MEDICAL POLICY

Medical Policy Title	**Hip Joint Procedures for Managed Medicaid (MMC), Health and Recovery Plan (HARP), Child Health Plus (CHP), and Essential Plan (EP) Members**
Policy Number	**7.01.121**
Current Effective Date	**January 1, 2027**
Next Review Date	**September 2027**

Our medical policies are guides to evaluate technologies or services for medical necessity. Criteria are established through the assessment of evidence based, peer-reviewed scientific literature, and national professional guidelines. Federal and state law(s), regulatory mandates and the member's subscriber contract language are considered first in the determination of a covered service.
(Link to Product Disclaimer)

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POLICY STATEMENT(S)

Hip Arthroplasty

Partial Hip Arthroplasty

I. Partial hip replacement is **medically necessary** when **EITHER** of the following criteria are met:

A. Traumatic hip injury; **or**

B. **ANY** of the following conditions are present when the body mass index (BMI) is 40 kg/m² or less (if BMI is greater than 40 kg/m², there is a documented weight reduction of at least 10% before surgery):

1. Comminuted femoral head or femoral neck fracture;
2. Completely displaced femoral neck or femoral head fracture;
3. Impacted femoral neck or femoral head fracture;

4. Partially displaced femoral neck or femoral head fracture;
5. Intracapsular fracture that is non-displaced for which fixation is not considered an appropriate treatment option.

Total Hip Arthroplasty

II. Total hip arthroplasty is **medically necessary** when **BOTH** the following are met:
   A. BMI of 40 kg/m² or less; **and**
   B. Presence of **any** of the following conditions when associated criteria are met:
      1. Developmental dysplasia of the hip;
      2. Displaced or comminuted femoral neck or femoral head;
      3. Post-traumatic arthritis;
      4. Malunion/non-union femoral head or proximal femur fracture;
      5. Prior fracture treated with open reduction internal fixation (ORIF) resulting in advanced joint disease;
      6. Osteonecrosis (Avascular Necrosis [AVN]) with subchondral fracture or crescent sign demonstrated on imaging;
      7. Symptomatic Osteonecrosis/AVN with stage IV collapse; **or**
      8. Osteoarthritis with **all** the following:
         a. Arthritis type is **any** of the following:
            i. Arthritis is Tonnis grade 2 or 3;
            ii. Rheumatoid arthritis;
            iii. Post-traumatic arthritis;
            iv. Inflammatory arthropathy; **and**
         b. Hip pain causing loss of function for 12 weeks or more that interferes with activities of daily living; **and**
         c. Conservative management includes **BOTH** of the following:
            i. Physical therapy (PT) meets **all** the following:
               a) Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
               b) Participation for a minimum of 6 weeks during the previous 6 months; **and**
               c) Failure to improve symptoms or functional impairments;
            ii. Pain management includes **any** of the following:
               a) Non-pharmacologic pain management such as activity modification,

modification of activity/protective weight-bearing/use of an orthotic;

b) Intra-articular corticosteroid injection;

c) Medication management (e.g., non-steroidal anti-inflammatory drugs [NSAIDS]); **and**

d. Diagnostic imaging studies (e.g., radiographs, CT, and/or MRI as clinically indicated) demonstrate **ANY** of the following findings:

i. Bone-on-bone articulation;

ii. Severe joint-space narrowing;

iii. Advanced osteoarthritis;

iv. Tönnis Grade III deformity;

v. Symptomatic Osteonecrosis/AVN with stage IV collapse; **and**

e. Documentation demonstrates **ANY** of the following symptoms:

i. Contracture;

ii. Antalgic gait or Trendelenburg gait;

iii. Pain with hip rotation;

iv. Leg-length discrepancy;

v. Reduction in range of motion.

III. Total hip arthroplasty is **not medically necessary** for **ANY** of the following contraindications:

A. Diabetes with HbA1c greater than 8%;

B. Nicotine or tobacco use, including cigars, cigarette, e-cigarette, nicotine pouch, smokeless tobacco, or vape pen, within six (6) weeks of surgery;

C. Intra-articular corticosteroid injection within 12 weeks of surgery;

D. Clinically unstable or unmanaged comorbid conditions;

E. Active infection, in treatment or is ongoing;

F. Uncontrolled hypertension;

G. Allergy to medical treatment material;

H. Drug dependency that is not being appropriately managed.

<u>Revision Hip Arthroplasty</u>

IV. Revision hip arthroplasty is **medically necessary** when **ALL** the following are met:

A. BMI is either:

1. 40 kg/m² or less, **or**

2. If BMI is greater than 40 kg/m², documented weight reduction of at least 10% before surgery;

B. Prosthesis is painful, unstable, or causing loss of function; **and**

C. **ANY** of the following:

1. Recurrent instability, dislocation, or subluxation;
2. Intolerable leg-length discrepancy;
3. Aseptic loosening;
4. Osteolysis;
5. Implant component failure;
6. Implant recall;
7. Symptomatic synovitis or metallosis; **or**
8. Prosthetic infection or failure requiring removal.

