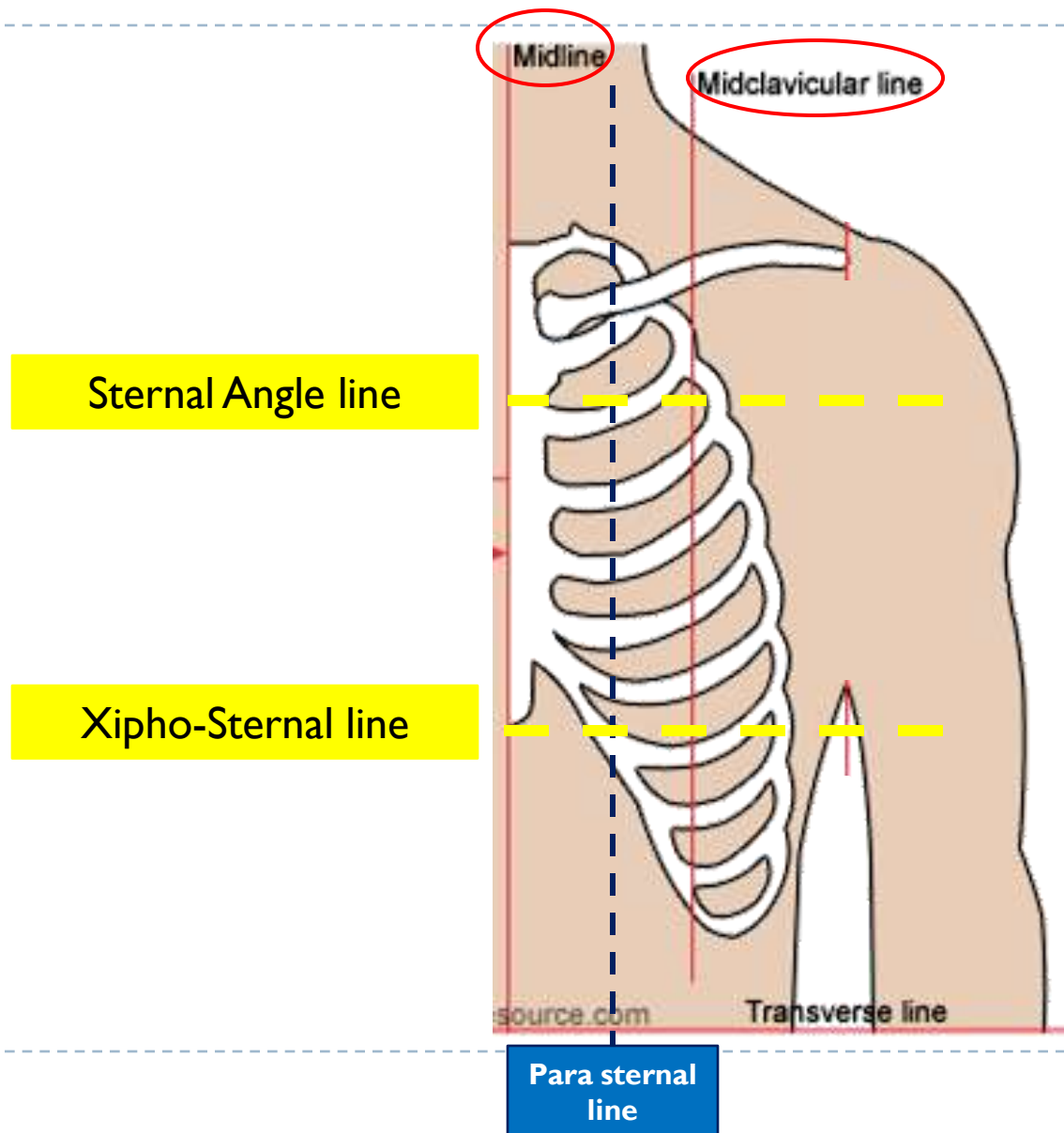
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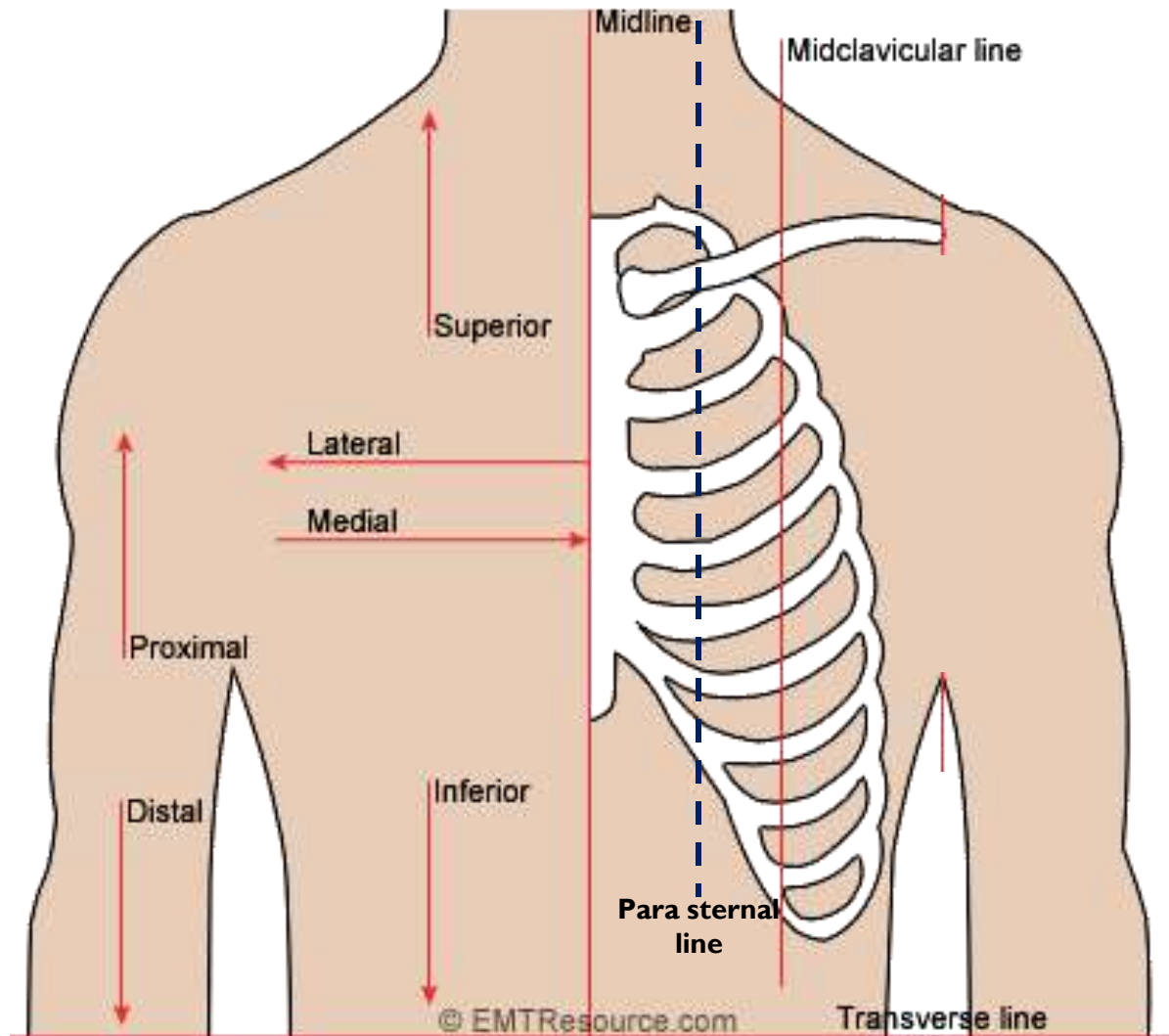




