



## FEP Medical Policy Manual

### FEP 7.01.118 Surgical Treatment of Femoroacetabular Impingement

**Annual Effective Policy Date: July 1, 2024**

**Original Policy Date: December 2011**

**Related Policies:**

None

## Surgical Treatment of Femoroacetabular Impingement

### Description

#### Description

Femoroacetabular impingement results from localized compression within the joint as a result of an anatomic mismatch between the head of the femur and the acetabulum. Symptoms of impingement typically occur in young to middle-aged adults before the onset of osteoarthritis but may be present in younger individuals with developmental hip disorders. The objective of surgical treatment of femoroacetabular impingement is to provide symptom relief and reduce further joint damage.

### OBJECTIVE

The objective of this evidence review is to evaluate whether the use of surgical treatments (open surgery, arthroscopic surgery, mixed open/arthroscopic surgery) improves the net health outcome in individuals with femoroacetabular impingement.

## POLICY STATEMENT

Open or arthroscopic treatment of femoroacetabular impingement may be **medically necessary** when all of the following conditions have been met:

### Age

- Candidates should be skeletally mature with documented closure of growth plates (eg,  $\geq 15$  years of age).

### Symptoms

- Moderate-to-severe hip pain worsened by flexion activities (eg, squatting or prolonged sitting) that significantly limits activities; AND
- Unresponsive to conservative therapy for at least 3 months (including activity modifications, restriction of athletic pursuits, and avoidance of symptomatic motion); AND
- Positive impingement sign on clinical examination (pain elicited with 90 of flexion and internal rotation and adduction of the femur).

### Imaging

- Morphology indicative of cam or pincer femoroacetabular impingement (eg, pistol-grip deformity, femoral head-neck offset with an alpha angle  $>50$ , a positive wall sign, acetabular retroversion [overcoverage with crossover sign]), coxa profunda or protrusion, or damage of the acetabular rim; AND
- High probability of a causal association between the femoroacetabular impingement morphology and damage (eg, a pistol-grip deformity with a tear of the acetabular labrum and articular cartilage damage in the anterosuperior quadrant); AND
- No evidence of advanced osteoarthritis, defined as Tonnis grade 2 or 3, or joint space of less than 2 mm; AND
- No evidence of severe (Outerbridge grade IV) chondral damage.

Treatment of femoroacetabular impingement is considered **investigational** in all other situations.

## POLICY GUIDELINES

If femoroacetabular impingement morphology is identified, patients should be advised not to play aggressive sports. No more frequent than annual follow-up with magnetic resonance arthrography may be indicated for femoroacetabular impingement morphology to evaluate cartilage changes before damage becomes severe. It should be noted that current imaging techniques limit the early identification of cartilage defects, whereas delay in the surgical correction of bony abnormalities may lead to disease progression to the point at which joint preservation is no longer appropriate. Confirmation of subtle femoroacetabular impingement morphology may require 3-dimensional computed tomography. Some clinicians may also use local anesthetic injection into the joint to assist in confirming femoroacetabular impingement pathology.

Treatment of femoroacetabular impingement should be restricted to centers experienced in treating this condition and staffed by surgeons adequately trained in techniques addressing femoroacetabular impingement. Because of the differing benefits and risks of open and arthroscopic approaches, patients should make an informed choice between the procedures.

Some patients may require a revision procedure if symptoms recur or persist. Published studies have indicated that all sources of impingement might not have been identified before surgery, and those that had might not have been adequately treated. The risk of additional surgical procedures can be reduced by intraoperative assessment of impingement after bone debridement and reshaping.

## BENEFIT APPLICATION

Experimental or investigational procedures, treatments, drugs, or devices are not covered (See General Exclusion Section of brochure).

## FDA REGULATORY STATUS

Surgery for treatment of femoroacetabular impingement is a procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration.

## RATIONALE

### Summary of Evidence

For individuals who are adults with asymptomatic femoroacetabular impingement who receive femoroacetabular impingement surgery, there is no direct evidence that the surgical treatment will prevent the development of osteoarthritis. Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Indirect evidence consists of observational studies. In retrospective studies of patients with osteoarthritis, the relevant outcomes were radiographic evidence of hip joint malformations. In prospective studies of patients with femoroacetabular impingement, the relevant outcome is progression to osteoarthritis. Several large observational studies (>1000 patients), as well as smaller studies, have shown radiographic evidence of relationships between abnormal hip morphology and the development of osteoarthritis. There have been no studies in which femoroacetabular impingement surgery was performed on patients with femoroacetabular impingement morphology but no symptoms. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are adults with symptomatic femoroacetabular impingement who receive femoroacetabular impingement surgery, the evidence includes mostly systematic reviews of large and small observational studies and systematic reviews of randomized controlled trials (RCTs). Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Open hip dislocation surgery and arthroscopic surgery are the most common surgical techniques performed on patients with femoroacetabular impingement. Systematic reviews have evaluated open hip dislocation surgery and arthroscopic surgery, compared with no comparator, nonsurgical management, and other surgical techniques. Compared with nonsurgical management, all types of surgical techniques have resulted in significant improvements in functional outcomes, pain, and radiographic measurements. The reviews were limited when comparing surgical techniques with each other because patient characteristics and outcome measurements were heterogeneous among studies. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are children 15 years of age or younger with symptomatic femoroacetabular impingement who receive femoroacetabular impingement surgery, the evidence includes a meta-analysis evaluating small observational studies and individual observational studies. Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. While the studies reported reductions in pain and improvements in functional outcomes, the sample sizes were relatively small, ranging between 11 and 116 hips per study. Additionally, comparative studies were not identified. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are children 15 years of age or younger with slipped capital femoral epiphysis-associated femoroacetabular impingement who receive femoroacetabular impingement surgery, the evidence includes a systematic review and small observational studies (range, 19 to 51 patients). Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. While most patients experienced symptom relief following femoroacetabular impingement surgery, the surgery is invasive and complications (eg, nonunions) were reported. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have residual femoroacetabular impingement symptoms following a primary surgery who receive revision arthroscopic surgery, the evidence includes systematic reviews of observational studies (>400 patients). Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Though the studies were of low-quality, consistent improvements in functional outcomes, pain relief, and patient satisfaction were reported, in some cases beyond 3 years. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

