Coverage Policy

Cigna covers open or arthroscopic hip surgery, including labral repair with or without grafting, for femoroacetabular impingement (FAI) syndrome as medically necessary when ALL of the following criteria are met:

- moderate-to-severe persistent hip or groin pain that limits activity and is worsened by flexion activities (e.g., squatting or prolonged sitting)
- pain unresponsive to medical management (e.g., restricted activity, nonsteroidal anti-inflammatory drugs)
- positive impingement sign (i.e., sudden pain on 90 degree hip flexion with adduction and internal rotation or extension and external rotation)
- radiographic confirmation of FAI (e.g., pistol-grip deformity, alpha angle greater than 50 degrees, coxa profunda, and/or acetabular retroversion)
- absence of BOTH of the following:
  - Tönnis grade 2 osteoarthritis (i.e., small cysts in femoral head or acetabulum, increasing narrowing of joint space, moderate loss of sphericity of femoral head)
  - Tönnis grade 3 osteoarthritis (i.e., large cysts, severe narrowing or obliteration of joint space, severe deformity of femoral head, avascular necrosis)

Cigna does not cover EITHER of the following for the treatment of femoroacetabular impingement (FAI) syndrome because each is considered experimental, investigational or unproven:

- capsular plication
General Background

Femoroacetabular impingement (FAI) syndrome, also called acetabular rim syndrome or cervicoacetabular impingement, is a structural abnormality in which there is abnormal contact between the femoral head and the acetabular rim. Over time, this abnormal contact, or impingement, results in tears, or lesions, in the labrum and adjacent acetabular cartilage.

There are three types of impingement: cam impingement, pincer impingement, and mixed impingement. Cam impingement occurs when a nonspherical portion of an abnormally shaped femoral head jams into a normal acetabulum during motion. It can also be caused by a decreased head-neck offset. In pincer impingement, the abnormality is the result of linear contact between an abnormal acetabular rim causing overcoverage of a normal femoral head. The term mixed impingement describes the presence of a combination of cam and pincer impingement (Khanduja and Villar, 2007; Parvizi, et al., 2007; Gaunche and Bare, 2006; Philippon and Schenker, 2006a; Pulido and Parvizi, 2007; Ganz, et al., 2003).

Presenting symptoms include: slow onset of intermittent hip pain, often in the groin, which may be associated with a minor injury; restricted movement; and clicking or snapping of the hip. The pain is typically exacerbated by strenuous or prolonged activity, squatting, or prolonged sitting and may be referred to the knee. Physical examination reveals limited hip mobility with a positive impingement test. A positive anterior impingement sign is the onset of sudden pain when the hip is passively placed in a position of 90 degrees of hip flexion then adducted and internally rotated. A positive posterior impingement sign is the onset of pain when the hip is extended and externally rotated (Khanduja and Villar, 2007; Parvizi, et al., 2007; Philippon, et al., 2007; Tannast, et al., 2007; Ganz, et al., 2003).

Radiographic signs of pincer impingement include: coxa profunda, protrusio acetabuli, and/or acetabular retroversion including the cross-over sign or “figure-8”. Radiographic signs of cam impingement include: pistol-grip deformity, alpha angle greater than 50 degrees, and/or femoral head-neck offset less than eight millimeters. MRI findings may include changes to the acetabular bone, labrum, and articular cartilage (Filigenzi and Bredella, 2008; Tannast, et al., 2007).

The earlier FAI is diagnosed, the more successful the treatment and retardation of degeneration. Initially, the patient is managed with medical treatment, including activity modification/restriction and nonsteroidal anti-inflammatory drugs (NSAIDs). If the patient becomes refractory to medical management, surgical intervention may be indicated (NG, et al., 2010; Ilizaliturri, et al., 2008; Kassarjian and Belzile, 2008; Krueger, et al, 2007; Parvizi, et al., 2007; Guanche and Bare, 2006).

Surgical intervention for the treatment of FAI includes open incision with dislocation of the hip or hip arthroscopy. Open incision of the hip allows full visualization of and access to the joint, but carries the risk of trochanteric nonunion and reoperation for painful internal fixation. Hip arthroscopy is less invasive, but it may be more difficult to achieve precise correction due to limited visualization of the joint. The appropriate surgical technique depends on the type of impingement, the extent of damage, the labral and cartilage pathology, and the physician/patient preferences and desired outcomes (Barton, et al., 2009).

