

Cohere Medicare Advantage Policy -Knee Arthroscopy

Clinical Policy for Medical Necessity Review

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This policy was reviewed by the American Association of Orthopaedic Surgeons (AAOS) prior to publication.

Important Notices

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Policy Information:

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Type: $[\underline{\mathbf{X}}]$ Adult (18+ yo) | $[\underline{\mathbf{X}}]$ Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Knee Arthroscopy

Related CMS Documents

Please refer to the <u>CMS Medicare Coverage Database</u> for the most current applicable CMS National Coverage.¹

• <u>National Coverage Determination. Arthroscopic Lavage and Arthroscopic Debridement for the Osteoarthritic Knee. (150.9)</u>

Description

Knee arthroscopy is a minimally invasive method of visualizing and treating the knee joint. It is the standard treatment for the removal of inflamed synovial tissue, loose fragments of bone or cartilage, and resecting the damaged meniscus. The procedure may also be performed to trim or reconstruct damaged articular cartilage, as well as to reconstruct a torn anterior cruciate ligament (ACL) or posterior cruciate ligament (PCL). Knee arthroscopy is additionally performed to treat knee sepsis and issues related to the patella, such as chondromalacia patella. Osteochondritis dissecans, a condition in which a portion of bone and the cartilage covering it begins to separate from the joint, may be treated and evaluated arthroscopically. As an alternative to more invasive open procedures, knee arthroscopy is well-tolerated, safe, and leads to improved quality of life and function.²⁻⁸

Medical Necessity Criteria

Indications

Knee Arthroscopy is considered appropriate if **ANY** of the following is **TRUE**:

- Intraarticular joint pathology evaluation, lateral retinacular release, or synovectomy/plica resection when ALL of the following are TRUE⁹⁻¹³:
 - o **ANY** of the following:
 - Chronic knee pain and **ALL** of the following are **TRUE**:
 - Unknown etiology of symptoms; AND
 - Imaging does not yield definitive results; AND
 - Diagnostic arthrocentesis with synovial fluid analysis when ANY of the following is TRUE:
 - o Nondiagnostic; **OR**
 - Not indicated; OR
 - Symptoms of locking, catching, and giving way; OR
 - A loose body on imaging; OR
 - Patellofemoral instability; OR
 - Abnormal patellar tracking; OR
 - Patellar compression syndrome; OR
 - Inflammatory (e.g., rheumatoid arthritis, psoriatic arthritis, Lyme arthritis) arthritis; **OR**
 - Benign tumor/neoplastic disorders (osteochondromatosis, tenosynovial giant cell tumor [pigmented villonodular synovitis PVNS], synovial hemangioma, and recurrent hemarthrosis)¹⁴; OR
 - Recurrent effusion¹⁵; OR
 - Plica syndrome¹⁵; **OR**
 - Hemophilic joint disease¹⁶; OR
 - Lipoma arborescens (synovial lipomatosis)¹⁵; AND
 - o ANY of the following:
 - Conservative management does not apply tenosynovial giant cell tumor (pigmented villonodular synovitis [PVNS]) or other pathologic synovial processes; OR
 - Failure of conservative management for greater than 3 months, including ALL of the following:
 - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; AND

- Physical therapy or physician-directed exercise program; AND
- Bracing if medically appropriate; AND
- ANY of the following:
 - Corticosteroid injection if medically appropriate; OR
 - Documentation that corticosteroid injection is contraindicated;
 OR
- **Debridement, lysis, drainage, or lavage** when **ALL** of the following are **TRUE**⁹:
 - ANY of the following:
 - Infected joint (septic arthritis)¹⁰⁻¹¹; **OR**
 - A foreign body on imaging (e.g., hardware); AND
 - The patient has **ANY** of the following conditions:
 - Nonoperative care does not apply (infected joint; symptoms of locking, catching, giving way); OR
 - Focal articular cartilage lesion (less than 4 cm²) with **ALL** of the following^{3,17-18}:
 - Symptoms that are related to chondral injury; AND
 - Absence of advanced osteoarthritis; AND
 - Nonoperative care (e.g., anti-inflammatory medications, analgesics, physical therapy, bracing) has been attempted and failed; OR
 - Arthrofibrosis (e.g., after prior surgical procedure or trauma), as indicated by ALL of the following⁸:
 - Loss of range of motion; AND
 - Nonoperative care (e.g., physical therapy, manipulation under anesthesia) has been attempted and failed for at least 6 weeks;
 OR
- Ligament injury (ACL, PCL, LCL) when ALL of the following are TRUE^{9,19-23}:
 - Absence of advanced osteoarthritis; AND
 - o Limited activities of daily living (ADLs) due to pain and instability; AND
 - Presence of ANY of the following:
 - Anterior cruciate ligament (ACL) tear; OR
 - Posterior cruciate ligament (PCL) tear; OR
 - Lateral collateral (fibular) ligament (LCL) tear; OR
 - Posterolateral corner (PLC) of the knee injury; AND
 - o ANY of the following:
 - Decrease in swelling with improvement in range of motion since initial injury; OR

