



PILATES EMPOWERMENT SUMMIT

Spinal Discs Decoded

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Objectives

- Deepen your understanding of **spinal disc mechanics**
- Develop the ability to **feel disc behavior** through embodied movement
- Identify **movement patterns and teaching habits** that may contribute to disc strain
- Apply strategies that support **disc hydration, load distribution, and resilience**
- Confidently support clients with **disc-related conditions** within your scope of practice



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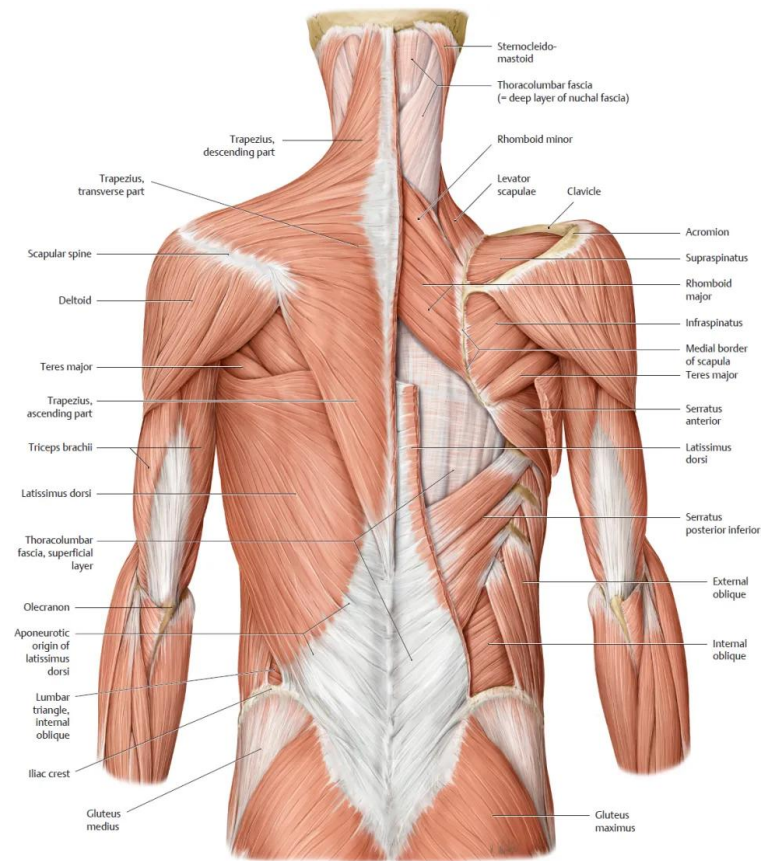
Functions of the Spinal Discs

- ❑ Flexibility & Mobility– allows bending, twisting, and extension
- ❑ Force Absorption – cushions the spine during movement and impact
- ❑ Load Distribution – spreads weight evenly across vertebrae
- ❑ Spinal Height & Alignment– maintains vertebral spacing and posture
- ❑ Nerve Protection – prevents compression of spinal nerves
- ❑ Energy Storage & Rebound – stores energy during movement to help the spine return to natural alignment
- ❑ Supports Breathing



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Thoracolumbar Fascia (TLF)





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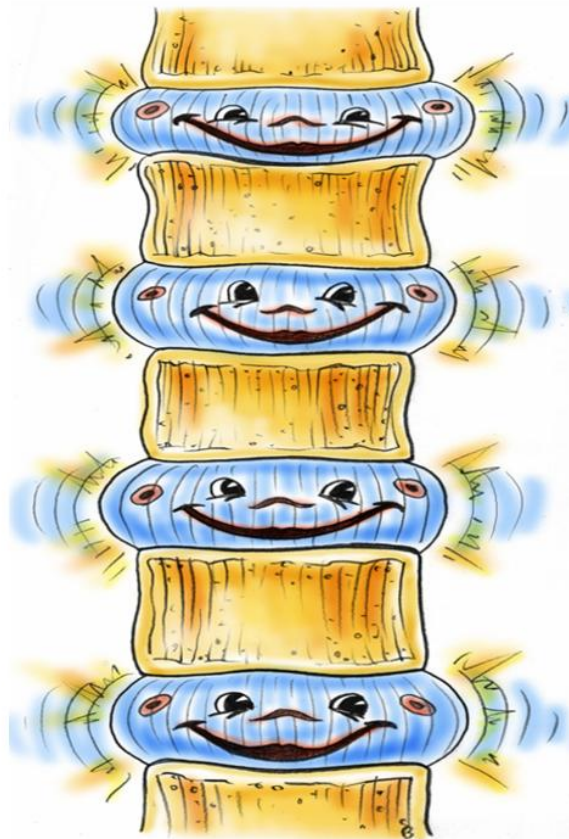
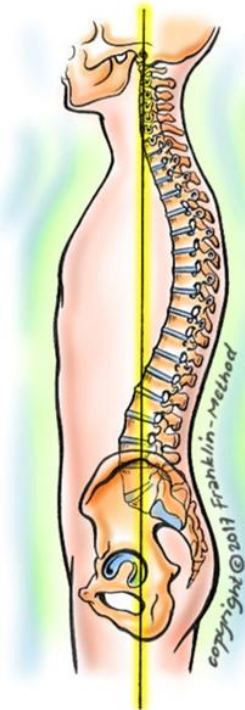
Spinal Movements

