*National Imaging Associates, Inc.	
Clinical guidelines: **KNEE ARTHROSCOPY**	**Original Date: November 2015**
CPT Codes:** - **Knee Manipulation Under Anesthesia (MUA): 27570, 29884** - **Knee Ligament Reconstruction/Repair: 27405, 27407, 27409, 27427, 27428, 27429, 29888, 29889** - **Knee Meniscectomy/Meniscal Repair/Meniscal Transplant: 27332, 27333, 27403, 29868, 29880, 29881, 29882, 29883** - **Knee Surgery – Other: 27412, 27415, 27416, 27418, 27420, 27422, 27424, 27425, 29866, 29867, 29870, 29873, 29874, 29875, 29876, 29877, 29879, 29885, 29886, 29887, G0289** ***See UM Matrix for allowable billed groupings and additional covered codes*	**Last Revised Date: December~~June~~ 2023**
Guideline Number: NIA_CG_316	**Implementation Date: July~~anuary~~ 2024**

Table of Contents

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

STATEMENT

Purpose

This guideline addresses the following elective, non-emergent, arthroscopic knee repair procedures; diagnostic knee arthroscopy, debridement with or without chondroplasty, meniscectomy/meniscal repair/meniscal transplant, ligament reconstruction/repair, articular cartilage restoration/repair (marrow stimulating and restorative techniques) , synovectomy (major [2+ compartments], minor [1 compartment]), loose body removal, lateral release/patellar realignment, manipulation under anesthesia (MUA), and lysis of adhesions for arthrofibrosis of the knee.

Scope

Open, non-arthroplasty knee surgeries are performed instead of an arthroscopy as dictated by the type and severity of injury and/or disease.

See* LEGISLATIVE REQUIREMENTS *for specific mandates in the State of Washington

General Requirements

Elective arthroscopic surgery of the knee may be considered if the following general criteria are met:

- There is clinical correlation of the individual's subjective complaints with objective exam findings and/or imaging (when applicable)
- Knee pain with documented loss of function: Deviation from normal knee function which may include painful weight bearing and/or inadequate range of motion (> 10 degrees flexion contracture or < 110 degrees flexion or both) to accomplish age-appropriate activities of daily living (ADLs), occupational or athletic requirements)
- ~~Individual is medically stable with no uncontrolled comorbidities)~~ Individual is medically stable and optimized for surgery, and any treatable comorbidities are adequately medically managed such as diabetes, nicotine addiction, or an excessively high BMI. There should also be a shared decision between the patient and physician to proceed

with knee surgery when comorbidities exist as it pertains to the increased risk of complications.

- Individual does not have an active local or systemic infection
- Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, or muscle relaxants) unless engaged in a treatment program
- No intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1 3~~

Clinical notes should address:

- Symptom onset, duration, and severity
- Loss of function and/or limitations
- Type and duration of non-operative management modalities (where applicable)

Unless otherwise stated in the subsections below, non-operative management must include **at least TWO** or more of the following, unless otherwise specified: [4]

- Rest or activity modifications/limitations
- Ice/heat
- Protected weight bearing
- Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
- Brace/orthosis
- Physical therapy modalities
- Supervised home exercise
- Weight optimization
- Injections: corticosteroid, NSAID, viscosupplementation

INDICATIONS

Diagnostic Knee Arthroscopy

Diagnostic knee arthroscopy -should rarely be required however may be medically necessary when **ALL** of the following criteria are met:

- At least 12 weeks of knee pain with documented loss of function
- Failure of at least 12 weeks of non-operative treatment, including **at least TWO** of the following: [4]
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis

    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- Clinical documentation of painful weight bearing, joint line tenderness, effusion and/or limited motion compared to pre-symptomatic joint range
- Indeterminate radiographs **AND** MRI findings. Radiographs and/or MRI should not demonstrate any of the following: Kellgren-Lawrence Grade 3-4 changes (based on weight-bearing radiographs), meniscus tears, ligament tears, loose bodies, stress fractures (including insufficiency fractures) or patellofemoral instability (lateral patellar tilt or patellar subluxation)
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3][1-3]

NOTE: Subchondroplasty and In-office diagnostic arthroscopy (e.g., Mi-Eye, VisionScope) [5][4-6] are not managed by NIA.

