



# CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

**Subject Arthroscopic Lavage and Debridement of the Knee for the Treatment of Osteoarthritis and Other Knee Conditions**

Effective Date ..... 2/15/2009  
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## Hyperlink to Related Coverage Policies

[Knee Arthroplasty/Replacement](#)

### INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant'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 participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, 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 group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 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. Proprietary information of CIGNA. Copyright ©2009 CIGNA

## Coverage Policy

**CIGNA covers arthroscopic debridement and lavage of the knee, in the presence or absence of osteoarthritis, as medically necessary when symptoms such as locking, giving way, or catching of the knee suggest, and imaging studies support, a mechanical cause such as:**

- loose bodies
- unstable flaps of articular cartilage
- disruption of the meniscus
- impinging osteophytes

**CIGNA does not cover arthroscopic debridement and lavage as a treatment for osteoarthritis of the knee in the absence of mechanical symptoms because it is not medically necessary.**

## General Background

Osteoarthritis (OA) is a joint condition in which degeneration and loss of articular cartilage occur, leading to pain and deformity, and is the most common form of arthritis. It is estimated that 40 million Americans and 70–90% of people over age 65 are affected by osteoarthritis. Risk factors for OA include joint injury, history of

meniscectomy, obesity, mechanical stress and age. Based on the American College of Rheumatology (ACR) criteria, a patient may be diagnosed with OA of the knee if he or she has pain and at least five of the following:

- age 50 or over
- less than 30 minutes of morning stiffness
- crepitus (i.e., noisy, grating sound) on active motion
- bony tenderness
- bony enlargement
- no palpable warmth of synovium
- erythrocyte sedimentation rate (ESR) < 40 mm/hr
- rheumatoid factor < 1:40
- synovial fluid signs

Progression of this disorder causes prolonged joint stiffness and enlargement, with crepitus occurring as a late manifestation. The joint surface thins; the cartilage softens; and clefts begin to develop, resulting in remodeling, hypertrophy, eventually sclerosis and possibly bone spur development. Movement may then be restricted because of disruption of the contour of the joint. Patchy synovitis and thickening of the joint capsule may result in further movement restriction, or small pieces of bone and cartilage may break off and float inside the joint space, causing further pain and damage.

There is no known cure for OA of the knee. From a treatment perspective, patients with symptoms of short duration and those with mechanical symptoms tend to do well. Patients with roentgenographic malalignment, especially valgus deformities, tend to have poor outcomes. The Outerbridge scale is the most common classification system, developed as a means of assessing chondral damage to the articular surface of the patella. There are five levels of degeneration:

Grade	Description
Grade 0	normal articular cartilage
Grade I	softening or blistering of joint cartilage
Grade II	cartilage fragmentation or fissuring on the surface < 1 cm diameter
Grade III	cartilage fragmentation or fissuring > 1 cm diameter
Grade IV	cartilage erosion down to subchondral bone

The treatment for mild, symptomatic OA includes exercise, lifestyle modification, patient education, use of supportive devices and analgesics. If symptoms are unresponsive to this treatment, then the use of nonsteroidal, anti-inflammatory drugs, either oral or intra-articular, may be added to the treatment plan. If conservative treatment fails for the patient with mild to moderate OA, surgical intervention (e.g., arthroscopy with lavage and/or debridement, osteotomy, arthroplasty) may be indicated. Arthroscopic surgery for the patient with loose bodies, flaps of cartilage or disruption in the meniscus that cause mechanical symptoms may result in pain relief and improved function (Dieppe, Brandt, 2003). In these cases, surgery is aimed at treating the mechanical derangement rather than the OA (Richmond, 2008).

Arthroscopic lavage and debridement have been proposed as a treatment for OA of the knee as a method of alleviating pain and symptoms, to improve functioning, and to delay the need for total knee arthroplasty, although the procedure does not alter the natural progression of the disease. Pain alone is not a specific indication for arthroscopic surgery. Knee arthroscopy involves the direct visualization of the joint, using videofiberoptics. It may include both debridement and lavage and can be accomplished with the same surgical equipment, usually as an outpatient procedure.

Lavage with saline solution is used to remove bone or cartilage fragments that may be free-floating within the synovium and causing mechanical problems. It is generally performed to reduce pain and improve function. Research indicates, however, that arthroscopic lavage alone is not effective for patients with OA of the knee.

