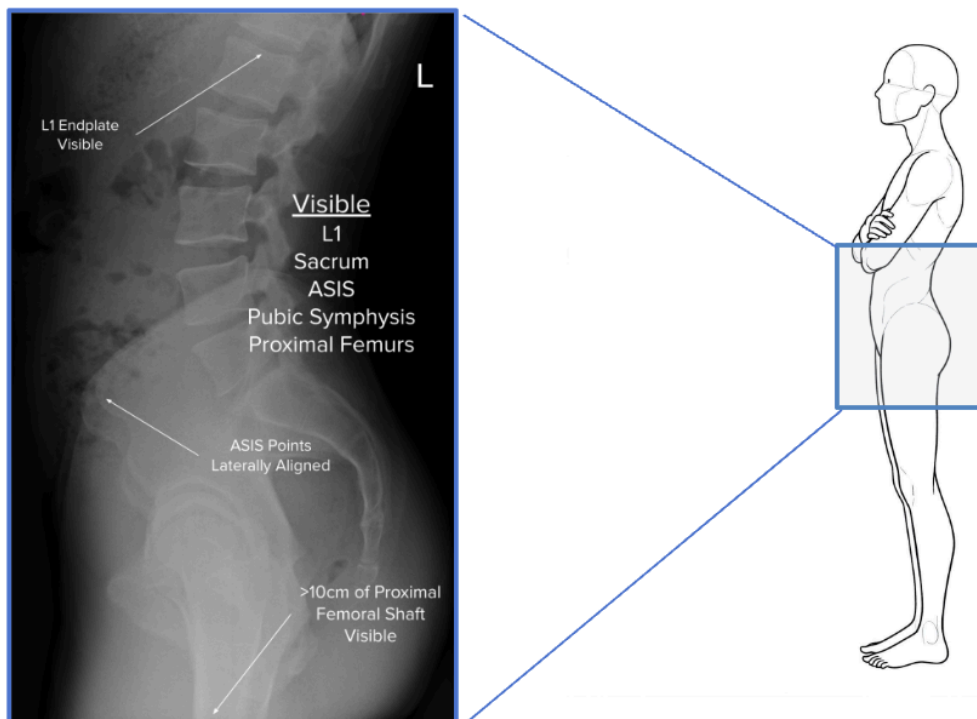


## Formus X-ray Protocol – Preoperative Standing Lateral

To facilitate optimal and correct use of Formus Navigator, please adhere to the following protocol. This protocol is applicable for pre-operative referrals. If the patient is unable to stand, do not take any X-rays.

An example radiograph with primary requirements is presented at right, with detailed specifications in the table below.

If you have any questions, please do not hesitate to contact [support@formuslabs.com](mailto:support@formuslabs.com) for assistance.



<b>X-ray Requirements</b>	<ul style="list-style-type: none"> <li>• <b>Landmarks that should be visible:</b> <ul style="list-style-type: none"> <li>○ Superior endplate of L1</li> <li>○ Superior endplate of the sacrum</li> <li>○ Left and right ASIS</li> <li>○ Pubic symphysis</li> <li>○ Hip joint centers</li> <li>○ Proximal femurs</li> </ul> </li> <li>• Annotate the lateral functional X-ray indicating the affected side</li> <li>• Do not flip or mirror the image if the affected side is incorrectly positioned (i.e. furthest from the plate)</li> </ul>
<b>Patient Position</b>	<ul style="list-style-type: none"> <li>• Standing, feet shoulder width apart, neutral positioning (0° toeing out), upper body relaxed</li> <li>• Arms folded across chest or away from the pelvis to not obstruct the view</li> <li>• No pelvic rotation (trans-ASIS line perpendicular to detector)</li> <li>• Affected (referred) side closest to the plate and furthest from the tube</li> </ul>
<b>Central Ray</b>	<ul style="list-style-type: none"> <li>• Midcoronal, at the level of the iliac crest</li> </ul>
<b>Collimation</b>	<ul style="list-style-type: none"> <li>• 14 x 17 (35 x 43 cm) L.W.</li> <li>• T12 to proximal 1/3 of femur (L1 must be visible)</li> </ul>
<b>Fixed focal distance (FFD)</b>	<ul style="list-style-type: none"> <li>• Must be set to capture all required landmarks within the image</li> <li>• Typically an FFD of 100cm is suitable, but this may be increased up to 180 cm, if required for taller patients</li> </ul>
<b>Respiration</b>	<ul style="list-style-type: none"> <li>• Expose at end of exhalation</li> </ul>
<b>File format</b>	<ul style="list-style-type: none"> <li>• DICOM or any common image formats, e.g. JPEG, PNG</li> </ul>

