## CMM-312: Knee Surgery-Arthroscopic and Open Procedures

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CMM-312.1: Definitions

- **The Modified Outerbridge Classification** is a system that has been developed for judging articular cartilage injury to the knee. This system allows delineation of varying areas of chondral pathology, based on the qualitative appearance of the cartilage surface, and can assist in identifying those injuries that are suitable for repair techniques. The characterization of cartilage in this system is as follows:
  - Grade I – Softening with swelling
  - Grade II – Fragmentation and fissuring less than one square centimeter (1 cm²)
  - Grade III – Fragmentation and fissuring greater than one square centimeter (1 cm²)
  - Grade IV – Subchondral bone exposed

- **The Kellgren-Lawrence Grading System** is a radiographic grading system that has been developed for describing osteoarthritic changes to the knee. When used, the radiographic findings are typically reported within one of the following categories:
  - Grade 0 – No radiographic features of osteoarthritis are present
  - Grade I – Doubtful narrowing of joint space and possible osteophytic lipping
  - Grade II – Definite osteophytes and possible narrowing of joint space
  - Grade III – Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis, and possible deformity of bone contour
  - Grade IV – Large osteophytes, marked narrowing of joint space, severe sclerosis, and definite deformity of bone contour.

- **Autologous Chondrocyte Implantation (ACI) or Autologous Chondrocyte Transplantation (ACT)** is a cell-based cartilage repair surgical technique which utilizes an individual’s own cells in an effort to repair damage to articular cartilage with the goal of improving joint function and reducing pain. The procedure involves the collection and culture of articular cartilage cells (i.e., chondrocytes) that are then implanted into the cartilage defect with the intent that the cultured cells will contribute to the regeneration and repair of the articular surface.

- **MACI® Implant** (Vericel Corporation, Cambridge, MA [formerly Genzyme Biosurgery]): Until recently, Carticel® (Vericel Corporation, Cambridge, MA [formerly Genzyme Biosurgery]) was the only technology that received FDA approval for the culturing of chondrocytes. MACI® Implant received approval from the U.S. Food and Drug Administration December 2016 as an autologous cellularized scaffold indicated for repair of single or multiple symptomatic, full-thickness cartilage defects of the knee with or without bone involvement in adults. MACI® Implant is utilized as part of an ACI procedure in which cartilage cells are removed during arthroscopy, and shipped to a laboratory, where the cells are cultured over a period of several weeks. The cells are seeded on a porcine collagen membrane, and once the culturing process is complete, the cells seeded on the membrane are returned to the surgeon.
for implantation during the procedure. The membrane is placed into the defect, and over several months the cells create a matrix that is intended to cover the articular surface of the knee. The safety and effectiveness of MACI® Implant in joints other than the knee has not been established.

- **Mosaicplasty** (or osteochondral cylinder transplantation) is a surgical technique which consists of harvesting cylindrical bone-cartilage grafts and transplanting them into focal chondral or osteochondral defects in the knee. After excision of the chondral lesion, an abrasion arthroplasty is performed to refresh the base of the defect. The grafting procedure involves collecting grafts from the posterior aspect of the distal femoral articular surfaces (medial condyle, lateral condyle or trochlea) and implanting the grafts in a mosaic-like pattern that will contribute to regeneration and repair the articular surface. A recipient tunnel is created and sized with a drill bit slightly larger than the length of the graft. The harvested graft is placed in the tunnel by a press-fit method. All subsequent grafts are inserted in a similar pattern.

- **The Osteochondral Allograft Transplantation (OATS) Procedure** is similar to mosaicplasty, involving the use of a larger, single plug that usually fills an entire defect. It is often performed to graft chondral defects that are also associated with anterior cruciate ligament (ACL) tears. This method allows arthroscopic access to both the ACL and the chondral defect for the performance of a repair and the grafting procedure.

- **Subchondral Drilling or Microfracturing** is a surgical procedure which is performed after the calcified cartilage is debrided and the surgeon creates tiny fractures in the adjacent bones (through the use of an awl). Blood and bone marrow (which contains stem cells) seep out of the fractures, creating a blood clot that releases cartilage-building cells. The microfractures are treated as an injury by the body, which is why the surgery results in new, replacement cartilage. Studies have shown that microfracturing techniques do not fill the chondral defect fully and the repair material that forms is fibrocartilage. Fibrocartilage is not as mechanically sound as the original hyaline cartilage; it is much denser and isn’t able to withstand the demands of everyday activities as well as hyaline cartilage and is; therefore, at a higher risk of breaking down. The procedure is less effective in treating older individuals, overweight individuals, or in larger cartilage lesions. Furthermore, chances are high that after only one or two years, symptoms start to return as the fibrocartilage wears away, forcing the individual to reengage in articular cartilage repair.

- **Arthrofibrosis** is a condition of the appendicular skeletal system that has resulted from disease, injury, or surgery, and results in pain and restricted range of motion due to internal scarring of the joint with consequent stiffness.

- **Non-surgical management**, with regard to the treatment of knee pain, is defined as any provider-directed non-surgical treatment which has been demonstrated in the scientific literature as efficacious and/or is considered reasonable care in the
treatment of knee pain. The types of treatment involved can include, but are not limited to: ice, relative rest/activity modification, acupuncture, weight loss, supervised physiotherapy modalities and therapeutic exercises, oral prescription and non-prescription medications, assistive devices (e.g., brace, cane, crutches, walker, wheelchair), and/or intra-articular injections (i.e., steroid, viscosupplementation).

