



# SPINE METRICS

Digital Analysis

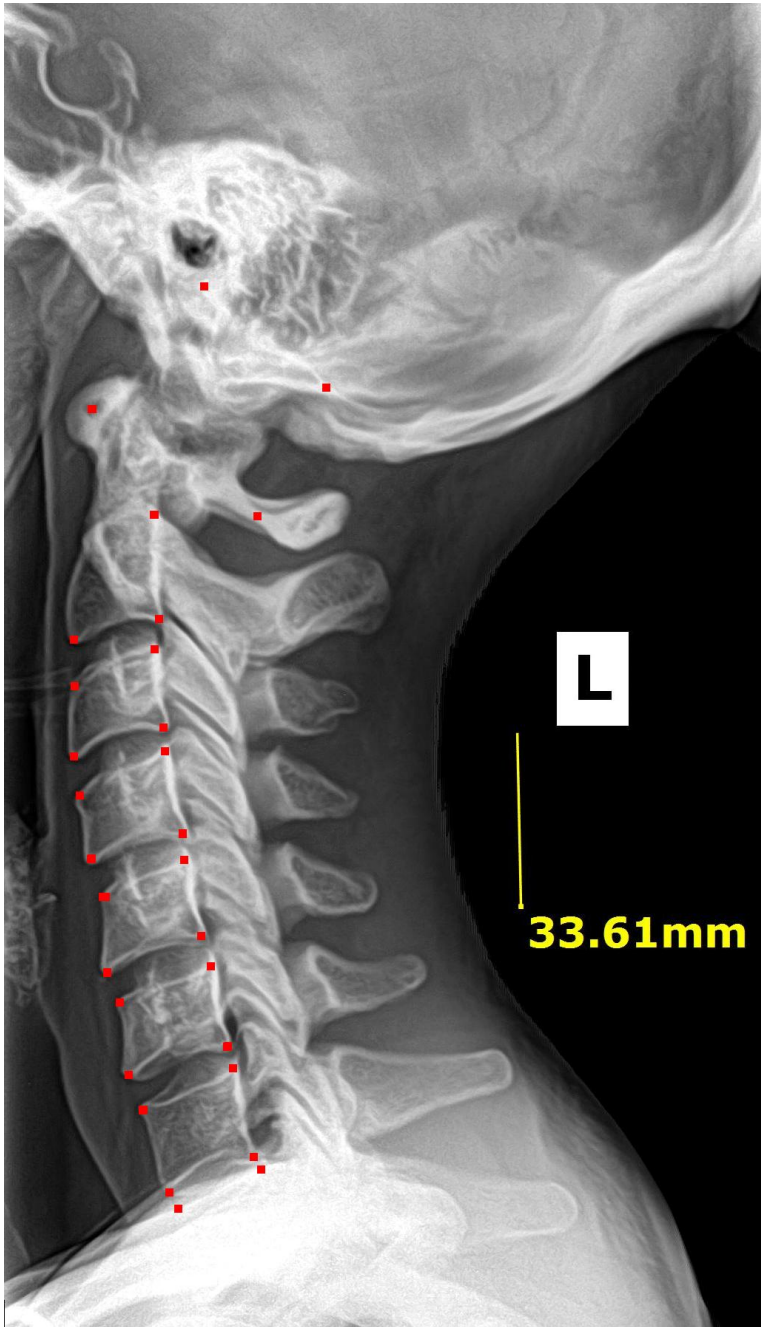
X-ray Requirements

# In General

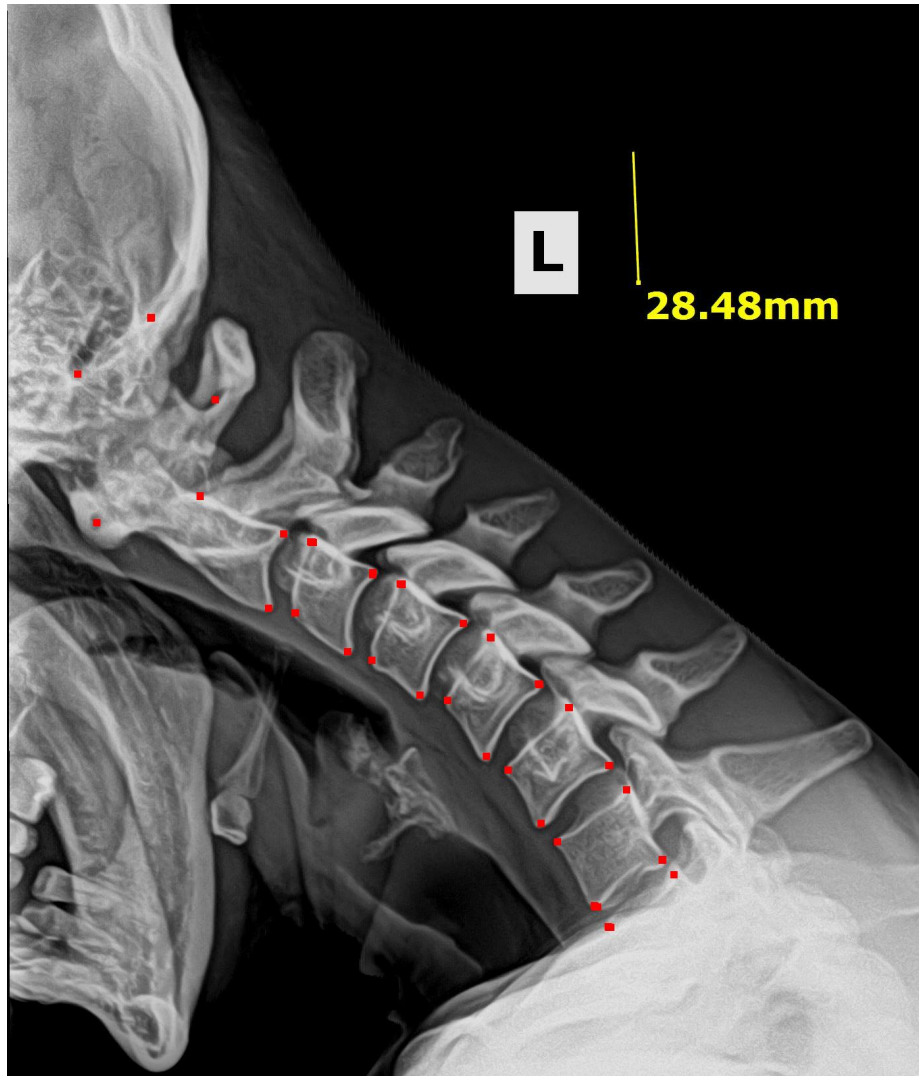
- Standing x-rays
- Tight collimation
- Mitchel marker
- Attach scale preferably in millimeters; with DR use tools; with pictures of film put millimeter ruler on film, then take picture.
- See following slides for specific view information. **Do not mark the films. I will do that.**
- **Impairment rating requires F,E of cervical or lumbar**
- Additional clinical analysis requires frontal and sagittal planes including C,T,L plus cervical F,E
- Lateral bending analysis of cervical and lumbar regions are available upon request

# Lateral Cervical Digitizing Points

- Neutral View
- Range: base of occiput to top of T1
- Four corners of vertebra
- Position:
  - Bring chin up so plane line of teeth in horizontal position



