



Meniscal Tears

There are two menisci (cartilage) in the knee, each resting between the femur (thigh bone) and tibia (shin bone). The menisci help distribute forces through the knee joint, and allow the femur and tibia to glide against each other smoothly without causing damage to the bone.

Two common causes of meniscal tears are traumatic injury to the knee and degenerative processes. In soccer, the most common mechanism for meniscus tears is the twisting of a bent knee joint. Those who experience a meniscus tear usually have pain, swelling, tenderness, and a popping or clicking sensation in the knee. Another common complaint is joint locking, or the inability to completely straighten the joint. This is due to a piece of the torn cartilage physically impinging upon the joint mechanism of the knee.

Diagnosis

A careful medical history and physical examination can help differentiate patients with a meniscus tear from patients with knee pain from other conditions. Specific tests and an MRI can be performed to detect a meniscus tear.

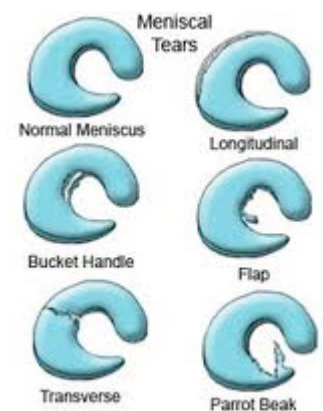
Treatment

There are many factors to consider when deciding how to treat a torn meniscus, including the extent, type, location of the tear, pain level, age, activity level, and when the injury occurred. Treatment choices include:

- Non-surgical treatment with rest, ice, compression, elevation, and non-steroidal anti-inflammatory drugs such as ibuprofen.
- Physical Therapy
- Knee Brace
- Surgical repair
- Partial meniscectomy, which is surgery to remove the torn section
- Total meniscectomy, which is surgery to remove the entire meniscus; generally avoided, because it increases the risk for osteoarthritis in the knee

Prevention

Many cases of meniscus tears are caused by trauma and may not be preventable. Though most tears are caused by trauma, adequate hip strength, proper warm-up, and dynamic balance and flexibility may decrease the risk of knee injury.



Rehabilitation

For most tears, some simple exercises can help maintain muscle strength in the front of the thigh (quadriceps), back of the thigh (hamstrings), and hip. All of these areas are important for your overall leg function while your knee heals after an injury or after surgery. Exercises should be performed only with the advice of your Physician, Physical Therapist, or Athletic Trainer; and, only if you feel very minimal or no pain while you perform them at home. The sets and reps listed below are general guidelines.

- Quad sets: Sit with legs extended and fully contract the muscles of the front thighs. Hold contractions for 10 seconds. Repeat 10 times for three sets.
- Straight leg raises (hip flexion): Lie with one leg extended and the other bent at the knee. Lift the entire leg from the hip so that the heel is about five inches above the floor. Hold this position for five to 10 seconds and then slowly lower the leg. Repeat 10 times for three sets.
- Backward leg raise (hip extension): Lie on stomach with legs straight. Lift one leg as high as possible and hold for five to 10 seconds, then slowly lower the leg. Repeat 10 times for three sets.
- Hip abduction: Lie on side of uninjured leg, so that the injured leg is on top of the uninjured leg. Lift the injured leg at the hip away from the body. Lift the leg as high as possible and hold for five to 10 seconds, then slowly lower the leg. Repeat 10 times for three sets.
- Hip adduction: Lie on side of injured leg, with uninjured leg bent at the knee and foot flat on the floor. Lift the injured leg at the hip towards the other leg. Hold for five to 10 seconds and then slowly lower the leg. Repeat 10 times for three sets.
- Half-knee bends: Stand with feet shoulder width apart. Slowly lower the body weight by bending the knees. Do not perform a full squat, but rather stop at about half of the full squat position and then fully extend the knees. If there is pain before achieving the half-squat position, stop downward travel at that point. Repeat 10 times for three sets.
- Hamstring curls: Lie on stomach with knee straight. Lift the foot of the injured leg by bending the knee so that you bring the foot up toward your buttocks.



About the Author

Matt Repa has been a Board Certified Athletic Trainer with Illinois Bone and Joint Institute since 2007. Matt is a graduate of Coe College in Cedar Rapids, Iowa where he earned his bachelor degree in Athletic Training and Physical Education. As a senior he received the prestigious "Wallace Award" for excellence in Athletic Training and Sports Medicine. His soccer work experience includes DIII Collegiate Soccer, Olympic Development Program, Illinois State Cup, US Club, and Great Lakes Soccer Association.

References

1. Prentice, William E. *Arnheim's Principals of Athletic Training. 11th Ed.* p 569-570, 587-588, 600-601, and 614-620.