A combination of systematic review
and clinicians’ beliefs in interventions for
subacromial pain

Kajsa Johansson, Birgitta Öberg, Lars Adolfsson and Mats Foldevi

SUMMARY
The aim of the study is to determine which treatments for patients with subacromial pain are trusted by general practitioners (GPs) and physiotherapists, and to compare trusted treatments with evidence from a systematic critical review of the scientific literature. A two-step process was used: a questionnaire (written case simulation) and a systematic critical review. The questionnaire was mailed to 189 GPs and 71 physiotherapists in Sweden. The total response rate was 72% (186/259). The following treatments were trusted: ergonomics/adjustments at work, corticosteroids, non-steroidal anti-inflammatory drugs, movement exercises, acupuncture, ultrasound therapy, strengthening exercises, stretching, transcutaneous electric nerve stimulation, and superficial heat or ice therapy. The review, including efficacy studies for the treatments found to be trusted, was conducted using the CINAHL, EMBASE and MEDLINE databases. Evidence for efficacy was recorded in relation to methodological quality and to diagnostic criteria that labelled participants as having subacromial pain or a non-specific shoulder disorder.

Forty studies were included. The methodological quality varied and only one treatment had definitive evidence for efficacy for non-specific patients, namely injection of corticosteroids. The trust in corticosteroids, injected in the subacromial bursa, was supported by definitive evidence for short-term efficacy. Acupuncture had tentative evidence for short-term efficacy in patients with subacromial pain. Ultrasound therapy was ineffective for subacromial pain. This is supported by tentative evidence and, together with earlier reviews, this questions both the trust in the treatment and its use. The clinicians’ trust in treatments had a weak association with available scientific evidence.

Keywords: subacromial pain; physiotherapy; rotator cuff; shoulder; systematic review.

Introduction
The term ‘evidence-based medicine’ is in increasing use and has been defined by Davidoff et al. in five areas:

1. The clinician’s decisions should be based on the best available evidence.
2. The clinical problem should determine the type of evidence to be sought.
3. Identifying the best evidence means using epidemiological and biostatistical ways of thinking.
4. Conclusions derived from identifying and critically appraising evidence are useful only if put into action in managing patients or making health care decisions.
5. Performance should be constantly evaluated.

In a previous study on attitudes toward management of patients with subacromial pain, we concluded that, in Swedish primary care, general practitioners (GPs) and physiotherapists considered most common treatments as possible choices. Owing to uncertainty about which treatments were most effective, few treatments were ruled out.

Earlier reviews of treatment of shoulder pain raised the problem of heterogeneity as a consequence of poor diagnostic criteria for different shoulder disorders. One review can be questioned for lacking a systematic review method and another for concluding on treatment efficacy for non-specific soft tissue shoulder disorders. This raised the need for a systematic review related to a more specific diagnosis, which would be easier to implement in clinical practice.

Clinical decisions should integrate the individual clinician’s expertise with information from the best external evidence. Therefore, our objectives were to study which treatments for patients with subacromial pain are trusted by GPs and physiotherapists and to compare trusted treatments with available evidence from a systematic critical review of the scientific literature.

Method
A two-step process was used: a study of GPs’ and physiotherapists’ trust in existing treatments and a systematic critical review of the efficacy of these treatments.

A study of GPs’ and physiotherapists’ trust in existing treatments
A questionnaire study was performed during the autumn of 1996 to describe attitudes among GPs and physiotherapists toward the diagnostic approach and management of patients with a common shoulder disorder. The question-
knowledge option.

The treatments for the chosen diagnosis. There was also a ‘don’t respond’ option. The majority of the responders diagnosed the case as having pain originating from subacromial structures. A total of 96% considered either rotator cuff tendinitis or subacromial bursitis as a possible diagnosis.2

The first part of the questionnaire resulted in choice of treatment for the chosen diagnosis and was presented in an earlier study.2 In the second part, used in the present study, the GPs and physiotherapists reported their trust in the efficacy of available treatments. Using a five-point scale with endpoints defined as ‘no effect’ and ‘good effect’, the practitioners’ trust in treatments had a weak association with available scientific evidence. This study helps clinicians to choose between treatments for subacromial pain and makes them aware of whether their choice is based on evidence or experience, or a combination.

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WHAT DO WE KNOW?

