



CLINICAL GUIDELINES

CMM-311: Knee Replacement/Arthroplasty

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EviCore
By ~~EVERNORTH~~

EviCore healthcare Clinical Decision Support Tool Diagnostic Strategies: This tool addresses common symptoms and symptom complexes. Imaging requests for individuals with atypical symptoms or clinical presentations that are not specifically addressed will require physician review. Consultation with the referring physician, specialist, and/or individual's Primary Care Physician (PCP) may provide additional insight.

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Table of Contents

Guideline	Page
Definitions.....	3
General Guidelines.....	6
Partial Knee Replacement.....	8
Total Knee Replacement.....	13
Revision of Knee Replacement.....	16
Arthroscopic or Open Abrasion Arthroplasty Procedures of the Patella (without prosthesis), Femoral Condyles, or Tibial Plateau.....	21
Codes (CMM-311).....	23
References (CMM-311).....	25

Definitions

Guideline	Page
Definitions.....	4

Definitions

CMM.JT.DF.311

v2.0.2025

Kellgren-Lawrence Grading System

a radiographic grading system describing osteoarthritic changes to the tibial-femoral joint of the knee. When used, the radiographic findings on plain X-rays are typically reported within one of the following categories:

- 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

Knee Arthroplasty

an orthopedic surgical procedure during which the articular surface of the knee joint is replaced, remodeled, or realigned.

Knee Replacement

a form of arthroplasty that includes the surgical replacement of the knee joint with a prosthesis.

Modified Outerbridge Classification

a system 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 as viewed on MRI, 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 $<1\text{cm}^2$
- Grade III: fragmentation and fissuring $>1\text{cm}^2$
- Grade IV: subchondral bone exposed

Non-Surgical Management (with regard to the treatment of lower extremity joint pain)

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 lower extremity joint pain. The types of treatment involved can include, but are not limited to, the following: relative rest/activity modification; weight loss; supervised physiotherapy modalities and therapeutic exercises; prescription and non-prescription medications; assistive devices; and/or, intra-articular injections.

Outerbridge Classification

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 as viewed by direct visualization intraoperatively, 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 $<1\text{cm}^2$
- Grade III: fragmentation and fissuring $>1\text{cm}^2$
- Grade IV: subchondral bone exposed

Partial Knee Replacement

surgical reconstruction or replacement of one joint surface of the knee joint as a result of unicompartmental (e.g., medial, lateral, or patellofemoral) involvement.

Prosthesis

an artificial device used to replace a structural element within a joint to improve and enhance function.

Revision of Knee Replacement (Partial or Total)

surgical reconstruction or replacement due to failure or complications of previous knee replacement.

Total Knee Replacement

surgical reconstruction or replacement of the entire knee joint as a result of unicompartmental, bicompartmental, or tricompartmental involvement.

General Guidelines

Guideline	Page
General Guidelines.....	7

General Guidelines

CMM.JT.GG.311

v2.0.2025

Application of Guideline

- The determination of medical necessity for the performance of of knee replacement (partial or total) is always made on a case-by-case basis.
- For the advanced imaging indications prior to knee replacement surgery refer to **MS-12: Osteoarthritis** and **MS-25: Knee**.
- For advanced imaging indications following knee replacement surgery refer to **MS-16: Post-Operative Joint Replacement Surgery** and **MS-25: Knee**.
- For indications and non-indications of trochleoplasty using CPT® 27442 for trochlear dysplasia in individuals with patellar instability refer to **Procedures for Patellofemoral Conditions** in **CMM-312: Knee Surgery Arthroscopic and Open Procedures**.

Health Equity Considerations

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Partial Knee Replacement

Guideline	Page
Partial Knee Replacement Indications.....	9
Partial Knee Replacement Non-Indications.....	11

Partial Knee Replacement Indications

CMM.JT.IN.311

v2.0.2025

Partial Knee Replacement - Unicompartmental (Medial, Lateral, or Patellofemoral)

Partial knee replacement (medial, lateral, or patellofemoral) is considered **medically necessary** when ALL of the following criteria have been met:

- Imaging or arthroscopic findings show EITHER of the following:
 - severe unicompartmental (medial, lateral, or patellofemoral) osteoarthritis as evidenced by ANY of the following:
 - Kellgren-Lawrence Grade IV radiographic findings
 - Outerbridge Classification Grade IV arthroscopic findings AND not a candidate for joint sparing procedure
 - Modified Outerbridge Classification Grade IV MRI findings AND not a candidate for joint sparing procedure
 - unicompartmental avascular necrosis (AVN) of the femoral condyles and/or proximal tibia
- Physical exam demonstrates BOTH of the following findings:
 - knee stability
 - knee arc of motion (full extension to full flexion) >90°
- Symptoms include BOTH of the following:
 - function-limiting pain at short distances (e.g., walking less than one-quarter mile, limiting activity to two city blocks, the equivalent to walking the length of a shopping mall) for at least three (3) months duration
 - loss of knee function which interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment
- Failure of provider-directed non-surgical management for at least three (3) months duration
 - **Criteria exception:** Provider-directed non-surgical management may be inappropriate. The medical record must clearly document why provider-directed non-surgical management is not appropriate.
 - **Note:** It is incumbent on the surgeon to preoperatively optimize reasonably modifiable medical and behavioral health comorbidities.

Patellofemoral Unicompartmental Replacement Following a Total Knee Replacement

Patellofemoral unicompartmental replacement is considered **medically necessary** when ALL of the following criteria have been met:

- Procedure is performed to manage protracted anterior knee pain and/or mechanical symptoms attributed to the patellofemoral joint following a total knee replacement, during which patellar replacement was NOT performed at the time of the index knee replacement.
- Physical exam demonstrates BOTH of the following findings:
 - intact, stable ligaments
 - knee arc of motion (full extension to full flexion) >90°
- Symptoms include BOTH of the following:
 - function-limiting pain at short distances (e.g., walking less than one-quarter mile, limiting activity to two city blocks, the equivalent to walking the length of a shopping mall)
 - loss of knee function which interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment
- Failure of provider-directed non-surgical management for at least three (3) months duration
 - **Criteria exception:** Provider-directed non-surgical management may be inappropriate. The medical record must clearly document why provider-directed non-surgical management is not appropriate.
 - **Note:** It is incumbent on the surgeon to preoperatively optimize reasonably modifiable medical and behavioral health comorbidities.

Partial Knee Replacement Non-Indications

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v2.0.2025

Not Medically Necessary

Partial knee replacement (medial, lateral, or patellofemoral) is considered **not medically necessary** for ANY other indication, condition, or when ANY of the following are present:

- when unicompartmental replacement is to be performed of the medial or lateral compartment:
 - Grade IV patellofemoral joint osteoarthritis involving the lateral patella facet and/or lateral trochlea as evidenced by EITHER of the following:
 - Kellgren-Lawrence Grade IV radiographic findings
 - Outerbridge Classification Grade IV arthroscopic findings
- when unicompartmental replacement is to be performed of the patellofemoral compartment:
 - Grade III or IV medial or lateral compartment osteoarthritis as evidenced by EITHER of the following:
 - Kellgren-Lawrence Grade III or IV radiographic findings
 - Outerbridge Classification Grade III or IV arthroscopic findings
 - Patellar Malalignment Syndrome as evidenced by EITHER of the following:
 - increased Q angle (15° in males or 20° in females)
 - TT-TG (tibial tuberosity-trochlear groove) distance of 20mm
- tibial or femoral shaft deformity
- radiographic evidence of medial or lateral subluxation
- flexion contracture $>15^{\circ}$
- valgus deformity $>20^{\circ}$
- varus deformity $>15^{\circ}$
- varus deformity $\geq 10^{\circ}$ with sagittal tibiofemoral subluxation ≥ 6 mm (consistent with an ACL deficient osteoarthritic knee)
- Charcot joint
- inflammatory arthropathy
- active local or systemic infection
- vascular insufficiency (defined as ankle brachial index of <0.5), significant muscular atrophy of the leg, or neuromuscular disease that is severe enough to compromise implant stability or post-operative recovery

Experimental, Investigational, or Unproven (EIU)

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

- bicompartamental knee arthroplasty (modular or monolithic/nonmodular)
- bi-unicompartamental knee arthroplasty
- focal resurfacing of a single knee joint defect (e.g., Arthrosurface® femoral condyle implant)
- unicompartamental free-floating (un-fixed) interpositional device (e.g., UniSpacer®)

Total Knee Replacement

Guideline	Page
Total Knee Replacement Indications.....	14
Total Knee Replacement Non-Indications.....	15

CMM-311: Knee Replacement/Arthroplasty

Total Knee Replacement Indications

CMM.JT.IN.311

v2.0.2025

Total knee replacement is considered **medically necessary** for ANY of the following conditions when ALL of the associated criteria have been met:

Fracture of Distal Femur

- Imaging shows a fracture of the distal femur (trochlea, condyles).
- Conservative management or surgical fixation is not considered a reasonable option.

