



Shoulder Arthritis

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Diseases & Disorders of the Musculoskeletal System (M00-M99)

CarePath Group: Shoulder

CarePath Name: Shoulder Arthritis

Type: Adult (18+ yo) | Pediatric (0-17yo)

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Care Path Clinical Discussion

Osteoarthritis (OA) is a common joint disease that affects tens of millions of people in the United States. The glenohumeral joint is the third most commonly affected large joint, behind the knee and hip.¹ The incidence increases with age, particularly over age 60.² It is associated with pain and progressively decreased function. However, it is challenging to predict the natural history of the disease.^{1,2} The degree of pain and disability does not always correlate with cartilage loss.¹ Rheumatoid arthritis (RA), a chronic inflammatory disorder, can lead to joint erosion and destruction in end-stage disease. Shoulder RA not only destroys the glenohumeral joint but is also commonly associated with rotator cuff tears.³ Both types of glenohumeral arthritis can significantly impact function and quality of life.¹

Plain films can usually diagnose arthritis of the shoulder joint.⁴ Advanced imaging is frequently needed to assess soft tissue pathology or to assist with surgical planning.^{2,5} When conservative management has been exhausted or is deemed inappropriate, surgical intervention may be necessary.^{1,5} The type of surgery depends upon patient age, the extent of disease, functional requirements of the shoulder, and of course, patient preference and ability to comply with postoperative restrictions.^{3,5} Surgical options include arthroscopic debridement, total shoulder arthroplasty, and reverse shoulder arthroplasty. While originally developed for cuff tear arthropathy, reverse shoulder arthroplasty indications now include some OA and RA cases.³ According to the American Academy of Orthopaedic Surgeons (AAOS), there is insufficient evidence to support recommendations for implant selection when treating GJO with arthroplasty.²

The information contained herein gives a general overview of the pathway of glenohumeral joint arthritis (excluding rotator cuff arthropathy), beginning with initial presentation, recommended assessments, and treatment options as supported by the medical literature and existing guidelines. It should be noted that the care of patients can be complex. The information below is meant to support clinical decision making in adult patients. It is not necessarily applicable to every case, as the entire clinical picture (including comorbidities, history, etc.) should be considered.

Key Information

- Older patients may present with symptoms to their primary care provider before seeing an orthopedic surgeon. Younger patients may seek out care from an orthopedic specialist immediately.
- In 2011, according to the National Health Information Survey, 50 million people in the United States reported they had arthritis.²
- Magnetic resonance imaging (MRI) is often unnecessary in standard arthritis cases. Use MRI for suspected rotator cuff involvement.
- According to the AAOS, there is strong evidence that supports a total shoulder arthroplasty for the treatment of glenohumeral osteoarthritis, which results in increased function and pain relief.²
- Physical therapy used alone may not improve the arthritic joint.

Definitions

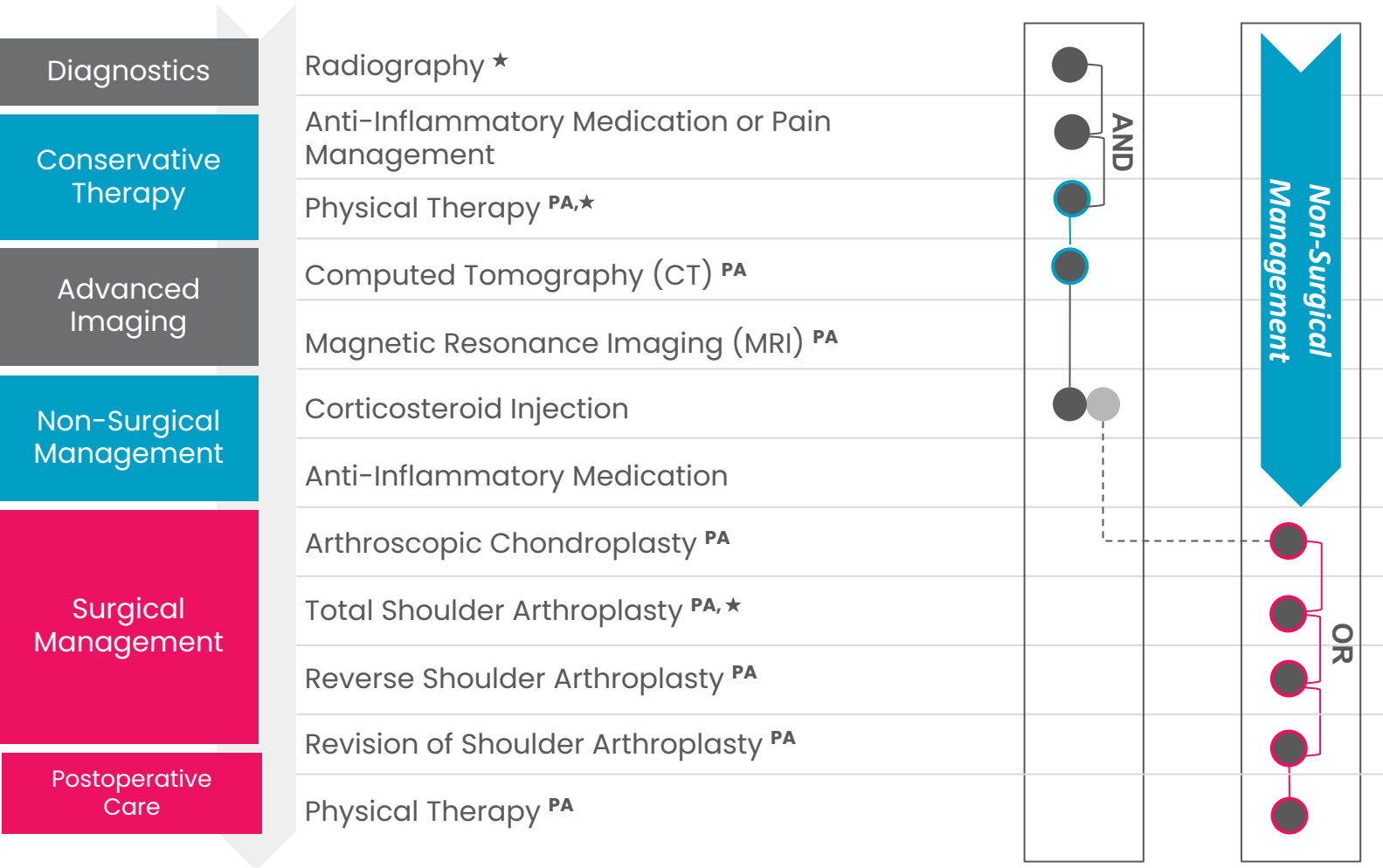
- **Glenohumeral Joint Osteoarthritis (GJO)**: A degenerative joint disease that causes damage to the articular surfaces of the glenoid and humeral head.⁶
- **Rheumatoid Arthritis**: A systemic autoimmune disease that can result in joint erosion and destruction.
- **Anatomic Total Shoulder Replacement (Arthroplasty)**: A shoulder procedure that recreates the normal anatomy. The humeral head is replaced with a ball, and the joint socket is replaced with a cup.
- **Reverse Shoulder Arthroplasty**: A shoulder procedure to reconstruct the glenohumeral joint. A sphere is placed on the cup side of the joint, and the cup is on the humeral side. This makes a semi-constrained prosthesis. A reverse arthroplasty may be appropriate for situations such as glenoid bone loss, pathologic retroversion, instability, subluxation, or cuff insufficiency.
- **Hemiarthroplasty**: A procedure to replace the humeral head with a ball. The glenoid joint socket remains intact.

