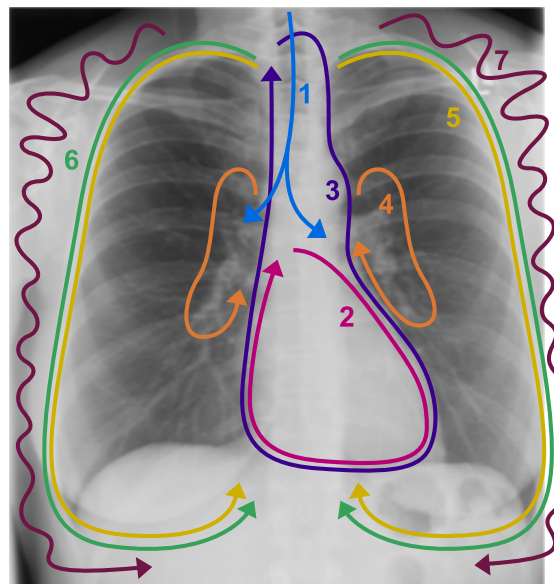


Chest X-Ray INTERPRETATION ALGORITHM

Starting from center and moving **OUT**:

- 1 Trachea & bronchi
- 2 Heart
- 3 Mediastinum
- 4 Hila
- 5 Lungs
- 6 Pleura
- 7 Chest wall



How to use the algorithm

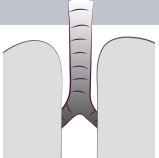
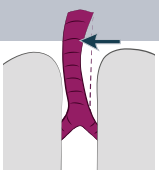
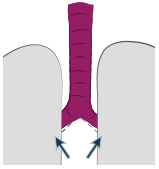
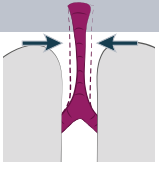
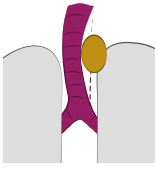
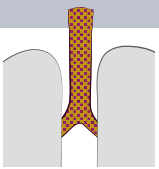
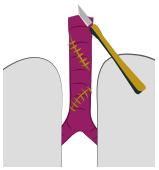
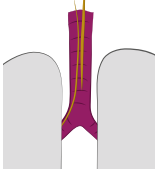
If you **FIND AN ABNORMALITY**,
GO TO THE APPROPRIATE STEP.
 Then evaluate the remaining steps.

- 2 Trachea & bronchi
- 3 Heart
- 4 Mediastinum
- 5 Hila
- 1 Lungs ←
- 6 Pleura
- 7 Chest wall


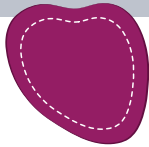
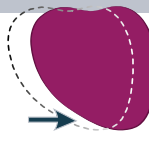

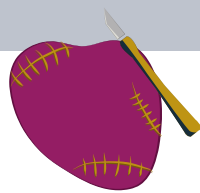
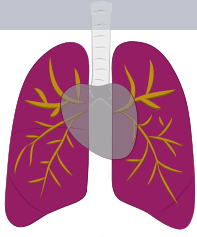
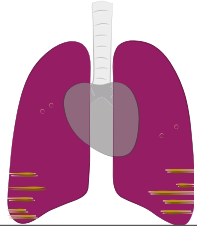
If you **DON'T FIND** an abnormality,
EVALUATE THE STEPS IN
CONSECUTIVE ORDER.