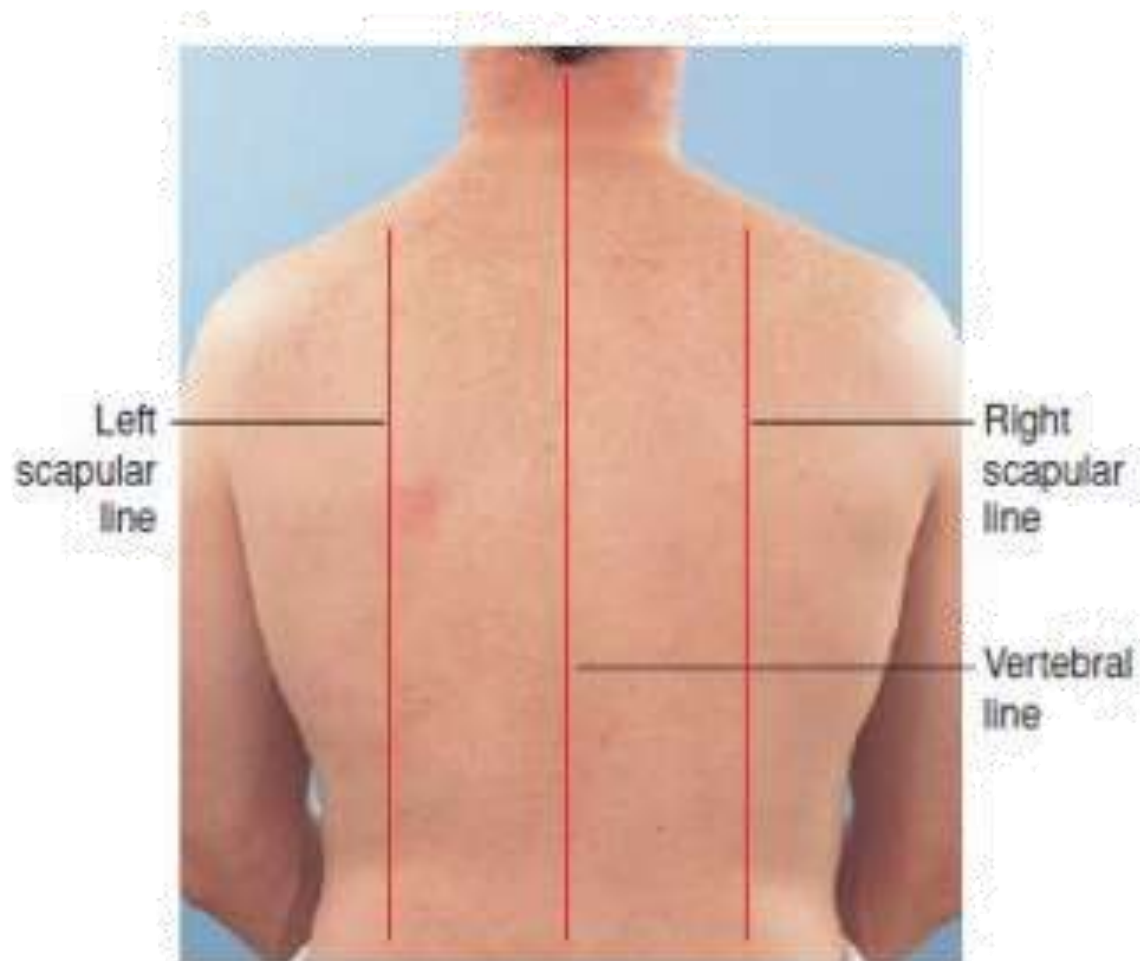








## Posterior vertical lines



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## Comments

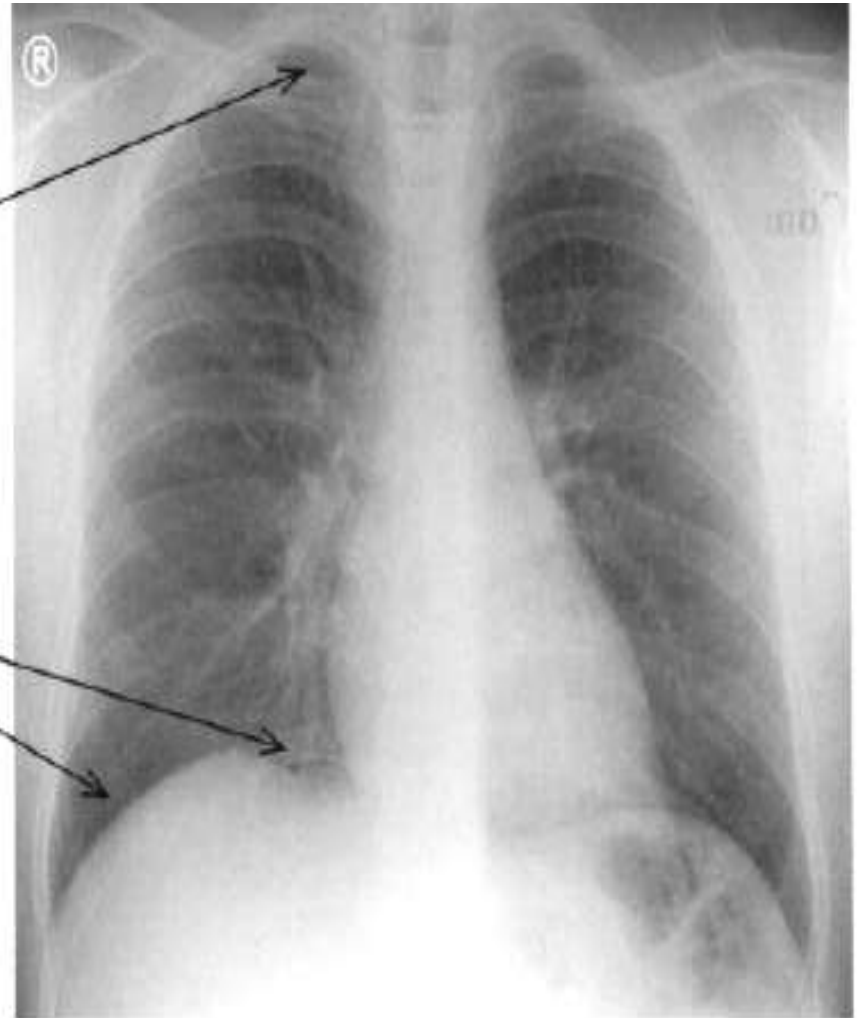
The top of the lungs must be visible.

The exposure shall be made at full inspiration:  
rib 10 shall be visible posteriorly above the  
diaphragm and rib 6 anteriorly.

Make sure that the lower parts of the diaphragm  
is visible on both sides, including both  
costophrenic angles.

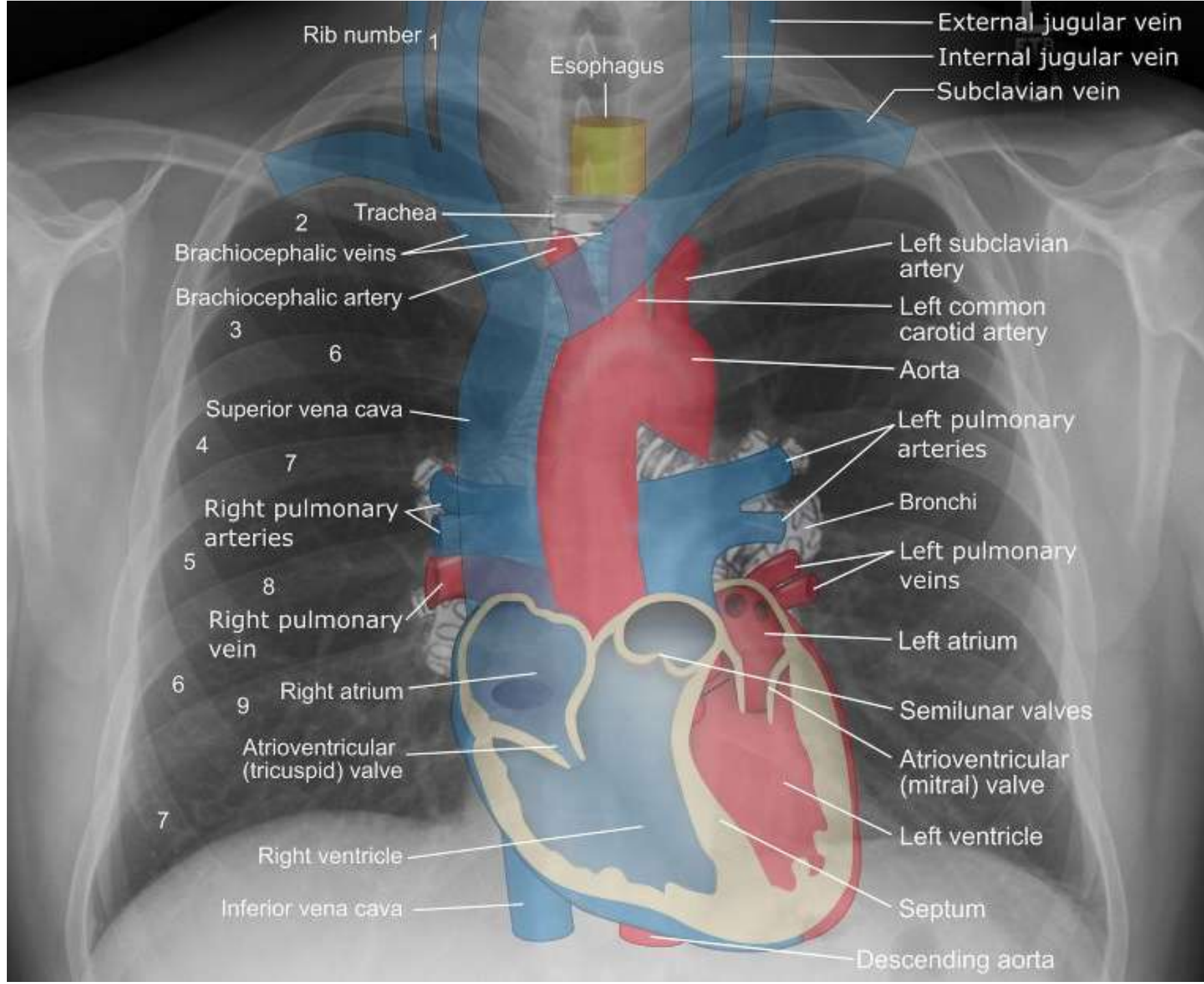
The lung structure and the spine must be  
discernible (seen) behind the heart.

