



Tear of Cartilage of Meniscus of Knee

Diagnosis/Condition:	Other tears of cartilage or meniscus of knee
Discipline:	DC
ICD-10 Codes:	S83.209A, S83.30XA
Origination Date:	1996
Review/Revised Date:	07/2026
Next Review Date:	07/2028

Soft tissue disorders of the knee are common. Ten to fifteen percent (10-15%) of adults report knee symptoms and approximately five percent (5%) of all primary care visits in adults are related to knee pain. The knee is the largest joint in the body. Stability is provided by the ligaments and the menisci. The two menisci (medial and lateral) are wedge shaped and aid in dissipating loading forces, stabilizing the knee during rotation, and lubricating the joint. Because of its location and anatomy, the medial meniscus is more susceptible to injury. Meniscus tears are classified as traumatic or degenerative. Meniscal tears affect an estimated 12% of the adult population and can occur following acute trauma (e.g., twisting injury) in people younger than 40 years. Alternatively, a meniscal tear may be a degenerative condition present in patients with knee Osteoarthritis (OA) who are aged 40 years or older.¹

The athletic population is at greatest risk, especially those who participate in pivoting or twisting sports (commonly American football, soccer, rugby, and basketball). One third of meniscal tears are associated with sports injuries.² Left untreated, large complex tears can impair smooth motion of the knee, cause joint effusions, and may lead to premature osteoarthritis. Meniscal injuries can occur in isolation or in association with collateral or cruciate ligament tears. With increasing age, degeneration of the menisci can lead to tears without overt trauma. Meniscus tears are often asymptomatic and up to 36% of patients over 45 years show meniscal tears.

Meniscal tears are a common reason for arthroscopic surgery. Surgery rates are 60-70 per 100,000. About 500,000 arthroscopic procedures for torn meniscus are performed annually in the US. Acute traumatic tears, especially in younger patients, may benefit from arthroscopic repair. Randomized controlled trials of surgery versus non-operative care for degenerative meniscus tears show no advantage for surgery.³ This low value surgical care costs an estimated \$3.2 billion annually. The Choosing Wisely® campaign suggests “Avoid recommending knee arthroscopy as initial/management for patients with degenerative meniscal tears and no mechanical symptoms.”

Evaluation of the accuracy of clinical examinations for diagnosing meniscus tears show relatively low specificity and sensitivity for specific tests when compared to the gold standard of MRI. However, there is acceptable utility of the composite of history and physical examination findings to produce an accurate diagnosis.

Significant associations were demonstrated between increasing BMI and meniscal surgeries in both genders, including obese and overweight adults.⁴

Subjective Findings and History

- May or may not be due to a single traumatic event. Trauma is more likely causative in younger patients. May be associated with chronic activity, e.g. occupational kneeling.
- Seen as a degenerative process in older individuals. Risk factors include obesity.
- Knee pain is localized to the joint line.
- Clicking, sense of something loose.
- Mechanical symptoms, locking.
- Positional pain, especially at night.

Objective Findings

- Screening tests for significant meniscal tears begin with an assessment of general knee function such as gait, motion, and the ability to squat.
- The accuracy of the physical examination depends on the type and location of the tear and can be completely normal.
- Decreased range of motion, pain at end-range, loss of smooth passive motion or an inability to fully extend the knee.
- Effusions are common in patients with meniscal injury, particularly with large or complex tears.
- Thessaly test has mixed results. One study stated the test at 20 degrees of knee flexion had a high diagnostic accuracy rate of 94% in the detection of tears of the medial meniscus and 96% in the detection of tears of the lateral meniscus.⁵ Other studies state that it is inconsistent.⁶
- Joint-line tenderness presented a diagnostic accuracy rate of 89% in the detection of lateral meniscal tears.⁵
- Provocative tests such as McMurray, Loss of End Range of Extension, Bounce Home, Active Knee Flexion, and Apley Grind/Compression Test have variable sensitivity, specificity, and positive predictive value.⁷
- Evaluate kinetic chain and spine for joint dysfunction.
- The Ottawa Knee Rules should be applied in the evaluation of acute knee injuries to assist clinicians in making decisions about the need for radiography to exclude fractures.
 - Age 55+
 - Tender head fibula
 - Isolated tenderness patella
 - Inability to flex > 90°
 - Inability to bear weight (4 steps) at time of injury and in the examination.

- Ultrasound demonstrated a high median diagnostic accuracy for both lateral (97%) and medial (94.2%) meniscal tears, with a pooled median accuracy of 95.3% in 11 studies comprising 866 knees.⁸
- MRI can define the extent and type of meniscal tear and is the most sensitive imaging modality for detecting small tears. However, MRI is usually not necessary unless surgery is being considered.⁹
- Computed tomography (CT) imaging is typically most useful for assessing fractures and is not considered a first-line modality for imaging of meniscus tears.
- Multiple positive examination findings make the diagnosis of meniscal injury likely.

Assessment

The clinical impression should indicate the specific anatomical structures involved and clinically correlate with mechanism of injury, history, subjective complaints, and objective findings.

Plan

Non-operative treatment has been shown to be successful in nearly 50% of cases and should be considered a first line therapy before surgical treatment is contemplated. In patients with degenerative medial meniscus tears, nonoperative should be the initial treatment prior to considering surgery.¹⁰

There were no significant differences between arthroscopic meniscectomy and nonoperative management with strengthening exercises in terms of relief in knee pain, improved knee function, or increased satisfaction in patients after 2 years of follow-up.¹¹

RICE:

- Protection and rest
- Ice application
- Compression
- Elevation

Supplements and Nutrients:

- Glucosamine
- Chondroitin sulfate

Pharmaceuticals (OTC):

- NSAIDS, analgesics.