- 1 Trachea & bronchi
- 2 Heart
- 3 Mediastinum
- 4 Hila
- 5 Lungs
- 6 Pleura
- 7 Chest wall


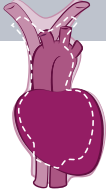
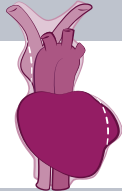
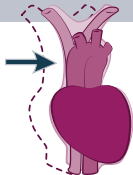
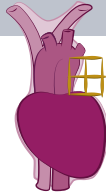

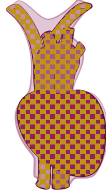
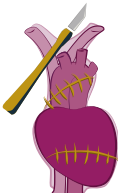
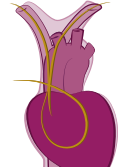
1. TRACHEA & BRONCHI

GRAYSCALE		
1	Is the grayscale of the trachea altered?	 <p>If YES, then describe. Too white/too black.</p>
POSITION		
2	Is the trachea deviated?	 <p>If YES, then describe. Right/left. Anterior/posterior.</p>
3	Is the carina angle greater than 90 degrees?	 <p>If YES, then describe. Give angle measurement.</p>
SHAPE		
4	Is the shape of the trachea narrowed?	 <p>If YES, then describe. Focal/diffuse.</p>
5	Is there a visible mass deviating/narrowing the trachea?	 <p>If YES, then describe. Size/position.</p>
OTHER		
6	Are there any radiological signs related to the trachea?	 <p>If YES, then describe. Air bronchogram. Tram line.</p>
7	Is there any evidence of previous surgery to the trachea and/or bronchi?	 <p>If YES, then describe. Type of surgery and location. Compare to previous CXR.</p>
8	Are there any lines or tubes in the trachea?	 <p>If YES, then describe. Give location of each relative to the carina.</p>



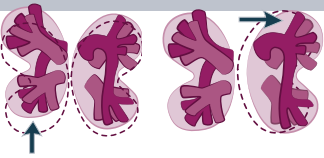
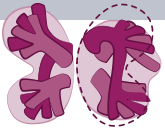
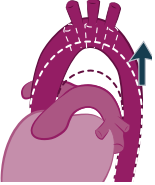
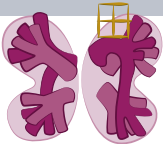
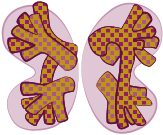
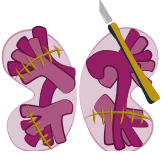
2. HEART

GRAYSCALE		
1	Is the grayscale of the cardiopericardial silhouette altered?	 <p>If YES, then describe. Too white/too black.</p>
SIZE		
2	Is the size of the cardiopericardial silhouette altered?	 <p>If YES, then describe. Too big/too small. Pathological/magnification effect/pectus excavatum.</p>
POSITION		
3	Is the position of the cardiopericardial silhouette shifted?	 <p>If YES, then describe. Up/down. Right/left. Anterior/posterior.</p>
SHAPE		
4	Is the shape of the cardiopericardial silhouette distorted?	 <p>If YES, then describe. Name specific contour. Pathological/normal variant.</p>
OTHER		
5	Is there any evidence of previous surgery to the heart or pericardium?	 <p>If YES, then describe. Type of surgery and location. Compare to previous CXR.</p>
CONGESTIVE HEART FAILURE		
6	Are there signs of vascular redistribution?	 <p>If YES, then describe. Pulmonary venous hypertension/ pulmonary arterial hypertension / shunt vascularity.</p>
7	Are there signs of edema?	 <p>If YES, then describe. Interstitial/alveolar. Kerley A/Kerley B/cuffing.</p>

3. MEDIASTINUM

GRAYSCALE		
1	Is the grayscale of the mediastinum altered?	 <p>If YES, then describe. Too white/too black. Pathology/lipomatosis.</p>
SIZE		
2	Is the size of the mediastinum altered?	 <p>If YES, then describe. Too big. Right/left. Anterior/middle/posterior compartment.</p>
SHAPE		
3	Are the mediastinal contours abnormal?	 <p>If YES, then describe. Right/left. Distorted/missing/additional.</p>
POSITION		
4	Is the position of the mediastinum shifted?	 <p>If YES, then describe. Right/left. Anterior/posterior.</p>
OTHER		
5	Is the AP window normal?	 <p>If NO, then describe. Blurred, obscured. Too big/too small.</p>
6	Are the lines and stripes normal?	 <p>If NO, then describe. Too wide/irregular/missing.</p>
7	Are there any radiological signs related to the mediastinum?	 <p>If YES, then describe. 123. hilar overlay. Iceberg. Silhouette.</p>
8	Is there any evidence of previous surgery to the mediastinum?	 <p>If YES, then describe. Type of surgery and location. Compare to previous CXR.</p>
9	Are there any lines or tubes in the mediastinum?	 <p>If YES, then describe. Give location of each relative to the carina and SVC.</p>

