General

Guideline Title

Shoulder conditions diagnosis and treatment guideline.

Bibliographic Source(s)

Washington State Department of Labor and Industries. Shoulder conditions diagnosis and treatment guideline. Olympia (WA): Washington State Department of Labor and Industries; 2013. 28 p. [72 references]

Guideline Status

This is the current release of the guideline.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- December 14, 2016 – General anesthetic and sedation drugs: The U.S. Food and Drug Administration (FDA) is warning that repeated or lengthy use of general anesthetic and sedation drugs during surgeries or procedures in children younger than 3 years or in pregnant women during their third trimester may affect the development of children's brains. Consistent with animal studies, recent human studies suggest that a single, relatively short exposure to general anesthetic and sedation drugs in infants or toddlers is unlikely to have negative effects on behavior or learning. However, further research is needed to fully characterize how early life anesthetic exposure affects children's brain development.

Recommendations

Major Recommendations

Criteria for Shoulder Surgery

<table>
<thead>
<tr>
<th>A request may be appropriate for</th>
<th>If the patient has</th>
<th>AND the diagnosis is supported by these clinical findings:</th>
<th>AND this has been done (if recommended)</th>
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</table>
### Surgical Procedure

#### Diagnosis

<table>
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<tr>
<th>Diagnosis</th>
<th>Subjective</th>
<th>Objective</th>
<th>Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute full-thickness rotator cuff tear</td>
<td>Report of an acute traumatic injury within 3 months of seeking care&lt;br&gt;AND&lt;br&gt;Shoulder pain: With movement and/or at night</td>
<td>Patient will usually have weakness with one or more of the following:&lt;br&gt;- Forward elevation&lt;br&gt;- Internal/external rotation&lt;br&gt;- Abduction testing</td>
<td>Conventional x-rays, AP, and true lateral or axillary view&lt;br&gt;AND&lt;br&gt;MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear&lt;br&gt;Routine use of contrast imaging is not indicated</td>
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<tr>
<td>Partial thickness rotator cuff tear</td>
<td>Pain with active arc motion 90°–130°&lt;br&gt;AND&lt;br&gt;Tenderness over rotator cuff&lt;br&gt;AND&lt;br&gt;Positive impingement sign</td>
<td>Weak or painful abduction&lt;br&gt;AND&lt;br&gt;MRI, ultrasound, or x-ray arthrogram shows a partial thickness rotator cuff tear&lt;br&gt;Routine use of contrast imaging is not indicated</td>
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<tr>
<td>Chronic or degenerative full-thickness rotator cuff tear</td>
<td>Gradual onset of shoulder pain without a traumatic event&lt;br&gt;OR&lt;br&gt;Minor trauma; night pain</td>
<td>Patient will usually have weakness with one or more of the following:&lt;br&gt;- Forward elevation&lt;br&gt;- Internal/external rotation&lt;br&gt;- Abduction testing</td>
<td>Conventional x-rays, AP, and true lateral or axillary view&lt;br&gt;AND&lt;br&gt;MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear&lt;br&gt;Routine use of contrast imaging is not indicated</td>
</tr>
<tr>
<td>Recurring full thickness tear</td>
<td>1. New traumatic injury with good function prior to injury</td>
<td>Patient may have weakness with forward elevation, internal/external rotation, and/or abduction testing</td>
<td>Conventional x-rays, AP, and true lateral or axillary view&lt;br&gt;AND&lt;br&gt;MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear&lt;br&gt;Routine use of contrast imaging is not indicated</td>
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</tbody>
</table>

### Non-operative Care

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Note</th>
<th>Care</th>
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<tbody>
<tr>
<td>Rotator cuff tear repair</td>
<td>The use of allografts and xenografts in rotator cuff tear repair is not covered.</td>
<td>Conservative care* required for at least 6 weeks, then: If tear is &gt;50% of the tendon thickness, may consider surgery; If &lt;50% thickness, do 6 more weeks conservative care</td>
</tr>
<tr>
<td>Chronic or degenerative full-thickness rotator cuff tear</td>
<td>New traumatic injury with good function prior to injury</td>
<td>Conservative care*, for at least 6 weeks If no improvement after 6 weeks, and tear is repairable, surgery may be considered</td>
</tr>
</tbody>
</table>

### Additional Information

- One request may be appropriate for Rotator cuff tear repair.
- A request may be appropriate for Rotator cuff tear repair after previous rotator cuff surgery.
- If the patient has been done (if recommended).