- ❑ Cervical Spine:
 - Great rotation, flexion, extension and lateral flexion
- ❑ Thoracic Spine:
 - More movement options due to ribs
 - Lots of flexion, good amount of rotation,
 - not too much lateral flexion (due to ribs)
 - and extension (due to shape of spinous processes)
- ❑ Lumbar Spine:
 - Lot of extension and flexion
 - Less rotation and lateral flexion



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Design of the Spine

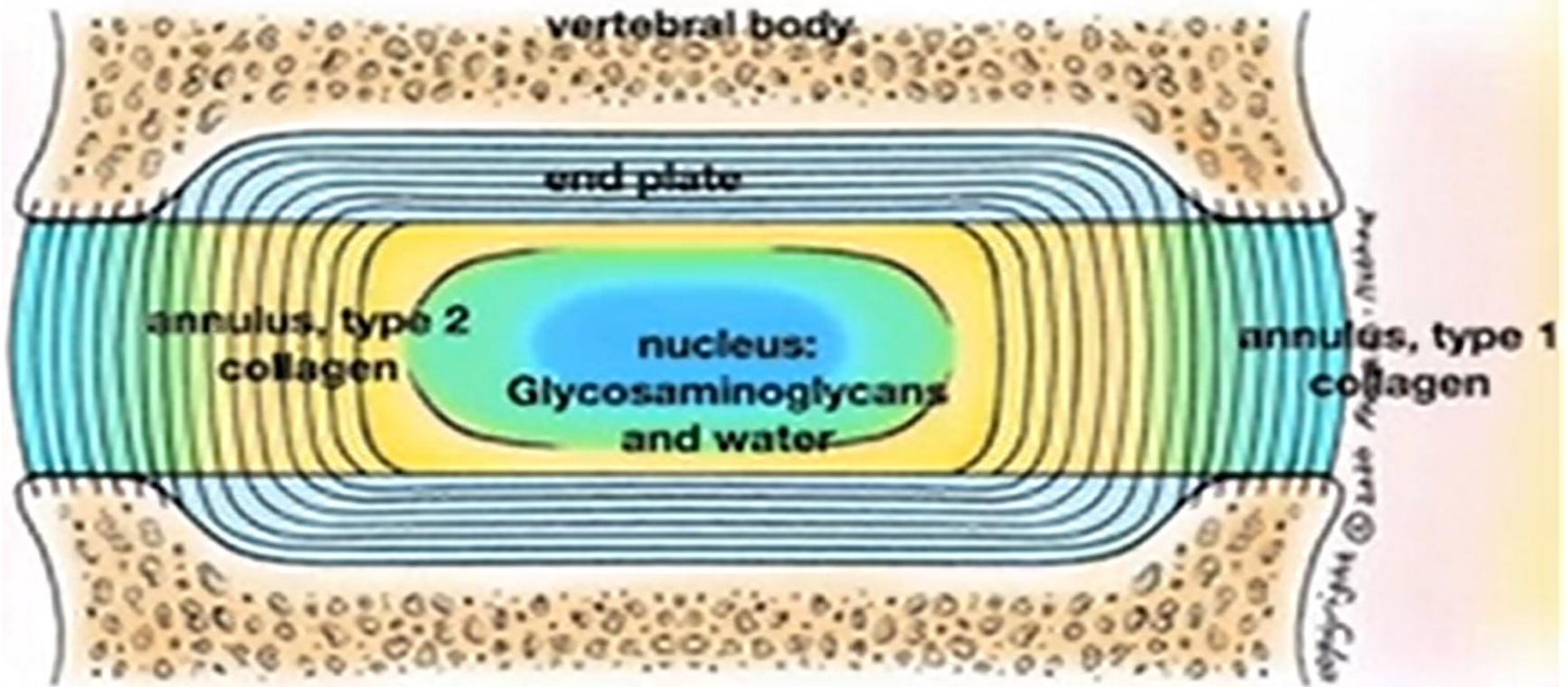


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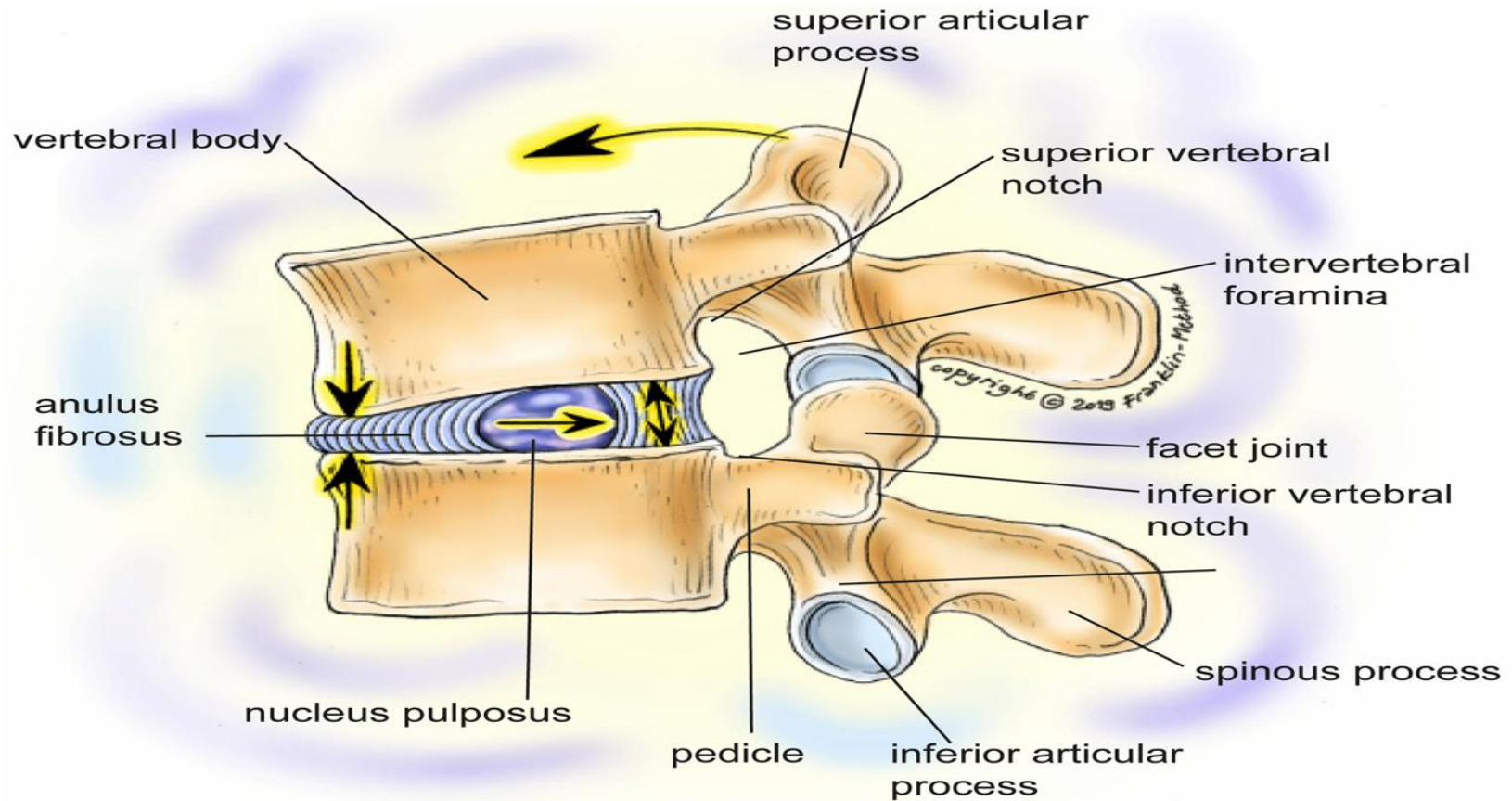
Design of Discs





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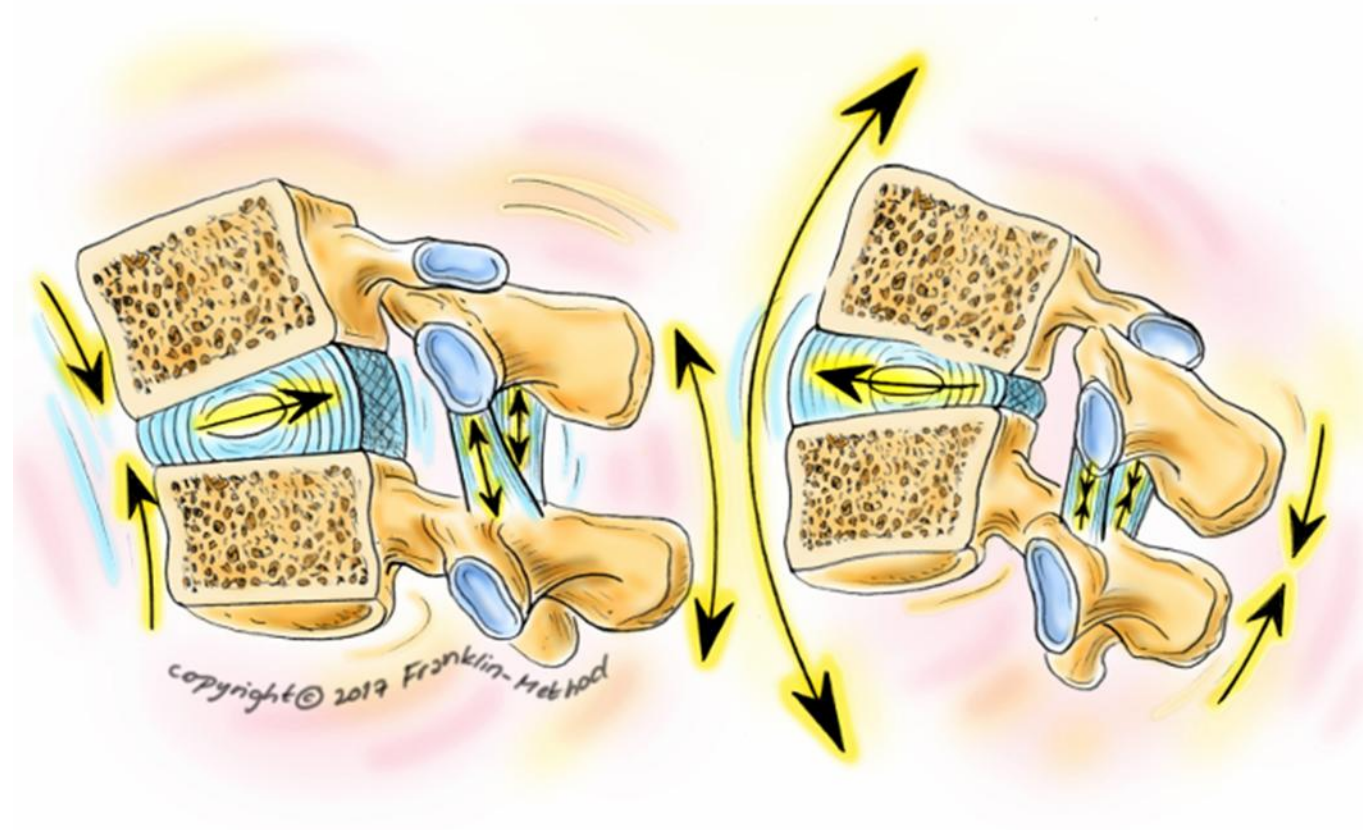
Design of Discs