Shoulder Arthritis

What is a "Cohere Care Path"?

These Care Paths organize the services typically considered most clinically optimal and likely to be automatically approved. These service recommendations also include the suggested sequencing and quantity or frequency determined clinically appropriate and medically necessary for the management of most patient care scenarios in this Care Path's diagnostic cohort.

Non-Surgical Management **Surgical Management**



Key

- ^{PA} = Service may require prior authorization
- [★] = Denotes preferred service
- AND = Services completed concurrently
- OR = Services generally mutually exclusive
- (Blue) = Non-surgical management prior authorization group of services
- (Red) = Surgical management prior authorization group of services
- - - = Subsequent service
- - - = Management path moves to a different management path

Care Path Diagnostic Criteria

Disease Classification

Shoulder Arthritis

ICD-10 Codes Associated with Classification

ICD-10 Code	Code Description/Definition
M02.30	Reiter's disease, unspecified site
M02.311	Reiter's disease, right shoulder
M02.312	Reiter's disease, left shoulder
M05.61	Rheumatoid arthritis of shoulder with involvement of other organs and systems
M05.611	Rheumatoid arthritis of right shoulder with involvement of other organs and systems
M05.612	Rheumatoid arthritis of left shoulder with involvement of other organs and systems
M05.619	Rheumatoid arthritis of unspecified shoulder with involvement of other organs and systems
M05.711	Rheumatoid arthritis with rheumatoid factor of right shoulder without organ or systems involvement
M05.712	Rheumatoid arthritis with rheumatoid factor of left shoulder without organ or systems involvement
M05.719	Rheumatoid arthritis with rheumatoid factor of unspecified shoulder without organ or systems involvement
M05.81	Other rheumatoid arthritis with rheumatoid factor of shoulder
M05.811	Other rheumatoid arthritis with rheumatoid factor of right shoulder
M05.812	Other rheumatoid arthritis with rheumatoid factor of left shoulder
M05.819	Other rheumatoid arthritis with rheumatoid factor of unspecified shoulder

M06.1	Adult-onset Still's disease
M06.01	Rheumatoid arthritis without rheumatoid factor, shoulder
M06.011	Rheumatoid arthritis without rheumatoid factor, right shoulder
M06.012	Rheumatoid arthritis without rheumatoid factor, left shoulder
M06.019	Rheumatoid arthritis without rheumatoid factor, unspecified shoulder
M06.811	Other specified rheumatoid arthritis, right shoulder
M06.812	Other specified rheumatoid arthritis, left shoulder
M06.819	Other specified rheumatoid arthritis, unspecified shoulder
M08.011	Unspecified juvenile rheumatoid arthritis, right shoulder
M08.012	Unspecified juvenile rheumatoid arthritis, left shoulder
M08.019	Unspecified juvenile rheumatoid arthritis, unspecified shoulder
M08.211	Juvenile rheumatoid arthritis with systemic onset, right shoulder
M08.212	Juvenile rheumatoid arthritis with systemic onset, left shoulder
M08.219	Juvenile rheumatoid arthritis with systemic onset, unspecified shoulder
M08.411	Pauciarticular juvenile rheumatoid arthritis, right shoulder
M08.412	Pauciarticular juvenile rheumatoid arthritis, left shoulder
M08.419	Pauciarticular juvenile rheumatoid arthritis, unspecified shoulder
M08.811	Other juvenile arthritis, right shoulder
M08.812	Other juvenile arthritis, left shoulder
M08.819	Other juvenile arthritis, unspecified shoulder
M08.911	Juvenile arthritis, unspecified, right shoulder
M08.912	Juvenile arthritis, unspecified, left shoulder
M08.919	Juvenile arthritis, unspecified, unspecified shoulder

M12.511	Traumatic arthropathy, right shoulder
M12.512	Traumatic arthropathy, left shoulder
M12.519	Traumatic arthropathy, unspecified shoulder
M12.811	Other specific arthropathies, not elsewhere classified, right shoulder
M12.812	Other specific arthropathies, not elsewhere classified, left shoulder
M12.819	Other specific arthropathies, not elsewhere classified, unspecified shoulder
M12.9	Arthropathy, unspecified
M13.0	Polyarthritis, unspecified
M13.111	Monoarthritis, not elsewhere classified, right shoulder
M13.112	Monoarthritis, not elsewhere classified, left shoulder
M13.119	Monoarthritis, not elsewhere classified, unspecified shoulder
M13.811	Other specified arthritis, right shoulder
M13.812	Other specified arthritis, left shoulder
M13.819	Other specified arthritis, unspecified shoulder
M14.811	Arthropathies in other specified diseases classified elsewhere, right shoulder
M14.812	Arthropathies in other specified diseases classified elsewhere, left shoulder
M14.819	Arthropathies in other specified diseases classified elsewhere, unspecified shoulder
M15.0	Primary generalized (osteo)arthritis
M15.3	Secondary multiple arthritis
M15.8	Other polyosteoarthritis
M15.9	Polyosteoarthritis, unspecified
M19.01	Primary osteoarthritis, shoulder
M19.011	Primary osteoarthritis, right shoulder
M19.012	Primary osteoarthritis, left shoulder

M19.019	Primary osteoarthritis, unspecified shoulder
M19.111	Post-traumatic osteoarthritis, right shoulder
M19.112	Post-traumatic osteoarthritis, left shoulder
M19.119	Post-traumatic osteoarthritis, unspecified shoulder
M19.211	Secondary osteoarthritis, right shoulder
M19.212	Secondary osteoarthritis, left shoulder
M19.219	Secondary osteoarthritis, unspecified shoulder
M19.90	Unspecified osteoarthritis, unspecified site
M19.91	Primary osteoarthritis, unspecified site
M19.92	Post-traumatic osteoarthritis, unspecified site
M19.93	Secondary osteoarthritis, unspecified site
M24.111	Other articular cartilage disorders, right shoulder
M24.112	Other articular cartilage disorders, left shoulder
M24.119	Other articular cartilage disorders, unspecified shoulder
M25.411	Effusion, right shoulder
M25.412	Effusion, left shoulder
M25.419	Effusion, unspecified shoulder
M36.2	Hemophilic arthropathy
M79.601	Pain in right arm
M79.602	Pain in left arm
M79.603	Pain in arm, unspecified
M79.621	Pain in right upper arm
M79.622	Pain in left upper arm
M79.629	Pain in unspecified upper arm
M87.011	Idiopathic aseptic necrosis of right shoulder
M87.012	Idiopathic aseptic necrosis of left shoulder
M87.019	Idiopathic aseptic necrosis of unspecified shoulder
M87.021	Idiopathic aseptic necrosis of right humerus
M87.022	Idiopathic aseptic necrosis of left humerus