### Notes

- Note: The use of allografts and xenografts in rotator cuff tear repair is not covered.
- Note: Distal clavicle resection as a routine part of acute rotator cuff tear repair is not covered.

### Additional Notes

- Smoking/nicotine use is a strong relative contraindication for rotator cuff surgery.
<table>
<thead>
<tr>
<th>Procedure</th>
<th>If the patient has</th>
<th>AND the diagnosis is supported by these clinical findings:</th>
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<tbody>
<tr>
<td>2. 2nd and subsequent revisions</td>
<td>Recurring full thickness tear</td>
<td>Patient may have weakness with forward elevation, internal/external rotation, and/or abduction testing</td>
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<tr>
<td>Revision surgery is not covered in the presence of a massive rotator cuff tear, as defined by one or more of the following:</td>
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<td>Conventional x-rays, AP, and true lateral or axillary view</td>
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<td>a. &gt;3 cm of retraction</td>
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<td>AND MRI, ultrasound, or x-ray arthrogram reveals a full thickness rotator cuff tear</td>
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<td>b. Severe rotator cuff muscle atrophy</td>
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<td>Routine use of contrast imaging is not indicated</td>
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<tr>
<td>c. Severe fatty infiltration</td>
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<td>Second revision: Conservative care* for 6 weeks is required; if no improvement, surgery may be considered</td>
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<tr>
<td>Partial claviculectomy</td>
<td>Arthritis of AC joint</td>
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<tr>
<td>(includes Mumford procedure)</td>
<td>Pain at AC joint; aggravation of pain with shoulder motion</td>
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<tr>
<td>Not authorized as a part of acute rotator cuff repair</td>
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<td>Note: Mumford procedure done alone must meet all these criteria. Mumford as an add-on to any other shoulder surgery must also meet all diagnostic criteria preoperatively. Intraoperative visualization of AC joint, in the absence of radiographic findings, is not a sufficient finding to authorize the claviculectomy.</td>
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<tr>
<td>Isolated subacromial decompression with or without acromioplasty</td>
<td>Subacromial impingement syndrome</td>
<td>Pain with active elevation</td>
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<td>Generalized shoulder pain</td>
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<td>A request may be appropriate for</td>
<td>If the patient has</td>
<td>AND the diagnosis is supported by these clinical findings:</td>
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<tr>
<td>Debridement of calcific tendinitis</td>
<td>Calcific tendinitis</td>
<td>Generalized shoulder pain</td>
</tr>
<tr>
<td>Open treatment of acute acromioclavicular dislocation</td>
<td>Shoulder AC joint separation</td>
<td>Pain with marked functional difficulty</td>
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<tr>
<td>Note: Surgery for acute types I and II AC joint dislocations is not covered.</td>
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<tr>
<td>Repair, debridement, or biceps tenodesis for labral lesion, including SLAP tears</td>
<td>Labral tears without instability (including SLAP tears)</td>
<td>Traumatic event reported or an occupation with significant overhead activity AND Pain worse with motion and active elevation</td>
</tr>
<tr>
<td>Capsulorrhaphy (Bankart procedure)</td>
<td>Glenohumeral instability</td>
<td>History of a dislocation that inhibit activities of daily living</td>
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<td>Positive apprehension/relocation test AND MRI demonstrates one of the following:</td>
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<tr>
<td></td>
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<td>a. Bankart/labral lesion</td>
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<td>b. Hill Sachs lesion</td>
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<td></td>
<td></td>
<td>c. Capsular tear</td>
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<tr>
<td>A request may be appropriate for</td>
<td>If the patient has</td>
<td>AND the diagnosis is supported by these clinical findings:</td>
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<td>Tenodesis or tenotomy of long head of biceps</td>
<td>Partial biceps tear, biceps instability from the biceps groove, proximal biceps enlargement that inhibits gliding in the biceps groove, complete tear of the proximal biceps tendon</td>
<td>Anterior shoulder pain, weakness and deformity</td>
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<tr>
<td>Total/hemi shoulder arthroplasty</td>
<td>Severe proximal humerus fracture with; post traumatic arthritis, post traumatic avascular necrosis OR Comminuted fractures of proximal humerus</td>
<td>Pain with ROM, history of work related fracture</td>
</tr>
<tr>
<td>Reverse total shoulder arthroplasty</td>
<td>Rotator cuff arthropathy OR Severe proximal humerus fractures</td>
<td>Pain, weakness AND History of work related rotator cuff tear</td>
</tr>
<tr>
<td>Manipulation under anesthesia/arthroscopic capsular release</td>
<td>Idiopathic adhesive capsulitis, postoperative adhesive capsulitis</td>
<td>Pain, loss of motion</td>
</tr>
<tr>
<td>Diagnostic arthroscopy</td>
<td>Arthroscopy for diagnostic purposes</td>
<td>Diagnostic arthroscopy is not covered.</td>
</tr>
</tbody>
</table>

