

BESS Patient Care Pathway: Subacromial Pain

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on behalf of the BESS Subacromial Pain Working Group[†]

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Abstract

This article provides summary guidance for the management of Subacromial Pain using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) of rating quality of literature and grading the strength of available evidence. The Guideline development group of volunteers including orthopaedic surgeons, trainees, physiotherapists and patients set out explicit PICO questions, to specify all important outcomes to determine the clinical effectiveness of common treatment options for Subacromial Shoulder Pain compared with no treatment or placebo. A clinical librarian performed a search (date 6 December 2023) for available systematic reviews and randomised controlled trials (RCTs) from January 2013 onwards, and evidence was collected and summarised using explicit GRADE criteria for rating the quality of evidence. A total of 6261 records (3686 MEDLINE, 2543 Cochrane CENTRAL and 32 Cochrane CDSR) were retrieved by the searches. The results of the databases were deduplicated in EndNote 21, leaving a total of 5283 unique records. These were narrowed down to 342 articles (242 RCTs and systemic reviews) after excluding articles on other causes of shoulder pain. Recommendations were characterised as strong or weak according to the quality of the supporting evidence. This informative summary provides the quality of available evidence for management of Subacromial Pain.

Keywords

subacromial pain, shoulder, guidelines, patient care pathway

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Introduction

Definition

There is widespread variation in the use of the term “subacromial pain” with no consensus on the diagnostic criteria. “Subacromial pain” can be used to describe a diverse range of symptoms and pathology. Due to the widespread variation in the literature (with over 20 unique terms used)¹ on the terminology describing subacromial pain, it is difficult to compare studies investigating subacromial pain.

Subacromial pain can arise from different anatomical structures within the subacromial space. Various pathological processes may either directly or indirectly affect these structures and lead to pain perception.

Witten et al.¹ suggested that if the patient had a diagnosis of glenohumeral or acromioclavicular joint (ACJ) osteoarthritis, frozen shoulder, partial and full-thickness rotator cuff tears, calcific tendinitis, shoulder instability, neurological and cervical spine dysfunction, they should be excluded as having ‘subacromial pain syndrome’. Currently there is no consensus on the diagnostic criteria for patients with subacromial pain and the pathologies which cause it.

Shared decision-making

The General Medical Council's Good Medical Practice – Duties of a Doctor guide² clearly states in the section on working in partnership with patients that doctors should:

- Listen to patients and respond to their concerns and preferences.
- Give patients the information they want or need in a way they can understand.
- Respect patients' right to reach decisions with the doctor about their treatment.

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- Support patients in caring for themselves to improve and maintain their health.

This can only be achieved by direct consultation between the patient and their treating clinician, resulting in shared decision-making.

Background

About 2.4% of people in the United Kingdom attend primary care for shoulder pain annually.^{3–5} Shoulder pain is higher in women than in men.⁵ The causes of subacromial pain can be intrinsic or extrinsic. Intrinsic causes of subacromial pain include rotator cuff tendinopathy and subacromial/ subdeltoid bursitis. Extrinsic causes of subacromial pain include anatomical variations in the coracoacromial arch, scapular movement disorders, postural abnormalities of the shoulder, glenohumeral capsule and soft tissue contractures.^{6,7} Psycho-social factors may have an impact on patient-reported symptoms and on the outcome of the treatment of subacromial pain.⁸

There is low to moderate evidence for an association between metabolic syndrome (diabetes, hypertension, dyslipidaemia, central obesity etc) and subacromial pain.⁹

There is limited evidence about prognostic factors that are associated with the outcomes in patients with subacromial pain. Four factors were found to be associated with better outcomes after physiotherapy treatment: higher expectation of recovery with physiotherapy, higher pain self-efficacy, lower pain severity at rest and being in employment or education.¹⁰