M87.029	Idiopathic aseptic necrosis of unspecified humerus
M87.111	Osteonecrosis due to drugs, right shoulder
M87.112	Osteonecrosis due to drugs, left shoulder
M87.119	Osteonecrosis due to drugs, unspecified shoulder
M87.121	Osteonecrosis due to drugs, right humerus
M87.122	Osteonecrosis due to drugs, left humerus
M87.129	Osteonecrosis due to drugs, unspecified humerus
M87.211	Osteonecrosis due to previous trauma, right shoulder
M87.212	Osteonecrosis due to previous trauma, left shoulder
M87.219	Osteonecrosis due to previous trauma, unspecified shoulder
M87.221	Osteonecrosis due to previous trauma, right humerus
M87.222	Osteonecrosis due to previous trauma, left humerus
M87.229	Osteonecrosis due to previous trauma, unspecified humerus
M87.311	Other secondary osteonecrosis, right shoulder
M87.312	Other secondary osteonecrosis, left shoulder
M87.319	Other secondary osteonecrosis, unspecified shoulder
M87.321	Other secondary osteonecrosis, right humerus
M87.322	Other secondary osteonecrosis, left humerus
M87.329	Other secondary osteonecrosis, unspecified humerus
M87.811	Other osteonecrosis, right shoulder
M87.812	Other osteonecrosis, left shoulder
M87.819	Other osteonecrosis, unspecified shoulder
M87.821	Other osteonecrosis, right humerus
M87.822	Other osteonecrosis, left humerus
M87.829	Other osteonecrosis, unspecified humerus
M90.50	Osteonecrosis in diseases classified elsewhere, unspecified site

M90.511	Osteonecrosis in diseases classified elsewhere, right shoulder
M90.512	Osteonecrosis in diseases classified elsewhere, left shoulder
M90.519	Osteonecrosis in diseases classified elsewhere, unspecified shoulder
M97.31XA	Periprosthetic fracture around internal prosthetic right shoulder joint, initial encounter
M97.31XD	Periprosthetic fracture around internal prosthetic right shoulder joint, subsequent encounter
M97.31XS	Periprosthetic fracture around internal prosthetic right shoulder joint, sequela
M97.32XA	Periprosthetic fracture around internal prosthetic left shoulder joint, initial encounter
M97.32XD	Periprosthetic fracture around internal prosthetic left shoulder joint, subsequent encounter
M97.32XS	Periprosthetic fracture around internal prosthetic left shoulder joint, sequela
T84.018A	Broken internal joint prosthesis, other site, initial encounter
T84.018D	Broken internal joint prosthesis, other site, subsequent encounter
T84.018S	Broken internal joint prosthesis, other site, sequela
T84.019A	Broken internal joint prosthesis, unspecified site, initial encounter
T84.019D	Broken internal joint prosthesis, unspecified site, subsequent encounter
T84.019S	Broken internal joint prosthesis, unspecified site, sequela
T84.028A	Dislocation of other internal joint prosthesis, initial encounter
T84.028D	Dislocation of other internal joint prosthesis, subsequent encounter
T84.028S	Dislocation of other internal joint prosthesis, sequela

T84.029A	Dislocation of unspecified internal joint prosthesis, initial encounter
T84.029D	Dislocation of unspecified internal joint prosthesis, subsequent encounter
T84.029S	Dislocation of unspecified internal joint prosthesis, sequela
T84.038A	Mechanical loosening of other internal prosthetic joint, initial encounter
T84.038D	Mechanical loosening of other internal prosthetic joint, subsequent encounter
T84.038S	Mechanical loosening of other internal prosthetic joint, sequela
T84.039A	Mechanical loosening of unspecified internal prosthetic joint, initial encounter
T84.039D	Mechanical loosening of unspecified internal prosthetic joint, subsequent encounter
T84.039S	Mechanical loosening of unspecified internal prosthetic joint, sequela
T84.058A	Periprosthetic osteolysis of other internal prosthetic joint, initial encounter
T84.058D	Periprosthetic osteolysis of other internal prosthetic joint, subsequent encounter
T84.058S	Periprosthetic osteolysis of other internal prosthetic joint, sequela
T84.059A	Periprosthetic osteolysis of unspecified internal prosthetic joint, initial encounter
T84.059D	Periprosthetic osteolysis of unspecified internal prosthetic joint, subsequent encounter
T84.059S	Periprosthetic osteolysis of unspecified internal prosthetic joint, sequela
T84.068A	Wear of articular bearing surface of other internal prosthetic joint, initial encounter
T84.068D	Wear of articular bearing surface of other internal prosthetic joint, subsequent encounter

T84.068S	Wear of articular bearing surface of other internal prosthetic joint, sequela
T84.069A	Wear of articular bearing surface of unspecified internal prosthetic joint, initial encounter
T84.069D	Wear of articular bearing surface of unspecified internal prosthetic joint, subsequent encounter
T84.069S	Wear of articular bearing surface of unspecified internal prosthetic joint, sequela
T84.098A	Other mechanical complication of other internal joint prosthesis, initial encounter
T84.098D	Other mechanical complication of other internal joint prosthesis, subsequent encounter
T84.098S	Other mechanical complication of other internal joint prosthesis, sequela
T84.099A	Other mechanical complication of unspecified internal joint prosthesis, initial encounter
T84.099D	Other mechanical complication of unspecified internal joint prosthesis, subsequent encounter
T84.099S	Other mechanical complication of unspecified internal joint prosthesis, sequela
T84.218D	Breakdown (mechanical) of internal fixation device of other bones, subsequent encounter
T84.218S	Breakdown (mechanical) of internal fixation device of other bones, sequela
T84.228A	Displacement of internal fixation device of other bones, initial encounter
T84.228D	Displacement of internal fixation device of other bones, subsequent encounter
T84.228S	Displacement of internal fixation device of other bones, sequela
T84.298A	Other mechanical complication of internal fixation device of other bones, initial encounter

T84.298D	Other mechanical complication of internal fixation device of other bones, subsequent encounter
T84.298S	Other mechanical complication of internal fixation device of other bones, sequela
T84.310A	Breakdown (mechanical) of electronic bone stimulator, initial encounter
T84.310D	Breakdown (mechanical) of electronic bone stimulator, subsequent encounter
T84.310S	Breakdown (mechanical) of electronic bone stimulator, sequela
T84.318A	Breakdown (mechanical) of other bone devices, implants and grafts, initial encounter
T84.318D	Breakdown (mechanical) of other bone devices, implants and grafts, subsequent encounter
T84.318S	Breakdown (mechanical) of other bone devices, implants and grafts, sequela
T84.320A	Displacement of electronic bone stimulator, initial encounter
T84.320D	Displacement of electronic bone stimulator, subsequent encounter
T84.320S	Displacement of electronic bone stimulator, sequela
T84.328A	Displacement of other bone devices, implants and grafts, initial encounter
T84.328D	Displacement of other bone devices, implants and grafts, subsequent encounter
T84.328S	Displacement of other bone devices, implants and grafts, sequela
T84.390A	Other mechanical complication of electronic bone stimulator, initial encounter
T84.390D	Other mechanical complication of electronic bone stimulator, subsequent encounter
T84.390S	Other mechanical complication of electronic bone stimulator, sequela