Hip Resurfacing

V. Hip resurfacing is **medically appropriate**, when **ALL** the following are met:

A. The individual is aged 55 years or less;

B. Active lifestyle;

C. Candidate for conventional total hip arthroplasty;

D. Femoral head size of greater than or equal to 46mm;

E. Adequate femoral bone stock;

F. Presurgical x-rays within 2 to six 6 months;

G. Conservative management includes **BOTH** of the following:

1. Physical therapy (PT) meets **all** the following:
   a. Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
   b. Participation for a minimum of 6 weeks during the previous 6 months; **and**
   c. Failure to improve symptoms or functional impairments;
2. Pain management includes **any** of the following:
   a. Non-pharmacologic pain management such as activity modification, modification of activity/protective weight-bearing/use of an orthotic;
   b. Non-steroidal anti-inflammatory drugs (NSAIDS) for a minimum of 4 weeks; **and**

VI. Hip resurfacing is **not medically necessary** for **ANY** of the following contraindications:

A. Developmental abnormalities affecting the acetabulum or femur;
B. Systemic infection or other active infectious process;
C. Immunocompromised status, including chronic corticosteroid therapy;
D. Clinically significant leg length inequality;
E. Known hypersensitivity or allergy to implant metal components;
F. Osteonecrosis/AVN affecting more than 50% of the femoral head;
G. Pregnancy;
H. Moderate-to-severe renal dysfunction, including an estimated glomerular filtration rate (eGFR) below 60 mL/min/1.73m²;
I. Severe reduction in bone quality or density, such as advanced osteopenia or osteoporosis;
J. History of slipped capital femoral epiphysis (SCFE);
K. Incomplete skeletal maturity.

Osteotomy- Pediatrics

VII. Pelvic or femoral osteotomy for the treatment of developmental dysplasia of the hip (DDH) in a pediatric individual is **medically necessary** when documentation supports **ALL** the following:

A. Preoperative imaging performed within the previous 4 weeks demonstrates DDH with residual or persistent acetabular dysplasia, or a subluxated/dislocated hip (a standard pelvic radiograph is the usual primary study in a child ≥6 months. Ultrasound for infants, MRI, CT, or arthrography is acceptable, but not required);
B. **ONE** of the following indications for osteotomy are present:
    1. Persistent or recurrent instability, subluxation, or dislocation of the hip;
    2. Residual acetabular dysplasia that is not anticipated to correct on its own (e.g., a persistently elevated age-specific acetabular index or a low center-edge angle); **or**
    3. Corresponding physical findings of DDH are present, including **any** of the following:
        a. Positive Barlow/Ortolani or Galeazzi sign in infants;
        b. Limited or asymmetric hip abduction, limb-length discrepancy; or limping or waddling gait in an ambulatory child; **or**
        c. Late presentation or older age at diagnosis in which primary open reduction with concomitant osteotomy would be the appropriate approach.

Hip Arthroscopy

Hip Arthroscopy- Diagnostic

VIII. Diagnostic hip arthroscopy is infrequently indicated, and therefore is only **medically**

necessary when **ALL** the following are met:

A. Hip pain for at least 6 months resulting in functional impairment that interferes with activities of daily living;

B. Conventional imaging has not established a diagnosis, including both MRI and plain radiographs; and

C. Conservative management includes **BOTH** the following:

1. Physical therapy (PT) meets **all** the following:
    a. Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
    b. Participation for a minimum of 6 weeks during the previous 6 months; **and**
    c. Failure to improve symptoms or functional impairments;
2. Pain management includes **any** of the following:
    a. Non-pharmacologic pain management such as activity modification, modification of activity/protective weight-bearing/use of an orthotic;
    b. Intra-articular corticosteroid injection;
    c. Non-steroidal anti-inflammatory drugs (NSAIDS) or analgesics.