Review of existing guidelines

To avoid duplication, a review of the existing guidance was undertaken. Medline, Embase, PubMed, Trip, SIGN, NICE, PEDro and Google were searched for national, international and society publications produced within the last 10 years that provided clinical guidelines for the diagnosis and management of subacromial pain. Two publications were identified after excluding the results which were not according to the guidelines or where no translatable access was available. These were published by the Dutch Orthopaedic Association: Guideline for diagnosis and treatment of subacromial pain syndrome: a multidisciplinary review (2014)¹¹ and British Elbow Shoulder Society (BESS)/BOA Patient Care Pathway for Subacromial Shoulder Pain (2015).¹² These guidelines are more than eight years old, and since then, more literature has been published on subacromial pain hence, the committee concluded that an up-to-date review of the management of subacromial shoulder pain using a modern guideline methodology is required.

Methodology

The BESS guideline development group was formed of volunteers with an interest and expertise in managing shoulder problems. These included senior and junior shoulder consultant surgeons, orthopaedic trainees, physiotherapists and patients. Multiple virtual meetings were held initially to formulate pertinent 24 PICO questions, including specification of all important outcomes to determine the clinical effectiveness of common treatment options for Subacromial Shoulder Pain compared with no treatment or placebo. Structural causes of shoulder pain have been excluded from this review, and these should be managed individually.

Literature searches were performed by a trained information specialist on 6 December 2023, searching for available systematic reviews and randomised controlled trials (RCTs) reviewing the management of Subacromial Shoulder Pain. Literature from January 2013 onwards was collated and summarised using explicit Grading of Recommendations Assessment, Development, and Evaluation criteria for rating the quality of evidence that include study design, risk of bias, imprecision, inconsistency, indirectness and magnitude of effect.

A total of 6261 records (3686 MEDLINE, 2543 Cochrane CENTRAL and 32 Cochrane CDSR) were retrieved by the searches. The results of the databases were deduplicated in EndNote 21, leaving a total of 5283 unique records.

Following screening, these were narrowed down to 342 articles (242 RCTs and Systemic reviews) which were specific to subacromial pain after excluding articles on other causes of shoulder pain.

Aims of treatment

Treatment success needs to be defined individually with patients in a shared decision-making process. The treatment aim for Subacromial Shoulder Pain is to relieve pain, increase range of movement, improve function and aid return to usual day-to-day activities but patients should be supported to identify their definition of success through shared decision-making and identification of personal goals.

Primary care/community triage services.

Making a correct diagnosis is essential to the appropriate management of patients with subacromial pain (Figure 1). The diagnosis is crucially based on history and a competent clinical examination. Patients with subacromial pain syndrome frequently present with mid-arc pain with overhead activities and could coexist with psychosocial problems, which may impact the outcomes.

A combination of provocative tests such as Hawkins–Kennedy tests, Neer's, Jobe's and External rotation