Earlier systematic reviews of treatment of shoulder problems found no evidence of efficacy for corticosteroids and inconclusive evidence for different physiotherapy treatments. They raised the problem of heterogeneity and the lack of diagnostic criteria for different shoulder disorders, pointing at the need for a systematic review related to a more specified diagnosis, which should be easier to implement in clinical practice.

WHAT DOES THIS PAPER ADD?

Most common treatments for subacromial pain were trusted by both GPs and by physiotherapists. This systematic review established definitive evidence for corticosteroid injection in the subacromial bursa and tentative evidence for acupuncture. Ultrasound therapy had tentative evidence for lack of efficacy for patients with subacromial pain, questioning its use. GPs’ and physiotherapists’ trust in treatments had a weak association with available scientific evidence. This study helps clinicians to choose between treatments for subacromial pain and makes them aware of whether their choice is based on evidence or experience, or a combination.

sound therapy, strengthening exercises, stretching, transcutaneous electronic nerve stimulation (TENS), and superficial heat or ice therapy. Differences in trust between the professions were statistically analysed with a continuity corrected \( \chi^2 \) test. The treatments where at least one profession presented trust were included in the literature search. The number of responders choosing the ‘don’t know’ option is shown in Table 1.

Systematic critical review

A search for papers was conducted in the computerised bibliographic databases MEDLINE and CINAHL using the OVID search engine, and also the EMBASE database using the Silver Platter search engine. The search was conducted for studies published between January 1984 and December 1999 (for EMBASE, January 1986 to December 1999).


All abstracts comprising an evaluation of efficacy for any of the trusted treatments for shoulder disorders were reviewed. Studies published as full reports in Scandinavian, English, French, and German languages, and judged as dealing with symptoms originating from subacromial structures, were included.

In the present study, the term ‘subacromial pain’ is used, defined as pain originating from subacromial structures, including rotator cuff tendinitis/tendinopathy and subacromial bursitis. A diagnostic labelling of patients in the retrieved studies was performed. The label ‘subacromial pain’ was used when the authors described at least one of the following inclusion criteria: a positive Neer’s impingement sign or test,9,10 the Hawkins and Kennedy impingement test11 or equal manoeuvres to test the subacromial structures, and positive findings by ultrasonographic or radiographic examination that indicated disturbance of rotator cuff muscles and/or the subacromial bursa. The manoeuvres are described in Box 1. Studies not fulfilling these inclusion criteria, but where the authors either stated a diagnosis of pain originating from subacromial structures or studies properly excluding adhesive capsulitis/frozen shoulder, neck disorder, osteoarthritis or rheumatoid arthritis, were labelled as non-specific. This group was judged as probably including patients with subacromial pain. Studies dealing with other shoulder diagnoses (for example, rotator cuff ruptures) or single case reports, were excluded.

According to these inclusion criteria, 40 studies (one study with two papers) were included and labelled.12,52 The study designs resulted in a level of evidence (level I-V) and grade of recommendation for each treatment according to Sackett,53 grade A (definitive evidence), including at least two level I studies; grade B (tentative evidence) and at least one level II study; and grade C (suggestive evidence) supported only by level III-V studies.53 The definition of a
Neer’s impingement sign
Forced passive forward elevation of the arm (somewhere between flexion and abduction) with the scapular rotation prevented by the examiner. The manoeuvre should reproduce the pain originating from subacromial structures.

Neer’s impingement test
A positive impingement sign should be eliminated or relieved by an injection of 10 cc of 1.0% lignocaine injected into the subacromial space.

Hawkins and Kennedy’s impingement test
Forward flexion of the humerus to 90° and forcibly internally rotating the shoulder. The manoeuvre should reproduce the pain originating from subacromial structures.

Box 1. Tests for subacromial pain.

level I study is ‘a randomised trial with low false-positive (alpha) and low false-negative (beta) errors (high power)’ — the former meaning a statistically significant benefit of a treatment; the latter that, although no effect was found, the sample size was sufficient to avoid missing an effect of clinical importance. Level II studies are defined as ‘a randomised trial with high false-positive (alpha) and high false-negative (beta) errors (low power)’ — the former meaning a trial with an interesting positive trend that is not statistically significant; the latter meaning that, although no effect was found, because of the small sample size an effect of clinical importance can not be ruled out. Levels III–V consisted of non-randomised concurrent and historical cohorts and case series.

