

**Appendix 2:** Characteristics of included studies: Author, year, country, trial arms and intervention, clinical aspects and human sex ratio, applied tests to confirm diagnosis, measured outcome, conclusion of authors, and remarks.

ID	Authors Year Reference Country	INTERVENTION/CONTROLS: I: INTERVENTIONS C: CONTROLS 1: GROUP 1 2: GROUP 2 3: GROUP 3 4: GROUP 4 5: GROUP 5  F&D: Frequency of Treatment, Duration of Treatment Period	Clinical Aspects:  A: Inclusion Age D: Duration of Symptoms (months if not stated otherwise) Co: Comment	N: Included [Randomized]  Analysed : I: C:	Mean age (SD, Range)	Female/ Male	Inclusion based on Test to confirm Diagnosis	Relevant Outcome/ Time of assessment	Conclusion of Study- Authors	Remarks
1	Abrisham 2011  [1]  Iran	I: Low Level Laser + Exercise  C: Placebo + Exercise  F&D: 10 Sessions in 2 wks.	A: >18  D: Not Specified	80 [80]  I: 40 C: 40	Ø: 52	50/30  I: 24/16 C: 26/14	Hawkins–Kennedy Jobe Neer Speed	AROM VAS  T1	“Low level laser (LLL) combined with exercise therapy is more effective than exercise therapy alone.”	<b>Female: +</b>
2	Adebajo 1990  [2]  Great Britain	1: Oral Diclofenac + Injection of Lignocaine  2: Placebo Oral + Injection of Lignocaine + Steroid  3: Oral Placebo + Injection of Lignocaine  F&D: 50 mg 3 Times daily for 28 days	A: Not Specified  D: >3 1: 7.7 (0.8) 2: 8.6 (0.6) 3: 8.5 (0.8)	60 [60]  1: 20 2: 20 3: 20	Ø  1: 53.8 (2.9) 2: 51.3 (2.5) 3: 54.8 (2.8)	28/32  1: 11/9 2: 8/12 3: 9/11	Cyriax’s Criteria Painful Arc Resisted test	AROM Function VAS  T1	“Oral diclofenac and subacromial triamcinolone are of benefit in the treatment of rotator cuff tendinitis.”	
3	Akgun 2004  [3]  Turkey	1. Lignocaine + Methylprednisolone  2. Lignocaine + Methylprednisolone  3 Lignocaine  F&D: Injections 10 Days apart + Home Exercise	A: Not Specified  D: Not Specified  Co: Excluded NSAID during the preceding 3 months.	48 [48]  1: 16 2: 16 3: 16	Ø  1: 48.5 (8.5) 2: 50.5 (7.6) 3: 47.5 (9.5)	33/15  1. 12/4 2. 11/5 3. 10/6	Hawkins-Kennedy Neer  Painful Arc  MRI (Stage II)	Constant VAS  T1	“Corticosteroid injections in the acute or sub acute phase of SIS provided additional beneficial effect when used together with NSAIDs and exercise in the short term without any complication.”	<b>Female: +</b>  <b>Unilateral</b>
4	Akkaya 2016  [4]  Turkey	I: Weighted pendulum exercise  C: Un-weighted Pendulum exercise  F&D: 3 times daily for 4 wks.	A: Not Specified  D: I: 7.2 (4.3) C: 6.6 (4.1)	45 [35]  I: 18 C: 16	Ø  I: 42.9 (8.5) C: 40.4 (9.4)	23/11  I: 15/5 C: 15/5	Hawkins-Kennedy Jobe Neer  Painful Arc	AROM SPADI VAS  AHD  T1	“While significant clinical improvements were achieved with both weighted and un-weighted solo pendulum exercises, no significant difference was detected for ultrasonography AHD measurements between exercise groups.”	<b>Female: +</b>  <b>Unilateral</b>

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5	Aksakal 2016  [5]  Turkey	I: Injection of 8 mg Lornoxicam  C: Injection of 7,0 mg Betamethason  F&D: One single dose injection	A: >18  D: weeks I: 3 (2-7) C: 3 (2-8)	70 [70]  I: 35 C: 35	∅  I: 53 (47-63) C: 53 (46-68)	44/26  I: 21/14 C: 23/12	Hawkins- Kennedy Neer  MRI	Constant UCLA  T1/T2/T3	"Although a single subacromial lornoxicam injection provides rapid functional recovery, which partially extends into the intermediate term, its results are inferior to betamethasone and it may be an alternative only in patients where corticosteroids are contraindicated."	<b>Female: +</b>  <b>Unilateral</b>  No data Extractable