**CMM-312.2: General Guidelines**

- The determination of medical necessity for the performance of knee surgery is always made on a case-by-case basis.
- Refer to **MS-25: Knee** for advanced imaging indications for conditions about the knee.

**CMM-312.3: Indications and Non-Indications**

Knee arthroscopic or open surgical procedures may be considered medically necessary for individuals when surgery is being performed for fracture, tumor, infection or foreign body that has led to, or will likely lead to, progressive destruction.

**Diagnostic Arthroscopy**

- Diagnostic arthroscopy is considered medically necessary as a stand-alone procedure when **ALL** of the following criteria have been met:
  - Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment) for at least six (6) months in duration
  - Any **ONE** of the following physical examination findings:
    - Limited range of motion
    - Evidence of joint swelling/effusion
    - Joint line tenderness
  - Failure of provider-directed non-surgical management for at least three (3) months in duration
  - Absence of Kellgren-Lawrence Grade 2 or greater osteoarthritic changes on weight-bearing AP and weight-bearing PA with 45 degrees of knee flexion (Rosenberg) radiographic views
  - MRI or CT arthrogram is inconclusive for internal derangement/pathology
- Diagnostic Arthroscopy is considered not medically necessary for any other indication or condition.
Arthroscopic Debridement (Chondroplasty)/Loose Body/Foreign Body Removal

Arthroscopic debridement (chondroplasty), loose body removal, and foreign body removal are considered medically necessary when ALL of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
- Individual reports pain and any ONE of the following mechanical symptoms:
  - Knee range of motion is “blocked” due to pain
  - Giving way, subjective weakness, buckling of the knee
  - Painful locking, clicking, catching, or popping during weight-bearing activities
- Failure of provider-directed non-surgical management for at least three (3) months in duration
  - Please note: In the presence of an acutely locked knee joint related to an intra-articular loose body or foreign body, three (3) months of provider-directed non-surgical management is not required.
- MRI or CT arthrogram demonstrates articular cartilage degeneration and any ONE of the following conditions:
  - Loose body or foreign body within the joint
  - Unstable flaps of articular cartilage
  - Meniscal tear that extends to the articular surface (not simply degenerative changes, i.e., fraying) in conjunction with articular cartilage degeneration
  - Impinging osteophytes, which would be reasonably expected to result in mechanical symptoms and loss of knee joint function

Arthroscopic debridement (chondroplasty) is considered not medically necessary in the presence of Kellgren-Lawrence Grade 2 or greater osteoarthritic changes on weight-bearing AP and weight-bearing PA with 45 degrees of knee flexion (Rosenberg) radiographic views.

Arthroscopic debridement (chondroplasty), loose body removal, and foreign body removal are considered not medically necessary for any other indication or condition.

Synovectomy

Synovectomy (limited [e.g., plica or shelf resection], as a stand-alone procedure, or a major procedure with 2 or more compartments [e.g., medial or lateral]) is considered medically necessary when ALL of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
- Any ONE of the following physical examination findings:
Knee Surgery - Arthroscopic and Open

- Limited range of motion
- Evidence of joint swelling/effusion
- Joint line or plica tenderness

- Failure of provider-directed non-surgical management for at least three (3) months in duration
- MRI or CT arthrogram demonstrates evidence of synovitis or plica
- Presence of any ONE of the following:
  - Plica syndrome
  - Inflammatory arthritis (i.e., rheumatoid arthritis, gout, pseudogout, psoriatic arthritis)
  - Pigmented villonodular synovitis (PVNS)
  - Synovial chondromatosis
  - Lyme synovitis
  - Hemophilia
  - Hemochromatosis
  - Non-specific synovitis (including proliferative synovitis, post-operative synovitis as a sequel from a knee replacement, patellar clunk syndrome, cyclops lesion, etc.)
  - Recurrent hemarthrosis (i.e., secondary to sickle cell anemia, bleeding diathesis, etc.)

- Synovectomy is considered not medically necessary for any other indication or condition.

**Meniscectomy or Meniscal Repair**

- Meniscectomy (partial or total) or meniscal repair is considered medically necessary when ALL of the following criteria have been met:
  - Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
  - Individual reports pain and any ONE of the following mechanical symptoms:
    - Knee range of motion is "blocked" due to pain
    - Giving way, subjective weakness, or buckling of the knee
    - Painful locking, clicking, catching, or popping during weight-bearing activities
  - TWO OR MORE of the following physical examination findings:
    - Limited range of motion
    - Evidence of joint swelling/effusion
    - Joint line tenderness
    - Positive McMurray’s Test, Thessaly Test, or Apley’s Compression Test
  - Failure of provider-directed non-surgical management for at least three (3) months in duration,
Please note: Acute meniscal tear with associated function-limiting pain or locked knee does not require three (3) months of provider-directed non-surgical management.

- MRI or CT arthrogram demonstrates a meniscal tear that extends to the articular surface (not simply degenerative changes, i.e., fraying) that correlates with the individual's reported symptoms and physical exam findings.

