



**EDWARD R. ANDERSON, MD**  
1830 N. Franklin St, Suite 340  
Denver, CO 80218  
PHONE: (303) 318-3330 FAX: (303) 812-4221

**www.FROST-clinic.com**

**COMPREHENSIVE ADULT SPINE, ADULT TOTAL HIP AND KNEE RECONSTRUCTION, AND  
ORTHOPAEDIC TRAUMATOLOGY/FRACTURE MANAGEMENT**

Patient Name: \_\_\_\_\_

Diagnosis: \_\_\_\_\_

## **Lumbar Facet Arthritis/Spondylosis Physical Therapy Prescription**

Therapy should occur 2-3 times per week for 6 weeks, or as long as needed in order to reach functional goals, and to develop an independent Home Exercise Program (HEP).

### **Permanent Restrictions:**

- Avoid aggressive endrange extension.

### **Goals:**

- 45 minutes of aerobic exercise 5 days a week
- Learn to decrease sitting time, initiation of use of a lumbar roll while sitting
- Talk to Dr. Anderson about bone health and weight loss strategies if indicated.

Treatment options listed below are not all-inclusive nor absolute. Rather, individual patient needs based upon appropriate clinical decision making should guide therapy. For patients with lumbar facetar spondylosis and/or degenerative disc disease, all below could be indicated. If the patient demonstrates radicular symptoms, address these first. Ensure to develop a long-term home exercise program, and emphasized need for a home exercise program as a maintenance for prevention of the patient's back pain

### **Phase I**

#### **Precautions**

- Keep spine in neutral for all strengthening and make sure to achieve proper neuromuscular control of transversus abdominis, and multifidus before progressing strengthening exercises.
- If leg symptoms are present, focus on centralizing pain out of the leg, **Do Not** progress strength exercises until achieved.

#### **Goals**

- Centralize symptoms out of lower extremity (if present) then work to abolish possible.
- Achieve proper muscle firing of transversus abdominis and multifidus muscles 10-20 second isometrics to start.
- Achieve proper muscle firing of gluteus medius without substitution from hamstrings or lumbar paraspinal muscles, 10-20 second isometrics to start.
- Improve cardio endurance to at least 20 minutes, 3 to 5 days/week.

- Learn proper sitting posture with lumbar roll, and proper lifting mechanics.

## Education

- **Posture Education:** Sitting Posture with Lumbar Roll at All Times; Frequent Change in Positions, Sleeping Positions. Teach how different body positions and postures affect the spine.
- **Body Mechanics:** Light lifting, transfers (include logrolling) positioning, vacuuming, yardwork, etc.

## Stabilization Exercises

Emphasize achieving proper neuromuscular control of the transversus abdominis and multifidus muscle groups without compensation (use stabilizer biofeedback cuff if available).

- **Transversus Abdominis Bracing:** 10-20 second isometrics with normal breathing (without pelvic tilt) in supine, quadruped and prone.
- **Multifidus:** 10-20 second isometrics with normal breathing in prone position.
- **Glute sets:** 10-20 second isometrics with emphasis on proper gluteal muscle group firing in prone position (bilateral and unilateral).

## Manual Therapy

- Sound assisted soft tissue mobilization/augmented soft tissue mobilization/myofascial release as needed for areas of soft tissue restrictions or muscle guarding.
- Address any positional faults with mobilization or contraction/relaxation techniques.
- Joint mobilizations as required.

## Flexibility

- **Stretching:** Hip flexors, hamstrings, gastrocsoleus, quadriceps, iliopsoas
- **Hip Range Of Motion:** Restore normal extension, internal rotation, external rotation if not within normal limits (mobilizations as required)

**Cardiovascular** (as long as it does not aggravate or increase symptoms, let pain be your guide)

- Walking - The best exercise for these patients!
- Biking - Recumbent or hybrid/upright (avoid road bikes)
- Swimming

## Phase II

### Goals

- Patient able to activate co-contraction of transversus abdominis and multifidus muscle groups regularly during daily activities, especially in situations where there is anticipation of pain, or they are experiencing pain.
- Restore normal hip range of motion for extension, internal rotation, and external rotation (provided they were out of range of normal limits).
- Once patient is able to complete exercise and cardio below without aggravation of pain during or after exercise, progress to Phase III.

## **Transversus Abdominis/Multifidus Progressions** (maintain a neutral spine)

Only initiate these once patient can complete Phase I exercises. Emphasize neutral spine position during each exercise and correct muscle firing of transversus abdominis.

- **Supine:** Add upper extremity/lower extremity movements (example: Marches, straight leg raises, upper extremity lift and lowers, etc.)
- **Quadruped:** Alternating upper extremity, alternating lower extremity, alternating upper extremity/lower extremity (bird-dog)
- **Side-lying:** Clams, hip abduction, etc.
- **Prone:** Hip extensions, alternating upper extremity/lower extremity lifts (avoid hyperextension)
- **Bridging:** Bridges, Side Leg Bridges, on Swiss ball, etc.
- **Balance:** Static (example: Single-Leg Stance, Tandem, etc.)
- **Swiss ball:** No Sit Ups, No Twisting (example wall squats, seated exercises, bridges, bird-dog, etc.)

## **Flexibility**

- **Stretching:** Hip flexors, hamstrings, gastrocsoleus, quadriceps, iliopsoas
- **Hip Range Of Motion:** Restore normal extension, internal rotation, external rotation if not within normal limits (mobilizations as required)

## **Cardiovascular**

- As long as it does not aggravate or increase symptoms, let pain be your guide
- Walking - The best exercise for these patients!
- Biking - Recumbent or hybrid/upright (avoid road bikes)
- Swimming
- Elliptical
- Hiking
- Pilates

## **Phase III**

Only initiate Phase III once patient can complete Phase II exercises correctly and without aggravation of pain

## **Transversus Abdominis/Multifidus Progressions** (maintain a neutral spine)

- **Strengthening:** Lower extremity strengthening with transversus abdominis bracing (lunges, squats, step ups, etc.)
- **Balance:** Progress with BOSU, dynamic balance, etc.
- **Swiss Ball:** Advanced exercises (continue extension and rotation precautions)

## **Cardiovascular**

- As long as it does not aggravate or increase symptoms, let pain be your guide
- Walking - The best exercise for these patients!
- Biking - Recumbent or hybrid/upright (avoid road bikes)
- Swimming
- Elliptical
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- Pilates

**Return to Sports** (must be cleared by Dr. Anderson first)

- Gradual progressive return to sports following parameters outlined by Dr. Anderson.
- **Goal:** Reaching full participation over 4 to 6 weeks, provided there is no recrudescence of pain. **Do Not** start full practices or games right away.
- **Guideline:** Increase participation by 20 to 25 %/week, avoiding participation on consecutive days for the first 2 weeks. Example:
  - **Week 1:** 20-30 minutes of participation every other day
  - **Week 2:** 30-60 minutes of participation every other day
  - **Week 3:** 30-60 minutes of participation up to 5 days/week
  - **Week 4:** 60-120 minutes of participation up to 5 days/week
- Do not participate in sports activities that have risk of trauma from collisions or falling. Limit activities and repetitions of activities that require arching, twisting/rotation of the back (diving, throwing, serving, rebounding).