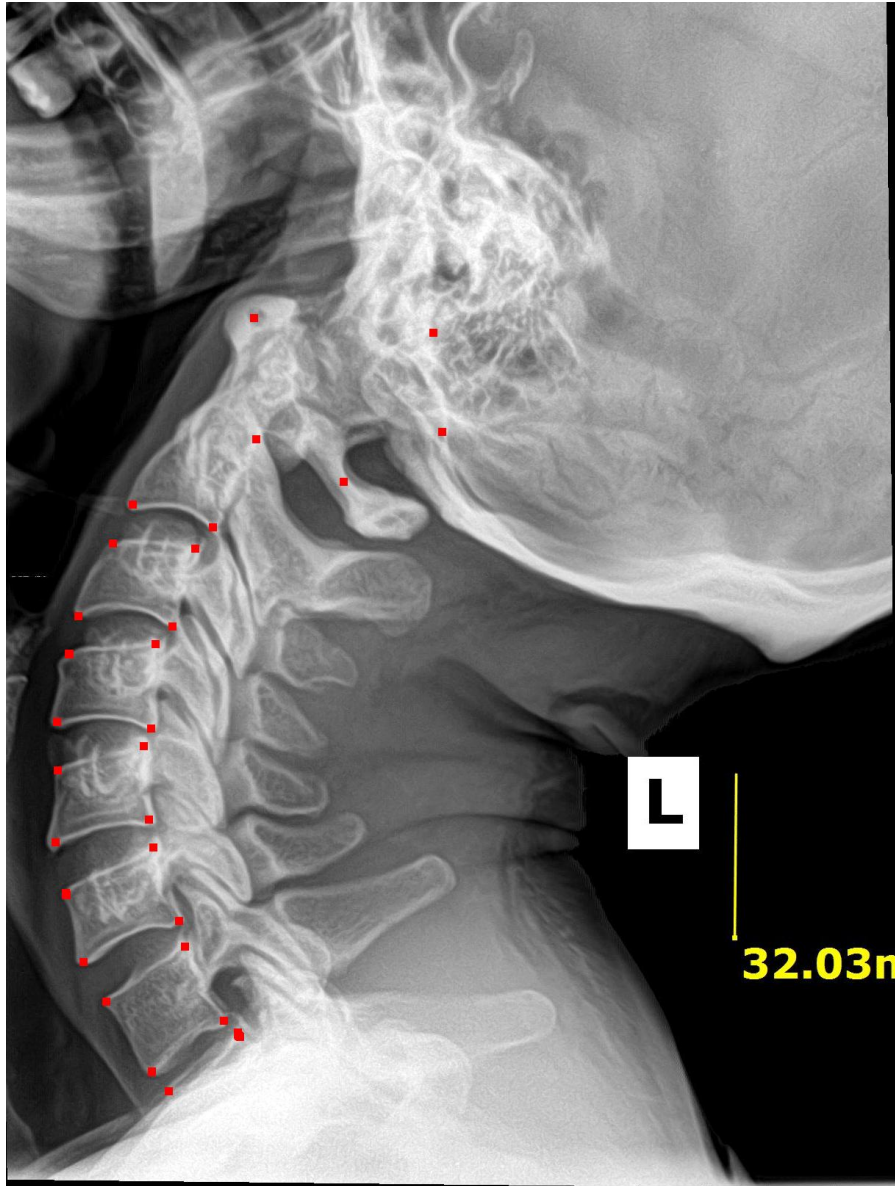
# Lateral Cervical Digitizing Points



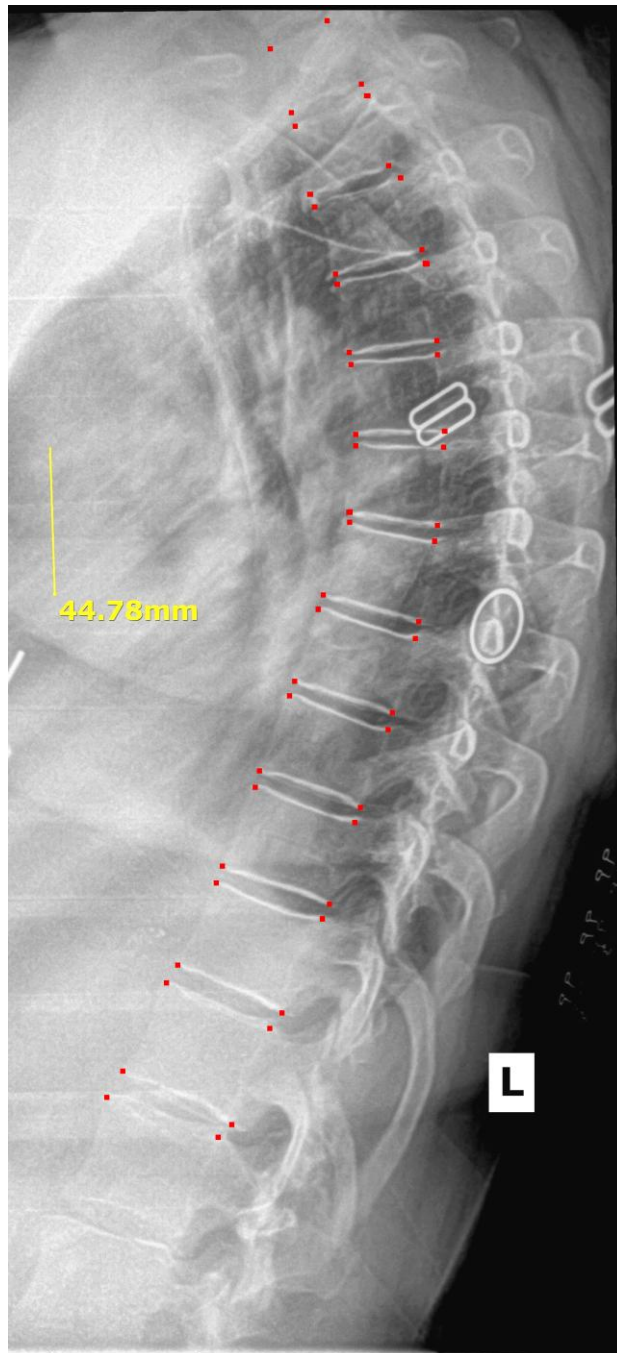
- Flexion View
- Range: base of occiput to top of T1
- Four corners of vertebra
- Position:
  - Take neck through flexion and extension three times
  - Tuck chin down first and then flex neck until shoulders begin to move

# Lateral Cervical Digitizing Points

- Extension View
- Range: base of occiput to top of T1
- Four corners of vertebra
- Position:
  - Take neck through flexion and extension three times
  - Bring chin up first and then extend head backwards until shoulder begin to move