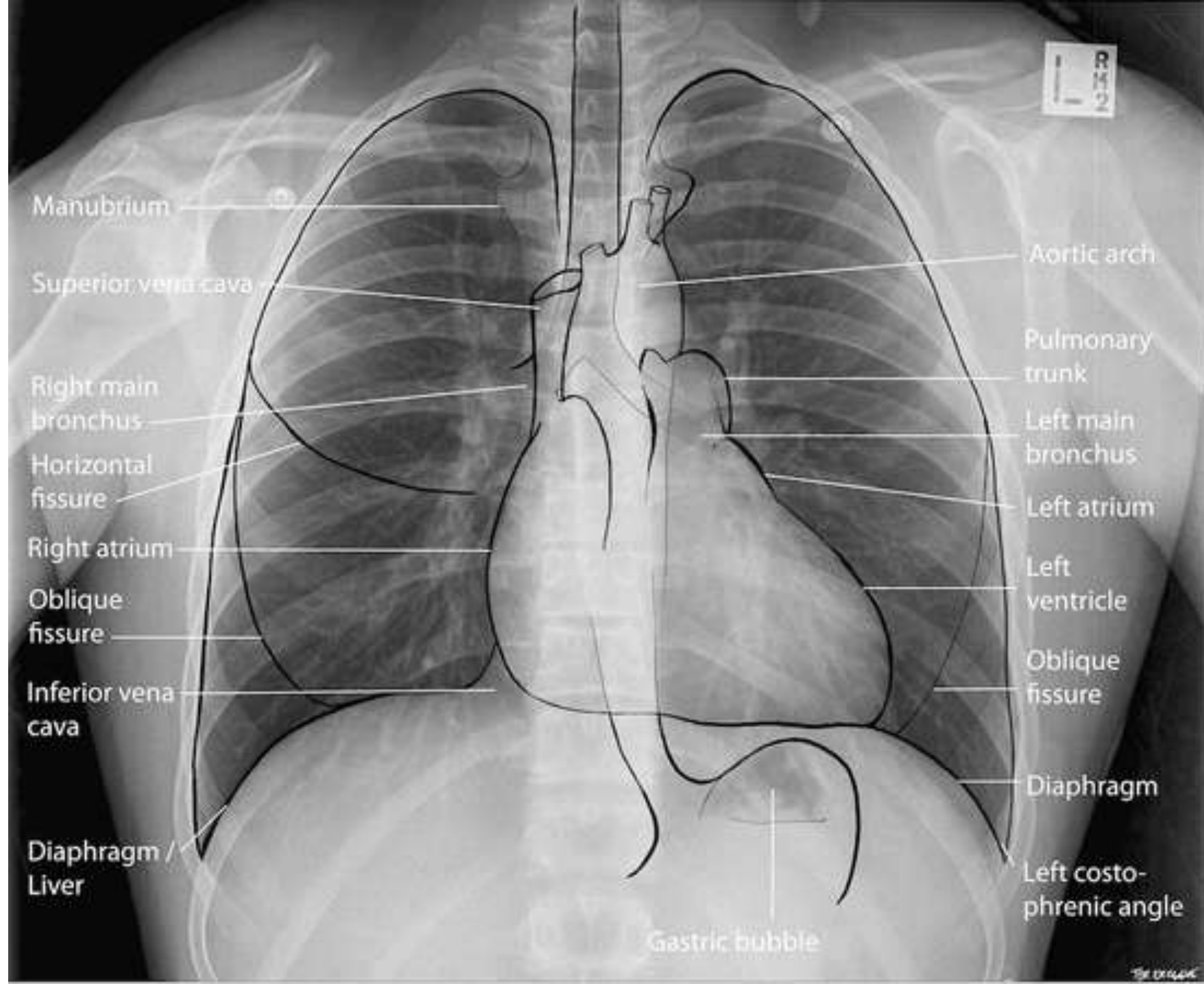
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## CHEST LATERAL

Standing erect – left (or right)

BASIC

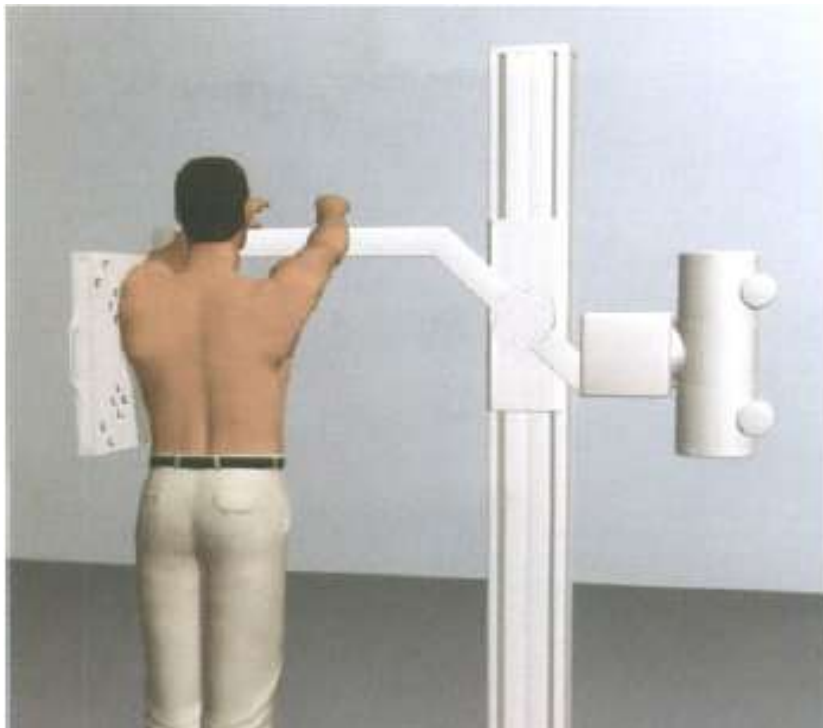
### Cassette size

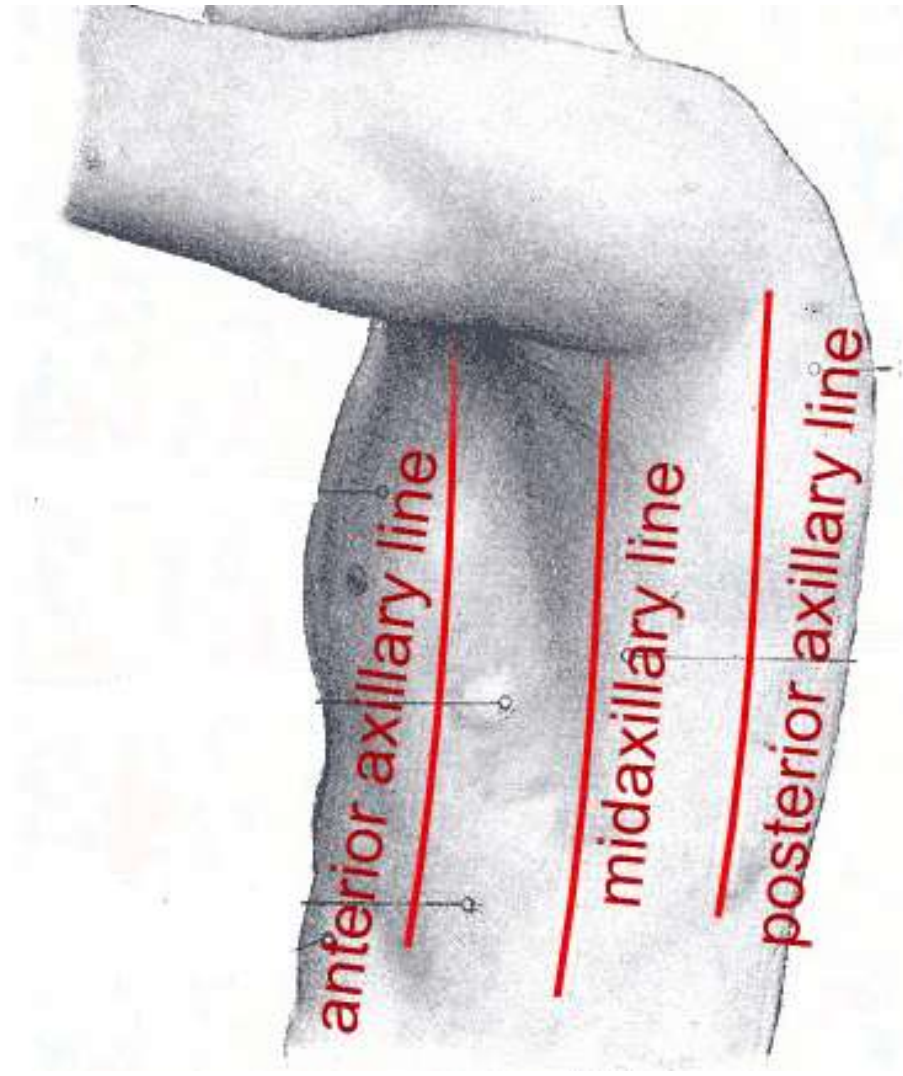
35×43 cm (14×17 inches)

35×35 cm (14×14 inches)