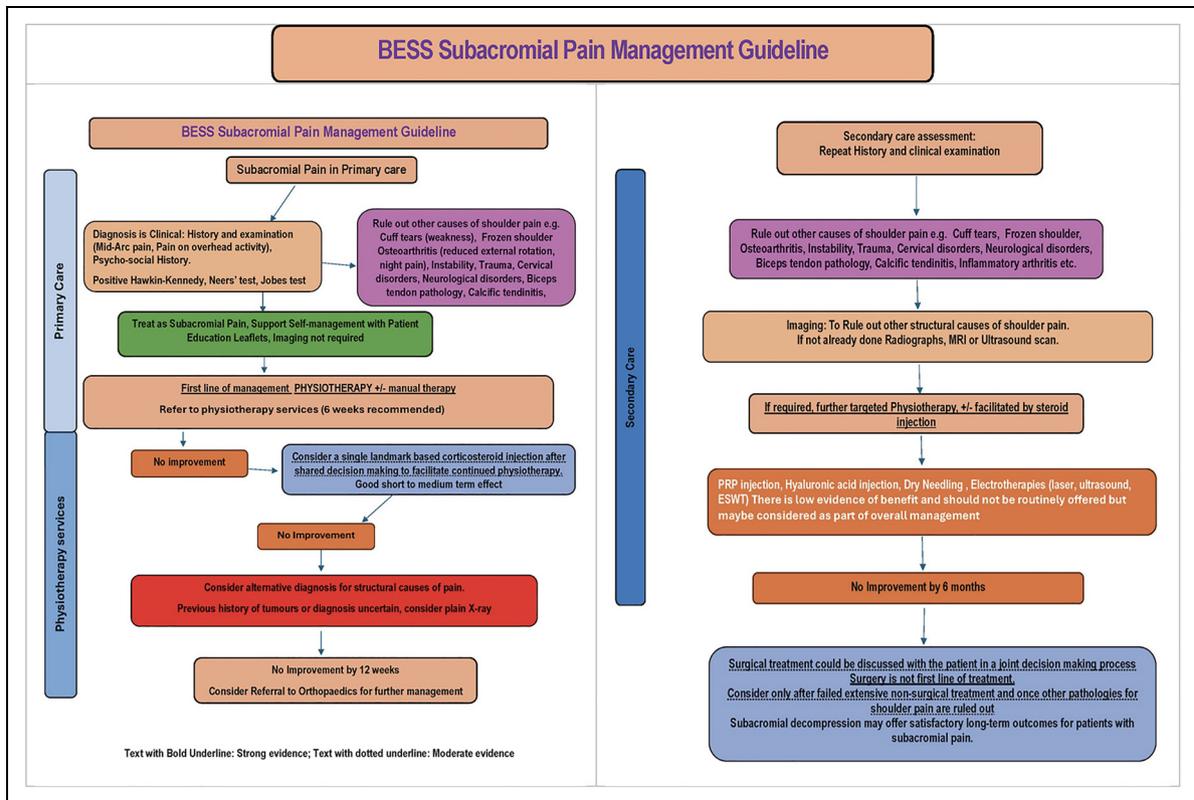


Figure 1. British Elbow Shoulder Society (BESS) subacromial pain guideline.

resistance tests are useful to diagnose subacromial impingement.

Subacromial pain syndrome is a clinical diagnosis. Additional imaging is not essential to confirm the diagnosis or start treatment. Imaging is useful in cases of refractory subacromial pain, and plain radiographs should be obtained if there is a history of trauma, the presence of red flag symptoms, severe pain or stiffness and in cases of long-lasting subacromial pain.¹³ Magnetic resonance imaging (MRI) has the advantage of assessing the extent of rotator cuff tears, muscle volume and fatty infiltration to be assessed, but ultrasound (US) is a low-cost and efficacious modality as a first-line investigation when done by an experienced operator.¹⁴⁻¹⁶

The mostly self-limiting nature of the condition lends itself to patients initially self-managing their symptoms with anti-inflammatory medication and self-directed exercises (or to an appropriate physiotherapy website). Subsequently, early referral for assessment and targeted physiotherapy could be considered.

Features of importance are:

- Thorough patient history that provides the majority of information to inform a working hypothesis to be further tested through examination.

- Insidious onset pain around the upper arm made worse by shoulder level or overhead activities.
- A thorough medical history including social and activity history, hand dominance, occupation, level of activities/sports and psychosocial factors should be taken.
- The history of duration and severity of symptoms and any associated weakness.
- There should not be a history of trauma or evidence of cuff tear, arthritis, frozen shoulder, shoulder instability and neurological and cervical spine dysfunction.

Red flags for the Shoulder:

Any Shoulder Pain 'red flags' identified during primary care assessment needs urgent secondary care referral.

- Child or adolescent patient: Refer to Trauma & Orthopaedics
- History of injury likely to cause harm: Fracture or Dislocation, Refer to fracture Clinic
- Any evidence of infection requires immediate referral to secondary care
- Swelling/Lumps: Refer to the Orthopaedic Clinic

- Inflammation/ Multiple Joints involved: Refer to Rheumatology
- Suspected malignancy or tumour needs urgent referral following the local two-week cancer referral pathway.