<u>Hip Arthroscopy-Biopsy, Foreign Body Removal, Synovectomy</u>

IX. Hip arthroscopy biopsy, foreign body removal, synovectomy, or a combination of these procedures is medically necessary when **ALL** the following are met:

A. Hip pain for at least 3 months;

B. **Both** the following symptoms:

1. Pain results in functional impairment that interferes with activities of daily living; **and**
2. Is associated with mechanical symptoms such as catching, clicking, grinding, locking, **or** popping;

C. Diagnostic imaging studies (e.g., radiographs, CT, and/or MRI as clinically indicated) demonstrate **any** of the following:

1. Calcification;
2. Inflammatory changes;
3. Intra-articular loose body;
4. Nodular lesion(s);
5. Pannus formation; **or**
6. Synovial proliferation;

D. Clinical exam reveals restricted range of motion of the affected hip;

E. Conservative management includes **both** of the following:

1. Physical therapy (PT) meets **all** the following:
    a. Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
    b. Participation for a minimum of 6 weeks during the previous 6 months; **and**
    c. Failure to improve symptoms or functional impairments;
2. Pain management includes **any** of the following:
    a. Non-pharmacologic pain management such as activity modification, modification of activity/protective weight-bearing/use of an orthotic;
    b. Intra-articular corticosteroid injection; **or**
    c. Pharmacologic pain management (e.g., NSAIDS).

<u>Hip Arthroscopy- Femoroacetabular Impingement</u>

X. Arthroscopic treatment of CAM-type or Pincer-type femoroacetabular impingement is **medically necessary** when **ALL** the following criteria are met:

A. BMI is 40kg/m² or less;

B. Imaging confirms **both** the following:

1. The presence of **either** of the following:
    a. CAM-type impingement, demonstrated by femoral head-neck junction abnormalities (e.g., loss of femoral head sphericity, pistol-grip deformity, or alpha angle greater than 55 degrees); **or**
    b. Pincer-type impingement, demonstrated by acetabular overcoverage findings such as acetabular retroversion, crossover sign, acetabular protrusion, posterior wall sign, prominent ischial spine sign, or center-edge angle greater than 35 degrees;

    and
2. The absence of **either** of the following on weight-bearing radiographs:
    a. Moderate-to-severe osteoarthritis (Tönnis grade 2 or 3); or
    b. Hip dysplasia; **and**

C. Physical exam demonstrates the following:

1. Hip and groin pain consistent with impingement, including pain with flexion, adduction, and internal rotation; **and**
2. Symptoms are reproducible or exacerbated by hip positioning;

    (Mechanical symptoms such as locking, catching, grinding, or popping and positive

provocative maneuvers such as FABER or Fitzgerald testing may also be present); **and**

D. Conservative management includes **BOTH** the following:
   1. Physical therapy (PT) meets **all** the following:
      a. Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
      b. Participation for a minimum of 6 weeks during the previous 6 months; **and**
      c. Failure to improve symptoms or functional impairments;
   2. Pain management includes **any** of the following:
      a. Non-pharmacologic pain management such as activity modification, modification of activity/protective weight-bearing/use of an orthotic;
      b. Intra-articular corticosteroid injection; **or**
      c. Pharmacologic pain management (e.g., NSAIDS).

Hip Labral Repair

XI. Hip labral repair is **medically necessary** when **ALL** the following are met:
   A. Imaging findings include **both** the following:
      1. Weight-bearing radiographs do not demonstrate moderate-to-severe osteoarthritis (Tönnis grade 2 or 3) or hip dysplasia;
      2. Magnetic resonance imaging confirms an acetabular labral tear;
   B. Hip pain for **at least** 6 weeks that includes **all** the following:
      1. The pain results in functional impairment that interferes with activities of daily living;
      2. The pain is accompanied by examination findings consistent with impingement, including pain with flexion, adduction, and internal rotation;

         (Mechanical symptoms such as locking, catching, grinding, or popping may also be present)
   C. Conservative management meets **either** of the following:
      1. Conservative management is not required when **any** of the following is documented:
         a. Irreparable or substantially deficient labral tissue;
         b. A labral tear identified during another medically necessary hip arthroscopic procedure;
         c. Loose bodies, foreign bodies, or synovial pathology requiring surgical removal;
         d. Advanced structural femoroacetabular impingement with clearly associated labral pathology; **or**

e. Suspected or confirmed septic arthritis; **or**

2. For all other indications, conservative management must include **both** of the following:
   a. Physical therapy (PT) meets **all** the following:
      i. Supervised by a licensed PT, chiropractor, or through tele-rehab PT;
      ii. Participation for a minimum of 6 weeks during the previous 6 months; **and**
      iii. Failure to improve symptoms or functional impairments;
   b. Pain management includes **any** of the following:
      i. Non-pharmacologic pain management such as activity modification, modification of activity/protective weight-bearing/use of an orthotic;
      ii. Intra-articular corticosteroid injection; **or**
      iii. Pharmacologic pain management (e.g., NSAIDS).

