Elbow Radiographs: Lateral View

A routine elbow exam consists of a lateral, flexed lateral and craniocaudal view. When performing elbow 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" alt="Lateral Anatomy Boundaries Needed" /></td>
<td>The boundaries include the medial epicondyle with the x-ray beam centered on the joint space/medial epicondyle. The ¼ distal humerus and the ¼ proximal antebrachium or forearm must be included.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Checklist</th>
<th><img src="image" alt="Is the patient straight? Is the positioning appropriate?" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Patient right side (affected side) down</td>
<td></td>
</tr>
<tr>
<td>✓ Limb’s long axis is parallel to the table</td>
<td></td>
</tr>
<tr>
<td>✓ Pull top limb out cranially and affected limb in neutral position</td>
<td></td>
</tr>
<tr>
<td>✓ Positioning devices can be used</td>
<td></td>
</tr>
<tr>
<td>✓ Collimate to landmarks</td>
<td></td>
</tr>
<tr>
<td>✓ Verify positioning</td>
<td></td>
</tr>
</tbody>
</table>
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 X-ray](image) | • the humerus  
• radius  
• ulna  
• olecranon process  
• humeral condyle including the medial and lateral epicondyle  
• There should be superimposition of humeral epicondyles |

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, Flexed Lateral and Craniocaudal

Quick Tips

1. Gently flex and extend while palpating the limb to ensure you identify the joint space for proper positioning.
2. Plates or cassettes can be “split” so that a comparative of the right and left elbow or multiple views of the same elbow can be obtained. If this technique is used, the proximal and distal orientation of the limb should be the same for both views.
3. If the patient is sedated/anesthetized, note type of sedation on the radiology form
4. Be sure to decrease the collimator size to only include ¼ distal humerus and ¼ of the proximal antebrachium.
5. If there is an external fixator in place or other lateral abnormality, you may need to raise the entire patient (or at least the front portion of the patient) in order to keep the long axis of the limb parallel to the table. Do not rotate the patient but rather keep the patient in a lateral position and use positioning aides to achieve this.
6. Use of patient positioning aids is recommended to keep patient in the proper position. Some examples include foam wedges, sandbags and ties.
7. A wooden spoon can be used to help move excess skin on the chest/thorax out of the collimated view.
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.
Elbow Radiographs: Flexed Lateral View

When performing elbow radiographs, a quality control check system is performed. The guidelines for this check are listed 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>Flexed Lateral</th>
<th>Anatomy Boundaries Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>The boundaries include the medial epicondyle with the x-ray beam centered on the joint space/medial epicondyle. The ¼ distal humerus and the ¼ proximal antebrachium or forearm must be included.</td>
</tr>
</tbody>
</table>

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

**Checklist**

- Patient right side (affected side) down
- Limb’s long axis is parallel to the table
- Pull top limb out of view cranially
- Pull forearm of down limb dorsally to maximally flex the elbow
- Maintain flexion on elbow; rotate the limb; push elbow ventrally
- Positioning devices can be used
- Collimate to landmarks
- Verify positioning

![Image](image2.png)
3. **Is the technique appropriate? Is the background black? Can you see the needed anatomy including soft tissues?**

<table>
<thead>
<tr>
<th>Flexed Lateral</th>
<th>Anatomy Needed</th>
</tr>
</thead>
</table>
| ![Bone Image](image) | - humerus  
- radius  
- ulna  
- olecranon process  
- humeral condyle including the medial and lateral epicondyle  
There should be superimposition of humeral epicondyles |

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, Flexed Lateral and Craniocaudal**

