Provincial Shoulder Primary Care Clinical Pathway

Quick Links: Primer & Expanded details | Provider resources | Patient resources | Provide feedback

1a. History

Chief complaint (pain, stiffness, weakness, instability); Mechanism of injury; Nature of symptoms; Patient demographics.

1b. Physical Exam

Inspection (contour, atrophy, posture); Palpation; Active / passive range of motion; Strength; Special tests; Neurological exam.

If too painful and/or swollen to perform assessment, re-assess every 2 weeks.

2a. Red Flags

Infection / Septic Arthritis

Cardiopulmonary: Can present as atypical shoulder pain.

Fracture / Unreduced Dislocation

Pectoralis Major / Distal Bicep Ruptures

Malignancy: Shoulder can be a location of primary malignancy / metastases.

2b. Additional Diagnostic Considerations

Neurological / Neuromuscular Condition (e.g. stroke, multiple sclerosis) or **Disturbance** (altered power/sensation, numbness, tingling, burning).

Inflammatory / Rheumatological Condition / Arthropathy

Cervical Spine (e.g. radiculopathy, arthritis, gout, psoriatic arthropathy).

3. Advice & Referral Information

- Refer to Emergency / RAAPID
- **Urgent** Orthopedic Oncology surgeon referral within 1 week
- Refer as indicated: MSK specialist; Rheumatologist

Determined to be a shoulder issue — NO Red Flags noted

If unsure at any time, consult specialist advice.

FAST RAC / Specialist Referral

4. Chief Complaint / Differential Diagnosis

a. Pain ± Weakness

Acute	• Consider X-rays if high energy MOI / fall; Surgical referral for large acute cuff injury in young patient. • Start rehabilitation. • *Potential DDx: RC Injury, ACJ Separation, Proximal Biceps Rupture.*
Chronic	• Start rehabilitation ± Pain management (Injections, NSAIDs). • *Potential DDx: RC Related Pain, SLAP Tears, Biceps Pathology.*
Other	• Start rehabilitation. • *Potential DDx: Parsonage Turner, Suprascapular Nerve Compression.*

b. Instability

Traumatic	• Consider specialist referral for recurrent dislocations. • Start rehabilitation. • *Potential DDx: 1st time or recurrent ant. / post. dislocation.*
Atraumatic	• Start rehabilitation. • *Potential DDx: Multidirectional Instability, Hypermobility.*

c. Stiffness ± Pain

Arthritis	• Consider X-ray. • Pain management (Injections, NSAIDs, nerve block); Start Rehabilitation. • *Potential DDx: GHJ / ACJ OA.*
Frozen Shoulder	• Consider X-ray. • Injections; Start Rehabilitation. • *Potential DDx: Primary, Secondary, Diabetic.*

5. Imaging

No imaging at 1st presentation unless indicated during assessment for acute, high-energy mechanism or to differentiate stiffness.

X-ray

Shoulder series
Shoulder girdle: AP, AP Oblique, PA Oblique and Axial.
Shoulder instability: Also include AP axial & inferosuperior axial.

Other Imaging
Do NOT order **Ultrasound, MRI,** or **CT** in advance of referral.

In case of Red Flags on imaging, follow appropriate Advice & Referral Information.

Abbreviations: Acromioclavicular joint (ACJ); Computed tomography (CT); Facilitated access to specialized treatment (FAST); Glenohumeral joint (GHJ); Magnetic resonance imaging (MRI); Non-steroidal anti-inflammatory drugs (NSAIDs); Osteoarthritis (OA); Rotator cuff (RC); Superior labrum from anterior to posterior (SLAP).

6. Exercise Based Rehabilitation & Pain Management

Physiotherapy: at least 12 weeks of exercise-based rehabilitation (home or supervised) and patient education.

Pain Management: if patient is unable to achieve pain-free status after 6 weeks (i.e. oral NSAID medication +/- topical analgesia).

Image Guided Injection: assess whether injection is needed before physical therapy (e.g. hyaluronic acid, steroid, or combination when pain is barrier to rehabilitation).

7. Follow Up

In 12 weeks, re-assess symptoms, functional progress, and re-evaluate diagnosis. Consider whether patient is a good surgical candidate.

- Good functional outcome → Reinforce **ongoing exercise-based rehabilitation** & follow up as needed
- Poor functional outcome → **8. FAST** RAC / Specialist Referral

Alberta Health Services

Call to Action: We need your feedback during this **new** pathway's initial testing phase!

Alberta's Pathway Hub | Background

Updated: November 2024

This primary care pathway was co-developed by primary and specialty care and includes input from multidisciplinary teams from all five zones. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home.

EXPANDED DETAILS

PATHWAY PRIMER

This pathway focuses on the primary care management of adult patients presenting to Primary Care with shoulder pain that is acute, sub-acute or chronic in nature. This pathway will help primary care providers to manage shoulder pain within the medical home and indicate what referral triggers to watch for during ongoing patient monitoring.

The shoulder is composed of three bones (clavicle, scapula and proximal humerus) and four articular surfaces (sternoclavicular, acromioclavicular, glenohumeral and scapulothoracic). Shoulder pain is a common reason patients present to primary care. In Alberta, approximately half a million individuals seek physician services for shoulder related issues every year, resulting in over a million visits. Shoulder pain can be caused by either intrinsic shoulder (glenohumeral joint or extra- glenohumeral joint) issues or referred pain (e.g. neck pain) [1]. In this clinical pathway, shoulder issues are classified as pain, stiffness, instability and weakness.

