



Management of Occupational Shoulder Injuries in Primary Care

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Abstract

The shoulder is the most mobile joint in the body and is comprised of an intricate complex of muscles, tendons, and ligaments. Due to this mobility and heavy reliance on arms, shoulder injuries are one of the most debilitating and common disorders afflicted in the workplace. They have been categorized as a high impact injury by the workplace safety and insurance board (WSIB) of Ontario due to the long recovery and return to work (RTW) times. Difficulty diagnosing shoulder injuries due to similar clinical presentations and variability with range of motion (ROM) testing has led to uncertainty when administering proper treatment and an over reliance on diagnostic imaging. Current standards emphasize taking a thorough patient history, using basic physical examination tests to examine ROM, stability, and strength, and using specialized tests to help determine early prognostic indicators. Physiotherapy is the first-line treatment for most non-traumatic shoulder injuries as it addresses most repetitive overload disorders commonly found in occupational settings. Analgesics and injections have a role for pain relief but should only be used as a temporary measure. A surgical approach can be considered if there is a specific pathology without red flag indicators but an initial trial of physiotherapy should be recommended. In conjunction with treatment, a patient tailored RTW plan should be developed with information about the injury and preventative measures with an emphasis on early RTW as there is evidence that regular work life promotes positive health benefits.

Keywords

Occupational shoulder injuries, Physical examination, Rotator cuff, Shoulder impingement, Adhesive capsulitis, Traumatic injury, Return to work, Modified work

Introduction

The shoulder joint is the most mobile joint in the human body but sacrifices stability as a result. The rotator cuff muscles, glenoid labrum, and glenohumeral (GH) ligaments provide the majority of stabilization but are prone to natural degeneration and fatigue with age, sports, or work [1,2]. This article will examine common shoulder disorder presentations, diagnosis, treatments, and RTW considerations.

Shoulder injuries are one of the most debilitating disorders commonly found in the workplace. They have been categorized as "high impact" claims, along with lower back injuries and fractures, by the WSIB based on long recovery and RTW times. These three high impact claims account for an average of 40% of all lost time benefit

payments and 35% of all lost time claims from 2009 to 2014 with a higher number of average days lost than all other lost time claims from 2010 to 2013. Although the incidence of lost time claims from 2010 to 2014 of low back pain has steadily declined (20.6% to 17.7%), lost time claims from shoulder injuries have remained unchanged (6.4%) [3].

The source of workplace shoulder injuries is multifactorial and involves both physical and psychological factors. Physical factors – manual materials handling, vibration, static postures, work involving hands above shoulders, repetitive motions – are common, well known risks associated with occupational shoulder pain [4,5]. These factors can lead to shoulder pain due to the stress on the muscles and tendons from increased ischemia and inadequate time for rest [6]. These risks along with a patient's age (> 37) and possible psychological factors have shown strong correlations with the onset of shoulder disorders [1,7].

Common shoulder diagnoses covered in this article include rotator cuff disorders (subacromial impingement, partial and full thickness rotator cuff tears), adhesive capsulitis, and trauma-related injuries (GH instabilities and acromioclavicular (AC) disorders). With rotator cuff disorders being most common [8], shoulder disorders are prevalent in primary care and determining the correct diagnosis and treatment method is difficult because of their similar presentations [9]. Correctly identifying a shoulder injury can be done by taking an accurate patient history and appropriate physical examination. Further investigations such as ultrasound, magnetic resonance imaging (MRI), and X-ray are recommended for traumatic injuries, injuries signifying red flags, or uncertain diagnoses [8].

There are a variety of different options to treat shoulder injuries but they are heavily dependent on an accurate diagnosis. The main goal for treating shoulder injuries is to return the patient to regular activities with manageable pain and a functional ROM. Common treatment for shoulder injuries include analgesics, injections, physiotherapy, and surgery. Physiotherapy, with possible analgesics or injections, is the most commonly prescribed treatment for minor shoulder disorders as it is a non-operative means shown to produce good results in patients [10,11]. Surgery is usually only recommended if the patient has reoccurring shoulder dislocations or red flags [8]. Treatment along with a RTW plan can be effective at restoring normal activity for patients.