Debridement Chondroplasty

Arthroscopic debridement with or without chondroplasty for the treatment of osteoarthritis of the knee is considered **NOT MEDICALLY NECESSARY**. [6][7-12]

Debridement for Non-Patellofemoral (Femoral Condyle and Tibial Plateau) Articular Cartilage

May be medically necessary when **ALL** of the following criteria are met[13-15]: [7]

- Knee pain with documented loss of function
- Failure of **at least 12 weeks** of non-operative treatment, including **at least two** of the following: [4]
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- MRI results demonstrate evidence of an area of localized articular cartilage damage or an unstable chondral flap
- History of t~~T~~wo or more or persistent effusion(s)
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3][1-3]

Debridement chondroplasty for patellofemoral chondrosis

May be medically necessary when **ALL** of the following criteria are met: [8]

- Anterior knee pain with documented loss of function, exacerbated by activities that load the patellofemoral joint such as ascending > descending stairs or being in seated position for extended periods of time with knee flexed
- Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred hip pain , radicular pain, tendinitis, bursitis, neuroma)
- Physical exam localizes tenderness to the patellofemoral joint
- Failure of **at least 12 weeks** of non-operative treatment, including **at least two** of the following: [4]
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- **NO** evidence of moderate to severe osteoarthritis (Kellgren-Lawrence Grade 3-4 based on weight-bearing radiographs and patellofemoral views [see Grading Appendix])
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]

Meniscectomy / Meniscal Repair / Meniscal Transplant

Meniscectomy / Meniscal Repair

There is a high incidence of incidental meniscal findings on knee MRI in middle-aged and elderly individuals and several studies have indicated that there is no difference in outcome between operative and non-operative treatment of individuals with degenerative meniscus tears, especially when associated with an arthritic knee. [9, 10, 11] Arthroscopic debridement of degenerative meniscus tears in those with visible arthritis is generally not recommended and, in some cases, may worsen the symptoms and progression of the arthritis. [9, 12, 13] Studies have also demonstrated an increased incidence of revision arthroplasty, infection, loosening and stiffness in individuals who underwent a knee arthroscopy prior to a total knee arthroplasty.

Meniscectomy and/or meniscal repair may be medically necessary when **ALL** the following criteria in any of the following subsections are met: [9, 14]

- Symptomatic meniscal tear confirmed by MRI results that demonstrate a peripheral tear in the vascular zone, root tear, [15] or other tear that the requesting physician considers repairable and is associated with pain localized to the corresponding compartment upon physical examination.

OR

- MRI results demonstrate a meniscus tear in a pediatric or adolescent individual who complains of either pain or mechanical symptoms and has ANY positive meniscal findings on physical examination.

OR

- History of acute injury/onset of symptoms with a locked knee and/or mechanical symptoms of locking
- Physical examination demonstrates ANY positive meniscal findings on examination or demonstrates evidence of a locked knee (loss of terminal extension)
- MRI demonstrates a bucket-handle tear of the meniscus. (Does not include an extruded meniscus or flap tears)

OR

- When **at least two** of the following 5 criteria are met:
  - History of mechanical symptoms such as "catching" or "locking" as reported by the individual
  - Knee joint line pain with forced hyperextension upon physical exam
  - Knee joint line pain with maximum flexion upon physical exam
  - Knee pain, crepitus, or an audible or palpable click with the McMurray's test or Apley grind test
  - Joint line tenderness to palpation upon physical exam

AND

- Failure of at least 6 weeks of non-operative treatment, including **at least TWO** of the following:
  - Rest or activity modifications/limitations
  - Ice/heat
  - Protected weight bearing
  - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
  - Brace/orthosis
  - Physical therapy modalities
  - Supervised home exercise
  - Weight optimization
  - Corticosteroid injection
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3][1-3]

AND

- **ONE** of the following:
    - Weight-bearing X-rays (standing X-rays, Rosenberg view, 45-degree flexed PA view, etc.) that demonstrate no moderate or severe osteoarthritic changes defined as Kellgren-Lawrence Grade 3-4 [see Grading Appendix]; X-rays should be described as showing either no arthritis or mild/minimal arthritis only

      OR

    - MRI results confirm a frank meniscal tear (not simply degenerative changes, i.e., fraying) and the MRI **does not** demonstrate any of the following: moderate or severe articular cartilage thinning, full-thickness articular cartilage loss or defects, extrusion of the meniscus, subchondral edema, more than mild osteophytes, subchondral cysts, or an impression of "moderate" or "advanced/severe" arthritis (see absolute and relative contraindications). If the MRI demonstrates any of the above-described findings of more than mild arthritis, **weight-bearing X-rays are required** to confirm no moderate or severe articular cartilage loss*.

***Arthroscopic meniscus requests and MRI/X-rays of the knee**

The imaging evaluation of the knee for individuals with meniscus tears should be individualized, the goal of which is to recommend treatment for only those with no or minimal associated arthritis.