As illustrated in Figure 1 [2], education and non-surgical management should be considered as first line management for the majority of shoulder issues. A subset of patients experiencing shoulder pain may also require pharmacologic pain relief and physiotherapy. An even smaller subset of patients may benefit from surgical interventions. It is important that physicians and patients participate in joint decision making when exploring the pros and cons of any treatment, including surgical intervention, particularly when considering that surgery may not always improve patient outcomes. There are a multitude of factors to consider such as age, overall health, activity, smoking, that can affect the likelihood of positive outcomes from a given intervention.

Patient assessment may identify other conditions that may require additional resources to help optimize management. These resources may include additional advice services, referrals to other medical specialties and connections to programs and services designed to target root causes and psychosocial factors. Programs and services may vary by zone.

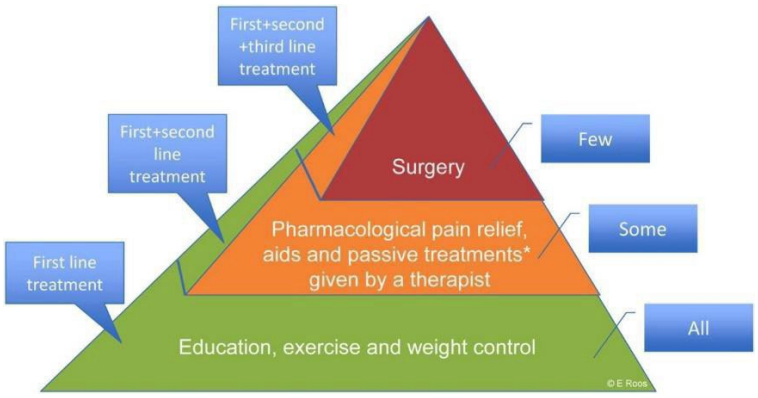

Figure 1: Management approach to care. [2]

1a. History

Patient Demographics

Age, Sex, Occupation, Dominant hand, Co-morbidities (e.g. smoking status).

Patient Questions

When did you first notice you had a problem with your shoulder?

Mechanism of injury

- Is your shoulder problem the result of a specific injury? How did you injure your shoulder?
- Describe the activity that provokes pain in your shoulder.

Chief Complaint

Pain

Do you have pain in your shoulder?

- **Severity:** scale of 0-10
- **Character:** dull, sharp, ache
- **Onset:** acute, chronic, insidious, in a defining moment
- **Duration:** How long have you been symptomatic (i.e. date)?
- **Location:** Where in your shoulder do you feel the most pain?
- **Patterns of radiation:** neck, arm, below elbow, deltoid insertion
- **Aggravating factors:** e.g. arm position; time of day
- **Alleviating factors:** e.g. arm position; medications

Weakness

Does your shoulder feel weak?

What movements do you feel weakness in?

Is your weakness associated with pain?

Instability

Does your shoulder feel stable?

Does your shoulder dislocate or come out of place?

Has your shoulder dislocated in the past?

Have you required the shoulder to be relocated by a physician or someone else? Did you require sedation?

Stiffness

Does your shoulder feel stiff?

What movements are stiff?

When did the stiffness begin?

Treatment History

Have you had any treatment(s) for your shoulder problem (e.g. injections, physiotherapy)? Please describe your treatments.

Crepitus / Catching

Do you hear or feel unusual sensations such as catching, locking, or grinding in your shoulder?

Do you have painful clicking, grinding, or clunking in your shoulder?

Neurological

Do you have numbness, tingling, or burning in your shoulder or down your arm?

Medical History

Past and Current Medical Conditions, and present medications.

Past Surgical History.

Smoking History.

1b. Physical Examination

1. Inspect for atrophy, abnormalities, defects, posture, and scapular positioning; Palpate for point(s) of maximum tenderness.

2. Rule out cervical spine pathology: dermatomes, myotomes, reflexes, and active range of motion (ROM) of the cervical neck.

Flexion	Extension	Left Side-Flexion	Right Side-Flexion	Left Rotation	Right Rotation
Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited

- If pain is NOT reproduced during neck movement, proceed with Step 3.
- If pain is reproduced during neck movement, alternative pathway is required.

3. Active ROM and strength testing of the shoulder (bilateral).

		Forward Flexion	Scaption[1]	Abduction	External Rotation (Neutral)	Internal Rotation (Neutral)	Internal Rotation at Spinal Level[2]
ROM	**Left**	Full OR Limited		Full OR Limited	Full OR Limited		Full OR Limited
	Right	Full OR Limited		Full OR Limited	Full OR Limited		Full OR Limited
Strength	**Left**	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	
	Right	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	Full OR Limited	

[1] Forward flexion in the scapular plane (halfway between the frontal and sagittal planes).
[2] Highest vertebral level reached with thumb extended.

