Introduction

Knee arthroplasty is the medical term for a total knee replacement. A surgeon removes the damaged part of the joint. The surfaces are shaped to hold a replacement joint that is either metal or plastic. The artificial joint is attached to the thigh bone, shin bone, and knee cap. For the right patient, a knee replacement reduces pain and improves quality of life. People who may qualify for this surgery are those who have severe pain from “wear-and-tear” arthritis (osteoarthritis) of the knee, who are not able to perform their normal daily activities, and who tried nonsurgical treatments. Replacement joints have a limited life. Factors such as a person’s age, severity of knee disease, obesity, and the type of replacement affect how long an artificial joint will last. Knee arthroplasty must be pre-approved by the health plan. This policy outlines the information needed for health plan review.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.
Note: This policy only applies to those aged 18 and over. This policy does not apply to patellofemoral knee arthroplasty

<table>
<thead>
<tr>
<th>Indication</th>
<th>Medical Necessity</th>
</tr>
</thead>
</table>
| Osteoarthritis or degenerative joint disease | **Total knee and unicompartmental arthroplasty may be considered medically necessary for degenerative joint disease when ALL of the following are met:**  
- Treatment is needed because of one or more of the following:  
  - Disabling pain for at least 3 months duration  
  - Functional disability which interferes with the ability to carry out activities of daily living  
- Radiographic or imaging evidence of severe osteoarthritis in the 12 months prior to surgery evidenced by either:  
  - Moderate multiple or large osteophytes, definite or marked narrowing of joint space, some or severe sclerosis and possible or definite deformity of bone contour (Kellgren-Lawrence grade of 3 or 4)  
  - Exposed subchondral bone (full thickness cartilage loss with underlying bone reactive changes)  
- Documentation of three months of failed non-operative, conservative management for Kellgren-Lawrence grade 3 findings as demonstrated by a trial of one or more of the following medications:  
  - Non-steroidal anti-inflammatory drugs (oral or topical)  
  - Acetaminophen  
  - Intra-articular injection of corticosteroids as appropriate  
- A trial of one or more of the following physical measures:  
  - Physical therapy  
  - Flexibility and muscle strengthening exercises  
  - Reasonable restriction of activities  
- For Kellgren-Lawrence grade 4 findings, a trial of one or more of the following medications:  
  - Non-steroidal anti-inflammatory drugs (oral or topical)  |
<table>
<thead>
<tr>
<th>Indication</th>
<th>Medical Necessity</th>
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<tbody>
<tr>
<td>Authentication</td>
<td>Acetaminophen</td>
</tr>
<tr>
<td></td>
<td>Intra-articular injection of corticosteroids as appropriate</td>
</tr>
<tr>
<td>Replacement/revision of previous arthroplasty</td>
<td>Knee arthroplasty may be considered medically necessary for a replacement/revision of a previous arthroplasty as indicated by one or more of the following:</td>
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<tr>
<td></td>
<td>• Disabling pain</td>
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<td></td>
<td>• Functional disability</td>
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<td></td>
<td>• Progressive and substantial bone loss</td>
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<td>• Fracture or dislocation of patella</td>
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<td></td>
<td>• Aseptic component instability or loosening</td>
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<td>• Infection</td>
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<td>• Periprosthetic fracture</td>
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<tr>
<td>Other Conditions</td>
<td>Knee arthroplasty may be considered medically necessary for the following diagnoses:</td>
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<tr>
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<td>• Distal femur fracture repair in a patient with osteoporosis</td>
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<td></td>
<td>• Failure of a previous proximal tibial or distal femoral osteotomy</td>
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<td></td>
<td>• Hemophilic arthroplasty</td>
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<td></td>
<td>• Limb salvage for malignancy</td>
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<td></td>
<td>• Posttraumatic knee joint destruction</td>
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</tbody>
</table>

**Documentation Requirements**

The patient’s medical records submitted for review for all conditions should document that medical necessity criteria are met. The record should include the following:

- For osteoarthritis or degenerative joint disease with ALL of the following:
  - Needs treatment because of disabling pain and/or limited knee function interfering with activities of daily living (ADLs)
  **AND**
  - Imaging evidence of severe osteoarthritis by either: large osteophytes (bone spurs), severe narrowing of joint space, severe sclerosis (thickening, hardening, increase in density), and definite deformity of bone contours. Radiologic or imaging must be done in the 12 months prior to planned surgery
  **AND**
  - History of unsuccessful conservative/medical management such as anti-inflammatory medication, analgesics, physical therapy, flexibility and muscle strengthening exercises, or reasonable restriction of activities
- For replacement/revision of previous arthroplasty with evidence of one of the following:
Documentation Requirements

- Disabling pain
- Limited knee function
- Progressive and substantial bone loss
- Patella (kneecap) fracture or dislocation
- Aseptic component instability (a non-infectious loosening of the bond between the bone and the implant)
- Infection
- Periprosthetic fracture (fracture around the knee implant)

For other significant conditions, detailed clinical documentation supporting the diagnoses of one of the following:

- Repair of distal femur fracture (fracture of the femur just above the knee joint) in a patient with osteoporosis
- Failure of a previous proximal tibial or distal femoral osteotomy (cutting or removal of bone related to a break in the shinbone just below the knee or the femur just above the knee)
- Hemophilic arthroplasty (knee replacement for a person with hemophilia)
- Limb salvage for malignancy
- Posttraumatic knee joint destruction

Coding

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CPT</td>
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<tr>
<td>27445</td>
<td>Arthroplasty, knee, hinge prosthesis (eg, Walldius type)</td>
</tr>
<tr>
<td>27446</td>
<td>Arthroplasty, knee condyle and plateau; medial OR lateral compartment</td>
</tr>
<tr>
<td></td>
<td>( unicompartmental or partial knee replacement)</td>
</tr>
<tr>
<td>27447</td>
<td>Arthroplasty, knee, condyle and plateau; medial AND lateral compartments</td>
</tr>
<tr>
<td></td>
<td>with or without patella resurfacing (total knee arthroplasty)</td>
</tr>
<tr>
<td>27486</td>
<td>Revision of total knee arthroplasty, with or without allograft; 1 component</td>
</tr>
<tr>
<td>27487</td>
<td>Revision of total knee arthroplasty, with or without allograft; femoral and</td>
</tr>
<tr>
<td></td>
<td>entire tibial component</td>
</tr>
</tbody>
</table>

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Related Information

KOOS Knee Survey

It is widely agreed that good outcome measures are needed to be able to tell the difference between treatments that are effective from those that are not. In order to do this, there must be some standardized, patient-centered measures that can be administered at a low cost. A questionnaire (the Knee Injury and Osteoarthritis Outcome Scores, or KOOS) was developed to evaluate short- and long-term patient-relevant outcomes after knee injury. This questionnaire was based on the WOMAC (Western Ontario and McMaster Universities) Osteoarthritis Index, a literature review, an expert panel, and a pilot study. The KOOS is a tool that can be used in the provider’s office. It is self-administered and looks at five outcomes: pain, symptoms, activities of daily living, sport and recreation function, and knee-related quality of life. It has been shown to be a useful tool in assessing a patient’s pain and functional disability.

Kellgren-Lawrence Grading Scale

- Grade 1: Doubtful narrowing of joint space and possible osteophytic lipping
- Grade 2: Definite osteophytes, definite narrowing of joint space
- Grade 3: Moderate multiple osteophytes, definite narrowing of joints space, some sclerosis and possible deformity of bone contour
- Grade 4: Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour

Modified Outerbridge Classification

- Grade 1: Signal intensity alterations with an intact surface of the articular cartilage compared with the surrounding normal cartilage
- Grade 2: Partial thickness defect of the cartilage
- Grade 3: Fissuring of the cartilage to the level of the subchondral bone
- Grade 4: Exposed subcondral bone
Modern total knee arthroplasty consists of resection of the diseased articular surfaces of the knee, followed by resurfacing with metal and polyethylene prosthetic components. For the properly selected patient, the procedure results in significant pain relief, as well as improved function and quality of life. Despite the potential benefits of total knee arthroplasty, it is an elective procedure and should only be considered after extensive discussion of the risks, benefits, and alternatives.¹