6	Aktas 2007  [6]  Turkey	I: Pulsed Electromagnetic Field (PEMF)  C: Sham PEMF  F&D: 15 Sessions for 3 wks. with active and passive elements	A: Not Specified  D: I: 4.82 (3.75) C: 4.80 (3.47)  Co: Excluded NSAID during the preceding 3 months.	46 [46]  I: 20 C: 20	∅  I: 48.7 (9.0) C: 53.9 (11.2)	30/10  I: 15/5 C: 15/5	Hawkins- Kennedy Neer  Painful Arc  Injection Test	Constant VAS  T1	"No convincing evidence that PEMF therapy is of additional benefit in SIS acute phase rehabilitation program."	<b>Female: +</b>  <b>Unilateral</b>
7	Akyol 2012  [7]  Turkey	I: Microwave, Hotpacks + Exercise  C: Sham Microwave, Hotpacks + Exercise  F&D: 15 Sessions for 3 wks.	A: Not Specified  D: >3 I: 10.5 (8.59) C: 14.1 (18.38)	40 [40]  I: 20 C: 20	∅ (21- 71)  I: 55.3 (14.5) C: 51.2 (6.82)	30/10  I: 15/5 C: 15/5	Hawkins- Kennedy Neer  Painful Range of Motion  MRI: Reference	SDQ SPADI VAS  T2	"No evidence that true microwave diathermy, as compared with sham microwave diathermy, is beneficial."	<b>Female: +</b>  <b>Unilateral</b>
8	Al Dajah 2014  [8]  South Arabia	I: Myofascial Trigger Point Therapy (Soft tissue mobilization)  C: Ultrasound alone  F&D: One Single Sessions	A: 40-60  D: Not Specified	30 [30]  I: 15 C: 15	Not Specified	Not Specified	Diagnosis of SIS  Neer Positive	Active External Rotation VAS  T1	"Confirmed the immediate effect of STM with PNF and significant values for reduction in pain, increased glenohumeral external rotation and overhead reach were obtained."	

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9	Alvarez 2005  [9]  Canada	I: Betamethasone + Xylocaine  C: Xylocaine alone  F&D: One Single Shot	A: Not Specified  D: I: 3.8 (3.9) C: 2.5 (3.1)	91 [77]  I: 28 C: 30	∅  I: 50 (15) C: 46 (12)	31/27  I: 14/16 C: 17/11	Neer  Painful Range of Motion  Pain on Palpation  US	AROM ASES DASH NEER WORC  T1/T2/T3/ T4	“That the addition of betamethasone to xylocaine improved patient health-related quality of life or other outcome measures during the following 6 months to a greater extent than xylocaine alone.”	It was controlled that the placement of the needle was appropriate (n=10).  14 excluded (full-thick- ness tear)
10	Alvarez- Nemegyei 2008  [10]  Mexico	I: Methylprednisolone + Lidocaine + standard physiotherapy program  C: Lidocaine alone + standard physiotherapy program  F&D: One Single Injection	A: >18  D: >7 days I: 8.1 (9.0) C: 3.1 (2.4)	56 [56]  I: 27 C: 29	∅  I: 53 (9) C: 52 (9)	43/13  I: 19/8 C: 24/5	Neer Injection Test  Rotator cuff tendinitis as proposed by the Southampton group	AROM Spanish- SDQ VAS  T3/T4	„Methylprednisolone acetate was not more effective than the injection of lidocaine by itself. Could be applicable only to patients who receive NSAIDs and are in a physiotherapy and rehabilitation program as co-interventions.“	<b>Female: +</b>
11	Ammer 1991  [11]  Germany	I: Pulsed Electromagnetic Field (PEMF)  C: Sham PEMF  F&D: 10 Sessions	A: Not specified  D: wks. I: 4 (2-8) C: 8 (2-25)	28 [28]  I: 12 C: 10	∅  I: 54 (35- 76) C: 64 (35- 76)	12/10  I: 6/6 C: 6/4	Speed Neer Hawkins Painful Arc  MRI	Pain (Likert Scale)  T1	„Therefore superiority of therapy with pulsed magnetic fields could not be proved.“	