- Clinically urgent injury for which ROM restoration would not be feasible prior to surgery; AND
- Treatment is indicated for ANY of the following reasons:
 - Acute tear or injury; OR
 - Chronic injury associated with meniscal tear; OR
 - Concurrent with injury of ANY of the following:
 - Concomitant MCL/PCL/ACL/PLC/LCL injury; OR
 - Concomitant avulsion fracture; OR
 - Posterolateral corner of the knee is injured; OR
 - Tibial displacement of more than 8mm is demonstrated on stress radiographs; OR
 - Anterolateral ligament injury in conjunction with ACL injury; OR
 - Chronic injury with ANY of the following:
 - Failure of conservative management for greater than 3 months, including **ALL** of the following:
 - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; AND
 - Physical therapy or physician-directed exercise program; AND
 - ANY of the following:
 - Corticosteroid injection if medically appropriate; OR
 - Documentation that corticosteroid injection is contraindicated; OR
 - Persistent instability such that surgical treatment is recommended; OR
- Treatment of osteochondral defect (e.g., osteochondritis dissecans)
 when ALL of the following are TRUE²⁴⁻²⁵:
 - Plain radiograph or advanced imaging demonstrates an osteochondral defect; AND
 - Patient has ANY of the following:
 - Symptoms attributable to the osteochondral defect; OR
 - Acute traumatic injury resulting in osteochondral defect; OR
 - Unstable lesion/unstable defect on imaging; OR
- Autologous chondrocyte implantation (ACI) when ALL of the following are TRUE^{4,9}:
 - The patient has knee symptoms (e.g., pain, swelling, mechanical) or functional compromise; AND
 - Chondral lesion between 2 cm and 4 cm; AND

- 12 years or older; AND
- ANY of the following:
 - Underlying malalignment will be addressed with osteotomy in the same procedure; OR
 - Patient does not have concurrent malalignment; OR
- Treatment of torn meniscus when ANY of the following is TRUE^{2,26-34}:
 - Partial meniscectomy when ANY of the following is TRUE:
 - The tear is an acute tear due to injury or trauma, or a recurrent or failed prior repair, and **ALL** of the following are **TRUE**:
 - Advanced imaging demonstrates a meniscal tear; AND
 - Acute, painful knee with exam consistent with MRI finding of tear;
 AND
 - Persistent mechanical symptoms; OR
 - The tear is a chronic (degenerative) tear and ALL of the following are TRUE:
 - Advanced imaging demonstrates a meniscal tear; AND
 - Persistent mechanical symptoms; AND
 - Knee pain with exam consistent with MRI finding of meniscal tear;
 AND
 - Failure of conservative management for greater than 3 months with degenerative tears and minimal osteoarthritis, including ALL of the following:
 - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; AND
 - o Physical therapy or physician-directed exercise program; AND
 - o Activity modification; AND
 - ANY of the following:
 - Corticosteroid injection if medically appropriate; **OR**
 - Documentation that corticosteroid injection is contraindicated; OR
 - Meniscus repair when ALL of the following are TRUE:
 - The patient has mechanical symptoms following an acute injury;
 AND
 - The patient has a meniscal tear on advanced imaging findings or a failed prior repair; OR
 - **Meniscus allograft transplantation** is considered appropriate if **ALL** of the following are **TRUE**⁹:

- A significant portion of the meniscus is absent due to either prior meniscectomy or prior injury; AND
- Persistent pain or impaired function with activity; AND
- Age 50 years or younger; AND
- Symptoms are localized to the tibiofemoral compartment; AND
- No evidence of advanced arthrosis; AND
- Over 50% joint space remaining; AND
- **ANY** of the following:
 - Underlying malalignment will be addressed with osteotomy in the same procedure; OR
 - Patient does not have concurrent malalignment; OR
- Arthroscopic management of fractures when ANY of the following is TRUE⁹:
 - o Fracture of the anterior intercondylar eminence of the tibia; OR
 - Other fracture pattern that would benefit from arthroscopically-assisted fracture reduction.

Non-Indications

Knee arthroscopy is not considered appropriate if **ANY** of the following is **TRUE**⁹:

- Osteoarthritis of the knee that is moderate or severe (or KL [Kellgren-Lawrence] grade III or grade IV)^{1,26,28,31}; OR
- Active infection at the surgical site (unless arthroscopy is indicated for surgical management of infection); OR
- The procedure is a meniscus allograft transplantation for ANY of the following:
 - o Inflammatory arthropathy; OR
 - Malalignment or instability that is not being corrected at the time of the meniscal allograft surgery; OR
 - o Irreparable/untreatable chondral damage.