Not Medically Necessary Indications

XII. The following indications are **not medically necessary**:

A. Hip Arthroscopy for **ANY** of the following conditions:
   1. Bone marrow edema;
   2. Radiographic or clinical evidence of fracture;
   3. Intra-articular loose body or synovial pathology (see procedure specific criteria for arthroscopic removal of loose bodies and synovial pathology in Policy Statement XI);
   4. Tear involving the abductor, adductor, or hamstring tendon complex;

B. Diagnostic Hip Arthroscopy when **ANY** of the following are present:
   1. Advanced degenerative joint disease when documentation demonstrates significant arthritic changes of the affected hip, including **either** of the following:
      a. Joint space narrowing to 2 mm or less on radiographs; **or**
      b. Subchondral edema identified on MRI;
   2. Structural hip abnormalities with an established diagnosis and imaging confirms **ANY** of the following:
      a. Acetabular protrusion;
      b. Acetabular overcoverage involving the anterolateral rim;
      c. Femoroacetabular impingement (FAI);
      d. Alpha angle greater than 50 degrees;
      e. Crossover sign;

f. Posterior wall sign;
g. Prominent ischial spine sign;
h. Abnormal femoral head contour resulting in loss of normal sphericity;
i. Prominent femoral head-neck junction (e.g., pistol-grip deformity); **or**
j. Acetabular retroversion with a center-edge angle greater than 35 degrees;

C. Hip dysplasia when imaging findings are consistent, including **ANY** of the following, when the proposed procedure does not include a periacetabular osteotomy:
1. Lateral center-edge angle less than 20 degrees;
2. Anterior center-edge angle less than 20 degrees;
3. Tönnis angle greater than 15 degrees; **or**
4. Femoral head extrusion index greater than 25%;

D. Alternative identifiable pathology that adequately explains symptoms, including **ANY** of the following:
1. Intra-articular loose body;
2. Pigmented villonodular synovitis (PVNS);
3. Synovial chondromatosis;
4. Ischiofemoral impingement;
5. Pubic edema or osteitis pubis; **or**
6. MRI-confirmed tear involving the labrum, adductor tendon, hamstring tendon, gluteus medius, or gluteus minimus.

E. Presence of active infection; **or**
F. Unmanaged substance use disorder/dependency.

RELATED POLICIES

Not Applicable

POLICY GUIDELINE(S)

Not Applicable

DESCRIPTION

Total Hip Arthroplasty

Total hip replacement is a surgical technique in which the femoral head and neck are removed, and the femoral canal (marrow space) is reamed out. The damaged hip joint is replaced with an artificial

prosthesis composed of two or three different components: (1) the head that replaces the original femoral head; (2) the femoral component (a metal stem placed into the femur); and (3) the acetabular component, which is implanted into the acetabulum. The stem may be secured using bone cement or press-fit for the bone to grow into it.

The Tonnis Classification System is commonly used to describe the presence of osteoarthritis in the hips, with grading as follows:

- Grade 0: No signs of osteoarthritis.
- Grade 1: Sclerosis of the joint, with slight joint space narrowing and osteophyte formation and no or slight loss of femoral head sphericity.
- Grade 2: Small cysts in the femoral head or acetabulum, with moderate joint space narrowing and moderate loss of femoral head sphericity.
- Grade 3: Large cysts in the femoral head or acetabulum, severe joint space narrowing or obliteration of the joint space, and severe deformity and loss of sphericity of the femoral head.

Revision of hip replacement (partial or total) involves surgical reconstruction or replacement due to failure or complications of previous hip replacement.

Non-surgical management regarding the treatment of hip osteoarthritis is defined as any provider-directed, non-surgical treatment that has been demonstrated in the scientific literature to be efficacious and/or is considered reasonable care in the treatment of hip pain from osteoarthritis. The types of treatment can include but are not limited to relative rest/activity modification, weight loss, supervised physiotherapy modalities and therapeutic exercises, oral prescription and non-prescription medications, assistive devices (e.g., cane, crutches, walker, wheelchair), and/or intra-articular (i.e., steroid) injections.

Hip Resurfacing

Total hip resurfacing is an alternative to watchful waiting or total hip arthroplasty (THA) for younger, active individuals less than 65 years old with hip disease such as osteoarthritis, rheumatoid arthritis, or advanced avascular necrosis.

In total hip resurfacing, the surface of the femoral head is trimmed and covered with a hollow metal hemisphere that fits into a metal acetabular cup. It is believed to optimize stress transfer to the proximal femur, and, because of the large diameter of the articulation, to offer stability and optimal range of movement. Because total hip resurfacing preserves the proximal femoral bone stock, it may not compromise future total hip replacements.

