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, no tube 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

**FSA P:** expose
• deep breath in and hold
• zzzzzaaaappppp!

**FSA P:** 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, no tube 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
- zzzzzaaaapppp!

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