Rehabilitation of Spondylolysis
(what to expect)

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PT Interventions

- Core Stabilization
- Glute Strengthening
- Joint Mobilization
- Flexibility
- Body Mechanics
- Return to Sport Progression
Treatment: Core Stabilization

- activation of deep abdominal muscles
  - transverse abdominus & internal oblique
  - “draw-in”

- with co-activation of lumbar multifidi
  - “swell back muscles”
Why Abdominal Stabilization?

- Delay in transverse abdominal contraction in patients with LBP*

- Lumbar multifidus atrophy correlated to the same side and vertebral level of symptomatic LBP**


Phases of Core Stabilization

Phase 1: Core Initiation: supine, 4-point drawing-in

Phase 2: Static Stabilization: 4-point, ½ kneel, standing drawing-in with arm/leg motion

Phase 3: Dynamic Stabilization: allow trunk motion to occur with dynamic control

Phase 4: Reactive Core Control: dynamic control during specific drills & various environmental challenges
Core Initiation

Transverse Abdominus: “drawing-in”

Lumbar Multifidus: “swell back muscles”
NWB Static Stabilization
Standing Static Stabilization
Swiss Ball Dynamic Stabilization

rotation from above

rotation from below
Medicine Ball
Dynamic Stabilization
Treatment: Strengthening

- Core “Strengthening”: External oblique
- Gluteus Maximus: pelvic stability in sagittal plane
- Gluteus Medius: pelvic stability in frontal plane
- Oblique Abdominals
- Erector Spinae
Glute & External Oblique Strength

Squat with hip hinge  Backward lunge with twist
**Glute Strength**

**Sidestep with band at knees → ankles → forefoot**

in squat position (weight on heels)  
in bow position (weight on heels)
Treatment: Joint Mobilization

if necessary: “steal” joint ROM from elsewhere....

• Mobilization of Hips
• Manipulation of Thoracic spine
Thoracic Spine
Treatment: Flexibility

• Hip Flexors: Psoas and Quads

• Latissimus Dorsi (overhead athlete)

• Hamstrings: tight from growth spurt or muscle spasming
Treatment: Flexibility
Treatment: Body Mechanics

• Body Mechanics
  – Sleep: avoid sleeping prone (suggest body pillow to break the habit)
  
  – School: unload backpack to 10% BW (suggest double copy of textbooks for home and school, rolling bag); use both straps

  – Footwear: avoid flip flops, tie shoes, consider arch supports to improve LE alignment
Treatment: Return to Sport Progression

- NWB to WB postures
- Static to Dynamic Stabilization
- Sport-Specific planes of movement, speeds, loads, dosing impact
References


