CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Shoulder Instability

title: “Shoulder Instability” slug: shoulder-instability region: shoulder audience: patient mesh_terms: [“Shoulder Dislocation”, “Recurrence”, “Bankart Lesions”, “Shoulder Injuries”, “Shoulder”, “Scapula”, “Glenoid Cavity”, “Arthroplasty”] article_count: 1547 model_used: Qwen3.6-35B-A3B-Q8_0.gguf generated_at: ‘2026-06-16T19:26:00+00:00’ key_articles: - title: “Assessment and diagnosis of non-traumatic shoulder instability: A scoping review” ref_num: 1 evidence_tier: paper evidence_level: 5 doi: 10.1177/17585732251320070 year: 2025 - title: “Non-operative Management of Posterior Shoulder Instability: An Assessment of Survival and Predictors for Conversion to Surgery at 1 to 13 Years After Diagnosis” ref_num: 2 evidence_tier: paper evidence_level: 3 doi: 10.1177/2325967118s00098 year: 2018 - title: “Descriptive Epidemiology of the MOON Shoulder Instability Cohort” ref_num: 3 evidence_tier: paper evidence_level: 4 doi: 10.1177/0363546518755752 year: 2018 - title: “Nonoperative management of anterior shoulder instability can result in high rates of recurrent instability and pain at long-term follow-up” ref_num: 4 evidence_tier: paper evidence_level: 4 doi: 10.1016/j.jse.2021.07.016 year: 2022 - title: “Proper Evaluation of Bone Loss Determines Shoulder Instability Indications and Outcomes” ref_num: 5 evidence_tier: paper evidence_level: 5 doi: 10.1016/j.arthro.2021.01.004 year: 2021 - title: “Posterior shoulder instability: Prospective non-randomised comparison of operative and non-operative treatment in 51 patients” ref_num: 6 evidence_tier: paper evidence_level: 3 doi: 10.1016/j.otsr.2017.08.004 year: 2017 - title: “(ii) The classification of shoulder instability: new light through old windows!” ref_num: 7 evidence_tier: paper evidence_level: 5 doi: 10.1016/j.cuor.2004.04.002 year: 2004 - title: “International survey and surgeon’s preferences in diagnostic work-up towards treatment of anterior shoulder instability” ref_num: 8 evidence_tier: paper evidence_level: 4 doi: 10.1007/s00402-016-2443-7 year: 2016 - title: “No difference in outcomes for posterior shoulder instability surgery in patients with a normal vs. pathological radiologist reported magnetic resonance arthrogram study” ref_num: 9 evidence_tier: paper evidence_level: 3 doi: 10.1016/j.xrrt.2026.100675 year: 2026 - title: “Recurrent Posterior Shoulder Instability” ref_num: 10 evidence_tier: paper evidence_level: 5 doi: 10.5435/00124635-200608000-00004 year: 2006 - title: “Critical Findings on Magnetic Resonance Arthrograms in Posterior Shoulder Instability Compared With an Age-Matched Controlled Cohort” ref_num: 11 evidence_tier: paper evidence_level: 3 doi: 10.1177/0363546516660076 year: 2016 - title: “Biomechanics of posterior shoulder instability - current knowledge and literature review” ref_num: 12 evidence_tier: paper evidence_level: 4 doi: 10.5312/wjo.v9.i11.245 year: 2018 - title: “A predictive model of shoulder instability after a first-time anterior shoulder dislocation” ref_num: 13 evidence_tier: paper evidence_level: 2 doi: 10.1016/j.jse.2010.10.037 year: 2011 - title: “Free Bone Block Procedures for Glenoid Reconstruction in Anterior Shoulder Instability” ref_num: 14 evidence_tier: paper evidence_level: 4 doi: 10.5435/jaaos-

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paper evidence_level: 3 doi: 10.1177/2325967121s00593 year: 2022 synthesis_version: “v2” verifier_status: skipped

Overview

- Nearly 40% of patients treated non-operatively for posterior shoulder instability eventually require surgery at long-term follow-up [2].
- The MOON Shoulder Instability Study has enrolled the largest cohort of patients undergoing shoulder stabilization to date [3].
- At long-term follow-up of 17 years, a high rate of poor outcomes was observed following nonoperative management of anterior shoulder instability [4].
- Proper evaluation of bone loss best determines shoulder instability surgical indications and outcomes [5].
- The 1-year outcomes in a prospective study suggest superiority of operative over non-operative treatment for posterior shoulder instability [6].
- Free bone block procedures are considered safe and clinically effective for the management of anterior shoulder instability with glenoid bone loss [14].
- The thresholds defined in a 2025 study can provide a guideline for interpreting patient outcomes following arthroscopic stabilization for posterior shoulder instability, allowing for earlier detection of recurrent posterior instability [19].
- With modern arthroscopic management, posterior shoulder instability represents a condition where reliable and lasting recovery may be achievable, supported by emerging data suggesting durable protection against recurrent instability and sustained athletic participation [20].
- Management of shoulder instability should be based on clinical indication, and surgical stabilization should not be done prophylactically in the hope of increasing the number of future games played or enhancing performance [23].
- Despite the wide array of available PROMs for assessing shoulder instability surgery outcomes, the availability of clinically significant outcome thresholds such as MCID and PASS remains relatively limited [82].
- Arthroscopic capsulolabral repair for posterior shoulder instability was a durable treatment option that improved long-term shoulder pain and function and facilitated return to sport in the majority of patients at a mean follow-up of 15.4 years, although a notable proportion of patients met various criteria for failure [83].
- RCTs reporting on shoulder instability surgery are well performed but poorly reported [84].