**Quick Tips**

1. Gently flex and extend while palpating the limb to ensure you identify the joint space for proper positioning.
2. Plates or cassettes can be “split” so that a comparative of the right and left elbow or multiple views of the same elbow can be obtained. If this technique is used, the proximal and distal orientation of the limb should be the same for both views.
3. If the patient is sedated/anesthetized, note type of sedation on the radiology form.
4. Be sure to decrease the collimator size to only include ¼ distal humerus and ¼ of the proximal antebrachium.
5. If there is an external fixator in place or other lateral abnormality, you may need to raise the entire patient (or at least the front portion of the patient) in order to keep the long axis of the limb parallel to the table. Do not rotate the patient but rather keep the patient in a lateral position and use positioning aides to achieve this.
6. Use of patient positioning devices is recommended to keep patient in the proper position. Some examples include foam wedges, sandbags and ties.
7. A wooden spoon can be used to help move excess skin out of the collimated view.
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.
Elbow Radiograph: Craniocaudal (CrCd) View

When performing elbow radiographs, a quality control check system is performed. The guidelines for this check are listed 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>Craniocaudal</th>
<th>Anatomy Boundaries Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Elbow Radiograph" /></td>
<td>The boundaries include the medial epicondyle with the x-ray beam centered on the joint space/medial epicondyle. The ¼ distal humerus and the ¼ proximal antebrachium or forearm must be included.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Checklist</th>
<th><img src="image" alt="Elbow Radiograph" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Limb’s long axis is parallel to the table</td>
<td>✓ Limb’s long axis is parallel to the table</td>
</tr>
<tr>
<td>✓ Traction on limb cranially</td>
<td>✓ Traction on limb cranially</td>
</tr>
<tr>
<td>✓ Angle x-ray beam 5 to 10 degrees</td>
<td>✓ Angle x-ray beam 5 to 10 degrees</td>
</tr>
<tr>
<td>✓ Roll body towards the limb being examined</td>
<td>✓ Roll body towards the limb being examined</td>
</tr>
<tr>
<td>✓ Apply external rotation to carpus to roll the elbow under the patient’s body</td>
<td>✓ Apply external rotation to carpus to roll the elbow under the patient’s body</td>
</tr>
<tr>
<td>✓ Position head away from limb being examined</td>
<td>✓ Position head away from limb being examined</td>
</tr>
<tr>
<td>✓ Positioning devices can be used</td>
<td>✓ Positioning devices can be used</td>
</tr>
<tr>
<td>✓ Collimate to landmarks</td>
<td>✓ Collimate to landmarks</td>
</tr>
<tr>
<td>✓ Verify positioning</td>
<td>✓ Verify positioning</td>
</tr>
</tbody>
</table>
3. **Is the technique appropriate? Is the background black? Can you see the needed anatomy including soft tissues?**

<table>
<thead>
<tr>
<th>Craniocaudal</th>
<th>Anatomy Needed</th>
</tr>
</thead>
</table>
| ![Image](image.png) | • the humerus  
• radius  
• ulna  
• olecranon process  
• humeral condyle including the medial and lateral epicondyle |

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, Flexed Lateral and Craniocaudal**

### Quick Tips

1. Plates or cassettes can be “split” so that a comparative of the right and left elbow or multiple views of the same elbow can be obtained. If this technique is used, the proximal and distal orientation of the limb should be the same for both views.
2. If the patient is sedated/anesthetized, note type of sedation on the radiology form
3. Be sure to decrease the collimator size to only include ¼ distal humerus and ¼ of the proximal antebrachium.
4. If there is an external fixator in place or other lateral abnormality, you may need to raise the entire patient (or at least the front portion of the patient) in order to keep the long axis of the limb parallel to the table. Do not rotate the patient but rather keep the patient in a lateral position and use positioning aides to achieve this.
5. Use of patient positioning devices is recommended to keep patient in the proper position. Some examples include foam wedges, sandbags and ties.
6. A wooden spoon can be used to help move excess skin out of the collimated view.
7. Wear your personal protective equipment appropriately and distance yourself from the primary beam.
8. Once reviewed, submit the study to AIS immediately to expedite interpretation and communication of results.
9. Reset the tube head after taking the view.
10. Appreciate your patient.