## Formus X-ray Protocol – Preoperative Flexed-Seated Lateral

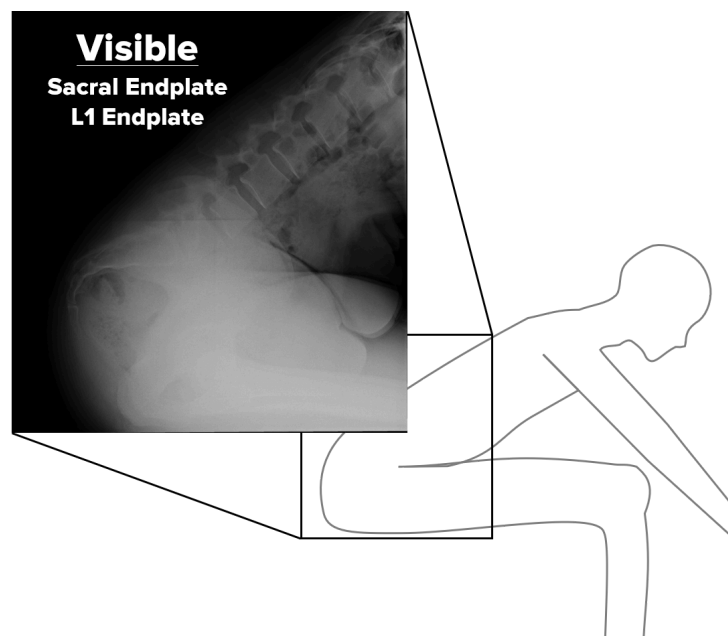
Annotated Example

### Radiograph Specifications

To facilitate optimal and correct use of Formus Hip, please adhere to the following protocol. This protocol is applicable for pre-operative referrals.

An example radiograph with primary requirements is presented at right, with detailed specifications in the table below.

If you have any questions, please do not hesitate to contact [support@formuslabs.com](mailto:support@formuslabs.com) for assistance.



<b>X-ray Requirements</b>	<ul style="list-style-type: none"> <li>• <b>Landmarks that should be visible:</b> <ul style="list-style-type: none"> <li>○ Superior endplate of the sacrum</li> <li>○ Superior end plate of L1</li> </ul> </li> <li>• Do not flip or mirror the image if the affected side is incorrectly positioned (i.e. furthest from the plate)</li> <li>• Focus should be on the lumbar spine and not the femurs</li> </ul>
<b>Patient Position</b>	<ul style="list-style-type: none"> <li>• Seated, feet and knees shoulder width apart.</li> <li>• Femurs parallel to floor (no rotation or abduction)</li> <li>• Arms reached out over knees (to avoid lumbar occlusion)</li> <li>• <i>Trunk flexed maximally forward</i> (limit of lumbar flexibility within patient comfort).</li> <li>• No pelvic rotation (trans-ASIS line perpendicular to detector)</li> <li>• Affected side towards the detector</li> </ul>
<b>Central Ray</b>	<ul style="list-style-type: none"> <li>• Sagittal midpoint of the L5 vertebra.</li> </ul>
<b>Collimation</b>	<ul style="list-style-type: none"> <li>• Suggestion: 14 x 17 (35 x 43 cm) C.W.</li> <li>• Sacral endplate and all lumbar vertebrae (L1-L5) must be fully visible.</li> <li>• <i>Note: Collimator must expose all lumbar vertebrae at their position in maximal flexion, regardless of alignment; if the above is not suitable, similar square or L.W. collimation is recommended.</i></li> </ul>
<b>Fixed focal distance (FFD)</b>	<ul style="list-style-type: none"> <li>• Must be set to capture all required landmarks within the image</li> </ul>
<b>Respiration</b>	<ul style="list-style-type: none"> <li>• Expose at end of exhalation</li> </ul>
<b>File format</b>	<ul style="list-style-type: none"> <li>• <i>DICOM or any common image formats, e.g. JPEG, PNG</i></li> </ul>