Thoracic Radiograph: Lateral View

A routine thoracic exam consists of a lateral and ventrodorsal view. When performing thoracic radiographs, a quality control check system is performed. The guidelines for this check are listed here for review. If your answer is yes to all of questions below, have your doctor review the images and then send them to AIS for evaluation. If you answer is no, review the material to help you obtain a diagnostic quality radiograph.

### 1. Check the anatomical boundaries

<table>
<thead>
<tr>
<th>Lateral</th>
<th>Anatomy Boundaries Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Diagram of thoracic anatomy" /></td>
<td>The area cranial to the thoracic inlet (the manubrium) to half way between the xiphoid process and the last rib to include the caudal tips of the lungs.</td>
</tr>
<tr>
<td></td>
<td>The crosshairs of the beam should be centered over the heart just behind the scapula and 1/3 of the way up from the sternum.</td>
</tr>
</tbody>
</table>

### 2. Is the patient straight? Is the positioning appropriate?

**Checklist**
- Patient right side (affected side) down
- Extend forelimbs and hindlimbs out of area of collimation
- Head in neutral position
- Positioning devices can be used
- Collimate to landmarks
- Verify positioning
- Capture image upon inspiration
3.  **Is the technique appropriate?** Is the background black? Can you see the needed anatomy including soft tissues?

<table>
<thead>
<tr>
<th>Lateral</th>
<th>Anatomy Needed</th>
</tr>
</thead>
</table>
| ![Lateral Image](image) | - the cardiac silhouette (heart)  
- pulmonary vessels  
- trachea  
- lungs  
- diaphragm |

- There should be superimposition of the ribs on this view

4.  **Is there a positioning marker present?** Is it on the correct side of the patient, not obscuring anatomy and legible? Is the patient ID information correct on the image or file?

5.  **Do you have all of the necessary views?** Lateral and ventrodorsal

- Right lateral, left lateral, VD for a metastasis check?  
- Lateral, DV for a heartworm screen?

### Quick Tips

1.  Take lateral image first to increase chance of patient compliance.  
2.  If the patient is sedated/anesthetized, note type of sedation on the radiology form.  
3.  Use of patient positioning devices is recommended to keep patient in the proper position. Some examples include foam wedges, sandbags and ties.  
4.  Remove collar and/or harness.  
5.  To verify positioning of the crosshairs, on the LAT view you can pull the “up limb” back 90 degrees and place the center of the collimator at the point of the elbow. This should allow the heart to be in the center of the film.  
6.  The thorax is radiographically smaller than it appears visually — utilize your landmarks.  
7.  If the patient is large, take two overlapping images to ensure all anatomy is captured.  
8.  Capture the image upon inspiration.  
9.  Wear your personal protective equipment appropriately and distance yourself from the primary beam.  
10.  Once reviewed, submit the study to AIS immediately to expedite interpretation and communication of results.  
11.  Appreciate your patient.
Thoracic Radiograph: Ventrodorsal View

When performing thoracic radiographs, a quality control check system is performed. The guidelines for this check are listed here for review. If your answer is yes to all of questions below, have your doctor review the images and then send them to AIS for evaluation. If you answer is no, review the material to help you obtain a diagnostic quality radiograph.

1. Check the anatomical boundaries

<table>
<thead>
<tr>
<th>Ventrodorsal</th>
<th>Anatomy Boundaries Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>The area cranial to the thoracic inlet (the manubrium) to half way between the xiphoid process and the last rib to include the caudal tips of the lungs. The thoracic inlet, cranial and caudal tips of the lung lobes, entire diaphragm, spinous processes should be included.</td>
<td></td>
</tr>
</tbody>
</table>

2. Is the patient straight? Is the positioning appropriate?

Checklist
- Patient with back on the table
- Extend forelimbs and hindlimbs out of area of collimation
- Spine and head should be in-line
- Spine and sternum must be in-line
- Positioning devices can be used
- Collimate to landmarks
- Verify positioning
- Capture image upon inspiration
3. Is the technique appropriate? Is the background black? Can you see the needed anatomy including soft tissues?