Proposed advantages of total hip resurfacing as compared with THA include preservation of the femoral neck and femoral canal, thus allowing for revision or conversion to THA, if required. In addition, the resurfaced head is more similar in size to the normal femoral head, thus increasing the stability and decreasing the risk of dislocation compared with THA.

Non-surgical management with regard to the treatment of lower extremity joint pain is defined as any provider-directed, non-surgical treatment which has been demonstrated in scientific literature to

be efficacious and/or is considered reasonable care in the treatment of lower extremity joint pain. Types of treatment may include but are not limited to relative rest/activity modification, weight loss, supervised physiotherapy modalities and therapeutic exercises, oral prescription and non-prescription medications, assistive devices (e.g., cane, crutches, walker, wheelchair), and/or intra-articular injections (e.g., steroid).

Total hip resurfacing using polyethylene components offers a promising bone-conserving alternative to total hip replacement, particularly for individuals with metal allergies or small femoral geometries (variations in the shape and size of the upper part of the femur, particularly around the hip joint). Earlier concerns with conventional polyethylene relative to wear, thickness, osteolysis, and deformation are currently being studied with the use of cross-linked polyethylene which provides a low-friction bearing surface, mimicking the natural joint's articulation and thus promoting good outcomes.

SUPPORTIVE LITERATURE

Total Hip Arthroplasty

In a meta-analysis, Smith and colleagues (2010) compared the clinical and radiological outcomes and complication rates of hip resurfacing (HRS) and total hip arthroplasty (THA). A systematic review was undertaken of all published (Medline, CINAHL, AMED, EMBASE) and unpublished or gray literature research databases up to January 2010. Clinical and radiological outcomes, as well as complications of HRS, were compared to those of THA, using risk ratio, mean difference, and standardized mean difference statistics. Studies were critically appraised using the CASP appraisal tool. A total of 46 studies were identified from 1,124 citations. These included 3,799 HRSs and 3,282 THAs. On meta-analysis, functional outcomes for subjects following HRS were better than or the same as for subjects with a THA, but there were statistically significant increases in incidence of heterotopic ossification, aseptic loosening, and revision surgery with HRS, compared to THA. The evidence base showed a number of methodological inadequacies, such as the limited use of power calculations and poor or absent blinding of both patients and assessors, possibly giving rise to assessor bias. The authors concluded that, on the basis of the current evidence base, HRS may have better functional outcomes than THA, but the increased risks of heterotopic ossification, aseptic loosening, and revision surgery following HRS indicate that THA is superior in terms of implant survival.

In a 2019 retrospective cohort study, Inoue et al compared post-operative complications and survivorship of total hip and knee arthroplasty in dialysis and renal transplantation patients. They included a total of 107 patients undergoing primary total joint arthroplasty (TJA), including 50 who were receiving dialysis and 57 who had a prior renal transplantation. The end point was defined as revision surgery secondary to post-operative complications. Researchers found a significantly higher rate of post-operative complications in the dialysis cohort (28%, n=14 of 50 joints) compared to the renal transplant cohort (7.1%, n= 4 of 57 joints). There was a higher rate of surgical site infection (SSI) and periprosthetic joint infection (PJI) in dialysis patients, compared with renal transplantation patients (18% versus 3.5%, P=0.02). In addition, there was an increased rate of revision surgery in the dialysis cohort, compared to transplant cohort (24% versus 3.5%, P=0.002). A multi-variate

analysis considering demographics and comorbidities revealed that patients with renal transplantation were less likely to have revision surgery, compared to patients on dialysis as the time of arthroplasty (95 % CI, P=0.031), and demonstrated a strong trend for lower complications (95% CI, P=0.76), although the latter was not statistically significant. Researchers concluded that transplantation was independently associated with reduced rates of revision surgery in the setting of chronic renal failure, suggesting that those who are candidates may benefit from renal transplantation before undergoing elective TJA.

Chou et al (2021) compared outcomes of TJA, including THA and total knee arthroplasty, in individuals with end-stage renal disease who were either receiving dialysis or had undergone a kidney transplant (KT). The analysis included 22 studies encompassing 9,384 patients (n = 8,921 dialysis; n = 463 KT). The overall mortality rate after TJA was 14.9%-13.8% in dialysis patients and 15.8% in KT patients. The overall surgical site complication (SSC) rate was 3.3%, with KT patients experiencing a rate of 3.6%. SSCs included hematoma, seroma, delayed wound healing, and superficial infections. The overall PJI rate was 3.9%, with dialysis patients at 4.0% and KT patients at 3.7%. Multivariate regression analysis found no statistically significant differences in outcomes between dialysis and KT patients. Both groups demonstrated elevated risks compared to the general population, with comparable outcomes between them.

