Policy Number	**SUR705.048**
Policy Effective Date	**07/15/2025**

Genicular Artery Embolization

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Related Policies (if applicable)
SUR705.040: Ablation of Peripheral Nerves to Treat Pain

Disclaimer

Carefully check state regulations and/or the member contract.
Each benefit plan, summary plan description or contract defines which services are covered, which services are excluded, and which services are subject to dollar caps or other limitations, conditions or exclusions. Members and their providers have the responsibility for consulting the member's benefit plan, summary plan description or contract to determine if there are any exclusions or other benefit limitations applicable to this service or supply. **If there is a discrepancy between a Medical Policy and a member's benefit plan, summary plan description or contract, the benefit plan, summary plan description or contract will govern.**

Coverage

Genicular artery embolization (GAE) **is considered experimental, investigational and/or unproven** for the treatment of knee pain, including but not limited to the following:

- Degenerative joint disease;
- Osteoarthritis of the knee;
- As a treatment prior to or following knee replacement;
- As a treatment for individuals who are not candidates for knee replacement surgery.

Policy Guidelines

This policy addresses genicular artery embolization. It does not address genicular radiofrequency ablation or cryoneurolysis of peripheral nerves to treat pain associated with knee arthritis. Refer to SUR705.040 Ablation of Peripheral Nerves to Treat Pain.

Description

Chronic osteoarthritis (OA) of the knee is one of the most common diseases of advanced age. With up to 20 million adults in the United States suffering from osteoarthritis of the knee, close to 700,000 cases progress to total knee joint replacement. Many individuals with chronic joint pain, however, are not candidates for invasive procedures due to body mass index, age, and other comorbidities. Alternative therapies including arthroscopic debridement or injections are associated with less-than-optimal clinical outcomes. (1) In addition to osteoarthritis, adults can experience knee pain due to other causes, and an estimated 10-34% of individuals experience long-term pain after a total knee replacement.

Therapeutic occlusion or embolization is defined as the intravascular deposition of particulate liquid, mechanical agents, or autologous blood clot to produce intentional vessel blockage. Embolic vascular occlusion may be performed at any level from large arteries or veins to the capillary beds, and it may be temporary or permanent in nature. (2)

Geniculate artery embolization (GAE) is a minimally invasive intra-arterial intervention that was originally developed for the treatment of knee hemarthrosis that has recently been adapted for symptomatic knee OA. Through selective embolization of geniculate branches corresponding to the site of knee pain, GAE inhibits the neovascularity that contributes to the catabolic and inflammatory drive of OA. (3)

Table 1 outlines embolic agents used in GAE. (4)

Table 1. Difference Between Embolic Agents Applied in GAE Used for OA

Product	Duration of Action	Size, µm	FDA Approved for Embolization	Specific Properties
Imipenem/cilastatin	Temporary	10-70	No	Small molecule antibiotic, resorbable
Particulate PVA (contour)	Permanent	45-1200	Yes	Irregularly shaped microparticles, nonresorbable
Embozene (Boston Scientific) (polymethylmethacrylate)	Permanent	40-1300	Yes	Calibrated sizes, polymeric, spherical, nonresorbable, biodegradable coating
Gel-Bead (Teleflex Medical) (gelatine)	Temporary	100-30, 300-500, 500-700, 700-1000	Yes	Calibrated sizes, gelatine microspheres degradable in 4-12 weeks

GAE: genicular artery embolization; OA: osteoarthritis; FDA: U.S. Food and Drug Administration; µm: micrometer; PVA: polyvinyl alcohol.

Rationale

This policy is based on a review of relevant professional association recommendations.

Society of Interventional Radiology (SIR)
In 2021, SIR Research Consensus Panel reported the need for ongoing trials to assess the effectiveness of genicular artery embolization (GAE) for osteoarthritis and that these be conducted as sham trials to insure appropriate results. It was noted that placebo effect in prior OA trials may be as high as 40%. (5)

In 2024, SIR released the Society of Interventional Radiology Research Reporting Standards for Genicular Artery Embolization. (6) They note that early studies have established safety and short-term effectiveness, but that ensuing studies are needed to validate long-term safety, durability, and comparative effectiveness and to optimize patient selection, embolic agent selection, and administration techniques. The Society notes that standardized reporting guidelines are essential to enhance transparency and reproducibility across clinical trials, facilitating data aggregation and comparison. The SIR endorsed reporting standards consensus document provides a framework to harmonize future research efforts and improve the interpretation of outcomes.

National Institute for Health and Care Excellence (NICE)
In an interventional procedures guidance published in 2021, the NICE states “Evidence on the safety of genicular artery embolisation for pain from knee osteoarthritis shows no major safety concerns in the short term. Evidence on its efficacy and long-term safety is inadequate in quality and quantity. Therefore, this procedure should only be used in the context of research.” (7)

Coding

Procedure codes on Medical Policy documents are included **only** as a general reference tool for each policy. **They may not be all-inclusive.**

The presence or absence of procedure, service, supply, or device codes in a Medical Policy document has no relevance for determination of benefit coverage for members or reimbursement for providers. **Only the written coverage position in a Medical Policy should be used for such determinations.**

Benefit coverage determinations based on written Medical Policy coverage positions must include review of the member’s benefit contract or Summary Plan Description (SPD) for defined coverage vs. non-coverage, benefit exclusions, and benefit limitations such as dollar or duration caps.

CPT Codes	37241, 37242, 37243, 37244, 75894
HCPCS Codes	None

*Current Procedural Terminology (CPT®) ©2024 American Medical Association: Chicago, IL.

References

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Centers for Medicare and Medicaid Services (CMS)

The information contained in this section is for informational purposes only. HCSC makes no representation as to the accuracy of this information. It is not to be used for claims adjudication for HCSC Plans.

The Centers for Medicare and Medicaid Services (CMS) does not have a national Medicare coverage position. Coverage may be subject to local carrier discretion.

A national coverage position for Medicare may have been developed since this medical policy document was written. See Medicare's National Coverage at <https://www.cms.hhs.gov>.

Policy History/Revision

Date	Description of Change
07/15/2025	Document updated with literature review. Coverage unchanged. Added new references 5-7; others removed.
04/01/2024	Document updated with literature review. Coverage unchanged. New references added: 1-3 and 10-14.
09/15/2023	Reviewed. No changes.
03/01/2023	New medical document. Genicular artery embolization (GAE) is considered experimental, investigational and/or unproven for the treatment of knee

	pain, including but not limited to the following: Degenerative joint disease; Osteoarthritis of the knee; As a treatment prior to or following knee replacement; As a treatment for individuals who are not candidates for knee replacement surgery.