# Lateral Thoracic Digitizing Points

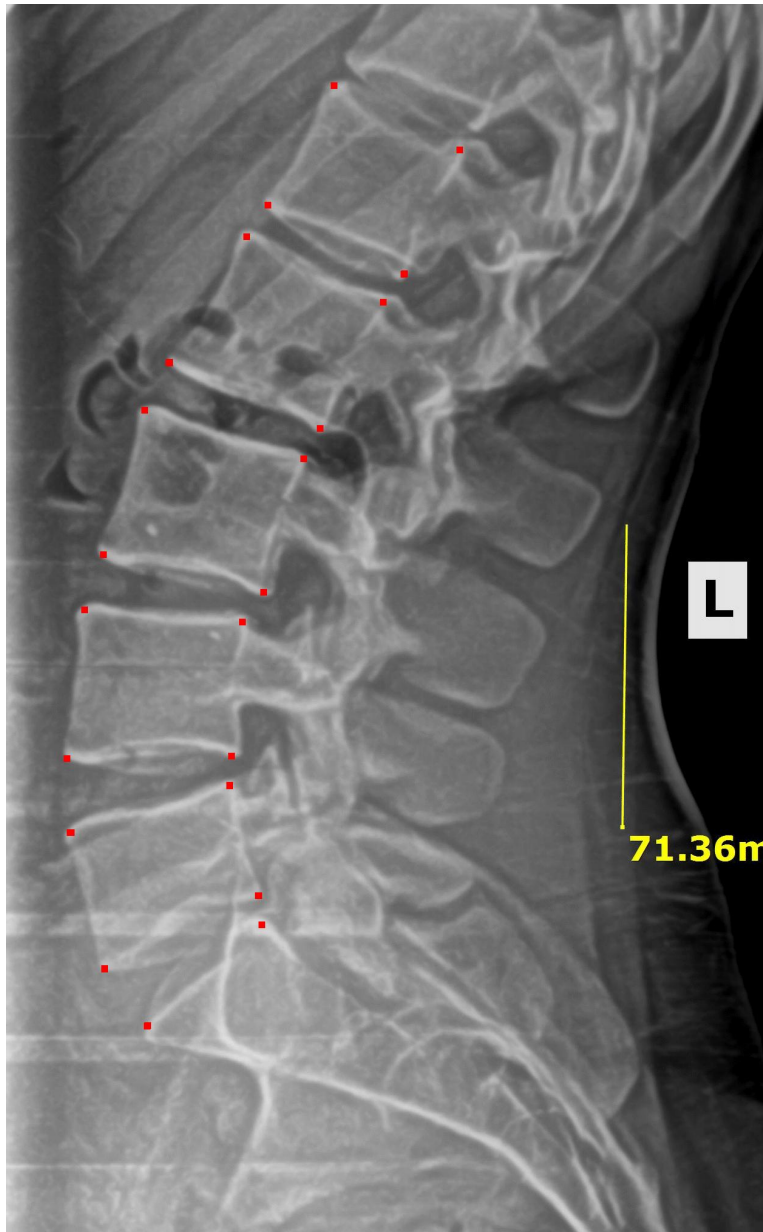


- Neutral View
- Range: T1 – L1
- Four corners of vertebra
- Position:
  - Patient standing with elbows brought together as close as possible
  - Make sure patient does not lean backwards