Although most individuals that have a request for arthroscopic meniscectomy will have had **BOTH** an MRI **AND** X-rays of the knee, only one of these tests is required for approval, provided all other criteria for meniscectomy have been met. For example, if there has been a failure to improve with 6 weeks of non-operative treatment and there are physical examination findings of a meniscus tear, an MRI is not required, only weight-bearing X-rays that demonstrate no more than mild arthritis. Likewise, if an MRI describes a frank meniscus tear and does not describe any significant associated arthritis, weight-bearing X-rays are not required. However, as noted above, if an MRI demonstrates findings of more than mild arthritis, **weight-bearing X-rays are required** to confirm no moderate or severe articular cartilage loss.

Absolute Contraindications Meniscectomy/Meniscal Repair

- Arthroscopic meniscectomy or meniscal repair is never medically necessary in the presence of Kellgren-Lawrence Grade 4 osteoarthritis [see Grading Appendix].
- **ANY**~~No~~ intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1 3~~

Relative Contraindications Meniscectomy / Meniscal Repair

- Meniscectomy or repair is considered NOT MEDICALLY NECESSARY in the presence of Kellgren-Lawrence Grade 3 osteoarthritis [see Grading Appendix], **Unless**:
    - There has been the acute onset of locking (does not include catching, popping, cracking, etc.); **AND**
    - There is MRI evidence of a bucket-handle **or** displaced meniscal fragment that correlates with the correct compartment (i.e., medial tenderness and locking, for a medial meniscus tear).
- If grade 3 changes are present, only a meniscectomy may be indicated, not a repair. If there is evidence of meniscal extrusion on coronal MRI, with/without subchondral edema, arthroscopy is relatively contraindicated, even if a tear is present.

Meniscal Transplant

Meniscal Transplants may be medically necessary when **ALL** of the following criteria are met [16, 17][35-39]

- Individual is < 40 years of age
- Individual has no evidence of arthritic changes
- Symptomatic meniscal deficiency confirmed by MRI results that show a meniscal deficient compartment, OR previous arthroscopy photographs or video showing subtotal or total meniscectomy
- Failure of at least 6 weeks of non-operative treatment, including **at least TWO** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection

Absolute Contraindications: Meniscal Transplant

- Uncorrected (staged or simultaneous) ligamentous insufficiency (ACL, PCL, MCL, LCL, PMC, PLC)
- Uncorrected (staged or simultaneous) malalignment greater than 5 degrees varus or 5 degrees valgus
- Uncorrected (staged or simultaneous) full-thickness articular cartilage isolated defects (International Cartilage Research Society Grade 3 or 4; Outerbridge Grade IV [see Grading Appendix])

- Kellgren-Lawrence Grade 3 or 4 osteoarthritis [see Grading Appendix]
- Intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1-3~~

Ligament Reconstruction or Repair

Anterior Cruciate Ligament (ACL) Repair or Reconstruction with Allograft or Autograft

ACL reconstruction or repair may be medically necessary when either of the following criteria are met: [18]~~ALL of the following criteria in any of the following subsections are met~~[39-42]~~: [16, 17]~~

- MRI results confirm an ACL tear associated with other ligamentous instability or repairable meniscus
- Acute ACL tear confirmed by MRI in high demand occupation or competitive athlete (as quantified by Marx activity score for athletics (any score greater than 4) and Tegner activity score for athletics and/or occupation (score greater than 2)) [see Grading Appendix])

~~Acute ACL tear confirmed by MRI in high demand occupation or competitive athlete (as quantified by Marx activity score for athletics (any score greater than 4) and Tegner activity score for athletics and/or occupation (score greater than 2)) [see Grading Appendix])~~

~~-~~**OR**

When **ALL** the following criteria are ~~met:[~~met: [16,17]

~~C. 1. P~~PPatient history of instability at the time of an acute injury OR history of recurrent knee instability (as defined subjectively as "giving way", "giving out", "buckling", two-fist sign) ~~with~~ ~~clinical~~

- ~~2.~~ Physical examination findings of instability: Lachman test, Lachman test 1A, 1B, 2A, 2B, 3A, 3B, anterior drawer, pivot shift test, or instrumented (KT-1000 or KT-2000) laxity of greater than 3 mm side-side difference
- ~~3.~~ MRI results confirm complete ACL tear or substantial “partial tear” with non-functioning ACL as demonstrated on physical examination
- ~~4.~~ Individual has no evidence of severe arthritis defined as Kellgren-Lawrence grade 3 or 4 [see Grading Appendix]

