

Knee Strains

Diagnosis Explanation:

A **knee strain** occurs when the **muscles or tendons** around the knee are **overstretched or torn**, usually due to **sudden movements, overuse, or improper mechanics**. It commonly affects the **quadriceps, hamstrings, or patellar tendon**. Symptoms include **pain, swelling, stiffness, weakness, and difficulty bending or straightening the knee**.

Specific Work Modifications:

- **If your job requires standing or walking:** Take frequent seated breaks and wear **shock-absorbing footwear**.
- **If your job involves lifting:** Avoid **deep squatting and sudden twisting movements**.
- **If your job is desk-based:** Keep the knee **elevated** when sitting and perform **gentle mobility exercises** throughout the day.
- **Avoid:** Prolonged standing, kneeling, excessive stair climbing, and sudden knee strain.

Specific Activity Modifications:

- **If you run or play sports:** Reduce **high-impact activities** and switch to **low-impact options** like swimming or cycling.
- **If you hike:** Stick to **flat trails** and use **trekking poles** for additional support.
- **If you do weightlifting:** Avoid **deep squats, lunges, and leg presses** until fully healed. Focus on **controlled, low-impact strength training**.
- **Avoid:** Jumping, pivoting, sprinting, and high-impact exercises that place stress on the knee.

Recommended Supplements:

- **Collagen Peptides** - 10g daily for muscle and tendon repair.
- **Magnesium** - 300-400mg daily to aid muscle relaxation and prevent cramping.
- **Vitamin C** - 500mg daily to promote collagen production.
- **Omega-3 Fatty Acids** - 1000mg daily to reduce inflammation.
- **Protein Supplement (if needed)** - 20-30g post-exercise for muscle healing.

Recommended Nutrition and Hydration:

- **Increase Lean Protein** (chicken, fish, eggs, tofu) to support muscle repair.
- **Eat Anti-Inflammatory Foods** (berries, leafy greens, turmeric, nuts) to reduce swelling.

- **Consume Hydrating Foods** (cucumber, watermelon, citrus) to maintain tissue elasticity.
- **Limit Processed Foods & Sugars** to prevent inflammation.
- **Hydration:** Drink **8-10 cups of water daily** to maintain joint lubrication and promote recovery.

Home Exercise Prescription (Rehabilitation for Knee Strain)

Early Phase (0-2 Weeks, Reducing Pain & Swelling):

- **RICE Protocol** - Rest, Ice (15-20 min, 3x/day), Compression (brace if needed), Elevation.
- **Quadriceps Sets** - Tighten thigh muscle, hold for 5 seconds, repeat **10 reps, 3x/day**.
- **Heel Slides** - Gently slide heel toward buttocks to improve mobility, **10 reps, 2x/day**.
- **Ankle Pumps** - Move ankle up and down to improve circulation, **10 reps, 3x/day**.

Strengthening Phase (2-6 Weeks, Regaining Strength & Stability):

- **Straight Leg Raises** - Keep knee straight, lift leg, hold 5 seconds, repeat **10 reps, 2x/day**.
- **Clamshells (Hip Strengthening)** - Lie on side, open and close knees, **10 reps, 2x/day**.
- **Mini Squats (No Deep Bending)** - Slight knee bends while keeping weight on heels, **10 reps, 2x/day**.
- **Glute Bridges** - Lie on back, lift hips while keeping knees bent, **10 reps, 2x/day**.

Advanced Phase (6+ Weeks, Improving Stability & Return to Activity):

- **Step-Ups** - Step onto a low platform, push through the heel, repeat **10 reps, 2x/day**.
- **Lateral Band Walks** - Step sideways with a resistance band around thighs, **10 steps each way, 2x/day**.
- **Stationary Cycling** - Low resistance for **10-15 minutes/day** to maintain knee mobility.
- **Balance Exercises** - Stand on injured leg for **10-20 seconds**, increase as tolerated.

Helpful Books:

1. *The Knee Injury Bible: Everything You Need to Know About Knee Pain, Prevention, and Treatment* - Kevin R. Stone, MD.
2. *Heal Your Knees: How to Prevent Knee Surgery and What to Do If You Need It* - Robert Klapper, MD, and Lynda Huey.

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Contact a Key West orthopedic clinic or reach out to Dr. Jason Pirozzolo.