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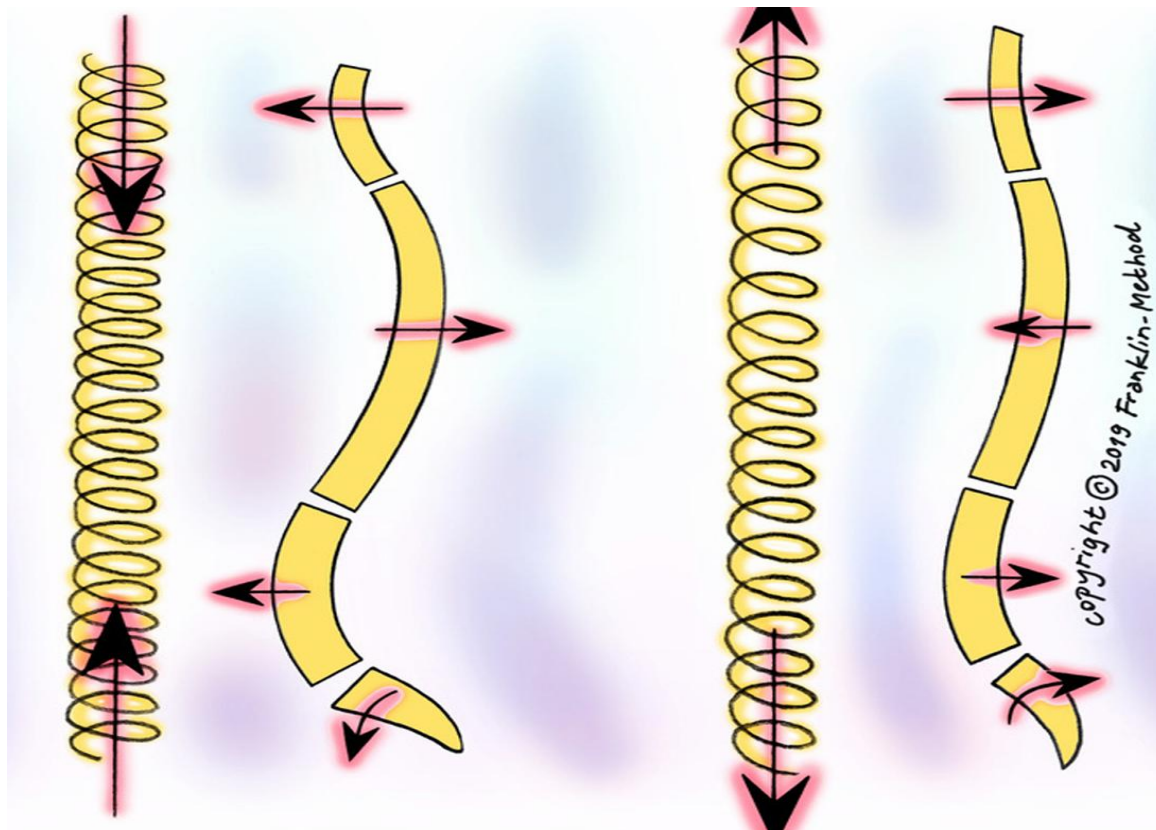
Design of Discs