12	Analan 2015  [12]  Turkey	I: True US and physiotherapy (combined)  C: Sham US and physiotherapy (combined)  F&D: 20 sessions in 4 wks.	A: Not Specified  D: I: 27.5 C: 18.1	22 [22]  I: 11 C: 11	∅  I: 52.9 (11.1) C: 57.1 (15)	11/11  I: 5/6 C: 6/5	Neer Hawkins  Painful Arc MRI	VAS Constant UCLA  T1	„Physiotherapy interventions effectively treat the pain, improve the clinical status, and increase the muscle strength of the shoulder.“	<b>Unilateral</b>  No data Extractable

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13	Arias-Buria 2015  [13]  Spain	I: US-guided percutaneous electrolysis + Eccentric training  C: Eccentric training only  F&D: I: Once a week for 4 wks. + Home training	A: 18-65  D: >3 I: 11.2 (2.7) C: 10.6 (2.6)	50 [36]  I: 17 C: 19	∅  I: C:	27/9  I: 13/4 C: 14/5	Neer Hawkins  Painful Arc MRI	NPRS DASH  T1	„US-guided percutaneous electrolysis combined with eccentric exercises resulted in small better outcomes at short term compared to when only eccentric exercises were applied in SAIS.“	<b>Unilateral</b>
14	Arias-Buria 2016  [14]  Spain	I: Trigger Point Dry Needling and exercise  C: Exercise only  F&D: 2 Sessions of Dry Needling; exercise program twice daily for 5 wks.	A: 18-65  D: >3 I: 6.2 (1.9) C: 5.8(1.7)	60 [50]  I: 25 C: 25	∅  I: 48 (6) C: 49 (5)	13/37  I: 6/19 C: 7/18	Neer Hawkins Jobe  Painful Arc	DASH  T1/T3/T4/T5	„This study found that the inclusion of two sessions of trigger point dry needling into an exercise program was effective for improving shoulder pain-related disability at short-, medium- and long-term; however, no greater improvement in shoulder pain was observed.“	<b>Unilateral</b>
15	Atkinson 2008  [15]  South Africa	I: Chirotherapy, High velocity, low Amplitude  C: Placebo Laser  F&D: 6 Visits	A: Not Specified  D: Not Specified	68 [65]  I: 30 C: 35	∅  I: 41.53 (18-63) C: 42.0 (20-70)	17/43  I: 8/22 C: 9/21	3 of 4 Findings: Overhead activity Painful Arc Impingement Test Empty can Test	AROM NRS  T1	„For short term relief of rotator cuff tendinopathy vs. placebo showing an improved algometry, goniometric ROM, and clinically meaningful decrease in the pain.“	Male: +  In control group: 5 drop outs replaced
16	Atya 2012  [16]  Egypt	I: Micro Current Electrical Stimulation (MENS)  C: Placebo MENS  F&D: 18 Visits, 3 Sessions a week	A: 30-55  D: I: 5 67 (3.13) C: 6.55 (2.21)	68 [40]  I: 19 C: 21	∅  I: 48.8 (6.0) C: 49.1 (3.3)	21/19  I: 9/10 C: 12/9	2 of 4 Tests: Hawkins-Kennedy Neer Painful Arc Resistance Test	VAS SDQ  T1	“Suggested that micro current electrical stimulation at the selected parameters could be an effective modality in reducing pain and improving functional disability in patients with SIS.“	
17	Aytar 2015  [17]  Turkey	1: Scapular mobilization + Hot Pack + TENS 2: Sham scapular mobilization + Hot Pack + TENS 3: Supervised exercise + Hot Pack + TENS  F&D: 9 Visits, 3 Sessions per week	A: Not Specified  D: Not Specified	69 [66]  1: 22 2: 22 3: 22	∅ 52  1: 52 2: 52 3: 51	51/15  1: 18/4 2: 14/8 3: 19/3	Hawkins-Kennedy Neer Painful Arc Resistance Test	VAS Quick DASH  T2/T3	“There was not a significant advantage of scapular mobilization for shoulder function, pain, range of motion, and satisfaction compared with sham or exercise.“	<b>Female: +</b>

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18	Bae 2011  [18]  Turkey	I: Motor Control, Strength + Conservative Physical Therapy  C: Conservative Physical Therapy  F&D: I: Same as Control and 30min extra C: 12 Sessions for 45min in 4 wks.	A: Not Specified  D: Not Specified	35 [35]  I: 17 C: 18	Ø  I: 49.9 (5.5) C: 48.3 (4.3)	23/12  I: 11/6 C: 12/6	Hawkins-Kennedy Jobe Neer  Painful Arc Resistance Test	AROM SPADI  T1	“Motor control and strengthening exercise program improved pain, function, strength and the range of motion.”	Female: +