Meniscectomy/debridement for degenerative meniscal tears is considered medically necessary when ALL of the above criteria have been met AND when BOTH of the following criteria have been met:

- Acute or acute on chronic degenerative meniscal tear that produced a recent change in symptoms which includes new mechanical symptoms
- Absence of Kellgren-Lawrence Grade 2 or greater findings on weight-bearing AP and weight-bearing PA with 45 degrees of knee flexion (Rosenberg) radiographic views

Meniscectomy/saucerization for discoid lateral meniscus is considered medically necessary when MRI confirms the presence of a discoid meniscus and ALL of the above criteria are met (other than demonstration of a frank meniscal tear).

Meniscectomy (partial or total) or meniscal repair is considered not medically necessary for any other indication or condition.

Meniscal Allograft Transplantation

Meniscal allograft transplantation is considered medically necessary when ALL of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands or employment)
- Prior significant trauma resulting in an irreparable meniscal tear or has undergone a meniscectomy where at least 50% of the meniscus has been removed
- Any ONE of the following physical examination findings:
  - Limited range of motion
  - Evidence of joint swelling/effusion
  - Joint line tenderness
  - Failure of provider-directed non-surgical management for at least three (3) months in duration
  - Body Mass Index (BMI) 35 or less
  - Age 49 years or younger

Meniscal allograft transplantation is considered not medically necessary for any other indication or condition, including when EITHER of the following criteria is present:
Upon standing radiographs, individual demonstrates osteoarthritic change in the knee including joint space narrowing and osteophytes which is classified by the Kellgren-Lawrence Scale as Grade III or IV.

Upon MRI, individual demonstrates articular degeneration in affected compartment which is classified by the Modified Outerbridge Scale as Grade III or IV.

**Anterior Cruciate Ligament (ACL) Reconstruction**

- Anterior cruciate ligament (ACL) reconstruction with allograft or autograft is considered **medically necessary** when **ALL** of the following criteria have been met:
  - Function-limiting pain and/or a documented loss of knee function during the course of preoperative treatment which interferes with **ANY** of the following:
    - Ability to carry out age appropriate activities of daily living
    - Demands of employment
    - Need to return to activities that require cutting, pivoting, and/or agility in which ACL insufficiency may predispose to further instability episodes that may result in new articular or meniscal cartilage injuries
  - Individual reports knee instability which is noted as giving way, subjective weakness, or “buckling” during the course of preoperative treatment
  - Any **ONE** of the following physical examination findings:
    - Positive Lachman’s Test
    - Positive Anterior Drawer Test
    - Positive Pivot Shift Test
  - Failure of provider-directed non-surgical management for at least three (3) months in duration, except in an acute injury setting where hemarthrosis, effusion, and joint instability have been documented and **ANY** of the following are present:
    - Need to return to high-demand sports that require cutting, pivoting, and/or agility activities in which ACL insufficiency may predispose to further instability episodes that may result in new articular or meniscal cartilage injuries
    - A confirmed ACL tear and a repairable meniscus tear
    - Concomitant ligament injuries (i.e., multi-ligamentous knee injury) that require reconstruction to provide stability
  - MRI, CT arthrogram, or arthroscopy demonstrates a tear/disruption or significant laxity of the anterior cruciate ligament (ACL)
- Anterior cruciate ligament (ACL) reconstruction is considered **not medically necessary** for any other indication or condition.

**Posterior Cruciate Ligament (PCL) Reconstruction**

- Posterior cruciate ligament (PCL) reconstruction with allograft or autograft is considered **medically necessary** when **ALL** of the following criteria have been met:
Function-limiting pain and a documented loss of knee function which interferes with the ability to carry out the age appropriate activities of daily living and/or demands of employment

Any ONE of the following physical examination/radiographic imaging findings:
- Positive Posterior Drawer Sign
- Positive Posterior Sag Sign or Tibial Drop Back Test
- Positive Quadriceps Active Test
- Eight (8) millimeters or more of increased posterior translation on stress radiographs

Failure of provider-directed non-surgical management for at least three (3) months in duration, except in an acute injury setting where hemarthrosis, effusion and joint instability have been documented and EITHER of the following are present:
- Need to return to high-demand sports that require cutting, pivoting, and/or agility activities in which PCL insufficiency may predispose to further instability episodes that may result in new articular or meniscal cartilage injuries
- Concomitant ligament injuries (i.e., multi-ligamentous knee injury) that require reconstruction to provide stability

MRI, CT arthrogram, or arthroscopy demonstrates a tear/disruption or significant laxity of the posterior cruciate ligament (PCL)

Posterior cruciate ligament (PCL) reconstruction is considered not medically necessary for any other indication or condition.