In the next step, methodological quality was assessed to ascertain whether the grade of recommendation was supported or not. All 40 studies were assessed using the guideline and checklist published by Fowkes et al., complemented by validation of statistics. The names of the authors, title, source, and year of publication were blinded for the two reviewers (KJ and LA) who assessed the papers independently. The reviewers had trained beforehand in the use of the guidelines and checklist. They both made an overall judgement on a scale from 1 to 5 to state whether or not the methodology was sufficient to support the grade of recommendation (A to C). This resulted in one of three summary categories: ‘yes’, meaning that the grade of recommendation was methodologically supported (representing 4 or 5 on the scale), ‘yes, with reservation’, (representing a score of 3 on the scale), and the final category ‘no’ (representing 1 or 2 on the scale), meaning that the methodology was insufficient to support the grade of evidence. In other words, a ‘yes’ represented solid research where bias, confounding, and chance are under control. The reviewers also came to conclusions regarding the evidence for efficacy for the different treatments.

Effect size was calculated for treatments where the reviewers stated some evidence for efficacy and when the studies fulfilled the following criteria:

- design of evidence level I or II;
- satisfactory methodology (appraised as 4 or 5);
- standard deviation was reported or could be calculated.

The choice of outcome was an overall clinical change that always included the variable pain as well as movement and/or functional limitation.

The effect size was calculated by subtracting the mean change score for the placebo/control group from the mean change for the treatment group and then dividing by the standard deviation of the placebo/control group at baseline.

If there were more than two groups then the figures for the placebo group were used. Cohen’s guidelines for the magnitude of the effect size were used, interpreting an effect size of 0.2 as small, one of 0.50 as moderate, and one of 0.80 or greater as large.

Results
The treatments found to be trusted are presented in Table 1. The review resulted in 17 studies labelled as subacromial pain and 23 as non-specific. A total of 27 studies represented evidence on a level I or on level II basis (Table 2). The

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Total (%)</th>
<th>Proportion of GPs (%)</th>
<th>Proportion of Physiotherapists (%)</th>
<th>Difference: GPs/Physiotherapists (%)</th>
<th>Proportion of ‘don’t knows’ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergonomics/adjustments at work(^a)</td>
<td>98</td>
<td>100</td>
<td>97</td>
<td>(P = 0.60)</td>
<td>2</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>94</td>
<td>89</td>
<td>96</td>
<td>(P = 0.13)</td>
<td>1</td>
</tr>
<tr>
<td>Non-steroidal anti-inflammatory drugs</td>
<td>92</td>
<td>88</td>
<td>94</td>
<td>(P = 0.33)</td>
<td>2</td>
</tr>
<tr>
<td>Movement exercise/mobilisation(^a)</td>
<td>90</td>
<td>95</td>
<td>88</td>
<td>(P = 0.29)</td>
<td>1</td>
</tr>
<tr>
<td>Acupuncture(^a)</td>
<td>73</td>
<td>90</td>
<td>64</td>
<td>(P = 0.004)</td>
<td>24</td>
</tr>
<tr>
<td>Ultrasound therapy(^a)</td>
<td>71</td>
<td>80</td>
<td>76</td>
<td>(P = 0.11)</td>
<td>9</td>
</tr>
<tr>
<td>Strengthening exercise(^a)</td>
<td>67</td>
<td>79</td>
<td>62</td>
<td>(P = 0.047)</td>
<td>9</td>
</tr>
<tr>
<td>Stretching(^a)</td>
<td>64</td>
<td>70</td>
<td>60</td>
<td>(P = 0.29)</td>
<td>10</td>
</tr>
<tr>
<td>Transcutaneous electric nerve stimulation(^a)</td>
<td>64</td>
<td>68</td>
<td>62</td>
<td>(P = 0.60)</td>
<td>11</td>
</tr>
<tr>
<td>Superficial heat/ice therapy(^a)</td>
<td>56</td>
<td>59</td>
<td>55</td>
<td>(P = 0.74)</td>
<td>2</td>
</tr>
<tr>
<td>Expectance without treatment</td>
<td>36</td>
<td>17</td>
<td>45</td>
<td>(P&lt;0.001)</td>
<td>1</td>
</tr>
<tr>
<td>Surgery</td>
<td>29</td>
<td>32</td>
<td>27</td>
<td>(P = 0.73)</td>
<td>15</td>
</tr>
<tr>
<td>Massage</td>
<td>30</td>
<td>30</td>
<td>29</td>
<td>(P&gt;0.99)</td>
<td>3</td>
</tr>
<tr>
<td>Aid/appliance</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>(P&gt;0.99)</td>
<td>8</td>
</tr>
<tr>
<td>Counselling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>(P = 0.26)</td>
<td>6</td>
</tr>
</tbody>
</table>

\(^a\)Included in the literature search.
results from the best available studies for each treatment are presented; conclusions from studies of lower levels are not presented where there are better studies available. Trusted treatments and available external evidence are summarised in Table 3 and calculated effect sizes in Table 4.