As the factors affecting the patient at work are multifactorial, a proper RTW plan should take daily activities into account and check

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for physical and psychological risks. An early RTW plan with activity modification can assist with the patient's rehabilitation through social support, financial security, and physical activity to increase the chances for a successful work reintegration [12]. With proper RTW interventions from clinicians and communication between those involved, there is a much greater chance for successful recovery and return to normal activity [12,13].

Shoulder biomechanics

The shoulder being the most mobile joint in the body comprises many different muscles, bones, and ligaments. With most injuries occurring with the rotator cuff muscles (supraspinatus, infraspinatus, subscapularis, and teres minor), understanding their regular function and interaction with the surrounding tissue (ligaments, glenoid labrum, etc...) is key to diagnosing and administering proper treatment.

The scapula comprises the origin of the rotator cuff muscles and glenoid labrum and is used as a base for stabilizing the humeral head [14]. Scapular position is important for maximal force in daily activities. Improper positioning of the scapula (scapular protraction) can affect the internal and external rotation strength of the rotator cuff muscles along with decreasing subacromial space [15].

The rotator cuff muscles main role is to keep the humeral head centred and compressed into the glenoid during dynamic and static arm movements [2]. Along with this function, they assist the larger muscles (deltoid, pectoralis major, etc...) with abduction (supraspinatus), internal rotation (subscapularis), and external rotation (infraspinatus, teres minor) [14]. Weakness in these muscles from fatigue (repetitive or overhead work) has been shown to shift the humeral head superiorly, increasing the risk for impingement from tendon compression [16].

Another biomechanical factor to consider is the arm position. Arm position and movement greatly effects humeral head movement as shown by Massimini et al. This study demonstrated large anterior/posterior shifts and ligament elongation during 90° shoulder abduction with and without external rotation [17].

Knowledge of the biomechanics involved in shoulder movements can help practitioners determine a correct diagnosis and understand the underlying issues that may cause pain or weakness in shoulder disorders.

Pathophysiology

There are various pathophysiological reasons for the onset of a shoulder disorder. Workplace factors that can increase the prevalence are age, type of work, and repetitive/awkward positions [5,6,18]. These factors create opportunity for fatigue and micro trauma from overexertion and overuse of the shoulder and without adequate rest time can increase the risk of ischemia and tendinopathy [6,14,19,20]. Ischemia and rotator cuff tendinopathy, consisting of tendonitis or tendinosis, can affect the repair of collagen to increase the risk for further mechanical failure [20,21]. This resulting failure can lead to subacromial impingement and resulting rotator cuff muscle atrophy [2,22].

Muscular imbalance from muscle fatigue as well as awkward positions have been shown to shift the humeral head and cause substantial lengthening of the GH ligaments [16,17]. There are also correlations of acromion shape with rotator cuff damage. Studies have shown associations between acromion shape (particularly type III (hooked) acromion) and rotator cuff tears due to decreased subacromial space and supraspinatus impingement [23,24].

Clinical presentations

The majority of patients presenting with a shoulder injury will have symptoms ranging from pain with specific movements to limited ROM but differentiating these symptoms and determining a diagnosis is a difficult task [8,22]. Taking a thorough patient history, identifying the cause of injury, and conducting ROM tests are the best methods to determine an accurate diagnosis [25].



Figure 1: Internal Rotation Resistance Test

The patient flexes the elbow of both arms to 90° with both arms full adducted. The patient attempts to rotate both hands internally, into the stomach, while the clinician resists the internal rotation. A positive test will show the patient experiencing pain or weakness.

