

# *Radiographic Positioning of the Full Spine*

## *Section Objectives*

At the conclusion of this lecture, the student doctor should;

1. be able to efficiently conduct a full spine series including the choice of cassette size, patient positioning and instructions, setting of technical factors, and placement of the filters/shields,
2. be conversant about the limitations of the full spine study.

## *Standard Full Spine Views*

Postural series

1. full spine A-P (FSAP)
2. full spine lateral (FSL)

Scoliosis series

1. FSAP, FSL
2. recumbent AP of curvature
3. recumbent forced lateral bending, R & L
4. PA left hand

## *FSAP: prepare the room*

- Cassette: black; 14" X 36"; LW
- Tube: 72" FFD, notube tilt
- Technique: 70 kVp, large focal spot
  - on Auto-technique you have FSAP #1 for normal-sized individuals with 76 kV and FSAP #2 for larger patients with 100 kVp
- Measure: 3 sites to measure
  1. through neck
  2. on sternum
  3. through full thickness of abdomen
- Use largest of 3 for autotech or SuperTech calculation

## *FSAP: prepare the patient*

- Position:
  - patient is fully gowned with no jewelry, hairpins, watches, etc and has shoes on
  - set the cassette so that the bottom of the cassette is below the ischial tuberosities
  - patient should bend forward at the waist and align the 2nd sacral tubercle to midline of film/cassette
  - mouth open wide with canthomeatal line parallel to beam angle
- Filters/Shields: Clear Pb system
  - paraspinals; the bottom should be 1" above iliac crests and separated to see to tips of transverse processes
  - AP/PA; from top of cross upward
  - thick build up; from lower edge of mandible down
  - gonad; Pb shield for male, Cu heart for female
- Filters/Shields: Nolan system
  - paraspinals; the bottom should be 1" above iliac crests. (Be careful with scoliotic patients)
  - Use chart to determine total pts of filtration required but always use 5 pt wedge from bottom of mandible down. Slightly stagger other filters to prevent harsh lines on radiograph.
  - gonad; Pb shield for male, Cu heart for female

- Coll: open to below eyes but be certain ischial tuberosities are in beam. If not, adjust tube height accordingly
- Marker: R or L

*FSAP: expose*

- deep breath in and hold
- zzzzaaaaappppp!

*FSAP: Evaluation Criteria*

- ischial tuberosities must be on film (if dens is not, perform APOM)
- pubic symphysis and midline gluteal cleft should superimpose (this means pt was not rotated) and be over midline lead reference line
- tip of dens should be fully visualized
- all vertebra should be demonstrated

*FSL: prepare the room*

- Cassette: black; 14" X 36"; LW
- Tube: 72" FFD, notube tilt
- Technique: 100 kVp, large focal spot
  - on Auto-technique under "Lumbar"
- Measure: 3 sites to measure
  1. through neck
  2. from axilla to axilla
  3. through widest part of hips
- Use largest of 3 for autotech or SuperTech calculation

*FSL: prepare the patient*

- Position:
  - patient is fully gowned with no jewelry, hairpins, watches, etc and has shoes on
  - usually L lateral but if pt has a major convexity, place it closest to the film
  - set the cassette to 2" above the top of the ear
  - midline of film/cassette should go through greater trochanter
  - have forearms resting on support in front of body
- Filters/Shields: Clear Pb system
  - paraspinals; first one blocking the eyes and breasts in front of patient and second one behind patient acting a support for other shields
  - lateral cervical AND thick build-up from acromion up
  - lateral thoracic from lowest part of axilla down
  - gonad; big Mickey (upside down) at approximately ASIS
- Filters/Shields: Nolan system
  - lateral cervical to top of shoulder
  - lateral thoracic put in same slot as lat. cerv. except up from bottom to meet lat. cerv.
  - lateral lumbar/lung even with lateral thoracic
  - gonad; lateral gonad even with ASIS (arc posterior)
- CR: at about T6
- Coll: about top of ear.
- Marker: L (usually)

*FSL: expose*

- deep breath in and hold
- zzzzaaaaapppp!

*FSL: Evaluation Criteria*

- dens and sacral base must be on film
- ASIS should be parallel to midline lead reference line (this means pt was not rotated)
- all vertebra should be demonstrated

*Suggested further reading;*

- Taylor, J *Full Spine Radiography: A Review* JMPT (1993) V16(7);460-474