The main indication for total knee arthroplasty is for the relief of pain associated with arthritis of the knee in patients who have failed nonoperative treatments. Correction of deformity and restoration of function should be considered secondary outcomes of the surgery and should not be considered the primary indication. The prosthetic joint has a finite lifetime, and the durability of the prosthesis depends on many factors such as patient age, underlying disease, the presence of obesity, as well as the type of prosthesis and surgical factors.²

Patients with osteoarthritis limited to just one part of the knee may be candidates for unicompartmental knee replacement (also called a “partial” knee replacement). Unicompartmental knee replacements are an option for a small percentage of patients with osteoarthritis of the knee. In this type of surgery, only the damaged knee compartment is replaced with metal and plastic.³

Evidence Review

Knee arthroplasty may be done to treat both posttraumatic arthritis and osteoarthritis.

Although excellent long-term outcomes can be seen with modern methods of ligament reconstruction and open reduction and internal fixation for knee injuries, posttraumatic knee arthritis often develops. Options to treat symptomatic posttraumatic knee arthritis include osteotomy, arthrodesis, and arthroplasty. There may be surgical challenges including the presence of extensive (often broken) hardware, scarring, stiffness, bony defects, compromised soft tissues, and malalignment. When deciding on a treatment plan, the patient’s age and level of activity must be taken into account, as well as the anatomic location and extent of damage to the articular surface. For younger patients, osteotomy, allograft transplantation, or arthrodesis of the knee is often considered, whereas older, low-demand patients are typically treated with arthroplasty. Attention to specific technical details and careful surgical technique are required in order to achieve a successful result. Functional improvement is usually seen following arthroplasty and, sometimes, after arthrodesis. However, complications are common.³
In people with advanced osteoarthritis of the knee, knee replacement surgery is often done as a way to relieve pain and improve function. Carr et al\(^4\) surveyed the epidemiology and risk factors for knee replacement surgery.

In 2010, Bozic et al\(^5\) looked at the relationship between the number of procedures that a surgeon and hospital do and the clinical outcomes of those procedures. They found that the patients of surgeons who performed more knee replacements had a lower risk of complications, lower readmission and reoperation rates, shorter length of stay, and a higher chance that they would be discharged to home. Hospitals that did more knee replacement surgeries had lower mortality, lower risk of readmission, and a higher likelihood of the patient being discharged to home. Bozic et al also found that when the surgeon and hospital closely follow evidence-based processes of care, there were better clinical outcomes and shorter lengths of stay, regardless of how many procedures the surgeon and hospital had performed.

In 2009, the Osteoarthritis Research Society International (OARSI) updated their global, evidence-based, consensus recomendations that had been done in 2006. They found that there were 64 systematic reviews, 266 randomized controlled trials (RCTs) and 21 new economic evaluations (EEs). New data on efficacy had been published for more than half (26/39, or 67%) of the 51 new treatment modalities. They found that there had been changes in the calculated risk-benefit ratio for some osteoarthritis treatments.\(^6\)