24×30 cm (10×12 inches) for a child

Exposure values	kV	mAs average	mAs range
Adult	120	4–5	2–16
Child	90	2.5	1–5

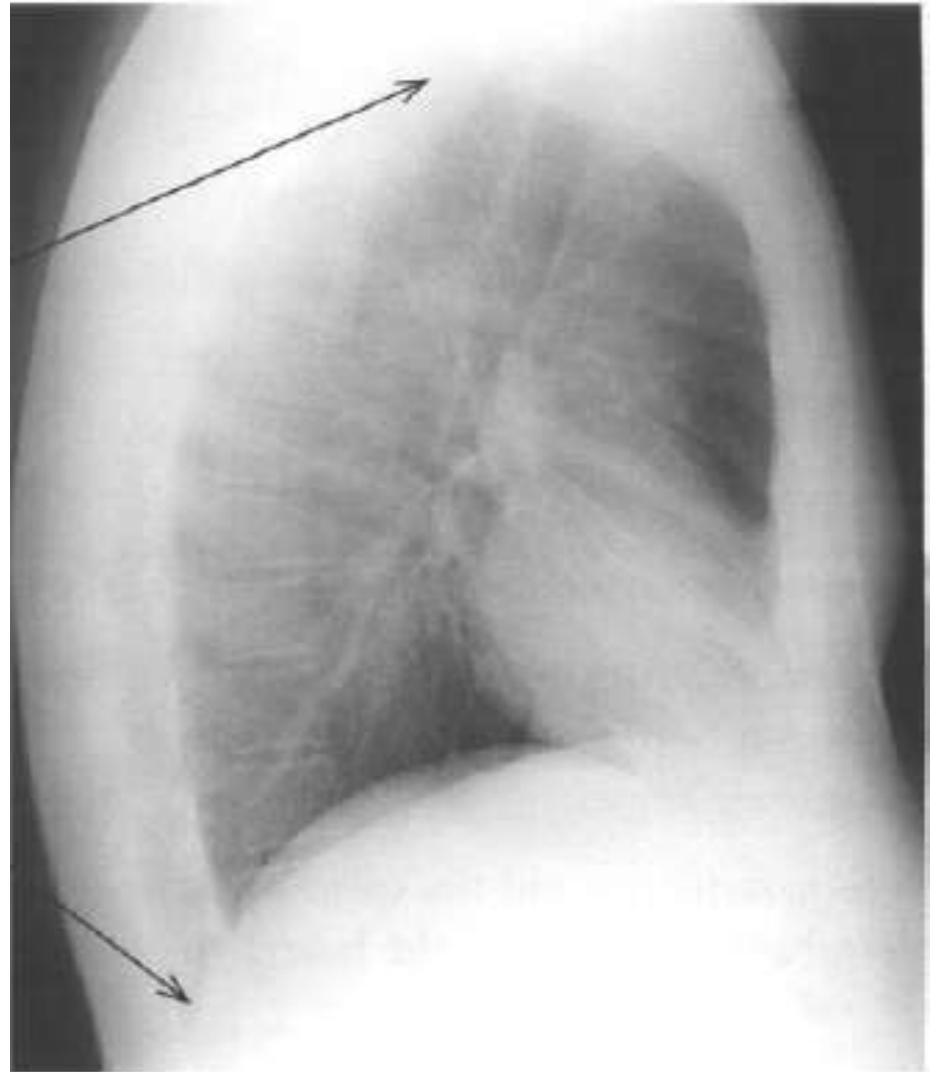




The top of the lungs must be visible.

Straight lateral view of the sternum

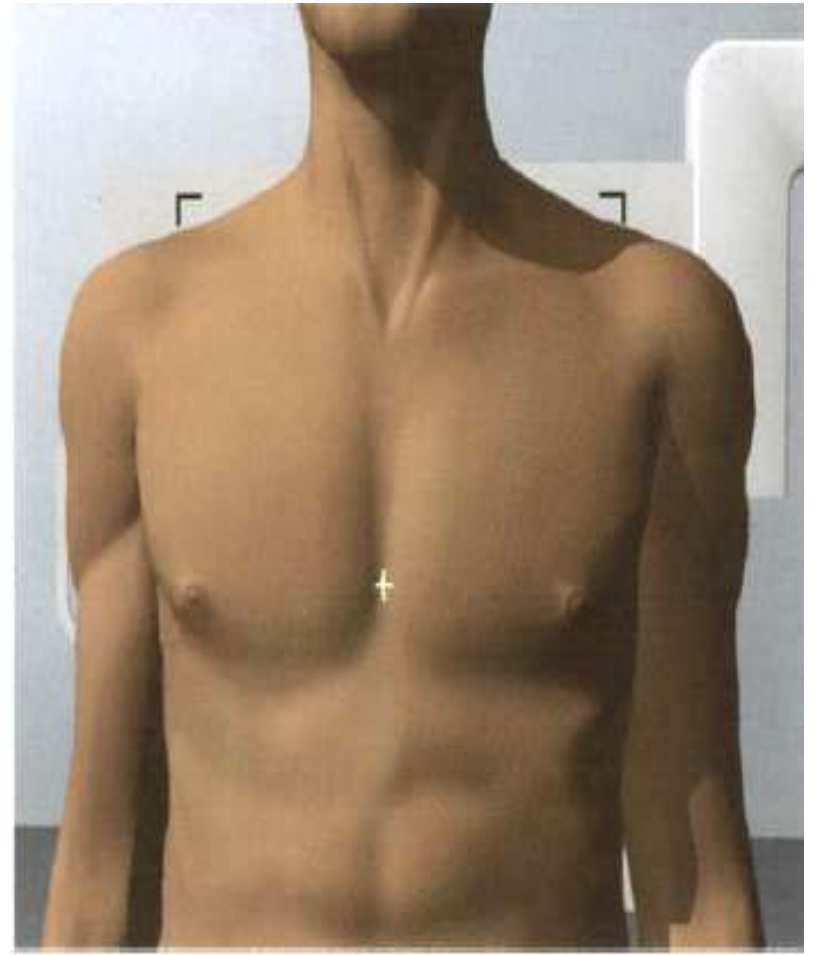
Make sure that the lower parts of the diaphragm is visible.



## **CHEST AP**    **Sitting erect**

on a stool or trolley – only used when the patient is unable to stand

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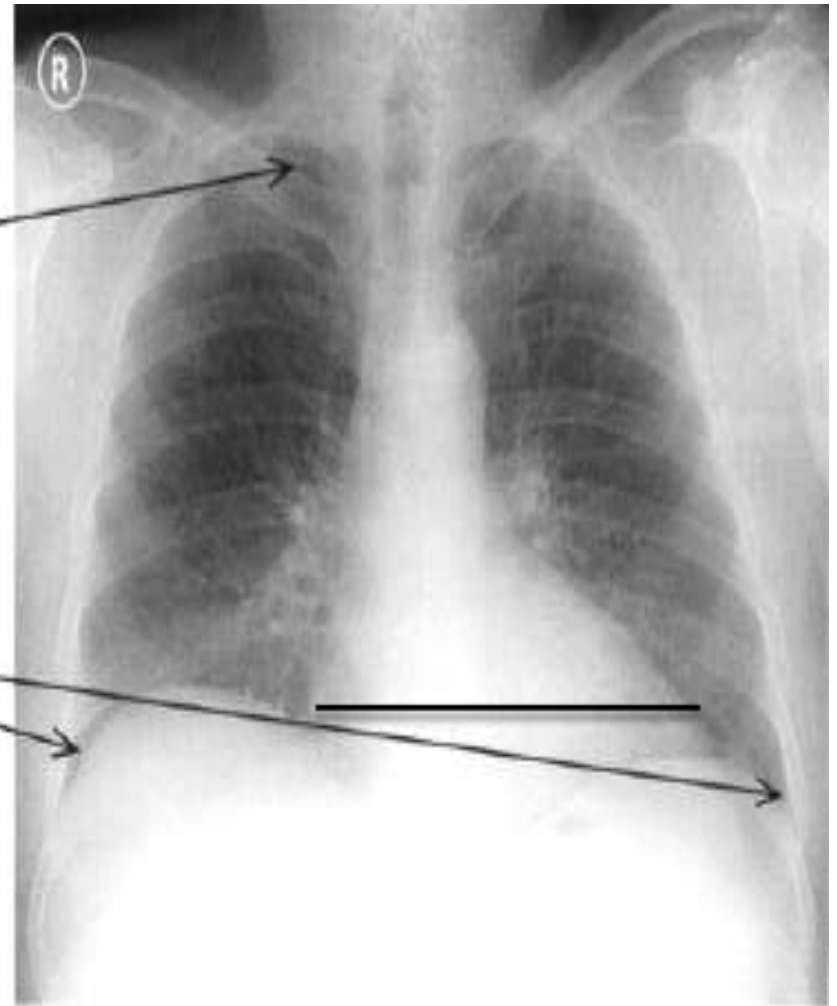
## Comments

The top of the lungs must be visible.

The exposure shall be made at full inspiration.