T84.398A	Other mechanical complication of other bone devices, implants and grafts, initial encounter
T84.398D	Other mechanical complication of other bone devices, implants and grafts, subsequent encounter
T84.398S	Other mechanical complication of other bone devices, implants and grafts, sequela
T84.410A	Breakdown (mechanical) of muscle and tendon graft, initial encounter
T84.410D	Breakdown (mechanical) of muscle and tendon graft, subsequent encounter
T84.410S	Breakdown (mechanical) of muscle and tendon graft, sequela
T84.418A	Breakdown (mechanical) of other internal orthopedic devices, implants and grafts, initial encounter
T84.418D	Breakdown (mechanical) of other internal orthopedic devices, implants and grafts, subsequent encounter
T84.418S	Breakdown (mechanical) of other internal orthopedic devices, implants and grafts, sequela
T84.420A	Displacement of muscle and tendon graft, initial encounter
T84.420D	Displacement of muscle and tendon graft, subsequent encounter
T84.420S	Displacement of muscle and tendon graft, sequela
T84.428A	Displacement of other internal orthopedic devices, implants and grafts, initial encounter
T84.428D	Displacement of other internal orthopedic devices, implants and grafts, subsequent encounter
T84.428S	Displacement of other internal orthopedic devices, implants and grafts, sequela
T84.490A	Other mechanical complication of muscle and tendon graft, initial encounter
T84.490D	Other mechanical complication of muscle and tendon graft, subsequent encounter

T84.490S	Other mechanical complication of muscle and tendon graft, sequela
T84.498A	Other mechanical complication of other internal orthopedic devices, implants and grafts, initial encounter
T84.498D	Other mechanical complication of other internal orthopedic devices, implants and grafts, subsequent encounter
T84.498S	Other mechanical complication of other internal orthopedic devices, implants and grafts, sequela
T84.50XA	Infection and inflammatory reaction due to unspecified internal joint prosthesis, initial encounter
T84.50XD	Infection and inflammatory reaction due to unspecified internal joint prosthesis, subsequent encounter
T84.50XS	Infection and inflammatory reaction due to unspecified internal joint prosthesis, sequela
T84.59XA	Infection and inflammatory reaction due to other internal joint prosthesis, initial encounter
T84.59XD	Infection and inflammatory reaction due to other internal joint prosthesis, subsequent encounter
T84.59XS	Infection and inflammatory reaction due to other internal joint prosthesis, sequela
T84.60XA	Infection and inflammatory reaction due to internal fixation device of unspecified site, initial encounter
T84.60XD	Infection and inflammatory reaction due to internal fixation device of unspecified site, subsequent encounter
T84.60XS	Infection and inflammatory reaction due to internal fixation device of unspecified site, sequela
T84.619A	Infection and inflammatory reaction due to internal fixation device of unspecified bone of arm, initial encounter
T84.619D	Infection and inflammatory reaction due to internal fixation device of unspecified bone of arm, subsequent encounter
T84.619S	Infection and inflammatory reaction due to internal fixation device of unspecified bone of arm, sequela

T84.69XA	Infection and inflammatory reaction due to internal fixation device of other site, initial encounter
T84.69XD	Infection and inflammatory reaction due to internal fixation device of other site, subsequent encounter
T84.69XS	Infection and inflammatory reaction due to internal fixation device of other site, sequela
T84.7XXA	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.7XXD	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.7XXS	Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts, sequela
T84.81XA	Embolism due to internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.81XD	Embolism due to internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.81XS	Embolism due to internal orthopedic prosthetic devices, implants and grafts, sequela
T84.82XA	Fibrosis due to internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.82XD	Fibrosis due to internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.82XS	Fibrosis due to internal orthopedic prosthetic devices, implants and grafts, sequela
T84.83XA	Hemorrhage due to internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.83XD	Hemorrhage due to internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.83XS	Hemorrhage due to internal orthopedic prosthetic devices, implants and grafts, sequela
T84.84XA	Pain due to internal orthopedic prosthetic devices, implants and grafts, initial encounter

T84.84XD	Pain due to internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.84XS	Pain due to internal orthopedic prosthetic devices, implants and grafts, sequela
T84.86XA	Thrombosis due to internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.86XD	Thrombosis due to internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.86XS	Thrombosis due to internal orthopedic prosthetic devices, implants and grafts, sequela
T84.89XA	Other specified complication of internal orthopedic prosthetic devices, implants and grafts, initial encounter
T84.89XD	Other specified complication of internal orthopedic prosthetic devices, implants and grafts, subsequent encounter
T84.89XS	Other specified complication of internal orthopedic prosthetic devices, implants and grafts, sequela
T84.9XXA	Unspecified complication of internal orthopedic prosthetic device, implant and graft, initial encounter
T84.9XXD	Unspecified complication of internal orthopedic prosthetic device, implant and graft, subsequent encounter
T84.9XXS	Unspecified complication of internal orthopedic prosthetic device, implant and graft, sequela
T84.110A	Breakdown (mechanical) of internal fixation device of right humerus, initial encounter
T84.110D	Breakdown (mechanical) of internal fixation device of right humerus, subsequent encounter
T84.110S	Breakdown (mechanical) of internal fixation device of right humerus, sequela
T84.111A	Breakdown (mechanical) of internal fixation device of left humerus, initial encounter
T84.111D	Breakdown (mechanical) of internal fixation device of left humerus, subsequent encounter

T84.120A	Displacement of internal fixation device of right humerus, initial encounter
T84.120D	Displacement of internal fixation device of right humerus, subsequent encounter
T84.120S	Displacement of internal fixation device of right humerus, sequela
T84.121A	Displacement of internal fixation device of left humerus, initial encounter
T84.121D	Displacement of internal fixation device of left humerus, subsequent encounter
T84.121S	Displacement of internal fixation device of left humerus, sequela
T84.190A	Other mechanical complication of internal fixation device of right humerus, initial encounter
T84.190D	Other mechanical complication of internal fixation device of right humerus, subsequent encounter
T84.190S	Other mechanical complication of internal fixation device of right humerus, sequela
T84.191A	Other mechanical complication of internal fixation device of left humerus, initial encounter
T84.191D	Other mechanical complication of internal fixation device of left humerus, subsequent encounter
T84.191S	Other mechanical complication of internal fixation device of left humerus, sequela
T84.610A	Infection and inflammatory reaction due to internal fixation device of right humerus, initial encounter
T84.610D	Infection and inflammatory reaction due to internal fixation device of right humerus, subsequent encounter
T84.610S	Infection and inflammatory reaction due to internal fixation device of right humerus, sequela
T84.611A	Infection and inflammatory reaction due to internal fixation device of left humerus, initial encounter

T84.611D	Infection and inflammatory reaction due to internal fixation device of left humerus, subsequent encounter
T84.611S	Infection and inflammatory reaction due to internal fixation device of left humerus, sequela
Z96.611	Presence of right artificial shoulder joint
Z96.612	Presence of left artificial shoulder joint

Presentation and Etiology

Causes and Risk Factors

The cause of primary glenohumeral joint osteoarthritis (GJO) is unknown. Risk factors include^{1,2}:

- Age (greater than 60 years)
- Caucasian race
- Previous dislocation
- Previous injury
- Previous surgery
- Early glenoid posterior subluxation
- Posterior labral tears

Clinical Presentation

Glenohumeral joint osteoarthritis (GJO)¹:

- Insidious onset of pain in the shoulder and upper arm
 - Night pain is possible
- Loss of motion; limitations with overhead activities
- Weakness
- Stiffness
- Deformities of the shoulder humeral head or glenoid

Rheumatoid arthritis⁷:

- Insidious onset of pain in the shoulder and upper arm
 - Night pain is possible
- Stiffness (especially in the morning)
- Loss of motion; limitations with overhead activities
- Other joints are typically involved.
- Extra-articular disease manifestations
- Deformities of the shoulder humeral head or glenoid

Typical Physical Exam Findings

Glenohumeral joint osteoarthritis (GJO)¹:

- Shoulder muscle atrophy
- Decreased active and passive range of motion (ROM)
 - Internal rotation loss first; eventually, all planes
- Crepitus
- Joint line tenderness

Rheumatoid arthritis^{7,8}:

- Shoulder muscle atrophy
- Decreased active and passive ROM
- Crepitus

Typical Diagnostic Findings

- Radiography
 - Joint space loss, subchondral sclerosis and osteophytes (bone spurs) in OA⁴
 - Periarticular osteopenia, joint space narrowing, and bone erosions in RA⁷

Care Path Services & Medical Necessity Criteria

Conservative Therapy

Service: Physical Therapy

General Guidelines

- **Units, Frequency, & Duration:**
 - There is no consensus recommendation for therapy units, frequency, or duration.¹
 - Evidence for physical therapy (PT) for glenohumeral joint osteoarthritis (GJO) is scarce.⁵
- **Criteria for Subsequent Requests:** The patient has not met all physical therapy goals.
- **Recommended Clinical Approach:**
 - Physical therapy, in addition to non-narcotic medications, is an integral part of conservative management for GJO.^{1,9}
 - Physical therapy should include shoulder kinetics, stretching, distraction, and range of motion (ROM); aggressive strengthening may exacerbate the condition.⁵
 - Physical therapy is appropriate for rheumatoid arthritis (RA) to maintain or improve ROM.⁸
- **Exclusions:**
 - There is insufficient evidence to support a recommendation for or against any the following for GJO:²
 - Transcutaneous electrical nerve stimulation (TENS)
 - Acupuncture
 - Dry needling
 - Cupping

Medical Necessity Criteria

Indications

- **Physical therapy** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ The patient has **ANY** positive findings from the [presentation](#) list:
 - Insidious onset of pain in the shoulder and upper arm
 - Loss of motion; limitations with overhead activities

- Weakness
- Stiffness
- Other joints are involved
- Extra-articular disease manifestations
- ◆ The patient has **ANY** positive findings from the [physical exam](#) list:
 - Shoulder muscle atrophy
 - Decreased active and passive range of motion (ROM)
 - Crepitus
 - Joint line tenderness
- ◆ Physical therapy is indicated for patients with glenohumeral OA who may not be candidates for surgery, such as **ANY** of the following: ²
 - Young patients in whom implant survivorship is a concern
 - Older patients with medical comorbidities that preclude surgical intervention

Non-Indications

None.

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT) Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
97010	Application of hot or cold packs
97012	Application of mechanical traction
97014	Application of electrical stimulation
97016	Application of vasopneumatic devices
97018	Application of paraffin bath
97022	Application of whirlpool
97024	Application of diathermy
97026	Application of infrared modality
97028	Application of ultraviolet modality
97032	Application of manual electrical stimulation

97033	Application of iontophoresis
97034	Application of contrast baths
97035	Application of ultrasound modality
97036	Application of Hubbard tank
97039	Modality service
97110*	Therapeutic exercises to develop strength and endurance, range of motion and flexibility
97112	Neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and proprioception for sitting and standing activities
97113	Aquatic therapy with therapeutic exercises
97116	Gait training including stair climbing
97124	Massage including effleurage and petrissage; Massage including effleurage and tapotement; Massage including effleurage, petrissage and tapotement; Massage including petrissage and tapotement
97139	Therapeutic procedure
97140	Manual therapy techniques
97150	Group therapeutic procedures
97164	Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient 20 minutes; Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient and family 20 minutes; Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient's family 20 minutes
97530	Direct therapeutic activities with use of dynamic activities to improve functional performance, each 15 minutes
97535	Home management training, direct one-on-one contact, each 15 minutes; Self-care management training, direct one-on-one

	contact, each 15 minutes
97537	Community reintegration training, direct one-on-one contact, each 15 minutes; Work reintegration training, direct one-on-one contact, each 15 minutes
97542	Wheelchair management, each 15 minutes
97545	Work conditioning, initial 2 hours; Work hardening, initial 2 hours
97546	Work conditioning, each additional hour; Work hardening, each additional hour
97750	Physical performance measurement with written report, each 15 minutes; Physical performance test with written report, each 15 minutes
97755	Assistive technology assessment with written report, direct one-on-one contact, each 15 minutes
97760	Initial orthotic management and training with assessment and fitting of lower extremities and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremities, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity, each 15 minutes; Initial orthotic management and training with assessment and fitting of trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of upper and lower extremities and trunk, each 15 minutes
97761	Initial prosthetic training of lower extremities, each 15 minutes; Initial prosthetic training of lower extremity, each 15 minutes Initial prosthetic training of upper and lower extremities, each 15 minutes; Initial prosthetic training of upper extremities, each 15 minutes; Initial prosthetic training of upper extremity, each 15

	minutes
97763	<p>Subsequent orthotic management and training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management and training of lower extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic management and training of lower extremity, each 15 minutes</p> <p>Subsequent orthotic management and training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management and training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management and training of upper extremities, each 15 minutes</p> <p>Subsequent orthotic management and training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic management and training of upper extremity, each 15 minutes</p> <p>Subsequent orthotic management of lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management of lower extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic management of lower extremity, each 15 minutes</p> <p>Subsequent orthotic management of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management of upper extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic management of upper extremities, each 15 minutes</p> <p>Subsequent orthotic management of upper extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic management of upper extremity, each 15 minutes</p> <p>Subsequent orthotic training of lower extremity, each 15 minutes</p> <p>Subsequent orthotic training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic training of upper extremities and trunk,</p>

	<p>each 15 minutes</p> <p>Subsequent orthotic training of upper extremities, each 15 minutes</p> <p>Subsequent orthotic training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic training of upper extremity, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremity, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremity, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremity, each 15 minutes</p> <p>Subsequent prosthetic management of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremity, each 15 minutes</p>
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	<p>each 15 minutes</p> <p>Subsequent prosthetic training of lower extremity, each 15 minutes</p> <p>Subsequent prosthetic training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremity, each 15 minutes</p> <p>Subsequent orthotic management and training of lower extremities, each 15 minutes</p> <p>Subsequent orthotic management of lower extremities, each 15 minutes</p> <p>Subsequent orthotic training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic training of lower extremities, each 15 minutes</p> <p>Subsequent orthotic training of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremities, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremities, each 15 minutes</p> <p>Subsequent prosthetic training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of lower extremities, each 15 minutes</p> <p>Subsequent prosthetic training of lower extremity and trunk, each 15 minutes</p>
97799	Unlisted physical medicine/rehabilitation service or procedure
420	Physical Therapy
421	Physical Therapy: Visit Charge

422	Physical Therapy: Hourly Charge
423	Physical Therapy: Group Rate
424	Physical Therapy: Evaluation/Re-evaluation
429	Physical Therapy: Other Physical Therapy
97163	Evaluation of physical therapy, typically 45 minutes
97161	Evaluation of physical therapy, typically 20 minutes
97162	Evaluation of physical therapy, typically 30 minutes
97168	Re-evaluation of occupational therapy established plan of care, typically 30 minutes
97165	Evaluation of occupational therapy, typically 30 minutes
97166	Evaluation of occupational therapy, typically 45 minutes
97167	Evaluation of occupational therapy established plan of care, typically 60 minutes
G0151	Hhcp-serv of pt,ea 15 min