Osteoarthritis (OA) or Avascular Necrosis (AVN)

- Imaging or arthroscopic findings show EITHER of the following:
 - severe unicompartmental (medial, lateral, or patellofemoral), bicompartamental, or tricompartmental osteoarthritis as evidenced by ANY of the following:
 - Kellgren-Lawrence Grade III or IV radiographic findings
 - Outerbridge Classification Grade IV arthroscopic findings AND not a candidate for joint sparing procedure
 - Modified Outerbridge Classification Grade IV MRI findings AND not a candidate for joint sparing procedure
 - avascular necrosis (AVN) of the femoral condyles and/or proximal tibia
- Symptoms include BOTH of the following:
 - function-limiting pain at short distances (e.g., walking less than one-quarter mile, limiting activity to two city blocks, the equivalent to walking the length of a shopping mall) for at least three (3) months duration
 - loss of knee function which interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment
- Failure of provider-directed non-surgical management for at least three (3) months duration
 - **Criteria exception:** Provider-directed non-surgical management may be inappropriate. The medical record must clearly document why provider-directed non-surgical management is not appropriate.
 - **Note:** It is incumbent on the surgeon to preoperatively optimize reasonably modifiable medical and behavioral health comorbidities.

Total Knee Replacement Non-Indications

CMM.JT.NI.311

v2.0.2025

Not Medically Necessary

Total knee replacement is considered **not medically necessary** for ANY other indication, condition, or when ANY of the following are present:

- joint instability (due to a lack of collateral ligament integrity) that is not amendable to surgical correction (e.g., specialized implant, constrained implant, or a hinge implant)
- >30° of fixed varus deformity that is not amendable to surgical correction
- >30° of fixed valgus deformity that is not amendable to surgical correction
- individuals undergoing dialysis^{28,29,34,35,57,69,88,128}
- active local or systemic infection
- vascular insufficiency (defined as ankle brachial index of <0.5), significant muscular atrophy of the leg, or neuromuscular disease that is severe enough to compromise implant stability or post-operative recovery

Experimental, Investigational, or Unproven

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

- bicompartamental knee arthroplasty (modular or monolithic/nonmodular)
- bi-unicompartamental knee arthroplasty

Revision of Knee Replacement

Guideline	Page
Revision of Knee Replacement (Partial or Total) Indications.....	17
Revision of Knee Replacement (Partial or Total) Non-Indications.....	18
Isolated Polyethylene Liner Exchange (IPE) Indications.....	19
Isolated Polyethylene Liner Exchange (IPE) Non-Indications.....	20

Revision of Knee Replacement (Partial or Total) Indications

CMM.JT.IN.311

v2.0.2025

Revision of knee replacement includes any of the following: revision of a total knee replacement; revision of a unicompartmental (medial, lateral, or patellofemoral) replacement to another unicompartmental (medial, lateral, or patellofemoral) replacement; or, revision of a unicompartmental (medial, lateral, or patellofemoral) replacement to a total knee replacement.

- Revision of knee replacement is considered **medically necessary** for an individual who has previously undergone a partial or total knee replacement when ANY of the following post-operative conditions are present:
 - patellar fracture or dislocation
 - aseptic loosening
 - periprosthetic infection
 - periprosthetic fracture
 - implant fracture or component failure
 - post-operative stiffness for more than 12 weeks when BOTH of the following criteria have been met:
 - manipulation is deemed unsafe by provider
 - components are well-positioned, well-fixed, and appropriately-sized.
 - post-operative stiffness due to component sizing or positioning
 - instability of the knee
 - clinically significant, symptomatic limb malalignment due to existing component position
 - function-limiting pain at short distances (e.g., walking less than one-quarter mile, limiting activity to two city blocks, the equivalent to walking the length of a shopping mall), that is unexplained, greater than six (6) months duration, and is unresponsive to provider-directed non-surgical management
 - If **revising from a partial** (unicompartmental) knee replacement **to a total** joint replacement: Kellgren-Lawrence Grade IV radiographic findings in the non-replaced compartments (medial, lateral, or patellofemoral)

