# Corporate Medical Policy

# Surgery for Femoroacetabular Impingement

**File Name:** surgery_for_femoroacetabular_impingement
**Origination:** 3/2007
**Last Review:** 6/2024

## Description of Procedure or Service

Femoroacetabular impingement (FAI), is an anatomical mismatch between the head of the femur and the acetabulum resulting in compression of the labrum or articular cartilage during flexion. The mismatch can arise from subtle morphologic alterations in the anatomy or orientation of the ball-and-socket components ( eg, a bony prominence at the head-neck junction or acetabular overcoverage), with articular cartilage damage initially occurring from abutment of the femoral neck against the acetabular rim, typically at the anterosuperior aspect of the acetabulum. Although hip joints can possess the morphologic features of femoroacetabular impingement without symptoms, femoroacetabular impingement may become pathologic with repetitive movement and/or increased force on the hip joint. High-demand activities may also result in pathologic impingement in hips with normal morphology.

Two types of impingement, known as cam impingement and pincer impingement, may occur alone or, more frequently, together. Cam impingement is associated with an asymmetric or nonspherical contour of the head or neck of the femur jamming against the acetabulum, resulting in cartilage damage and delamination (detachment from the subchondral bone). Deformity of the head/neck junction that looks like a pistol grip on radiographs is associated with damage to the anterosuperior area of the acetabulum. Symptomatic cam impingement is found most frequently in young male athletes. Pincer impingement is associated with overcoverage of the acetabulum and pinching of the labrum, with pain more typically beginning in women of middle age. In cases of isolated pincer impingement, the damage may be limited to a narrow strip of the acetabular cartilage.

Epidemiologic and radiographic studies have found correlations between hip osteoarthritis and femoroacetabular impingement lesions, supporting the theory that prolonged contact between the anatomically mismatched acetabulum and femur may lead not only to cam and pincer lesions, but also to further cartilage damage and subsequent joint deterioration. It is believed that osteoplasty of the impinging bone is needed to protect the cartilage from further damage and to preserve the natural joint. Therefore, if femoroacetabular impingement morphology is shown to be an etiology of osteoarthritis, a strategy to reduce the occurrence of idiopathic hip osteoarthritis could be early recognition and treatment of femoroacetabular impingement before cartilage damage and joint deterioration occurs.

An association between femoroacetabular impingement and athletic pubalgia, sometimes called sports hernia, has been proposed. Athletic pubalgia is an umbrella term for a large variety of musculoskeletal injuries involving attachments and/or soft tissue support structures of the pubis (see policy titled “Surgery for Groin Pain in Athletes”.

A technique for hip dislocation with open osteochondroplasty that preserved the femoral blood supply was reported by Ganz et al in 2001. Visualization of the entire joint with this procedure led to the identification and acceptance of femoroacetabular impingement as an etiology of cartilage damage and the possibility of correcting the abnormal femoroacetabular morphology. Open osteochondroplasty of bony abnormalities and treatment of the symptomatic cartilage defect is considered the criterion standard for complex bony abnormalities. However, open osteochondroplasty is invasive, requiring transection of the greater trochanter (separation of the femoral head from the femoral shaft) and dislocation of the hip joint to provide full access to the femoral head and acetabulum. In addition to the

general adverse effects of open surgical procedures, open osteochondroplasty with dislocation has been associated with non-union, and neurologic and soft tissue lesions.

Less invasive hip arthroscopy and an arthroscopy-assisted mini-approach were adapted from the open approach by 2004. Arthroscopy requires specially designed instruments and is considered technically more difficult due to reduced visibility and limited access to the joint space. Advanced imaging techniques, including computed tomography and fluoroscopy, have been utilized to improve visualization of the 3-dimensional head/neck morphology during arthroscopy.

Femoroacetabular impingement can also be a source of hip pain and decreased hip internal rotation in the pediatric population. When nonoperative management of femoroacetabular impingement in children and adolescents is ineffective, surgical procedures may be indicated. Surgical techniques include arthroscopy, open hip dislocation, limited open with arthroscopy, and osteotomy.