**Ergonomics**

There were no studies evaluating the most trusted treatment, ergonomics.

**Corticosteroids**

A majority of the responders (94%) trusted corticosteroids and the systematic critical review resulted in definitive evidence for short-term efficacy (Table 3), supported by large effect sizes (Table 4). Twelve studies evaluated corticosteroid injection.13,19-21,23,25,30,31,37,40,49 Five had evidence level I,19-21,23 and most of the others had evidence level II. Four of the level I studies were labelled as non-specific19-21,23 and one as specific for subacromial pain.13 They reached a positive conclusion regarding its short-term efficacy when injected subacromially. ‘Short-term’ was defined as follow-up within six weeks of treatment. The outcomes were decreased pain, increased abduction and improved function. All four were methodologically well performed; the reviewers supported the concluded efficacy (Table 3).

Some studies compared corticosteroid injection with other treatments.31,37,39 such as physiotherapy,31 injection of lignocaine37 or saline39 for non-specific patients and found them all equally effective. All three were level II studies and with insufficient methodology.

Two studies with longer follow-up seemed to support a probable efficacy.13,23 especially the level I study by Blair et al.13 which was methodologically well performed and specific. This resulted in tentative evidence for corticosteroid injections in the long term.

**Non-steroidal anti-inflammatory drugs (NSAIDs)**

Treatment with NSAIDs was trusted by 89% of the clinicians and the systematic critical review resulted in tentative evidence for short-term efficacy (Table 3) and large effect sizes (Table 4). A total of nine studies were found and distributed over evidence level I, II, and level V. Two of the four level I studies had a methodological quality providing grade A with support. The studies by Petri et al.20 and by Adebajo et al.21 found NSAIDs to be better than placebo in decreasing pain, as well as improving function. Of the level II studies, only one was specified as subacromial pain and, in general, all concluded that the treatments were not efficacious.30 In conclusion, the methodology supported grade A but, since the results were drawn from a non-specific group, this evidence is of less clinical use. Therefore the appraised support for methodology resulted in tentative evidence for short-term efficacy in the reviewers’ conclusion (Table 3).

**Movement exercise**

No evidence for efficacy was found for movement exercise or mobilisation but the treatment was trusted by 90% of the clinicians. Two studies were found on evidence level II and V, respectively. Conroy et al reported that mobilisation resulted in a decrease of 24-hour pain, evaluated one to three days after the final treatment.27 In the other study, no effect was seen of movements with the arm suspended in a sling.46 Since both had methodological deficiencies their conclusions could not be supported.

**Acupuncture**

The physiotherapists had the greatest trust in acupuncture (Table 1) and the review resulted in tentative evidence for short-term efficacy (Table 3), supported by a rather large effect size (Table 4). Four studies were found, one with evidence level I19 and three with evidence level V,50,51 Kleinhenz et al evaluated patients with subacromial pain after four weeks of treatment using manual needle stimulation.15 They found decreased pain and restored function in comparison with placebo. The other three studies suggested results in agreement with this.

**Ultrasound therapy and transcutaneous electric nerve stimulation**

Ultrasound treatment was trusted by 71% but the systematic review resulted in tentative evidence for lack of efficacy (Table 3) provided by five studies with evidence level I or II.
Table 2. Studies of pulsed ultrasound by Nykänen, van der Heijden et al, and Downing and Weinstein. NSLDs are labelled as non-specific diagnosis, and by van der Heijden et al, as non-specific diagnosis. (Note: Four studies deal with more than one treatment; mixed treatments excluded).

Table 3. Reviewers’ conclusions about evidence for trusted treatments and the proposed efficacy in relation to grade of evidence and methodological quality. (Note: Four studies deal with more than one treatment, mixed treatments excluded).