Medial/Lateral Collateral Ligament (MCL/LCL) Repair/Reconstruction

Medial/lateral collateral ligament (MCL/LCL) repair/reconstruction with allograft or autograft is considered medically necessary when ALL of the following criteria have been met:
- Function-limiting pain and/or a loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment
- Individual reports knee instability which is noted as giving way, subjective weakness, or buckling
- EITHER of the following physical examination findings:
  - Positive Valgus Stress Test (Medial)
  - Positive Varus Stress Test (Lateral)
- Failure of provider-directed non-surgical management for at least three (3) months in duration, except in an acute injury setting of the lateral collateral ligament (LCL) (including the posterolateral corner) when total disruption of the ligament is documented on MRI or CT arthrogram and effusion and joint instability have been documented on physical examination
MRI or CT arthrogram demonstrates a tear/disruption of the medial or lateral collateral ligament (MCL/LCL)

- Medial collateral ligament (MCL) repair/reconstruction is considered **not medically necessary** in an acute injury setting, including an isolated MCL repair.
- Medial/lateral collateral ligament (MCL/LCL) repair/reconstruction is considered **not medically necessary** for any other indication or condition.

**Autologous Chondrocyte Implantation (ACI) or Autologous Chondrocyte Transplantation (ACT)**

- Autologous chondrocyte implantation (ACI) or autologous chondrocyte transplantation (ACT) (using the MACI™ implant) is considered **medically necessary** for the treatment of symptomatic single or multiple full-thickness cartilage defects of the distal femoral articular surface (i.e., medial condyle, lateral condyle or trochlea) and/or patella caused by acute or repetitive trauma when **ALL** of the following criteria have been met:
  - Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
  - Presence of **BOTH** of the following on physical examination:
    - A stable knee with intact or reconstructed ligaments (ACL or PCL)
    - Normal tibial-femoral and/or patella-femoral alignment
  - Failure of provider-directed non-surgical management for at least three (3) months in duration
  - A full-thickness distal femoral articular surface (i.e., medial condyle, lateral condyle or trochlea) and/or patellar chondral defect of 1-10cm² in size that has been identified during an MRI or CT arthrogram, or during an arthroscopy and classified by the Modified Outerbridge Scale as Grade III or Grade IV
  - Absence of an osteochondritis dissecans (OCD) lesion that requires bone grafting
  - Absence of inflammatory arthritis or other systemic disease affecting the joints
  - Minimal to absent osteoarthritic changes in the surrounding articular cartilage (e.g., Kellgren-Lawrence Grade 2 or less)
  - Normal articular cartilage at the lesion border (contained lesion)
  - For femoral and patellar chondral lesions, absence of a corresponding ‘kissing lesion’ with a Modified Outerbridge Scale of Grade III or IV of the distal femur (trochlea, condyles), patella or tibia
  - Body Mass Index (BMI) 35 or less
  - Age 15 - 55 years

- Autologous chondrocyte implantation is considered **not medically necessary** for any other indication or condition, including when **ANY** of the following criteria is present:
Any knee joint surgery within six (6) months before screening excluding surgery to procure a biopsy or a concomitant procedure to prepare the knee for a MACI implant

- Modified Outerbridge grade III or IV defect(s) on the patella or tibia
- Presence of Kellgren-Lawrence Grade 3 or 4 osteoarthritic changes in the surrounding articular cartilage
- Total meniscectomy, meniscal allograft, or bucket-handle tear or displaced tear requiring > 50% removal of the meniscus in the target knee
- Septic arthritis within one (1) year before screening
- Known history of hypersensitivity to gentamicin, other aminoglycosides, or products of porcine or bovine origin
- Uncorrected congenital blood coagulation disorders
- Cruciate ligament instability

Osteochondral Allograft/Autograft Transplantation Systems (OATS) /Mosaicplasty

Osteochondral allograft/autograft transplantation (OATS)/mosaicplasty is considered medically necessary when ALL of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
- Presence of BOTH of the following on physical examination:
  - A stable knee with intact or reconstructed ligaments (ACL or PCL)
  - Normal tibial-femoral and/or patella-femoral alignment
- Failure of provider-directed non-surgical management for at least three (3) months in duration
- A full-thickness distal femoral articular surface (i.e., medial condyle, lateral condyle or trochlea) and/or patellar chondral defect that has been identified during an MRI or CT arthrogram, or during an arthroscopy and classified by Modified Outerbridge Scale as Grade III or Grade IV
- EITHER of following:
  - Osteochondral autograft transplants and mosaicplasty:
    - Small (i.e., ≤ 2.5 cm² total) chondral defects with sharp, definite borders surrounded by normal-appearing hyaline cartilage
  - Osteochondral allograft transplants:
    - Larger (i.e., ≤ 10.0 cm² total) chondral defects with sharp definite borders surrounded by normal appearing hyaline cartilage
- Previous arthroscopic or other traditional surgical procedure (i.e., microfracture, drilling, abrasion, osteochondral graft) which has resulted in an unsatisfactory outcome
- Absence of inflammatory arthritis or other systemic disease affecting the joints
Minimal to absent osteoarthritic changes in the surrounding articular cartilage (e.g., Kellgren-Lawrence Grade 2 or less)

Normal articular cartilage at the lesion border (contained lesion)

For femoral and patellar chondral lesions, absence of a corresponding ‘kissing lesion’ with a Modified Outerbridge Scale of Grade III or IV of the distal femur (trochlea, condyles), patella or tibia

Individual is not a candidate for total knee arthroplasty

Body Mass Index (BMI) of less than 35

Age 49 years or younger

Osteochondral allograft/autograft transplantation (OATS)/mosaicplasty of the distal femoral articular or patellar surface is considered not medically necessary for any other indication or condition.