19	Bal 2009  [19]  Turkey	I: Low Level Laser + Hot/Cold Pack Therapy + Exercise  C: Hot /Cold Pack Therapy + Exercise alone  F&D: 10 Sessions Laser + 12 wks. Comprehensive Home Exercise	A: 18-70  D: 6 wks. - 6 mos.	44 [44]  I: 22 C: 22	Ø  I: 51.7 (14.1) C: 53.1 (8.4)	28/12  I: 15/5 C: 13/7	Hawkins-Kennedy Neer Painful range of motion Injection Test	SPADI UCLA VAS  T1	„Failed to show a distinct advantage of low level laser (LLLT) over exercise alone.“	Female: +
20	Bang 2000  [20]  USA	I: Manual therapy + Exercise  C: Exercise  F&D: Twice weekly for 3 wks.	A: 18–65  D: I: 5.6 (3.7) C: 44.4 (2.8)	52 [52]  I: 27 C: 23	Ø  I: 42 (10.1) C: 45 (8.4)	22/30  I: 10/18 C: 12/12	1 of the 2 Tests: Active shoulder abduction Resisted Tests	Pain composite score  T3	„Manual physical therapy combined with supervised shoulder exercise is superior. Provides evidence that effective outcomes are attainable after relatively few physical therapy visits.“	
21	Bansal 2011  [21]  India	I: Therapeutic Ultrasound (pulsed mode)  C: Deep Friction Massage  F&D: 10 Sessions within 10 Days and Codman Exercises	A: Not Specified  D: Not Specified	40 [40]  I: 20 C: 20	Ø  I: 30.35 (5.76) C: 30.90 (5.33)	19/21  I: 11/9 C: 8/12	Painful Arc Empty can Test	AROM VAS  T1	“Both the interventions reduce pain and increase Abduction AROM but DFM has slight edge over US.“	
22	Barbosa 2008  [22]  Brasil	I: Therapeutic Ultrasound, eccentric Muscle Training + Joint Mobilization for the Accessory Movements of the Shoulder  C: Therapeutic Ultrasound + eccentric Training  F&D: 10 Sessions with 3 Sessions per wk.	A: Not Specified  D: >6	14 [14]  I: 7 C: 7	Ø 46.1 (7.62)  I: 43.52 (7.59) C: 48.71 (7.27)	9/5  I: 4/3 C: 5/2	One or more special tests for detecting shoulder dysfunction: Pain on Palpation Jobe Speed Yergason	Constant DASH  T1	„The associated use of joint mobilization seemed to offer better functional results.“	Small Sample Study

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23	Barra Lopez 2011  [23]  Spain	1: Diacutaneous Fibrolysis + Therapeutic Exercises + Electrotherapy + Cryotherapy  2: Sham Diacutaneous Fibrolysis + Therapeutic Exercises + Electrotherapy + Cryotherapy  F&D: Single Sessions	A: >18  D: 1. 14.5 (16.2) 2. 17.9 (27.6)  Co: Pilot study	50 [50]  1: 25 2: 25	Ø  1. 56.8 (10.3) 2. 60.8 (10.1)	29/21  1: 16/9 2: 13/12	Hawkins–Kennedy Neer Yergason	AROM Constant VAS  T1	„Diacutaneous Fibrolysis may be an effective and safe therapeutic option to improve active range of motion in patients suffering from painful shoulder.“	“A few had trauma”
24	Barra Lopez. 2013  [24]  Spain	1: Diacutaneous Fibrolysis (DF) + Therapeutic Exercises + Electrotherapy + Cryotherapy 2: Therapeutic Exercises + Electrotherapy + Cryotherapy 3: Sham Diacutaneous Fibrolysis + Therapeutic Exercises + Electrotherapy + Cryotherapy  F&D: 5 Sessions per Week for 3 wks.; 6 Sessions (2/wk.) of DF	A: >18  D: 1. 17.4 (24.9) 2. 24.2 (59.1) 3. 14.7 (21.6)	147 [120]  1: 40 2. 40 3. 40	Ø  1. 56.2 (12.0) 2. 60.0 (10.0) 3. 59.1 (11.5)	75/45  1: 25/15 2.: 27/13 3.: 23/17	Hawkins–Kennedy Neer Yergason	AROM Constant VAS  T1/T3	„Hypothesis that Diacutaneous Fibrolysis treatment adds a positive effect to conventional Physiotherapeutic treatment of SAIS.“	<b>Female: +</b>