Anatomy & Pathophysiology

- The shoulder depends on dynamic and static stabilizers because it has little inherent stability, making it prone to instability [63].
- Shoulder instability results from an imbalance between static and dynamic stabilizers [76].
- A thorough understanding of normal anatomy and anatomic variations is critical to differentiate them from pathologic findings [76].
- Biomechanical studies on posterior shoulder instability remain limited in the literature [12].
- Current biomechanical models for posterior shoulder instability are performed in a static manner, which limits their translation for explaining a dynamic pathology [12].
- Time-zero biomechanical shoulder instability studies are valuable but limited because they do not replicate clinical dynamics [62].
- Observed results from time-zero biomechanical studies do not confirm that the surgical approach would provide sufficient long-term noncontractile shoulder stability to withstand repetitive soft-tissue loading in a dynamic, clinical situation [62].
- Influential articles in shoulder instability included a high proportion of biomechanical/cadaveric studies [48].
- The Latarjet procedure leads to anatomic and biomechanical changes in the shoulder [33].
- A more inferior graft position (fixed at 4-6 o'clock) in the Latarjet procedure may improve shoulder biomechanics, but additional work is needed to establish clinical relevance [67].
- In the setting of shoulder instability without evidence of a labral tear, the capsulolabral advancement technique may be considered biomechanically superior to suture capsulorrhaphy [53].
- The observed changes in scapular kinematics after rotator cuff repair are associated with an increased overall range of motion and suggest restored function of shoulder muscles [35].
- Scapular kinematics of patients with shoulder arthroplasty were influenced by implementation of external loads, but not by the type of load [36].
- Arm kinematic analyses suggest that open surgery stabilizes the shoulder but does not necessarily restore normal movement quality [60].
- Integrating digital dynamic radiography (DDR) into the clinical workflow allows dynamic noninvasive examination of shoulder kinematics and provides an inexpensive method to objectively quantify disease severity with low radiation dosage [52].
- A validated finite-element shoulder numerical model is suitable for shoulder articular contact evaluation [57].
- Current glenoid bone loss measurements are unable to provide an adequate estimation on the actual biomechanical effect of glenoid defects because the relation between the glenoid defect size and its biomechanical effect is nonlinear [69].
- Patients with shoulder instability have constitutional biomechanically relevant glenoid concavity shape differences [69].

- Current glenoid defect extent measurements are precise but not accurate because they do not account for the 3-dimensional shape of the glenoid concavity or the native glenoid shape, which are critical for expressing the loss of biomechanical stability [74].
- While more advanced measurement techniques that take glenoid concavity into account are more accurate in determining the biomechanical relevance of glenoid bone loss, the reliability of manually performed, more complex measurements was moderate [64].
- Most patients undergoing shoulder stabilization procedures regained fundamental strength and range of motion [75].

Classification

- A proposed classification system for shoulder instability is all-inclusive and recognizes that more than one pathology can occur in an individual shoulder [7].
- There is a high variety in the use of diagnostic tools and examinations for assessing shoulder instability [8].
- The FEDS classification, particularly the frequency and etiology of shoulder instability, may be helpful in identifying patients with a higher likelihood of undergoing surgical treatment [16].
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- The FEDS classification, particularly the frequency and etiology of shoulder instability, may be helpful in identifying patients with a higher likelihood of undergoing surgical treatment [18].
- A new classification system for shoulder instability categorizes instability based on frequency, aetiology, direction, and severity [37].
- Shoulder instability cannot reliably be classified using the ICD-9 coding system [43].
- The ABC classification distinguishes three groups of posterior glenohumeral instability with two different subtypes based on the pathomechanical type of instability and the current standard of treatment [56].
- A resource on shoulder instability reviews the classification of shoulder instability, pathoanatomy, the concept of the glenoid track, and evaluation of bone loss [58].
- The ABC classification distinguishes three groups of posterior shoulder instability based on the nature of pathology and two subtypes based on pathomechanical causes [65].
- An expanded assessment framework is useful to estimate the contribution of each component of non-traumatic shoulder instability and offer a framework for targeted rehabilitation [66].
- The validity of testing specific subgroups within the expanded assessment framework for non-traumatic shoulder instability remains to be established [66].

Clinical Presentation

- Non-traumatic shoulder instability has multifactorial aetiologies and clinical manifestations [1].

