



CIGNA MEDICAL COVERAGE POLICY

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

Subject **Hip Surgery for Femoroacetabular Impingement (FAI) Syndrome**

Effective Date4/15/2011
Next Review Date.....4/15/2012
Coverage Policy Number0485

Table of Contents

Coverage Policy 1

General Background 2

Coding/Billing Information 3

References 4

Policy History 7

Hyperlink to Related Coverage Policies

Hip Resurfacing Arthroplasty

Minimally Invasive Total Hip Arthroplasty

Total Hip Replacement with Metal-on-Metal and Ceramic-On-Ceramic Prostheses

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans. Please note, the terms of a customer'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 customer'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 customer'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 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 ©2011 CIGNA

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 **ALL** 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)
 - Outerbridge grade III cartilage damage (i.e., fissuring to the level of subchondral bone in an area with a diameter more than 1.5 centimeters)
 - Outerbridge grade IV cartilage damage (i.e., exposed subchondral bone head)

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. 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; Kassarian 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)
- repair of chondral defects (microfracture, drilling chondroplasty)
- excising bony prominence and reshaping the acetabular rim

Superior 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) and/or minimal to no cartilage damage (Outerbridge grades 0–II) on preoperative hip radiograph.

Results from clinical trials have reported that there is a higher risk of failure in patients with advanced osteoarthritis (Tönnis grades 2–3) and/or cartilage damage (Outerbridge grades III-IV). In advanced degenerative joint disease, total hip replacement may be the treatment of choice (Philippon, 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, case series and retrospective reviews 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; Beaulé, 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, case series and retrospective reviews (Botser, et al., 2011; Phillipon, et al., 2010; Brunner, et al., 2009; Byrd and Jones, 2009; Philippon, et al., 2009; Bedi, et al., 2008; Larson and Giveans, 2008; Ilizaliturri, et al., 2008; Philippon, et al., 2008; Stähelin, et al., 2008; Ilizaliturri Jr., et al., 2007; Philippon, et al., Jul 2007; Kim, et al., 2007; Sampson, 2005).

Professional Societies/Organizations

In guidance documents, the National Institute of Health and Clinical Excellence (NICE) (United Kingdom) (2007a; 2007b) stated that the evidence does not support the safety and efficacy of open or arthroscopic surgery for the treatment of FAI. Although there is some evidence of short-term pain reduction, long-term efficacy data showing that the surgical intervention slows degenerative changes are lacking.

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.

Coding/Billing Information

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

Covered when medically necessary:

CPT®* Codes	Description
27299†	Unlisted procedure, pelvis or hip joint
29914	Arthroscopy, hip, surgical; with femoroplasty (ie treatment of cam lesion)
29915	Arthroscopy, hip, surgical; with acetabuloplasty (ie treatment of pincer lesion)
29916	Arthroscopy, hip, surgical; with labral repair

†Note: Covered when medically necessary when used to report open hip surgery for femoroacetabular impingement (FAI) syndrome.

ICD-9-CM Diagnosis Codes	Description
718.45	Contracture of joint, pelvic region and thigh
718.65	Unspecified intrapelvic protrusion acetabulum, pelvic region and thigh
718.85	Other joint derangement, not elsewhere classified
718.95	Unspecified derangement of joint
719.45	Pain in joint, pelvic region and thigh
719.55	Stiffness of joint, not elsewhere classified, pelvic region and thigh
719.7	Difficulty in walking
719.85	Other specified disorders of joint, pelvic region and thigh
719.95	Unspecified disorder of joint, pelvic region and thigh
736.30	Acquired deformities of hip, unspecified deformity
736.39	Acquired deformities of hip, other

*Current Procedural Terminology (CPT®) © 2010 American Medical Association: Chicago, IL.