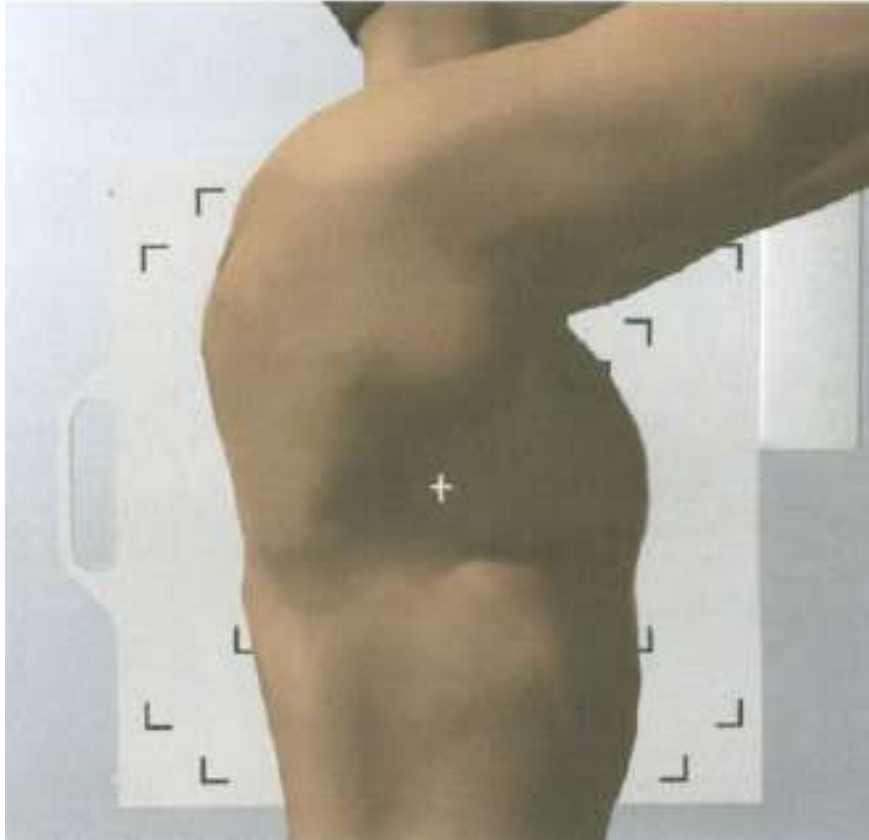
Make sure that the lower parts of the diaphragm is visible on both sides, including both costophrenic angles.

The lung structure and the spine must be discernible (seen) behind the heart.



**CHEST LATERAL**     Sitting erect – left (or right)  
on a stool or trolley – only used when the patient is unable to stand

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# CHEST AP      Supine

## Cassette size

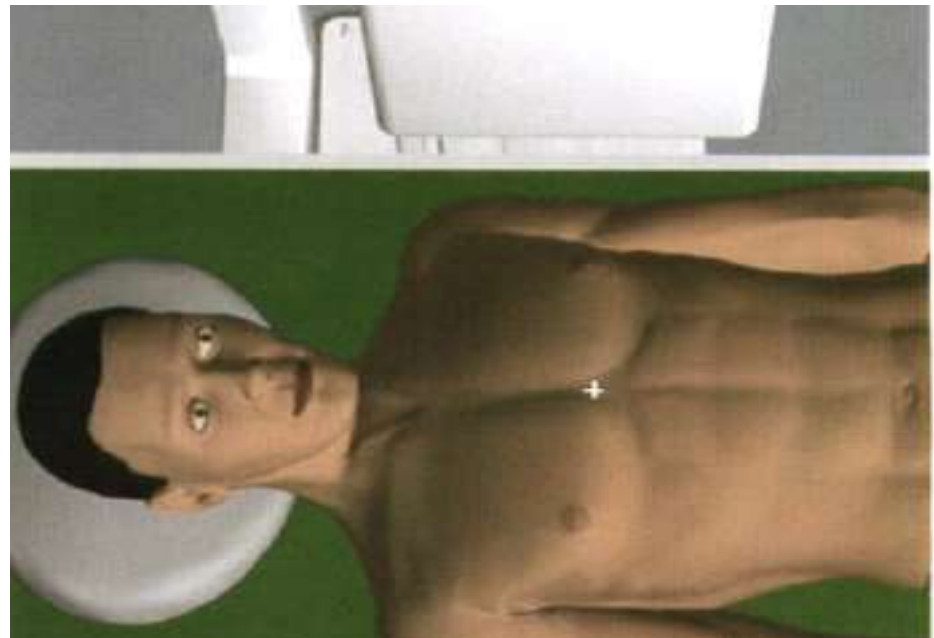
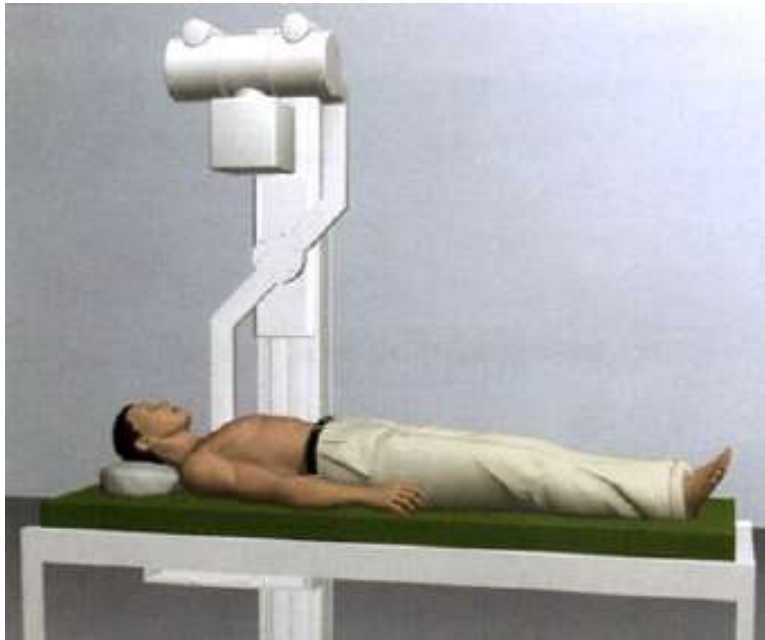
35×43 cm (14×17 inches)

35×35 cm (14×14 inches)

24×30 cm (10×12 inches) for a child

Use a **R**ight or **L**eft marker

Exposure values	kV	mAs average	mAs range
Adult	120	2–3.2	1–12
Child	90	1.6–2	1–4



**CHEST APICAL (LORDOTIC) AP**    Sitting reclining backwards    ADDITIONAL

### **Cassette size**

24×30 cm (10×12 inches)