Patient history

A comprehensive history is the most valuable method for diagnosing patients, as the physical examination, including specialized tests, can have varying results and should be used as a measure to rule in or rule out a diagnosis [9,25,26]. Patient history should include information about: age, hand dominance, recreational activities, location of pain, onset of pain, and pain at night, duration of pain, when the pain occurs, and severity of pain, past medical history, and family history [8,11]. Practitioners need to remain alert to "red flags" which should be managed by an appropriate specialist. Common red flags include history of cancer with unexplained deformity or sensory deficit, massive/multiple rotator cuff tear, failed shoulder reduction, significant weakness without pain, fever, or epileptic seizure or neurologic sensation after trauma [8,25].

Physical examination

The physical exam begins with a visual inspection to check for any abnormalities of the shoulder region. Abnormalities can be found by palpation and general inspection with the contralateral shoulder for symmetry, deformity, tenderness, redness, crepitus, bruising, atrophy, or swelling [8,11]. Checking the patient's ROM by testing both their active and passive ROM with shoulder abduction/adduction, flexion/extension, and internal/external rotation can show weakness, pain, or stiffness in the shoulder [8,11,25]. Specialized testing can then be used as supplementary information to attempt to isolate the area of pain.

Specialized physical tests

Commonly used tests for detecting injury to specific rotator cuff muscles in rotator cuff tears or impingement are internal/external rotation lag tests, internal/external rotation resistance tests, the empty can test, the drop arm test, the Hawkins-Kennedy test, and the painful arc test. These tests have been created to isolate specific rotator cuff muscles or cause controlled pain.

The internal rotation resistance (Figure 1) and lag (Figure 2) tests examine the subscapularis.



Figure 2: Internal Rotation Lag Test

The patient flexes their elbow 90° and places the back of their hand on their lower back. They then lift the hand off their back and attempt to hold this position. A positive test is found if they have difficulty holding this position.



Figure 4: External Rotation Lag Test

The patient flexes the elbow 90° and abducts their arm 20°. The clinician then externally rotates the arm 90° and the patient attempts to hold this position. The test is positive if the patient has difficulty holding the externally rotated arm.



Figure 3: External Rotation Resistance Test

The patient flexes the elbow of both arms to 90° with both arms full adducted. The patient attempts to rotate both hands externally, away from each other, while the clinician resists the external rotation. A positive test will show the patient experiencing pain or weakness in one arm more than the other.

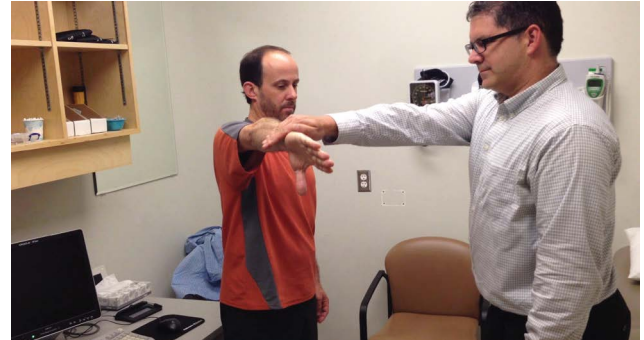


Figure 5: The Empty Can Test

Patient abducts arm 90° then brings the arm forward 30° horizontally. They fully internally rotate and then resist downward force from the clinician. A positive test is shown with pain or weakness in holding the arm in this position.

Initial measurements of weakness and pain can be conducted with the disabilities of the arm, shoulder, and hand (DASH) or Quick DASH questionnaires to check for improvement in treatments [29].

Diagnosis

Differentiating shoulder disorders is challenging due to the similarity of the symptoms. Factors attributed to differentiating between rotator cuff disorders, adhesive capsulitis, and traumatic injuries are patient history, mechanism of injury, and examinations.