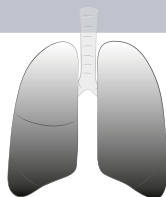
4. HILA

GRAYSCALE		
1	Is the grayscale of the hilum altered?	 <p>If YES, then describe. Too white (too dense) Right/left/bilateral.</p>
SIZE		
2	Is the size of the hilum altered?	 <p>If YES, then describe. Too big/too small. Right/left/bilateral.</p>
POSITION		
3	Is the position of the hilum shifted?	 <p>If YES, then describe. Elevated/depressed. Medial/lateral. Anterior/posterior. Right/left/bilateral.</p>
SHAPE		
4	Is the H-shape of the hila distorted on the PA x-ray?	 <p>If YES, then describe. Lobulated/irregular. Right/left/bilateral.</p>
5	Are one or both of the arches distorted on the lateral x-ray?	 <p>If YES, then describe. Aorta narrowed/distended. LPA narrowed/distended.</p>
OTHER		
6	Is the AP window normal?	 <p>If NO, then describe. Blurred/obscured. Too big/too small.</p>
7	Are there any radiological signs related to the hilum?	 <p>If YES, then describe. Hilar convergence. Hilar overlay. H-sign.</p>
8	Is there any evidence of previous surgery to the hilum?	 <p>If YES, then describe. Type of surgery and location. Compare to previous CXR.</p>

5. LUNGS

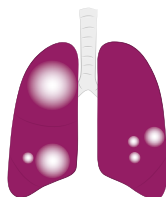
GRAYSCALE

1 Is the grayscale of the lungs altered?

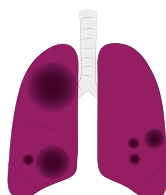


If **YES**, then describe.
Too white/too black/too white AND too black.
Right/left/bilateral.

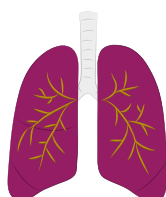
2 Is the normal branching of blood vessels obscured?



If **TOO WHITE**, then describe opacity.
Focal/diffuse.
Multiple/solitary.
Homogeneous/inhomogeneous.



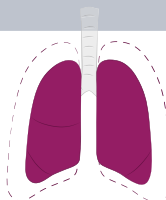
If **TOO BLACK**, then describe hyperlucency.
Focal/diffuse.
Multiple/solitary.
Pathological/mastectomy/surgery.
Homogeneous/inhomogeneous.



If **YES**, then describe.
Right/left/bilateral.

SIZE

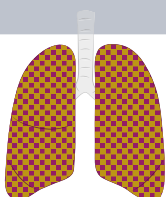
3 Is the size of the lungs altered?
(Does the blackness of the lungs extend all the way to the ribs?)



If **NO**, then describe.
Right/left/bilateral.
Increased/decreased.

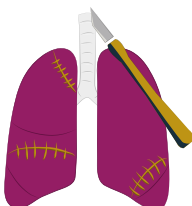
OTHER

4 Are there any radiological signs related to the lungs?



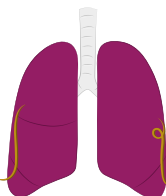
If **YES**, then describe.
Air bronchogram.
Silhouette.
Spine.

5 Is there any evidence of previous surgery to the lungs?



If **YES**, then describe.
Type of surgery and location.
Compare to previous CXR.