<table>
<thead>
<tr>
<th>Trusted by GPs and physiotherapists (%)</th>
<th>Number of studies</th>
<th>Grade of evidence*</th>
<th>Grade supported by methodological quality</th>
<th>Authors’ conclusion</th>
<th>Reviewers’ conclusions about evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergonomics/adjustments at work</td>
<td>86</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>94</td>
<td>12</td>
<td>A</td>
<td>Yes</td>
<td>Definitive evidence for short-term efficacy</td>
</tr>
<tr>
<td>Non-steroidal anti-inflammatory drugs (NSAIDs)</td>
<td>92</td>
<td>9</td>
<td>A</td>
<td>Yes</td>
<td>Tentative evidence for long-term efficacy</td>
</tr>
<tr>
<td>Movement exercise/mobilisation</td>
<td>90</td>
<td>2</td>
<td>B</td>
<td>No</td>
<td>No evidence for efficacy</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>73</td>
<td>4</td>
<td>B</td>
<td>Yes</td>
<td>Tentative evidence for short-term efficacy</td>
</tr>
<tr>
<td>Ultrasound therapy</td>
<td>71</td>
<td>6</td>
<td>A</td>
<td>No difference between true ultrasound and placebo. Probable short-term efficacy</td>
<td>Tentative evidence for lack of efficacy</td>
</tr>
<tr>
<td>Strengthening exercise</td>
<td>67</td>
<td>1</td>
<td>B</td>
<td>Yes</td>
<td>Tentative evidence for short-term efficacy</td>
</tr>
<tr>
<td>Stretching</td>
<td>64</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Transcutaneous electric nerve stimulation (TENS)</td>
<td>64</td>
<td>1</td>
<td>B</td>
<td>No</td>
<td>No evidence for efficacy</td>
</tr>
<tr>
<td>Superficial heat/ice therapy</td>
<td>56</td>
<td>0</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*Grade of evidence based on design: A = at least two large randomised controlled trials, B = at least one small randomised controlled trial, C = study of other designs. **One study with two papers.
Clinical encounters, but is appropriate for measuring atti-
ment to which it agreed or predicted responses to actual
physiotherapists. The method could be limited in the
study to evaluate which treatments were trusted by GPs
This study. Other researchers have stated that only level I or
studies (randomised controlled trials) can provide satis-
the risk of missing treatments which were only partly trusted.
The strategy of defining trust as a majority score rating of
The search strategy used in this review may have disre-
and were not
The period of 15 years was regarded as relevant, since it
decreases the risk for bias from a time-dependent culture of
According to Mulrow, a good methodology is needed
when performing medical reviews to avoid biased conclu-
sions. In the present study, a systematic search was com-
bined with the assessment of Sackett’s level of evidence and
grades of recommendation, as well as with methodological
appraisal, to justify this review’s conclusion. However, one
should bear in mind that the reviewers based the assessment
on a qualitative judgement.
Jüni et al showed that the type of instrument used to
assess methodological quality influenced the conclusion. They
highlighted methodological aspects that needed to be
individually assessed conforming to the guidelines used in
this study. Other researchers have stated that only level I or
II studies (randomised controlled trials) can provide satis-
factory evidence. In this review all studies were included in
the critical appraisal to receive an overall view of the evi-
dence for treatment of subacromial pain.
Earlier reviews highlighted the problem of heterogeneity
caused by insufficient classification of diagnosis. The criteria
used in this study for labelling subacromial pain and non-
specific diagnosis are the most broadly accepted and used.
This would make the results easier to implement in clinical
practice. The non-specific group was judged to be of value
in this study since they probably included patients with sub-
acromial pain.
Effect sizes were calculated to determine the extent to
which a treatment works, since a change that is statistically
significant is not always of clinical importance. Therefore,
this was only calculated for studies providing evidence for
efficacy. The overall clinical outcome was chosen, since it
was shared by most of the studies and included variables
relevant to patients with subacromial pain. Since these stud-
ies were few and their outcome measurements differed, we
chose not to do a pooled analysis of the effect sizes.
This review provides knowledge of which of the trusted
treatments for subacromial pain are supported by available
evidence and which are not. This does not mean that the lat-
ter are ineffective, but that they cannot be regarded as sci-
entifically supported.
The treatments with a significant difference in trust
between the professions showed a stronger trust in the
responder’s own treatments (Table 1). Both professions had
a strong trust in drug treatments and the largest number of
studies that evaluated efficacy was found for these treat-
ments.
No studies were found in the field of ergonomics, yet
responders trusted it most of all. This is an area needing fur-
ther study.
There was only one treatment with definitive evidence for
efficacy: injection of corticosteroids in the subacromial
bursa. Noticeably, these studies concerned non-specific
diagnosis, but since the injection was given locally into the
subacromial bursa, it is most likely that the origin of pain was
subacromial. The large effect sizes support the conclusion
that the differences are clinically relevant. An earlier review
by Green et al concluded that corticosteroid injection might
be superior to placebo for patients with shoulder disorders;
another by Van der Heijden et al found the evidence to be
scanty.4
The physiotherapists showed trust in acupuncture and
this review found tentative evidence for its efficacy for
patients with subacromial pain. Until recently there have
been no valid studies of acupuncture for shoulder pain and
the efficacy of acupuncture for chronic pain have been

