Thoracic Spine and Rib Cage Algorithms

1. Mid/Lower Thoracic Single Plane Active Mobility Exam
   - No
     - Pain with Respiration, Coughing, or Sneezing?
       - Yes: Go To Rib Cage Clinical Pathways
       - No: See next steps

2. Transverse Plane
   - Mobility Loss
     - Contralateral Pain End of Range
     - Ipsilateral Pain End of Range
       - Mid/Lower Thoracic Spine Segmental/Soft Tissue Mobility Exam

3. Sagittal Plane
   - Mobility Loss
     - Contralateral Pain End of Range
     - Ipsilateral Pain End of Range
       - Mid/Lower Thoracic Spine Segmental/Soft Tissue Mobility Exam

4. Coronal Plane
   - Mobility Loss
     - Contralateral Pain End of Range
     - Ipsilateral Pain End of Range
       - Mid/Lower Thoracic Spine Segmental/Soft Tissue Mobility Exam

5. Mid/Lower Thoracic Spine Segmental/Soft Tissue Mobility Exam
   - Ipsilateral Pain End of Range
     - Transverse Plane Flexion Dysfunction Pattern
     - Transverse Plane Extension Dysfunction Pattern
   - Contralateral Pain End of Range
     - Sagittal Plane Flexion Dysfunction Pattern
     - Sagittal Plane Extension Dysfunction Pattern
   - End of Range
     - Coronal Plane Flexion Dysfunction Pattern
     - Coronal Plane Extension Dysfunction Pattern

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Thoracic Spine Examination Algorithm

End of Range Pain
Contralateral Side

Positive Asymmetry in
Flexion on Painful Side

Soft Tissue Mobility
Restriction/Provocation
on Painful Side

Resistance Limited
Accessory Motions with
Symptom Provocation

Flexion
Mobilization
Pattern

Thoracic Spine Active Mobility Exam
(with over pressure if indicated)

Pain Limited Active Mobility

Transverse Process Symmetry Palpation

Structural Asymmetry

Soft Tissue Mobility/Provocation Exam

Pain Limited Soft Tissue Mobility

Mobility Examination of Thoracic Spine
Accessory Motions

Pain Limited Accessory Motions

Stabilization Or
Modalities Pattern

End of Range Pain
Ipsilateral side

Positive Asymmetry in
Extension on Painful Side

Soft Tissue Mobility
Restriction/Provocation
on Painful Side

Resistance Limited
Accessory Motions with
Symptom Provocation

Extension
Mobilization
Pattern
Suspect Underlying Stress Fracture?

Costovertebral Joint Pain

Costrochondral Junction Pain

Observe Rib Cage:
- Excursion with Inhalation/Exhalation

Palpation for Symmetry

Costovertebral Joint Mobilization Pattern

Anterior Rib Mobilization Pattern

Posterior Rib Mobilization Pattern

Consult With Referring Healthcare Practitioner
Rib Cage Clinical Pathways

Respiratory Pattern Recognition
- Pain with Inhalation
- Pain with Exhalation

Rib Positional Testing
- Anterior with Internal Rotation
- Anterior with External Rotation
- Posterior with Internal Rotation
- Posterior with External Rotation

Provocation Testing
- Costovertebral Joint
- Sternocostal Joint
- Intercostal Muscle

Inhalation Breathing Exercises
- Mobilization of Costovertebral, Sternocostal Joint, or STM Intercostal Muscles

Exhalation Breathing Exercises
- Posterior Rib Mobilization with STM to facilitate Internal or External Rib
- Anterior Rib Mobilization with STM to facilitate Internal or External Rib

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