*Conservative care should include at least active assisted range of motion and home-based exercises.

Abbreviations: AC, acromioclavicular; AP, anteroposterior; MRI, magnetic resonance imaging; PT, physical therapy; ROM, range of motion; SLAP, superior labral tear from anterior to posterior

Clinical Algorithm(s)
None provided

Scope
Disease/Condition(s)
Acute and chronic work-related shoulder dysfunctions

Guideline Category
Diagnosis
Evaluation
Management
Rehabilitation
Treatment

Clinical Specialty
Anesthesiology
Emergency Medicine
Family Practice
Geriatrics
Internal Medicine
Nursing
Orthopedic Surgery
Physical Medicine and Rehabilitation
Sports Medicine
Surgery

Intended Users
Advanced Practice Nurses
Chiropractors
Health Care Providers
Health Plans
Managed Care Organizations
Nurses
Physical Therapists
Physician Assistants
Utilization Management

Guideline Objective(s)
• To provide a tool for utilization review staff to appropriately authorize shoulder surgery for injured workers, and to guide health care providers in the appropriate and allowable treatment for shoulder injuries for injured workers covered by the Washington State workers' compensation system
• To serve as an educational resource for health care providers who treat injured workers in the Washington workers' compensation system under Title 51 Revised Code of Washington (RCW) and as review criteria for the department's utilization review team to help ensure treatment of shoulder injuries is of the highest quality
• To provide standards that ensure a uniformly high quality of care for injured workers in Washington State

Target Population
Injured workers with acute and chronic shoulder dysfunctions

Interventions and Practices Considered

Diagnosis/Evaluation
1. History and clinical exam, including tests such as labral loading test and apprehension/relocation test
2. Diagnostic imaging

Treatment/Management/Rehabilitation
1. Conservative treatment
   • Non-steroidal anti-inflammatory drug (NSAID) medications and acetaminophen
   • Brief rest and immobilization (less than 4 days)
   • Unloaded movement and manual interventions
   • Therapeutic exercise and mobilization
   • Strengthening exercise
   • Corticosteroid injections
   • Ergonomic interventions
2. Surgical treatment
   • Rotator cuff repair
   • Revision rotator cuff repair
   • Partial claviculectomy (includes Mumford procedure)
   • Isolated subacromial decompression with or without acromioplasty
   • Debridement of calcific tendinitis
   • Open treatment of acute acromioclavicular dislocation
   • Repair, debridement, or biceps tenodesis for labral lesion, including superior labral tear from anterior to posterior (SLAP) tears
   • Capsulorrhaphy (Bankart procedure)
   • Tenodesis or tenotomy of long head of biceps
   • Total/hemi shoulder arthroplasty
   • Reverse total shoulder arthroplasty
   • Manipulation under anesthesia/arthroscopic capsular release

Note: Diagnostic arthroscopy is not currently accepted as a viable treatment option. The following treatments were considered but are not authorized: allografts or xenografts in rotator cuff tear repair; distal clavicle excision as a routine part of rotator cuff repair.