Specific established components that may be performed during FAI surgery include:

- assessment of the labrum and chondral
- examination of the articular surfaces
- assessing the presence, type and extent of labral and acetabular lesions
- removing the nonspherical section of the femoral head and prominent sections of the anterior femoral neck (osteoplasty)
- debridement of chondral lesions
- labral debridement (resection) or labral repair (refixation or reattachment) with or without grafting
- repair of chondral defects (microfracture, drilling chondroplasty)
- excising bony prominence and reshaping the acetabular rim
Snapping hip is characterized by an audible snap or pop on physical examination that usually occurs during range of motions of the hip. In patients with FAI, this is often due to snapping of the iliotibial band across the greater trochanter or snapping of the iliopectineal eminence and may be associated with a labral tear. It has been reported that up to 25%-50% of patients with FAI have snapping hip. Cases refractory to medical management (e.g., physical therapy, anti-inflammatory medications) may require surgical intervention. Iliopsoas release is an established surgical intervention for snapping hip and may be one of the surgical components of FAI (Nord and Meislin, 2010; Shah and Busconi, 2009; Cleveland, 2008; Phillipon, et al., 2007; Kelly and Buly, 2005).

The best outcomes (e.g., increased activity, decreased pain) associated with both open and arthroscopic surgery for FAI have been reported in patients who have minimal to no osteoarthritic changes (i.e., Tönnis grade 0 or grade 1). The Tönnis grade is identified on preoperative hip radiograph. Better outcomes have also been reported when there is minimal to no cartilage damage (Outerbridge grades 0–II). However, Outerbridge grades can only be identified in a patient during a surgical procedure and may not be known prior to FAI repair. Typically, an Outerbridge grade III or IV is accompanied by at least a Tönnis grade II. Results from clinical trials have reported that there is a higher risk of failure in patients with advanced osteoarthritis (Tönnis grades 2–3). In advanced degenerative joint disease, total hip replacement may be the treatment of choice (Saadat, et al., 2013; Phillipon, et al., 2009; Larson and Giveans, 2008; Parvizi, et al., 2007; Ilizaliturri Jr., et al., 2007; Zebala, et al., 2007; Gaunche and Bare, 2006; Philippon and Schenker, 2006b; Ganz, et al., 2003).

Tönnis grades include:
- grade 0 - no signs of osteoarthritis
- grade 1 - slight narrowing of joint space, slight lipping of joint margin, slight sclerosis of femoral head or acetabulum
- grade 2 - small cysts in femoral head or acetabulum, increasing narrowing of joint space, moderate loss of sphericity of femoral head
- grade 3 - large cysts, severe narrowing or obliteration of joint space, severe deformity of femoral head, avascular necrosis

Outerbridge grades include:
- grade 0 - normal
- grade I - cartilage with softening and swelling
- grade II - a partial-thickness defect with fissures on the surface that do not reach subchondral bone or exceed 1.5 centimeters (cm) in diameter
- grade III - fissuring to the level of subchondral bone in an area with a diameter more than 1.5 cm
- grade IV - exposed subchondral bone head

Literature Review
Open incision and arthroscopy are established surgical approaches for the treatment of FAI. Significant improvements in activity level, pain scores, and range of motion, as well as absence of impingement pain have been consistently reported following surgical intervention for FAI that is nonresponsive to medical management.

Open Surgical Approach: Systematic reviews and case series with up to 12 years of follow-up data reported significant improvements in postoperative outcomes following open surgical repair of FAI (Clohisy, et al., 2010; NG, et al., 2010; Graves and Mast, 2009; Beaule, et al., 2007; Spencer, et al., 2006; Murphy, et al., 2004; Siebenrock, et al., 2003; Gantz, et al., 2001).

Arthroscopy: Significant improvements in postoperative outcomes for up to three years following arthroscopic repair of FAI have been reported in systematic reviews and case series (Harris, et al., 2013; Botser, et al., 2011; Phillipon, et al., 2010; Brunner, et al., 2009; Byrd and Jones, 2009; Phillipon, et al., 2009; Bedi, et al., 2008; Larson and Giveans, 2008; Ilizaliturri, et al., 2008; Phillipon, et al., 2008; Stähelin, et al., 2008; Ilizaliturri Jr., et al., 2007; Phillipon, et al., Jul 2007; Kim, et al., 2007; Sampson, 2005).