4. Passive ROM if active range of motion was limited.

5. Isolated glenohumeral joint ROM if both active and passive ROM are limited.

6. Assess abduction and forward flexion for painful arc (from anterior viewpoint).

7. Assess scapulohumeral rhythm for scapular dyskinesis.

8. Perform special tests (see pages 5-6).

NOTE: *If too swollen to perform assessment have client return in 2 weeks for re-assessment.*

Special Tests

Test	Technique	Positive Sign
Rotator cuff		
Empty Can Test	With each hand, grasp one of the patient's wrists. The patient's arms are abducted to 90° with the elbows fully extended. The shoulders are then angled forward 30° and internally rotated (i.e. thumbs-down position) as if emptying a can. Apply a downward force that the patient resists.	Pain or weakness with resistance.
Drop Arm Test	Place the patient into 90° of shoulder abduction while supporting the arm under the elbow. Release the elbow and instruct the patient to slowly lower the arm back to neutral in the same movement arc.	Sudden dropping of the arm or weakness in maintaining arm position during the return movement. A positive test may indicate a tear in the rotator cuff complex. A complete tear is more common in older patients (50+ years).
External Rotation Lag Sign	Position the shoulder in 20° abduction and maximal external rotation (i.e. end range; ~45°) and ask the patient to maintain this position.	Unable to maintain position.
Lift Off Sign	Patient attempts to lift their hand away from their back in a posterior direction. The two sides are compared. If the patient is able to lift their hand away, the strength of the subscapularis can be tested by pushing the hand toward the back. Observe how the scapula acts under dynamic loading.	Patient is unable to lift off their hand.
Belly Press (Napoleon) Test	Patient's hand is flat on belly. Examiner places hand between patient's hand and the abdomen. Instruct patient to press down as hard as possible on their abdomen. Compare force exerted on both sides.	Inability to compress the abdomen without flexing at wrist. Pay attention to the wrist, elbow and shoulder positions, as the patient may compensate by changing positions to maintain the force exerted on the examiner's hand. False positive = shoulder stiffness.
Bear Hug	Lift the patient's hand straight up off the shoulder. The patient resists the movement and the two sides are compared.	Inability to resist lifting of the hand off the shoulder. Indicates a tear of the upper subscapularis tendon.
Hornblower's Sign	Place the patient's arm into 90° of abduction in the scapular plane and 90° of flexion at the elbow (i.e. hand is facing upward). Apply an anterior force at the distal forearm, that the patient is asked resist (i.e. external rotation of the arm).	Unable to externally rotate the arm, indicating a tear of teres minor.
Bursitis / Impingement		
Neer's Impingement Sign	Stabilize the patient's shoulder, placing one hand over the clavicle and scapula. With the other hand, grasp the patient's wrist or forearm. The arm is then passively and forcibly fully elevated in the scapular plane and then internally rotated.	Expression of shoulder pain.
Hawkins Kennedy Test	Place one hand on the patient's elbow for support and grasps the wrist with the other hand. Place the arm into 90° of shoulder flexion and 90° of elbow flexion. Internally rotate the shoulder. This pushes the supraspinatus tendon against the anterior surface of the coracoacromial ligament and coracoid process.	Expression of shoulder pain. If this test is negative its likely not a shoulder problem and need to strongly consider neck.

Test	Technique	Positive Sign
Biceps/Labral Pathology		
Speed's Test	Place one hand beneath the upper arm for support and grasps the patient's wrist with the other hand. The patient's arm is positioned into forward shoulder flexion (at the angle where the patient is symptomatic), with the elbow extended and the hand supinated. Apply a downward force at the forearm that the patient resists.	Expression of pain during resistance in the bicipital groove, indicating bicipital paratenonitis or tendinosis.
O'Brien's Test	Stabilize the patient's shoulder, placing one hand on the scapula and clavicle, and with the other hand, grasps the patient's forearm. The patient's arm is then horizontally adducted 10 to 15° and internally rotated so that the thumb faces downward (i.e. pronation). Apply a downward force on the forearm that the patient resists. Repeat the motion with the patient's arm in supination.	Pain or clicking inside the shoulder (not over the acromioclavicular joint) in pronation but not in supination position.
Saw Test	The patient flexes their elbow to 90°. Grasp the patient's fist. Apply a downward force that the patient resists while making a saw motion moving between 30° of shoulder flexion and 30° of shoulder extension.	Pain in the bicipital groove is suggestive of bicipital tendinitis.
Glenohumeral Instability		
Load and Shift Test	Stabilize the shoulder with one hand over the clavicle and scapula. With the other hand, grasp the head of the humerus (thumb & fingers over posterior & anterior humeral head respectively). "Load" portion – gently push the humerus to seat it in a neutral position in the glenoid fossa. "Shift" portion – Push the humeral head anteriorly (anterior instability) or posteriorly (posterior instability), noting the amount of translation. Compare the two sides.	Excessive anterior movement compared to the other side and pain. Translation of 25% of the humeral head diameter or less anteriorly from neutral is considered normal.
Anterior Apprehension Test	Place one hand beneath the elbow to support the upper extremity and with the other hand grasp the patient's wrist. Place the patient's arm into 90° of abduction and 90° of elbow flexion. Slowly move the arm into external rotation as far as possible, while looking for facial signs of apprehension. It is imperative that this test is performed slowly and that the patient's arm is returned to neutral before releasing the arm to avoid accidental shoulder dislocation.	Patient looks or reports apprehension (not pain) in any way (i.e. patient feels like their shoulder will dislocate) and resists further motion.
Anterior Relocation Test	See Anterior Apprehension Test. On a positive sign, apply a posterior force to the proximal humerus and assess if the patient loses apprehension and their pain decreases. After checking that the shoulder is centered, take the shoulder into greater external rotation, if tolerated by the patient. Return the arm to neutral before releasing to minimize the risk of shoulder dislocation.	Reduced apprehension and being able to move further into external rotation.
Sulcus Sign	Stabilize the scapula with one hand over the clavicle and scapula. With the other hand, grasp the patient's arm above the elbow and pull the arm distally (i.e. applies traction). Inferior translation of the humerus from the scapula and clavicle creates a sulcus or depression beneath the acromion process. The sulcus sign may be graded by measuring from the inferior margin of the acromion to the humeral head (+1 sulcus <1cm; +2 = 1 to 2cm; and +3 >2cm).	Presence of sulcus sign, which may indicate inferior instability or glenohumeral laxity. A bilateral sulcus sign is not as clinically significant as unilateral laxity on the affected side.
Jerk Test	Stabilize the patient's scapula with one hand and with the other hand grasp the patient's elbow and axially loads the humerus in a proximal direction. While maintaining the axial loading, move the arm horizontally (cross-flexion/horizontal adduction) across the body.	Sharp pain or sudden clunk as the humeral head slides off the back of the glenoid (subluxes). When the arm is returned to the original position, a second jerk may be observed when the humeral head reduces.
Acromioclavicular (Not Instability, Joint Related Issues)		
Cross Body Adduction Test	Place one hand on the contralateral shoulder for support and grasps the elbow of the involved arm with the other hand. Passively flex the arm forward to 90° and then adduct the arm horizontally as far as possible. The patient may also actively perform the test.	Localized pain over the acromioclavicular or sternoclavicular joint.

