

MEDICAL POLICY



Medical Policy Title	Shoulder Arthroplasty (Total, Partial, Reverse, Revision and Resurfacing)
Policy Number	7.01.95
Current Effective Date	October 15, 2025
Next Review Date	June 2026

Our medical policies are based on the assessment of evidence based, peer-reviewed literature, and professional guidelines. Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract. (Link to [Product Disclaimer](#))

POLICY STATEMENT(S)

Total Shoulder Arthroplasty (Replacement)

- I. Total shoulder arthroplasty (replacement) is considered **medically necessary**, when **ALL** of the following criteria have been met:
 - A. Radiographic imaging or an advanced diagnostic study (e.g., MRI, CT scan) is conclusive for advanced destructive degenerative joint disease (e.g., osteoarthritis, rheumatoid arthritis, avascular necrosis) with marked joint space narrowing that correlates with the individual's reported symptoms and physical exam findings, including **ANY** of the following findings:
 1. irregular joint surfaces;
 2. glenoid sclerosis;
 3. glenoid osteophyte changes;
 4. flattened glenoid; **or**
 5. cystic changes in the humeral head;
 - B. Function-limiting pain (e.g., loss of shoulder function that interferes with the ability to carry out age-appropriate activities of daily living or demands of employment) for at least three (3) months duration;
 - C. Failure of provider-directed, non-surgical management for at least three (3) months' duration.
- II. Total shoulder arthroplasty (replacement) is considered **not medically necessary**, for **ANY** other indication, condition, or when **ANY** of the following are present:
 - A. Active local or systemic infection;
 - B. Paralytic disorder of the shoulder (e.g., flail shoulder due to irreversible brachial plexus palsy, spinal cord injury, or neuromuscular disease);
 - C. One or more uncontrolled or unstable medical conditions that would significantly increase the risk of morbidity (e.g., cardiac, pulmonary, liver, genitourinary, or metabolic disease; hypertension, abnormal serum electrolyte levels);
 - D. Charcot joint.

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Hemi-Arthroplasty (Partial Replacement) of Shoulder

III. Hemi-arthroplasty (replacement) of the shoulder is considered **medically necessary** for **ANY** of the following conditions, when **ALL** of the associated criteria have been met:

A. Arthritic Conditions with Inadequate Bone Stock and Avascular Necrosis (AVN):

1. Radiographic imaging or an advanced diagnostic study (e.g., MRI, CT scan) is conclusive for **EITHER** of the following, and that correlates with the individual's reported symptoms and physical exam findings:
 - a. Arthritic conditions in which the glenoid bone stock is inadequate to support a glenoid prosthesis; or
 - b. Avascular necrosis without glenoid involvement;
2. Function-limiting pain (e.g., loss of shoulder function that interferes with the ability to carry out age-appropriate activities of daily living or demands of employment) for at least three (3) months duration; and
3. Failed provider-directed, non-surgical management for at least three (3) months' duration.

B. Proximal Humerus Fracture **NOT** Amenable to Internal Fixation:

1. Radiographic imaging or an advance diagnostic study (e.g., MRI, CT scan) is conclusive for proximal humerus fracture that is not amenable to internal fixation.

IV. Hemi-arthroplasty (replacement) is considered **not medically necessary** for **ANY** other indication, condition, or when **ANY** of the following criteria are present:

- A. Active local or systemic infection;
- B. Paralytic disorder of the shoulder (e.g., flail shoulder due to irreversible brachial plexus palsy, spinal cord injury, or neuromuscular disease);
- C. One or more uncontrolled or unstable medical conditions that would significantly increase the risk of morbidity (e.g., cardiac, pulmonary, liver, genitourinary, or metabolic disease, hypertension, abnormal serum electrolyte levels);
- D. Charcot joint;
- E. Advanced destructive degenerative joint disease (e.g., rheumatoid arthritis or osteoarthritis) resulting in marked joint space narrowing;
- F. Rotator cuff tear arthropathy.

