

Knee Sprains

Diagnosis Explanation:

A **knee sprain** occurs when the **ligaments** that stabilize the knee joint are **stretched or torn** due to **twisting, sudden stops, awkward landings, or direct impact**. The most commonly affected ligaments are:

- **MCL (Medial Collateral Ligament)** - Inner knee, injured by side impacts.
- **LCL (Lateral Collateral Ligament)** - Outer knee, injured by twisting or blows to the inside of the knee.
- **ACL (Anterior Cruciate Ligament)** - Injured by sudden stops, pivoting, or hyperextension.
- **PCL (Posterior Cruciate Ligament)** - Injured by direct blows to the front of the knee.

Severity Classification:

- **Grade 1 (Mild):** Ligament is stretched but not torn, slight swelling, minimal instability.
- **Grade 2 (Moderate):** Partial tear, noticeable swelling, difficulty bearing weight.
- **Grade 3 (Severe):** Complete tear, significant instability, possible need for bracing or surgery.

Specific Work Modifications:

- **If your job requires standing or walking:** Wear a **knee brace** for support and take frequent **seated breaks**.
- **If your job involves lifting:** Avoid **sudden twisting, deep squats, or heavy lifting** that puts stress on the knee.
- **If your job is desk-based:** Keep your leg **elevated** when sitting and perform **gentle mobility exercises**.
- **Avoid:** Prolonged standing, excessive stair climbing, squatting, and movements that cause knee instability.

Specific Activity Modifications:

- **If you play sports:** Avoid **running, jumping, and pivoting** until fully healed. Try **swimming or cycling** instead.
- **If you hike:** Stick to **flat terrain**, avoid steep inclines, and use **trekking poles** for stability.
- **If you do weightlifting:** Avoid **deep squats, lunges, and leg presses**. Instead, focus on **controlled strength exercises** for the hips and quads.
- **Avoid:** Cutting movements, sudden direction changes, and high-impact activities.

Recommended Supplements:

- **Collagen Peptides** - 10g daily for ligament and cartilage repair.
- **Glucosamine & Chondroitin** - 1500mg/1200mg daily for joint health.
- **Omega-3 Fatty Acids** - 1000mg daily to reduce inflammation.
- **Vitamin C** - 500mg daily to aid collagen production.
- **Calcium & Vitamin D** - 1000mg/800 IU daily for bone and joint support.

Recommended Nutrition and Hydration:

- **Increase Lean Protein** (chicken, fish, tofu, eggs) to support ligament repair.
- **Eat Anti-Inflammatory Foods** (berries, leafy greens, turmeric, nuts) to reduce swelling.
- **Consume Hydrating Foods** (cucumber, watermelon, citrus) to maintain joint lubrication.
- **Limit Processed Foods & Sugars** to prevent inflammation.
- **Hydration:** Drink **8-10 cups of water daily** to keep joints hydrated.

Home Exercise Prescription (Rehabilitation for Knee Sprain)

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

- **RICE Protocol** - Rest, Ice (15-20 min, 3x/day), Compression (brace or knee sleeve), Elevation.
- **Quadriceps Sets** - Tighten thigh muscles, 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.