**Abrasion Arthroplasty/Subchondral Drilling/Microfracturing**

Abrasion arthroplasty, subchondral drilling, or microfracturing is considered medically necessary when ALL of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)

- Presence of BOTH of the following on physical examination:
  - A stable knee with intact or reconstructed ligaments (ACL or PCL) and menisci
  - Normal tibial-femoral and/or patella-femoral alignment

- Failure of provider-directed non-surgical management for at least three (3) months in duration

- A full-thickness distal femoral articular surface (i.e., medial condyle, lateral condyle or trochlea) and/or patellar chondral defect of ≤ 2.5 cm² in size on the weight-bearing surface that has been identified during an MRI or CT arthrogram, or during an arthroscopy and classified by the Modified Outerbridge Scale as Grade III or IV

Abrasion arthroplasty, subchondral drilling, or microfracturing is considered not medically necessary for any other indication or condition.
Procedures for Patellofemoral Conditions

Procedures for anterior knee pain (i.e., Fulkerson or Maquet type procedures) are considered medically necessary when ALL of the following criteria have been met:
- Function-limiting anterior knee pain (e.g., loss of knee function which interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
- Any ONE of the following physical examination findings:
  - Joint effusion
  - Tenderness of the medial or lateral facets
  - Positive Patellar Grind Test
- Failure of provider-directed non-surgical management for at least three (3) months in duration
- Confirmed osteochondral defect of the patellofemoral joint (MRI, CT scan, or previous arthroscopic procedure)

Procedures for recurrent patellar instability (i.e., Campbell, Goldwaite, or Hauser type procedures, trocleoplasty) are considered medically necessary when ALL of the following criteria have been met:
- Recurrent patellar instability interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment
- Positive Patellar Apprehension Test on physical examination
- Failure of provider-directed non-surgical management for at least three (3) months in duration
- Increased TT-TG (tibial tubercle-trochlear groove) distance of > 20 mm

Medial patellofemoral ligament (MPFL) reconstruction is considered medically necessary when the above criteria are met for recurrent patellar instability and there is a confirmed tear of the medial patellofemoral ligament (MPFL) (MRI, CT scan, or previous arthroscopic procedure).

Lateral retinacular release is considered medically necessary when EITHER of the following criteria have been met:
- Documented radiographic evidence of acute patellar dislocation with associated intra-articular fracture
- Documented radiographic evidence of patellar “tilt” and failure of provider-directed non-surgical management for at least three (3) months in duration

Procedures for patellofemoral conditions are considered not medically necessary for any other indication or condition.
High Tibial Osteotomy

High tibial osteotomy is considered **medically necessary** when **ALL** of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)**ALL** of the following physical examination findings:
  - Less than 15 degrees of fixed varus deformity
  - The individual must be capable of at least 90 degrees of flexion
  - Joint stability in full extension
  - Intact anterior cruciate ligament (ACL)
- Failure of provider-directed non-surgical management for at least three (3) months in duration
- Unicompartmental osteoarthritis of the knee
- Age 60 years or less
- Individual is not a candidate for a knee arthroplasty

High tibial osteotomy is considered **not medically necessary** for any other indication or condition, including when **ANY** of the following criteria is present:

- Inflammatory arthropathy (i.e., rheumatoid arthritis)
- Chondrocalcinosis
- Anterior cruciate ligament (ACL) tear
- Degenerative change affecting more than 1/3 of the femoral condylar surface
- Osteochondral defect more than five (5) mm in depth

Lysis of Adhesions/Manipulation Under Anesthesia (MUA)

Lysis of Adhesions/Manipulation Under Anesthesia (MUA) is considered **medically necessary** when **ALL** of the following criteria have been met:

- Function-limiting pain (e.g., loss of knee function interferes with the ability to carry out age appropriate activities of daily living and/or demands of employment)
- Patient demonstrates less than 90° of knee flexion by two (2) months after surgery including knee replacement or trauma
- Failure of provider-directed non-surgical management for at least two (2) months in duration, including a combination of anti-inflammatory medication, cortisone injection, and at least two (2) months of physical therapy (i.e., active exercise and manual therapy designed to increase joint mobility and range of motion)

Manipulation Under Anesthesia (MUA) should be performed in conjunction with an active rehabilitation/therapeutic exercise program. Manipulation performed in isolation without the individual participating in an active rehabilitation/therapeutic exercise program is considered **not medically necessary**.
Lysis of adhesions, with or without manipulation, is considered not medically necessary for any other indication or condition.

**CMM-312.4: Experimental, Investigational, or Unproven**

Based on lack of scientific evidence of efficacy and safety, the following are considered experimental, investigational, or unproven:

- Subchondroplasty
- Focal resurfacing of a single knee joint defect (e.g., Arthrosurface® femoral condyle implant)
- In-office diagnostic arthroscopy (e.g., Mi-Eye™, VisionScope®)
### CMM-312.5: Procedure (CPT®) Codes

This guideline relates to the CPT® code set below. Codes are displayed for informational purposes only. Any given code’s inclusion on this list does not necessarily indicate prior authorization is required.