Major Outcomes Considered
• Functional improvement of shoulder
• Pain relief
• Return to work
• Recurrent instability rate
Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The bulk of the literature search and review was conducted from November 2012 to March 2013. Additional searches were conducted as requested by the Industrial Insurance Medical Advisory Committee Subcommittee members. Search results were limited to human adults only and English only and in some cases filtered to studies published in the last 10 years.

PubMed was the main database searched for peer-reviewed articles. The following keywords were used in PubMed: shoulder surgery and workers compensation, rotator cuff tear repair and workers compensation, rotator cuff tear repair, acromioclavicular dislocation treatment, long head of the biceps, tenodesis of biceps, diagnostic arthroscopy, bankart repair, clavicular fractures, recurrent dislocation treatment, subacromial decompression and rotator cuff repair, SLAP tear repair, partial rotator cuff tear repair and treatment, shoulder injury and imaging, rotator cuff tears and imaging, SLAP tears and imaging, shoulder injury and work relatedness, conservative treatment and shoulder injury.

Additional citation tracking was also performed by department staff for potentially relevant studies not initially retrieved from the electronic database.

Number of Source Documents

319 abstracts were reviewed, 129 full texts reviewed and 71 cited in this guideline.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus (Committee)

Weighting According to a Rating Scheme (Scheme Not Given)

Rating Scheme for the Strength of the Evidence


Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

A systematic review and summary of the relevant peer reviewed medical literature is done and is presented to the subcommittee for their review. Claim and billing data from Labor & Industries may also be reviewed.

Methods Used to Formulate the Recommendations

Expert Consensus
Description of Methods Used to Formulate the Recommendations

The process for guideline development is contained in a separate document, titled Medical Treatment Guidelines in Washington Workers’ Compensation, June 2010 (see the "Availability of Companion Documents" field). The process can be summarized as follows:

1. A subcommittee of the Industrial Insurance Medical Advisory Committee (IIMAC) was formed with practicing health care providers, including physicians, a physical therapist, and professional utilization review staff. The subcommittee met 5 times between February and October 2013.
2. A systematic review and summary of the relevant peer-reviewed medical literature was done and presented to the subcommittee for their review. Claim and billing data from Labor and Industries were also reviewed.
3. Drafts of the guideline were formulated and reviewed and modified by the subcommittee members.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

- After the full advisory committee has given their input and any recommended changes are made, the third draft guideline is posted on the web and distributed via a provider listserv for public review and comment.
- Once all public comments are received and reviewed, responses are provided by the subcommittee. Both comments and responses are posted on the web.
- The subcommittee may make further revisions to the draft guideline based on public input and any other information they have received. This then results in a fourth draft.
- The fourth draft is presented to the full advisory committee in an open public meeting. Oral comments are invited from the public, and the full committee may recommend further changes, potentially creating a fifth and final draft.
- Once the full committee makes the advisory recommendation to adopt the guideline, it becomes final and is again posted on the web and distributed via the provider listserv.
- Labor & Industries (L&I) then posts on the web a Provider Bulletin announcing the new or revised guideline and distributes it via the provider listserv.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

This guideline was based on the weight of the best available clinical and scientific evidence from a systematic review of the literature and on a consensus of expert opinion.

Benefits/Harms of Implementing the Guideline Recommendations
Potential Benefits

- Appropriate authorization of shoulder surgeries by the utilization review team and claim adjudicators, leading to better outcomes for workers with shoulder injuries.
- One anticipated benefit is decreasing surgical procedures that are unnecessary to the health of the worker, such as distal claviculectomies routinely done with rotator cuff repairs. The diagnostic criteria will help ensure that surgery is performed when there is clear evidence that it will be of benefit.

Potential Harms

Care must be exercised when giving a corticosteroid injection to a partial rotator cuff tear, as this may lead to tear extension. Because corticosteroid use is associated with side effects such as weakening of connective tissue, no more than 3 injections are recommended under one claim for the shoulder, 4 injections per lifetime.