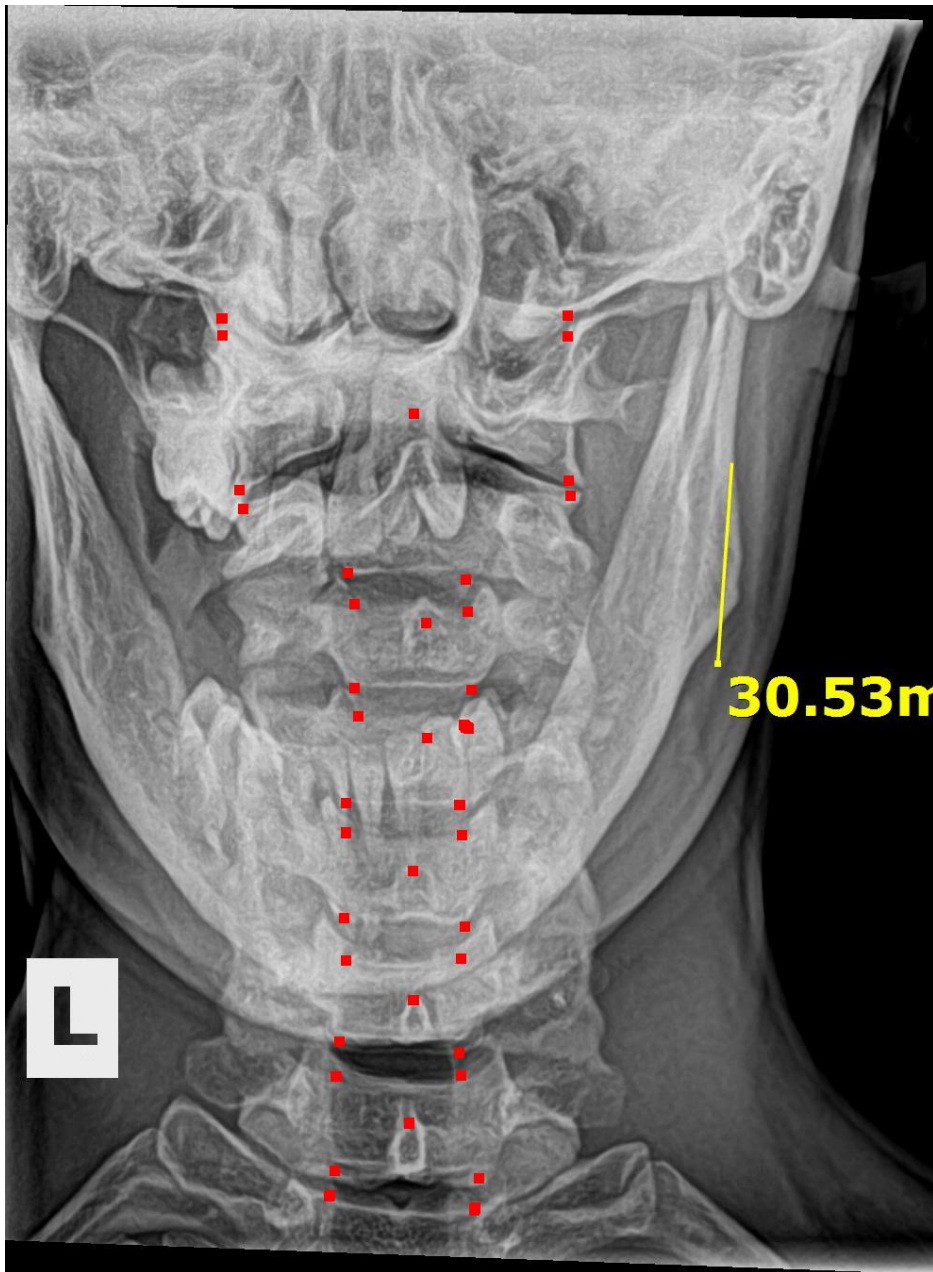
# Lateral Lumbar Digitizing Points

- Neutral View
- Range: L1 – S1
- Four corners of vertebra
- Position:
  - Patient standing with arms brought forward and elbows as close as possible
  - Make sure patient does not lean backwards
  - **Flexion view: have patient bend forward attempting to touch floor**