Debridement is often performed to reduce pain and mechanical symptoms and to improve function. Debridement may include partial synovectomy, partial meniscectomy and resection of plicae, chondroplasty,

removal of loose bodies or removal of osteophytes. Debridement, when used alone, typically involves low-volume saline or washout (i.e., lavage).

Properly selected patients may benefit from arthroscopic debridement (Day, 2005; Wu and Kalunian, 2005). Recommendations regarding arthroscopy surgery and OA of the knee were provided in an unpublished report for the Centers for Medicare & Medicaid Services Coverage Analysis Group prepared by representatives from the American Academy of Orthopaedic Surgeons (AAOS), the American Association of Hip and Knee Surgeons (AAHKS), the Arthroscopy Association of North America (AANA), the American Orthopaedic Society of Sports Medicine (AOSSM) and the Knee Society. The group reported that with proper selection, patients with early degenerative arthritis and mechanical symptoms can derive significant benefit from arthroscopic surgery. Furthermore, when arthroscopic surgery is indicated, there are well-recognized specific indicators that are predictors of good outcome. The specific indicators include the following:

- x-ray indicating no or minimal degenerative arthritis
- normal alignment or minimal malalignment
- recent onset of symptoms within one year of presentation, along with other indicators
- mechanical symptoms such as locking, catching, giving way or buckling
- loose bodies (bone or cartilaginous)
- unstable flaps of articular cartilage
- symptomatic meniscus tears associated with localized pain
- impinging osteophytes

### **Literature Review**

Studies conducted to date on the effectiveness of arthroscopic lavage and/or debridements have reported variable outcomes. It has been proposed that the beneficial effect of arthroscopic debridement and/or lavage may be related to the cyclic nature of the symptoms or to the therapeutic benefit of placebo (Richmond, 2008). While authors continue to evaluate clinical outcomes and a variety of arthroscopic procedures, in general, studies have been small in sample size, lacked generalizability, and had other methodological limitations precluding the ability to draw strong conclusions (Dervin, et al., 2003; Bazian Ltd, 2005; Aaron, et al., 2006). Patient selection criteria have not been clearly defined in the scientific literature, although some authors recommend treatment early in the course of the disease. Additionally, textbook sources state that arthroscopic debridement should be reserved for patients with OA of the knee who have failed a comprehensive medical management program and who have mechanical symptoms with minimal or moderate radiographic changes and little or no angular deformity (Arnold, Arnold, 2005; Dabov, Perez, 2003).

A 2008 Cochrane Review (Laupattarakasem et al.), evaluated the effectiveness of arthroscopic debridement in subjects with OA of the knee. Three randomized controlled trials, which included a total of 272 subjects, were included in the review. Differences among trials precluded a meta-analysis. Based on their review of the evidence, the authors acknowledged that arthroscopic debridement probably does not improve pain or the ability to function when compared to placebo, probably leads to little or no difference in pain or ability to function compared to lavage, may improve pain compared to washout, and may not lead to any difference in pain or ability to function compared to closed needle joint lavage.

The results of a randomized controlled trial published by Kirkely et al. (2008) did not support superiority of arthroscopic surgery for the treatment of knee OA. Patients were randomized to undergo surgical lavage and debridement together with physical and medical therapy (n=92) or to treatment with physical and medical therapy alone (n=86). After two years, mean Western Ontario and McMaster Universities Osteoarthritis (WOMAC) scores and Short-Form-36 scores did not support greater improvement for those patients assigned to arthroscopic treatment. Limitations of the trial however included possible bias due to lack of sham surgery and strict exclusion criteria.

Aaron et al. (2006) conducted a cross-sectional study of a consecutive cohort of patients (n=122) who underwent arthroscopic debridement for OA of the knee and reported that severity of arthritis does affect the clinical outcome of arthroscopic debridement. This group of authors reported that the severity of the lesion was highly predictive of clinical outcome ( $p < 0.0001$ ); patients with severe arthritis did poorly, and patients with mild arthritis did well (i.e., relief of symptoms) after arthroscopic debridement. Outcomes could not be predicted for patients with moderate arthritis.

Bazian Ltd (2005) published an evidence-based review of arthroscopic lavage for OA of the knee. The group systematically examined evidence for the effectiveness of arthroscopic lavage, with or without debridement, in people with OA of the knee. The review focused on effects on pain, function, disability, quality of life or any other clinical outcome. Included in the review were one systematic review and four randomized controlled trials. The evidence identified was insufficient to compare clinical effects of arthroscopic lavage and other treatments for OA of the knee. All of the identified trials were too small to confidently preclude a clinically important effect, either beneficial or detrimental.