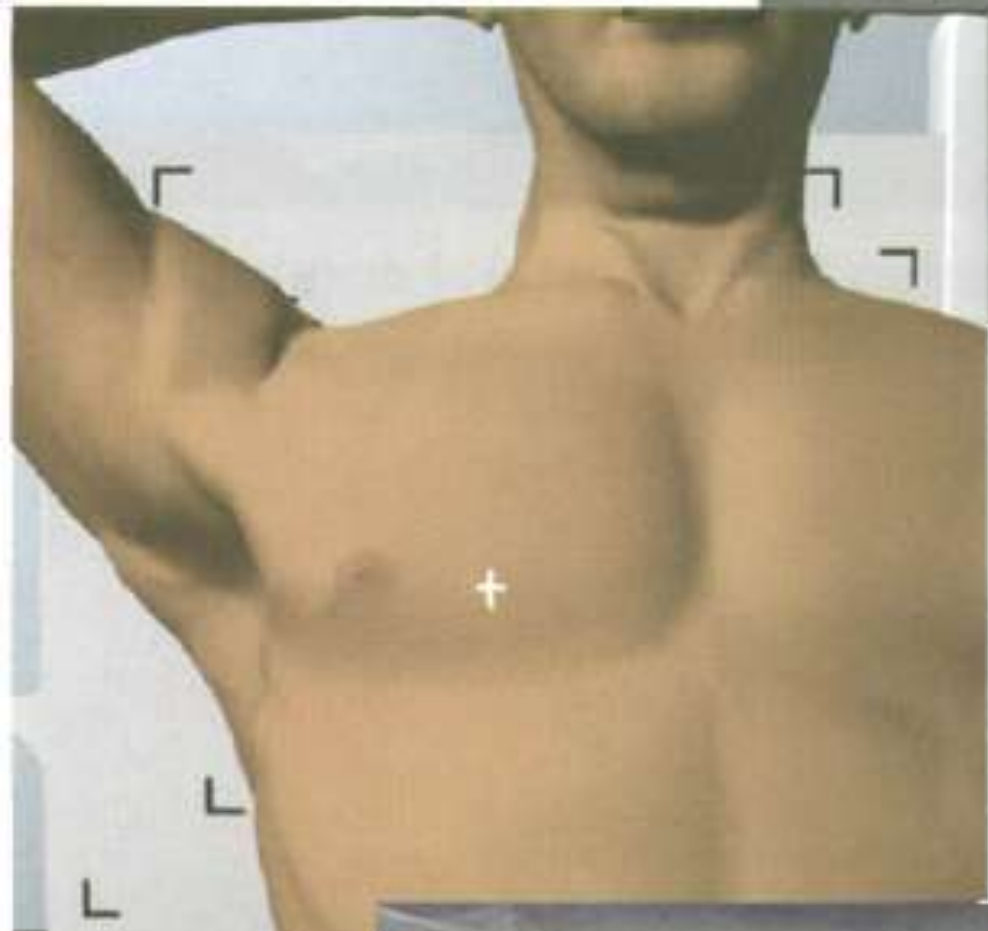
Use a **R**ight or **L**eft marker

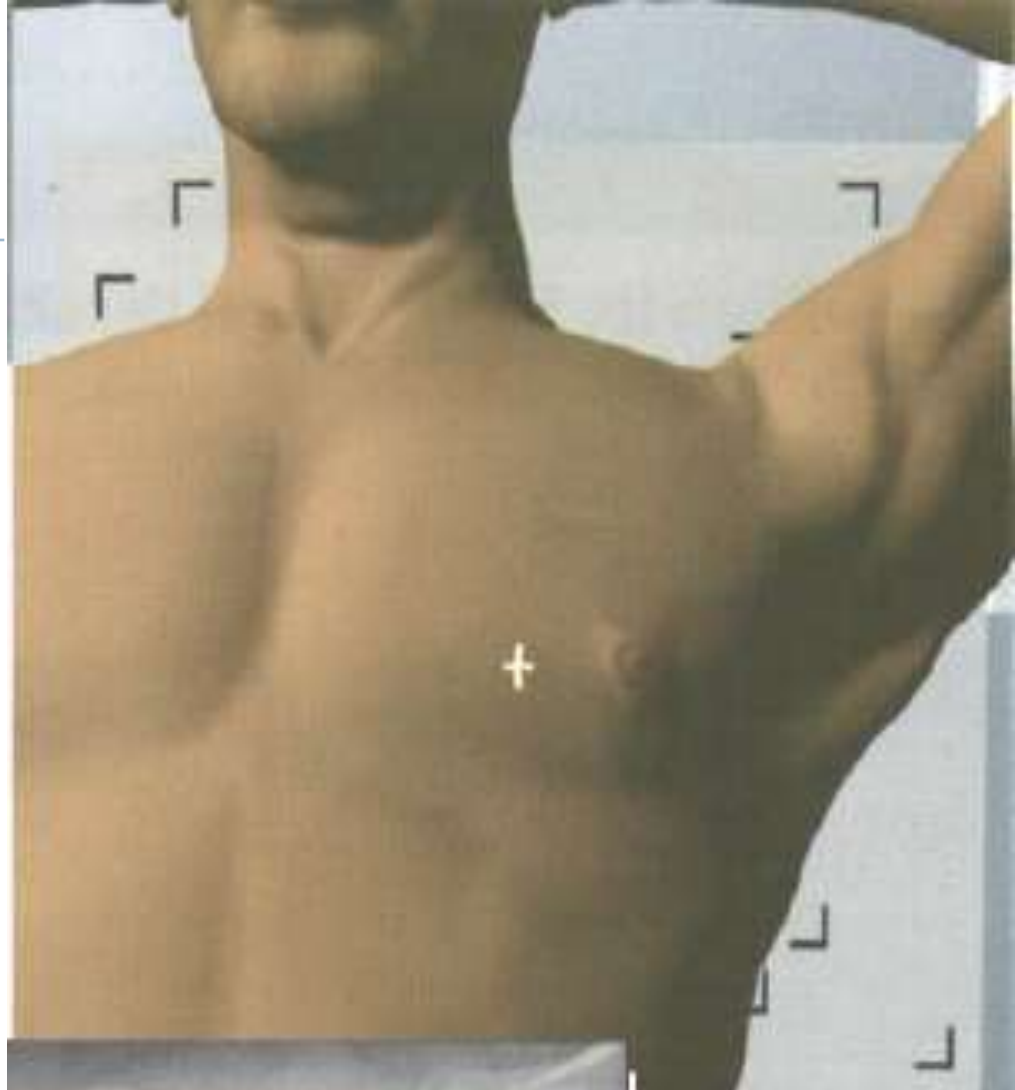
<b>Exposure values</b>	<b>kV</b>	<b>mAs average</b>	<b>mAs range</b>
Adult	120	2.5	2–5





Right side





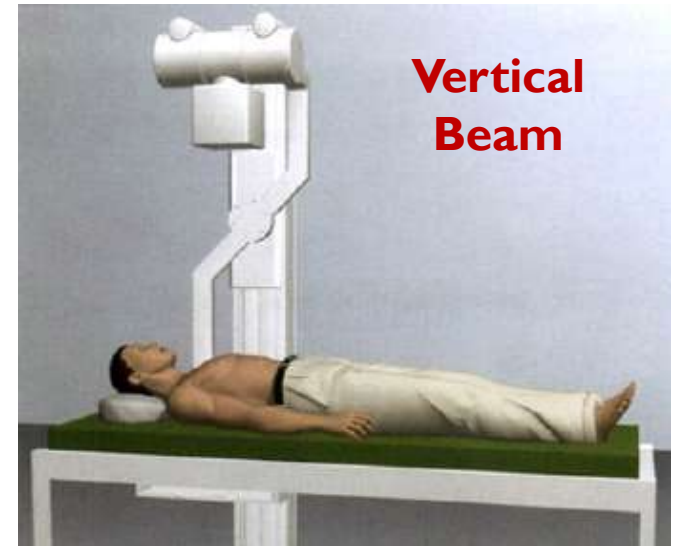
**Can we use Horizontal beam  
while the patient is supine ?**



**Horizontal  
Beam**



**Vertical  
Beam**



# CHEST LATERAL DECUBITUS

Lying on the right (PA) or left (AP) side – horizontal beam

ADDITIONAL views used to detect fluid in the pleural sac

# CHEST LATERAL DECUBITUS

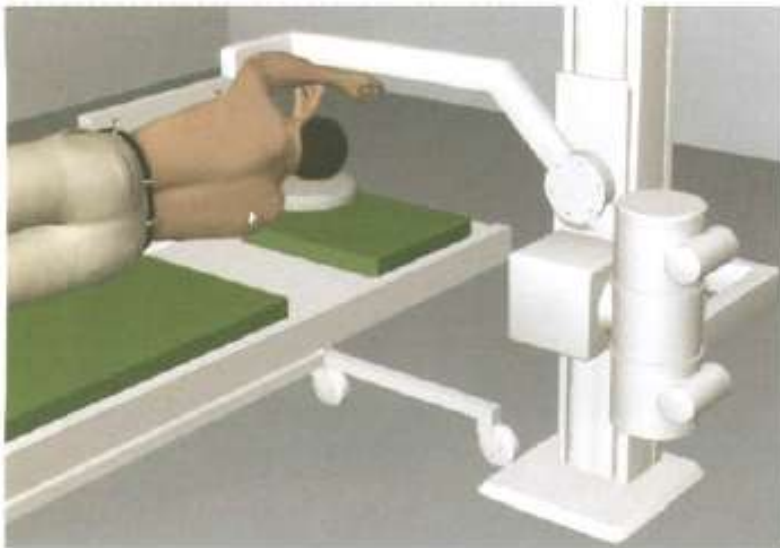
## Cassette size

24×30 cm (10×12 inches)

Use a **R**ight or **L**eft marker

Exposure values	kV	mAs average	mAs range
Adult	120	2	1.6–3.2

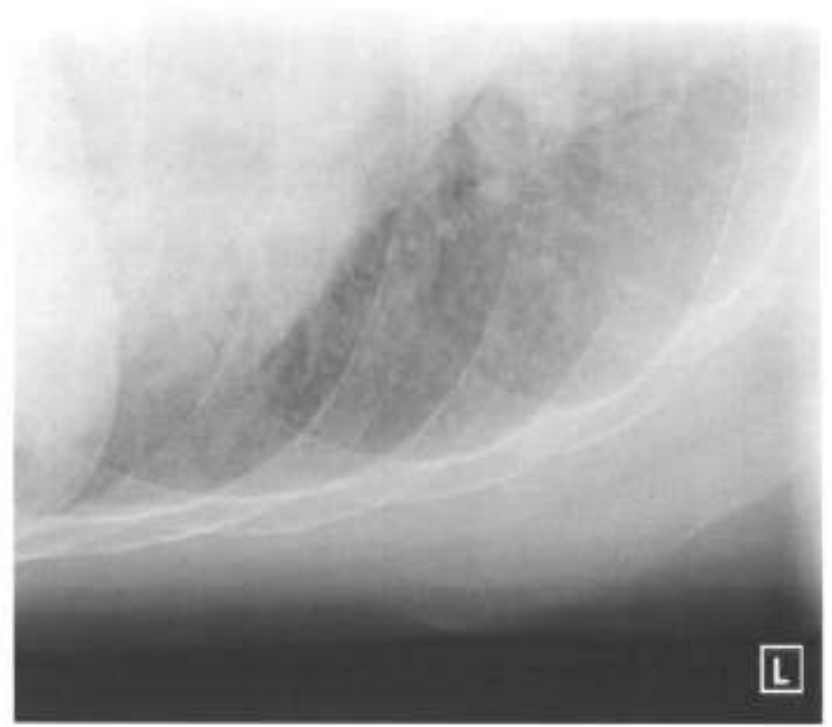
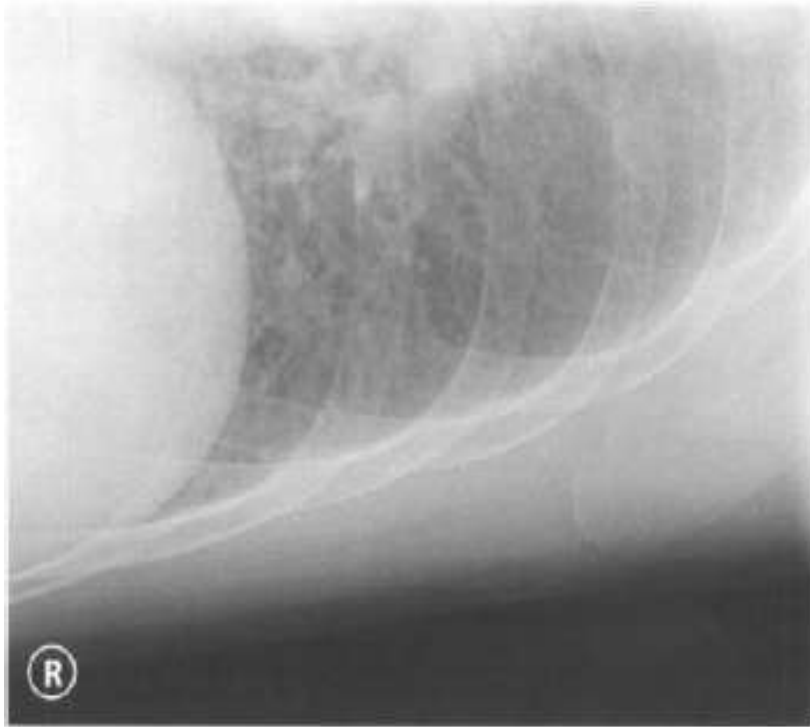
**Lying on the right (PA) or left (AP) side – horizontal beam**