Definitions

Advanced osteoarthritis is defined as a complete or near-complete loss of joint space or moderate/severe KL grade arthritis^{2,26}:

 Grade 3 (moderate): Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis, and possible deformity of bone ends. • **Grade 4 (severe)**: Large osteophytes, marked narrowing of joint space, severe sclerosis, and definite deformity of bone ends.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
27405	Repair, primary, torn ligament and/or capsule, knee; collateral
27407	Repair, primary, torn ligament and/or capsule, knee; cruciate
27409	Repair, primary, torn ligament and/or capsule, knee; collateral and cruciate ligaments
27412	Autologous chondrocyte implantation, knee
27427	Ligamentous reconstruction (augmentation), knee; extra-articular
27599	Unlisted procedure, femur or knee
29850	Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; without internal or external fixation (includes arthroscopy)
29851	Arthroscopically aided treatment of intercondylar spine(s) and/or tuberosity fracture(s) of the knee, with or without manipulation; with internal or external fixation (includes arthroscopy)
29855	Arthroscopically aided treatment of tibial fracture, proximal (plateau); unicondylar, includes internal fixation, when performed (includes arthroscopy)
29856	Arthroscopically aided treatment of tibial fracture, proximal (plateau); bicondylar, includes internal fixation, when performed (includes

	arthroscopy)
29866	Arthroscopy, knee, surgical; osteochondral autograft(s) (e.g., mosaicplasty) (includes harvesting of autograft[s])
29867	Arthroscopy, knee, surgical; osteochondral allograft (e.g., mosaicplasty)
29868	Arthroscopy, knee, surgical; meniscal transplantation (includes arthrotomy for meniscal insertion), medial or lateral
29870	Arthroscopy, knee, diagnostic, with or without synovial biopsy (separate procedure)
29871	Arthroscopy, knee, surgical; for infection, lavage and drainage
29873	Arthroscopy, knee, surgical; with lateral release
29874	Arthroscopy, knee, surgical; for removal of loose body or foreign body (e.g., osteochondritis dissecans fragmentation, chondral fragmentation)
29875	Arthroscopy, knee, surgical; synovectomy, limited (e.g., plica or shelf resection) (separate procedure)
29876	Arthroscopy, knee, surgical; synovectomy, major, 2 or more compartments (e.g., medial or lateral)
29877	Arthroscopy, knee, surgical; debridement/shaving of articular cartilage (chondroplasty)
29879	Arthroscopy, knee, surgical; abrasion arthroplasty (includes chondroplasty where necessary) or multiple drilling or microfracture
29880	Arthroscopy, knee, surgical; with meniscectomy (medial AND lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed
29881	Arthroscopy, knee, surgical; with meniscectomy

	(medial OR lateral, including any meniscal shaving) including debridement/shaving of articular cartilage (chondroplasty), same or separate compartment(s), when performed
29882	Arthroscopy, knee, surgical; with meniscus repair (medial OR lateral)
29883	Arthroscopy, knee, surgical; with meniscus repair (medial AND lateral)
29884	Arthroscopy, knee, surgical; with lysis of adhesions, with or without manipulation (separate procedure)
29885	Arthroscopy, knee, surgical; drilling for osteochondritis dissecans with bone grafting, with or without internal fixation (including debridement of base of lesion)
29886	Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion
29887	Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion with internal fixation
29888	Arthroscopically aided anterior cruciate ligament repair/augmentation or reconstruction
29889	Arthroscopically aided posterior cruciate ligament repair/augmentation or reconstruction
29999	Unlisted procedure, arthroscopy
J7330	Cultured chondrocytes implant
S2112	Knee arthroscopy harvest

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for knee arthroscopy may include:

- Adverse effects from delayed or denied treatment, such as progression of degenerative joint disease, worsening pain, and impaired mobility.
 Decreased mobility is associated with medical comorbidities. Certain injuries, including acute meniscus tears, can lead to knee instability if untreated or undertreated, which may increase fall risk.²⁹
- Risks with inappropriate surgical procedures include infection, bleeding, injury to neurovascular structures, injury to the articular cartilage, implant (anchor) migration, anesthetic risk, and the need for repeat or additional procedures. Other risks include iatrogenic injury due to intraoperative traction, damage due to misplaced anchors, fluid extravasation, adhesions, and pyogenic arthritis. If a patient has an inappropriate knee arthroscopy, this can lead to additional complications, necessitating further invasive management; therefore, careful patient selection is in the patient's best interest.^{2,9}

The clinical benefits of using these criteria for knee arthroscopy may include:

• Improved patient outcomes by ensuring timely and appropriate access to care for conditions that are optimally treated with knee arthroscopy. Adequate treatment of a meniscus tear, for example, can result in decreased pain, improved mobility, and prevention of early degenerative changes. Many patients are able to return to their prior level of activity and/or participation in sport after proper, timely treatment of acute knee injury or other pathology that is optimally managed arthroscopically.²⁹

- Maintenance of rigorous patient safety standards aligned to best available evidence. It is crucial to avoid unnecessary surgery, as in the future, it may result in additional invasive management. Knee arthroscopy can result in damage to the articular cartilage, thus worsening degenerative changes in the knee.²⁹
- Appropriate management of acute trauma and acute infection. Early arthroscopic intervention is indicated for specific traumatic injuries and infections with limited self-healing capacity in order to optimize patient outcomes. These criteria allow for approval of patients with certain acute trauma or infection of the knee joint without requiring any additional treatment, so as to expedite their treatment.^{2,9}
- Enhanced overall patient satisfaction and healthcare experience. Positive patient-reported outcomes include reduced pain, better function, and improved quality of life.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

