

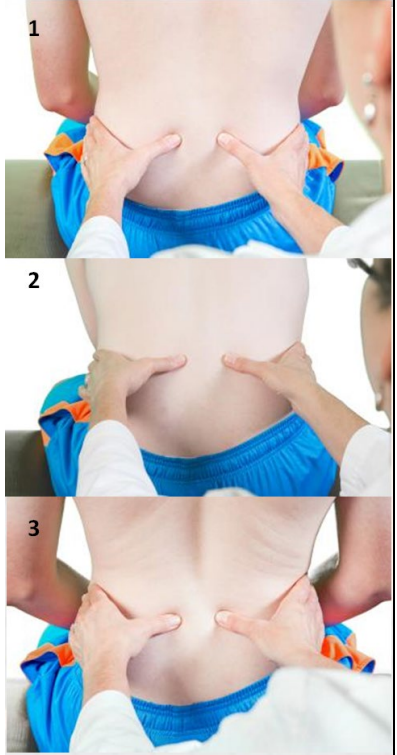
Thoracic and Lumbar Spine

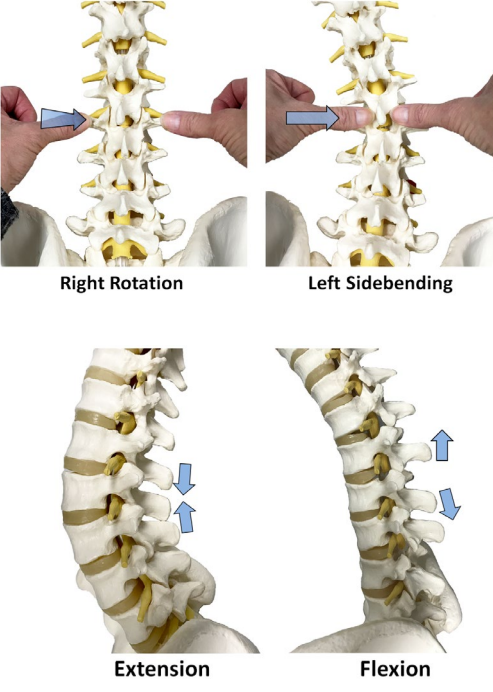
Thoracic Spine Rule of 3's: describes the relationship between the transverse processes and the spinous process of each thoracic vertebral segment

- T1-3: TP is level with the spinous process
- T4-6: TP is ½ step up from the spinous process
- T7-9: TP is 1 step up from the spinous process
- T10: TP is 1 step up, T11: TP is ½ step up, T12: TP is level
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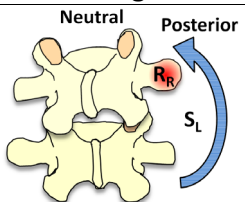
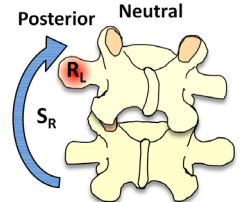
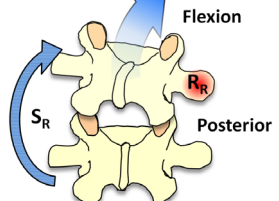
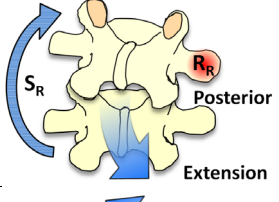
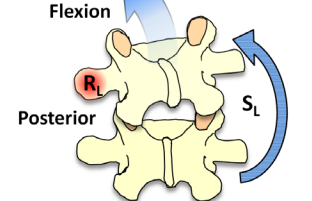
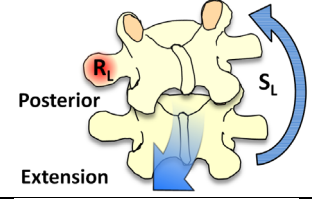
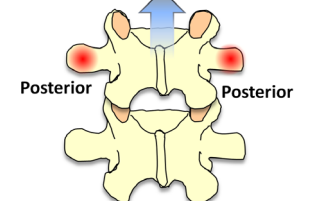
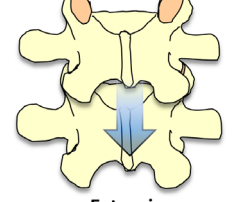
Lumbar Spine – Iliac crest is at the level of L4 in males and L5 in females