- The MOON Shoulder Instability Study has enrolled the largest cohort of patients undergoing shoulder stabilization to date [3].
- Proper evaluation of bone loss best determines shoulder instability surgical indications and outcomes [5].
- A proposed classification system for shoulder instability is all-inclusive and recognizes that more than one pathology can occur in an individual shoulder [7].
- There is a high variety in the use of diagnostic tools for assessing shoulder instability [8].
- A thorough clinical exam is the most important factor when determining indication for shoulder instability surgery, with no difference in outcomes for posterior shoulder instability surgery between patients with normal vs. pathological radiologist-reported magnetic resonance arthrogram studies [9].
- Recurrent posterior shoulder instability is an uncommon condition that is often unrecognized, leading to incorrect diagnoses and delays [10].
- Identification of critical radiographic variables on magnetic resonance arthrography assists in the accurate diagnosis and management of clinically significant posterior shoulder instability [11].
- Biomechanical studies on posterior shoulder instability remain limited, with current models performed in a static manner which limits their translation for explaining a dynamic pathology [12].
- Detailed and specific information about prognosis is critical in the management of a first-time anterior shoulder dislocation [13].
- Failure of primary shoulder stabilization procedures is often related to uncorrected anatomic pathology, and the instability severity index score permits precise identification of patients at risk [15].
- Existing data on the presentation of shoulder instability in men and women is evaluated to determine if there are differences in occurrence, treatment, or functional outcome following management [31].
- The consensus statement on shoulder instability aims to improve diagnosis and treatment through universal agreement on outcome measurement tools and tailored treatment based on pathology, patient age, activity demands, and surgeon skills [32].
- Traumatic shoulder instability in patients older than 35 years may result in a wide array of pathologic findings as well as a diversity of clinical presentations [34].
- Proper identification and treatment of osseous defects resulting in complex shoulder instability is critical in minimizing recurrence [38].
- Current literature concerning shoulder anatomy and pathology related to shoulder stability/instability is reviewed to improve clinical diagnosis and surgical treatment [40].
- Minor or occult shoulder instability is an intra-articular pathology presenting with extra-articular subacromial impingement symptoms [41].
- The Delphi method was used to achieve an international consensus statement on shoulder instability covering diagnosis, nonoperative management, surgical options, rehabilitation, and clinical follow-up [42].
- Microinstability is diagnostically challenging and can be diagnosed in young patients with ambiguous shoulder pain during motion, without instability [44].
- HAGL lesions are a rare and underdiagnosed cause of anterior shoulder instability that can lead to recurrent dislocations if unaddressed [47].

Investigations

- Non-traumatic shoulder instability has multifactorial aetiologies and clinical manifestations [1].
- Proper evaluation of bone loss best determines shoulder instability surgical indications and outcomes [5].
- A high variety of diagnostic examinations and tools are used for assessing shoulder instability [8].
- A thorough clinical exam is the most important factor when determining indication for shoulder instability surgery [9].
- Recurrent posterior shoulder instability is an uncommon condition often unrecognized, leading to incorrect diagnoses and delays [10].
- Identification of critical radiographic variables on magnetic resonance arthrography assists in the accurate diagnosis and management of clinically significant posterior shoulder instability [11].
- Magnetic resonance arthrography is regarded as the gold-standard imaging modality for shoulder instability [85].
- CT imaging is more important than MRI for evaluating glenoid defects in recurrent anterior shoulder instability [86].
- Advanced imaging modalities are essential for identifying associated lesions in shoulder instability [87].
- Substantial variability exists in the scoring of important elements in radiological reports for the evaluation of anterior shoulder instability, regardless of modality [89].
- MR-arthrography is identified as the main tool in diagnosing shoulder instability injuries [90].
- Radiography can be used for screening patients for significant glenoid bone loss [91].
- Superior-capsular elongation and its diagnostic criteria of measurements by MR arthrography serve as references for diagnosing atraumatic posteroinferior shoulder instability [92].
- Radiographic progression of glenohumeral arthritis occurred in 14% of patients with posterior shoulder instability [93].
- ZTE MRI demonstrated high reproducibility for the evaluation of glenoid bone defect in shoulders with anterior instability [94].
- MRI is a valid imaging tool to diagnose and measure osseous lesions of the shoulder [95].
- Arthrotomography of the glenoid labrum is a helpful adjunct in substantiating the diagnosis of shoulder instability and in planning the choice of surgical reconstruction [96].
- While CT and MRI measurements of bone loss differ statistically, the differences are clinically imperceptible when using the circle technique [97].

Treatment

NON-OPERATIVE MANAGEMENT

- Non-traumatic shoulder instability has multifactorial aetiologies and clinical manifestations [1].

- Nonoperative management of anterior shoulder instability can result in high rates of recurrent instability and pain at long-term follow-up [4].
- At long-term follow-up of 17 years, a high rate of poor outcomes was observed following nonoperative management of anterior shoulder instability [4].
- Primary non-operative management is a prominent risk factor for recurrence of shoulder instability in young and adolescent athletes [39].
- Nonoperative treatment of shoulder instability has substantial societal costs [71].
- Recent studies continue to demonstrate a role for nonoperative treatment in the successful long-term management of anterior glenohumeral instability [77].
- NHL team physicians strongly favor nonoperative management in-season for initial posterior instability events of the shoulder [81].
- The study group achieved strong or unanimous consensus on 63% of statements related to the diagnosis, nonoperative treatment, and labrum repair for posterior shoulder instability [78].