Immobilization, Bracing, Taping:

- A patellar restraining brace may be helpful if quadriceps strength is poor and the knee frequently "gives out."

Physical Modalities (Western):

- Physical therapy (PT) may be considered an alternative to surgery for patients with nonobstructive meniscal tears.¹²

- PT should be the preferred treatment over surgery for degenerative meniscal tears.¹³
- Modalities such as ultrasound
- Evaluate and fit (or refer) for foot orthotics

Movement and Exercise:

- Passive range of motion exercises.
- Avoid positions and activities that place excessive pressure on the knee joint until pain and swelling resolve.
- Patients should begin straight leg raising exercises without weights as the pain begins to wane with the goal of strengthening the quadriceps to provide support to the joint.
- Suitable exercises may include walking, swimming using a limited freestyle kick, water aerobics, walking or light jogging on a soft platform treadmill, and using a cross-country ski glide machine.
- Exercises to improve strength, range of motion, and function. A recent study of middle-aged patients with a degenerative meniscal tear demonstrated no clinically relevant differences between a surgical group and an exercise group at two years follow-up.¹⁴
- Training in proper mechanics of joint protection and self exercises.

Manual Adjustments/Manipulation:

- Lower extremity and spinal manipulation to correct joint dysfunction.

IV Therapies:

- A glucocorticoid injection may provide short-term symptom relief in patients who have osteoarthritis complicated by a degenerative meniscal tear.¹⁵

Surgical Intervention:

- The decision to undergo surgery for a meniscal tear depends upon several factors, including:¹⁶
 - Frequency of symptoms (e.g., daily)
 - General knee function (e.g., unable to squat, unstable knee)
 - Type of tear (e.g., complex tear extending to the articular surface)
 - Presence of osteoarthritis or damage to the articular cartilage or other structures
 - Likelihood that leaving the meniscus unrepaired will lead to further damage of the articular cartilage
- Early repair may be advantageous, although the quality of available evidence is limited.¹⁷

Length of Treatment

- Up to 16 weeks.

Outcome Assessment Tools

- VAS/NRS
- Knee Injury and Osteoarthritis Outcome Score (KOOS) questionnaire

Referral Criteria

- Referral to orthopedist if moderate or severe (acute meniscal tear often requires surgical intervention); and/ or progressive significant loss of range of motion or strength.
- Referral to physical therapy if not available in your office.
- Continued worsening of condition.
- Failure to respond to care.

Resources for Clinicians

The diagnosis and management of soft tissue knee injuries: internal derangements. New Zealand Guidelines Group - Private Nonprofit Organization. 2003 Jul. 100 pages. NGC:003270 Available at the National Guidelines Clearing House:

<http://ccpor.ca/wp-content/uploads/New-Zealand-Diagnosis-and-Management-of-Soft-Tissue-Knee-Injuries.pdf>

EFORT Open Rev 2017;2. DOI: 10.1302/2058-5241.2.160056. Originally published online at www.efortopenreviews.org

Siemieniuk Reed A C, Harris Ian A, Agoritsas Thomas, Poolman Rudolf W, Brignardello-Petersen Romina, Van de Velde Stijn et al. Arthroscopic surgery for degenerative knee arthritis and meniscal tears: a clinical practice guideline BMJ 2017; 357 :j1982
<https://www.bmj.com/content/357/bmj.j1982>

UpToDate: meniscal injury of the knee reviewed 8/26/2024.

Resources for Patients

Should I have surgery for my torn meniscus? Search the Heathwise® Knowledgebase:
<https://wa.kaiserpermanente.org/kbase/topic.jhtml?docId=te7366>

Is arthroscopic knee surgery worth it? Healthline. <https://www.healthline.com/health-news/is-arthroscopic-knee-surgery-worth-it#1>

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- ⁴ Ford G, Hegmann K T, White G L, Holmes E, Associations of body mass index with meniscal tears, *Am J Prev Med*. 2005 May;28(4):364-8. doi: 10.1016/j.amepre.2005.01.013.
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- ⁷ The diagnosis and management of soft tissue knee injuries: internal derangements. New Zealand Guidelines Group - Private Nonprofit Organization. 2003 Jul. 100 pages. NGC:003270.
- ⁸ Rifat Hassan 1, Daryl Poku 2, Otto Chan 3, Nicola Maffulli, Diagnostic accuracy of ultrasonography for meniscal tears: a systematic review and meta-analysis. *Skeletal Radiol*. 2026 Aug;55(8):1777-1785. doi: 10.1007/s00256-025-05076-0. Epub 2025 Nov 14.
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- ¹² van de Graaf V A, Noorduyn J, Willigenburg N, Butter I, de Gast A, Mol B, Saris D, Twisk J, Poolman R, Effect of Early Surgery vs Physical Therapy on Knee Function Among Patients With Nonobstructive Meniscal Tears: The ESCAPE Randomized Clinical Trial, *Randomized Controlled Trial JAMA* . 2018 Oct 2;320(13):1328-1337. doi: 10.1001/jama.2018.13308.
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¹⁷ van der List JP, Daniel S, Blom I, Benner JL Early Meniscal Repair Leads to Higher Success Rates Than Delayed Meniscal Repair: A Systematic Review and Meta-analysis. Am J Sports Med. 2025;53(11):2761. Epub 2025 Jan 23.