Since so much of the lung and mediastinum are hidden on the frontal view by the shadows of the heart, diaphragm and bony structures, it is not surprising that lesions obscured in this projection are often readily visible on the lateral film.

- Appropriate diagnosis and patient management require accurate chest radiograph interpretation
- The lateral view is helpful in localizing findings
- The lateral chest radiograph can identify abnormalities in spaces that are under-evaluated by the frontal projection
The aorta is candy cane-shaped and tapers as it courses inferiorly.

The great vessels arise from the aortic arch and are often obscured by the axillary folds.

The inferior vena cava joins the right atrium and is usually concave.

On the lateral radiograph the anterior heart border is the right ventricle and the posterior border is the left atrium.

**Lateral Chest Radiograph: Anatomy**

**Pulmonary vascularity**

- **Pulmonary outflow tract (POF)**
  - Arises from the right ventricle
  - Anterior-superior part of cardiac shadow

- **Main pulmonary artery (MPA)**
  - Continues from the outflow tract

- **Left main pulmonary artery (LPA)**
  - Continuous with the main PA
  - Arches over the L main bronchus

- **Right hilar vascular opacity (RVHO)**
  - Superimposition of the right PA, proximal lobar branches and right superior pulmonary vein

**Tracheobronchial tree**

- **Trachea**
- **Carina**
- **Right & left mainstem bronchi**
- **RUL bronchial orifice**
- **Bronchus intermedius**
- **Left main/LUL bronchial continuum**
The trachea divides into mainstem bronchi at the carina.
RUL bronchial orifice is right below carina and just superior to L main/LLL bronchial continuum; seen only 50% of the time. (Not seen here.)
L main/LLL bronchial continuum is round lucency caused by the long course of the left airways within the mediastinum. Bifurcated by the posterior wall of the bronchus intermedius.

**Lateral Chest Radiograph: Anatomy**

### Clear and Other Spaces
- Retrosternal clear space
- Retrotracheal clear space
- Retrocardiac clear space
- Aorticopulmonary window
- Infrahilar window

### Retrosternal space
- Bounded by sternum, ascending aorta, heart
- Contains
  - Fat
  - Lymph nodes
  - Thymus
- Pathologies
  - Lymphoma
  - Thymic masses
  - Germ cell tumors
  - Hematoma

### Retrotracheal space
- Bounded by trachea, spine, transverse aorta
- Contains
  - Fat
  - Lymph nodes
  - Esophagus
- Pathologies
  - Vascular anomalies
  - Thyroid enlargement
  - Esophageal disease
  - Tumor
  - Infection
  - Hematoma

### Retrocardiac space
- Bounded by heart, diaphragm, spine
- Contains
  - Fat
  - Lymph nodes
  - Esophagus
  - Lung
- Pathologies
  - Esophageal disease
  - Hiatal hernia
  - Pneumothorax
  - Pleural effusion
  - Left ventricular dilatation
**Conclusion**

- The lateral chest radiograph is helpful to localize findings seen on the frontal chest radiograph.
- It often better demonstrates findings in the retrosternal, retrocardiac and paravertebral areas and in the posterior recesses.

**References**

- Proto AV et al. The Left Lateral Radiograph of the Chest, part I. Medical Radiography and Photography 1979; 55 (2).
- Proto AV et al. The Left Lateral Radiograph of the Chest, part II. Medical Radiography and Photography 1980; 56 (2).

Thank you for your kind attention.