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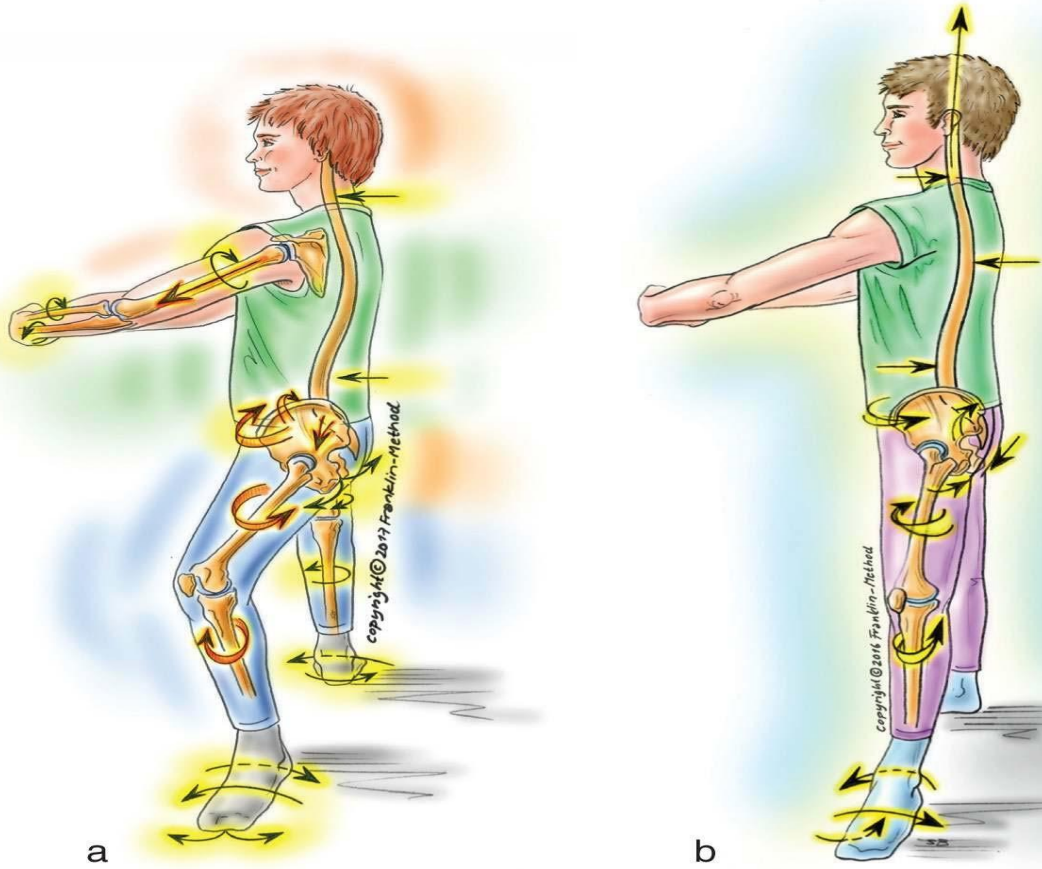
Design of Spine





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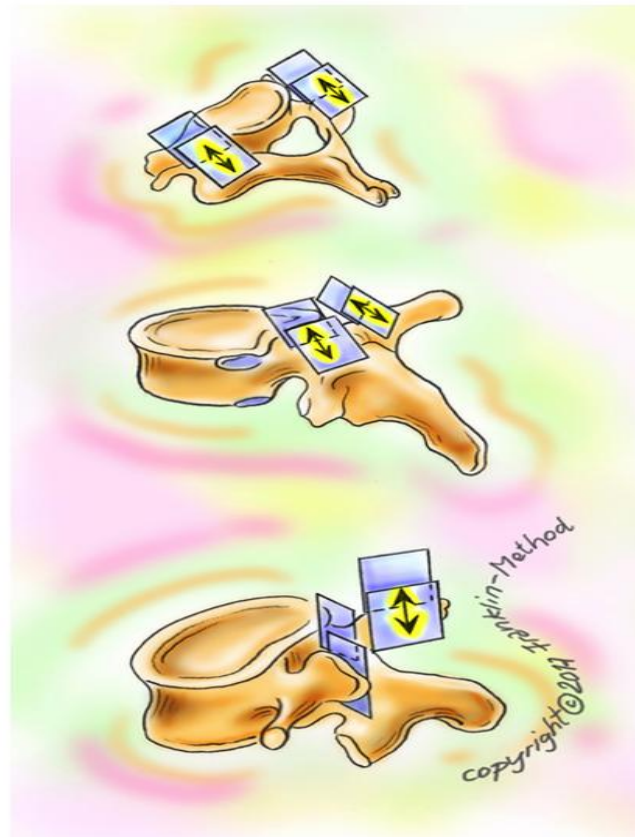
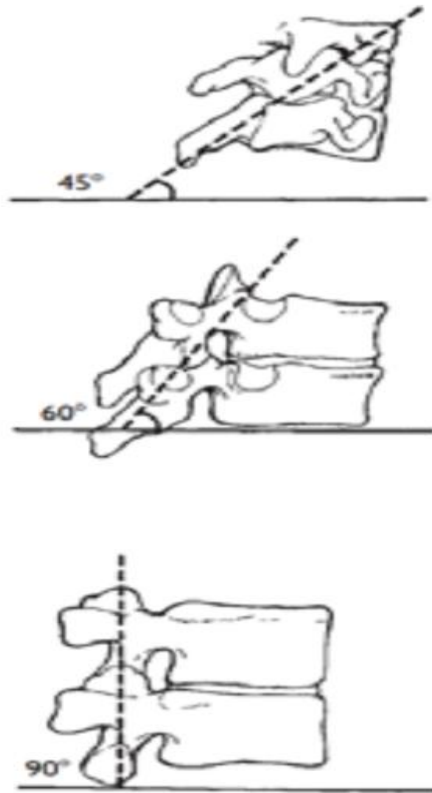
Design of Spine