OPERATIVE MANAGEMENT

- Proper evaluation of bone loss best determines shoulder instability surgical indications and outcomes [5].
- The success of treating anterior glenohumeral instability relies on multiple factors, including glenoid bone loss [51].
- Free bone block procedures are considered safe and clinically effective for the management of anterior shoulder instability with glenoid bone loss [14].
- Recurrent anterior shoulder instability with glenoid bone loss requires restoring the bone [51].
- Successful treatment of anterior instability of the shoulder requires a balance between restoring joint stability and minimizing loss of glenohumeral motion [59].
- Surgical treatment of primary, traumatic, anterior shoulder instability results in reduced rates of recurrence compared with nonsurgical treatment at 10-year follow-up [50].
- Successful results were obtained in patients younger than 40 years with both primary and recurrent anterior shoulder instability after arthroscopic treatment [55].
- To assess the effectiveness of an arthroscopic stabilization procedure for anterior shoulder instability using the Rowe score, a difference of at least 9.7 in the score is clinically relevant [46].
- Adolescent multidirectional shoulder instability refractory to non-surgical management appears to have long-term outcomes after surgical intervention that are comparable to adolescent patients with unidirectional instability [61].
- Diagnostic and therapeutic arthroscopy is useful for soft tissue instability complicating a previously successful total shoulder arthroplasty [79].
- The 1-year outcomes in a prospective study suggest superiority of operative over non-operative treatment for posterior shoulder instability [6].
- Long-term follow-up demonstrates that nearly 40% of patients treated non-operatively for posterior shoulder instability eventually require surgery [2].

- Most patients younger than 40 years with shoulder instability who were initially treated nonoperatively for 6 months were definitively treated without surgery [30].
- Multiple instability events at initial presentation are the major predictor of failure of nonoperative treatment for anterior shoulder instability [30].
- Management of shoulder instability should be based on clinical indication, and surgical stabilization should not be done prophylactically in the hope of increasing the number of future games played or enhancing performance [23].
- A thorough clinical exam is the most important factor when determining indication for shoulder instability surgery [9].
- Arthroscopic stabilization of the shoulder for posterior instability has promising early and midterm results [21].
- Primary arthroscopic treatment of posterior shoulder instability is associated with favorable outcomes and high return to sport and work rates [54].
- With modern arthroscopic management, posterior shoulder instability represents a condition where reliable and lasting recovery may be achievable, supported by emerging data suggesting durable protection against recurrent instability and sustained athletic participation [20].
- Treatment of posterior shoulder instability by capsulolabral reconstruction leads to good clinical outcomes; however the recurrence rate is high [49].
- The thresholds defined in this study can provide a guideline for interpreting patient outcomes following arthroscopic stabilization for posterior shoulder instability, allowing for earlier detection of recurrent posterior instability [19].

Complications

- Non-traumatic shoulder instability has multifactorial aetiologies and clinical manifestations [1].
- Nearly 40% of patients treated non-operatively for posterior shoulder instability eventually require surgery at long-term follow-up [2].
- Nonoperative management of anterior shoulder instability results in high rates of recurrent instability and pain at long-term follow-up [4].
- At long-term follow-up of 17 years, a high rate of poor outcomes was observed following nonoperative management of anterior shoulder instability [4].
- Operative treatment shows superiority over non-operative treatment for posterior shoulder instability at 1-year outcomes [6].
- Failure of primary shoulder stabilization procedures is often related to uncorrected anatomic pathology [15].
- The instability severity index score permits precise identification of patients at risk for failure of primary shoulder stabilization [15].
- Early and midterm results of arthroscopic stabilization for posterior instability are promising [21].

- About one third of stabilized shoulders experienced at least one redislocation after 8 to 10 years following arthroscopic shoulder stabilization using suture anchors [22].
- Patients with a history of anterior shoulder instability undergoing total shoulder arthroplasty can expect continued improvement in function compared with preoperative values at mid-term follow-up [25].
- The natural history of first-time shoulder dislocations is bound up with arthropathy [26].
- The open Latarjet procedure is a safe and reliable technique for recurrent anterior shoulder instability at 24-year follow-up [27, 28].
- A history of multiple instability episodes prior to presentation was the greatest predictor of recurrent instability and failure of nonoperative treatment and progression to surgery [29].
- Most patients younger than 40 years with shoulder instability who were initially treated nonoperatively for 6 months were definitively treated without surgery [30].
- The Latarjet procedure for anterior shoulder instability results in an overall complication rate of 16.1% and a reoperation rate of 2.6% [72].
- Serious complications at short-term follow-up after the Latarjet procedure appear rare [72].
- Approximately one-fourth of patients younger than 40 years with anterior shoulder instability developed symptomatic osteoarthritis at a mean follow-up of 15 years from their first instability event [88].