Medical Evidence

In a 2022 Cochrane Review, O'Connor et al. reviewed the literature to determine the efficacy of arthroscopic knee surgery for the treatment of symptomatic knee osteoarthritis, including for degenerative meniscal tears. While current guidelines discourage the use of the procedure for these indications, it is still performed with some regularity. The review analyzed benefits and harms (e.g., debridement, partial meniscectomy, or both) when compared to non-surgical interventions (e.g., physical therapy, exercise, intra-articular glucocorticoid injections, non-arthroscopic lavage, non-steroidal anti-inflammatory drugs, hyaluronic acid injections) or placebo surgery. Sixteen trials were included, representing randomized controlled trials (RCTs) and quasi-randomized trials. A total of 2105 patients (age range 46 to 65 years; 56% women) met the inclusion criteria. The authors affirmed that arthroscopic surgery is not recommended for patients with symptomatic degenerative knee disease as the evidence does not demonstrate clinically significant improvements in pain, function, or quality of life. In addition, arthroscopy may advance the progression of knee osteoarthritis and may result in earlier or additional surgery (e.g., knee arthroplasty, osteotomy).²

A 2024 publication by Sonesson et al. examined the 10-year outcomes among 150 middle-aged patients with meniscal symptoms who were randomized to either nonsurgical or surgical management. At the time of follow-up, the 142 surviving patients were evaluated for radiographic presence of osteoarthritis, as well as symptoms of osteoarthritis. The authors found that patient-reported outcomes were similar between cohorts and, given the short-term benefit and lack of long-term harm of knee arthroscopy, endorsed it as a first-line treatment for meniscal pathology after a failed trial of conservative care for a minimum of three months.³⁵

The Academy of Orthopaedic Surgeons (AAOS) has published four clinical guidelines to direct the management of patients with disease and damage to the knee that may be treated with arthroscopy. *Diagnosis and Treatment of Osteochondritis Dissecans* was published in 2023.²⁵ Therein, two recommendations, classified as limited in strength, were made regarding the surgical management of osteochondritis dissecans. The authors noted that

the current body of evidence is insufficient to make a recommendation for or against surgical intervention for both adult and pediatric patients. They cite the associated benefits and risks for nonoperative and operative treatment and ultimately opine, as a workgroup, that patients should be given the option of undergoing surgery. Management of Acute Meniscal Pathology was adopted in 2024, although the workgroup notes that current evidence is insufficient to establish strong recommendations.34 Importantly, a moderate-strength recommendation is made regarding the preservation of meniscal tissue during surgical intervention in order to reduce the future risk of osteoarthritis. The authors opine that patients with a displaced acute meniscal tear or a symptomatic acute meniscal tear would benefit from early surgical intervention. Elsewhere in the guideline, the authors recommend surgical treatment of acute meniscal tears within six months of injury after failed conservative treatment, although this guidance was limited in strength and based on low-quality evidence. The workgroup advocates for future research in this area to allow for improved recommendations to be made in the future. Management of Anterior Cruciate Ligament Injuries was published in 2022.²⁰ The AAOS recommends operative treatment of ACL injuries in select patients. Early reconstruction for patients with acute isolated ACL tears is recommended due to the increased risk profile (potential chondral injury, meniscal injury) beyond 3 months. In general, ACL reconstruction was endorsed over ACL repair due to the higher risk of revision surgery after ACL repair. ACL reconstruction was characterized as the standard of care for primary ACL injury. Both recommendations were categorized as strong and were based on evidence that was rated as high-quality. 20 Management of Osteoarthritis of the Knee (Non-Arthroplasty) was adopted in 2021. In this guideline, the AAOS does not recommend arthroscopy with lavage and/or debridement for primary knee osteoarthritis. Among patients with meniscal tears and concomitant mild to moderate osteoarthritis, arthroscopic partial meniscectomy may be necessary when conservative treatment (e.g., physical therapy) has been unsuccessful. Both recommendations were made with moderate strength.26

The AAOS has also issued position statements pertaining to knee arthroscopy. Information statement 1047, published in 2016, acknowledges the increased patient safety risks conferred by tobacco use – including increased ventilatory support, myocardial infarction, cardiac arrest, cerebrovascular accident, sepsis, and death.³⁶ The AAOS states that patients who are active

