

- 1  **Gonstead Radiological Analysis**  
Atlas
- 2  **Goals when analyzing the Atlas**
  1. Locate superiority/inferiority (lateral film)
  2. Locate Laterality (A-P film)
  3. Locate Rotation on the appropriate side
  4. Watch for pathologies or other items that will affect your adjustment
- 3  **Goal 1: Locate Superiority/Inferiority of the Anterior Tubercle**
- 4  **On the Lateral film...**
  - We'll need to construct three lines
    1. A-P Atlas Plane Line
    2. Odontoid Line
    3. Odontoid Perpendicular Line
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- 6  **OK, The lines are there, Now what?**
  - If the lines diverge (separate) **anteriorly**, the tubercle went superior
    - We'll list the atlas "AS"
  - If the lines diverge **posteriorly** then the tubercle went inferior
    - We'll list the atlas "AI"
- 7  **Goal 2: Locate the laterality of the Atlas**
  - We'll need to draw 2 lines for this one
    1. Transverse Atlas Plane Line
    2. Base Line on C2
- 8  **Interpreting these lines:**
  - The Theory here is that the atlas will move laterally and subluxate. It appears to subluxate on one side, and the capsule there swells, causing the lateral mass to rise.
- 9  **OK, what does that mean to me?**
  - The diverging lines will show you which side is lateral.
  - We list the atlas on the open wedge side.
  - Example: ASR or AIR
- 10  **Goal 3: Finding Rotation**
  - The theory: In order to list a Y-axis rotation without taking an x-ray along that axis, we have to understand the distortions that occur when the atlas rotates
- 11  **What distortions do occur?**
  - The lateral masses are somewhat bean-shaped, and we can take advantage of that fact.
- 12  **The anterior side**
  - As the atlas rotates, the side going anterior will turn its flatter side to the x-ray, making it appear wider on the film

- 13  **The Posterior side**
- The side going posterior will turn its end more to the x-ray and it will appear narrower on the film
- 14  **We want to list the side that is lateral**
- (the side we're going to be contacting.)
- 15  **Lucency**
- There is a lucent region on the lateral mass where the bone density is lower (see image). This will behave the same way the lateral masses did: wider is the anterior side, narrower is the posterior side
  - We want to list the side that is lateral (the side we're going to be contacting.)
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- 18  **Examples**
- ASR
  - ASL
  - ASRP
  - ASRA
  - A-RP
- 19  **Goal 4: Pathologies, etc.**
- Use the skills you will learn in your bone path classes to accomplish this.
  - As your experience grows, so will the things you can glean from the film.
  - Take good films and you'll get good readings
- 20  **Now let's do some drawings to lock this in...**