Rotator cuff disorders

Rotator cuff disorders are the most common shoulder disorder and commonly affect people greater than 35 years of age with a higher risk as age increases [8]. Common rotator cuff disorders are shoulder impingement and partial and full thickness rotator cuff tears. They commonly present with atrophy, pain and/or weakness with active movements, and night pain [8,11,25]. Differentiating between impingement and rotator cuff tear is very difficult and highly dependent on the patient's history. This is because rotator cuff tears

The external rotation resistance (Figure 3) and lag (Figure 4) test the infraspinatus.

The empty can test (Figure 5) and the drop arm test (Figure 6) check for the supraspinatus.

The Hawkins-Kennedy test (Figure 7) and painful arc test (Figure 8) are used to diagnose for shoulder impingement [27,8].



Figure 6: The Drop Arm Test

The arm of the affected shoulder is raised to maximum abduction. The patient then slowly lowers the arm. A positive test is found if the arm drops after adducting to 90°.



Figure 8: The Painful Arc Test

The patient abducts their arm to 180° from full adduction or vice versa. The test is positive if the patient experiences pain during 60° to 120° of abduction or adduction.



Figure 7: The Hawkins-Kennedy Test

The patient flexes the elbow 90° and then flexes the shoulder 90°. The patient then internally rotates and holds this position. The clinician attempts to further internally rotate the arm. The test is positive if there is pain experienced during further rotation.

Shoulder impingement is characterized by a decreased subacromial space which causes pinching of the soft tissue (supraspinatus, subacromial bursa, bicep tendon, etc...) between the acromion and humeral head [11]. This can be caused by muscular imbalances of the surrounding tissue resulting in compressive forces on the rotator cuff muscles [2,22]. The main symptom is pain and treatments are designed to reduce subacromial pressure with rotator cuff strengthening [10].

Rotator cuff tears can vary in size from partial to full thickness tears. Rotator cuff tears are more likely to occur in traumatic events but persistent micro ruptures through sustained positions or repetitive movements can cause enough damage for the rotator cuff tendons to gradually tear, usually the supraspinatus [2,6,8,25]. These partial and full tears can be asymptomatic and differentiating partial or small full thickness tears from tendinopathy can be difficult [8].

Identifying the damaged rotator cuff muscle or differentiating between impingement and tears can be assisted with specialized ROM tests. Studies with strong results have been done to test different combinations of special tests. The Journal of the American Medical Association (JAMA) recommends using one pain provocation test (the painful arc test), three strength tests (internal/external rotation lag tests and the drop arm test), and one composite test (external rotation resistance test or the empty can test) as a general guide for checking which rotator cuff muscle may be damaged [27]. Another study developed a combination of tests to determine shoulder impingement or rotator cuff tear. Testing for impingement used the Hawkins-Kennedy test, painful arc test, and an infraspinatus test, while testing for a full thickness tear used the drop arm test, painful arc test, and an infraspinatus test [28]. There have been good results from these tests but special tests should still be used as an assistive measure for diagnosing a disorder [26].

Adhesive capsulitis

Adhesive capsulitis (frozen shoulder) is an idiopathic onset of pain and ROM restriction due to a contracture of the shoulder capsule that affects people 40-60 of age with a higher prevalence in diabetics [31]. The disorder comes in three stages that, in total, can last approximately

may be asymptomatic or they could have impingement from an underlying rotator cuff tear [30]. Some indicators for a differential diagnosis can be repetitive motions from overuse in tendinopathy (associated with impingement) or minor trauma for partial/full thickness tears [25,30].

two years: the pain stage, the stiffness stage, and then a slow recovery stage [25,31]. The major difference on examination between frozen shoulder and other shoulder disorders is the limited global active and passive ROM, particularly in external rotation [25,31]. Specialized physical tests are generally not recommended as they can be difficult to examine appropriately due to the limited global passive ROM. Investigations such as X-ray show normal findings and can be used to exclude other possible disorders (osteoarthritis) that share similar symptoms [31]. In the case of osteoarthritis, frozen shoulder shares similar limited ROM but usually has a history of more gradual pain development [32].