Reverse Total Shoulder Arthroplasty (Replacement)

V. Reverse total shoulder arthroplasty (replacement) is considered **medically necessary** for **ANY** of the following conditions when **ALL** of the associated criteria have been met:

A. Rotator Cuff Tear Pathology:

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1. Dysfunctional rotator cuff with **ANY** of the following additional findings:
 - a. Rotator cuff tear arthroplasty;
 - b. Pseudoparalysis with a massive unrepairable/irreparable rotator cuff tear;
 - c. Pseudoparesis with a massive unrepairable/irreparable rotator cuff tear;
 - d. Failed hemi-arthroplasty, with an unrepairable/irreparable rotator cuff tear;
 - e. Failed total shoulder arthroplasty, with an unrepairable/irreparable rotator cuff tear;
2. Physical exam demonstrates findings supporting that the individual has functional use of the deltoid muscle;
3. Function-limiting pain (e.g., loss of shoulder function which interferes with the ability to carry out age-appropriate activities of daily living or demands of employment for at least three (3) months duration;
4. Failure of provider-directed non-surgical management for at least three (3) months duration.

B. Glenoid Retroversion:

1. CT confirms glenoid retroversion with Walch Classification B2, B3, or C glenoid changes;
2. Physical exam demonstrates findings supporting that the individual has functional use of the deltoid muscle;
3. Function-limiting pain (e.g., loss of shoulder function which interferes with the ability to carry out age-appropriate activities of daily living or demands of employment) for at least three (3) months duration;
4. Failure of provider-directed non-surgical management for at least three (3) months duration.

C. Posterior Humeral Head Subluxation:

1. X-rays or advanced imaging shows posterior humeral head subluxation greater than 50%;
2. Physical exam demonstrates findings supporting that the individual has functional use of the deltoid muscle;
3. Function-limiting pain (e.g., loss of shoulder function that interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment) for at least three (3) months;
4. Failure of provider-directed non-surgical management for at least three (3) months duration.

VI. Reconstruction after tumor resection and shoulder fracture not amenable to other repair or reconstruction techniques is considered **medically necessary** when performed for **EITHER** of

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the following:

- A. Reconstruction after a tumor resection;
 - B. Radiographic imaging or an advanced diagnostic study (i.e., MRI, CT) is conclusive for a shoulder fracture that is not repairable or cannot be reconstructed with other techniques.
- VII. Reverse total shoulder arthroplasty (replacement) is considered **not medically necessary** for **ANY** other indication, condition, or when **ANY** of the following criteria are present:
- A. Active local or systemic infection;
 - B. Paralytic disorder of the shoulder (e.g., flail shoulder due to irreversible brachial plexus palsy, spinal cord injury, or neuromuscular disease);
 - C. Deltoid deficiency (e.g., axillary nerve palsy);
 - D. One or more uncontrolled or unstable medical conditions that would significantly increase the risk of morbidity (e.g., cardiac, pulmonary, liver, genitourinary, or metabolic disease, hypertension, abnormal serum electrolyte levels);
 - E. Charcot joint.

Revision of Shoulder Arthroplasty (Replacement)

- VIII. Revision of shoulder arthroplasty (replacement) is considered **medically necessary** for an individual who has previously undergone a hemi or total shoulder arthroplasty, and when **EITHER** of the following criteria have been met:
- A. Presence of **ANY** of the following:
 - 1. recurrent prosthetic dislocation unresponsive to a reasonable course of non-surgical care;
 - 2. instability of the components;
 - 3. aseptic loosening;
 - 4. periprosthetic infection;
 - 5. periprosthetic fracture.
 - B. Unexplained function-limiting pain (e.g., loss of shoulder function that interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment) for greater than six (6) months duration that is unresponsive to provider-directed, non-surgical management.
- IX. Revision of shoulder arthroplasty (replacement) is considered **not medically necessary** for **ANY** other indication or condition, including Charcot joint.
- X. Shoulder resurfacing (total, hemi, or partial resurfacing) is considered **investigational**.

RELATED POLICIES

Corporate Medical Policy

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11.01.03 Experimental or Investigational Services

POLICY GUIDELINE(S)

Not Applicable

DESCRIPTION

Total shoulder arthroplasty (replacement) is a surgical technique that involves replacing the humeral head and the glenoid. A total shoulder arthroplasty is typically the best option if the glenoid is damaged, but sufficient bone and rotator cuff remain to ensure that the glenoid component will last. The primary goal of shoulder replacement surgery is pain relief, with the secondary benefits of restoring motion, strength, and function, and helping individuals return to an activity level as near to normal as possible.