6 Are there any lines or tubes in the lungs?



If **YES**, then describe.
Give location of each relative to the carina, SVC and/or diaphragms.

6. PLEURA

GRAYSCALE

- 1 Do the lungs extend all the way to the ribs?
If **NO**, is the grayscale of the pleura altered?



If **YES**, then describe.
Too white/too black/too white AND too black.
Right/left/bilateral.

SIZE

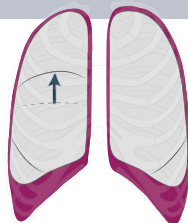
- 2 Is the size of the pleural space altered?



If **YES**, then describe.
Right/left/bilateral.
Give size of pneumothorax or pleural effusion.

POSITION

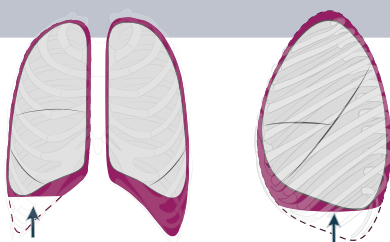
- 3 Are the fissures shifted?



If **YES**, then describe.
Elevated/depressed.
Medial/lateral.

SHAPE

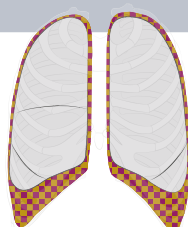
- 4 Is the shape of the lateral or posterior costophrenic angles altered?



If **YES**, then describe.
Right/left/bilateral.
Blunted.

OTHER

- 5 Are there any radiological signs related to the pleura?



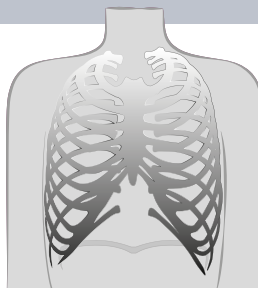
If **YES**, then describe.
Pseudotumor.
Deep sulcus.

7. CHEST WALL

BONY THORAX (Spine, ribs, clavicles, scapulae, sternum)

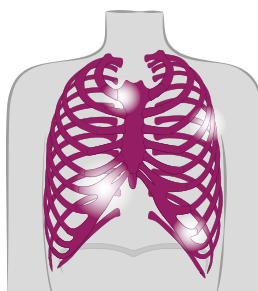
GRAYSCALE

- 1 Is the grayscale of the bones altered?



If **YES**, then describe.
Too white/too black.
Bone density.
Cortical outline.
Fractures/bone destruction.

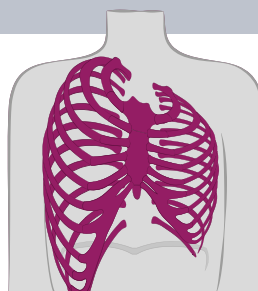
- 2 Are any abnormal opacities present?



If **YES**, then describe.
Give number and location.
Focal/diffuse.

POSITION

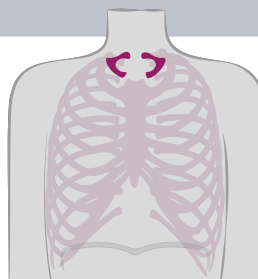
- 3 Is the position of the bony thorax (ribs, spine, clavicles, sternum, scapulae) altered?



If **YES**, then describe.
Right/left.
Anterior/posterior.
Elevated/depressed.

OTHER

- 4 Are there any accessory ribs?



If **YES**, then describe.
Cervical/lumbar
Give number and position.

7. CHEST WALL

SOFT TISSUES

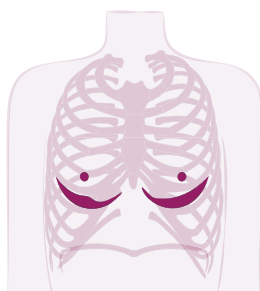
GRAYSCALE

5 Is the grayscale of the soft tissues altered?



If **YES**, then describe.
Too white/too black.