smokers may reduce these risks through cessation of smoking prior to surgery; they also note the special role orthopaedic surgeons play in counseling patients on the benefits of reduced or eliminated tobacco use before surgery. Importantly, unconfirmed cessation is not endorsed as a hard stop to surgery; rather, the surgeon's unique role as an advocate for preoperative smoking cessation is emphasized. Statements 1040 and 1184 discuss the impact of obesity on musculoskeletal conditions. 27,38 Patients with morbid obesity (BMI of 40 or above) are encouraged to participate in a weight loss program, obtain weight reduction resources through their physician, rectify nutritional deficiencies, and consider a delay in surgical treatment if it would facilitate participation in weight loss interventions that may improve surgical outcomes. Statement 1040 notes that individuals with obesity face an increased risk for sports injuries and that when such injuries are treated arthroscopically, the procedure may be more technically difficult because of the loss of superficial landmarks.³⁷ Questions remain as to whether functional results are affected by obesity. Further, the authors note the risks associated with general anesthesia for patients with obesity and emphasize the importance of adequate patient positioning and padding to avoid pressure ulcers, nerve palsies, and compartment syndromes, which are more common among obese patients. In general, obesity is associated with a greater risk of premature complications and mortality during the perioperative period. The AAOS endorses compassionate, risk-informed patient counseling for obese patients who are considering surgery. Careful screening and appropriate referral to nutrition or endocrine care is also endorsed. Statement 1184 reinforces the risks associated with obesity in the setting of orthopaedic care and similarly encourages adequate patient counseling prior to surgery.38

Social determinants of health remain an important area of ongoing orthopaedic surgery research, with recent literature raising questions regarding the healthcare disparities that may be potentiated by care limitations based on obesity and smoking status/nicotine dependence.³⁹⁻⁴⁵ Other ongoing research interrogates the impacts that biological sex, race, and socioeconomic status have on knee arthroscopy utilization and outcomes.⁴⁶⁻⁵⁴

References

- Centers for Medicare and Medicaid Services (CMS). National coverage determination (NCD): Arthroscopic lavage and arthroscopic debridement for the osteoarthritic knee (150.9). Effective Date June 11, 2004. https://www.cms.gov/medicare-coverage-database/ view/ncd.aspx?ncdid=285&ncdver=1&bc=0
- 2. O'Connor D, Johnston RV, Brignardello-Petersen R, et al. Arthroscopic surgery for degenerative knee disease (osteoarthritis including degenerative meniscal tears). *Cochrane Database Syst Rev.* 2022 Mar 3;3(3):CD014328. doi: 10.1002/14651858.CD014328. PMID: 35238404
- Howell M, Liao Q, Gee CW. Surgical management of osteochondral defects of the knee: An educational review. *Curr Rev Musculoskelet Med*. 2021 Feb;14(1):60-66. doi: 10.1007/s12178-020-09685-1. PMID: 33587261; PMCID: PMC7930143
- Mall NA, Harris JD, Cole BJ. Clinical evaluation and preoperative planning of articular cartilage lesions of the knee. *J Am Acad Orthop* Surg. 2015 Oct;23(10):633-40. doi: 10.5435/JAAOS-D-14-00241. PMID: 26377673
- 5. Harris JD, Siston RA, Pan X, et al. Autologous chondrocyte implantation: A systematic review. *J Bone Joint Surg Am*. 2010 Sep 15;92(12):2220-33. doi: 10.2106/JBJS.J.00049. PMID: 20844166; PMCID: PMC7373451
- 6. Lim HC, Bae JH, Song SH, et al. Current treatments of isolated articular cartilage lesions of the knee achieve similar outcomes. *Clin Orthop Relat Res.* 2012 Aug;470(8):2261-7. doi: 10.1007/s11999-012-2304-9. PMID: 22422593; PMCID: PMC3392395
- 7. Ulstein S, Årøen A, Røtterud JH, et al. Microfracture technique versus osteochondral autologous transplantation mosaicplasty in patients with articular chondral lesions of the knee: A prospective randomized trial with long-term follow-up. *Knee Surg Sports Traumatol Arthrosc.* 2014 Jun;22(6):1207-15. doi: 10.1007/s00167-014-2843-6. PMID: 24441734; PMCID: PMC4028546

- 8. Thompson R, Novikov D, Cizmic Z, et al. Arthrofibrosis after total knee arthroplasty: Pathophysiology, diagnosis, and management. *Orthop Clin North Am*. 2019 Jul;50(3):269-279. doi: 10.1016/j.ocl.2019.02.005. PMID: 31084828
- Phillips BB, Mihalko MJ. Arthroscopy of the lower extremity. In: Azar FM, Beaty JH, editors. Campbell's Operative Orthopaedics. 14th ed. Philadelphia, PA: Elsevier; 2021:2576-2662.e8
- 10. Mascioli AA, Park AL. Infectious arthritis. In: Azar FM, Beaty JH, editors. *Campbell's Operative Orthopaedics*. 14th ed. Philadelphia, PA: Elsevier; 2021:842–867.e2
- Donders CM, Spaans AJ, Bessems JHJM, et al. Arthrocentesis, arthroscopy or arthrotomy for septic knee arthritis in children: A systematic review. J Child Orthop. 2021 Feb 1;15(1):48-54. doi: 10.1302/1863-2548.15.200129. PMID: 33643458; PMCID: PMC7907762
- 12. Dabov GD. Osteomyelitis. In: Azar FM, Beaty JH, editors. *Campbell's Operative Orthopaedics*. 14th ed. Philadelphia, PA: Elsevier; 2021:817-841.e6
- 13. Miller RH III, Azar FM. Knee injuries. In: Azar FM, Beaty JH, editors.