References

1. Barton C, Banga K, Beaulé PE. Anterior Hueter approach in the treatment of femoro-acetabular impingement: rationale and technique. *Orthop Clin North Am.* 2009 Jul;40(3):389-95.
2. Beaulé PE, Le Duff MJ, Zaragoza E. Quality of life following femoral head-neck osteochondroplasty for femoroacetabular impingement. *J Bone Joint Surg Am.* 2007 Apr;89(4):773-9.
3. Beaulé PE, O'Neill M, Rakhra K. Acetabular labral tears. *J Bone Joint Surg Am.* 2009 Mar 1;91(3):701-10.
4. Beck M, Leunig M, Parvizi J, Boutier V, Wyss D, Ganz R. Anterior femoroacetabular impingement: part II. Midterm results of surgical treatment. *Clin Orthop Relat Res.* 2004 Jan;(418):67-73.
5. Bedi A, Chen N, Robertson W, Kelly BT. The management of labral tears and femoroacetabular impingement of the hip in the young, active patient. *Arthroscopy.* 2008 Oct;24(10):1135-45.
6. Botser IB, Smith TW Jr, Nasser R, Domb BG. Open surgical dislocation versus arthroscopy for femoroacetabular impingement: a comparison of clinical outcomes. *Arthroscopy.* 2011 Feb;27(2):270-8.
7. Brunner A, Horisberger M, Herzog RF. Sports and recreation activity of patients with femoroacetabular impingement before and after arthroscopic osteoplasty. *Am J Sports Med.* 2009 May;37(5):917-22.
8. Byrd JW, Jones KS. Arthroscopic femoroplasty in the management of cam-type femoroacetabular impingement. *Clin Orthop Relat Res.* 2009 Mar;467(3):739-46.
9. Clohisy JC, St John LC, Schutz AL. Surgical treatment of femoroacetabular impingement: a systematic review of the literature. *Clin Orthop Relat Res.* 2010 Feb;468(2):555-64.

10. Espinosa N, Beck M, Rothenfluh DA, Ganz R, Leunig M. Treatment of femoro-acetabular impingement: preliminary results of labral refixation. Surgical technique. *J Bone Joint Surg Am.* 2007 Mar;89 Suppl 2 Pt.1:36-53.
11. Filigenzi JM, Bredella MA. MR imaging of femoroacetabular impingement: pathomechanisms of femoroacetabular impingement. May 8, 2008. Accessed Feb 21, 2011. Available at URL address: http://www.medscape.com/viewarticle/573242_2
12. Ganz R, Gill TJ, Gautier E, Ganz K, Krügel N, Berlemann U. Surgical dislocation of the adult hip a technique with full access to the femoral head and acetabulum without the risk of avascular necrosis. *J Bone Joint Surg Br.* 2001 Nov;83(8):1119-24.
13. Ganz R, Parvizi J, Beck M, Leunig M, Notzli H, Siebenrock KA. Femoroacetabular impingement: a cause for osteoarthritis of the hip. *Clin Orthop Relat Res.* 2003 Dec;(417):112-20.
14. Graves ML, Mast JW. Femoroacetabular impingement: do outcomes reliably improve with surgical dislocations? *Clin Orthop Relat Res.* 2009 Jun;467(6):1648.
15. Groh MM, Herrera J. A comprehensive review of hip labral tears. *Curr Rev Musculoskelet Med.* 2009 Jun;2(2):105-17.
16. Guanche CA, Bare AA. Arthroscopic treatment of femoroacetabular impingement. *Arthroscopy.* 2006 Jan;22(1):95-106.
17. Hartmann A, Günther KP. Arthroscopically assisted anterior decompression for femoroacetabular impingement: technique and early clinical results. *Arch Orthop Trauma Surg.* 2009 Aug;129(8):1001-9.
18. Ilizaliturri VM Jr, Nossa-Barrera JM, Acosta-Rodriguez E, Camacho-Galindo J. Arthroscopic treatment of femoroacetabular impingement secondary to paediatric hip disorders. *J Bone Joint Surg Br.* 2007 Aug;89-B(8):1025-30.
19. Ilizaliturri VM Jr, Orozco-Rodriguez L, Acosta-Rodríguez E, Camacho-Galindo J. Arthroscopic treatment of cam-type femoroacetabular impingement: preliminary report at 2 years minimum follow-up. *J Arthroplasty.* 2008 Feb;23(2):226-34.
20. Johnston TL, Schenker ML, Briggs KK, Philippon MJ. Relationship between offset angle alpha and hip chondral injury in femoroacetabular impingement. *Arthroscopy.* 2008 Jun;24(6):669-75. Epub 2008 Mar 17.
21. Kassirjian A, Belzile E. Femoroacetabular impingement: presentation, diagnosis, and management. *Semin Musculoskelet Radiol.* 2008 Jun;12(2):136-45.
22. Khanduja V, Villar RN. The arthroscopic management of femoroacetabular impingement. *Knee Surg Sports Traumatol Arthrosc.* 2007 Aug;15(8):1035-40.
23. Kim KC, Hwang DS, Lee CH, Kwon ST. Influence of femoroacetabular impingement on results of hip arthroscopy in patients with early osteoarthritis. *Clin Orthop Relat Res.* 2007 Mar;456:128-32.
24. Krueger A, Leunig M, Siebenrock KA, Beck M. Hip arthroscopy after previous surgical hip dislocation for femoroacetabular impingement. *Arthroscopy.* 2007 Dec;23(12):1285-1289.e1.
25. Larson CM, Giveans MR. Arthroscopic debridement versus refixation of the acetabular labrum associated with femoroacetabular impingement. *Arthroscopy.* 2009 Apr;25(4):369-76.
26. Larson CM, Giveans MR. Arthroscopic management of femoroacetabular impingement: early outcomes measures. *Arthroscopy.* 2008 May;24(5):540-6.