Partial shoulder replacement, also known as hemiarthroplasty, is a surgical technique that involves replacing the humeral head and not replacing the glenoid (socket), which is typically the best option if the glenoid does not have any arthritis or if there is some concern that the glenoid component might fail if it is replaced. Hemiarthroplasty is a highly technical procedure. There are two types of hemiarthroplasties: stemmed hemiarthroplasty and resurfacing hemiarthroplasty. The surgeon determines the type of procedure to perform, based on the nature of the injury and the condition of the shoulder.

Reverse shoulder arthroplasty (replacement) involves replacing both the humeral head and the glenoid, but the ball and socket are reversed to improve muscle function. This allows the deltoid muscle, which has a longer movement arm, to generate greater force, allowing it to act in place of an inadequately functioning or torn rotator cuff.

Revision of shoulder arthroplasty (replacement) is a surgical technique that involves surgical reconstruction or replacement due to failure or complication of previous shoulder arthroplasty.

Shoulder pseudoparesis is a shoulder dysfunction, particularly in the setting of a massive unreparable or irreparable rotator cuff tear, in which there is the presence of less than 90 degrees of active elevation.

Shoulder pseudoparalysis is a shoulder dysfunction, particularly in the setting of a massive unreparable or irreparable rotator cuff tear, with all of the following: the presence of true anterosuperior escape; no true active shoulder elevation; and the individual is only able to demonstrate a shrug.

Shoulder resurfacing is a surgical technique that involves replacing the diseased part of the shoulder joint without replacing the humeral head. Resurfacing of the humeral head involves a prosthetic metal covering or cap to provide complete or partial coverage. It can be performed alone (hemi-resurfacing) or in combination with glenoid resurfacing (total or partial shoulder resurfacing).

The Walch classification of glenoid morphology is used to stratify the outcomes of shoulder arthroplasty for varying pathologic glenoid types. It also is used in preoperative planning to recognize morphologies that may pose intraoperative problems.

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Type A: Centered humeral head, concentric wear, no subluxation of the humeral head

- A1: minor central erosion
- A2: major central erosion, humeral head protruding into the glenoid cavity

Type B: Humeral head subluxated posteriorly, biconcave glenoid with asymmetric wear

- B1: narrowing of the posterior joint space, subchondral sclerosis, osteophytes
- B2: biconcave aspect of the glenoid with posterior rim erosion and retroverted glenoid
- B3: monoconcave and posterior wear with $>15^\circ$ retroversion or $>70\%$ posterior humeral head subluxation, or both

Type C:

- C1: dysplastic glenoid with $>25^\circ$ retroversion regardless of the erosion
- C2: biconcave, posterior bone loss, posterior translation of the humeral head

Type D: Glenoid anteversion or anterior humeral head subluxation $<40^\circ$

SUPPORTIVE LITERATURE

In a systematic review and meta-analysis, Carter and colleagues (2012) characterized the change in generic and shoulder-specific health-related quality-of-life (QOL) measures resulting from TSA. These investigators identified published studies reporting pre-operative and post-operative health related QOL outcomes for patients receiving TSA. Health-related QOL measures were identified, and meta-analysis was used to calculate standardized mean differences (SMD)s¹ reflective of the effect size, and 95% confidence interval (CI) for each scale. A total of 20 studies (1,576 TSAs) met the inclusion criteria. Outcome measures were analyzed after an average post-operative follow-up duration of 3.7 +/- 2.2 years. The Short Form-36 demonstrated significant improvement in physical component summary scores (SMD = 0.7, $p < 0.001$), but not in mental component summary scores (SMD = 0.2, $p = 0.37$). Significant improvements were observed in the visual analog scale score for pain (SMD = -2.5, $p < 0.001$) and scores on three shoulder-specific measures: the Constant score (SMD = 2.7, $p < 0.001$), the American Shoulder and Elbow Surgeons score (SMD = 2.9, $p < 0.001$), and the Simple Shoulder Test (SMD = 2.3, $p < 0.001$). The authors concluded that TSA leads to significant improvement in scores for function and pain. Shoulder-specific measures of function consistently showed the greatest degree of improvement, with large effect sizes. They noted that TSA also leads to significant improvements in overall physical well-being, with a moderate-to-large effect size.