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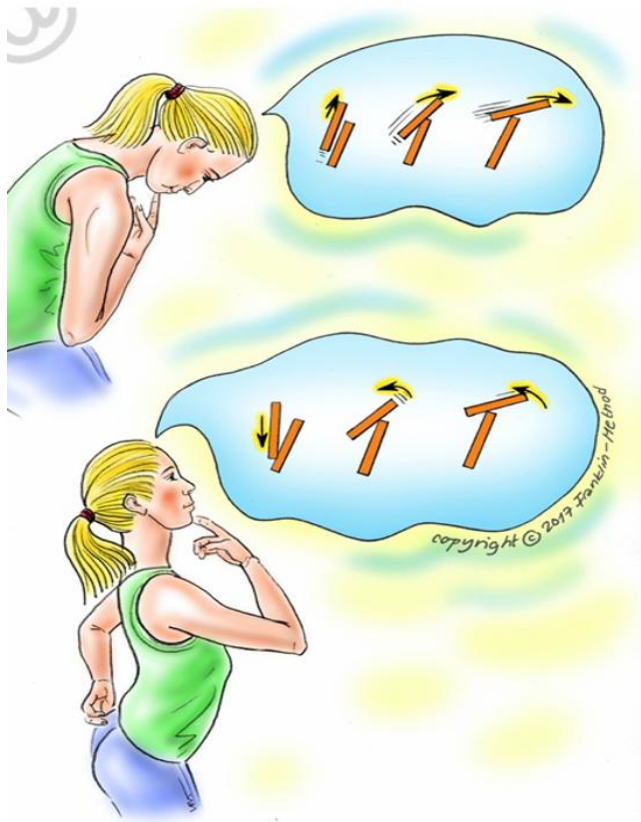
Design of Spine – Facet Joints





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Design of Spine – Facet Joints



❑ Cervical and Thoracic Spine:

Flexion: facet joints slide up and forward

Extension: facet joints slide back and down

❑ Lumbar Spine:

Flexion: facet joints slide up and out

Extension: facet joints slide back and in-between



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Common Injuries

Disc Herniation (Slipped Disc / Prolapsed Disc)

- What happens: The inner gel-like nucleus pulposus pushes through a tear in the outer annulus fibrosus.
- Common areas: Lumbar spine (lower back) > Cervical spine (neck)
- Symptoms: Pain, numbness, tingling, or weakness in arms or legs depending on the nerve compressed

Bulging Disc

- What happens: The disc protrudes outward but the annulus fibrosus remains intact
- Difference from herniation: No rupture of the outer layer; usually less severe
- Symptoms: Sometimes asymptomatic; may cause nerve compression if severe

Degenerative Disc Disease

- What happens: Discs lose hydration, elasticity, and height over time
- Causes: Aging, wear and tear, repetitive stress
- Symptoms: Chronic back or neck pain, stiffness, reduced flexibility

Disc Tear / Annular Tear

- What happens: The outer ring (annulus fibrosus) develops small cracks or tears
- Causes: Trauma, sudden twisting, repetitive strain
- Symptoms: Localized pain, sometimes radiating if nerve irritated



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Disc Extrusion / Sequestration

- What happens: Nucleus pulposus breaks through the annulus and may separate from the disc entirely
- Symptoms: More severe nerve compression, intense pain, possible muscle weakness

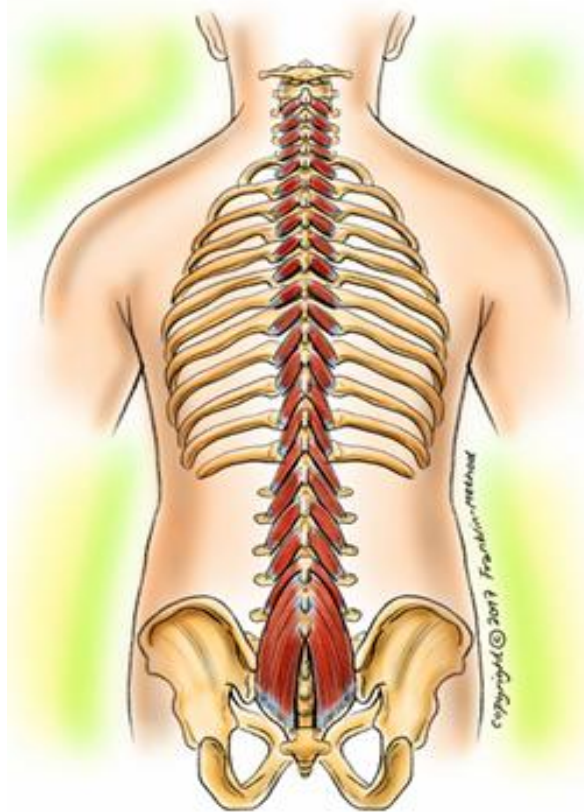
Protrusion / Contained Herniation

- What happens: Nucleus pulposus bulges outward but is contained by the outer layers of annulus fibrosus
- Symptoms: Can be painful or asymptomatic depending on nerve involvement