Diagnostic Methods: Thoracic spine and Lumbar spine

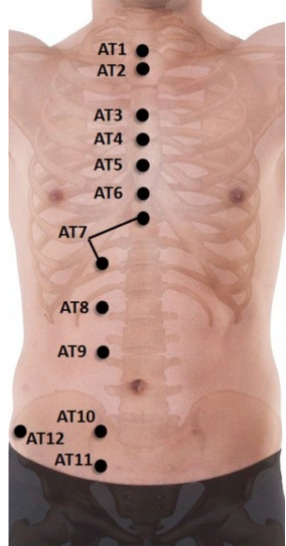
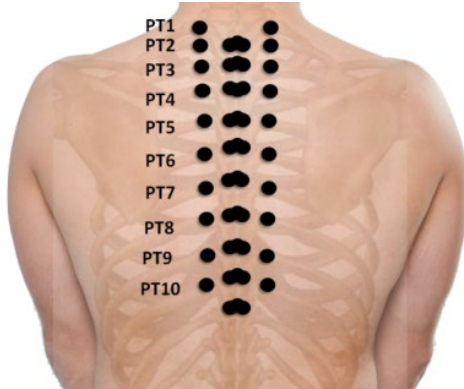
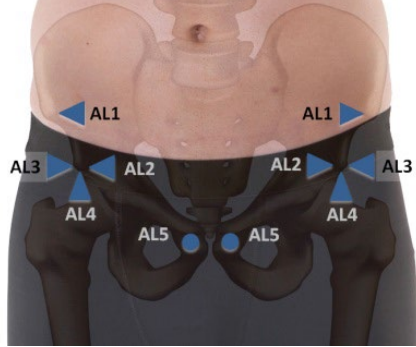
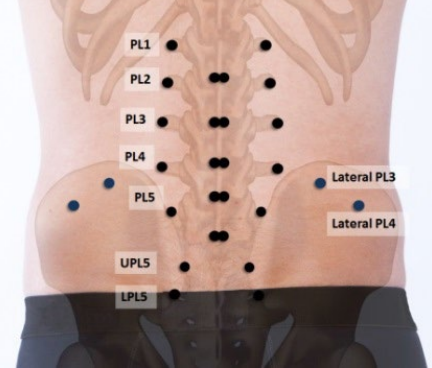
Method		
Active Motion Testing	1. Assess for posterior prominence of transverse processes (static rotational asymmetry). 2. Monitor both transverse processes of asymmetric segment during active range of motion to determine if asymmetry improves or worsens. Assess asymmetry in 1) neutral, 2) flexion, and 3) extension of the spinal region. Naming Dysfunctions Sagittal plan is named for motion preference which is defined by the position of least asymmetry. - Neutral (rotational asymmetry does not change throughout the range) - Flexion (rotational asymmetry improves in flexion) - Extension (rotation asymmetry improves in extension) Rotation is named for the side of posterior prominence of the asymmetrical transverse processes. Sidebending is inferred based on the other findings using this method. If neutral, then sidebending and rotation occur to opposite sides. If flexed or extended, then sidebending and rotation occur to the same side.	

Passive Motion Testing	1. Assess for posterior prominence of transverse processes (static rotational asymmetry). 2. Presses anteriorly on the asymmetrical transverse processes to induce rotation and determine rotational motion preference. 3. Translate each vertebra at the level of the facet joints to the right and then to the left to determine sidebending motion preference 4. Passively flex and extend spinal region and note motion of spinous processes. a. In flexion, spinous processes should separate equally. If a pair of spinous processes fails to separate, then the upper vertebra is likely extended. b. In extension, spinous processes should approximate equally. If pair of spinous processes fails to approximate, the upper vertebra is likely flexed. c. Upper thoracic is typically assessed in the sphinx position and lower thoracic and lumbar are assessed in the lateral recumbent position.	 The image contains four anatomical diagrams of the spine illustrating passive motion testing: Right Rotation: Shows a lateral view of the spine with a blue arrow pointing to the right, indicating rotation. Left Sidebending: Shows a lateral view of the spine with a blue arrow pointing to the left, indicating sidebending. Extension: Shows a lateral view of the spine with a blue arrow pointing downwards, indicating extension. Flexion: Shows a lateral view of the spine with a blue arrow pointing upwards, indicating flexion.
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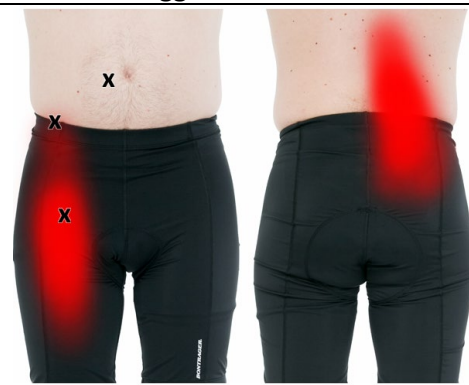
Diagnosis of Thoracic and Lumbar spine