*Default codes for suggested services

Advanced Imaging

Service: Magnetic Resonance Imaging (MRI)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:**
 - Radiography can diagnose most cases of osteoarthritis and rheumatoid arthritis of the glenohumeral joint; however, it may be negative in early disease.¹
 - MRI may be indicated to assess rotator cuff, articular cartilage, or bony erosions^{2,5}
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **MRI** is considered appropriate if **ANY** of the following is **TRUE**:
- ◆ The radiograph confirms OA or RA of the glenohumeral joint.
 - ◆ The patient is a candidate for arthroplasty, and further imaging is needed for surgical planning.²

Non-Indications

- **MRI** may not be appropriate if **ANY** of the following is **TRUE**:
- ◆ Non-compatible implanted devices
 - ◆ Metallic intraocular foreign bodies
 - ◆ Claustrophobia

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
73219	Magnetic resonance imaging (MRI) of upper arm between shoulder and elbow with contrast material
73220	Magnetic resonance imaging (MRI) of upper arm between shoulder and elbow without contrast material, followed by

	contrast material and further sequences
73221	Magnetic resonance imaging (MRI) of glenohumeral joint without contrast material
73222	Magnetic resonance imaging (MRI) of glenohumeral joint with contrast material
73223	Magnetic resonance imaging (MRI) of glenohumeral joint without contrast material, followed by contrast material and further sequences
23350	Injection of dye for X-ray imaging of shoulder joint
73218	MRI scan of arm

Service: Computed Tomography (CT)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:**
 - Radiography can diagnose most cases of osteoarthritis and rheumatoid arthritis of the glenohumeral joint; however, it may be negative in early disease.¹
 - Glenohumeral joint osteoarthritis (GJO):
 - Preoperative planning with CT imaging can improve surgical implant accuracy; however, evidence to support improved outcomes is lacking.
 - AAOS recommends surgeon discretion for advanced imaging.²
 - Rheumatoid arthritis:
 - CT may be indicated to evaluate bony lesions and glenoid erosion for surgical planning purposes.³
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **CT** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ The patient is a candidate for surgery, and CT is necessary to evaluate the bony pathology and anatomy for surgical planning.⁴

Non-Indications

None.

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
23350	Injection procedure for enhanced computed tomography (CT) arthrography of glenohumeral joint; Injection procedure for enhanced computed tomography (CT) arthrography of shoulder region joint

73200	Computed tomography (CT) of upper extremity without contrast material
73201	CT scan of arm with contrast
73202	CT scan of arm before and after contrast

Non-Surgical Management

Service: Corticosteroid Injections

General Guidelines

- **Units, Frequency, & Duration:**
 - Serial injections are not recommended.
 - There is insufficient literature to support recommendations for units or frequency.
- **Criteria for Subsequent Requests:** Not recommended.
- **Recommended Clinical Approach:**
 - Level 1 or 2 evidence to support intra-articular steroid injections as treatment of glenohumeral arthritis is lacking.^{1,9}
 - Should be used judiciously due to the risk of cartilage damage.
 - Ultrasound guidance significantly improves accuracy.^{10,11}
- **Exclusions:**
 - No consensus; there is mixed evidence on the use of hyaluronic acid injections for the treatment of glenohumeral joint osteoarthritis (GJO).^{2,5}

Medical Necessity Criteria

Indications

- **Corticosteroid injection** is considered appropriate if **ALL** of the following are **TRUE**^{1,9}:
- ◆ The patient has **ANY** positive findings from the [presentation](#) list:
 - Insidious onset of pain in the shoulder and upper arm
 - Loss of motion; limitations with overhead activities
 - Weakness
 - Stiffness
 - Other joints are involved
 - Extra-articular disease manifestations common
 - ◆ The patient has **ANY** positive findings from the [physical exam](#) list:
 - Atrophy of shoulder musculature
 - Decreased active and passive range of motion (ROM)
 - Crepitus
 - Joint line tenderness

Non-Indications

→ **Corticosteroid injection** may not be considered appropriate if **ANY** of the following is **TRUE**⁹:

- ◆ Prosthetic joint
- ◆ Septic arthritis
- ◆ Joint fracture

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
20610	Arthrocentesis, aspiration and/or injection, major joint or bursa (eg, shoulder, hip, knee, subacromial bursa); without ultrasound guidance.

Surgical Management

Service: Arthroscopic Debridement +/- Capsular Release

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** The patient has a different diagnosis.
- **Recommended Clinical Approach:**
 - Non-implant surgical intervention should be used with caution; consider using this procedure in young patients who desire a non-arthroplasty option after conservative management fails.²
 - Arthroscopic debridement is associated with poor patient satisfaction and progresses to arthroplasty in some studies.²
 - However, it may successfully delay replacement and allow the patient an earlier return to activity/work.⁵
 - Recommended for mild to moderate arthritis of the joint or minimal to no subluxation of the joint.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **Arthroscopic debridement** is considered appropriate if **ALL** of the following are **TRUE**:
- ◆ Failed conservative treatment (corticosteroid injections, anti-inflammatory medication)^{5,12}
 - ◆ Mild glenohumeral joint osteoarthritis (GJO) with minimal osteophyte formation and subchondral sclerosis.⁵

Non-Indications

- **Arthroscopic debridement** is not considered appropriate if **ANY** of the following is **TRUE**¹²:
- ◆ Severe deformity
 - ◆ Rotator cuff arthropathy
 - ◆ Significant joint subluxation
- **Arthroscopic debridement** may not be considered appropriate if **ANY** of the following is **TRUE**¹²:
- ◆ There is less than 2mm glenohumeral joint space.

- ◆ Severely limited passive ROM
- ◆ Large osteophytes
- ◆ Bipolar chondral lesions
- ◆ Kellgren-Lawrence grade III-IV OA
- ◆ Walch B or C glenoid

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
29822	Surgical arthroscopy of shoulder with debridement Surgical arthroscopy of shoulder with limited debridement
29823	Surgical arthroscopy of shoulder with debridement Surgical arthroscopy of shoulder with extensive debridement
29999	Joint procedure using an endoscope
29805	Diagnostic examination of shoulder using an endoscope
S2300	Arthroscopy, shoulder, surgical

Service: Total Shoulder Arthroplasty (Anatomic)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:**
 - Total shoulder arthroplasty (TSA) is considered the standard treatment for diffuse glenohumeral joint osteoarthritis (GJO).⁵
 - TSA is associated with better pain and functional outcomes when compared with hemiarthroplasty.²
 - AAOS guidelines indicate anatomic TSA for mild to moderate bone loss. A reverse TSA is acceptable for treating GJO in patients with excessive glenoid bone loss or rotator cuff dysfunction.²
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **Total shoulder arthroplasty** is considered medically appropriate if **ALL** of the following are **TRUE**¹³:
- ◆ The patient has pain and loss of motion.
 - ◆ Radiographs are consistent with end-stage arthritis.