In a multi-centered retrospective study, Favard and colleagues (2012) evaluated the rate of complications and the functional improvement with different types of shoulder arthroplasties after a minimum follow-up of eight years. A total of 198 shoulders, including 85 with primary osteoarthritis (OA) of the shoulder, 76 with rotator cuff tears, 19 with avascular necrosis, and 18 with rheumatoid arthritis (RA), were included in this study. Arthroplasties included 104 anatomic TSAs, 77 reverse arthroplasties, and 17 hemiarthroplasties. Ten patients had their arthroplasty revised, and 134 patients with TSA were able to be present at the final follow-up or provide information on their case.

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Function was evaluated by the Constant-Murley score, and loosening was evaluated by standard radiographs. In the group with primary OA of the shoulder, there were eight complications (11 %), including six (8.3 %) requiring implant revision. In the group of rotator cuff arthropathies, there were nine (14.7 %) with complications, including four (6.5 %) requiring implant revision. In the group with RA, there was one complication, but no surgical revision was necessary. There were no complications in the group with avascular necrosis. Glenoid migration occurred in 28.5 % of anatomic TSAs, and 3.4 % of reverse arthroplasties. This difference was significant ($p < 0.001$). The Constant-Murley score was significantly improved in all etiologies. The authors concluded that glenohumeral arthropathies can be successfully treated by arthroplasty. Anatomic TSA was shown to be associated with a high risk of glenoid loosening at radiographic follow-up, which made them hesitate to use the cemented polyethylene implant, especially in young patients.

In a Cochrane review, Singh et al (2011) determined the benefits and potential harm associated with surgery for shoulder OA. These investigators performed a systematic review of clinical trials of adults with shoulder OA, comparing surgical techniques (TSA, hemiarthroplasty, implant type and fixation) to placebo, sham surgery, non-surgical modalities, and no treatment. They also reviewed trials that compared various surgical techniques, identifying patient-reported outcomes (pain, function, quality of life, etc.) or revision rates. They calculated the risk ratio for categorical outcomes and mean differences for continuous outcomes with 95% CI. There were no controlled trials of surgery versus placebo or non-surgical interventions. A total of seven studies with 238 patients were included. Two studies compared TSA to hemiarthroplasty ($n = 88$). Researchers noted significantly worse scores on the 0 to 100 American Shoulder and Elbow Surgeons scale (mean difference, -10.05 at 24 to 34 months; 95 % CI: -18.97 to -1.13; $p = 0.03$) and a non-significant trend toward higher revision rate in hemiarthroplasty compared to TSA (relative risk 6.18; 95 % CI: 0.77 to 49.52; $p = 0.09$). With one study providing data ($n = 41$), no differences were noted between groups for pain scores (mean difference 7.8; 95 % CI: -5.33 to 20.93), quality of life on Medical Outcomes Study Short-Form 36 physical component summary (mean difference 0.80; 95 % CI: -6.63 to -8.23), or adverse events (relative risk 1.2; 95 % CI: 0.4 to 3.8). The authors concluded that TSA was associated with better shoulder function, with no other demonstrable clinical benefits compared to hemiarthroplasty. They stated that more studies are needed, to compare clinical outcomes between them and comparing shoulder surgery to sham, placebo, and other non-surgical treatment options.