 Campbell's Operative Orthopaedics. 14th ed. Philadelphia, PA: Elsevier; 2021;2198-2373.e18
- 14. Healey JH, Bernthal NM, van de Sande M. Management of tenosynovial giant cell tumor: A neoplastic and inflammatory disease. *J Am Acad Orthop Surg Glob Res Rev.* 2020 Nov;4(11):e20.00028. doi: 10.5435/JAAOSGlobal-D-20-00028. PMID: 33156160; PMCID: PMC7643913
- 15. Kelly MP, Bush-Joseph CA. Arthroscopic Synovectomy of the Knee. In: DeLee, Drez, Miller, editors. Orthopaedic Sports Medicine. 5th ed. Philadelphia, PA: Elsevier; 2020:1127-1131.e1
- van Vulpen LFD, Thomas S, Keny SA, et al. Synovitis and synovectomy in haemophilia. Haemophilia. 2021 Feb;27 Suppl 3(Suppl 3):96-102. doi: 10.1111/hae.14025. PMID: 32490595; PMCID: PMC7984224

- 17. Totlis T, Fermín TM, Kalifis G, et al. Arthroscopic debridement for focal articular cartilage lesions of the knee: A systematic review. Surgeon. 2021 Dec 1;19(6):356-64
- 18. Falah M, Nierenberg G, Soudry M, Hayden M, Volpin G. Treatment of articular cartilage lesions of the knee. *Int Ortho*. 2010 Jun;34:621-30
- Diermeier TA, Rothrauff BB, Engebretsen L, et al. Treatment after ACL injury: Panther Symposium ACL Treatment Consensus Group. Br J Sports Med. 2021 Jan;55(1):14-22. doi: 10.1136/bjsports-2020-102200. PMID: 32661128
- 20. American Academy of Orthopaedic Surgeons (AAOS). Management of anterior cruciate ligament injuries: Evidence-based clinical practice guideline. Published August 22, 2022. Accessed January 21, 2025. https://www.aaos.org/globalassets/quality-and-practice-resources/anterior-cruciate-ligament-injuries/aclcpg.pdf
- 21. LaBella CR, Hennrikus W, Hewett TE, et al. Anterior cruciate ligament injuries: Diagnosis, treatment, and prevention. *Peds*. 2014 May;133(5):e1437-50. doi: 10.1542/peds.2014-0623. PMID: 24777218
- 22. Weiss S, Krause M, Frosch KH. Posterolateral corner of the knee: A systematic literature review of current concepts of arthroscopic reconstruction. *Arch Orthop Trauma Surg*. 2020 Dec;140(12):2003-2012. doi: 10.1007/s00402-020-03607-z. PMID: 32955608; PMCID: PMC7674327
- 23. Song JG, Nha KW, Lee SW. Open posterior approach versus arthroscopic suture fixation for displaced posterior cruciate ligament avulsion fractures: Systematic review. *Knee Surg & Rel Res.* 2018 Dec;30(4):275
- 24.Chau MM, Klimstra MA, Wise KL, et al. Osteochondritis dissecans: Current understanding of epidemiology, etiology, management, and outcomes. *J Bone Joint Surg Am*. 2021 Jun 16;103(12):1132-1151. doi: 10.2106/JBJS.20.01399. PMID: 34109940; PMCID: PMC8272630
- 25. American Academy of Orthopaedic Surgeons (AAOS) Diagnosis and treatment of osteochondritis dissecans evidence-based clinical practice guideline. AAOS.org/ocdcpg.org Published December 1, 2023. Accessed January 21, 2025

- 26.Brophy RH, Fillingham YA. AAOS clinical practice guideline summary: Management of osteoarthritis of the knee (non-arthroplasty), third edition. *J Am Acad Orthop Surg*. 2022 May 1;30(9):e721-e729. doi: 10.5435/JAAOS-D-21-01233. PMID: 35383651
- 27. Katz JN, Arant KR, Loeser RF. Diagnosis and treatment of hip and knee osteoarthritis: A review. *JAMA*. 2021 Feb 9;325(6):568-578. doi: 10.1001/jama.2020.22171. PMID: 33560326; PMCID: PMC8225295
- 28. Abram SGF, Beard DJ, Price AJ, et al. Arthroscopic meniscal surgery: A national society treatment guideline and consensus statement. *Bone Joint J.* 2019 Jun;101-B(6):652-659. doi: 10.1302/0301-620X.101B6.BJJ-2019-0126.R1. PMID: 31154847
- 29.Beaufils P, Becker R, Kopf S, et al. Surgical management of degenerative meniscus lesions: The 2016 ESSKA meniscus consensus. *Knee Surg Sports Traumatol Arthrosc.* 2017 Feb;25(2):335-346. PMID: 28210788
- 30.Kopf S, Beaufils P, Hirschmann MT, et al. Management of traumatic meniscus tears: The 2019 ESSKA meniscus consensus. *Knee Surg Sports Traumatol Arthrosc.* 2020 Apr;28(4):1177-1194. doi: 10.1007/s00167-020-05847-3. PMID: 32052121; PMCID: PMC7148286
- 31. Chahla J, Hinckel BB, Yanke AB, et al. An expert consensus statement on the management of large chondral and osteochondral defects in the patellofemoral joint. *Orthop J Sports Med*. 2020 Mar 26;8(3):23259 67120907343. doi: 10.1177/2325967120907343. PMID: 32258181; PMCID: PMC7099674
- 32. Khan M, Evaniew N, Bedi A, et al. Arthroscopic surgery for degenerative tears of the meniscus: A systematic review and meta-analysis. *CMAJ*. 2014 Oct 7;186(14):1057-64. doi: 10.1503/cmaj.140433. PMID: 25157057; PMCID: PMC4188648
- 33. Brignardello-Petersen R, Guyatt GH, Buchbinder R, et al. Knee arthroscopy versus conservative management in patients with degenerative knee disease: A systematic review. *BMJ Open*. 2017 May 11;7(5):e016114. doi: 10.1136/bmjopen-2017-016114. PMID: 28495819