of movement over a four-year follow-up. This study was
judged to support earlier definitive evidence about efficacy
for corticosteroids and probably also the tentative short-term
efficacy for NSAIDs. The remainder of the nine studies were
evidence of level V and the results of the methodological
assessment are not presented.

**Discussion**

Some methodological considerations should be discussed
before interpretation of the results. A written case simulation
had been employed in earlier research57,58 and was used in
this study to evaluate which treatments were trusted by GPs
and physiotherapists. The method could be limited in the
extent to which it agreed or predicted responses to actual
clinical encounters, but is appropriate for measuring atti-
tudes.59 Although details of the case probably have influ-
enced the reported level of trust, we do not believe that this
would substantially change the overall pattern of trust.
The strategy of defining trust as a majority score rating of
3 to 5 for either profession seemed appropriate, to decrease
the risk of missing treatments which were only partly trusted.
The search strategy used in this review may have disre-
garded some relevant studies that were unpublished, were
incompletely reported, had publication bias, or were not
included in the computerised bibliographic databases.
The period of 15 years was regarded as relevant, since it
decreases the risk for bias from a time-dependent culture of
diagnosing.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Author(s)</th>
<th>Outcome</th>
<th>Effect size (follow-up)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corticosteroid injection</td>
<td>Adebajo et al, 1990a</td>
<td>Overall pain</td>
<td>4.74 (short-term)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limitation of function</td>
<td>0.77 (short-term)</td>
</tr>
<tr>
<td></td>
<td>Itzkowitch et al, 1986b</td>
<td>Clinical index (pain, active movement)</td>
<td>1.4 (short-term)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical index (pain, limitation of function)</td>
<td>1.03 (short-term)</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>Adebajo et al, 1990a</td>
<td>Overall pain</td>
<td>2.96 (short-term)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limitation of function</td>
<td>0.77 (short-term)</td>
</tr>
<tr>
<td></td>
<td>Petri et al, 1989a</td>
<td>Clinical index (pain, limitation of function)</td>
<td>0.81 (short-term)</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>Kleinhenz et al, 1999c</td>
<td>Constant–Murley shoulder assessment</td>
<td>0.77 (short-term)</td>
</tr>
</tbody>
</table>

aThe mean of two short-term effect sizes.
This review found tentative evidence for short-term efficacy of NSAIDs for subacromial pain, which is similar to the results of two earlier reviews for non-specific diagnosis.6,65

Conclusions


Peters G, Kohn D. Mittelfristige klinische resultate nach operativer versus konservativer behandlung des subakromialen impingementsyndroms. [Mid-term clinical results after surgical versus con-
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30. White RH, Pauli DM, Fleming KW. Rotator cuff tendinitis: compari-


32.围墙W, 殷X, 韦Y, 潘ATC, 陈S, 彭S-J. Long-term therapeutic effects of 

33. 克里斯赫克O, 赫普C, 罗姆珀JD, 德J. Determinants of outcome in 

34. 赖Y, 威特R, 格林FL, 赛尔特MH. A placebo-controlled trial of 

35. 史密斯MD, 托马斯D, 麦克里德M, 布鲁克斯PM. Piroxicam versus 

36. 掌上N, 科拉尔G, 沙里尔O, 奥德芬F. The efficacy and 

37. 维克乔PC, 哈兹莱尔BL, 王洁RH. A double-blind trial comparing 

38. 冬寒DS, 瓦特P, 杰伊J. A placebo-controlled trial of 

39. Withrington RH, Girgis FL, Seifert MH. A placebo-controlled trial of 

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