Treatment in primary care and community triage services

The following interventions are suitable for primary care:

- Analgesics/non-steroidal anti-inflammatory drugs (Topical/ Oral)
- Patient Education Leaflets +/- (Exercise sheets and physiotherapy websites)
- Early Physiotherapy referral
- Reassurance: This is usually a self-limiting condition, and most symptoms respond within three months.
- Beware of red flags such as tumour, infection, fractures, inflammatory arthritis, cuff tears, instability and frozen shoulder.
- If there is a failure of improvement by 6–8 weeks, one subacromial steroid without imaging done by an appropriately trained person can be considered in a shared decision-making process
- Failure of improvement by 12 weeks of non-operative management should trigger referral to secondary care.

Secondary care.

Reconfirm diagnosis with history and clinical examination.

- If the diagnosis is not certain, imaging with plain radiographs and/ or specialist imaging such as US or MRI scans may be needed to rule out tumour, infection, fractures, inflammatory arthritis, cuff tears, instability and frozen shoulder (Figure 1).
- Ensuring a multidisciplinary approach for care including physiotherapists and surgeons.
- The following non-surgical interventions maybe considered in secondary care, but patients should be made aware that there is low evidence of benefit:
 - PRP injection
 - Hyaluronic acid (HA) injection
 - Dry Needling
 - Electrotherapies (laser, US, ESWT)
- Physiotherapy or non-surgical treatment should be first line of management.¹⁷ If symptoms fail to resolve with non-surgical treatment by six months, then there is moderate evidence that surgical treatment could be considered and subacromial decompression may offer satisfactory long-term outcomes for patients with subacromial pain. In addition, patients should be made aware that there are studies which show no

evidence of the benefit of surgery compared to sham surgery.^{18,19}

Research and audit

Future research questions for the treatment of patients with Subacromial Shoulder Pain:

- The most effective physiotherapy regime or modality remains uncertain. An RCT considering the superiority between various physiotherapy regimes and protocols.
- The most effective duration of physiotherapy for patients with subacromial pain.
- Studies examining the role of psychological factors on shoulder pain, standardising metrics to assess psychological factors and outcome measures.
- There is a need for high-quality research regarding the risk factors and to assess the importance of psychosocial factors in patients with subacromial pain.
- Research is required in RCT format to compare 1:1 physiotherapy versus digital / virtual sessions in the management of adult patients with subacromial pain.

Evidence based on PICO questions: Subacromial shoulder pain

PICO 1: Are there prognostic factors that may predict outcomes for patients with subacromial pain? (Table 1).

Narrative review

In a systematic review of observational studies⁹ looking at metabolic syndrome (central obesity, hypertension, elevated triglycerides, diabetes) in patients with subacromial pain, low-moderate evidence exists for an association between metabolic syndrome and subacromial pain.

There is limited evidence about prognostic factors that are associated with the outcome of physiotherapy in patients with subacromial pain. Four factors were found to be associated with better outcome after physiotherapy treatment: higher expectation of recovery with physiotherapy, higher pain self-efficacy, lower pain severity at rest and being in employment or education.¹⁰

Conditional Neutral (very low evidence)

PICO 2: Is there a consensus on terminology to define pain from the Subacromial Region?

Narrative review

There was widespread variation in the use of subacromial pain terminology (27 terms used), and the diagnostic

Table 1. Summary of recommendations.