2a. Red Flags

Infection or Septic Arthritis
Indication: Systematically unwell; fever; unexplained swelling; pain unrelated to activity; pain not relieved with rest.
Referral: Same day emergency referral to emergency department or call RAAPID.

Cardiopulmonary
Indication: Pain extrinsic to shoulder, chest pain, dyspnea, diaphoresis.
Referral: If these symptoms are present call 911.

Fracture / Unreduced Dislocation
Indication: History of traumatic incident, Obvious deformity +/- loss of range of motion; Constant or progressive pain.
Referral: Same day emergency referral to emergency department or call RAAPID.

Pectoralis Major / Distal Biceps Rupture
Indication: Swelling, bruising or deformity in affected area; limited range of motion; weakness / inability to contract.
Referral: Same day emergency referral to emergency department or call RAAPID.

Malignancy
Indication: History of cancer; Night sweats; Unremitting night pain; Unexplained deformity or mass; Acute onset with no identifiable cause; Pain unrelated to activity; Pain not relieved with rest.
Referral: Urgent referral to orthopedic oncology surgeon within 1 week.

Thoracic
Indication: Pain extrinsic to the shoulder, dyspnea, fever. Consider pneumonia or pulmonary embolism (PE) depending on vitals/assessment.
Referral: Diagnose and manage as appropriate. If emergent, refer to ER or call RAAPID.

Abdominal
Indication: Pain extrinsic to shoulder, abdominal pain, nausea/vomiting. Consider hepatobiliary disease, diaphragmatic irritation.
Referral: Diagnose and manage as appropriate. If emergent, refer to ER or call RAAPID.

Rheumatological
Indication: Typically, patients present with no history of trauma, potentially multiple joints, stiffness, decreased ROM, symptoms external to shoulder. Consider polymyalgia rheumatica, inflammatory and crystal arthropathies. **Referral:** Work up appropriately, utilize advice services as available.

2b. Additional Diagnostic Considerations

If any of the following are identified during the primary care assessment, the patient may benefit from referral to alternative pathway measures:

Receiving active treatment for a neurological or neuromuscular condition (e.g. stroke, multiple sclerosis) or unexplained neurological disturbance or deficit (e.g. altered power or sensation, numbness, tingling, burning)
Referral: Musculoskeletal specialist (Physiatrist or Neurologist).

Inflammatory / rheumatological condition / arthropathy (e.g. rheumatoid arthritis, gout, psoriatic arthropathy) **Referral:** Rheumatologist.

Cervical spine involvement
Referral: Spine surgeon.

Shoulder injury is a part of an active medicolegal or third-party claim
Referral: Psychosocial support and/or Social Worker.

3. Advice and Referral Information

For emergency medical attention, call RAAPID for on-call Orthopedic Surgeon or call 911.

Zone	Program	Online Request	Phone Number	Hours of operation
All Zones	RAAPID	N/A	North: 1-800-282-9911 780-735-0811 South: 1-800-661-1700 403-944-4486	7 days per week 24 hours
Non-Urgent Electronic				
All Zones	eReferral Netcare		N/A	Mon - Fri
Edmonton, North	ConnectMD	Online Request	1-844-633-2263	Mon - Fri 9am – 6pm*
Calgary	Specialist Link	Online Request	403-910-2551	Mon - Fri 8am – 5pm*

You can request non-urgent advice at any point when uncertain about medications, next steps in treatment, investigations, or resources available. *There are some exceptions to non-urgent telephone program hours of operation and exclusion.