<table>
<thead>
<tr>
<th>CPT®</th>
<th>Code Description/Definition</th>
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<tbody>
<tr>
<td>27301</td>
<td>Incision and drainage, deep abscess, bursa, or hematoma, thigh or knee region</td>
</tr>
<tr>
<td>27303</td>
<td>Incision, deep, with opening of bone cortex, femur or knee (e.g., osteomyelitis or bone abscess)</td>
</tr>
<tr>
<td>27305</td>
<td>Fasciotomy, iliotibial (tenotomy), open</td>
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<tr>
<td>27306</td>
<td>Tenotomy, percutaneous, adductor or hamstring; single tendon (separate procedure)</td>
</tr>
<tr>
<td>27307</td>
<td>Tenotomy, percutaneous, adductor or hamstring; multiple tendons</td>
</tr>
<tr>
<td>27310</td>
<td>Arthrotomy, knee, with exploration, drainage, or removal of foreign body (e.g., infection)</td>
</tr>
<tr>
<td>27323</td>
<td>Biopsy, soft tissue of thigh or knee area; superficial</td>
</tr>
<tr>
<td>27324</td>
<td>Biopsy, soft tissue of thigh or knee area; deep (subfascial or intramuscular)</td>
</tr>
<tr>
<td>27325</td>
<td>Neurectomy, hamstring muscle</td>
</tr>
<tr>
<td>27326</td>
<td>Neurectomy, popliteal (gastrocnemius)</td>
</tr>
<tr>
<td>27327</td>
<td>Excision, tumor, soft tissue of thigh or knee area, subcutaneous; less than 3 cm</td>
</tr>
<tr>
<td>27328</td>
<td>Excision, tumor, soft tissue of thigh or knee area, subfascial (e.g. intramuscular); less than 5 cm</td>
</tr>
<tr>
<td>27329</td>
<td>Radical resection of tumor (e.g, sarcoma), soft tissue of thigh or knee area; less than 5 cm</td>
</tr>
<tr>
<td>27330</td>
<td>Arthrotomy, knee; with synovial biopsy only</td>
</tr>
<tr>
<td>27331</td>
<td>Arthrotomy, knee; including joint exploration, biopsy, or removal of loose or foreign bodies</td>
</tr>
<tr>
<td>27332</td>
<td>Arthrotomy, with excision of semilunar cartilage (meniscectomy) knee; medial OR lateral</td>
</tr>
<tr>
<td>27333</td>
<td>Arthrotomy, with excision of semilunar cartilage (meniscectomy) knee; medial AND lateral</td>
</tr>
<tr>
<td>27334</td>
<td>Arthrotomy, with synovectomy, knee; anterior OR posterior</td>
</tr>
<tr>
<td>27335</td>
<td>Arthrotomy, with synovectomy, knee; anterior AND posterior including popliteal area</td>
</tr>
<tr>
<td>27337</td>
<td>Excision, tumor, soft tissue of thigh or knee area, subcutaneous; 3 cm or greater</td>
</tr>
<tr>
<td>27339</td>
<td>Excision, tumor, soft tissue of thigh or knee area, subfascial (e.g, intramuscular); 5 cm or greater</td>
</tr>
<tr>
<td>27340</td>
<td>Excision, prepatellar bursa</td>
</tr>
<tr>
<td>27345</td>
<td>Excision of synovial cyst of popliteal space (e.g. Baker’s cyst)</td>
</tr>
<tr>
<td>27347</td>
<td>Excision of lesion of meniscus or capsule (e.g. cyst, ganglion), knee</td>
</tr>
<tr>
<td>27350</td>
<td>Patellectomy or hemipatellectomy</td>
</tr>
<tr>
<td>27355</td>
<td>Excision or curettage of bone cyst or benign tumor of femur</td>
</tr>
<tr>
<td>27356</td>
<td>Excision or curettage of bone cyst or benign tumor of femur; with allograft</td>
</tr>
<tr>
<td>27357</td>
<td>Excision or curettage of bone cyst or benign tumor of femur; with autograft (includes obtaining graft)</td>
</tr>
<tr>
<td>27358</td>
<td>Excision or curettage of bone cyst or benign tumor of femur; with internal fixation (List in addition to code for primary procedure)</td>
</tr>
<tr>
<td>27360</td>
<td>Partial excision (craterization, saucerization, or diaphyseotomy) bone, femur, proximal tibia and/or fibula (e.g., osteomyelitis or bone abscess)</td>
</tr>
<tr>
<td>27364</td>
<td>Radical resection of tumor (e.g. sarcoma), soft tissue of thigh or knee area; 5 cm or greater</td>
</tr>
<tr>
<td>27365</td>
<td>Radical resection of tumor, femur or knee</td>
</tr>
<tr>
<td>27372</td>
<td>Removal of foreign body, deep, thigh region or knee area</td>
</tr>
<tr>
<td>27380</td>
<td>Suture of infrapatellar tendon; primary</td>
</tr>
<tr>
<td>27381</td>
<td>Suture of infrapatellar tendon; secondary reconstruction, including fascial or tendon graft</td>
</tr>
<tr>
<td>27385</td>
<td>Suture of quadriceps or hamstring muscle rupture; primary</td>
</tr>
<tr>
<td>27386</td>
<td>Suture of quadriceps or hamstring muscle rupture; secondary reconstruction, including fascial or tendon graft</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>27390</td>
<td>Tenotomy, open, hamstring, knee to hip; single tendon</td>
</tr>
<tr>
<td>27391</td>
<td>Tenotomy, open, hamstring, knee to hip; multiple tendons, one leg</td>