Vancolen et al (2020) conducted a systematic review to evaluate the outcome of six studies totaling 245 participants aged less than 65 years who underwent reverse total shoulder arthroplasty (RTSA), with the most common indications being failed rotator cuff repair and rotator cuff tear arthropathy. The overall concern regarding RTSA is implant longevity and risk of failure necessitating need for revision surgery which may be a dissatisfier in younger individuals due to their higher postoperative expectations of function and pain relief. A significant level of postoperative functional improvement outcome was reported at a mean follow-up of 49 months (range, 19-140 months) ($P < .05$) as measured by the American Shoulder and Elbow Surgeons (ASES) and Subjective Shoulder Value (SSV), as well as pain scores as measured by Visual Analogue Scale (VAS) postoperatively. The pooled complication rate was considered high at 18% ($n=44/245$) with the most common complication reported as postoperative dislocation followed by glenoid loosening. The reoperation (revision) rate was 6% ($n=15$, range, 2-5) at a mean follow-up of 34 months (range, 19-140

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months). The authors concluded that this small group study identified favorable short- to midterm functional outcomes of RTSA in the younger individual (<65 years) for indications including rotator cuff arthropathy and osteoarthritis. Due to the complication and revision rates identified in this systematic review, the authors stated that additional long-term studies are needed to report definitive clinical results regarding prosthesis longevity, complications, and need for revision surgery in this patient population.

Mowers and colleagues (2025) performed a systematic review and meta-analysis which included six (6) studies totaling 4525 individuals (males, n=2288 and females, n=2237) to compare patient-reported outcomes, range of motion, and rates of revision surgery between male and female individuals who had undergone a primary anatomic total shoulder arthroplasty (aTSA). The systematic review identified that males experienced significantly greater improvement in postoperative ASES shoulder pain and functional scores (mean difference 2.18, $P<.001$) and VAS pain scores (mean difference 0.40, $P<.001$) compared to females. The study also found that female individuals compared to male individuals had a significantly higher risk of revision surgery (10.1% versus 7.3%, risk ratio 1.43, $P<.001$) and revision surgeries (6.2% versus 3.7%, risk ratio 1.87, $P=.03$). It has been well established that female individuals are associated with a higher risk of periprosthetic fracture due to a higher prevalence of osteoporosis in females. The authors concluded that there is a need for further investigation to determine the clinical significance of the identified aTSA comparative outcomes and to identify modifiable biological and social risk factors to improve results in female patients.

Bi and colleagues (2024) conducted a systematic review and meta-analysis which included 23 studies totaling 1178 individuals to analyze comparative studies of surgical treatment options for massive irreparable rotator cuff tears (MIRCTs) in individuals less than 70 years of age for several patient-reported outcomes, range of motion (ROM), and acromiohumeral distance (AHD). The mean age of study participants was 62.8 years of age, male (n=48.2%) to female (n=51.8%) participant numbers with a mean follow-up timeframe of 28.9 months. For the Constant-Murley score, debridement (MD, 21.03; 95% CI, 8.98 to 33.08; $P<.001$) and arthroscopic bridging graft (aBG) (mean difference [MD], 6.97; 95% CI, 1.88 to 12.05; $P=.007$) resulted in the highest P-scores. For the ASES score, InSpace balloon arthroplasty (MD, 12.34; 95% CI, 2.18 to 22.50; $P=.017$), aBG (MD, 7.07; 95% CI, 0.28 to 13.85; $P=.041$), and long head of biceps augmented superior capsular reconstruction (BSCR) (MD, 5.16; 95% CI, 1.10 to 9.22; $P=.013$) resulted in the highest P-scores. For AHD, BSCR resulted in the highest P-score (MD, 1.46; 95% CI, 0.45 to 2.48; $P=.005$). For forward flexion range of motion (ROM), debridement (MD, 45.77; 95% CI, 25.41 to 66.13; $P<.001$) resulted in the highest P-score, while reverse shoulder arthroplasty (RSA) resulted in the lowest P-score (MD, -16.70; 95% CI, -31.20 to -2.20; $P=.024$). The authors concluded that graft interposition repair techniques, superior capsular reconstruction using the long head of the bicep tendon, arthroscopic debridement, and balloon arthroplasty provided superiority in various study outcomes for individuals less than 70 years of age with MIRCTs without significant arthritis or pseudoparalysis and RSA provides the least benefit in forward flexion.

