Cigna Medical Coverage Policies – Musculoskeletal
Knee Replacement/Arthroplasty

Effective August 1, 2024

Instructions for use

The following coverage policy applies to health benefit plans administered by Cigna. Coverage policies are intended to provide guidance in interpreting certain standard Cigna benefit plans and are used by medical directors and other health care professionals in making medical necessity and other coverage determinations. Please note the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these coverage policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a coverage policy.

In the event of a conflict, a customer's benefit plan document always supersedes the information in the coverage policy. In the absence of federal or state coverage mandates, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of:

1. The terms of the applicable benefit plan document in effect on the date of service
2. Any applicable laws and regulations
3. Any relevant collateral source materials including coverage policies
4. The specific facts of the particular situation

Coverage policies relate exclusively to the administration of health benefit plans. Coverage policies are not recommendations for treatment and should never be used as treatment guidelines.

This evidence-based medical coverage policy has been developed by eviCore, Inc. Some information in this coverage policy may not apply to all benefit plans administered by Cigna.

CMM-311: Knee Replacement/Arthroplasty

Definitions

- **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 orthopaedic 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 less than one square centimeter (1 cm^2)
  - **Grade III** – Fragmentation and fissuring greater than one square centimeter (1 cm^2)
  - **Grade IV** – Subchondral bone exposed
- **Non-Surgical Management** (with regard to the treatment of knee osteoarthritis)**:** 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 from osteoarthritis. 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 less than one square centimeter (1 cm^2)
  - **Grade III** - Fragmentation and fissuring greater than one square centimeter (1 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

Application of Guideline

- The determination of medical necessity for the performance 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 lysis of adhesions refer to **CMM-312: Knee Surgery - Arthroscopic and Open Procedures**
- For indications and non-indications of trochleoplasty using CPT® 27442 for trochlear dysplasia in individuals with patellar instability refer to patellofemoral conditions in **CMM-312: Knee Surgery - Arthroscopic and Open Procedures**

Partial Knee Replacement

Partial Knee Replacement Indications

Partial Knee Replacement - Medial, Lateral, or Patellofemoral Unicompartmental

Partial knee replacement (medial, lateral, or patellofemoral unicompartmental) 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:
  - Knee stability
  - Knee arc of motion (full extension to full flexion) greater than 90º

- Symptoms include **BOTH** of the following:
  - Function-limiting pain at short distances (e.g., walking less than ¼ 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 at least three (3) months of provider-directed non-surgical management
  - **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) greater than 90º
- Symptoms include **BOTH** of the following:
  - Function-limiting pain at short distances (e.g., walking less than ¼ 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 at least three (3) months of provider-directed non-surgical management
  - **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

Not Medically Necessary

- Partial knee replacement (medial, lateral, or patellofemoral unicompartmental) is considered **not medically necessary** for any other indication, condition, or when **ANY** of the following conditions 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 findings:
    - Kellgren-Lawrence grade III or IV radiographic findings
    - Outerbridge Classification grade III or IV arthroscopic findings
  - Patellar malalignment syndrome identified by having **EITHER** of the following:
    - An increased Q angle (15º in males or 20º in females)
    - Tibial tuberosity-trochlear groove (TT-TG) distance 20 mm
- Tibial or femoral shaft deformity
- Radiographic evidence of medial or lateral subluxation
- Flexion contracture greater than 15º
- Varus deformity greater than 15º
- Valgus deformity greater than 20º
- Knee varus deformity of ≥10º and sagittal tibiofemoral subluxation of ≥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 (EIU)**:
  - Bicompartmental knee arthroplasty (modular or monolithic/nonmodular)
  - Bi-unicompartmental knee arthroplasty
  - Focal resurfacing of a single knee joint defect (e.g., Arthrosurface® femoral condyle implant)
  - Unicompartmental free-floating (un-fixed) interpositional device (e.g., UniSpacer®)

Total Knee Replacement

Total Knee Replacement Indications

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
- 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), bicompartmental, 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 ¼ 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 at least three (3) months of provider-directed non-surgical management
  - **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

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 amenable to surgical correction (e.g., specialized implant, constrained implant, or a hinge implant)
  - Greater than 30º of fixed varus or valgus deformity that is not amenable to surgical correction
  - 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 (EIU)**:
  - Bicompartmental knee arthroplasty (modular or monolithic/nonmodular)
  - Bi-unicompartmental knee arthroplasty

Revision of Knee Replacement

Revision of Knee Replacement (Partial or Total) Indications

Revision of knee replacement includes any of the following: revision of a total knee replacement; revision of a medial, lateral, or patellofemoral unicompartmental replacement to another medial, lateral, or patellofemoral unicompartmental replacement; or, revision of a medial, lateral, or patellofemoral unicompartmental 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:
  - Fracture or dislocation of the patella
  - 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 are 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
  - Greater than six (6) months of unexplained function-limiting pain at short distances (e.g., walking less than ¼ mile, limiting activity to two city blocks, the equivalent to walking the length of a shopping mall) that 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

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

Isolated Polyethylene Liner Exchange (IPE) Indications

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

- 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
- An acute post-operative or hematogenous periprosthetic joint infection with well-fixed implants
- Stiffness following total knee replacement (flexion contracture of >15º with flexion limited to <90º) 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

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

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

- 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.

Procedure (CPT®) Codes (CMM-311)

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.

CPT®	Code Description/Definition
27438	Arthroplasty, patella; with prosthesis
27440	Arthroplasty, knee, tibial plateau
27441	Arthroplasty, knee, tibial plateau; with debridement and partial synovectomy
27443	Arthroplasty, femoral condyles or tibial plateau(s), knee; with debridement and partial synovectomy
27445	Arthroplasty, knee, hinge prosthesis (e.g., Walldius type)
27446	Arthroplasty, knee, condyle and plateau; medial OR lateral compartment
27447	Arthroplasty, knee, condyle and plateau; medical 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

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.

References (CMM-311)

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