</tr>
<tr>
<td>27392</td>
<td>Tenotomy, open, hamstring, knee to hip; multiple tendons, bilateral</td>
</tr>
<tr>
<td>27393</td>
<td>Lengthening of hamstring tendon; single tendon</td>
</tr>
<tr>
<td>27394</td>
<td>Lengthening of hamstring tendon; multiple tendons, one leg</td>
</tr>
<tr>
<td>27395</td>
<td>Lengthening of hamstring tendon; multiple tendons, bilateral</td>
</tr>
<tr>
<td>27396</td>
<td>Transplant, hamstring tendon to patella; single tendon</td>
</tr>
<tr>
<td>27397</td>
<td>Transplant, hamstring tendon to patella; multiple tendons</td>
</tr>
<tr>
<td>27400</td>
<td>Transfer, tendon or muscle, hamstrings to femur (eg, Egger's type procedure)</td>
</tr>
<tr>
<td>27403</td>
<td>Arthotomy with meniscus repair, knee</td>
</tr>
<tr>
<td>27405</td>
<td>Repair, primary, torn ligament and/or capsule, knee; collateral</td>
</tr>
<tr>
<td>27407</td>
<td>Repair, primary, torn ligament and/or capsule, knee; cruciate</td>
</tr>
<tr>
<td>27409</td>
<td>Repair, primary, torn ligament and/or capsule, knee; collateral and cruciate ligments</td>
</tr>
<tr>
<td>27412</td>
<td>Autologous chondrocyte implantation, knee</td>
</tr>
<tr>
<td>27415</td>
<td>Osteochondral allograft, knee, open</td>
</tr>
<tr>
<td>27416</td>
<td>Osteochondral autograft(s), knee, open (e.g. mosaicplasty) (includes harvesting of autograft[s])</td>
</tr>
<tr>
<td>27418</td>
<td>Anterior tibial tubercleplasty (e.g. Maquet type procedure)</td>
</tr>
<tr>
<td>27420</td>
<td>Reconstruction of dislocating patella; (e.g. Hauser type procedure)</td>
</tr>
<tr>
<td>27422</td>
<td>Reconstruction of dislocating patella; with extensor realignment and/or muscle advancement or release (e.g. Campbell, Goldwaite type procedure)</td>
</tr>
<tr>
<td>27424</td>
<td>Reconstruction of dislocating patella; with patellectomy</td>
</tr>
<tr>
<td>27425</td>
<td>Lateral retinacular release, open</td>
</tr>
<tr>
<td>27427</td>
<td>Ligamentous reconstruction (augmentation), knee; extra-articular</td>
</tr>
<tr>
<td>27428</td>
<td>Ligamentous reconstruction (augmentation), knee; intra-articular (open)</td>
</tr>
<tr>
<td>27429</td>
<td>Ligamentous reconstruction (augmentation), knee; intra-articular (open) and extra-articular</td>
</tr>
<tr>
<td>27430</td>
<td>Quadricepsplasty (e.g., Bennett or Thompson type)</td>
</tr>
<tr>
<td>27435</td>
<td>Capsulotomy, posterior capsular release, knee</td>
</tr>
<tr>
<td>27448</td>
<td>Osteotomy, femur, shaft or supracondylar; without fixation</td>
</tr>
<tr>
<td>27450</td>
<td>Osteotomy, femur, shaft or supracondylar; with fixation</td>
</tr>
<tr>
<td>27454</td>
<td>Osteotomy, multiple, with realignment on intramedullary rod, femoral shaft (e.g., Sofield type procedure)</td>
</tr>
<tr>
<td>27455</td>
<td>Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); before epiphysseal closure</td>
</tr>
<tr>
<td>27457</td>
<td>Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); after epiphysseal closure</td>
</tr>
<tr>
<td>27465</td>
<td>Osteoplasty, femur; shortening (excluding 64876)</td>
</tr>
<tr>
<td>27466</td>
<td>Osteoplasty, femur; lengthening</td>
</tr>
<tr>
<td>27468</td>
<td>Osteoplasty, femur; combined, lengthening and shortening with femoral segment transfer</td>
</tr>
<tr>
<td>27470</td>
<td>Repair, nonunion or malunion, femur, distal to head and neck; without graft (e.g., compression technique)</td>
</tr>
<tr>
<td>27472</td>
<td>Repair, nonunion or malunion, femur, distal to head and neck; with iliac or other autogenous bone graft (includes obtaining graft)</td>
</tr>
<tr>
<td>27475</td>
<td>Arrest, epiphysseal, any method (e.g., epiphysiodesis); distal femur</td>
</tr>
<tr>
<td>27477</td>
<td>Arrest, epiphysseal, any method (e.g., epiphysiodesis); tibia and fibula, proximal</td>
</tr>
<tr>
<td>27479</td>
<td>Arrest, epiphysseal, any method (e.g., epiphysiodesis); combined distal femur, proximal tibia and fibula</td>
</tr>
<tr>
<td>27485</td>
<td>Arrest, hemiepiphyseal, distal femur or proximal tibia or fibula (e.g., genu varus or valgus)</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>27495</td>
<td>Prophylactic treatment (nailing, pinning, plating, or wiring) with or without methylmethacrylate, femur</td>
</tr>
<tr>
<td>27496</td>
<td>Decompression fasciotomy, thigh and/or knee, one compartment (flexor or extensor or adductor)</td>
</tr>
<tr>
<td>27497</td>
<td>Decompression fasciotomy, thigh and/or knee, one compartment (flexor or extensor or adductor); with debridement of nonviable muscle and/or nerve</td>