Traumatic injuries

Trauma can be sustained at any age with various different onsets (falls on shoulder, falls with arm extended, dislocation) and can cause an assortment of different diagnoses (rotator cuff tear, GH disorder, AC disorder, fracture). Trauma related injuries are not predominately suffered in occupational settings but improper treatment and the subsequent return to work can affect daily activities and exacerbate symptoms. When examining the patient, appropriate cautions should be taken for the patient when checking ROM and using specialized tests as the area of injury may be susceptible to further damage. Further investigations (X-ray, ultrasound) depending on the history, severity, and physical examination results are usually required to check for serious pathologies [25].

GH disorders (general instability, dislocations) from trauma can include labrum issues (superior labrum anterior to posterior (SLAP) lesions), ligament damage, or fractures. Specialtests for labrum damage have highly varied results and have questionable reliability for assisting in diagnosis [33]. SLAP lesions are best examined with a history of trauma with symptoms consisting of deep pain on movement, possible popping or locking, and general instability [34].

Labrum damage is also usually accompanied by other shoulder disorders such as rotator cuff tears and ligament damage [34,35]. Issues such as recurrent dislocations are best diagnosed with magnetic resonance arthrography (MRA) and a suspected fracture should be examined with X-ray [25,36].

AC disorders usually result from a fall on the shoulder and can cause subluxation of the AC joint. This disorder has six classifications (type I-VI) based on the amount of soft tissue damage. Types I and II are minor injuries of the AC ligament, while Types III-VI are severe subluxations of the AC joint and surrounding tissue [37]. Palpation of the AC joint by checking for tenderness, deformity, and compromised adduction can be indicative of AC disorders [11]. Further investigations (X-ray) may be required for suspected Type III or greater AC disorders [25].

Traumatic injuries are easily identified by patient history and the mechanism of injury but the resulting damage to the shoulder can be multi layered. Asymptomatic or minor trauma resulting in normal shoulder function should have an examination done with recommendation for X-ray to check for underlying bone damage. Highly debilitating traumatic injuries should be recommended to the correct specialist.

Investigations

Common investigations for shoulders include X-ray, MRI, MRA, and ultrasound [11]. Traumatic injuries should be investigated with X-ray to check for suspected bone damage or red flags while MRI and MRA should generally only be recommended if there are indications for surgery [22]. Although they are important for diagnosis and have high sensitivity and specificity, they are often overused in primary care when investigating patients that have injuries that can be treated conservatively [8,11,22,38] (Table 1).

Treatment

The key to administering treatment to patients with shoulder injuries is determining a correct diagnosis. Once accurately

diagnosed, the corresponding treatment can be recommended and the patient can begin healing. Common treatments for shoulder disorders include analgesics, injections, physiotherapy, and surgery.

Analgesics may be advised if the patient is experiencing severe pain but should only be recommended as a short term measure or used in conjunction with physiotherapy [8,22]. Possible recommendations include simple analgesics (paracetamol), non-steroidal anti-inflammatory drugs (NSAIDs), or corticosteroid injections but with strong attention to possible side effects for elderly or diabetic people [8,22,25].

Physiotherapy is usually the first treatment recommended to patients with non-traumatic shoulder disorders as it is a relatively inexpensive non-invasive method that can address key mechanical problems of the shoulder [11,39]. It can be administered in different forms such as exercise, stretching, and shockwave therapy. Exercise is usually advised as the main physiotherapy treatment as it can be done primarily at home, with correct guidance from a physiotherapist, it is readily available and can be done at any time.

A surgical approach should be considered only if the patient has evident red flags, traumatic events, or has failed conservative measures [8,11]. Orthopaedic surgeon referral may be recommended for young and active patients with traumatic injuries or severe rotator cuff damage but there is evidence that asymptomatic full thickness rotator cuff tears can be managed conservatively through physiotherapy [25,40].