Non-Indications

- **Total shoulder arthroplasty** is considered medically appropriate if **ANY** of the following is **TRUE**¹³:
- ◆ Active joint infection
 - ◆ Systemic infection
 - ◆ Irreparable rotator cuff tear

Site of Service Criteria

Outpatient or inpatient, depending on the surgeon's discretion.²

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
23472	Total arthroplasty of glenohumeral joint Total arthroplasty of glenohumeral joint with glenoid and proximal humeral replacement

Service: Reverse Shoulder Arthroplasty

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach³:**
 - Indications recently expanded for reverse shoulder arthroplasty.
 - It does not require a functional rotator cuff.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **Reverse shoulder arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:
- ◆ Rheumatoid arthritis
 - ◆ Osteoarthritis with posterior glenohumeral subluxation
 - ◆ Reconstruction post tumor resection
 - ◆ Failed arthroplasty
 - ◆ Fracture sequelae (malunion or fracture nonunion)
 - ◆ Failed rotator cuff repair, deemed irreparable.^{3,5}
 - ◆ Severe arthritis with glenoid bone loss or glenohumeral instability
 - ◆ Rotator cuff tear arthropathy
 - ◆ Massive irreparable rotator cuff tear

Non-Indications

- **Reverse shoulder arthroplasty** is considered appropriate if **ANY** of the following is **TRUE¹³**:
- ◆ Active joint infection
 - ◆ Systemic infection
- **Reverse shoulder arthroplasty** may not be considered appropriate if **ANY** of the following is **TRUE³**:
- ◆ Axillary nerve damage
 - ◆ Absent deltoid motor function
 - ◆ Neuropathic joint

Site of Service Criteria

Outpatient or inpatient, depending on the surgeon's discretion.²

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
23472	Total arthroplasty of glenohumeral joint; Total arthroplasty of glenohumeral joint with glenoid and proximal humeral replacement

Service: Hemiarthroplasty

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Patients will have better pain relief outcomes with total shoulder arthroplasties (TSA) compared to hemiarthroplasties. In some cases, the surgeon will determine what is the best procedure for the patient during surgery.¹⁴
- **Exclusions:** None.

Medical Necessity Criteria

Indications

→ **Hemiarthroplasty** is considered appropriate if **ANY** of the following is

TRUE:

- ◆ Cuff tear arthropathy
- ◆ Severe shoulder arthritis
- ◆ Shoulder arthritis of the head of the humerus only and the glenoid has intact surface cartilage¹⁴
- ◆ Avascular necrosis of the humeral head

Non-Indications

None.

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
23470	Hemiarthroplasty of glenohumeral joint

Service: Revision of Shoulder Arthroplasty

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** If a patient had a joint arthroplasty and presents with pain due to loosening, failure of the prosthesis, instability, or infection, revision surgery may be indicated.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

→ **Revision of shoulder arthroplasty** is considered appropriate if **ALL** of the following are **TRUE²**:

- ◆ The patient has **ANY** of the following findings:
 - Pain
 - Infection
 - Instability of the components or prosthetic dislocation
 - Loosening of the prosthesis
 - Failure of the prosthesis
 - Periprosthetic fracture
 - Rotator cuff tear with previous arthroplasty
- ◆ The patient has **ANY** of the following advanced imaging or radiography findings¹⁵:
 - Loosening of the prosthesis
 - Failure of the prosthesis
 - Normal (no findings) with the presence of debilitating pain

Non-Indications

None.

Site of Service Criteria

Inpatient or outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
23473	Revision of glenoid component of total shoulder arthroplasty Revision of humeral component of total shoulder arthroplasty

	Revision of glenoid component of total shoulder arthroplasty with allograft Revision of humeral component of total shoulder arthroplasty with allograft
23474	Revision of glenoid and humeral components of total shoulder arthroplasty Revision of glenoid and humeral components of total shoulder arthroplasty with allograft
23334	Removal of prosthesis from glenoid component of shoulder Removal of prosthesis from glenoid component of shoulder with debridement Removal of prosthesis from glenoid component of shoulder with debridement and synovectomy Removal of prosthesis from glenoid component of shoulder with synovectomy Removal of prosthesis from humeral component of shoulder Removal of prosthesis from humeral component of shoulder with debridement Removal of prosthesis from humeral component of shoulder with debridement and synovectomy Removal of prosthesis from humeral component of shoulder with synovectomy
23335	Removal of humeral and glenoid components of complete shoulder prosthesis Removal of humeral and glenoid components of complete shoulder prosthesis with debridement Removal of humeral and glenoid components of complete shoulder prosthesis with debridement and synovectomy Removal of humeral and glenoid components of complete shoulder prosthesis with synovectomy
20680	Removal of deep bone implant

Surgical Risk Factors

Patient Medical Risk Stratification

Patient Risk Score	Patient Characteristic	Min Range	Max Range	Guidance
1- Very Low Risk	No known medical problems			
2- Low Risk	Hypertension		180/110 mm Hg	
2- Low Risk	Asthma	peak flow >80% of predicted or personal best value		
2- Low Risk	Prior history of alcohol abuse			Screen for liver disease and malnutrition
2- Low Risk	Prior history of tobacco use			
3- Intermediate Risk	Asthma	peak flow <80% of predicted or personal best value		
3- Intermediate Risk	Active alcohol abuse			
3- Intermediate Risk	Age	65	75	
3- Intermediate Risk	History of treated, stable coronary artery disease (CAD)			
3- Intermediate Risk	Stable atrial fibrillation			
3- Intermediate Risk	Diabetes mellitus	HbA1C >7%		
3- Intermediate Risk	Morbid obesity	BMI 30	BMI 40	
3- Intermediate Risk	Anemia	hemoglobin <11 (females), <12 (males)		Workup to identify etiology
3- Intermediate Risk	HIV	CD4 <200 cells/mm3		Get clearance from HIV specialist

3- Intermediate Risk	Rheumatologic disease			Preoperative consultation with rheumatologist re: perioperative medication management
3- Intermediate Risk	Peripheral vascular disease or history of peripheral vascular bypass	ankle-brachial pressure index (ABPI) <0.9		Preoperative consultation with vascular surgeon
3- Intermediate Risk	History of venous thromboembolism (VTE)			
3- Intermediate Risk	Well-controlled obstructive sleep apnea			
3- Intermediate Risk	Malnutrition	transferrin <200 mg/dL albumin <3.5 g/dL prealbumin <22.5 mg/dL total lymphocyte count <1200-1500 cell/mm ³ BMI <18		Preoperative consultation with nutritionist
3- Intermediate Risk	Active tobacco Use			Enroll patient in smoking cessation program
4- High Risk	Diabetes mellitus with complications	HbA1c >8%		
4- High Risk	Age	76	85	
4- High Risk	Oxygen dependent pulmonary disease			
4- High Risk	Sickle cell anemia			
4- High Risk	Obesity	BMI 40		
4- High Risk	Cirrhosis, history of hepatic decompensation or variceal bleeding			

4- High Risk	Impaired cognition; dementia			
4- High Risk	Compensated CHF			
4- High Risk	Cerebrovascular disease			
4- High Risk	Uncontrolled or suspected obstructive sleep apnea (OSA)			
4- High Risk	Renal insufficiency	serum creatinine >1.5 mg/dL or creatinine clearance <100 mL/min		
4- High Risk	Opioid dependence			
4- High Risk	End Stage Liver Disease			
4- High Risk	Uncontrolled Seizure Disorder			
4- High Risk	History of Malignant Hyperthermia			
5- Very High Risk	Cardiovascular: unstable angina, recent myocardial infarction (60 days), uncontrolled atrial fibrillation or other high-grade abnormal rhythm, severe valvular disease, decompensated heart failure			
5- Very High Risk	Primary pulmonary hypertension			Preoperative consultation with pulmonologist warranted
5- Very High Risk	Cirrhosis or severe liver disease, history of hepatic decompensation or variceal bleeding			
5- Very High Risk	Severe frailty, dependence for ADLs, or history of 3 or more falls in last 6 mos			
5- Very High Risk	Obesity		BMI >50	
5- Very High Risk	Age		>85	

5- Very High Risk	History of VTE with CI to anticoagulation, failure of anticoagulation, cessation of anticoagulation therapy secondary to bleeding			Preoperative consultation with hematologist or internist
5- Very High Risk	Renal failure requiring dialysis			
5- Very High Risk	Immunosuppression			
5- Very High Risk	Chronic Pain			

Postoperative Care

Service: Physical Therapy

General Guidelines

- **Units, Frequency, & Duration:**
 - There is no evidence to support a recommendation for units or frequency; rehab protocol comparisons are lacking.^{2,16}
 - 3 months duration is typically appropriate.
- **Criteria for Subsequent Requests:** The patient failed to meet physical therapy goals.
- **Recommended Clinical Approach:**
 - Rehabilitation should begin immediately postoperatively and should be tailored to the patient (at the surgeon’s discretion).^{8,16}
 - Begin with mobilization; phased progression is recommended.^{8,16}
 - The late phase is 12–24 weeks.^{8,16}
- **Exclusions:** None.