27. Laude F, Sariali E, Nogier A. Femoroacetabular impingement treatment using arthroscopy and anterior approach. *Clin Orthop Relat Res*. 2009 Mar;467(3):747-52.
28. Murphy S, Tannast M, Kim YJ, Buly R, Millis MB. Debridement of the adult hip for femoroacetabular impingement: indications and preliminary clinical results. *Clin Orthop Relat Res*. 2004 Dec;(429):178-81.
29. National Institute for Health and Clinical Excellence (NICE). Arthroscopic femoro-acetabular surgery for hip impingement syndrome. Mar 28, 2007a. Accessed Feb 21, 2011. Available at URL address: <http://guidance.nice.org.uk/IPG213>
30. National Institute for Health and Clinical Excellence (NICE). Open femoro-acetabular surgery for hip impingement syndrome. Jan 24, 2007b. Accessed Feb 21, 2011. Available at URL address: <http://www.nice.org.uk/guidance/IPG203>
31. Nepple JJ, Zebala LP, Clohisy JC. Labral Disease Associated With Femoroacetabular Impingement Do We Need to Correct the Structural Deformity? *J Arthroplasty*. 2009 Jul 10.
32. Ng VY, Arora N, Best TM, Pan X, Ellis TJ. Efficacy of surgery for femoroacetabular impingement: a systematic review. *Am J Sports Med*. 2010 Nov;38(11):2337-45.
33. Parvizi J, Leunig M, Ganz R. Femoroacetabular impingement. *J Am Acad Orthop Surg*. 2007 Sep;15(9):561-70.
34. Pfirrmann CW, Mengiardi B, Dora C, Kalberer F, Zanetti M, Hodler J. Cam and pincer femoroacetabular impingement: characteristic MR arthrographic findings in 50 patients. *Radiology*. 2006 Sep;240(3):778-85. Epub 2006 Jul 20. Erratum in: *Radiology*. 2007 Aug;244(2):626.
35. Philippon MJ, Briggs KK, Yen YM, Kuppersmith DA. Outcomes following hip arthroscopy for femoroacetabular impingement with associated chondrolabral dysfunction: minimum two-year follow-up. *J Bone Joint Surg Br*. 2009 Jan;91(1):16-23.
36. Philippon MJ, Maxwell RB, Johnston TL, Schenker M, Briggs KK. Clinical presentation of femoroacetabular impingement. *Knee Surg Sports Traumatol Arthrosc*. 2007 Aug;15(8):1041-7.
37. Philippon M, Schenker M, Briggs K, Kuppersmith D. Femoroacetabular impingement in 45 professional athletes: associated pathologies and return to sport following arthroscopic decompression. *Knee Surg Sports Traumatol Arthrosc*. 2007 Jul;15(7):908-14.
38. Philippon MJ, Schenker ML. Arthroscopy for the treatment of femoroacetabular impingement in the athlete. *Clin Sports Med*. 2006a Apr;25(2):299-308, ix.
39. Philippon MJ, Schenker ML. A new method for acetabular rim trimming and labral repair. *Clin Sports Med*. 2006b Apr;25(2):293-7, ix.
40. Philippon MJ, Stubbs AJ, Schenker ML, Maxwell RB, Ganz R, Leunig M. Arthroscopic management of femoroacetabular impingement: osteoplasty technique and literature review. *Am J Sports Med*. 2007 Sep;35(9):1571-80.
41. Philippon MJ, Weiss DR, Kuppersmith DA, Briggs KK, Hay CJ. Arthroscopic labral repair and treatment of femoroacetabular impingement in professional hockey players. *Am J Sports Med*. 2010 Jan;38(1):99-104.
42. Philippon MJ, Yen YM, Briggs KK, Kuppersmith DA, Maxwell RB. Early outcomes after hip arthroscopy for femoroacetabular impingement in the athletic adolescent patient: a preliminary report. *J Pediatr Orthop*. 2008 Oct-Nov;28(7):705-10.
43. Pulido L, Parvizi J. Femoroacetabular impingement. *Semin Musculoskelet Radiol*. 2007 Mar;11(1):66-72.