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There is a lack of long-term, randomized controlled studies for shoulder resurfacing using metal, polyethylene and biological materials for the treatment of glenohumeral arthritis, humeral head fractures, and osteochondral lesions. Biological glenoid resurfacing with or without prosthetic humeral head replacement has been suggested as a means to avoid the potential complications of polyethylene use in younger patients with glenohumeral arthritis. A variety of biologic surfaces, including anterior capsule, autogenous fascia lata, and Achilles tendon allograft have been used; however, there is minimal evidence in the peer-reviewed literature that these biological grafts can provide a durable bearing surface over time and there is documentation of post-operative infections. Further studies to assess the long-term outcomes and to evaluate alternative surface bearing materials, especially on the glenoid side are required.

PROFESSIONAL GUIDELINE(S)

According to the 2020 Management of Glenohumeral Joint Osteoarthritis Evidence-based Clinical Practice Guidelines of the American Academy of Orthopaedic Surgeons (AAOS), there is strong evidence that anatomic TSA produces more favorable function and pain relief in the short-to mid-term follow-up, when compared to hemiarthroplasty, for the treatment of glenohumeral osteoarthritis. These guidelines also recommend, in the absence of reliable evidence, that clinicians use either anatomic TSA or reverse TSA for the treatment of glenohumeral joint osteoarthritis in select patients with excessive glenoid bone loss and/or rotator cuff dysfunction.

Within the 2020 guidelines, AAOS also advised of limited evidence to support that clinicians may utilize stemmed, stemless or resurfacing prosthesis for patients with glenohumeral joint osteoarthritis undergoing total or hemi-arthroplasty. However, the low-quality studies provided early information that any of these implants are reasonable and safe options but should be used with caution as there are no long-term outcome studies.

According to the 2010 Management of Rotator Cuff Injuries of the AAOS which were updated in 2019, there is strong evidence that supports both physical therapy and surgical management resulted in a notable improvement in PROs for patients with symptomatic small to medium full-thickness rotator cuff tears. AAOS also recommended that there is also strong evidence that supports that PROs improve with physical therapy in symptomatic patients with full-thickness rotator cuff tears. However, the rotator cuff tear size, muscle atrophy, and fatty infiltration may progress over five (5) to 10 years with nonsurgical management.

REGULATORY STATUS

The U.S. Food and Drug Administration (FDA) has approved a variety of shoulder arthroplasty systems, including reverse total shoulder arthroplasty (rTSA) and stemless implants since 2003.

Reverse Total Shoulder Arthroplasty (rTSA)

- The FDA cleared the Delta rTSA system in late 2003 for use in "Grossly rotator cuff deficient joint with severe arthropathy or a previous failed joint replacement with a grossly rotator cuff deficient joint". Over time, rTSA has been used for various off-label indications, including osteoarthritis, massive rotator cuff tears, and proximal humerus fractures.

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Stemless Implants

- Smith+Nephew's Aetos shoulder system, including the stemless version, received FDA clearance in June 2023. Zimmer Biomet also received FDA 510(k) clearance for their OsseoFit Stemless Shoulder System.

Other Devices

- Stryker received FDA approval for their Tornier Pyrocarbon Humeral Head in March 2023. Zimmer Biomet's ROSA Shoulder System, a robotic assistant, received FDA clearance and became commercially available in the second half of 2024.

Refer to the FDA Medical Device website. Available from: <https://www.fda.gov/medical-devices> [accessed 2025 May 20]

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
23470 (*E/I)	Arthroplasty, glenohumeral joint; hemiarthroplasty (*Considered E/I if used for billing resurfacing of the shoulder)
23472	Arthroplasty, glenohumeral joint; total shoulder (glenoid and proximal humeral replacement [e.g., total shoulder])
23473	Revision of total shoulder arthroplasty, including allograft when performed; humeral or glenoid component (Effective 01/01/13)
23474	Revision of total shoulder arthroplasty, including allograft when performed; humeral and glenoid component
23929 (*E/I)	Unlisted procedure; shoulder (Effective 01/01/93) (*Considered E/I if used for billing resurfacing of the shoulder)