Medical Necessity Criteria

Indications

→ **Physical therapy** is considered appropriate if **ALL** of the following are **TRUE**:

- ◆ The patient underwent surgery.

Non-Indications

None.

Site of Service Criteria

Inpatient or outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
97010	Application of hot or cold packs
97012	Application of mechanical traction
97014	Application of electrical stimulation

97016	Application of vasopneumatic devices
97018	Application of paraffin bath
97022	Application of whirlpool
97024	Application of diathermy
97026	Application of infrared modality
97028	Application of ultraviolet modality
97032	Application of manual electrical stimulation
97033	Application of iontophoresis
97034	Application of contrast baths
97035	Application of ultrasound modality
97036	Application of Hubbard tank
97039	Modality service
97110*	Therapeutic exercises to develop strength and endurance, range of motion and flexibility
97112	Neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and proprioception for sitting and standing activities
97113	Aquatic therapy with therapeutic exercises
97116	Gait training including stair climbing
97124	Massage including effleurage and petrissage; Massage including effleurage and tapotement; Massage including effleurage, petrissage and tapotement; Massage including petrissage and tapotement
97139	Therapeutic procedure
97140	Manual therapy techniques
97150	Group therapeutic procedures
97164	Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient 20 minutes;

	Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient and family 20 minutes; Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient's family 20 minutes
97530	Direct therapeutic activities with use of dynamic activities to improve functional performance, each 15 minutes
97535	Home management training, direct one-on-one contact, each 15 minutes; Self-care management training, direct one-on-one contact, each 15 minutes
97537	Community reintegration training, direct one-on-one contact, each 15 minutes; Work reintegration training, direct one-on-one contact, each 15 minutes
97542	Wheelchair management, each 15 minutes
97545	Work conditioning, initial 2 hours; Work hardening, initial 2 hours
97546	Work conditioning, each additional hour; Work hardening, each additional hour
97750	Physical performance measurement with written report, each 15 minutes; Physical performance test with written report, each 15 minutes
97755	Assistive technology assessment with written report, direct one-on-one contact, each 15 minutes
97760	Initial orthotic management and training with assessment and fitting of lower extremities and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremities, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity, each 15 minutes; Initial orthotic management and training with assessment and fitting of trunk, each 15 minutes; Initial orthotic management and

	training with assessment and fitting of upper and lower extremities and trunk, each 15 minutes
97761	Initial prosthetic training of lower extremities, each 15 minutes; Initial prosthetic training of lower extremity, each 15 minutes Initial prosthetic training of upper and lower extremities, each 15 minutes; Initial prosthetic training of upper extremities, each 15 minutes; Initial prosthetic training of upper extremity, each 15 minutes
97763	Subsequent orthotic management and training of lower extremities and trunk, each 15 minutes Subsequent orthotic management and training of lower extremity and trunk, each 15 minutes Subsequent orthotic management and training of lower extremity, each 15 minutes Subsequent orthotic management and training of upper and lower extremities and trunk, each 15 minutes Subsequent orthotic management and training of upper extremities and trunk, each 15 minutes Subsequent orthotic management and training of upper extremities, each 15 minutes Subsequent orthotic management and training of upper extremity and trunk, each 15 minutes Subsequent orthotic management and training of upper extremity, each 15 minutes Subsequent orthotic management of lower extremities and trunk, each 15 minutes Subsequent orthotic management of lower extremity and trunk, each 15 minutes Subsequent orthotic management of lower extremity, each 15 minutes Subsequent orthotic management of upper and lower extremities and trunk, each 15 minutes Subsequent orthotic management of upper extremities and trunk, each 15 minutes Subsequent orthotic management of upper extremities,

	<p>each 15 minutes</p> <p>Subsequent orthotic management of upper extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic management of upper extremity, each 15 minutes</p> <p>Subsequent orthotic training of lower extremity, each 15 minutes</p> <p>Subsequent orthotic training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic training of upper extremities, each 15 minutes</p> <p>Subsequent orthotic training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent orthotic training of upper extremity, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremity, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of upper extremity, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremity,</p>
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	<p>each 15 minutes</p> <p>Subsequent prosthetic management of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management of upper extremity, each 15 minutes</p> <p>Subsequent prosthetic training of lower extremity, each 15 minutes</p> <p>Subsequent prosthetic training of upper and lower extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremities and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremities, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic training of upper extremity, each 15 minutes</p> <p>Subsequent orthotic management and training of lower extremities, each 15 minutes</p> <p>Subsequent orthotic management of lower extremities, each 15 minutes</p> <p>Subsequent orthotic training of lower extremities and trunk, each 15 minutes</p> <p>Subsequent orthotic training of lower extremities, each 15 minutes</p> <p>Subsequent orthotic training of lower extremity and trunk, each 15 minutes</p> <p>Subsequent prosthetic management and training of lower extremities, each 15 minutes</p> <p>Subsequent prosthetic management of lower extremities, each 15 minutes</p> <p>Subsequent prosthetic training of lower extremities and</p>
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	trunk, each 15 minutes Subsequent prosthetic training of lower extremities, each 15 minutes Subsequent prosthetic training of lower extremity and trunk, each 15 minutes
97799	Unlisted physical medicine/rehabilitation service or procedure
420	Physical Therapy
421	Physical Therapy: Visit Charge
422	Physical Therapy: Hourly Charge
423	Physical Therapy: Group Rate
424	Physical Therapy: Evaluation/Re-evaluation
429	Physical Therapy: Other Physical Therapy
97163	Evaluation of physical therapy, typically 45 minutes
97161	Evaluation of physical therapy, typically 20 minutes
97162	Evaluation of physical therapy, typically 30 minutes
97168	Re-evaluation of occupational therapy established plan of care, typically 30 minutes
97165	Evaluation of occupational therapy, typically 30 minutes
97166	Evaluation of occupational therapy, typically 45 minutes
97167	Evaluation of occupational therapy established plan of care, typically 60 minutes
G0151	Hhcp-serv of pt,ea 15 min

*Default codes for suggested services

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Clinical Guideline Revision History/Information

Original Date: September 1, 2020	
Review History	
November 5th, 2021 (V2.0)	Reviewing Physician: Dr. Edwin Spencer Approving Physician: Dr. Brian Covino
December 29, 2022 (V3.0)	Reviewing Physician: Dr. Edwin Spencer Approving Physician: Dr. Traci Granston