1. Are there prognostic factors that may predict outcomes for patients with subacromial pain?	Conditional neutral
2. Is there a consensus on terminology to define pain from the subacromial region?	Conditional neutral
3. Which pathologies cause subacromial pain?	Conditional neutral
4. What are the clinical tests for diagnosing causes of subacromial pain?	Conditional neutral
5. Do psychological factors play a role in the diagnosis, management and outcomes of subacromial pain?	Conditional neutral
6. What physiotherapy regimes/modalities should be incorporated in the management of patient with subacromial pain?	Conditional positive
7. Are there any risk factors for the recurrence of subacromial pain?	Conditional neutral
8. Is there an optimum time period for patients with subacromial pain to engage in Physiotherapy/ rehab?	Conditional neutral
9. In the adult population with subacromial pain, is there benefit to multiple physiotherapy sessions versus a single session?	Strong neutral
10. In the adult population which imaging modality differentiates between various causes of subacromial pain and affects management?	Conditional neutral
11. In the adult population does physiotherapy provide better PROMS than placebo in patients with subacromial pain?	Strong positive
12. In the adult population with subacromial pain is a steroid injection more effective than placebo for pain relief?	Strong positive
13. In the adult population with subacromial pain is a single subacromial steroid injection as effective as multiple injections for pain relief?	Strong neutral
14. In the adult population with subacromial pain does an US-guided subacromial steroid injection offer better outcomes over landmark-based injections?	Strong neutral (low evidence)
15. Are there pre-operative criteria to select patients for arthroscopic subacromial decompression after failed conservative management to provide sustained benefit?	Conditional neutral
16. In the adult population with subacromial pain does arthroscopic subacromial decompression surgery or sham surgery produce better outcomes measured by PROMS?	Strong neutral (low evidence)
17. In the adult population with Subacromial pain, does physiotherapy + steroid injections provide better outcomes than Physiotherapy alone?	Strong neutral (low evidence)
18. In the adult population with Subacromial pain, Is physiotherapy + steroid injections better than subacromial surgery for treatment looking at outcome measures?	Strong neutral (low evidence)
19. In surgical management of subacromial pain, Is addition of ACJ excision beneficial over SAD alone.	Conditional neutral

(continued)

Table 1. Continued

20. In the adult population with Subacromial pain, Is an injection (PRP injection or Hyaluronic acid) provide better PROMS than placebo injection in the management of subacromial pain?	Conditional neutral (very low evidence)
21. Does novel therapies are more effective than placebo in the management of subacromial pain?	Conditional neutral (very low evidence)
22. In the adult population with Subacromial pain, Is there a difference in outcomes beyond 10 years between patients who have subacromial surgery after failing non-operative measures and patients who do not have surgery?	Strong neutral (moderate evidence)
23. In the adult population after undergoing subacromial surgery when should shoulder outcome be measured?	Conditional neutral
24. In the adult population with subacromial pain does providing 1:1 physiotherapy give better results than virtual / digital sessions	Conditional neutral
GRADE Recommendation²⁰	Description
Strong for	Confident that the benefits of an intervention clearly outweigh the harms.
Strong against	Confident that the harms of an intervention clearly outweigh the benefits
Conditional for	Denotes uncertainty over the balance of benefits, such as when the evidence quality is low and refer to decisions where consideration of personal preferences is essential for decision-making
Conditional against	Denotes uncertainty over the balance of harms, such as when the evidence quality is low, and as such refers to decisions where consideration of personal preferences is essential for decision-making
Conditional (neutral)	The working group cannot determine the direction of the recommendation

criteria for subacromial pain were mainly based on clinical tests.¹

A Dutch working group¹¹ suggested that clinical tests such as the Hawkins–Kennedy, painful arc and the infraspinatus muscle strength tests be used to determine subacromial pain syndrome. They defined subacromial pain syndrome as: “all non-traumatic, usually unilateral, shoulder problems that cause pain, localised around the acromion, often worsening during or subsequent to lifting of the arm.”

Conditional Neutral (very low evidence)

PICO 3: Which pathologies cause subacromial pain?

Narrative review

There is no consensus on the diagnostic criteria for patients with subacromial pain and the pathologies which cause it. Intrinsic causes of subacromial pain include rotator cuff tendinopathy and subacromial/subdeltoid bursitis. Extrinsic causes of subacromial pain include anatomical variations in the coracoacromial arch, scapular movement disorders, postural abnormalities of the shoulder and soft tissue contractures.^{6,7} Psycho-social factors may have an impact on patient-reported symptoms and on the outcome of the treatment of subacromial pain.⁸

We have determined, for the purposes of this review, that certain pathologies should not be included as causes of ‘subacromial pain’ as they have defined evidence-based treatment algorithms.²¹ These conditions include glenohumeral osteoarthritis, frozen shoulder, partial and full-thickness rotator cuff tendon tears, calcific tendinitis, shoulder instability and neurological and cervical spine dysfunction.