Recovery

- Nearly 40% of patients treated non-operatively for posterior shoulder instability eventually require surgery at long-term follow-up [2].
- Nonoperative management of anterior shoulder instability results in high rates of recurrent instability and pain at long-term follow-up [4].
- At long-term follow-up of 17 years, a high rate of poor outcomes was observed following nonoperative management of anterior shoulder instability [4].
- The 1-year outcomes in a prospective study suggest superiority of operative over non-operative treatment for posterior shoulder instability [6].
- About one third of stabilized shoulders experienced at least one redislocation after 8 to 10 years following arthroscopic shoulder stabilization using suture anchors [22].
- Patients with a history of anterior shoulder instability undergoing total shoulder arthroplasty can expect continued improvement in function compared with preoperative values at mid-term follow-up [25].
- The natural history of first-time shoulder dislocations is bound up with arthropathy [26].
- The open Latarjet procedure is a safe and reliable technique for recurrent anterior shoulder instability at 24-year follow-up [27].
- The open Latarjet procedure is a safe and reliable technique for recurrent anterior shoulder instability at 24-year follow-up [28].

- Patients aged >50 years with anterior shoulder instability have a decreased risk of recurrent dislocation after operative treatment compared with non-operative treatment [29].
- A history of multiple instability episodes prior to presentation was the greatest predictor of recurrent instability and failure of nonoperative treatment and progression to surgery [29].
- Outcomes at 3 years' follow-up for revision of failed Latarjet with the Eden-Hybinette surgical technique were satisfactory in 80% of patients, with 86% having stable shoulders [70].
- The combination of arthroscopic remplissage and classic Bankart repair for recurrent anterior shoulder instability with engaging Hill–Sachs lesions has long-term outcomes in terms of recurrence rate and does not significantly influence the range of motion of the shoulder [80].
- The number of episodes of dislocation before surgery and delayed surgical intervention did not increase the recurrent anterior shoulder instability rates postoperatively following an open Latarjet-Bristow procedure [99].
- There was no significant difference in reoperation rate and recurrence of symptoms between athletes who underwent objective return to sport testing and those released to sport on a time-based protocol after arthroscopic surgery for posterior shoulder instability [100].
- There was no significant difference in reoperation rate and recurrence of symptoms between athletes who underwent objective return to sport testing and those released to sport on a time-based protocol after arthroscopic surgery for posterior shoulder instability [101].

Key Evidence

- [L5] Non-traumatic shoulder instability's aetiologies and clinical manifestations are multifactorial. (10.1177/17585732251320070)
- [L3] Long-term follow-up demonstrates that nearly 40% of patients treated non-operatively for posterior shoulder instability eventually require surgery. (10.1177/2325967118s00098)
- [L4] The MOON Shoulder Instability Study has enrolled the largest cohort of patients undergoing shoulder stabilization to date. (10.1177/0363546518755752)
- [L4] At long-term follow-up of 17 years, a high rate of poor outcomes was observed following nonoperative management of anterior shoulder instability. (10.1016/j.jse.2021.07.016)
- [L5] Proper evaluation of bone loss best determines shoulder instability surgical indications and outcomes. (10.1016/j.arthro.2021.01.004)
- [L3] The 1-year outcomes in this prospective study suggest superiority of operative over non-operative treatment for posterior shoulder instability. (10.1016/j.otsr.2017.08.004)
- [L5] The authors propose a classification system, which challenges previous systems by being all inclusive and recognises that more than one pathology can occur in an individual shoulder. (10.1016/j.cuor.2004.04.002)
- [L4] Many different diagnostic examinations for assessing shoulder instability are used and a high variety is seen in the use of diagnostic tools. (10.1007/s00402-016-2443-7)

- [L3] A thorough clinical exam is the most important factor when determining indication for shoulder instability surgery. (10.1016/j.xrrt.2026.100675)
- [L5] Recurrent posterior shoulder instability is an uncommon condition often unrecognized, leading to incorrect diagnoses and delays. (10.5435/00124635-200608000-00004)
- [L3] Identification of these critical radiographic variables on magnetic resonance arthrography assists in the accurate diagnosis and management of clinically significant posterior shoulder instability. (10.1177/0363546516660076)
- [L4] Biomechanical studies on posterior shoulder instability remain limited in the literature, with current models performed in a static manner which limits their translation for explaining a dynamic pathology. (10.5312/wjo.v9.i11.245)
- [L2] Detailed and specific information about prognosis is critical in the management of a first-time anterior shoulder dislocation. (10.1016/j.jse.2010.10.037)
- [L4] They are considered safe and clinically effective for the management of anterior shoulder instability with glenoid bone loss. (10.5435/jaaos-d-22-00837)
- [L5] Failure of primary shoulder stabilization procedures is often related to uncorrected anatomic pathology, and the instability severity index score permits precise identification of patients at risk. (10.1016/j.arthro.2010.11.057)
- [L2] The FEDS classification, particularly the frequency and etiology of the patient's shoulder instability, may be helpful in identifying patients with a higher likelihood of undergoing surgical treatment. (10.1016/j.jse.2016.07.054)
- [L2] The FEDS classification, particularly the frequency and etiology of the patient's shoulder instability, may be helpful in identifying patients with a higher likelihood of undergoing surgical treatment. (10.1177/2325967115607434)
- [L2] The FEDS classification, particularly the frequency and etiology of the patient's shoulder instability, may be helpful in identifying patients with a higher likelihood of undergoing surgical treatment. (10.1016/j.jse.2016.07.053)
- [L4] The thresholds defined in this study can provide a guideline for interpreting patient outcomes following arthroscopic stabilization for posterior shoulder instability, allowing for earlier detection of recurrent posterior instability. (10.1016/j.jseint.2025.08.006)
- [Commentary] With modern arthroscopic management, posterior shoulder instability represents a condition where reliable and lasting recovery may be achievable, supported by emerging data suggesting durable protection against recurrent instability and sustained athletic participation. (10.1016/j.arthro.2025.09.003)
- [L1] The early and midterm results of arthroscopic stabilization of the shoulder for posterior instability are promising. (10.1016/j.arthro.2014.11.009)
- [L4] With a follow-up of 97%, about one third of the stabilized shoulders experienced at least one redislocation after 8 to 10 years. (10.1177/0363546511415657)