Rotator cuff disorders

Treatment for rotator cuff disorders should look to reduce pain and return normal function by correcting the muscular imbalances causing impingement or tears [11]. Analgesics or injections and physiotherapy should be recommended to help correct mechanical issues [8,11].

Strengthening the rotator cuff muscles creates a stronger compression of the humeral head into the glenoid labrum and reduces the natural superior shift of the humeral head by the deltoid [11,16]. Unless there is severe rotator cuff damage or conservative measures have failed, surgery is usually not recommended [11].

Some exercise recommendations based on maximum voluntary isometric contraction (MVIC) for rotator cuff strengthening exercises include [41,42].

- standing external rotation (infraspinatus, teres minor, supraspinatus)
- side lying external rotation (deltoid, infraspinatus, teres minor, supraspinatus)
- standing internal rotation (subscapularis, pectoralis major, latissimus dorsi)
- 90° shoulder abducted internal rotation (subscapularis, supraspinatus)
- standing abduction (supraspinatus, deltoid)

Along with exercise, high energy extracorporeal shock-wave therapy (ESWT) may be recommended as it has shown strong evidence with tissue regeneration and calcium deposit resorption for rotator cuff damage due to calcific tendinosis, while low energy ESWT has shown some evidence for short term pain relief in non-calcific tendinosis [43,44].

Adhesive capsulitis

Although the treatment goals of reduced pain and normal ROM are the same in each treatment method, treating adhesive capsulitis is a controversial issue [31,45]. Corticosteroid injections, with consideration of side effects, can be used to greatly reduce pain in the first stage and, in conjunction with light pendulum exercises and stretching, can be an effective non-operative treatment for increasing ROM [31]. If physiotherapy does not show significant

Table 1: Major differential factors commonly present in rotator cuff disorder, adhesive capsulitis, and traumatic injury.

Shoulder Disorder	Patient History	Physical Examination	Specialized Tests
Rotator Cuff Disorder	35 years or older	Atrophy	Recommended tests for suspected general rotator cuff disorder: -Painful arc test -Internal and external rotation lag test -Drop arm test -Empty can test or external rotation resistance test
	Repetitive or static postures in work environment	Deformity	
	Overhead work	Swelling	
	Night pain	Redness	
		Tenderness	
		Weakness or pain in: -Adduction/abduction -Flexion/extension -Internal/external rotation	Suspected full rotator cuff tear: -Drop arm test -Painful arc test -Infraspinatus test
			Suspected impingement: -Hawkins-Kennedy test -Painful arc test -Infraspinatus test
Adhesive Capsulitis	40-60 years of age	Limited global active and passive ROM	Specialized tests not recommended
	Idiopathic onset		
	May be diabetic		X-ray recommended to exclude osteoarthritis
Traumatic Injury	High impact on or around shoulder	Check for red flags	Specialized tests may be used to check asymptomatic injuries
		Deformity	
		Swelling	Further investigations recommended
		Atrophy	
		Tenderness	

improvement, manipulation under anaesthesia may be considered as it has been shown to have good efficacy for pain relief and restoration of motion but has been associated with complications, including humeral fracture and injury to the rotator cuff [31,45,46,47]. Arthroscopic release has also shown promising results with relief of pain and improvement in motion and is becoming more common for the treatment of frozen shoulder with potentially higher success and a lower complication rate compared with manipulation under anaesthesia [31,45,46].

Traumatic injuries

Treating traumatic injuries depends on the severity and area affected. Trauma involving minor injuries of the rotator cuff and AC joint can usually be treated non-operatively with physiotherapy and analgesia similar to rotator cuff disorders [8]. Major injuries resulting in significant weakness, suspected red flags, or minor injuries that fail conservative treatment will benefit from referral for possible surgery [25].