Patients with slipped capital femoral epiphysis have a displaced femoral head in relation to the femoral neck within the confines of the acetabulum, which can result in hip pain, thigh pain, knee pain, and onset of a limp. Slipped capital femoral epiphysis occurs most frequently in children between the ages of 10 to 16. Upon reaching skeletal maturity, 32% of patients diagnosed with slipped capital femoral epiphysis were found to have clinical signs of impingement. It is not uncommon for patients with slipped capital femoral epiphysis to develop premature osteoarthritis and require total hip arthroplasty within 20 years.

The standard treatment for slipped capital femoral epiphysis is stabilization across the physis by in situ pinning. Alternative treatments proposed for pediatric patients with slipped capital femoral epiphysis - related femoroacetabular impingement include osteoplasty without dislocation, or with the open dislocation technique described by Ganz. The Ganz technique (capital realignment with open dislocation) is technically demanding, with a steep learning curve and a high risk of complications, including avascular necrosis. Therefore, early treatment to decrease impingement must be weighed against increased risk of adverse events.

**Related Policies**

Surgery for Groin Pain in Athletes

******Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.***

## Policy

**BCBSNC will provide coverage for Surgery for Femoroacetabular Impingement when it is determined to be medically necessary because the criteria and guidelines shown below have been met.**

## Benefits Application

Please refer to Certificate for availability of benefits. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

## When Surgery for Femoroacetabular Impingement is covered

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

**Age**

- Individuals should be skeletally mature with documented closure of growth plates (e.g., 15 years or older).

**Symptoms**

- Moderate-to-severe hip pain worsened by flexion activities (e.g., 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 degrees of flexion and internal rotation and adduction of the femur).

**Imaging**

- Morphology indicative of cam or pincer-type femoroacetabular impingement , e.g., pistol-grip deformity, femoral head-neck offset with an alpha angle greater than 50 degrees, 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, (e.g., 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 II or III, or joint space of less than 2 mm; AND
- No evidence of severe (Outerbridge grade IV) chondral damage.

## When Surgery for Femoroacetabular Impingement is not covered

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-D 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.

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 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 (19-51 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 low quality, consistent improvements in functional outcomes, pain relief, and patient satisfaction were reported, in some cases beyond three years. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Some patients may require a revision procedure if they have persistent or recurrent symptoms and meet the criteria for treatment of femoroacetabular impingement. Published studies indicate that all sources of impingement may not have been identified prior to surgery, and those that had been identified may not have been adequately treated. The risk of needing an additional surgical procedure can be reduced by intra-operative assessment of impingement after bone debridement and reshaping.

## Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 29914, 29915, 29916*

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

## Scientific Background and Reference Sources

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Specialty Matched Consultant Advisory Panel 6/2023