~~MRI results confirm complete ACL tear~~

~~• Individual has no evidence of severe arthritis defined as Kellgren-Lawrence grade 3 or 4 [see Grading Appendix]**~~

~~OR~~

~~• When one of the following criteria are met: [18]~~
~~○ MRI results confirm an ACL tear associated with other ligamentous instability or repairable meniscus~~
~~○ MRI results confirm partial or complete ACL tear AND individual has persistent symptoms despite at least 12 weeks of non-operative treatment~~
~~○ Acute ACL tear confirmed by MRI in high demand occupation or competitive athlete (as quantified by Marx activity score for athletics (any score greater than 4) and Tegner activity score for athletics and/or occupation (score greater than 2)) [see Grading Appendix])~~

~~AND~~

~~Individual has no evidence of severe arthritis defined as Kellgren-Lawrence grade 3 or 4 [see Grading Appendix]*~~

NOTE: If the MRI results demonstrate an ACL tear and there is no mention of significant arthritis, especially in the younger individual, X-rays are not required. However, in others with significant MRI evidence of arthritis, standing X-rays are required to confirm that no Kellgren-Lawrence grade 3 or 4 changes are present.

NOTE: Requests for ACL repair or reconstruction~~tears~~ in individuals less than age 13 will be reviewed on a case-by-case basis. [21]

Posterior Cruciate Ligament (PCL) Reconstruction

PCL reconstruction or repair may be medically necessary when the following criteria are met~~[43, 44]~~: [22, 23]

- Knee instability (as defined subjectively as "giving way", "giving out" or "buckling") with clinical findings of any of the following signs/tests: positive posterior drawer, posterior sag, quadriceps active, dial test at 90 degrees knee flexion or reverse pivot shift test
- MRI results confirm complete PCL tear
- Failure of at least 12 weeks of non-operative treatment, including physical therapy emphasizing quadriceps strengthening
- Absence of medial and patellofemoral K-L grade 3-4 changes in chronic tears [see Grading Appendix]

The following clinical scenarios will be considered and decided on a case-by-case basis: [24]

- Pediatric and adolescent tears in individuals with open physis or growth plates
- Symptomatic partial tears with persistent instability despite non-operative treatment

- Incidental Kellgren-Lawrence grade 2-3 osteoarthritis [see Grading Appendix] in acute/subacute tears with unstable joint
- Acute PCL repair or reconstruction when surgery is also required for the ACL, MCL or LCL
- Tears in individuals less than age 13

Collateral Ligament Repair or Reconstruction

Collateral ligament repair or reconstruction should rarely occur independent of additional ligament repair or reconstruction surgery (ACL, MCL, LCL).

All non-traumatic collateral ligament repair/reconstruction requests will be reviewed on a case-by-case basis.

Articular Cartilage Restoration / Repair

Skeletally Immature Indications

Articular cartilage reparative or stimulation procedures may be medically necessary when **ALL** of the following criteria in **any** of the following subsections are met[45-52]: [25, 26, 27, 28]

- Skeletally immature patient
- Individual is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion)
- Radiographic findings (X-ray or MRI) of a displaced lesion

OR

- Skeletally immature patient
- Individual is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion)
- Failure of at least **12 weeks** of non-operative treatment, including at least **two** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- Radiographic findings (X-ray or MRI) findings of a stable osteochondral lesion

OR

- When **ALL** of the following criteria are met:
    - Skeletally immature
    - Asymptomatic
    - Failure of at least **12 weeks** of non-operative treatment, including at least **TWO** of the following
        - Rest or activity modifications/limitations
        - Ice/heat
        - Protected weight bearing
        - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
        - Brace/orthosis
        - Physical therapy modalities
        - Supervised home exercise
        - Weight optimization
        - Corticosteroid injection
    - Radiographic findings (X-ray or MRI) findings of an unstable osteochondral lesion

Exclusion (applies to all criteria above)

Exclude individuals with evidence of meniscal deficiency and/or malalignment if these are not being addressed (meniscal transplant and/or lateral release/patellar realignment procedure) at the same time as the cartilage restoration procedure.