Conditional Neutral (very low evidence)

PICO 4: What are the clinical tests for diagnosing causes of subacromial pain?

Narrative review

A combination of provocative tests such as Hawkins–Kennedy tests, Neer's, Jobe's and External rotation resistance tests is useful to diagnose subacromial impingement.^{22,23} There seems to be limited utility of Scapular dyskinesis and reposition tests in clinical practice for diagnosis of subacromial impingement.^{24,25}

Conditional Neutral (very low evidence)

PICO 5: Do psychological factors play a role in the diagnosis, management and outcomes of subacromial pain?

Narrative review

The evidence suggests there is a relationship between high levels of emotional distress, depressive symptoms, anxiety, preoperative concerns, fear avoidance beliefs, somatisation

or pain catastrophising and high levels of pain intensity and disability, though the quality of the evidence was very low.^{26–28}

A multicentre, longitudinal cohort study found that a higher patient expectation of recovery as a result of physiotherapy input, higher pain self-efficacy, resilience, lower pain severity at rest, lower disability and being in employment or education were associated with better outcome.¹⁰

Conditional Neutral (very low evidence)

PICO 6: What physiotherapy regimes/modalities should be incorporated in the management of patient with subacromial pain?

Narrative review

There is evidence that exercise is effective at reducing pain in the short term (8 weeks to 6 months) and improving patient-reported function at both short- and long-term follow-up (6 months). A recommendation may be made regarding the inclusion of manual therapy in the initial treatment phase.²⁹ The most effective physiotherapy or exercise therapy or manual therapy approach remains uncertain.

It is unclear from this review if there are significant and clinically important differences between different regimes such as exercise prescription below or above pain threshold, different dosage and supervised or unsupervised exercises.

Conditional Positive (low evidence)

PICO 7: Are there any risk factors for the recurrence of subacromial pain?

Narrative review

Overall, there is paucity of long-term prospective studies assessing risk factors for the recurrence of subacromial pain. However, there appears to be very weak evidence for high pain scores and a longer duration of symptoms being poor prognostic indicators.^{30–32}

Conditional Neutral (very low evidence)

PICO 8: Is there an optimum time period for patients with subacromial pain to engage in Physiotherapy/ rehab?

Narrative review

No available evidence compared six weeks of physiotherapy to 12 or 24 weeks in the management of subacromial pain. We are therefore unable to make an evidence-based recommendation on ‘optimum’ physiotherapy duration in the management for subacromial pain.

Conditional Neutral (very low evidence)

PICO 9: In the adult population with subacromial pain, is there benefit to multiple physiotherapy sessions versus a single session?

Evidence review

The available evidence suggests that there is no significant difference in long-term outcomes between a single and multiple sessions of physiotherapy. Pooled data demonstrates that physiotherapy provides benefit in both a single and multi-session approach, as there were no significant differences between the two comparatives. Lower quality evidence suggests that multiple sessions of physiotherapy may result in reduced disability in the long term but certainty is low.^{33,34}

Strong Neutral (low to high evidence)

PICO 10: In the adult population which imaging modality differentiates between various causes of subacromial pain and affects management?

Narrative review

Subacromial pain is a clinical diagnosis, and the role of additional imaging is useful in cases of refractory subacromial pain, to rule out surgical targets. Plain radiographs should be performed if there is a history of trauma, the presence of red flag symptoms, severe pain or stiffness, ACJ arthritis and in cases of subacromial pain lasting longer than four weeks.¹³ Ultrasound and MRI scan is done to rule out rotator cuff tears and other pathologies in patients with ongoing symptoms.^{14–16}

Conditional Neutral (very low evidence)

PICO 11: In the adult population, does physiotherapy provide better PROMS than placebo in patients with subacromial pain

Evidence review

The available evidence suggests that physiotherapy exercises with or without manual therapy show improvement in outcomes at 8, 11 and 22 weeks.^{35,36}

The available evidence suggests that physiotherapy exercises are superior to a do-nothing approach.³⁷ The available evidence also suggests that 80% of those completing physiotherapy exercises whilst awaiting surgery will go on to have surgery.³⁸ In addition, the available evidence suggests there is a favourable short-term effect of manual therapy.³⁹

Strong Positive (low to high evidence)

PICO12: In the adult population with subacromial pain is a steroid injection more effective than placebo for pain relief?