Medical Director Review 6/2023

Specialty Matched Consultant Advisory Panel 6/2024

Medical Director Review 6/2024

## Policy Implementation/Update Information

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|---|---|
| 3/26/07 | New policy issued. BCBSNC will not provide coverage for Arthroscopic Surgery for Femoroacetabular Impingement. This procedure is considered Investigational. |
| 618/07 | Specialty Matched Consultant Advisory Panel review 5/18/07. No changes to policy coverage criteria. (adn) |
| 7/6/09 | Information regarding CPT codes for this procedure was added to the Billing/Coding section. Specialty Matched Consultant Advisory Panel review 5/21/09. No change to policy statement. |
| 7/20/09 | Description section extensively revised. Policy statement changed to read: BCBSNC will provide coverage for Arthroscopic Surgery for Femoroacetabular Impingement when it is determined to be medically necessary because the criteria and guidelines shown below have been met. Medical necessity criteria added to the When FAI is Covered section. Information in the When FAI is Not Covered section deleted and replaced with the following statement: Treatment of FAI is considered investigational in all other situations. (adn) |
| 1/5/10 | Information added to Billing/Coding section for clarification. (adn) |
| 8/17/10 | Removed "Arthroscopic" from title of policy to reflect that the policy addresses both open and arthroscopic procedures for treatment of FAI. Specialty Matched Consultant Advisory Panel review 7/2010. References updated. Medical Policy number removed. Information regarding treatment of slipped capital femoral epiphysis (SCFE) added to Description section and Policy Guidelines. No changes to policy coverage criteria. (mco) |
| 1/4/11 | Billing/Coding section updated to read: "Effective January 1, 2011, three new codes have been added for arthroscopic surgical treatment of hip – 29914 for femoroplasty (ie, treatment of cam lesion), 29915 for acetabuloplasty (ie, treatment of pincer lesion), and 29916 for labral repair. Code 29915 cannot be reported with the hip arthroscopy codes for chondroplasty (29862) or synovectomy (29863). Code 29916 cannot be reported with 29915, 29862 or 29863. This service was previously submitted with 29999. With specific codes now available, services should not be submitted using the unlisted code."(mco) |
| 6/21/11 | Billing/Coding section updated to state the following: "Code 29914 and 29915 cannot be reported with the hip arthroscopy codes for chondroplasty (29862) or synovectomy (29863). Code 29916 cannot be reported with 29915 (acetabuloplasty and labral repair represent overlapping services when reported together); and 29916 cannot be reported with 29862 or 29863. (mco) |
| 8/16/11 | "Description" section updated to include information regarding the association of FAI and sport hernias. Deleted the following statement in the "Policy Guidelines": "It is not known whether patients with FAI morphology are more likely to have osteoarthritis than those without FAI morphology." References updated. Specialty Matched Consultant Advisory Panel review 7/2011. (mco) |
| 6/29/12 | References updated. No changes to Policy Statements. (mco) |
| 8/7/12 | Specialty Matched Consultant Advisory Panel review 7/2012. No changes to Policy Statements. (mco) |
| 7/1/13 | Description section updated. "When Covered" section revised. The statement: "Adult patients should be too young to be considered an appropriate candidate for total hip arthroplasty or other reconstructive hip surgery (e.g., younger than 55 years)" has been deleted. References updated. Medical Director review 6/2013. (mco) |
| 7/30/13 | Specialty Matched Consultant Advisory Panel review 7/2013. Medical Director review 7/2013. No Changes to Policy Statements. (mco) |

8/12/14 Specialty Matched Consultant Advisory Panel review 7/2014. Medical Director review 7/2014. References updated. No changes to Policy Statements. (mco)

7/28/15 Reference added. Specialty Matched Consultant Advisory Panel review 6/24/2015. Related policy added. (sk)

7/26/16 Specialty Matched Consultant Advisory Panel review 6/29/2016. (sk)

7/28/17 Reference added. Description section and Policy Guidelines section updated. Specialty Matched Consultant Advisory Panel review 6/28/2017. (sk)

7/13/18 Reference added. Specialty Matched Consultant Advisory Panel review 6/27/2018. (sk)

8/27/19 Reference added. Specialty Matched Consultant Advisory Panel review 7/30/2019. (sk)

6/30/20 Reference added. Specialty Matched Consultant Advisory Panel review 6/17/2020. (sk)

3/8/22 Reference added. Specialty Matched Consultant Advisory Panel review 6/16/2021. (sk)

7/26/22 Policy Guidelines updated. Specialty Matched Consultant Advisory Panel review 6/29/2022. (sk)

8/01/23 Reference added. Minimal edits to description section. Minimal edits to Policy Guidelines. Specialty Matched Consultant Advisory Panel review 6/2023. Medical Director review 6/2023. (rp)

7/17/24 Policy Guidelines updated. Reference added. Specialty Matched Consultant Advisory Panel review 6/2024. Medical Director review 6/2024. (rp)