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HCPCS Codes

Code	Description
Not Applicable	

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ICD10 Codes

Code	Description
M05.00 - M05.9	Rheumatoid arthritis (code range Felty's syndrome)
M12.511 - M12.519	Traumatic arthropathy, shoulder (code range)
M19.011 - M19.019	Osteoarthritis, localized, primary, shoulder region (code range)
M19.111 - M19.119	Post-traumatic osteoarthritis, shoulder (code range)
M19.211 - M19.219	Osteoarthritis, localized, secondary, shoulder region (code range)
M24.811 - M24.819	Other specific joint derangement of shoulder, not elsewhere classified [crepitus] (code range)
M87.021 - M87.029	Idiopathic aseptic necrosis of humerus [head] (code range)
S42.001K - S42.199P	Malunion or nonunion of fracture of shoulder (code range)
S42.201A - S42.496S	Fracture of humerus (code range)
T84.018A - T84.019A	Broken internal joint prosthesis [shoulder] (code range)
T84.028A - T84.029A	Dislocation of other and unspecified internal joint prosthesis (code range)
T84.038A - T84.039A	Mechanical loosening of other or unspecified prosthetic joint [shoulder] (code range)
T84.59XA	Infection and inflammatory reaction due to other internal joint prosthesis [shoulder]

REFERENCES

American Academy of Orthopaedic Surgeons (AAOS) [Internet]. Management of glenohumeral joint osteoarthritis. Evidence-based clinical practice guideline. Original 2020 Mar [Accessed 2025 May 21] Available from: <https://www.aaos.org/gjocpg>

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American Academy of Orthopaedic Surgeons (AAOS) [Internet]. Management of rotator cuff injuries. Evidence-based clinical practice guideline. Original 2010 Mar [Updated 2019 Mar 11; accessed 2025 May 21] Available from: <https://www.aaos.org/globalassets/quality-and-practice-resources/rotator-cuff/rotator-cuff-cpg-final-12-20-19.pdf>

Bi AS, et al. Comparison of multiple surgical treatments for massive irreparable rotator cuff tears in patients younger than 70 years of age: a systematic review and network meta-analysis. *Am J Sports Med*. 2024 Sep;52(11):2919-2930.

Carter MJ, et al. Impact of total shoulder arthroplasty on generic and shoulder-specific health-related quality-of-life measures: a systematic literature review and meta-analysis. *J Bone Joint Surg Am*. 2012 Sep 5;94(17):e127.

Craig RS, et al. Shoulder replacement surgery for osteoarthritis and rotator cuff tear arthropathy. *Cochrane Database Syst Rev*. 2020 Apr 21;4(4):CD012879.

Dhaliwal K, et al. The role of reverse shoulder arthroplasty in elderly trauma: a systematic review. *Cureus*. 2020 May 18;12(5):e8180.

Ernstbrunner L, et al. Salvage Reverse total shoulder arthroplasty for failed operative treatment of proximal humeral fractures in patients younger than 60 years: long-term results. *J Shoulder Elbow Surg*. 2020 Mar;29(3):561-570.

Favard L, et al. Total shoulder arthroplasty - arthroplasty for glenohumeral arthropathies: results and complications after a minimum follow-up of 8 years according to the type of arthroplasty and etiology. *Orthop Traumatol Surg Res*. 2012 Jun;98(4 Suppl):S41-7.

Gauci MO, et al. Revision of failed shoulder arthroplasty: epidemiology, etiology, and surgical options. *J Shoulder Elbow Surg*. 2020 Mar;29(3):541-549.

Geervliet PC, et al. Outcome and revision rate of uncemented glenohumeral resurfacing (C.A.P.) after 5-8 years. *Arch Orthop Trauma Surg*. 2017;137(6):771-778.

Ibrahim EF, et al. Resurfacing hemiarthroplasty of the shoulder for patients with juvenile idiopathic arthritis. *J Shoulder Elbow Surg*. 2018;27(8):1468-1474.

Klein A, et al. Early outcomes and complications of obese patients undergoing shoulder arthroplasty: A meta-analysis. *J Clin Orthop Trauma*. 2020 Mar;11(Suppl 2):S260-S264.

Knowles NK, et al. Revision shoulder arthroplasty: a systematic review and comparison of North American vs. European outcomes and complications. *J Shoulder Elbow Surg*. 2020 May;29(5):1071-1082.

Lopiz Y, et al. Reverse shoulder arthroplasty versus nonoperative treatment for 3- or 4-part proximal humeral fractures in elderly patients: a prospective randomized controlled trial. *J Shoulder Elbow Surg*. 2019 Dec;28(12):2259-2271.