Kim et al (2022) conducted a systematic review and meta-analysis of 10 retrospective studies that included 3,631,861 patients and 14,996 solid organ transplantations (SOT). They evaluate whether patients with a history of SOT experienced different outcomes after primary hip arthroplasty compared to non- SOT patients. Medical complications included cardiac complications, pneumonia, acute kidney injury, and pulmonary thromboembolism and deep vein thrombosis. The study showed that patients with a history of SOT undergoing hip arthroplasty are at higher risk for medical complications, transfusion, readmission, and short-term mortality compared to non-transplant patients. However, surgical complication rates such as infection and revision are not significantly different.

Hip Resurfacing

Evidence from numerous case series demonstrates symptomatic and functional improvements that appear to be comparable to those obtained with the current generation of total hip replacement in individuals younger than age 65 years at similar follow-up duration. In addition, hip resurfacing leaves femoral bone stock intact and therefore revision is technically similar to primary total hip replacement. Increased concentrations of metal ions have been documented after metal-on-metal hip resurfacing in some individuals. The effect of metal ion release on a fetus is also unknown.

Za and colleagues (2024) performed a systematic review and meta-analysis of eight (8) randomized control trials that compared the outcomes of hip resurfacing (HR) and total hip arthroplasty (THA) in the treatment of hip osteoarthritis in 844 patients (n=387 hip resurfacing; n=469 THA). The mean follow-up was 7.72 years. The systematic review identified no significant differences between the groups in terms of Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and University of California Los Angeles (UCLA) scores, revision rates, infection, aseptic loosening, or pseudotumor occurrence (all p>0.05). However, the dislocation rate was significantly lower in the hip

resurfacing group (0.72% vs 4%; p=0.04). Some studies evaluated metal ion levels with slightly higher chromium levels noted in THA patients postoperatively. The most common cause of revision in HR was aseptic loosening (48%), while adverse reactions to metal debris were the leading cause in THA (30.77%). The authors concluded that HR is a safe and effective alternative to THA.

In a 2019 retrospective cohort study, Inoue and colleagues compared post-operative complications and survivorship of total hip and knee arthroplasty in dialysis and renal transplantation patients. They included a total of 107 patients undergoing primary total joint arthroplasty, including 50 who were receiving dialysis and 57 who had a prior renal transplantation. The end point was defined as revision surgery secondary to post-operative complications. Researchers found a significantly higher rate of post-operative complications in the dialysis cohort (28%, n=14 of 50 joints), compared to the renal transplant cohort (7.1%, n= 4 of 57 joints). There was a higher rate of SSI and PJI in dialysis patients, compared with renal transplantation patients (18% versus 3.5%, P=0.02). In addition, there was an increased rate of revision surgery in the dialysis cohort, compared to transplant cohort (24% versus 3.5%, P=0.002). A multi-variate analysis considering demographics and comorbidities revealed that patients with renal transplantation were less likely to have revision surgery, compared to patients on dialysis as the time of arthroplasty (95 % CI, P=0.031) and demonstrated a strong trend for lower complications (95% CI, P=0.76), although the latter was not statistically significant. Researchers concluded that transplantation was independently associated with reduced rates of revision surgery in the setting of chronic renal failure, suggesting that those who are candidates may benefit from renal transplantation before undergoing elective total joint arthroplasty.

Ren and colleagues (2024) performed a retrospective review of 104 individuals who underwent 134 hip resurfacing arthroplasties with either the Birmingham Hip Resurfacing (BHR) (n=67) implant or the ReCap Magnum implant (n=67) at a single institution between 2006 and 2018. The primary aim of this study was to evaluate and compare early and midterm blood metal ion levels in hips implanted with BHR and ReCap devices as both contain cobalt-chromium (CoCr) metals. The study participants were matched 1:1 by sex, femoral head and acetabular cup sizes (±2 millimeters), age at surgery (±5 y), and year of surgery (±5 y). The ReCap group had lower median metal ion levels compared to the BHR group at 1-2 years (Co: 1.5 versus 1.9 parts per billion [ppb], P=0.018; Cr: 1.3 versus 2.8 ppb, P=0.008) and 3-5 years (Co: 1.1 versus 1.9 ppb, P=0.001; Cr: 1.2 versus 2.2 ppb, P=0.003) after surgery. Metal levels were identified in both study groups but potentially not clinically significant. Correlation analysis showed no significant associations between Co and Cr ion levels and pre- and postoperative patient-reported outcomes. Revisions for both study groups varied and included three (3) BHR hip revisions due to adverse reactions to metal debris as compared to two (2) ReCap hips revisions: one for instability and another for periprosthetic fracture. The authors concluded that the study identified that the BHR group had higher metal ion levels than the ReCap group at one to two (1-2) and three to five (3-5) years after surgery; however, these metal levels are still low and in line with prior studies.