Referral Information

Referral pathways are guidelines to help referring providers know what information, labs and diagnostic imaging are required with their referral to a specialty. These pathways are co-designed with Primary and Specialty Care, AHS Operations, and patients to ensure the right amount of information is included throughout the referral process to triage the patient as quickly as possible. To ensure referring providers have referral information at their fingertips, referral pathways may link to clinical pathways when available. AHS manages referral pathways and extensive work is ongoing as part of the Alberta Surgical Initiative. If you have questions or want more information about the referral pathway development process, please email access.ereferral@ahs.ca.

- Urgent Referral – Call surgeon on call via RAAPID or call 911.
- Follow the Provincial Adult Orthopedic & Spine Referral Pathway.

Rehab Advice Line

The **Rehabilitation Advice Line (1-833-379-0563)** is a telephone service open Monday to Friday and provides rehabilitation advice and general health information for Albertans of any age. The service can:

- Assess your rehabilitation needs over the phone.
- Speak to parents, guardians or caregivers about a child's development or well-being.
- Give advice on activities and exercises that help with physical, functional, or developmental concerns.
- Provide strategies to manage the day-to-day activities affected by these concerns.
- Link you to rehabilitation services.

4. Differential Diagnosis and Management Recommendations

DIAGNOSIS	HISTORY	PHYSICAL EXAMINATION	MANAGEMENT
ROTATOR CUFF DISEASE			
Rotator cuff tear (partial, full), **bursitis**, **impingement**	• Age > 40 • Traumatic onset or insidious • Possible catching sensation with overhead activity • Pain with overhead activity • Pain at night, often when lying on the affected side; difficulty finding a comfortable position	• Possible atrophy in supraspinatus and infraspinatus fossae • Possible presence of scapular dyskinesia • Active ROM limited - unable to lift arm overhead or off the torso • Positive painful arc sign • Full passive ROM • Weakness related to pain **SPECIAL TESTS FOR ROTATOR CUFF** • **Supraspinatus:** positive Empty Can test • **Infraspinatus:** weakness with infraspinatus manual muscle test OR presence of a positive External Rotation Lag Sign • **Subscapularis:** positive Lift-off test • **Subscapularis:** positive Belly Press test **SPECIAL TESTS FOR BURSITIS / IMPINGEMENT** • Positive Neer's impingement sign • Positive Hawkin's-Kennedy test	**Non-Surgical Management** At least 12 weeks of APPROPRIATE physical therapy (home or supervised – active, strength-based). If patient is unable to achieve pain-free status with improved range-of-motion after 6 weeks, provide additional means of pain control (i.e. oral NSAID medication and/or injectable corticosteroids) and continue with physical therapy for another 6 weeks. **Referral for Specialist Consult** If patient does not respond well to physical therapy (i.e. POOR functional outcome) refer the patient for further assessment / surgical consult. For patients <60 years old with ACUTE LARGE massive rotator cuff tears: refer earlier for specialist assessment and potential surgical management.
BICEPS PATHOLOGY			
Biceps tendinopathy	• Deep anterior shoulder pain with potential to refer into biceps muscle belly • History of overuse or repetitive overhead activity • Pain increases with activity • Pain with overhead activities, pulling, or lifting • Pain is at night, especially if lying on affected shoulder • Audible or palpable click at the site of pain	• Pain with internal and external rotation • Potential clicking felt at the site of pain, especially during throwing movements • Point tenderness with palpation of the tendon at the bicipital groove **SPECIAL TESTS** • Positive Speed's test	
Proximal biceps rupture	• Often traumatic onset • Potential audible pop or snap • Anterior shoulder and biceps pain followed by relief	• Subsequent discoloration and swelling with acute ruptures • Change in muscle contour **SPECIAL TEST** • Positive Popeye's sign	
LABRAL PATHOLOGY			
Superior labral tear from anterior to posterior (SLAP)	• Common in young to middle-aged overhead athletes or laborers • Traumatic onset or insidious • Poorly localized pain that is constant, dull, achy, and perhaps intermittent • Pain with activity, especially overhead • Popping, catching, snapping may be present	• Active ROM limited (Loss of internal rotation and overhead activity) • Associated instability during testing **SPECIAL TESTS** • Positive O'Brien's test • Positive Speed's test	
Degenerative tear	Similar to rotator cuff disease		

DIAGNOSIS	HISTORY	PHYSICAL EXAMINATION	MANAGEMENT
b. INSTABILITY			**Exercise Based Rehabilitation** For unidirectional instability or dislocation (anterior or posterior) OR atraumatic, multidirectional instability, prescribe non-surgical management: At least 12 weeks of APPROPRIATE physical therapy (home or supervised – active, strength-based). If patient is unable to achieve pain-free status with improved range-of-motion after 6 weeks, provide additional means of pain control (i.e. oral NSAID medication or topical analgesic) and continue with physical therapy for another 6 weeks. **Specialist Consultation** If patient is young / high functioning OR > 40 years old refer the patient for further assessment / specialist consultation. If patient does not respond well to physical therapy (i.e. POOR functional outcome) refer the patient for further assessment / specialist consultation. **Notes** If X-ray is positive for fracture (humeral, scapular and clavicular), **refer immediately** to orthopedic surgeon via phone call (ideal timeline: 1 week). If there is an unreduced dislocation, request a same day referral to the emergency department via phone call.
Glenohumeral joint instability	• Traumatic instability common in young males • Multidirectional, atraumatic instability common in young, flexible females • Pain or feeling of insecurity with activity • Audible or palpable click	• Full active and passive ROM, although pain and apprehension may occur in overhead positions • Possible pain at extreme passive ROM • Normal strength, except in provocative position • Laxity • Consider and assess for Rotator Cuff Injury in patients >40 years following a dislocation **SPECIAL TESTS** • Positive Anterior Shift test for anterior instability • Positive Anterior Apprehension and Relocation test • Positive Jerk test for posterior instability • Positive Sulcus sign for inferior instability	
Acromioclavicular joint separation	• Traumatic event such as landing on top of shoulder • Pain at the top of the shoulder • Pain with sleeping on affected side • Presence of a step deformity • Tenderness to palpate relative to unaffected side	• Glenohumeral active ROM preserved with the exception of cross-body adduction, which is limited by pain • Full, but painful passive ROM at end range of cross-body adduction **SPECIAL TESTS** • Positive Cross Body Adduction test	