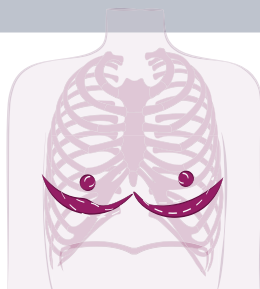
6 Are breast, pectoral folds and/or nipple shadows present?



If **YES**, then describe.
Right/left/bilateral.
If not sure, repeat CXR with nipple markers.

SIZE

7 Is the size of the breasts altered?

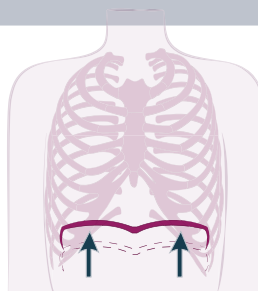


If **YES**, then describe.
Right/left/bilateral
Increased/decreased.

DIAPHRAGMS

POSITION

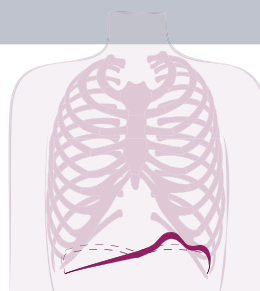
8 Is the position of the diaphragm(s) altered?



If **YES**, then describe.
Right/left/bilateral.
Elevated/depressed.

SHAPE

9 Is the shape of the diaphragm(s) altered?

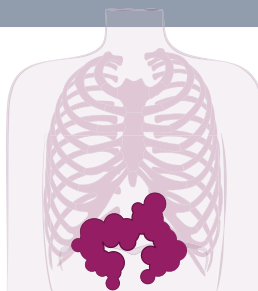


If **YES**, then describe.
Right/left/bilateral.
Describe shape.

7. CHEST WALL

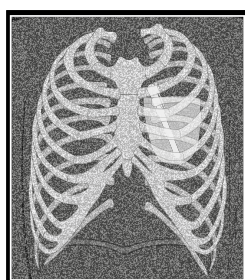
OTHER

- 10 Is there a presence of bowel loops or stomach in the thoracic cavity?



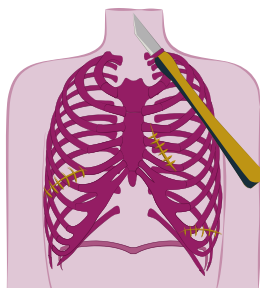
If **YES**, then describe.
Right/left.
Anterior/posterior.

- 11 Are there any external objects that are not part of the normal chest wall?



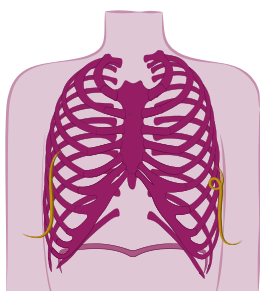
If **YES**, then describe.
ECG leads/buttons and clips on clothing/
hair bands and clips/jewellery/coins and
currency in pockets.

- 12 Is there any evidence of previous surgery to the chest wall or diaphragms?



If **YES**, then describe.
Type of surgery and location.
Compare to previous CXR.

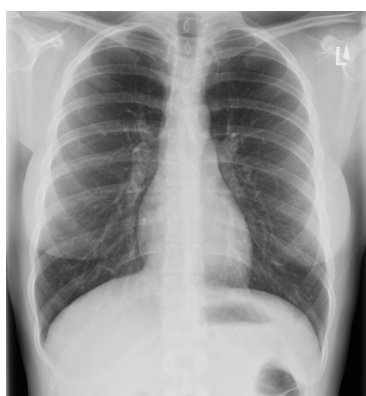
- 13 Are there any lines or tubes in the chest wall?



If **YES**, then describe.
Give location of each relative to the carina,
SVC and/or diaphragms.



LATERAL



PA

These normal images are provided for your use as reference images so you can familiarize yourself with what the normal looks like.