Zuke and colleagues (2025) assessed the long-term outcomes of the Birmingham Hip Resurfacing (BHR) implant in a retrospective study of 224 male individuals under 60 years of age with osteoarthritis. The study followed the participants for an average of 14 years. Survivorship analysis revealed excellent long-term durability, with 96.0% of BHR implants remaining free from any revision

and 97.4% free from aseptic revision at 15 years. Eight individuals required revision surgery, primarily due to infection (n=3), pseudotumor formation with elevated metal ions (n=2), and femoral component loosening (n=2). Median serum cobalt and chromium levels were 1.4 ppb and 1.5 ppb, respectively, with only two (2) cases of late-onset elevated metal ions requiring revision. Study participant-reported outcomes were similar between the cohort of individuals who received the BHR implant and the study participant group who received total hip arthroplasty (THA), with no significant differences in the modified Harris Hip Score (92.65 vs. 93.56; p=0.44) or long-term activity levels. The authors concluded that this cohort study demonstrated that metal on metal hip resurfacing arthroplasty using BHR implants is safe and effective with outcomes comparable to THA surgery.

PROFESSIONAL GUIDELINE(S)

Total Hip Arthroplasty

In the 2023 American Academy of Orthopaedic Surgeons adopted the evidence-based Clinical Practice Guidelines for the Management of Osteoarthritis of the Hip that state:

- "They strongly recommend conservative measures such as physical therapy, corticosteroid or hyaluronic acid injections, pharmacological management (NSAIDs)."

In the 2008 International Cartilage Repair Society Guidelines for the Management of Hip and Knee Osteoarthritis (OA), Part II, stated:

- "Patients with hip or knee OA who are not obtaining adequate pain relief and functional improvement from a combination of non-pharmacological and pharmacological treatment should be considered for joint replacement surgery. Replacement arthroplasties are effective, and cost-effective interventions for patients with significant symptoms, and/or functional limitations associated with a reduced health-related quality of life, despite conservative therapy." (Zhang et al 2008)

Hip Resurfacing

Professional Society Name	Guideline/Version/Year	Summary of Content
Hip Society	2012 Algorithmic Approach to the Diagnosis and Management of Metal-on-Metal Arthroplasty	Awareness of adverse local tissue reactions to metal debris. All arthroplasty patients returning for follow-up should be queried for pain, discomfort, or compromiseof function. Description of ideal candidate for metal on metal

		arthroplasty. Listing of contraindications for metal on metal arthroplasty.
National Institute for Health and Care Excellence (NICE)	2014 Updated Guidance on THA and Total Hip Resurfacing for End-stage Arthritis of the Hip	NICE advised that both THA and total hip resurfacing were options for treating end-stage arthritis of the hip. NICE concluded that THA was more effective and less costly than total hip resurfacing in all analyses, that the revision rate was the most important key driver of costs and quality-adjusted life years, and that because the predicted revision rate of THA was less than 5% at 10 years in the population for whom both THA and total hip resurfacing were suitable, the revision rate standard for total hip resurfacing should be the same as that for THA. NICE recommended specific prostheses for THA and total hip resurfacing only if the prostheses have revision rates of 5% or less at 10 years.

REGULATORY STATUS

Surgeries of the hip are procedures and, therefore, not regulated by the United States Food and Drug Administration (FDA). However, devices and instruments used during the surgery are regulated as medical devices. All resurfacing devices including related components require FDA approval before marketing and use in the United States to ensure they are safe and effective for human use. Refer to the FDA Medical Device website. Available from: https://www.fda.gov/medical-devices [accessed 2026 May 11]

The FDA lists the most serious type of medical device recalls as well as early alert communications

about corrective actions being taken by companies that the FDA believes are likely to be the most serious type of recalls. Available from: Medical Device Recalls | FDA [accessed 2026 May 11]

The Birmingham Hip Resurfacing Device (BHR), a metal-on-metal system, received FDA premarket approval in May 2006. The Cormet Hip Resurfacing system, another metal-on-metal system, received FDA premarket approval in July 2007. Two additional metal-on-metal hip resurfacing systems have received approval: the Cormet Hip Resurfacing System (Corin) in 2007 and the Conserve Plus Total Hip Resurfacing System (MicroPort Orthopedics) in 2009. Both implants were approved for skeletally mature patients with either noninflammatory degenerative arthritis (e.g., osteoarthritis and avascular necrosis) or inflammatory arthritis (e.g., rheumatoid arthritis).