<table>
<tr><th>DIAGNOSIS</th><th>HISTORY</th><th>PHYSICAL EXAMINATION</th><th>MANAGEMENT</th></tr>
<tr><td colspan="3">c. ADHESIVE CAPSULITIS (FROZEN SHOULDER)</td><td rowspan="6"><u>Imaging</u>
For patients with stiffness, an X-ray should be ordered to delineate the cause of the stiffness.

<u>Image Guided Injection</u>
For Adhesive Capsulitis and Severe OA or Mild / Moderate Painful OA refer for Image Guided Injection:

Adhesive Capsulitis
• Arthrodilation ± Steroid
Osteoarthritis
• Hyaluronic acid, steroid or combination

<u>Non-Surgical Management</u>
For Mild / Moderate OA prescribe non-surgical management:

At least 12 weeks of APPROPRIATE physical therapy (home or supervised – active, strength-based).

If patient is unable to achieve initial improvements in pain and range of motion within 6 weeks, provide additional means of pain control (i.e. oral NSAID medication or topical analgesic) and continue with physical therapy for another 6 weeks.

<u>Specialist Consult</u>
If patient does not respond well to physical therapy (i.e. POOR functional outcome) refer the patient for further assessment / specialist consultation.

<u>Notes</u>
If X-ray is positive for fracture (humeral, scapular and clavicular), refer immediately to orthopedic surgeon via phone call (ideal timeline: 1 week)</td></tr>
<tr><td>Primary (Idiopathic)</td><td>• Spontaneous onset
• Common in middle-aged females, hypothyroidism and/or diabetes
• Stage 1: pain and reluctance to move; night pain, especially if lying on affected side (usually 3 months)
• Stage 2: similar to Stage 1 with persistent severe pain, but with progressive capsular contracture leading to loss of motion
• Stage 3: characterized by stiffness with resolution of long-standing pain</td><td rowspan="3">• Gradual loss of both active and passive ROM
• Limited active ROM during forward flexion at the glenohumeral joint
• Limited active ROM during external rotation at 90 degrees abduction at the glenohumeral joint
• Loss of active ROM with external rotation at neutral
• Capsular pattern of limited ROM (e.g. where external rotation is more limited than abduction which is more limited than internal rotation)</td></tr>
<tr><td>Secondary</td><td>• Commonly associated with Rotator Cuff Disease
• May occur following trauma
• Stages similar to Primary (Idiopathic)</td></tr>
<tr><td>Diabetic</td><td>• Associated with diabetic patients
• Stages similar to Primary (Idiopathic)</td></tr>
<tr><td colspan="3">c. ARTHRITIS</td></tr>
<tr><td>Glenohumeral joint osteoarthritis (GHJ OA)</td><td>• Deep joint pain
• Pain diffuse around upper arm and axilla
• Pain with increasing activity
• Pain at night, but relieved with change in position
• Stiffness, crepitus
• Progressive loss of function
• Painful locking, with subsequent “giving way”</td><td>• Decreased active and passive ROM with later stages of OA depending on site of degeneration, fragment, or loose body</td></tr>
<tr><td>Acromioclavicular joint osteoarthritis (ACJ OA)</td><td>• Pain at the top of the shoulder
• Pain can present as dull ache over deltoid, exacerbated with movement
• Pain with increasing activity
• Pain at night with sleeping on affected side
• Stiffness, crepitus</td><td>• Glenohumeral active ROM preserved except for cross-body adduction, which is limited by pain
• Full, but painful passive ROM</td></tr>
</table>

Other differential diagnoses

Suprascapular Neuropathy

Suprascapular neuropathy is a potential source of shoulder pain and functional limitation that can present secondary to various etiologies including entrapment or compression. Cystic lesions arising from a labral or capsular tear can compress the nerve along its course over the scapula. Nerve traction is theorized to arise from chronic overhead athletics or due to a retracted rotator cuff tear. The diagnosis of suprascapular neuropathy is based on a combination of a detailed history, a comprehensive physical examination, imaging, and electrodiagnostic studies.

It is important to recognize that compression of the suprascapular nerve from a paralabral cyst that is clinically relevant is accompanied by isolated wasting and weakness of the infraspinatus (external rotators). Routine MRI is not indicated to screen for suprascapular nerve compression secondary to a paralabral cyst, however it is important to be able to identify patients with wasting and weakness of the infraspinatus, especially in younger patients (less than 55) as further wasting of the infraspinatus can be prevented by surgical decompression.