Skeletally Mature Indications

Articular cartilage reparative marrow stimulation procedures
Reparative marrow stimulation techniques such as microfracture & drilling may be medically necessary when **ALL** the following criteria are met [29, 30, 28, 31, 32][53-62]

- Skeletally mature adult
- MRI confirms an isolated full-thickness chondral or osteochondral lesion of the femoral condyle, trochlea, or patella < 2.0 cm^2
- Individual is symptomatic with pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion. For trochlea or patellar lesions, individual has anterior knee pain with physical examination findings localized to the patellofemoral joint.
- Failure of at least **12 weeks** of non-operative treatment, including at least **TWO** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing

    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- Individual is < 50 years of age
- BMI < 35 (optimal outcomes if patient BMI < 30)
- Physical exam findings and/or (imaging) results confirm no ligamentous instability
- For femoral condyle lesions, no evidence of prior meniscectomy in same compartment unless concurrent meniscal transplant performed.
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3][1-3]

NOTE: Abrasion arthroplasty is included in coding but is not indicated.

Articular cartilage restorative procedures – femoral condyle and trochlea
Restorative procedures for articular cartilage loss may include the following: osteochondral autograft transfer (OAT), osteochondral allograft transplantation (OCA), autologous chondrocyte implantation (ACI), or matrix autologous chondrocyte implantation (MACI). The OAT or OCA procedures are preferable if the lesion involves subchondral bone.

An articular cartilage restorative procedure may be medically necessary when **ALL** of the following criteria are met[48, 58, 63-88]: [29, 28, 33, 32, 31]

- Skeletally mature adult
- MRI results confirm an isolated full thickness chondral or osteochondral lesion of the femoral condyles or trochlea with stable surrounding articular cartilage:
  < 2.0 cm^2 - OAT
  > 2.0 cm^2 - ACI, MACI, OCA
- Individual is < 50 years of age
- BMI < 35 (optimal outcomes if patient BMI < 30)
- Individual has been symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) for at least 6 months
- Failure of at least **12 weeks** of non-operative treatment, including at least **TWO** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities

    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- MRI and/or physical findings confirm knee has normal alignment as defined as +/- 3 degrees from neutral on full-length mechanical axis long-leg x-ray (unless concurrent or staged tibial or femoral osteotomy performed) and stability (unless concurrent ligamentous repair or reconstruction performed)
- MRI and/or X-rays shows no evidence of osteoarthritis (no greater than Kellgren-Lawrence Grade 2 changes on weight-bearing X-rays [see Grading Appendix])
- **NO** prior meniscectomy in same compartment (unless concurrent or staged meniscal transplant performed)
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1-3~~

Articular cartilage restorative procedures - patella

Restorative procedures for articular cartilage loss of the patella may include the following: osteochondral autograft transfer (OAT), osteochondral allograft transplantation (OCA), autologous chondrocyte implantation (ACI), or matrix autologous chondrocyte implantation (MACI), with or without tibial tubercle osteotomy.*

An articular cartilage restorative procedure may be medically necessary when **ALL** of the following criteria are met: [29, 28, 32, 31, 34] ~~75, 89-105~~

- Anterior knee pain and loss of function
- Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma)
- Physical exam localizes tenderness to the patellofemoral joint with pain aggravated by activities that load the joint (single leg squat, descending > ascending stairs or stair climbing, and being in seated position for extended periods of time with knee flexed)
- MRI results confirm an isolated full thickness chondral or osteochondral lesion of the patella:
    < 2.0 cm^2 - OAT
    >2.0 cm^2 - ACI, MACI, OCA
- Failure of at least **12 weeks** of non-operative treatment, including at least **TWO** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise

    - Weight optimization
    - Corticosteroid injection
- Individual is < 50 years of age
- BMI < 35 (optimal outcomes if patient BMI < 30)
- **NO** evidence of associated osteoarthritis greater than Kellgren-Lawrence Grade 2 of the patellofemoral joint or medial/lateral compartments on weight-bearing X-rays [see Grading Appendix]
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1 3~~

***Patellofemoral Chondrosis**
For isolated tibial tubercle osteotomy for patellofemoral chondrosis without articular cartilage restoration procedures, the same criteria above apply except patellofemoral X-rays should document Kellgren-Lawrence grade 3 or 4 changes with no more than K-L 2 changes of the medial and lateral compartments on weight-bearing X-rays.