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Merolla G, et al. Clinical and radiographic mid-term outcomes after shoulder resurfacing in patients aged 50 years old or younger. *Musculoskelet Surg.* 2013;97(1):23-29.

Middernacht B, et al. Consequences of scapular anatomy for reversed total shoulder arthroplasty. *Clin Orthop Relat Res.* 2008;46(6):1410-1418.

Migliorini F, et al. Anatomic total shoulder arthroplasty versus hemiarthroplasty for glenohumeral osteoarthritis: A systematic review and meta-analysis. *Appl Sci.* 2021;11.

Monir JG, et al. Reverse shoulder arthroplasty in patients younger than 65 years, minimum 5-year follow-up. *J Shoulder Elbow Surg.* 2020 Jun;29(6):e215-e221.

Mowers CC, et al. Females experience inferior outcomes and higher rates of revisions and complications compared to males following anatomic total shoulder arthroplasty: a systematic review and meta-analysis. *J Shoulder Elbow Surg.* 2025. Online Ahead of Print.

Orman S, et al. Comparison of surgical and non-surgical treatments for 3- and 4-part proximal humerus fractures: a network meta-analysis. *Shoulder Elbow.* 2020 Apr;12(2):99-108.

Papalia R, et al. Return to sport after anatomic and reverse total shoulder arthroplasty in elderly patients: a systematic review and meta-analysis. *J Clin Med.* 2020 May 22;9(5):1576.

Polisetty TS, et al. Anatomic and reverse shoulder arthroplasty for management of type B2 and B3 glenoid; a matched-cohort analysis. *J Shoulder Elbow Surg.* 2023;32(8):1629-1637.

Rava et al. Preoperative partial-thickness rotator cuff tears do not compromise anatomic total shoulder replacement outcomes: medium-term follow-up. *J Shoulder Elbow Surg.* 2021 Apr;30(4):871-876.

Ricchetti, ET, et al. Reliability of the modified walch classification for advanced glenohumeral osteoarthritis using 3-dimensional computed tomography analysis: a study of the ASES B2 glenoid multicenter research group. *J Shoulder Elbow Surg.* 2021 Apr;30(4) 736-746.

Singh JA, et al. Surgery for shoulder osteoarthritis: a Cochrane systematic review. *J Rheumatol.* 2011 Apr;38(4):598-605.

Tokish JM, Brinkman JC. Pseudoparalysis and pseudoparesis of the shoulder: definitions, management, and outcomes. *J Am Acad Orthop Surg.* 2024;32(21):965-974.

Vancolen SY, et al. Reverse total shoulder arthroplasty in the younger patient (≤ 65 years): a systematic review. *J Shoulder Elbow Surg.* 2020 Jan;29(1):202-209.

Wright MA et al. Comparison of clinical outcomes after anatomic total shoulder arthroplasty and reverse shoulder arthroplasty in patients 70 years and older with glenohumeral osteoarthritis and an intact rotator cuff. *J Am Acad Orthop Surg.* 2020 Mar;28(5):e222-e229.

Zmistowski B, et al. Acromial stress fracture following reverse total shoulder arthroplasty: incidence and predictors. *J Shoulder Elbow Surg.* 2020 Apr;29(4):799-806.

SEARCH TERMS

Not Applicable

Medical Policy: Shoulder Arthroplasty (Total, Partial, Reverse, Revision and Resurfacing)

Policy Number: 7.01.95

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CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Based on our review, Shoulder Arthroplasty is not addressed in specific 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

06/21/18, 12/20/18, 12/19/19, 12/17/20, 04/15/21, 06/16/22, 06/22/23, 06/20/24, 06/26/25

Date	Summary of Changes
06/26/25	Annual policy review; policy title change, policy statement X added which indicates that shoulder resurfacing is considered investigational, policy guideline (Walch Classification of Glenoid Morphology) moved into the description section and the addition of CPT codes 23473 and 23929.
01/01/25	<ul style="list-style-type: none">• Summary of changes tracking implemented.
06/21/18	<ul style="list-style-type: none">• Original effective date