The Washington State Health Care Authority (WSHCA) (2011) conducted a systematic review of the literature and published a technology assessment on open and arthroscopic surgical treatment for FAI. A total of 263 articles including non-randomized comparative studies, prospective case series, case reports and retrospective
reviews met inclusion criteria. WSHCA concluded that the evidence on a consistent or agreed upon case
definition for FAI; expected treatment outcomes of surgery; validated instruments related to hip surgery
outcomes; definition of clinically meaningful improvement in outcomes; evidence of short-term effectiveness of
FAI; and “evidence that hip surgery for FAI compared with no surgery has differential efficacy or safety issues in
sub populations” was “very low” and that the evidence of the safety of FAI surgery was low. According to
WSHCA, there was no evidence available to assess the short- or long-term efficacy of FAI compared to no
surgery and no data to assess long-term effectiveness compared to no surgery.

Capsular Plication
Capsular plication, the application of sutures to remove redundant capsular tissue and decrease the volume of
joint capsule, is a surgical intervention proposed for the treatment of hip instability and capsular laxity. It has
been proposed that capsular plication may be indicated during FAI surgery. However, there is insufficient
evidence in the peer reviewed literature to support capsular plication for FAI (Bedi, et al., 2011; Shu and Safran,
2011; Kelly and Buly, 2005).

There is a paucity of studies, primarily case reports, investigating capsular plication for the treatment of FAI.
Clinical trials evaluating the efficacy of plication, comparing plication to standard surgical interventions and
reporting outcome data are lacking. Improved health outcomes of capsular plication for the treatment of FAI
have not been established.

Anterior Inferior Iliac Spine (AIIS)/Subspine Impingement
Impingement secondary to a prominent anterior or distal anterior inferior iliack spine (AIIS)/subspine impingement
with FAI syndrome has been reported in the literature. AIIS represents the origin of the direct head of the rectus
femoris tendon and its bony morphology can be variable. AIIS can result in impingement against the distal
femoral neck. Subspine impingement can be developmental or secondary to previous apophyseal or rectus
femoris avulsions or periacetabular osteotomy. It is typically seen in the setting of acetabular retroversion. Some
authors have proposed that if the AIIS extends excessively anterior and/or distal to the acetabular rim, then
subspine decompression might be considered as part of FAI corrective procedure (Larson, 2012; Larson, et al.,
2011).

Published studies are primarily in the form of case reports and retrospective reviews with small patient
populations (n=10). The available evidence does not support subspine/AIIS decompression during FAI repair.

Professional Societies/Organizations
In guidance documents for arthroscopic and open surgery for FAI (2011a; 2011b), the National Institute of
Health and Clinical Excellence (NICE) (United Kingdom) stated that the current evidence on efficacy is adequate
in terms of relief of symptoms in the short and medium term. With regards to safety, NICE stated that there are
“well recognized complications” and noted that surgery for FAI should only be performed by a well-trained
surgeon.

Outside the US
Surgical intervention for FAI is being performed outside of the US. Studies have been published by surgeons in
countries such as Canada, Japan, Turkey and London.

Summary
Evidence in the published peer-reviewed scientific literature supports open and arthroscopic hip surgery,
including labral repair with or without grafting, as safe and effective for the treatment of femoroacetabular
impingement (FAI) syndrome in a carefully selected subset of patients.

There is insufficient evidence in the published peer-reviewed scientific literature to support the safety and
effectiveness of capsular plication and anterior inferior iliack spine (AIIS)/subspine impingement for the treatment
of any subset of individuals with FAI nor is this procedure an established treatment option. The available studies
are primarily in the form of case reports and retrospective reviews precluding the ability to draw conclusions on
findings. Patient selection criteria and indications for these procedures have not been established. Well-
designed clinical trials with large patient populations documenting long-term effectiveness and improvement in
functional outcomes are needed.
Coding/Billing Information

Note: 1) This list of codes may not be all-inclusive.
2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Covered when medically necessary when used to report open or arthroscopic hip surgery for femoroacetabular impingement (FAI) syndrome without capsular plication and/or anterior inferior iliac spine (AIIS)/subspine impingement decompression:

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<td>Unlisted procedure, pelvis or hip joint</td>
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<td>29914</td>
<td>Arthroscopy, hip, surgical; with femoroplasty (ie, treatment of cam lesion)</td>
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<tr>
<td>29915</td>
<td>Arthroscopy, hip, surgical; with acetabuloplasty (ie, treatment of pincer lesion)</td>
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<tr>
<td>29916</td>
<td>Arthroscopy, hip, surgical; with labral repair</td>
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Experimental/Investigational/Unproven/Not Covered when used to report arthroscopic or open hip surgery for femoroacetabular impingement (FAI) syndrome with capsular plication and/or anterior inferior iliac spine (AIIS)/subspine impingement decompression:

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References