<table>
<thead>
<tr>
<th>Ventrodorsal</th>
<th>Anatomy Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• the cardiac silhouette (heart)</td>
</tr>
<tr>
<td></td>
<td>• pulmonary vessels</td>
</tr>
<tr>
<td></td>
<td>• trachea</td>
</tr>
<tr>
<td></td>
<td>• lungs</td>
</tr>
<tr>
<td></td>
<td>• diaphragm</td>
</tr>
</tbody>
</table>

• There should be symmetrical spinous processes
• The ribs should be symmetrical

4. Is there a positioning marker present? Is it on the correct side of the patient, not obscuring anatomy and legible? Is the patient ID information correct on the image or file?

5. Do you have all of the necessary views? Lateral and ventrodorsal

• Right lateral, left lateral, VD for a metastasis check?
• Lateral, DV for a heartworm screen?

Quick Tips

1. Take lateral image first to increase chance of patient compliance.
2. If the patient is sedated/anesthetized, note type of sedation on the radiology form.
3. Use of patient positioning devices is recommended to keep patient in the proper position. Some examples include v-trough, sandbags and ties.
4. Remove collar and/or harness.
5. The thorax is radiographically smaller than it appears visually – utilize your landmarks.
6. If the patient is large, take two overlapping images to ensure all anatomy is captured.
7. Capture the image upon inspiration.
8. Wear your personal protective equipment appropriately and distance yourself from the primary beam.
9. Once reviewed, submit the study to AIS immediately to expedite interpretation and communication of results.
10. Appreciate your patient.
Thoracic Radiograph: Dorsoventral View

When performing thoracic radiographs, a quality control check system is performed. The guidelines for this check are listed here for review. If your answer is yes to all of questions below, have your doctor review the images and then send them to AIS for evaluation. If you answer is no, review the material to help you obtain a diagnostic quality radiograph.

1. Check the anatomical boundaries

<table>
<thead>
<tr>
<th>Dorsoventral</th>
<th>Anatomy Boundaries Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Diagram]</td>
<td>The area cranial to the thoracic inlet (the manubrium) to half way between the xiphoid process and the last rib to include the caudal tips of the lungs.</td>
</tr>
<tr>
<td>![Diagram]</td>
<td>The thoracic inlet, cranial and caudal tips of the lung lobes, entire diaphragm, spinous processes should be included.</td>
</tr>
</tbody>
</table>

2. Is the patient straight? Is the positioning appropriate?

**Checklist**
- Patient with sternum on the table
- Extend forelimbs and hindlimbs to lie naturally on either side of patient
- Spine and head must be in-line
- Positioning devices can be used
- Collimate to landmarks
- Verify positioning
- Capture image upon inspiration
3. Is the technique appropriate? Is the background black? Can you see the needed anatomy including soft tissues?

<table>
<thead>
<tr>
<th>Dorsoventral</th>
<th>Anatomy Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• the cardiac silhouette (heart)</td>
</tr>
<tr>
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<tr>
<td></td>
<td>• lungs</td>
</tr>
<tr>
<td></td>
<td>• diaphragm</td>
</tr>
</tbody>
</table>

- There should be symmetrical spinous processes
- The ribs should be symmetrical

4. Is there a positioning marker present? Is it on the correct side of the patient, not obscuring anatomy and legible? Is the patient ID information correct on the image or file?

5. Do you have all of the necessary views? Lateral and ventrodorsal

- Right lateral, left lateral, VD for a metastasis check?
- Lateral, DV for a heartworm screen?

Quick Tips

1. Patients are often in respiratory distress when this image is requested. Pay close attention to the stress level and physical state of the patient when obtaining this image.
2. If the patient is sedated/anesthetized, note type of sedation on the radiology form.
3. Use of patient positioning devices is recommended to keep patient in the proper position. Some examples include foam wedges, sandbags and ties.
4. Remove collar and/or harness.
5. The thorax is radiographically smaller than it appears visually – utilize your landmarks.
6. If the patient is large, take two overlapping images to ensure all anatomy is captured.
7. Capture the image upon inspiration.
8. Wear your personal protective equipment appropriately and distance yourself from the primary beam.
9. Once reviewed, submit the study to AIS immediately to expedite interpretation and communication of results.
10. Appreciate your patient.