Diagnosis	Findings: Active Method	Findings: Passive Method	Image
Neutral Rotated Right, Sidebent Left	Right TP posterior Rotational asymmetry the same in flexion/extension Infer sidebent left	Right TP posterior Prefers right translation No flexion/extension preference	
Neutral, Rotated Left, Sidebent Right	Left TP posterior Rotational asymmetry the same in flexion/extension Infer sidebent right	Left TP posterior Prefers left translation No flexion/extension preference	
Flexed, Rotated Right, Sidebent Right	Right TP posterior Rotational asymmetry decreased in flexion & increased in extension Infer sidebent right	Right TP posterior Prefers left translation Spinous processes separate well but approximate poorly	
Extended, Rotated Right, Sidebent Right	Right TP posterior Rotational asymmetry decreased in extension & increased in flexion Infer sidebent right	Right TP posterior Prefers left translation Spinous processes approximate well but separate poorly	
Flexed, Rotated Left, Sidebent Left	Left TP posterior Rotational asymmetry decreased in flexion & increased in extension Infer sidebent left	Left TP posterior Prefers right translation Spinous processes separate well but approximate poorly	
Extended, Rotated Left, Sidebent Left	Left TP posterior Rotational asymmetry decreased in extension & increased in flexion Infer sidebent left	Left TP posterior Prefers right translation Spinous processes approximate well but separate poorly	
Flexed	No rotational preference No sidebending preference No flexion/extension preference <i>perceived</i>	No rotational preference No sidebending preference Spinous processes separate well but approximate poorly	
Extended	No rotational preference No sidebending preference No flexion/extension preference <i>perceived</i>	No rotational preference No sidebending preference Spinous processes approximate well but separate poorly	

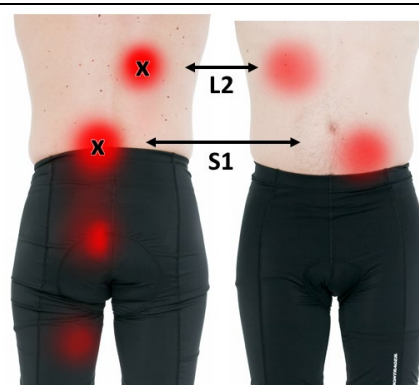
Thoracic Counterstrain Tender Points

Thoracic Anterior	AT1: sternal notch AT2: middle of manubrium AT3-6: along sternal midline at level of corresponding rib attachment AT7: on xiphoid tip and/or 1/4 distance from xiphoid tip to umbilicus, 1-2cm lateral to midline AT8: 1/2 distance from xiphoid to umbilicus, 2-3cm lateral to midline AT9: 3/4 distance from xiphoid to umbilicus, 2-3cm lateral to midline AT10: 1/4 distance from umbilicus to pubic symphysis, 2-3cm lateral to midline AT11: 1/2 distance from umbilicus to pubic symphysis, 2-3cm lateral to midline AT12: superior aspect of iliac crest at midaxillary line	
Thoracic Posterior	PT1-10 Midline SP: on tip of spinous processes PT1-10 Inferolateral SP: inferolateral aspect of spinous processes PT1-12 Transverse: on posterior aspect of corresponding transverse processes	
Lumbar Anterior	AL1: Medial aspect of ASIS AL2: Medial AIIS AL3: Lateral AIIS AL4: Inferior AIIS AL5: on anterior pubic ramus 1cm lateral to pubic symphysis	
Lumbar Posterior	PL1-5 Midline SP: on or between spinous processes PL1-5 Inferolateral SP: on inferolateral aspect of spinous process PL1-5 TP: on corresponding transverse processes Upper Pole L5: superomedial aspect of PSIS Lower Pole L5: inferior aspect of PSIS Lateral PL3: on iliac crest in superomedial gluteus medius Lateral PL4: on iliac crest in superolateral gluteus medius	

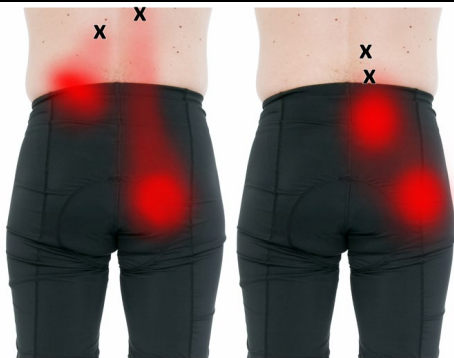
Common Trigger Points for Low Back Pain



Iliopsoas



Multifidi



Quadratus lumborum (Superficial [left] and Deep [right])



Gluteus medius



Gluteus maximus



Piriformis



Gluteus minimus