In 2003, Dervin et al. prospectively studied a cohort of patients with OA to determine which clinical criteria favored a sustained improvement in health-related quality of life after arthroscopic debridement. The outcomes measured up to 24 months postoperatively included WOMAC scores, and the Short Form-36 (SF-36). The study group consisted of 126 patients. At two years after arthroscopic debridement, the group reported that only 44% of the patients had a sustained clinically important reduction in pain, according to strict, validated quality-of-life measures obtained prospectively. The findings reported by the authors indicated that the prospectively evaluated quality-of-life benefit from arthroscopic debridement of the osteoarthritic knee was less than that reported in previous retrospective surveys on satisfaction. Furthermore, clinical variables were only slightly helpful for predicting a successful result after arthroscopic debridement. Three variables were significantly associated with improvement: the presence of medial joint line tenderness ( $p=0.04$ ), a positive Steinman test ( $p=0.01$ ) and the presence of unstable meniscal tear at arthroscopy ( $p=0.01$ ).

In their retrospective study of 121 individuals with follow-up occurring from four to six years after arthroscopic lavage and debridement had occurred, Jackson and Dietrichs (2003) reported significant improvements in pain levels for individuals with early stage II or III OA. They reported that neither lavage nor debridement of OA in moderate to late stage III or IV provided any relief.

Wai et al. (2002) evaluated the utilization of this procedure on individuals with OA who were at least 50 years old. Their retrospective study found that individuals > 70 years of age were 4.7 times more likely to have a total knee replacement within one year of knee debridement than were those under age sixty ( $p<0.05$ ). Individuals > 60 years of age were more likely to have an early, total joint replacement within one year of the debridement (in District Health Council regions where the population rates of arthroscopic knee debridement were higher) ( $p=0.04$ ). These findings raised the question of possible overuse of this procedure in an older population.

Moseley et al. (2002) reported on a double-blind, randomized, placebo-controlled trial of 180 patients with OA of the knee, stratified by severity, measuring outcome at 24 months of follow-up. This study compared the impact of arthroscopic lavage and debridement against a sham surgery. In all, 180 individuals participated and were randomized to placebo ( $n=60$ ), debridement ( $n=59$ ) and lavage ( $n=61$ ). All patients were blinded to treatment group assignments, and at one year none of the groups reported any statistical significance in improvement of pain levels or functionality. Some critics have questioned the validity of the AIMS-2 pain measurement used in this trial; however, the elements measured were similar to those of other widely used instruments.

Kalunian and colleagues (2000) prospectively randomized 90 individuals with OA to receive arthroscopic lavage using either 3000 ml or 250 ml of saline (the minimum amount needed for knee irrigation) to determine the effect of irrigation on knee pain. They concluded that the individuals who had 3,000 ml of irrigation and intra-articular crystals showed significant improvements in pain levels (feedback was obtained from patient questionnaires). However, this study lacked a control group for comparison.

In 1993, Chang randomized 32 patients with OA to either debridement or closed-needle joint lavage. After 12 months, his study showed that both groups reported improvement in pain levels compared to pre-procedure, but no one reported improved strength or function with either treatment.

Gibson et al. (1992) randomized 20 patients to receive either lavage or lavage and debridement for OA of the knee in order to determine the efficacy of these procedures on quadriceps strength. In neither group did the strength of the affected leg approximate that of the control leg. None of the study participants showed any change in quadriceps strength post-procedure, and the clinical scores for symptom and mobility did not improve after either procedure.

In August 2007, the National Institute for Health and Clinical Excellence (NICE, United Kingdom) issued a procedural guidance for arthroscopic knee washout, with or without debridement, for the treatment of OA. According to the procedural guidance, there is sufficient evidence to support for safety and efficacy of the procedure, provided normal arrangements are in place (i.e., consent, audit, clinical governance). The current evidence suggests that washout alone, however, is not clinically beneficial in either the short- or long-term.

In September 2005, the Ontario Health Technology Advisory Committee (OHTAC) reviewed the evidence on effectiveness of arthroscopic lavage and debridement, including meniscectomy, for OA of the knee. Based on the data reviewed, the authors concluded that arthroscopic debridement of the knee was found to be effective for medial compartmental OA. Arthroscopic lavage of the knee was not indicated for any stage of OA. Furthermore, the authors concluded that there is very poor quality evidence on the effectiveness of debridement with partial meniscectomy in the case of meniscal tears in OA of the knee (OHTAC, 2005).