### References


15. Martin GM, Crowley M. Total knee arthroplasty. UpToDate Inc., Waltham, MA. Last updated September 2018


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### History

<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/11/13</td>
<td>New Policy. Added to Surgery section. Considered medically necessary when criteria are met. Approved with 90-day hold for provider notification; this policy is effective February 15, 2014.</td>
</tr>
<tr>
<td>03/31/14</td>
<td>Coding update. ICD-9 Diagnosis codes 170.7, 170.8, 716.16, 996.43, and 996.44 added to policy.</td>
</tr>
<tr>
<td>09/08/14</td>
<td>Annual Review. Policy rewritten with removal of reference to MCG guidelines; all coverage criteria are now available within this policy; no change in coverage.</td>
</tr>
<tr>
<td>01/26/15</td>
<td>Update Related Policies. Add 7.01.144.</td>
</tr>
<tr>
<td>03/24/15</td>
<td>Update Related Policies. Change title to 7.01.549.</td>
</tr>
<tr>
<td>Date</td>
<td>Comments</td>
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</tr>
<tr>
<td>05/27/15</td>
<td>Annual Review. No change to policy statements. No references added.</td>
</tr>
<tr>
<td>02/09/16</td>
<td>Annual Review. No change to policy statements. No references added.</td>
</tr>
<tr>
<td>07/01/16</td>
<td>Interim Review, approved June 14, 2016. Removed Physical Therapy requirement of 6 visits over 12 weeks.</td>
</tr>
<tr>
<td>01/24/17</td>
<td>Minor formatting update; added second level bullets in Prior-Authorization Requirements section.</td>
</tr>
<tr>
<td>03/01/17</td>
<td>Annual Review, approved February 14, 2017. Policy section and Prior Authorization requirements updated to clarify that a copy of the radiologist’s report must be submitted for diagnostic imaging performed within the past 12 months and read by an independent radiologist when submitted requests for treatment related to osteoarthritis or degenerative joint disease. This replaces verbiage previously indicating an x-ray report.</td>
</tr>
<tr>
<td>03/01/18</td>
<td>Annual Review, approved February 27, 2018. Clarified that the medical necessity criteria are for total knee and unicompartmental arthroplasty. Revised policy statement using descriptors of Kellgren Lawrence Grading Scale and Modified Outerbridge Classification. Intent of policy unchanged. Clarification added that this policy does not address patellofemoral knee arthroplasty. Reference added.</td>
</tr>
<tr>
<td>03/09/18</td>
<td>Minor update, added Documentation Requirements section.</td>
</tr>
<tr>
<td>04/01/19</td>
<td>Annual Review, approved March 12, 2019. References 11-16 added. Requirement that a copy of the radiologist’s report must be submitted for diagnostic imaging performed and read by an independent radiologist reinstated. Minor edits for clarity; otherwise policy statements unchanged.</td>
</tr>
<tr>
<td>05/10/19</td>
<td>Minor update, removed requirement that imaging must be performed and read by an independent radiologist, as this was inadvertently added back to policy.</td>
</tr>
<tr>
<td>12/01/19</td>
<td>Interim Review, approved November 21, 2019, effective March 5, 2020. Added description of Kellgren-Lawrence grade 3 back to medical necessity statement of radiographic evidence. Modified conservative management to include one or more medical measures and physical measures unless symptoms are severe and there is radiographic evidence of advanced osteoarthritis then only one or more medical measure is required.</td>
</tr>
</tbody>
</table>

**Disclaimer:** This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review
and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). ©2020 Premera All Rights Reserved.

**Scope:** Medical policies are systematically developed guidelines that serve as a resource for Company staff when determining coverage for specific medical procedures, drugs or devices. Coverage for medical services is subject to the limits and conditions of the member benefit plan. Members and their providers should consult the member benefit booklet or contact a customer service representative to determine whether there are any benefit limitations applicable to this service or supply. This medical policy does not apply to Medicare Advantage.
Discrimination is Against the Law

Premera Blue Cross complies with applicable Federal civil rights laws and does not discriminate on the basis of race, color, national origin, age, disability, or sex. Premera does not exclude people or treat them differently because of race, color, national origin, age, disability or sex.

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• Provides free aids and services to people with disabilities to communicate effectively with us, such as:
  • Qualified sign language interpreters
  • Written information in other formats (large print, audio, accessible electronic formats, other formats)
• Provides free language services to people whose primary language is not English, such as:
  • Qualified interpreters
  • Information written in other languages

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PO Box 91102, Seattle, WA 98111
Toll free 855-332-4535, Fax 425-918-5592, TTY 800-842-5357
Email AppealsDepartmentInquiries@Premera.com

You can also file a civil rights complaint with the U.S. Department of Health and Human Services, Office for Civil Rights, electronically through the Office for Civil Rights Complaint Portal, available at https://ocrportal.hhs.gov/ocr/portal/lobby.jsf, or by mail or phone at:
U.S. Department of Health and Human Services
200 Independence Avenue SW, Room 509F, HHH Building
Washington, D.C. 20201, 1-800-368-1019, 800-537-7697 (TDD)

Getting Help in Other Languages

This Notice has Important Information. This notice may have important information on your application or coverage through Premera Blue Cross. There may be key dates in this notice. You may need to take action by certain deadlines to keep your health coverage or help with costs. You have the right to get this information and help in your language at no cost.