Position for **RIGHT** lateral decubitus



Position for **LEFT** lateral decubitus



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# RIBS OBLIQUE AP

Standing or sitting erect – right and left oblique **BASIC**

## Cassette size

35×43 cm (14×17 inches)

35×35 cm (14×14 inches)

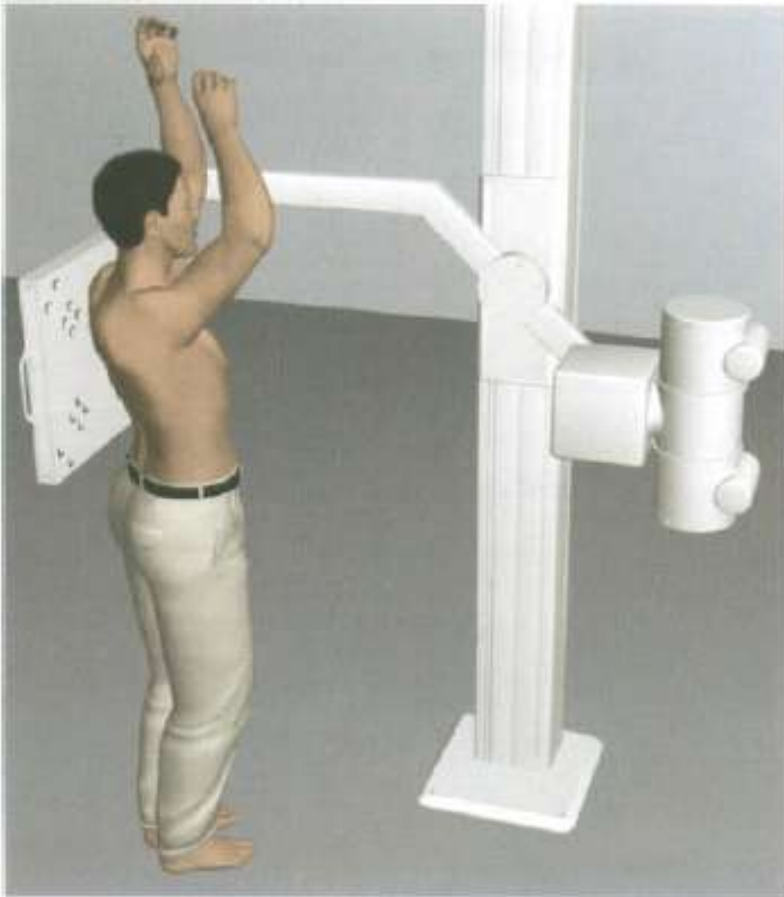
Use a **R**ight or **L**eft marker

**CXR PA**

or other  
Basic views

must be  
taken first

Exposure values	kV	mAs average	mAs range
Adult	70	20–25	10–125



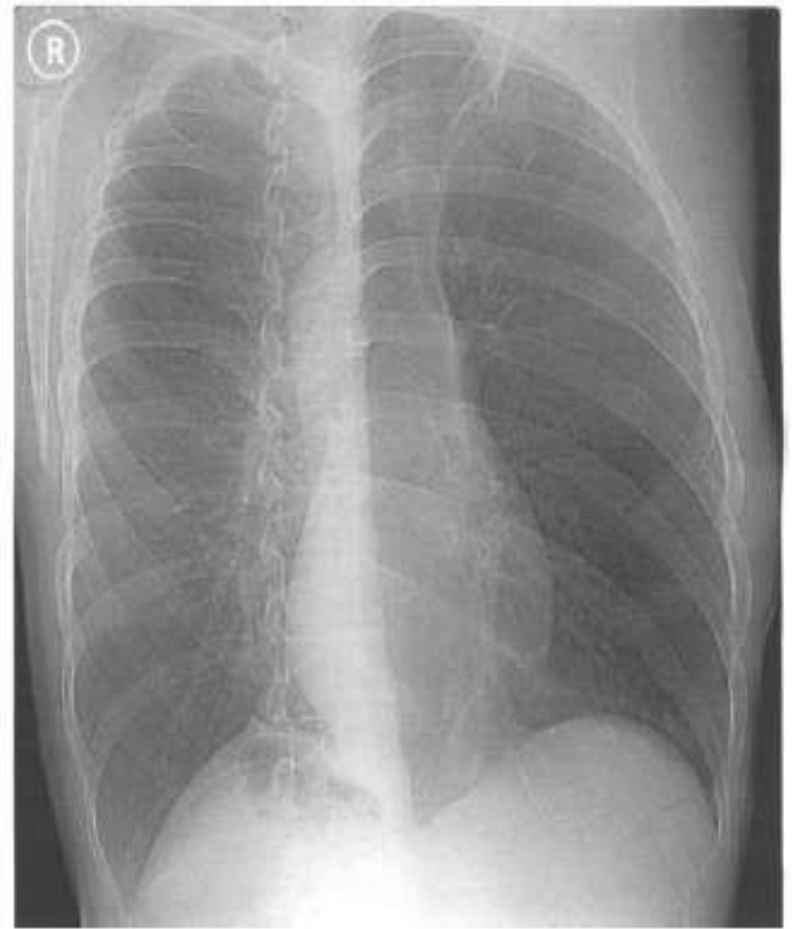
Left oblique



Right oblique

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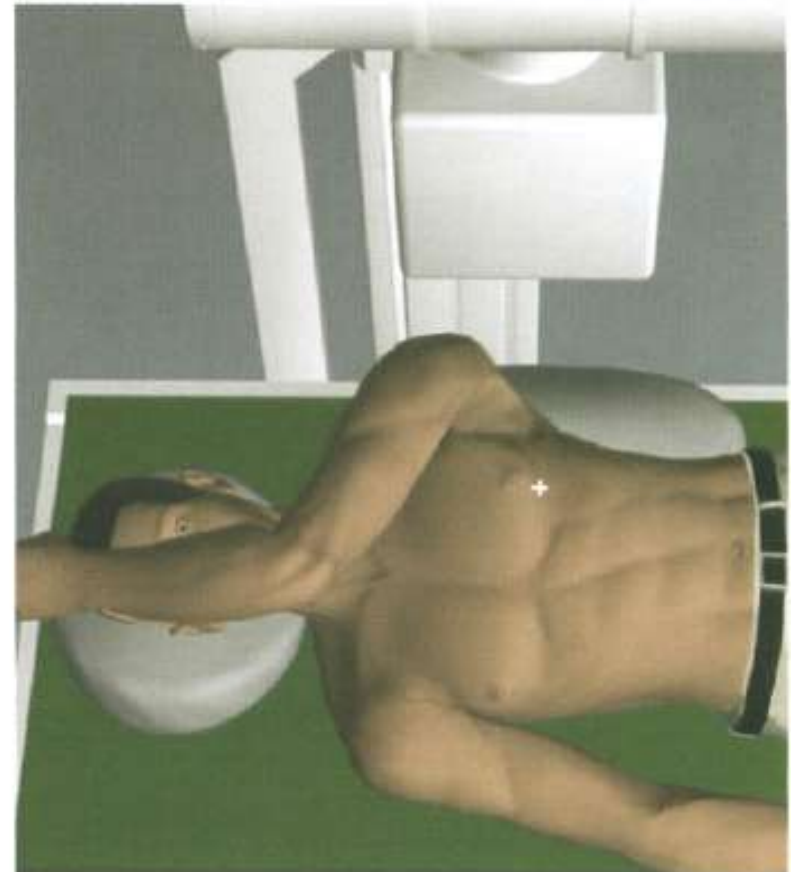
**ARMS MUST BE RAISED UP**