### **Professional Societies/Organizations**

In their guideline for treatment of OA of the knee, the American Academy of Orthopaedics recommends against performing arthroscopy with debridement or lavage in patients with a primary diagnosis of symptomatic OA of the knee (AAOS, 2008). This recommendation was based on level I and II evidence which consisted of randomized controlled trials and systematic reviews. The AAOS noted that the evidence reviewed demonstrated a lack of benefit when considering the risk due to surgery. None of the evidence examined by the AAOS specifically included patients who had primary diagnosis of a meniscal tear, loose body or other forms of mechanical derangement who also had a concomitant diagnosis of OA of the knee; therefore their recommendation does not apply to those patients. Although it is based on expert opinion consensus, the AAOS does recommend arthroscopic partial meniscectomy or loose body removal as an option in patients with symptomatic OA of the knee that also have primary signs and symptoms of a torn meniscus and/or a loose body.

The Osteoarthritis Research Society International (OARSI) published evidence-based, expert consensus guidelines for the management of hip and knee OA (Zhang, et al., 2008). The group of experts noted that the roles of joint lavage and arthroscopic debridement in the knee for OA remain controversial—some studies have shown that there is short-term symptom relief while other studies suggest the improvement in symptoms could be attributable to a placebo effect.

The American College of Rheumatology (ACR) published recommendations for the medical management of OA of the hip and knee. The ACR indicated that patients who have failed medical therapy and who have progressive limitation in activities of daily living (ADLs) should be referred to an orthopedic surgeon for evaluation. The recommendations concluded that “No well-controlled trials of arthroscopic debridement with or without arthroplasty have been conducted, and the utility of this intervention for the treatment of knee OA is unproven” (ACR, 2000). An update to this recommendation has not been posted on the ACR web site.

### **Summary**

Evidence in the published, peer-reviewed scientific literature supports arthroscopic debridement as a treatment for those patients with evidence of early degenerative arthritic disease and who have mechanical symptoms or intra-articular loose bodies. Although numerous studies have been done to evaluate the effectiveness of arthroscopic lavage and debridement within the knee for severe osteoarthritis (OA), there is insufficient evidence to support efficacy. Studies conducted to date have been retrospective, consisted of small patient populations, had short-term follow-up, and lacked measurable outcome validation of efficacy. Some studies lacked control groups and stratification of arthritis severity. Based on current evidence, arthroscopic lavage alone has not been shown to be effective in the long-term in reducing pain or improving function for the treatment of OA; and arthroscopic debridement is not effective for patients presenting with OA and knee pain only, or presenting with severe OA (Outerbridge grade III or IV).

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## **Coding/Billing Information**

**Note:** This list of codes may not be all-inclusive.

**Covered when medically necessary:**

<b>CPT®*</b> <b>Codes</b>	<b>Description</b>
29877	Arthroscopy, knee, surgical; debridement/shaving of articular cartilage (chondroplasty)

<b>HCPCS</b> <b>Codes</b>	<b>Description</b>
G0289	Arthroscopy, knee, surgical, for removal of loose body, foreign body, debridement/shaving of articular cartilage (chondroplasty) at the time of other surgical knee arthroscopy in a different compartment of the same knee

<b>ICD-9-CM</b> <b>Diagnosis</b> <b>Codes</b>	<b>Description</b>
717.5	Derangement of meniscus, not elsewhere classified
717.6	Loose body in knee
717.9	Unspecified internal derangement of knee
719.96	Unspecified disorder of lower leg joint

Not Medically Necessary/Not Covered

<b>ICD-9-CM</b> <b>Diagnosis</b> <b>Codes</b>	<b>Description</b>
715.16	Primary localized osteoarthritis, lower leg
715.26	Secondary localized osteoarthritis, lower leg
715.36	Localized osteoarthritis not specified whether primary or secondary, lower leg
715.96	Osteoarthritis, unspecified whether generalized or localized, lower leg

\*Current Procedural Terminology (CPT®) ©2008 American Medical Association: Chicago, IL.

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## Policy History

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<b><u>Pre-Merger Organizations</u></b>	<b><u>Last Review Date</u></b>	<b><u>Policy Number</u></b>	<b><u>Title</u></b>
CIGNA HealthCare	2/15/2008	0032	Arthroscopic Lavage and Debridement of the Knee for the Treatment of Osteoarthritis and Other Knee Conditions

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