- 34.American Academy of Orthopaedic Surgeons (AAOS) Management of Acute Meniscal Pathology Evidence-Based Clinical Practice Guideline. aaos.org/ampcpg. Published June 10, 2024.
- 35. Sonesson S, Springer I, Yakob J, Hedevik H, Gauffin H, Kvist J. Knee arthroscopic surgery in middle-aged patients with meniscal symptoms: a 10-year follow-up of a prospective, randomized controlled trial. *Amer A Sports Med.* 2024 Jul;52(9):2250-9
- 36.American Academy of Orthopaedic Surgeons (AAOS). Information Statement 1047: Tobacco Use and Orthopaedic Surgery. Published February 2016. https://www.aaos.org/globalassets/about/ bylaws-library/information-statements/1047-tobacco-use-and-orthopaedic-s urgery-3.pdf
- 37. American Academy of Orthopaedic Surgeons (AAOS). Information Statement 1040: Obesity and Musculoskeletal Care. Published June 2022. https://www.aaos.org/globalassets/about/bylaws-library/information-statements/1040-obesity-and-musculoskeletal-care.pdf
- 38.American Academy of Orthopaedic Surgeons. (AAOS) Information Statement 1184: The impact of obesity on bone and joint health. Published March 2015. https://www.aaos.org/contentassets/lcd7f41417ec4dd4b5c4c48532183b96/1184-the-impact-of-obesity-on-bone-and-joint-health1.pdf
- 39. Sing DC, Luan TF, Feeley BT, Zhang AL. Is obesity a risk factor for adverse events after knee arthroscopy?. *Arthrosc.* 2016 Jul 1;32(7):1346-53
- 40.Zhang T, Jauregui JJ, Foster M, et al. Outcomes of partial meniscectomy in obese patients: a systematic review and meta-analysis. *Cartilage*. 2021 Dec;13(1_suppl):216S-27S
- 41. Ford BT, Kong R, Wellington IJ, et al. Impact of obesity, smoking, and age on 30-day postoperative outcomes of patients undergoing arthroscopic meniscus surgery. *Ortho*. 2024 Nov 1;47(6):332-6
- 42.Bi AS, Mojica ES, Markus DH, et al. Risk of postoperative stiffness following multiligamentous knee injury surgery is not affected by obesity: a multicenter study. *Arthrosc.* 2022 Dec 1;38(12):3175-81

- 43.Holle AM, Tummala SV, Pejic J, et al. Association of smokeless tobacco use with perioperative complications and revision surgery after anterior cruciate ligament reconstruction. *Amer J Sports Med*. 2025 Jan 4:03635465241303487
- 44.Abdel Khalik H, Shanmugaraj A, Ekhtiari S, et al. Self-defined former smokers consume the highest opioid quantities following knee and shoulder arthroscopy. *Knee Surg, Sports Traumatol, Arthrosc.* 2024 Aug 6;33(3):856.
- 45.Everhart JS, Vajapey S, Kirven JC, et al. Symptom chronicity and tobacco use: Differences in athletic and nonathletic candidates for cartilage surgery. *Cartilage*. 2021 Oct;12(4):448-55.
- 46.Mok AC, Fancher AJ, Vopat ML, et al. Sex-specific outcomes after anterior cruciate ligament reconstruction: A systematic review and meta-analysis. *Ortho J Sports Med*. 2022 Feb 23;10(2):2325967122 1076883
- 47. Rohde MS, Shea KG, Dawson T, et al. Age, sex, and BMI differences related to repairable meniscal tears in pediatric and adolescent patients. *Amer J Sports Med*. 2023 Feb;51(2):389-97
- 48.Amen TB, Chatterjee A, Rudisill SS, et al. National patterns in utilization of knee and hip arthroscopy: An analysis of racial, ethnic, and geographic disparities in the United States. *Ortho J Sports Med*. 2023 Aug 16;11(8):23259671231187447
- 49.Bloise C, Fong B, Jeffers K, et al. Predictors of disparities in patient-reported outcomes before and after arthroscopic meniscectomy. *J Knee Surg.* 2023 Jun;36(07):792-800
- 50.Wentt CL, Farrow LD, Everhart JS, Spindler KP, Jones MH. Are there racial disparities in knee symptoms and articular cartilage damage in patients presenting for arthroscopic partial meniscectomy?. *JBJS Open Access*. 2022 Jul 1;7(3):e21
- 51. Fang CJ, Miller JA, Yergensen CJ, et al. Racial/ethnic disparities exist among patients who undergo anterior cruciate ligament reconstruction