25	Barra Lopez 2015  [25]  Spain	1: Functional Massage Group 2: Passive Mobilisation  F&D: Daily sessions for three weeks Including exercise, electro and cryotherapy	A: >18  D: I: 15.05 C: 12.37	43 [38]  1: 23 2: 20	Ø  1: 56.37 (10.61) 2: 59.84 (12.08)	26/12  1: 10/9 2: 16/3	Hawkins–Kennedy Neer	AROM Constant VAS  T1	“Functional Massage of trigger points in teres major muscle provides better clinical outcomes than passive mobilization towards the muscle stretch.“	<b>Female: +</b>
26	Baskurt 2006  [26]  Turkey	1: Heat 2: TENS 3: Heat + TENS  F&D: Heat for 20 min., TENS for 20 min.	A: Not Specified  D: Not Specified	92 [92]  1: 31 2: 30 3: 31	Ø 56.9  1: 56.54 (9.99) 2: 57.10 (4.43) 3: 57.32 (10.61)	60/32  1: 22/9 2: 20/10 3: 18/13	Stage I	PPT VAS  T1	“No statistically significant difference was found in VAS scores before and immediately after the application among the groups.”	<b>Female: +</b>

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27	Baskurt 2011  [27]  Turkey	1: Stretching + Strengthening  2: Stretching + Strengthening + „Scapular Stabilization“  F&D: 18 Sessions in 6 wks.	A: Not Specified  D: I: 11.60 (9.52) C: 8.55 (10.78)	40 [40]  1: 20 2: 20	∅  1: 51.25 (11.55) 2: 51.50 (8.4)	27/13	Hawkins–Kennedy Neer Jobe  US	AROM WORC VAS  T1	“Scapular stabilization exercises, given with stretching and strengthening exercises can be more effective in increasing the muscle strength, developing the JPS and decreasing the scapular dyskinesia.”	<b>Female: +</b>
28	Bayram 2014  [28]  Turkey	I: Nerve Block with 9 ml. of 2 % Prilocaine + 1 ml. of 40 mg Triamcinolone acetate  C: Placebo Injection  F&D: One Single Shot	A: >18  D: >3 I: 8.8 (9.8) C: 9.7 (9.5)	96 [96]  I: 38 C: 36	∅  I: 53.2 (11.8) C: 53.2 (10.5)	27/69  I: 16/35 C: 11/34	Painful Range of Motion  MRI: Zlatkin's	VAS AROM Constant  T1/T3	„Suprascapular nerve block (SSNB) is an effective treatment modality for the patients with chronic shoulder pain form impingement syndrome.“	Male: +  <b>Unilateral</b>
29	Beaudreuil 2011  [29]  France	I: Dynamic Humeral Centring (DHC)  C: Non-specific Mobilization Program  F&D: 15 Sessions for 6 wks.	A: >30  D: >1 I: 35.7 (81.6) C: 20.9 (27.6)	149 [70]  I: 35 C: 35  At 3 mos: I: 30 C: 32	∅  I: 57.9 (10.7) C: 59.4 (10.0)	47/22  I: 21/13 C: 26/9	At least two positive tests: Hawkins-Kennedy Neer Yocum  Constant score <80	Constant  T2/T5	„There was no difference in the total Constant score between DHC and controls.“	<b>Female: +</b>
30	Beaudreuil 2013  [30]  France	I: Dynamic humeral Centring (DHC)  C: Non-specific Mobilization Program  F&D: 15 Sessions for 6 wks.	A: >30  D: >1 I: 35.7 (81.6) C: 20.9 (27.6)	69 [69]  I: 34 C: 35  At 3 mos: I: 30 C: 32	∅  I: 57.9 (10.7) C: 59.4 (10.0)	47/22  I: 21/13 C: 26/9	At least two positive Tests: Hawkins–Kennedy Neer Yocum  Constant Score <80	AROM  T2	„Dynamic humeral centring is an effective modality of physiotherapy.“	<b>Female: +</b>  Secondary analysis from Beaudreuil (2011)

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31	Bennell 2010  [31]  Australia	I: Manual Therapy + Home Exercises  C: Sham Ultrasound Therapy + Light Application of a non-therapeutic Gel to the shoulder region for 10 minutes each. No Instruction in Exercise Techniques and no Manual Therapy  F&D: "10 Visits, 30-45 min. each twice weekly for the first fortnight, once a week for the next four wks., then once a fortnight in the last four wks."	A: >18  D: >3  I: 24 (6-54) C: 14 (6-24)	438 [120]  I: 59 C: 61	∅  I: 59.3 (10.1) C: 60.8 (12.4)	56/64  I: 25/34 C: 31/30	Positive quick Test  Pain on active abduction or external rotation	SPADI VAS  T1/T3	„Particular manual therapy and home exercise program tested conferred no additional benefit immediately after treatment compared with a realistic placebo in middle aged to older adults with chronic rotator cuff disease.“	