## SUPPLEMENTAL INFORMATION

### Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

#### American Academy of Orthopaedic Surgeons

In 2020, the American Academy of Orthopaedic Surgeons published a consensus-based best practice guidelines checklist for preoperative, intraoperative, and postoperative hip arthroscopy considerations in patients with femoroacetabular impingement.<sup>45</sup>

The guidelines define conservative care treatment as a trial of rest, non-steroidal anti-inflammatory drugs, activity modification or restriction, and physical therapy - without concomitant use of opioids. Prior to completion of the full duration of conservative treatment, assessment of the following

joint parameters is recommended: high alpha angle, low Tonnis grade, cam or combined impingement, large range of motion limitations with pain, high baseline mental health status, large cam (>65 alpha angle) or combined deformity in absence of osteoarthritis changes. A shorter duration of conservative treatment is permissible in professional or out-of-season athletes, patients completing physical therapy with no or marginal improvement, high baseline mental health status, and/or successful surgery on the contralateral side. Contraindications for hip arthroscopy include: joint space narrowing <2 mm along the sourcil or osteoarthritis, Tonnis grade 2 or higher, severe femoral retroversion or anteversion with gait abnormality, obesity hindering access, broken Shenton line, pain not localizing to the hip or out of proportion due to psychiatric issue, inclination Tonnis angle >13 to 15, or failed arthroscopy with dysplastic features. Hypermobility (Beighton Hypermobility Score  $\geq 5$ ) is not considered a contraindication for hip arthroscopy.

## National Institute for Health and Care Excellence

In 2011, the NICE issued guidance on arthroscopic femoroacetabular surgery for hip impingement syndrome.<sup>46</sup> The NICE considered the evidence on the efficacy of arthroscopic femoroacetabular surgery for hip impingement syndrome to be adequate for symptom relief in the short and medium term.

The NICE (2011) guidance on open femoroacetabular surgery for hip impingement syndrome indicated that evidence for this procedure was adequate for symptom relief in the short and medium term.<sup>47</sup>

## U.S. Preventive Services Task Force Recommendations

Not applicable.

## Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

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## **POLICY HISTORY - THIS POLICY WAS APPROVED BY THE FEP® PHARMACY AND MEDICAL POLICY COMMITTEE ACCORDING TO THE HISTORY BELOW:**

<b>Date</b>	<b>Action</b>	<b>Description</b>
December 2011	New policy	
December 2012	Replace policy	Policy updated and references added with literature review, policy statements unchanged.
September 2013	Replace policy	Policy updated with literature review, references added and reordered; age restriction on older adults removed; age restriction on pediatric patients clarified.
September 2014	Replace policy	Policy updated with literature review; references 13, 18, 40, 41 added; policy statements unchanged.
September 2015	Replace policy	Policy updated with literature review; references 4, 14, and 34 added. Policy statements unchanged.
June 2017	Replace policy	Policy updated with literature review through February 23, 2017; references 1, 16, 27-28, 34, 38, 42, and 44 were added. Rationale section reorganized. Policy statements unchanged.
June 2018	Replace policy	Policy updated with literature review through March 8, 2018; references 18-19, 42, and 49 added. Minor edits to the Policy section; statements unchanged.
June 2019	Replace policy	Policy updated with literature review through February 7, 2019; references PMID 29893223 and PMID: 30733197 added. Policy statements unchanged.
June 2020	Replace policy	Policy updated with literature review through January 30, 2020; references added. Policy statements unchanged.
June 2021	Replace policy	Policy updated with literature review through January 11, 2021; no references added. Policy statements unchanged.
June 2022	Replace policy	Policy updated with literature review through March 7, 2022; references added. Policy statements unchanged.
June 2023	Replace policy	Policy updated with literature review through March 13, 2023; references added. Policy statements unchanged.
June 2024	Replace policy	Policy updated with literature review through February 9, 2024; references added. Policy statements unchanged.

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