Revision of Knee Replacement (Partial or Total) Non-Indications

CMM.JT.NI.311

v2.0.2025

Not Medically Necessary

Revision of knee replacement is considered **not medically necessary** for ANY other indication or condition.

CMM-311: Knee Replacement/Arthroplasty

Isolated Polyethylene Liner Exchange (IPE) Indications

CMM.JT.IN.311

v2.0.2025

Isolated polyethylene liner exchange (IPE) is considered **medically necessary** for ANY of the following post-operative conditions when ALL of the associated criteria have been met

- eccentric polyethylene wear and osteolysis with imaging studies confirming BOTH of the following findings:
 - progressive osteolysis
 - well-fixed implants in acceptable position
- catastrophic polyethylene failure, (includes post fracture, locking mechanism failure, and severe polyethylene wear) with BOTH of the following findings:
 - with, or at risk for, metallosis and polyethylene liner fracture
 - without component loosening or malalignment
- acute post-operative joint infection (periprosthetic or hematogenous) with well-fixed implants
- stiffness following total knee replacement (flexion contracture $>15^{\circ}$ with flexion limited to $<90^{\circ}$) with BOTH of the following:
 - individual presents later than three (3) months from the index replacement procedure
 - persistent restricted range of motion despite BOTH of the following treatments:
 - physical therapy
 - manipulation under anesthesia
- instability without component malrotation or malalignment

Isolated Polyethylene Liner Exchange (IPE) Non-Indications

CMM.JT.NI.311

v2.0.2025

Isolated polyethylene liner exchange (IPE) is considered **not medically necessary** for ANY other indication or condition.

CMM-311: Knee Replacement/Arthroplasty

Arthroscopic or Open Abrasion Arthroplasty Procedures of the Patella (without prosthesis), Femoral Condyles, or Tibial Plateau

Guideline	Page
Arthroscopic or Open Abrasion Arthroplasty Procedures of the Patella (without prosthesis), Femoral Condyles, or Tibial Plateau Non-Indications.....	22

CMM-311: Knee Replacement/Arthroplasty

Arthroscopic or Open Abrasion Arthroplasty Procedures of the Patella (without prosthesis), Femoral Condyles, or Tibial Plateau Non-Indications

CMM.JT.NI.312

v2.0.2025

Not Medically Necessary

Arthroscopic or open abrasion arthroplasty procedures of the knee tibial plateau(s), patella, and/or femoral condyle(s), (with or without debridement and partial synovectomy), are considered **not medically necessary** for the treatment of symptomatic knee osteoarthritis.

CMM-311: Knee Replacement/Arthroplasty

Codes (CMM-311)

Guideline	Page
Codes (CMM-311).....	24

CMM-311: Knee Replacement/Arthroplasty

Codes (CMM-311)

CMM.JT.PC.311
v2.0.2025

The inclusion of any code in this table does not imply that the code is under management or requires prior authorization. Refer to the applicable health plan for management details. Prior authorization of a code listed in this table is not a guarantee of payment. The Certificate of Coverage or Evidence of Coverage policy outlines the terms and conditions of the member's health insurance policy.

Code	Code Description/Definition
27438	Arthroplasty, patella; with prosthesis
27440	Arthroplasty, knee, tibial plateau
27441	Arthroplasty, knee, tibial plateau; with debridement and partial synovectomy
27446	Arthroplasty, knee, condyle and plateau; medial OR lateral compartment
27447	Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee Arthroplasty)
27486	Revision of total knee Arthroplasty, with or without allograft; 1 component
27487	Revision of total knee Arthroplasty, with or without allograft; femoral and entire tibial component

CMM-311: Knee Replacement/Arthroplasty

References (CMM-311)

Guideline	Page
References (CMM-311).....	26

References (CMM-311)

CMM.JT.RF.311

v2.0.2025

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