A key to successful treatment is regular follow-up. Patients should be seen in follow-up no later than four to six weeks after initial assessment to check their progress. Considerations based on the patient's progress should be to reduce analgesics depending on the pain, increase the intensity of the physiotherapy if ROM and pain improve, or refer to an orthopaedic surgeon if initial measures fail [11].

Return to work

There are numerous physical and psychological factors to consider when developing a successful RTW plan for patients. A comprehensive RTW plan should educate the patient on the basics of their shoulder injury, understand and suggest modifications for the patient's daily work activities, and establish proper communication with the patient, employer, and other possible health care professionals about the importance of returning to work. The RTW plan should also promote an early RTW as there is an association between increased time away from work and never returning to work [12]. Returning to work has been shown to have an overall positive health benefit and should be the main concern after a complete diagnosis and treatment routine has been developed [48].

Education

Informing the patient of their injury and potential preventative

measures can be effective in keeping them healthy at work. Some topics of discussion can be about their injury, using good biomechanics for tasks (lifting, pushing, pulling), and practicing proper posture. Teaching the patient about their injury and why the injury occurred can help them learn how to avoid further injury and about the importance of keeping the rotator cuff muscles active and healthy. They can even adapt the knowledge learned in the clinic to recreational activities to further promote rotator cuff health.

Education about compromising positions (working above the shoulders, awkward external/internal rotation, etc...) during strenuous activity can be helpful as a preventative measure. These positions should be actively avoided and the workplace modified in order to eliminate these aggressors. Good form such as lifting objects closer to the body, using larger muscle groups (chest, legs), or emphasising the use of readily available workplace tools during occupational activities are some tips that can reduce risk of injury in the shoulder [49]. Posture is an important factor to consider as well. The patient should focus on neutral scapular position during work as a protracted scapula has been shown to reduce rotator cuff rotation strength, which can lead to overexertion [15].

Work modification

To reduce risk and prevent further injury, workplace hazards should be identified and modifications should be made at work to return the patient to work early and facilitate physical healing and social support. Physical factors that have been associated with shoulder disorders include manual materials handling, vibration, static postures, work involving hands above shoulders, and repetitive motions while the psychological factors such as psychological job demands, job satisfaction, low work control, and lack of social support can also have debilitating effects on work [4,5,8,22]. Everyday work activities of the patient should be examined by the practitioner and recommendations should be made to reduce the activities mentioned earlier. Some adjustments for common aggressors can be to reduce weight when lifting by lifting several smaller loads, using step stools to keep overhead work to a minimum, and to vary tasks by using their non-dominant arm with neutral scapular posture [49]. If possible, direct workplace examinations should be taken to assist with the RTW process. These interventions show strong evidence of successful returns to work. A study conducted by Cheng and Hung [13], demonstrated significant improvement in RTW rates of individuals trained at their workplace with assistance from a job coach

compared to basic clinic-based work training and modifications. By determining the hazards within the workplace and in daily work activities, recommendations can be made for the patient to return to a modified work environment and to their regular familiar routine.

Communication

Communication between the healthcare provider, employer, patient, and the relevant worker's compensation board is essential for a successful RTW. Identifying the risk factors mentioned earlier and making sure that they are addressed with the people involved in keeping the patient healthy is important [49,50]. The patient's workplace should be appropriately modified to reduce shoulder aggressors. Communication should be ongoing to monitor progress and address any issues that further aggravate physical (increased pain, weakness) or psychological (low job satisfaction, low social support) symptoms [50].

Conclusion

The shoulder complex is a very mobile joint but can be prone to mechanical failure and an approach to treatment can be a difficult process. Shoulder disorders can be detrimental to a patient's work life and can greatly affect basic daily activity. An accurate patient history, conducting a thorough physical examination, and identifying workplace hazards are essential for creating a patient specific treatment and RTW plan. Returning to work early with knowledge of their injury and open communication with the people involved can facilitate continued healing and a return to regular activity.

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