Articular Cartilage Restoration and Repair Exclusions~~:~~

These requests are excluded from consideration under this guideline:

Micronized cartilage extracellular matrix (BioCartilage)
Autologous Matrix-Induced Chondrogenesis (AMIC)
Bone marrow aspirate concentrate (BMAC) implantation
Hybrid ACI/OAT procedure
Particulated juvenile allograft cartilage (PJAC, DeNovo)
Particulated autologous cartilage implantation (PACI)
Viable cartilage allograft putty (CartiMax)
Decellularized Osteochondral Allograft Plugs (e.g., Chondrofix)
Cryopreserved viable osteochondral allograft (CVOCA; Cartiform and ProChondrix)
Aragonite biphasic osteochondral scaffolds (Agili-C™)
Human umbilical cord blood-derived mesenchymal stem cells (CARTISEM)

Synovectomy (major [2+ compartments], minor [1 compartment])

Synovectomy may be medically necessary when **ALL** of the following criteria in **any** of the following subsections are met~~106 108~~: [35, 36, 37]

- Proliferative rheumatoid synovium (in individuals with established rheumatoid arthritis according to the American College of Rheumatology Guidelines [see Grading Appendix])
- Non-responsive to disease modifying drug (DMARD) therapy for at least 6 months and failure of at least 6 weeks of non-operative treatment
- At least one instance of aspiration of joint effusion and corticosteroid injection (if no evidence of infection)

OR

- Hemarthrosis from injury, coagulopathy or bleeding disorder confirmed by physical exam, joint aspiration, and/or MRI

OR

- Proliferative pigmented villonodular synovitis, synovial chondromatosis, sarcoid synovitis, or similar proliferative synovial disease, traumatic hypertrophic synovitis confirmed by history, MRI, or biopsy [38, 39]
- Failure of **at least 6 weeks** of non-operative treatment, including **at least two** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- At least one instance of aspiration of joint effusion and injection of corticosteroid (if no evidence of infection)

OR

- Detection of painful plica confirmed by physical exam and MRI findings
- Failure of at least 12 weeks of non-operative treatment (see above for criteria)
- At least one instance of aspiration of joint effusion **OR** single injection of corticosteroid (effusion may not be present with symptomatic plica)
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1-3~~

Loose Body Removal

Loose body removal may be medically necessary when the following criteria are met:

- Documentation of mechanical symptoms that cause limitation or loss of function
- X-ray, CT, or MRI documentation of a loose body
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]~~1-3~~

Lateral Release/Patellar Realignment

This guideline describes indications for surgical procedures to address patellofemoral pain disorders and abnormal alignment of the extensor mechanism of the knee by arthroscopic and/or open surgical techniques.

Lateral Patellar Compression Syndrome

Surgical intervention for the treatment of lateral patellar compression syndrome is indicated when **ALL** the following criteria are met[109 113]: [40, 41, 42]

- Evidence of lateral patellar tilt from radiologic images (patellofemoral view: Merchant (45 degrees flexion; and/or skyline (60-90 degrees flexion); and/or sunrise (60-90 degrees flexion)
- Associated lateral patella facet Kellgren-Lawrence changes grade 1, 2, or 3 [see Grading Appendix]
- Reproducible isolated lateral patellofemoral pain with patellar tilt test
- Failure of **at least 6 months** of non-operative treatment, including quadriceps strengthening and appropriate hamstring/IT band stretching and patellar mobilization techniques, and **at least one** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Physical therapy modalities
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- **NO** evidence of patellar dislocation
- **NO** evidence of medial patellofemoral changes (Kellgren-Lawrence Grade 2 osteoarthritis or higher [see Grading Appendix])
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3][1 3]

Patellar Malalignment and/or Patellar Instability

Surgical intervention for the treatment of patellar malalignment and/or patellar instability is indicated when **ALL** of the following criteria in any of the following subsections are met[114 121]: [43, 44, 45]

- Acute traumatic patellar dislocation is associated with an osteochondral fracture, loose body, vastus medialis obliquus/medial patellofemoral ligament muscle avulsion, or other intra-articular injury that requires urgent operative management.

  OR

- Repeat (2 or more) patellar dislocations or subluxations have occurred despite 6 months of non-operative treatment with radiologic confirmation of MPFL (medial patellofemoral ligament) deficiency (including evidence of acute or remote injury, scarring, incomplete healing, etc.) **OR** physical examination demonstrates evidence of patellar instability (positive apprehension test).

  OR

- When all the following criteria have been met:
  - Physical exam has patellofemoral tenderness and abnormal articulation of the patella in the femoral trochlear groove (patellar apprehension or positive J sign)
  - Radiologic and/or advanced images (CT or MRI) rule out fracture or loose body, and show abnormal articulation, trochlear dysplasia, abnormal TT-TG distance (tibial tubercle-trochlear groove)***** or other abnormality related to malalignment[118, 122-125];
  - Failure of at least 6 months of non-operative treatment, including at least 3 months of physical therapy, and **ONE** of the following:
    - Rest or activity modifications/limitations
    - Ice/heat
    - Protected weight bearing
    - Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
    - Brace/orthosis
    - Supervised home exercise
    - Weight optimization
    - Corticosteroid injection
- **NO** intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]