Call 800-722-1471 (TTY: 800-842-5357).

Oromo (Cushite):

Français (French):

Kreyòl ayisyen (Creole):
Avi sila a gen Enfòmasyon Enpòtan ladan. Avi sila a kapab genyen enfòmasyon enpòtan konsénan aplikasyon w lan oswa konsefan kouvèti asirans lan atravè Premera Blue Cross. Kapab genyen dat ki enpòtan nan avi sila a. Ou ka gen pou pran kék aksyon avan sétenat dat limit pou ka kenbe kouvèti asirans sante w la oswa pou yo ka ede w avèk depans yo. Se dwa w pou resesw a enfòmasyon sa a ak asistans nan lang ou paule a, san ou pa ge pou yeye pou s a. Rate nan 800-722-1471 (TTY: 800-842-5357).

Deutsche (German):

HMoo (Hmong):

Ilokano (Ilocano):
Daytoy a Pakdaar ket naglaon iti Napateg nga Impormasion. Daytoy a pakdaar mabalín nga adda ket naglaon iti napateg nga impormasion maianggip e iplaksyonyno wenyo coverage babaen iti Premera Blue Cross. Daytoy ket mabalín dagiti importante a pelta iti daytoy a pakdaar. Mabalín nga adda rumbeng nga aramideny na nga addang sakbay dagiti partikular a naituding nga aldaw tapno mapagtingadidyo ti coverage ti salan-ayyo wenyo tulong kadagiti gastos. Adda karbenganyo a mangala ti daytoy nga impormasion ken tulong ti bukdoby a pagasaso nga awan ti bayadanyo. Tumawag ti numero nga 800-722-1471 (TTY: 800-842-5357).

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**Român (Romanian):**

**Русский (Russian):**
Настоящее уведомление содержит важную информацию. Это уведомление может содержать важную информацию о вашем заявлении или страховом покрытии через Premera Blue Cross. В настоящем уведомлении могут быть ключевые даты. Вам, возможно, потребуется принять меры к определенным предельным срокам для сохранения страхового покрытия или помощи с расходами. Вы имеете право на бесплатное получение этой информации и помощь на вашем языке. Звоните по телефону 800-722-1471 (TTY: 800-842-5357).

**Español (Spanish):**
Este Aviso contiene información importante. Es posible que este aviso contenga información importante acerca de su solicitud o cobertura a través de Premera Blue Cross. Es posible que haya fechas claves en este aviso. Es posible que deba tomar alguna medida antes de determinadas fechas para mantener su cobertura médica o ayuda con los costos. Usted tiene derecho a recibir esta información y ayuda en su idioma sin costo alguno. Llame al 800-722-1471 (TTY: 800-842-5357).

**Tagalog (Tagalog):**

**ไทย (Thai):**
ประกาศนี้มีข้อความสำคัญ ประกาศนั้นสำคัญเกี่ยวกับการติดต่อหรือขอข้อมูลเกี่ยวกับสิทธิของคุณ Premera Blue Cross และข้อจดหมายในกรณีของคุณ คุณจะต้องดูดูกว่ามีกำหนดเวลาที่สำคัญที่จะต้องดำเนินการ เพื่อสำหรับการขอข้อมูลของคุณหรือการติดต่อที่คุณมี คุณสามารถติดต่อ 800-722-1471 (TTY: 800-842-5357) ได้.

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Це повідомлення містить важливу інформацію. Це повідомлення може містити важливу інформацію про Ваше звернення щодо страхувального покриття через Premera Blue Cross. Зверніть увагу на ключові дати, які можуть бути вказані у цьому повідомленні. Існує імовірність того, що Вам треба буде здійснити певні кроки у конкретні кінцеві строки для того, щоб зберегти Ваше медичне страхування або отримати фінансову допомогу. У Вас є право на отримання цієї інформації та допомоги безкоштовно на Вашій рідній мові. Дозвоніться за номером телефону 800-722-1471 (TTY: 800-842-5357).