- [Commentary] Management of shoulder instability should be based on clinical indication, and surgical stabilization should not be done prophylactically in the hope of increasing the number of future games played or enhancing performance. (10.1016/j.arthro.2021.01.053)
- [L3] At mid-term follow-up, patients with a history of anterior shoulder instability undergoing total shoulder arthroplasty can expect continued improvement in function compared with preoperative values. (10.1016/j.jse.2023.07.005)
- [Abstract] The natural history of the first time shoulder dislocations is bound up with arthropathy. (10.1016/j.jse.2007.02.100)
- [L3] This long-term follow-up study demonstrated that the open Latarjet procedure is a safe and reliable technique for recurrent anterior shoulder instability. (10.1007/s00402-020-03426-2)
- [L3] This long-term follow-up study demonstrated that the open Latarjet procedure is a safe and reliable technique for recurrent anterior shoulder instability. (10.1016/j.jse.2021.03.097)
- [L3] A history of multiple instability episodes prior to presentation was the greatest predictor of recurrent instability and failure of nonoperative treatment and progression to surgery. (10.1016/j.asmr.2023.03.014)
- [L3] Most patients younger than 40 years with shoulder instability who were initially treated nonoperatively for 6 months were definitively treated without surgery. (10.1016/j.arthro.2021.03.047)
- [L4] This review evaluates existing data on the presentation of shoulder instability in men and women to determine if there are differences in occurrence, treatment, or functional outcome following management. (10.2106/jbjs.rvw.19.00007)
- [L5] The consensus statement aims to improve diagnosis and treatment of shoulder instability through universal agreement on outcome measurement tools and tailored treatment based on pathology, patient age, activity demands, and surgeon skills. (10.1016/j.arthro.2009.06.022)
- [L4] The Latarjet procedure leads to anatomic and biomechanical changes in the shoulder. (10.1016/j.asmr.2023.100804)
- [L4] Traumatic shoulder instability in the older patient may result in a wide array of pathologic findings as well as a diversity of clinical presentations. (10.1177/2325967115584318)
- [L4] The observed changes in scapular kinematics are associated with an increased overall range of motion and suggest restored function of shoulder muscles. (10.1016/j.jse.2015.10.021)
- [L4] Scapular kinematics of patients with shoulder arthroplasty was influenced by implementation of external loads, but not by the type of load. (10.1016/j.clinbiomech.2012.04.009)
- [L5] The system categorizes instability based on frequency, aetiology, direction, and severity. (10.1136/bjsm.2009.071183)
- [Paper] Proper identification and treatment of osseous defects resulting in complex shoulder instability is critical in minimizing recurrence. (10.1016/j.csm.2013.07.002)
- [L2] Primary non-operative management is a prominent risk factor for recurrence of shoulder instability. (10.1136/bjsports-2016-096895)