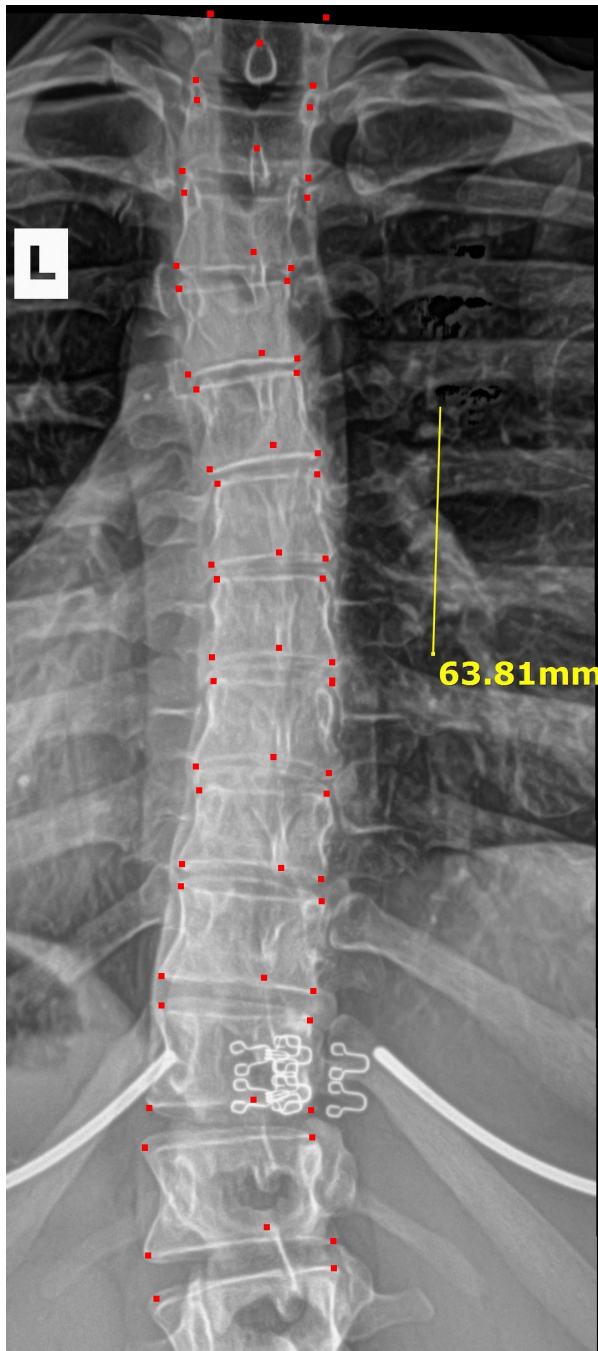
# A/P Cervical Digitizing Points

- Neutral View
- Range: Occiput – T1
- Four corners of vertebra and top of spinous
- Position: if tilting bucky
  - Tilt approximately 20 degrees down
  - Patient flexes neck forward approximately 20 degrees
  - Central beam up through bridge of nose and EAM
  - Open mouth