- in socioeconomic status, perception of health status and literacy. *Arthrosc, Sports Med, and Rehab.* 2024 Sep 11:101000.
- 52.Prinz NW, Thompson XD, Leicht AS, Kuenze C, Hart JM. Associations between race and socioeconomic status, lower extremity strength, and patient-reported outcomes following anterior cruciate ligament reconstruction. *J Athl Training*. 2024 Dec 1;59(12):1171-7
- 53. Testa EJ, Modest JM, Brodeur P, et al. Do patient demographic and socioeconomic factors influence surgical treatment rates after ACL injury?. *J Racial Ethn Health Disp.* 2023 Feb;10(1):319-24
- 54.England P, Patel NM. Disparities in evaluation, treatment, and outcomes of pediatric knee injuries. *Sports Med and Arthrosc Rev.* 2024 Dec 1;32(4):182-8
- 55.Ro KH, Kim JH, Heo JW, Lee DH. Clinical and radiological outcomes of meniscal repair versus partial meniscectomy for medial meniscus root tears: A systematic review and meta-analysis. *Ortho J Sports Med.* 2020 Nov 10;8(11):2325967120962078
- 56.Saltzman BM, Meyer MA, Leroux TS, et al. The influence of full-thickness chondral defects on outcomes following meniscal allograft transplantation: A comparative study. *Arthrosc*. 2018 Feb 1;34(2):519-29
- 57. Kempshall PJ, Parkinson B, Thomas M, et al. Outcome of meniscal allograft transplantation related to articular cartilage status: Advanced chondral damage should not be a contraindication. *Knee Surg, Sports Traumatol, Arthrosc.* 2015 Jan;23(1):280-9
- 58.Frank R, Gilat R, Haunschild ED, et al. Do outcomes of meniscal allograft transplantation differ based on age and sex? A comparative group analysis. *Arthrosc.* 2022 Feb 1;38(2):452-65

Policy Revision History/Information

Original Date: May 24, 2024			
Review History			
Version 2	06/10/2024	422.101 Disclaimer added	
Version 3	04/17/2025	Annual policy review & restructure:	
		Removed requirement for "young, active patient" for medial or lateral meniscal tears	
		Permitted osteochondritis dissecans to be visualized on plain radiograph per professional society guideline	
		Removed qualifier for "due to patient's occupation" on ACL reconstruction per professional society guidelines	
		Removed requirement for conservative management of greater than 3 months for ACL tear per professional society guidelines	
		Modified indications for meniscus allograft transplantation for clarity and to better reflect the referenced source	
		Removed redundant synovectomy indication for Lyme arthritis, which was already captured in prior indication	
		Removed redundant synovectomy indication for tenosynovial giant cell tumor, which was already captured in prior indication	
		Added indications for synovectomy: synovial hemangioma, degenerative synovitis, plica syndrome	

Added an "out" for conservative management requirement for plica syndrome and PVNS

Adjusted chondral lesion size for optimal ACI treatment to reflect appropriate arthroscopic management versus open arthrotomy

Added minimum age of 12 for optimal ACI treatment

Removed requirement for grade III or grade IV osteochondral defect for optimal arthroscopic ACI treatment versus open arthrotomy

Moved debridement of articular cartilage lesion indication beneath existing indications for debridement

Removed hemangioma indication under diagnostic arthroscopy as this indication was better covered elsewhere

Added indication for arthroscopic management of certain fracture types

Removed BMI requirement for meniscus allograft as it is not an absolute contraindication

Consolidated all indications which require three months of conservative care for policy's ease of use.

Updated conservative care to current internal standard language.

Conservative care language modified to reflect non-opioid pain control.

Modified steroid injection language for clarity.

Added references.

Updated medical evidence section.

Version 4	05/22/2025	Added CPT codes: 27405, 27407, 27409, 27427
		Slight modification to ligamentous injury indication to allow approval for lateral collateral ligament injury - changed "cruciate ligament injury" to "ligament injury" and added bullet points: presence of LCL tear, presence of PLC injury
Version 5	09/11/2025	Added "unstable lesion/unstable defect on imaging" as indication under osteochondritis dissecans to allow approval for patients who may not have mechanical symptoms
		Added requirement that underlying malalignment be addressed with osteotomy in the same procedure as meniscal transplant or autologous chondrocyte implantation per current medical guidelines Added definition of advanced osteoarthritis to "definition" section