Evidence review

The pooled data suggests that whilst a subacromial steroid injection results in a transient improvement (<12 weeks) in pain, function and range of movement. It does not influence the long-term outcome for people with subacromial pain.⁴⁰

Although there was conflicting evidence, the available evidence suggests that whilst a subacromial steroid injection does not influence the long-term outcome for people with subacromial pain, it results in a transient improvement in short-term pain, function and range of movement.⁴¹

Strong Positive (low to high evidence)

PICO 13: In the adult population with subacromial pain is a single subacromial steroid injection as effective as multiple injections for pain relief?

Evidence review

The available evidence suggests that there is no added benefit in multiple subacromial steroid injections compared to a single injection. In both cases, there is significant improvement in short-term pain, with no long-term benefits (>12 weeks).⁴⁰

Strong Neutral (low evidence)

PICO 14: In the adult population with subacromial pain does an US-guided subacromial steroid injection offer better outcomes over landmark-based injections?

Evidence review

The available evidence suggests that there is no significant difference between patient outcomes after an US-guided or a landmark-guided subacromial injection. Pooled data demonstrates that US-guided injections do not provide a significant improvement in overall outcome compared to landmark-guided injections.^{42–44}

Strong Neutral (low evidence)

PICO 15: Are there pre-operative criteria to select patients for arthroscopic subacromial decompression after failed conservative management to provide sustained benefit?

Narrative review

There remain no robust criteria for selecting patients with subacromial pain for surgery

Evidence suggests patients who engage in specific physiotherapy programmes should see significant improvements by three months.⁴⁵ If this is not the case, consider further imaging for the presence of associated pathology. In the absence of other pathology, and without significant clinical improvement after specific physiotherapy programmes, then surgical intervention could be considered.⁴⁶

Conditional Neutral

PICO 16: In the adult population with subacromial pain, does arthroscopic subacromial decompression surgery or sham surgery produce better outcomes measured by PROMS?

Evidence review

The current evidence suggests that arthroscopic subacromial decompression surgery (ASD) does not provide significant benefits over sham surgery in terms of pain relief, shoulder function or quality of life in adults with subacromial pain.^{18,19} Use of ASD as a first line of management is not recommended. The routine use of ASD for subacromial pain should be reconsidered, and patients should be informed about the limited benefits and potential risks during the decision-making process.⁴⁷

Strong Neutral (low evidence)

PICO 17: In the adult population with Subacromial pain, does physiotherapy + steroid injections provides better outcomes than Physiotherapy alone?

Evidence review

The evidence states that there are no significant long-term differences in pain or function between Physiotherapy exercises combined with steroid injection and Physiotherapy exercises alone. Pooled data demonstrates that exercises provide significant improvement in overall outcome in the medium and long term.^{13,48–51}

Strong Neutral (low evidence)

PICO 18: In the adult population with chronic subacromial pain, is arthroscopic subacromial decompression and post-operative physiotherapy superior to physiotherapy alone?

Evidence review

The available evidence suggests that arthroscopic subacromial decompression does not provide any clinically relevant benefit (in pain or function) over conservative options in the management of chronic subacromial pain, either in the short or medium term.⁵²

Physiotherapy can be considered as a first-line treatment in the management of chronic subacromial pain.

Strong Neutral (low evidence)

PICO 19: In surgical management of subacromial pain is addition of ACJ excision beneficial over ASD alone.