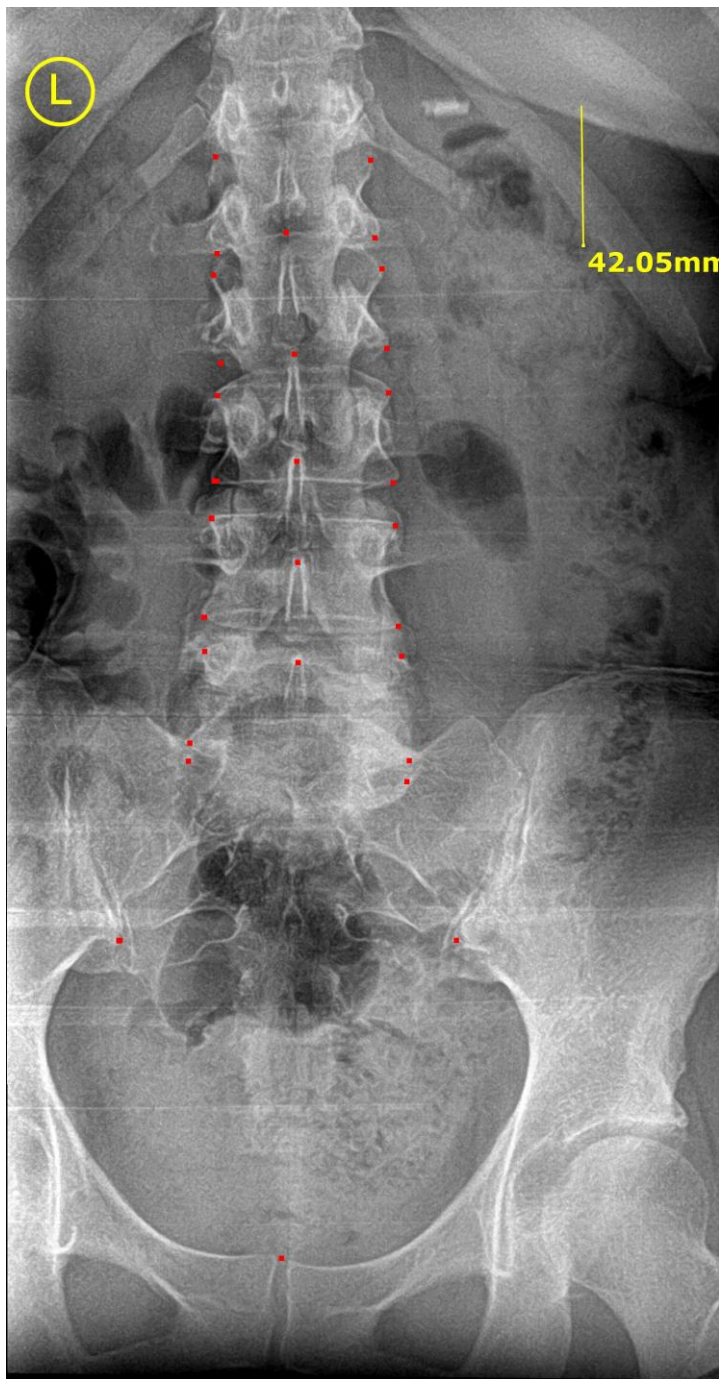




# A/P Thoracic Digitizing Points



- Neutral View
- Range: T1-L1
- Four corners of vertebra and top of spinous
- Position:
  - Central beam through T6
  - Collimate



# A/P Lumbar Digitizing Points

- Neutral View
- Range: L1-S1
  - Optional symphysis pubis
- Four corners of vertebra and top of spinous
- Position:
  - Central beam through L4
  - Collimate