44. Sampson TG. Arthroscopic Treatment of Femoroacetabular Impingement. Techniques in Orthopaedics. Hip Arthro. 2005 Mar; 20(1):56-62.
45. Siebenrock KA, Schoeniger R, Ganz R. Anterior femoro-acetabular impingement due to acetabular retroversion. Treatment with periacetabular osteotomy. J Bone Joint Surg Am. 2003 Feb;85-A(2):278-86.
46. Spencer S, Millis MB, Kim YJ. Early results of treatment of hip impingement syndrome in slipped capital femoral epiphysis and pistol grip deformity of the femoral head-neck junction using the surgical dislocation technique. J Pediatr Orthop. 2006 May-Jun;26(3):281-5.
47. Stähelin L, Stähelin T, Jolles BM, Herzog RF. Arthroscopic offset restoration in femoroacetabular cam impingement: accuracy and early clinical outcome. Arthroscopy. 2008 Jan;24(1):51-57.e1. Epub 2007 Nov 8.
48. Tannast M, Siebenrock KA, Anderson SE. Femoroacetabular impingement: radiographic diagnosis--what the radiologist should know. AJR Am J Roentgenol. 2007 Jun;188(6):1540-52.
49. Zebala LP, Schoenecker PL, Clohisy JC. Anterior femoroacetabular impingement: a diverse disease with evolving treatment options. Iowa Orthop J. 2007;27:71-81.

Policy History

Pre-Merger Organizations	Last Review Date	Policy Number	Title
CIGNA HealthCare	11/15/2008	0485	Hip Arthroscopy for Femoroacetabular Impingement (FAI) Syndrome

“CIGNA”, “CIGNA HealthCare” and the “Tree of Life” logo are registered service marks of CIGNA Intellectual Property, Inc., licensed for use by CIGNA Corporation and its operating subsidiaries. All products and services are provided by such operating subsidiaries and not by CIGNA Corporation. Such operating subsidiaries include Connecticut General Life Insurance Company, CIGNA Health and Life Insurance Company, CIGNA Behavioral Health, Inc., CIGNA Health Management, Inc., and HMO or service company subsidiaries of CIGNA Health Corporation and CIGNA Dental Health, Inc. In Arizona, HMO plans are offered by CIGNA HealthCare of Arizona, Inc. In California, HMO plans are offered by CIGNA HealthCare of California, Inc. In Connecticut, HMO plans are offered by CIGNA HealthCare of Connecticut, Inc. In North Carolina, HMO plans are offered by CIGNA HealthCare of North Carolina, Inc. In Virginia, HMO plans are offered by CIGNA HealthCare Mid-Atlantic, Inc. All other medical plans in these states are insured or administered by Connecticut General Life Insurance Company or CIGNA Health and Life Insurance Company.