## **RIBS OBLIQUE AP      Supine – right and left oblique**



Left oblique



Right oblique

**SUPPORT THE PATIENT WITH A PILLOW UNDER NORMAL SIDE.**



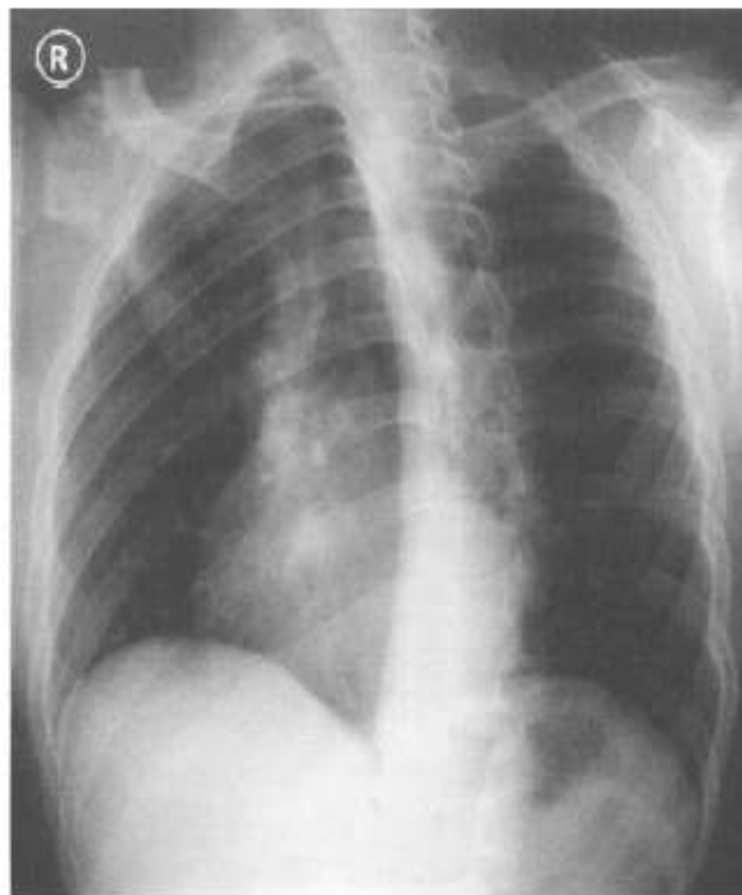
Keep the UPPER arm as high as possible.

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Left oblique



Right oblique



# CHEST AP Erect BASIC

Infants and small children weighing up to 15 kg,

hanging by the upper arms



## Cassette size

24×30 cm (10×12 inches)

Use a **R**ight or **L**eft marker

Exposure values	kV	mAs range
Child	90	1.25–2.5



**THE PERSON(S) HOLDING THE CHILD**, preferably one of the parents,  
MUST WEAR A **LEAD APRON** and, whenever possible, **LEADGLOVES**.





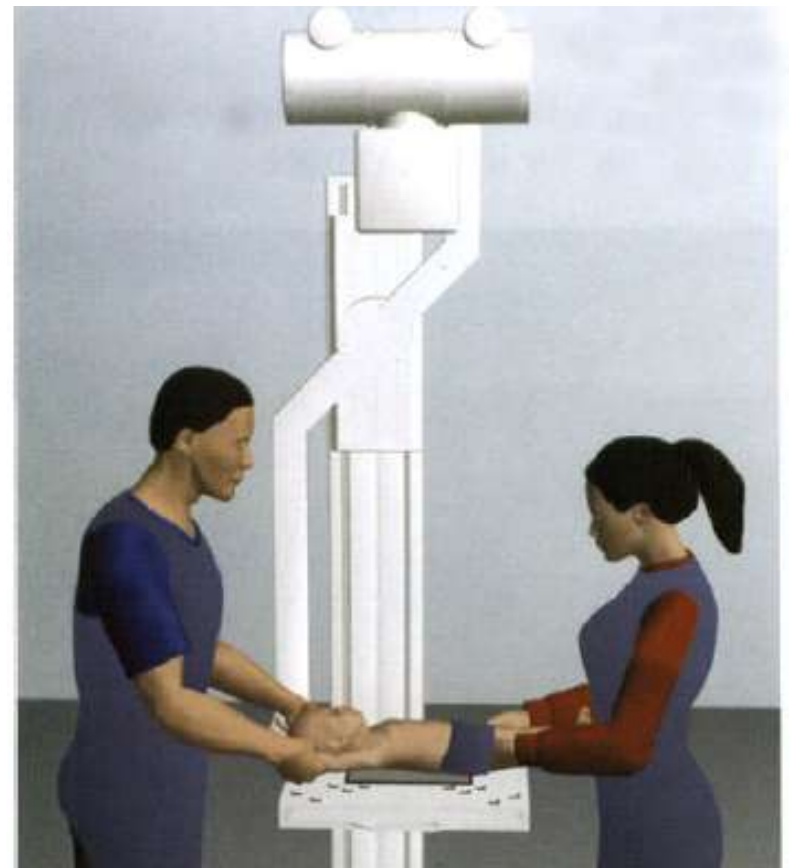
## CHEST AP – infant weighing up to 10 kg      Supine

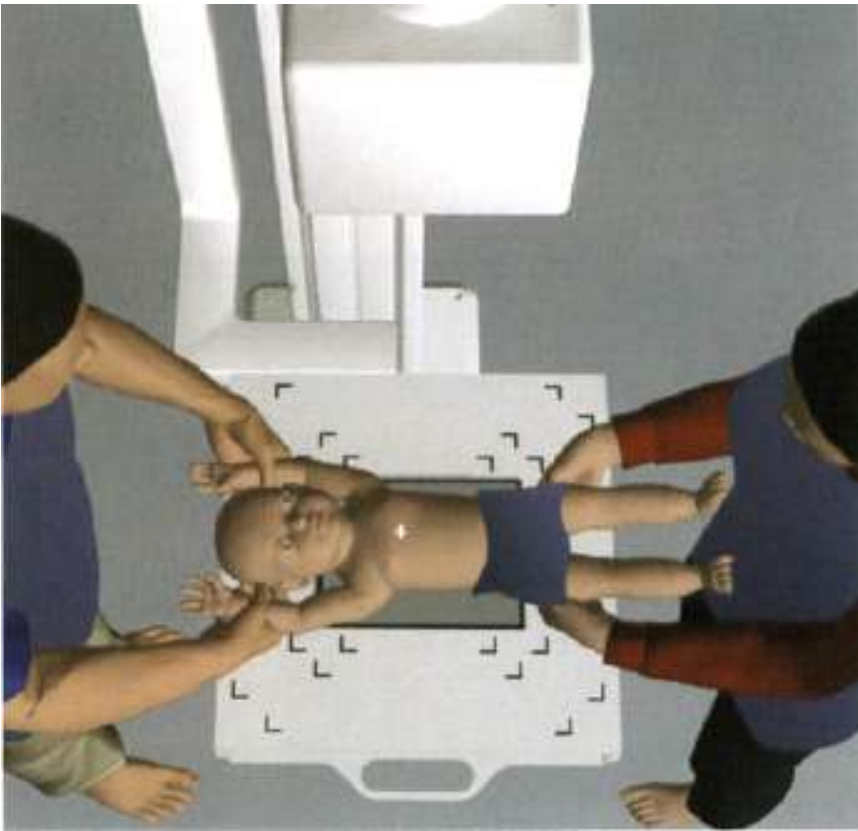
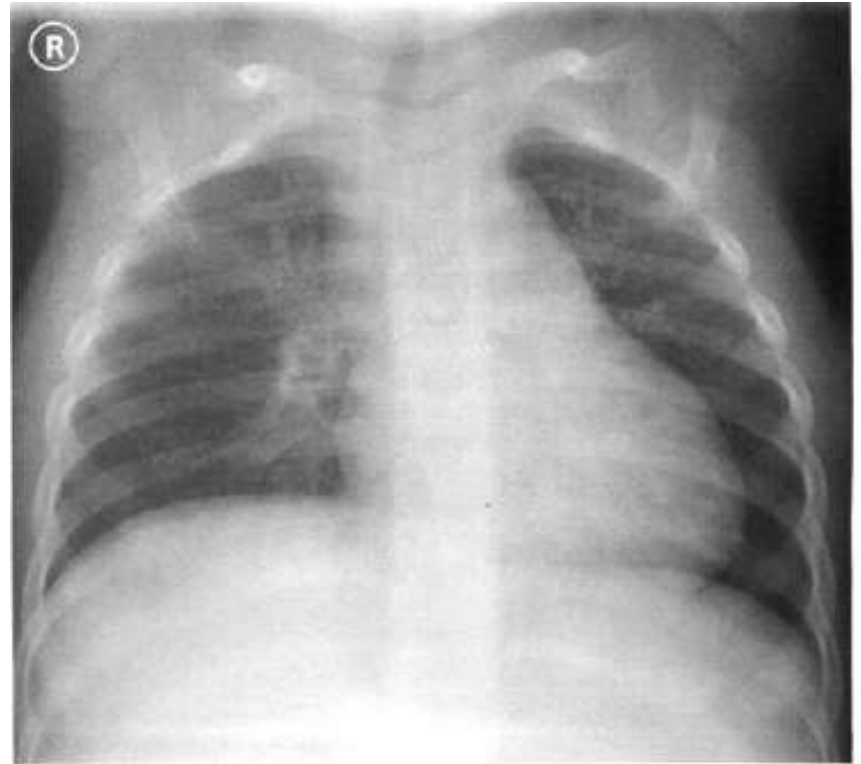
### Cassette size

18×24 cm (8×10 inches)

Use a **R**ight or **L**eft marker

Exposure values	kV	mAs range
Child	70	1.6–3.2





▶ **USE protective lead strip over the infant's pelvic area.**

# ..... Home Work

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- 
- ▶ A patient suffering from an apical lung mass  
.....what is the 1<sup>st</sup> chest projection to Do ?

# THANK YOU

A photograph of a sunset over the ocean. The sun is a bright, glowing orb on the horizon, casting a long, shimmering reflection down the center of the water. The sky is a deep orange and yellow, with some wispy clouds. In the foreground, the dark silhouettes of several people are visible, looking out at the sea. The overall mood is peaceful and contemplative.

*A. M. Abdallah*

2020