Narrative review

In the absence of level 1 studies and high-quality evidence, it is difficult to put forward robust recommendations

answering the review question. However, when appraising the available literature, the addition of ACJ excision to ASD does not affect the reoperation rate so shouldn't be added routinely.⁵³ In concomitant pathology of ACJ osteoarthritis, the addition of ACJ excision to ASD offers good symptom relief and quality of life improvement over long term.^{54–56}

Conditional Neutral (very low evidence)

PICO 20: In the adult population with subacromial pain are PRP and HA more effective than placebo in the management of subacromial pain?

Although PRP demonstrated mixed results, including both positive and negative outcomes, one study highlighted its potential effectiveness.⁵⁷ Research indicates that the benefits of PRP are minimal in the early stages, but after 12 months, there is a reduction in pain. HA also shows a positive effect size, suggesting it may be more effective than a placebo.⁵⁸

Conditional Neutral (very low evidence)

PICO 21: In the adult population with Subacromial pain are novel therapies (HA or PRP injections, laser therapy or dry needling) are more effective than placebo in the management of subacromial pain?

Evidence review

The pooled data came from five systematic reviews and four RCTs using multiple outcome measures in each study and multiple measurement intervals from four weeks up to one year of follow up. The available evidence suggests that Laser therapy showed small, short-term effects (2–4 weeks) in SPADI and flexion/abduction vs placebo/physiotherapy alone.^{59–61}

The current evidence showed no important effects in outcomes for dry needling, ESWT, electrical dry needling and therapeutic US.

There is not enough evidence to make recommendations regarding the use of acupuncture, pulsed radiofrequency or interferential current.

Conditional Neutral (very low evidence)

PICO 22: In the adult population with Subacromial pain Is there a difference in outcomes beyond 10 years between patients who have subacromial surgery after failing non-operative measures and patients who do not have surgery?

Evidence review

There is moderate evidence that surgical treatment could be considered when extensive non-operative management fails and subacromial decompression may offer satisfactory long-term outcomes for patients with subacromial pain. However, physiotherapy or non-surgical treatment should be first line of treatment.^{62,63}

Strong Neutral (moderate evidence)

PICO 23: In the adult population after undergoing subacromial surgery when should the shoulder outcome be measured?

Narrative review

Commonly, shoulder outcome scores are measured at 6 months and 12 months following surgery, but there are no studies to verify these time points as the most appropriate. This meant that we were unable to draw any conclusions from the data regarding the optimal timing of performing outcome measures in patients who have undergone arthroscopic subacromial decompression.

Conditional Neutral

PICO 24: In the adult population with subacromial pain does providing 1:1 physiotherapy give better results than virtual / digital sessions

Narrative review

There is no evidence either for or against the use of digital / virtual sessions in this patient subgroup, and we are unable to make an evidence-based recommendation. Research is required with an RCT form to compare 1:1 physiotherapy versus digital / virtual sessions in the management of adult patients with subacromial pain.

Conditional Neutral

BESS Subacromial Pain Working Group

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Notes

1. University Hospitals of Leicester NHS Trust
2. Cambridgeshire and Peterborough NHS Foundation Trust
3. Huddersfield Royal Infirmary
4. Derriford Hospital
5. Epsom and Saint Helier University Hospitals NHS Trust
6. Wrightington Hospital
7. The Arm Clinic
8. William Harvey Hospital
9. Royal Devon and Exeter NHS Foundation Trust
10. Belfast City Hospital Health and Social Services Trust
11. University Hospitals Birmingham NHS Foundation Trust
12. North Tees and Hartlepool NHS Foundation Trust
13. St Bernard Hospital
14. York and Scarborough Teaching Hospitals NHS Foundation Trust
15. Royal Berkshire NHS Foundation Trust
16. Woodend Hospital
17. James Cook University Hospital
18. St George's Healthcare NHS Trust
19. Leeds Teaching Hospitals NHS Trust
20. Leicester Royal Infirmary
21. East Kent University Hospital Trust
22. Liverpool University Hospitals NHS Foundation Trust
23. Royal Devon University Healthcare NHS Foundation Trust

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