- [L5] The purpose of this article is to review the current literature concerning shoulder anatomy/pathology related to shoulder stability/instability to improve clinical diagnosis and surgical treatment of our patients. (10.1016/j.arthro.2011.05.017)
- [L3] Minor shoulder instability is an intra-articular pathology presenting with extra-articular subacromial impingement symptoms. (10.1007/s00167-011-1552-7)
- [L5] The Delphi method is a structured communication technique used to allow a panel of experts to achieve a consensus in a systematic manner, resulting in an international consensus statement on shoulder instability covering diagnosis, nonoperative management, surgical options, rehabilitation, and clinical follow-up. (10.1016/j.arthro.2021.11.052)
- [L1] Shoulder instability cannot reliably be classified using the ICD-9 coding system. (10.1016/j.jse.2008.10.005)
- [L3] Microinstability is diagnostically challenging and can be diagnosed in young patients with ambiguous shoulder pain during motion, without instability. (10.1007/s00167-022-06941-4)
- [L4] To assess the effectiveness of an arthroscopic stabilization procedure for anterior shoulder instability using the Rowe score, a difference of at least 9.7 in the score is clinically relevant. (10.1016/j.jse.2017.10.032)
- [Paper] HAGL lesions are a rare and underdiagnosed cause of anterior shoulder instability that can lead to recurrent dislocations if unaddressed. (10.1016/j.eats.2020.10.053)
- [L4] Influential articles in shoulder instability included a high proportion of biomechanical/cadaveric studies. (10.1177/2325967121992577)
- [Paper] Treatment of posterior shoulder instability by capsulolabral reconstruction leads to good clinical outcomes; however the recurrence rate is high. (10.1016/j.otsr.2017.08.002)
- [L1] Surgical treatment of primary, traumatic, anterior shoulder instability results in reduced rates of recurrence compared with nonsurgical treatment at 10-year follow-up. (10.1016/j.arthro.2006.11.026)
- [L5] The success of treating anterior glenohumeral instability relies on multiple factors, including glenoid bone loss. (10.1016/j.arthro.2021.09.002)
- [Case_report] Integrating DDR into the clinical workflow allows dynamic noninvasive examination of shoulder kinematics and provides an inexpensive method to objectively quantify disease severity with low radiation dosage. (10.1016/j.jseint.2023.02.015)
- [L5] In the setting of shoulder instability without evidence of a labral tear, the capsulolabral advancement technique may be considered biomechanically superior. (10.1016/j.arthro.2012.04.140)
- [L1] Primary arthroscopic treatment of posterior shoulder instability is associated with favorable outcomes and high return to sport and work rates. (10.1016/j.asmr.2024.101032)
- [L3] Successful results were obtained in patients younger than 40 years with both primary and recurrent anterior shoulder instability after arthroscopic treatment. (10.1016/j.jse.2023.05.029)
- [L5] The ABC classification distinguishes three groups of posterior glenohumeral instability with two different subtypes based on the pathomechanical type of instability and the current standard of treatment. (10.1007/s11678-017-0404-6)

- [L5] The numerical model is suitable for the shoulder articular contact evaluation. (10.1016/j.otsr.2020.03.004)
- [L5] Shoulder Instability: Alternative Surgical Techniques represents a detailed resource that reviews classification of shoulder instability, pathoanatomy, the concept of glenoid track, and evaluation of bone loss and offers a description of various procedures designed to address bone loss and restore stability. (10.1016/j.arthro.2012.09.003)
- [L5] Successful treatment of anterior instability of the shoulder requires a balance between restoring joint stability and minimizing loss of glenohumeral motion. (10.1177/03635465030310011001)
- [L3] Arm kinematic analyses suggest that open surgery stabilizes the shoulder but does not necessarily restore normal movement quality. (10.1016/j.jse.2013.09.021)
- [L4] Adolescent multidirectional shoulder instability refractory to non-surgical management appears to have long-term outcomes after surgical intervention that are comparable to adolescent patients with unidirectional instability. (10.1177/2325967121s00021)
- [L5] Time-zero biomechanical shoulder instability studies are valuable but limited because they do not replicate clinical dynamics, and the observed results do not confirm that the surgical approach would provide sufficient long-term noncontractile shoulder stability to withstand repetitive soft-tissue loading in a dynamic, clinical situation. (10.1016/j.arthro.2022.04.006)
- [L5] The shoulder depends on dynamic and static stabilizers because it has little inherent stability, making it prone to instability. (10.1016/j.ocl.2019.11.008)
- [L3] While more advanced measurement techniques that take glenoid concavity into account are more accurate in determining the biomechanical relevance of glenoid bone loss, the reliability of manually performed, more complex measurements was moderate. (10.1177/23259671231222938)
- [L5] This review guides the reader to correctly identify posterior shoulder instability (PSI) by providing diagnostic criteria and treatment strategies based on the ABC classification, which distinguishes three groups of PSI based on the nature of pathology and two subtypes based on pathomechanical causes. (10.1530/eor-24-0025)
- [L5] An expanded assessment framework is useful to estimate the contribution of each component of non-traumatic shoulder instability and offer a framework for targeted rehabilitation, though the validity of testing specific subgroups remains to be established. (10.1177/1758573214548934)
- [L5] A more inferior graft position (fixed at 4-6 o'clock) may improve shoulder biomechanics, but additional work is needed to establish clinical relevance. (10.1177/23259671231202533)
- [L5] Current glenoid bone loss measurements are unable to provide an adequate estimation on the actual biomechanical effect of glenoid defects because the relation between the glenoid defect size and its biomechanical effect is nonlinear and patients with shoulder instability have constitutional biomechanically relevant glenoid concavity shape differences. (10.1177/0363546518819102)
- [L4] The outcomes at 3 years' follow-up were satisfactory in 80% of patients and 86% had stable shoulders. (10.1016/j.otsr.2019.12.009)
- [L3] Nonoperative treatment of shoulder instability has substantial societal costs. (10.1177/1758573218773543)