*****The tibial tubercle-trochlear groove (TT-TG) distance is normally @5-10 mm. Some authors use 13 mm as a cut-off and most agree that a TT-TG of 15 mm or over is abnormal. [46][118, 123, 125] TT-TG values over 17 mm indicate other possible bony abnormalities such as increased femoral anteversion that may cause patellar instability. [47, 45][126-128]

Manipulation under Anesthesia (MUA)

Manipulation under anesthesia (MUA) may be indicated when **ALL** of the following criteria are met[129-134]**:** [48, 49]

- Physical exam findings demonstrate inadequate range of motion of the knee defined as less than 110 degrees of flexion or lack of full extension
- Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy
- Individual is less than 20 weeks after ligamentous or joint reconstruction

Lysis of Adhesions for Arthrofibrosis of the knee

Surgical indications are based on relevant clinical symptoms, physical exam, radiologic findings, time from primary surgery, and response to conservative management when medically appropriate. Improved range of motion may be accomplished through arthroscopically assisted or open lysis of adhesions with general anesthesia, regional anesthesia, or sedation. [48, 50] ~~135-137~~

Lysis of adhesions for arthrofibrosis of the knee may be indicated when **ALL** of the following criteria in any of the following subsections are met:

- Physical exam findings demonstrate inadequate range of motion of the knee, defined as less than 110 degrees of flexion or lack of full extension
- Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy
- Individual is more than 12 weeks post~~after~~ ligamentous or joint reconstruction, or resolved infection
- No intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3]

OR

- Individual is more than 12 weeks post ~~after~~ trauma, or resolved infection
- Individual has native knee
- Manipulation under anesthesia is also performed
- No intra-articular cortisone injections within 4 weeks of surgery [1, 2, 3] ~~1-3~~

LEGISLATIVE REQUIREMENTS

State of Washington

- **Washington State Health Care Authority Technology Assessment** [51]
  20080815B – Knee Arthroscopy for Osteoarthritis of the knee
  - **HTCC Coverage Determination**
    - **Knee Arthroscopy for osteoarthritis of the knee is not a covered benefit. This decision does not apply to the use of knee arthroscopy for other diagnostic and therapeutic purposes.**
  - **HTCC Reimbursement Determination**

BACKGROUND

Grading Appendix

- Kellgren-Lawrence Grading System
- Outerbridge Arthroscopic Grading System
- Marx Scale
- Tegner Activity Score
- The International Cartilage Research Society (ICRS)
- American College of Rheumatology Guidelines

Kellgren-Lawrence Grading System (Standing/weight-bearing X-rays) [52]

Grade	Description
0	No radiographic features of osteoarthritis
1	Possible joint space narrowing and osteophyte formation
2	Definite osteophyte formation with possible joint space narrowing
3	Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour
4	Large osteophytes, marked narrowing of joint space, severe sclerosis, and definite deformity of bone contour

Outerbridge Arthroscopic Grading System [53]

Grade	Description
0	Normal cartilage
I	Softening and swelling/blistering

II	Partial thickness defect, fissures < 1.5cm diameter/wide
III	Fissures /defects down to subchondral bone with intact calcified cartilage layer, diameter > 1.5cm
IV	Exposed subchondral bone

Marx Scale

For determination of activity level in acute ACL tears. Indicate how often you performed each activity in your healthiest and most active state, in the past year.

Marx Scale table [54]

Activity/Movement	Less than one time in a month	One time in a month	One time in a week	2 or 3 times in a week	4 or more times in a week
Running: running while playing a sport or jogging	0	1	2	3	4
Cutting: changing directions while running	0	1	2	3	4
Deceleration: coming to a quick stop while running	0	1	2	3	4
Pivoting: turning your body with your foot planted while playing sport; For example: skiing, skating, kicking, throwing, hitting a ball (golf, tennis, squash), etc.	0	1	2	3	4

Tegner Scores

For determination of activity level in acute ACL tears. Indicate in the spaces below the HIGHEST level of activity that you participated in BEFORE YOUR INJURY and the highest level you are able to participate in CURRENTLY

Tegner Score table [55]