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).
- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
27033	Arthrotomy, hip, including exploration or removal of loose or foreign body
27050	Arthrotomy, with biopsy; sacroiliac joint
27070	Partial excision, wing of ilium, symphysis pubis, or greater trochanter of femur, (craterization, saucerization) (e.g., osteomyelitis or bone abscess); superficial
27071	Partial excision, wing of ilium, symphysis pubis, or greater trochanter of femur, (craterization, saucerization) (e.g., osteomyelitis or bone abscess); deep (subfascial or intramuscular)
27090	Removal of hip prosthesis; (separate procedure)
27091	Removal of hip prosthesis; complicated, including total hip prosthesis, methylmethacrylate with or without insertion of spacer
27125	Hemiarthroplasty, hip, partial (e.g., femoral stem prosthesis, bipolar arthroplasty)
27130	Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip arthroplasty), with or without autograft or allograft
27132	Conversion of previous hip surgery to total hip arthroplasty, with or without autograft or allograft
27134	Revision of total hip arthroplasty; both components, with or without autograft or allograft
27137	Revision of total hip arthroplasty; acetabular component only, with or without autograft or allograft
27138	Revision of total hip arthroplasty; femoral component only, with or without allograft
27140	Osteotomy and transfer of greater trochanter of femur (separate procedure)

Code	Description
27146	Osteotomy, iliac, acetabular or innominate bone;
27147	Osteotomy, iliac, acetabular or innominate bone; with open reduction of hip
27151	Osteotomy, iliac, acetabular or innominate bone; with femoral osteotomy
27156	Osteotomy, iliac, acetabular or innominate bone; with femoral osteotomy and with open reduction of hip
27161	Osteotomy, femoral neck (separate procedure)
27165	Osteotomy, intertrochanteric or subtrochanteric including internal or external fixation and/or cast
27170	Bone graft, femoral head, neck, intertrochanteric or subtrochanteric area (includes obtaining bone graft)
27455	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus [bowleg] or genu valgus [knock-knee]); before epiphyseal closure
29860	Arthroscopy, hip, diagnostic with or without synovial biopsy (separate procedure)
29861	Arthroscopy, hip, surgical; with removal of loose body or foreign body
29862	Arthroscopy, hip, surgical; with debridement/shaving of articular cartilage (chondroplasty), abrasion arthroplasty, and/or resection of labrum
29863	Arthroscopy, hip, surgical; with synovectomy
29914	Arthroscopy, hip, surgical; with femoroplasty (i.e., treatment of cam lesion)
29915	Arthroscopy, hip, surgical; with acetabuloplasty (i.e., treatment of pincer lesion)
29916	Arthroscopy, hip, surgical; with labral repair

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HCPCS Codes

Code	Description
S2118	Metal-on-metal total hip resurfacing, including acetabular and femoral components

ICD10 Codes

Code	Description
M05.051-M08.959	Inflammatory polyarthropathies (hip) (code range)
M12.551 - M12.559	Traumatic arthropathy, hip (code range)
M16.0 - M16.9	Osteoarthritis of hip (code range)

Code	Description
M80.051A - M80.059S, M80.851A- M80.859S, M84.451A- M84.453S, M84.459A- M84.459S, M84.551A- M84.559S, M84.651A- M84.659S	Pathologic fracture of neck of femur (hip) (code range)
M84.750A- M84.759S	Atypical femoral fracture (code range)
M87.050	Idiopathic aseptic necrosis of pelvis
M87.051- M87.059, M87.150 M87.151- M87.159, M87.250 M87.251- M87.256, M87.350 M87.351- M87.353, M87.850 M87.851- M87.859, M90.551- M90.559	Osteonecrosis of femur, pelvis and thigh (code range)
M97.01XA- M97.02XS	Periprosthetic fracture around internal prosthetic hip joint (code range)
S72.001A- S72.26XS	Fracture of head and neck of femur (code range)

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SEARCH TERMS

Not Applicable

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Total Joint Arthroplasty (LCD L36039) [accessed 2026 September 10].

Total Joint Arthroplasty (LCA A57428) [accessed 2026 September 10].

Total Hip Resurfacing is not specifically addressed in National or Regional Medicare coverage

determinations or policies.

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.
- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION

Committee Approval Dates	
09/17/26, 10/22/26	
Date	**Summary of Changes**
01/01/27	• Original Effective Date
10/22/26	• Off-cycle review; removal of site of care criteria, clarification of developmental hip dysplasia and primary cause of surgery, removal of imaging requirements for pediatric osteotomy patients as well as reformatted age-appropriate clinical findings.
09/17/26	• New Policy