- [L4] The Latarjet procedure for anterior shoulder instability results in an overall complication rate of 16.1% and a reoperation rate of 2.6%, though serious complications at short-term follow-up appear rare. (10.1177/03635465211042314)
- [L5] Current glenoid defect extent measurements are precise but not accurate because they do not account for the 3-dimensional shape of the glenoid concavity or the native glenoid shape, which are critical for expressing the loss of biomechanical stability. (10.1016/j.arthro.2020.05.006)
- [L1] Most patients undergoing shoulder stabilization procedures regained fundamental strength and range of motion. (10.1016/j.asmr.2024.100978)
- [L5] Shoulder instability results from an imbalance between static and dynamic stabilizers, and a thorough understanding of normal anatomy and anatomic variations is critical to differentiate them from pathologic findings. (10.1177/03635465000280062501)
- [L4] Recent studies continue to demonstrate a role for nonoperative treatment in the successful long-term management of anterior glenohumeral instability. (10.1007/s12178-017-9432-5)
- [L5] The study group achieved strong or unanimous consensus on 63% of statements related to the diagnosis, nonoperative treatment, and labrum repair for posterior shoulder instability. (10.1016/j.arthro.2024.04.035)
- [L5] This case demonstrates a clear indication for the usefulness of diagnostic and therapeutic arthroscopy in the situation of soft tissue instability complicating a previously successful total shoulder arthroplasty. (10.1007/s11420-013-9373-5)
- [L4] This combination has long-term outcomes in terms of the recurrence rate and does not significantly influence the range of motion of the shoulder. (10.1007/s00167-018-5261-3)
- [L4] NHL team physicians strongly favor nonoperative management in-season for initial posterior instability events of the shoulder. (10.1177/23259671261440208)
- [L1] Despite the wide array of available PROMs for assessing shoulder instability surgery outcomes, the availability of clinically significant outcome thresholds such as MCID and PASS remains relatively limited. (10.1016/j.arthro.2024.07.039)
- [L4] Arthroscopic capsulolabral repair for posterior shoulder instability was a durable treatment option that improved long-term shoulder pain and function and facilitated return to sport in the majority of patients at a mean follow-up of 15.4 years, although a notable proportion of patients met various criteria for failure. (10.1177/03635465231162271)
- [L2] RCTs reporting on shoulder instability surgery are well performed but poorly reported. (10.1177/1758573218754370)
- [L5] Magnetic resonance arthrography is regarded as the gold-standard imaging modality for shoulder instability. (10.1016/j.mric.2019.12.005)
- [L3] Despite the advantages of MRI in the detection of soft tissue damages in recurrent anterior shoulder instability CT imaging proved to be more important for glenoid defects. (10.1007/s00402-012-1656-7)
- [Paper] Advanced imaging modalities are essential for identifying associated lesions, and bony reconstruction procedures should be considered for patients with significant glenoid bone loss or recurrent instability after soft tissue reconstruction. (10.1016/j.csm.2014.06.006)

- [L3] In a US geographic population of patients younger than 40 years with anterior shoulder instability, approximately one-fourth of patients developed symptomatic osteoarthritis at a mean follow-up of 15 years from their first instability event. (10.1177/2325967120962515)
- [L5] Substantial variability was observed in the scoring of important elements in the radiological report for the evaluation of anterior shoulder instability, regardless of modality. (10.1016/j.jseint.2024.03.012)
- [L5] MR-arthrography is identified as the main tool in diagnosing shoulder instability injuries. (10.21037/qims.2017.08.05)
- [L4] Radiography can be used for screening patients for significant glenoid bone loss. (10.1186/s12891-015-0607-1)
- [L3] The superior-capsular elongation as well as its diagnostic criteria of measurements by MR arthrography revealed in the present study could serve as references for diagnosing atraumatic posteroinferior shoulder instability and offer insight into the spectrum of imaging findings corresponding to the pathologies encountered at clinical presentation. (10.3109/02841850903524421)
- [L3] Radiographic progression of glenohumeral arthritis occurred in 14% of patients with posterior shoulder instability. (10.1177/2325967118s00154)
- [L3] ZTE MRI demonstrated high reproducibility for the evaluation of glenoid bone defect in shoulders with anterior instability. (10.1016/j.jseint.2024.03.003)
- [L4] Additionally, MRI is a valid imaging tool to diagnose and measure osseous lesions of the shoulder. (10.1007/s00247-018-4318-2)
- [L4] Arthrotomography of the glenoid labrum is a helpful adjunct in substantiating the diagnosis of shoulder instability and in planning the choice of surgical reconstruction. (10.2106/00004623-198264040-00005)
- [Commentary] The authors conclude that while CT and MRI measurements of bone loss differ statistically, the differences are clinically imperceptible when using the circle technique, and they recommend continuing to use the circle technique for determining individual patient treatment for recurrent shoulder instability. (10.1016/j.arthro.2019.10.001)
- [L4] The number of episodes of dislocation before surgery and the delayed surgical intervention did not increase the recurrent anterior shoulder instability rates postoperatively. (10.1016/j.jseint.2022.12.003)
- [L3] In our cohort of young patients undergoing arthroscopic surgery for posterior shoulder instability, we detected no significant difference in reoperation rate and recurrence of symptoms between athletes who underwent objective return to sport testing and those who were released to sport on a time-based protocol. (10.1177/2325967121s00549)
- [L3] In our cohort of young patients undergoing arthroscopic surgery for posterior shoulder instability, we detected no significant difference in reoperation rate and recurrence of symptoms between athletes who underwent objective return to sport testing and those who were released to sport on a time-based protocol. (10.1177/2325967121s00593)

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