Although the anatomic course and variations in bony constraint are well understood, the role of surgical treatment in cases of suprascapular neuropathy is less clear. Recent reviews on the topic have shed light on the outcomes after the treatment of suprascapular neuropathy because of compression, showing that surgical release can improve return to play in well-indicated patients. The incidence of compressive neuropathy is quite high in the overhead athletic cohort, but most patients do not show clinically relevant deficiencies in function. Surgical release is therefore not routinely recommended unless patients with pain or deficits in strength fail appropriate nonsurgical treatment. [3]

Neuralgic Amyotrophy (Parsonage-Turner Syndrome)

Neuralgic amyotrophy (Parsonage-Turner syndrome or brachial plexus neuritis) is an uncommon syndrome whose cause is unknown. The suprascapular and axillary nerves and corresponding muscles are affected most frequently. The disorder exhibits a broad range of clinical manifestations, and patients frequently present to physicians of different subspecialties. Accurate diagnosis can be challenging and requires a thorough history and physical examination. Nerve conduction velocity and imaging studies assist in the evaluation. Treatment consists of symptomatic management. Symptoms can persist for more than a year, but most patients note resolution of symptoms over time.

Routine imaging to screen for neuralgic amyotrophy is not indicated. However, in patients who do not improve after 3 months of appropriate nonoperative management, further imaging, such as an MRI, may be considered appropriate to assess for more common causes of shoulder pain, and may aid the diagnosis of an uncommon condition such as neuralgic amyotrophy. [4]

5. Imaging

For imaging recommendations and requirements, please follow the Provincial Adult Orthopedic & Spine Referral Pathway for the shoulder.

1. Routine imaging is not recommended for patients with non-traumatic shoulder pain. Shoulder x-ray should be the first investigation ordered for chronic shoulder disorders [5].
   If movement is significantly restricted, symptoms are not improving or if traumatic pathology (fracture or dislocation) is suspected, then x-ray is encouraged as the initial investigation.
   A four-view X-ray series is recommended: AP (with external rotation), AP oblique (Glenoid), PA/AP oblique (Scapular Y), and Axial.
   For shoulder instability: also include AP axial (Stryker Notch) and inferosuperior axial (West Point) [6].
2. Ultrasound and MRI are not recommended for those with shoulder pain at first presentation.
   If malignancy is suspected, then MRI is the recommended investigation [7]. If avascular necrosis is suspected, then MRI is the recommended investigation. In patients with a chronic shoulder condition, shoulder ultrasound should not be ordered simultaneously with a shoulder x-ray.
3. In patients with a chronic shoulder condition, shoulder ultrasound or MRI should only be ordered after the failure of at least three months of appropriate non-operative treatment.
4. Shoulder ultrasound is not indicated in the following conditions as it is either not diagnostic or does not provide relevant information for management:
   a. Shoulder instability
   b. Moderated to severe shoulder arthritis.
5. MRI should only be ordered for surgical planning after discussions about surgical outcomes have been discussed with the patient.
6. CT should only be ordered for surgical planning after discussions about surgical outcomes have been discussed with the patient.

6. Exercise-Based Rehabilitation and Pain Management

Exercise-Based Rehabilitation

Exercise based rehabilitation and self-management strategies are the most important components to improve pain and function and should be the main treatment focus. It is recommended that patients engage in formal physiotherapy, with sessions spaced 1-2 weeks apart and focused on education, self-management strategies and prescription of daily exercises. Dry needling, acupuncture and heat / ice can be helpful as an adjunct to help participate in exercise. Modalities like ultrasound, TENS and IFC provide short term relief but should not be the focus of your treatment.

Generally, a minimum of 12 weeks is required to see if rehabilitation is helpful. It is important that patient's work on the exercises daily.

Good Posture and Technique: Ensuring good posture and technique with exercise is key to train the muscles to effectively control the shoulder and can often improve pain.

Movement is Important: Patients should start with the exercises they can do with good technique and gradually progress through the program. It is okay for patients to work into light soreness or stiffness when doing exercise, however, they should avoid pushing into sharp or pinching pain.

Pain Management

Heat / Ice: Patients can apply ice or heat to their shoulder, depending on what feels best. They should monitor their skin and use a barrier such as a thin cloth to protect their skin from burns or frostbite.

General Exercise: Staying active with activities that don't increase shoulder pain can be helpful in recovery. Patients should be encouraged to go for a walk, ride a stationary bike, or work on lower body and core strengthening exercises. Doing this can help reduce inflammation, improve sleep and mood, and keep the rest of the body strong.

Positioning and Sleeping: Using positions that reduce shoulder tension can help relieve shoulder pain. Night pain is common and some patients find it helpful to sleep in a more upright position such as in a recliner or propped up on pillows in a slightly reclined position. Patients should use a support behind their elbow so that it doesn't fall back behind the midline of the body. When sitting during the day, patients may place a pillow under their arm to support it and help alleviate pain.

Weight-Loss: Weight-loss (if indicated) is recommended in patients with a BMI >25kg/mg^2. Patients should be encouraged to partake in daily exercise and consideration of a walking aid if functional mobility or pain are issues.