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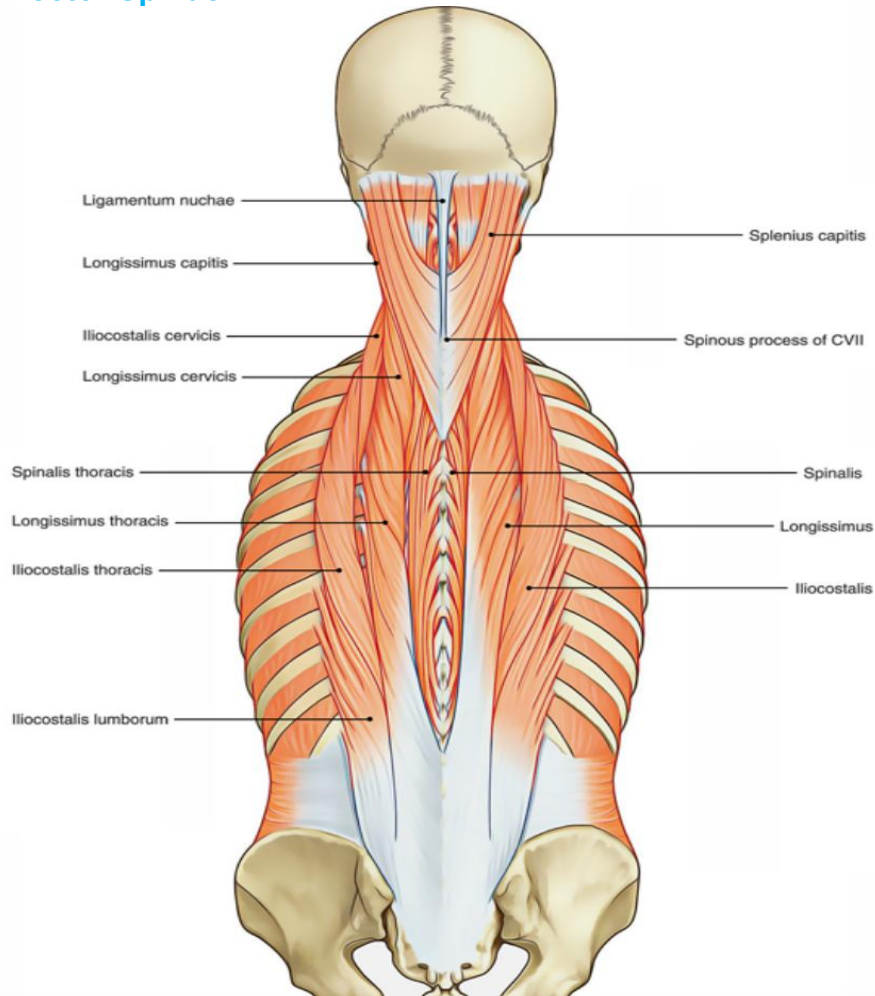
Multifidi





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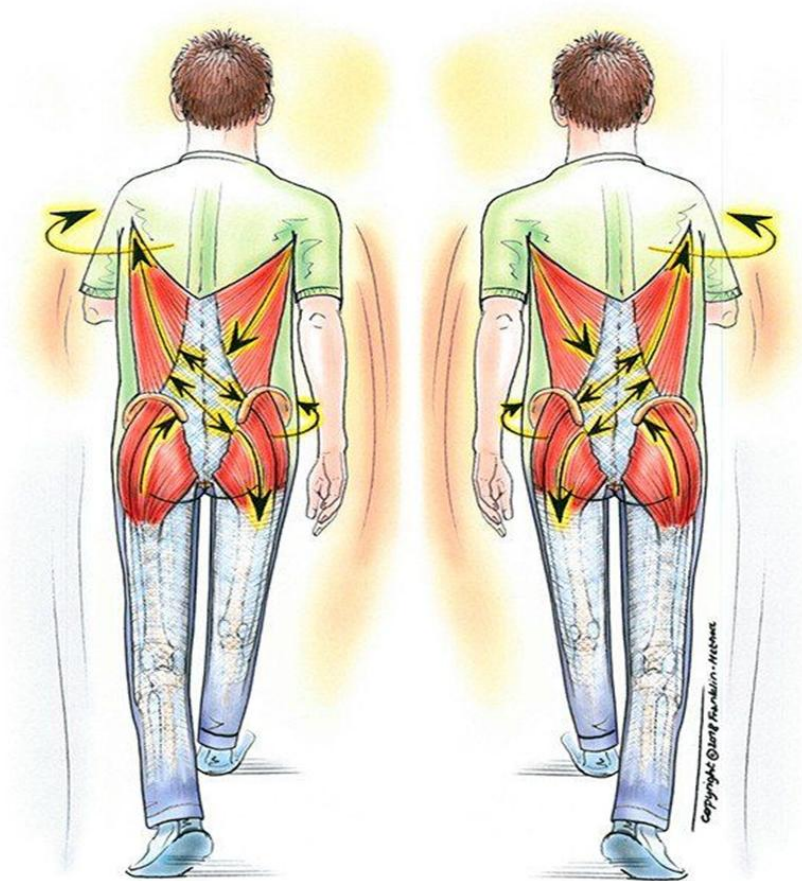
Erector Spinae