Contraindications

- Smoking/nicotine use is a strong relative contraindication for rotator cuff surgery.
-Revision rotator cuff surgery should not be done if a patient has a massive rotator cuff tear (i.e., tears >3 cm or with severe fatty infiltration).

Qualifying Statements

In order for a shoulder condition to be allowed as an occupational disease, the provider must document that the work exposures created a risk of contracting or worsening the condition relative to the risks in everyday life, on a more-probable-than-not basis.

Implementation of the Guideline

Description of Implementation Strategy

Most guidelines are implemented within the utilization review (UR) program. Labor and Industries (L&I) guidelines have priority over other proprietary guidelines and criteria that may exist. Where L&I guidelines are not available, proprietary ones may be used. Reviewers apply each guideline as a standard for the majority of requests in the Washington workers' compensation program. For the minority of workers who appear to fall outside of the guideline and whose complexity of clinical findings exceeds the specificity of the guideline, further review by a physician is conducted.

When a surgical procedure is requested for a patient who meets the guideline criteria, the reviewer will recommend approval to the claim manager. If the criteria are not met, the request will be referred to a physician consultant who will review the patient's file, offer to discuss the case with the requesting physician, and make a recommendation to the claim manager. The flexibility built into this decision making process is important in two ways. First, it enables the Washington State Industrial Insurance Medical Advisory Committee (IIMAC) to develop surgical indications fairly quickly. Second, it plays a major role in legitimizing the work of the subcommittee in the eyes of practicing physicians in Washington.

Completed guidelines will be communicated to practicing physicians via L&I's website and through its provider listserv (http://www.lni.wa.gov/Main/Listservs/Provider.asp). Education and training will be provided to reviewers and staff to ensure their proper application within the UR program. Where possible, continuing medical education (CME) credits may be offered.
Implementation Tools
Chart Documentation/Checklists/Forms

For information about availability, see the Availability of Companion Documents and Patient Resources fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need
Getting Better
Living with Illness
Staying Healthy

IOM Domain
Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation
Not applicable: The guideline was not adapted from another source.

Date Released
2013

Guideline Developer(s)
Washington State Department of Labor and Industries - State/Local Government Agency [U.S.]

Source(s) of Funding
Washington State Department of Labor and Industries

Guideline Committee
Labor and Industries' Industrial Insurance Medical Advisory Committee (IIMAC), Subcommittee on Shoulder Conditions
Composition of Group That Authored the Guideline

*Industrial Insurance Medical Advisory Committee (IIMAC) Committee Members: Andrew Friedman, MD; Chris Howe, MD (Chair); Gerald Yorioka, MD; Karen Nilson, MD; Kirk Harmon, MD*

*Subcommittee Clinical Experts: Michael Codsi, MD; Eric Fletcher, PT; Laura Rachel Kaufman, MD*

*Consultants: Ken O’Bara, MD, Qualis Health; Shari Fowler-Koorn, RN, Qualis Health; Mike Dowling, DC*

*Department Staff: Gary M. Franklin, MD, MPH, Medical Director; Lee Glass, MD, Associate Medical Director; Hal Stockbridge, MD, MPH, Associate Medical Director; Robert Mootz, DC, Associate Medical Director; Teresa Cooper, MN, MPH, Occupational Nurse Consultant; Bintu Marong, MS, Epidemiologist*

Financial Disclosures/Conflicts of Interest

The Washington State Department of Labor and Industries is a public state agency and did not receive any outside funding and has no conflicts of interest to report. Committee members reported no conflicts of interest, and their signed statements are kept on file.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in Portable Document Format (PDF) from the Washington State Department of Labor and Industries Web site.

Availability of Companion Documents

The following is available:


In addition, a Simple Shoulder Test and Shoulder Pain and Disability Index (SPADI) are provided in the original guideline document.

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 22, 2014. This summary was updated by ECRI Institute on September 18, 2015 following the U.S. Food and Drug Administration advisory on non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI Institute on February 15, 2017 following the U.S. Food and Drug Administration advisory on general anesthetic and sedation drugs.

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