Injections: Cortisone / steroid injections can be used to help with short term pain control. They are used to decrease pain so that patients can participate in exercises and/or rehabilitation. Injections should be spaced at least three months apart and should not be used as a stand-alone treatment. Multiple shoulder injections are generally not recommended. Other injection options include:

- **Hyaluronic Acid and/or Corticosteroids:** Patients with severe OA or mild/moderate painful OA who do not have sufficient pain relief with topical or oral medication and physical therapy may benefit from injections of hyaluronic acid and/or corticosteroids. Intra-articular hyaluronic acid injection has been shown to be safe and effective leading to improved pain for patients with glenohumeral osteoarthritis. Further, corticosteroid injections have demonstrated short-term benefit for the management of rotator cuff-related shoulder pain [8]
- **Arthrodilation ± Corticosteroids:** Combined arthrodilation and corticosteroid injection potentially expediates the recovery of pain free range-of-motion for patients with adhesive capsulitis, with the greatest benefits experienced within the first 3 months of intervention. Arthrodilation should be used in conjunction with physical therapy on the day of procedure to optimize outcomes. Intra-articular corticosteroid injections have been shown to provide effective short-term pain relief and can result in short and long-term improvement in passive range-of-motion [9].

Sling / Immobilization: A sling is not required to manage shoulder pain. Keeping the shoulder moving is important to prevent a stiff or 'frozen' shoulder. Doing small bouts of gentle stretching exercises throughout the day can help the patient keep their shoulder moving and reduce pain.

Manual Therapy / Modalities: Manual therapy, dry needling, or acupuncture can offer additional pain relief when used alongside exercise therapy, particularly in the short term. Treatment options (modalities) such as inferential current, ultrasound, TENS, or shockwave therapy should not be the primary treatment focus.

7. Follow up with patient

In acutely painful injuries, follow-up assessment should be every 2 weeks until a clear diagnosis has been achieved. In cases where pain prevents a full examination, management should focus on controlling symptoms with conservative management such as light movement exercise, analgesics and physiotherapy.

In the majority of musculoskeletal injuries to the shoulder that are appropriate for exercise-based rehabilitation, improvement should be seen within 6-12 weeks. It is therefore recommended that a follow-up be scheduled within this timeframe to re-assess symptoms and functional progress, as well as to re-evaluate diagnosis if improvement is not being seen. However, it should also be stressed that many patient's rehabilitation will take several months and this can be important to note to the patient to ensure that expectations of participation and timelines are appropriate.

BACKGROUND

About this pathway

- This pathway will help guide appropriate procedures for patient management, investigations, and referrals. The purpose of this guideline is to initiate early, non-operative management for suitable patients, reduce unnecessary diagnostic imaging, increase appropriate surgical referrals, and reduce waiting lists for surgical consult.

Authors and conflict of interest declaration

- This pathway was co-designed for use in primary care settings by Dr. Monica Sargious and Dr. David Sheps in their roles as members of the Alberta Surgical Initiative Provincial Working Group for Orthopedics. Work is based on the Shoulder Assessment Clinical Pathway (MSK Shoulder Assessment Clinical Pathway - albertahealthservices.ca), which was developed under the guidance of the Bone and Joint Health Strategic Clinical Network and the Alberta Bone & Joint Health Institute in 2022. Names of participants and their conflicts of interest declarations are available upon request.

Pathway review process, timelines

- Primary care pathways undergo scheduled review every two years, or earlier if there is a clinically significant change in knowledge or practice. The next scheduled review is October 2026. However, we welcome feedback at any time. Please send us your feedback here, or email us at AlbertaPathways@ahs.ca.

Copyright information

DISCLAIMER

This pathway represents evidence-based best practice but does not override the individual responsibility of healthcare professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified healthcare professional. It is expected that all users will seek advice of other appropriately qualified and regulated healthcare providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.

PROVIDER RESOURCES

Choosing Wisely Canada: Orthopedics	Orthopaedics - Choosing Wisely Canada
Alberta Health: Alberta Wait Times Reporting	Alberta Wait Times Reporting: Wait Time Trends
Smoking Cessation	• The importance of smoking in orthopedic surg (tandfonline.com) • Becoming Tobacco Free | Alberta Health Services • COF_StopSmoking.qxp_Layout 1_(movepainfree.org)
BMI and weight management	• 1184-the-impact-of-obesity-on-bone-and-joint-health1.pdf (aaos.org) • Adult Weight Management | Alberta Health Services
QuRE (Quality Referral Evolution)	QuRE one-page summary (ucalgary.ca)

CLINICAL CARE CHECKLIST

Clinical Care checklist	
☐	History and Physical
☐	Confirm Shoulder problem (if not, please refer to alternate pathway and manage as appropriate).
☐	Checked for RED and YELLOW flag symptoms and made referrals as appropriate.
☐	Reviewed ADDITIONAL considerations and made additional referrals as deemed appropriate.
☐	Conducted an in-depth history and physical examination if comfortable assessing and diagnosing shoulder conditions (if not, please refer, do not order diagnostic imaging and refer to a trained shoulder expert OR Shoulder Central Intake Clinic).
☐	Order Diagnostic Imaging as appropriate.
☐	Generate differential diagnosis and select appropriate sub shoulder pathway.
☐	Exploration of patient barriers to attending investigations, referrals or receiving care.

PATIENT RESOURCES

The Rehabilitation Advice Line (1-833-379-0563). Available Monday-Friday 09:00-17:00.	A telephone service open Monday to Friday and provides rehabilitation advice and general health information for Albertans of any age.
MAP to MOTION | Patient Resources	https://maptomotion.org/patient-resources

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