

Scoliosis PA Series

(Rm4 Equipment)

Set Up:

1. Select patient from worklist.
2. Click Examination.
3. DR Long Spine will be listed followed by PA AEC, Lateral AEC, AP AEC.
4. Select PA AEC.
5. Put L marker accordingly on the wall bucky – do not place on patient or scoliosis stand. Place marker about a ½ inch down from the top of the board to ensure it does not get clipped when stitching images are taken. (It may appear in the light when it is placed, but stitched images collimate to 17x14).
6. Make sure 180 cm grid (purple – labeled STITCHING GRID) is in wall stand.
7. Take arm bar out of wall stand *as this can create movement/stitching issues*.
8. Position tube to 102 SID.
9. Move scoliosis stand in place in front of wall bucky.
 - Align back 2 wheels into metal grooves on floor.
 - Lock front 2 wheel brakes.
 - Move stitching ruler into light field so that the numbers are towards the patient. (will be to the right of patient for PA/front of patient on lateral; no need to move between images).
 - Release foot stand using white latch to the left and bring foot stand to floor.
10. Patient should be changed with everything off but socks and underpants. They should keep their shoes on until they enter the room. ***Shoes should then be removed for images.***

Scoliosis Procedure and Positioning:

1. The patient should stand straight in a **PA position** on the platform with their anterior surface close to the barrier stand, weight distributed evenly on both feet. Midsagittal plane centered to the midline of the central ray and stand.
*PA is done over an AP due to a significantly lower dose to the breasts and thyroid (90% lower dose).
2. Place the gonadal shielding around the patient. Choose smallest circle shield. Top of circle should be at ASIS for females. Top of circle should be centered at pubic symphysis for males. (Place all appropriate shielding before positioning patient and aligning tube and measurements.)
3. Have patient hold onto handle bars on either side of them.
4. Start with collimation at 31 ½ (**or less**) to ensure only 2 images are taken.
5. Field of view extends from patient's chin to a V space below ASIS. (Collimation must include c-spine, iliac crests in entirety and the entire acetabulum of both hips.) If patient is tall and collimation needs to be more than 31 ½, it is okay.
6. Instruct the patient that the tube will move during the exposure, they will be taking in a deep breath and holding it, holding as still as possible.
7. You may use the TEST button on the tube as a test run to ensure collimation looks appropriate, *but this step is not required*, but very effective.
8. At console, rotor so that the tube and board move into position.
9. Tell patient to take in a deep breath and hold it. Expose.
10. When taking the exposure keep depressing the switch as multiple exposures are being taken. Do not leave go until completed! In the bottom left of the screen you will see "Now generating image 1 of 3" etc. until all 2 or 3 stitched images are taken you will "Stitching run complete". You may now release the exposure button.
11. Computer will display a stitched image and each individual image.
12. You now need to verify everything stitched properly on the stitched image.
 - Using the hand/magnifying glass and the zoom in + button, zoom in to the lines where it is stitched to ensure the vertebrae are aligned and not blurry.
 - You may now hit reset or the zoom out button to go back to normal image.
 - If it stitched properly, proceed to step 13. If not, you must repeat exposure.
13. On the stitched image, you will see 2 sets of dashed lines, the stitching. These lines must be removed. To do so:

Press the stitching lines button



Then press single orange line button to remove lines



Press the stitching lines button again to save.



14. Check mark all images to confirm them. If you repeated images, reject them.
15. Hit Review and send individual images, as well as the stitched image to PACS.
16. Hit Complete to complete the study.

Scoliosis Evaluation Criteria:

- Thoracic and lumbar vertebrae to include acetabulum of both hips
- Both iliac crests in entirety
- Vertebral column aligned down the center of the image
- Correct identification marker

Additional Note:

- If you have orders for PA and Lateral Scoliosis, then perform the PA under PA Pasting and the Lateral under Left Lateral Pasting. Position the lateral by following the above steps for the PA exam.
- If a Physician orders a “Scoliosis Series” this is a PA view only. A lateral image is taken only if “Lateral/Lat” or “2 views” is written on the script.

Additional Projections:

Lateral:

Recommended with the patient erect to show spondylolisthesis or demonstrate exaggerated degrees of kyphosis or lordosis.

Ferguson Method:

AP/ PA- the foot on the convex side of the scoliosis curve is raised 3-4 inches (place a block under the foot to keep it elevated). This evaluates and identifies the primary curves from the compensatory curves.

Right and Left Bending Views:

Can be done AP/PA erect or AP recumbent.
Patient bends laterally as far as possible while using the pelvis as a fulcrum. One is done to the right and one to the left.