

Thoracic Spine

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1 Osteokinematics

1.1 Flexion

- Total: 20-45°¹
 - Upper T/S: 4-5°¹
 - Middle T/S: 6-8°¹
 - Lower T/S: 9-15°¹

1.2 Extension

- Total: 15-20°¹
- Segment: 1-2°¹
- *Compression @ center¹

Extension Limitations

1.3 SB (Lateral flexion)¹

- Segment: 3-4° per
- Total: 25-45°
 - Lower segment: 7-9°

SB Limitations

SB limited throughout d/t rib stacking¹

1.4 Rotation

- Total: 35-50°¹
- Segments:
 - Upper: 7°¹
 - Middle: 5°¹
 - Last 2 segments: 2-3°¹

Rotation Limitations

2 Arthrokinematics

3 T/S Pain

3.1 Referred pain

- Z-joints of the C/S can refer to the thoracic spine

3.2 Acute T/S Pain

- Fracture:
 - Old (>50) = Minor trauma (hx of osteoporosis or steroid use)
 - Young = Major trauma in younger pop
- Infection: Fever, night sweats, risk factors of inf (wound, etc)
- Tumor: Hx of malignant dx, age > 50 , no improvement w txt, unexplained weight loss, pain at multiple sites, rest, night pain

4 T/S Pathologies

- [TOS](#)
 - Spinal nerve root syndrome— radiculopathy
 - Osteoporosis: (10% of ppl 50 +)
 - Chest wall variations
 - Kyphotic variations
 - Osteoarthritis
 - Spinal stenosis
1. Dutton M. *Dutton's Orthopaedic Examination, Evaluation, and Intervention*. Fifth edition. McGraw Hill Education; 2020.