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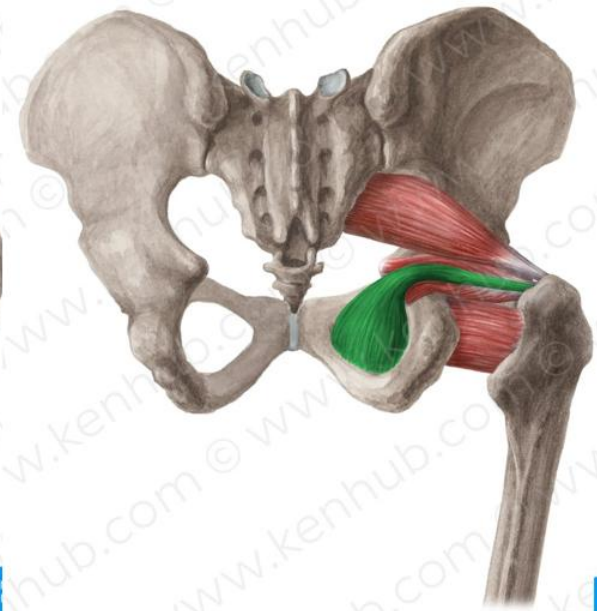
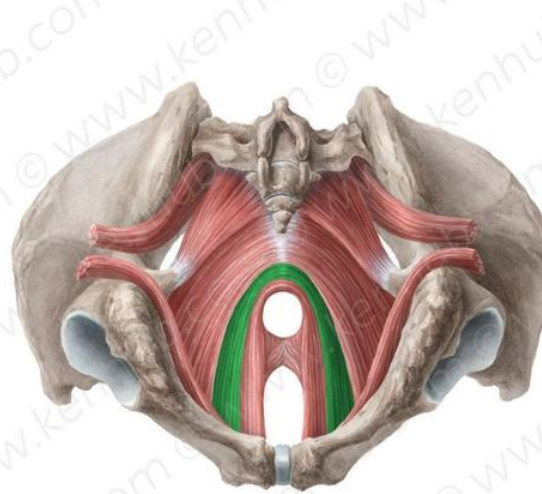
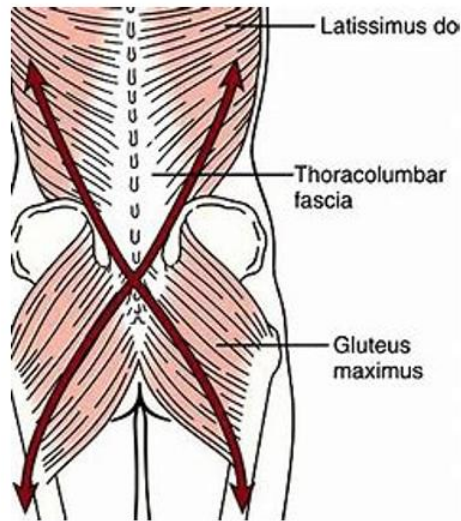
Counter Rotation in Walking





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Influence of other muscles



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Exercises for Spinal Discs Health

- Tapping
- Influencing the glide of fascial layers
- Move the spine using positive images
- Move spine in all directions every day
- Spinal discs fluid rebalancing
- Extension and extension hold
- Spinal discs compression and decompression
- Work spine as a spring
- Balance movement of facet joints
- Proper seated and standing posture
- Improve proprioception of spinal Muscles
- Erector Spinae release
- Counter rotation in walking



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Important precautions in the early recovery phase

Always **check with doctor or physical therapist** before starting exercises.

Stop any exercise that **increases pain, tingling, or numbness**.

Focus on dynamic **core stability, posture, breathing and slow controlled movement**.

Avoid **heavy lifting, twisting, or prolonged bending** in the early phase.

Suggested Movements during recovery

- Breathing
- Equal weight in pelvis, feet
- Hip, Glute, Piriformis release
- Pelvic floor release
- Pelvic Tilt
- Knee-to-Chest Stretch
- Cat-Cow (Gentle)/Leaning into a wall over a towel
- SLS with a band
- Bird Dog



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Movements during recovery

- Glute Bridges – keep small at first
- Plank (Modified → Full)
- Side leg movement
- Standing side glutes
- Side plank progression
- Spine stretch forward progression
- Gentle rotation
- Extension – swan prep, swimming building blocks
- Back strengthening - rows



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Thank you for being a part of PES 2026.

Please remember to submit a session evaluation.

Your feedback is important to us!