</tr>
<tr>
<td>27498</td>
<td>Decompression fasciotomy, thigh and/or knee, multiple compartments</td>
</tr>
<tr>
<td>27499</td>
<td>Decompression fasciotomy, thigh and/or knee, multiple compartments; with debridement of nonviable muscle and/or nerve</td>
</tr>
<tr>
<td>27570</td>
<td>Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices)</td>
</tr>
<tr>
<td>29884</td>
<td>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)</td>
</tr>
<tr>
<td>29885</td>
<td>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)</td>
</tr>
<tr>
<td>29886</td>
<td>Arthroscopy, knee, surgical; osteochondral autograft(s) (e.g. mosaicplasty) (includes harvesting of the autograft(s))</td>
</tr>
<tr>
<td>29887</td>
<td>Arthroscopy, knee, surgical; osteochondral allograft (e.g. mosaicplasty)</td>
</tr>
<tr>
<td>29888</td>
<td>Arthroscopy, knee, surgical; meniscal transplantation (includes arthroscopy for meniscal insertion), medial or lateral</td>
</tr>
<tr>
<td>29889</td>
<td>Arthroscopy, knee, diagnostic; with or without synovial biopsy (separate procedure)</td>
</tr>
<tr>
<td>29890</td>
<td>Arthroscopy, knee, surgical; for infection, lavage and drainage</td>
</tr>
<tr>
<td>29891</td>
<td>Arthroscopy, knee, surgical; with lateral release</td>
</tr>
<tr>
<td>29892</td>
<td>Arthroscopy, knee, surgical; for removal of loose body or foreign body (e.g. osteochondritis dissecans fragmentation, chondral fragmentation)</td>
</tr>
<tr>
<td>29893</td>
<td>Arthroscopy, knee, surgical; synovectomy, limited (eg, plica or shelf resection) (separate procedure)</td>
</tr>
<tr>
<td>29894</td>
<td>Arthroscopy, knee, surgical; synovectomy, major, two or more compartments (eg, medial or lateral)</td>
</tr>
<tr>
<td>29895</td>
<td>Arthroscopy, knee, surgical; debridement/shaving of articular cartilage (chondroplasty)</td>
</tr>
<tr>
<td>29896</td>
<td>Arthroscopy, knee, surgical; abrasion arthroplasty (includes chondroplasty where necessary) or multiple drilling or microfracture</td>
</tr>
<tr>
<td>29897</td>
<td>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</td>
</tr>
<tr>
<td>29898</td>
<td>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</td>
</tr>
<tr>
<td>29899</td>
<td>Arthroscopy, knee, surgical; with meniscus repair (medial OR lateral)</td>
</tr>
<tr>
<td>29900</td>
<td>Arthroscopy, knee, surgical; with meniscus repair (medial AND lateral)</td>
</tr>
<tr>
<td>29901</td>
<td>Arthroscopy, knee, surgical; with lysis of adhesions, with or without manipulation (separate procedure)</td>
</tr>
<tr>
<td>29902</td>
<td>Arthroscopy, knee, surgical; drilling for osteochondritis dissecans with bone grafting, with or without internal fixation (including debridement of base of lesion)</td>
</tr>
<tr>
<td>29903</td>
<td>Arthroscopy, knee, surgical; drilling for intact osteochondritis dissecans lesion</td>
</tr>
</tbody>
</table>
CMM-312.6 Procedure (HCPCS) Codes

This guideline relates to the HCPCS code set below. Codes are displayed for informational purposes only. Any given code's inclusion on this list does not necessarily indicate prior authorization is required.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J7330</td>
<td>Autologous cultured chondrocytes, implant</td>
</tr>
</tbody>
</table>

This list may not be all inclusive and is not intended to be used for coding/billing purposes. The final determination of reimbursement for services is the decision of the health plan and is based on the individual’s policy or benefit entitlement structure as well as claims processing rules.

CMM-312.7: References


35. HCSC Medical Policy SUR705.035 effective date 05.15.2017


57. MACI prescribing information (December 2016). U.S. Food and Drug Administration.


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82. Solomon D, Avorn J, Warsi A et al. Which individuals with knee problems are likely to benefit
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CP, Thaunat M. Anterolateral ligament reconstruction is associated with significantly
reduced ACL graft rupture rates at a minimum of follow-up of 2 years: a prospective
Jun; 45(7): 1547-57.
84. Stuart M, Lubowitz J. What, if any, are the indications for arthroscopic debridement of the
Midterm Clinical Outcomes of Osteochondral Allograft Transplantation in the Knee. J
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knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines.
Osteoarthritis Cartilage. 2008;16(2):137-162.