Level	Activity Description
Level 10	Competitive sports- soccer, football, rugby (national elite)
Level 9	Competitive sports- soccer, football, rugby (lower divisions), ice hockey, wrestling, gymnastics, basketball
Level 8	Competitive sports- racquetball or bandy, squash or badminton, track and field athletics (jumping, etc.), down-hill skiing
Level 7	Competitive sports- tennis, running, motorcars speedway, handball Recreational sports- soccer, football, rugby, bandy, ice hockey, basketball, squash, racquetball, running
Level 6	Recreational sports- tennis and badminton, handball, racquetball, down-hill skiing, jogging at least 5 times per week
Level 5	Work- heavy labor (construction, etc.) Competitive sports- cycling, cross-country skiing; Recreational sports- jogging on uneven ground at least twice weekly
Level 4	Work- moderately heavy labor (e.g., truck driving, etc.)
Level 3	Work- light labor (nursing, etc.)
Level 2	Work- light labor Walking on uneven ground possible, but impossible to backpack or hike
Level 1	Work- sedentary (secretarial, etc.)
Level 0	Sick leave or disability pension because of knee problems

The International Cartilage Research Society (ICRS) [56]

Grade	Description
0	Normal cartilage
1	Nearly normal cartilage *Superficial lesions. Soft indentation and/or superficial fissures and cracks.*
2	Abnormal cartilage *Lesions extending down to <50% of cartilage depth.*
3	Severely abnormal cartilage *Cartilage defects extending down >50% of cartilage depth as well as down to calcified layer and down to but not through the subchondral bone. Blisters are included in this Grade.*
4	Severely abnormal cartilage (through the subchondral bone) *Penetration of subchondral bone that may or may not be across the full diameter of defect*

American College of Rheumatology Guidelines [57]

2010 ACR/EULAR: Classification Criteria for RA	
JOINT DISTRIBUTION (0-5)	
1 large joint	0
2-10 large joints	1
1-3 small joints (large joints not counted)	2
4-10 small joints (large joints not counted)	3
>10 joints (at least one small joint)	5
SEROLOGY (0-3)	
Negative RF AND negative ACPA	0
Low positive RF OR low positive ACPA	2
High positive RF OR high positive ACPA	3
SYMPTOM DURATION (0-1)	
<6 weeks	0
≥6 weeks 1	1
ACUTE PHASE REACTANTS (0-1)	
Normal CRP AND normal ESR	0
Abnormal CRP OR abnormal ESR	1
	≥6 = definite RA

~~BACKGROUND~~

~~***KNEE ARTHROSCOPY** - Knee Arthroscopy & Open, Non-Arthroplasty~~

~~This guideline addresses the following elective, non-emergent, arthroscopic knee repair procedures; diagnostic knee arthroscopy, debridement with or without chondroplasty, meniscectomy/meniscal repair/meniscal transplant, ligament reconstruction/repair, articular cartilage restoration/repair (marrow stimulating and restorative techniques) , synovectomy (major [2+ compartments], minor [1 compartment]), loose body removal, lateral release/patellar realignment, manipulation under anesthesia (MUA), and lysis of adhesions for arthrofibrosis of the knee.~~

POLICY HISTORY

Date	Summary
December 2023	• Legislative Requirements added for the State of Washington for Knee Arthroscopy 20080815B • Revised surgical optimization and physician/patient discussion language • Reorganized ACL Repair/Reconstruction Section • Added table of contents • Adjusted Background Section • Updated References
June 2023	• Updated references pertaining to the relationship of meniscectomy and arthritis of the knee • Clarification of the requirement of X-rays for ACL reconstruction • Additional references for articular cartilage restorative procedures • Revision of the listing of articular cartilage restorative procedures • Clarification of the lesion size for articular cartilage restorative procedures of the knee: < 2.0 cm^2 - OAT; > 2.0 cm^2 - ACI, MACI, OCA • Non-operative treatment requirement for articular cartilage procedures changed from 6 months to 3 months • Listing of investigational/non-covered articular cartilage procedures • Added CPT codes: 29885, 29886. 29887
May 2022	• Updated references • Added cortisone injection within 4 weeks of arthroscopy as a contraindication. • Expanded references pertaining to recommendations against the use of arthroscopy for arthritis, with or without associated meniscus tears. • Included references pertaining to total knee arthroplasty complications in those with prior arthroscopic surgery of the knee • Replaced “patient” with “individual” where appropriate

~~Arthroscopy introduces a fiber-optic camera into the knee joint through a small incision for diagnostic visualization purposes. Other instruments may then be introduced to remove, repair, or reconstruct intra- and extra-articular joint pathology. Surgical indications are based on relevant subjective clinical symptoms, objective physical exam and radiologic findings, and response to previous non-operative treatments when medically appropriate.~~

~~Open, non-arthroplasty knee surgeries are performed instead of an arthroscopy as dictated by the type and severity of injury and/or disease.~~

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Reviewed / Approved by NIA Clinical Guideline Committee