32	Berry 1980  [32]  Great Britain	1: Acupuncture 2: Steroid (40 mg prednisolone) Injection + Placebo Tolmetin Sodium 3: Steroid (40 mg prednisolone) Injection + active Tolmetin Sodium 4: Ultrasound 5: Placebo Ultrasound + Placebo Tolmetin Sodium  F&D: Tolmetin Sodium (NSAID) 1: Once a week for 4 wks.	A: Not Specified  D: wks 1: 20.3 (16.9) 2: 23.6 (27.9) 3: 28.3 (15.2) 4: 16.3 (14.5) 5: 27.5 (35)	60 [60]  In each group: 12	∅  1: 52.3 (10.8) 2: 54.1 (16.7) 3: 51.2 (14.6) 4: 55.1 (12.7) 5: 56.2 (11.2)	31/29  1: 4/8 2: 6/6 3: 8/4 4: 7/5 5: 6/6	Painful Arc  Painful stiff but not frozen shoulders.	AROM VAS  T1	“There does not seem to be any definite advantage of any particular treatment for the painful shoulder.”	
33	Bialoszewski 2011  [33]  Poland	I: Manual Therapy + TENS, US + Physiotherapy  C: TENS + US + Physiotherapy  F&D: 10 Sessions in 2 wks.	A: Not Specified  D: 4.6 (2-9) I: 4.8 C: 4.4	30 [30]  I: 15 C: 15	∅  51.3 (38-61) I: 52.6 (38-61) C: 50 (38-60)	12/18  I: 5/10 C: 7/8	Confirmed chronic rotator cuff injury Painful Arc	AROM VAS  T1	“Inclusion of manual therapy in the standard comprehensive physiotherapy used in the rehabilitation of patients with chronic rotator cuff injuries significantly improves treatment effectiveness.”	
34	Binder 1984  [34]  Great Britain	I: Pulsed electromagnetic field therapy (active coils)  C: Placebo (dummy coils)  F&D: I: 5-9 hours/d. C: One Sessions lasted one hour.	A: Not Specified  D: >3 I: 9.2 (3-24) C: 9.5 (3-24)	29 [29]  I: 15 C: 14	∅  I: 54.4 C: 53.2	8/21  I: 5/10 C: 3/11	Painful Arc  According to Cyriax	AROM VAS  Time: Not Specified	“PEMF therapy may thus be useful in the treatment of severe and persistent rotator cuff.”	No data Extractable



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35	Bjornsson Hallgren 2014  [35]  Sweden	I: Specific Exercise  C: Unspecific Exercises  After 3 mos.: Whether they still wanted surgery  F&D: 7 Sessions Weekly for both groups during the first 2 weeks and then every other week over the following 10 wks.	A: Not Specified  D: >6 I: 24 (6–120) C: 12 (6–156)	97 [97]  I: 51 C: 46  At 1 yr.: I: 45 C: 50	Ø  I: 52 (33–65) C: 52 (37–65)	36/61  I: 14/37 C: 22/24	3 positive Criteria: Hawkins-Kennedy Jobe Neer Patte  Injection Test	Constant DASH VAS  T3	„Specific exercises reduced the need for surgery for subacromial pain. Results are maintained after 1 year.“	Same study as Holmgren (2012)  Male: +  Patients were offered surgery after 3 months. Therefore we take the values for 12 weeks.
36	Blair 1996  [36]  Sweden	I: Triamcinolone acetonide + Lidocaine without Epinephrine  C: Lidocaine without Epinephrine  F&D: One Single Injection	A: Not Specified  D: >3 I: 8 m (3–24) C: 8 m (3–22)	40 [40]  I: 19 C: 21	Ø  I: 56 (32–80) C: 57 (33–81)	32/8  I: 15/4 C: 17/4	Lidocaine Injection Test	AROM VAS  T not clear: In weeks I: 28 (12–52) C: 33(12–55)	„Such injections are effective in the short term for alleviating pain and improving the range of motion of the shoulder.“	No data Extractable
37	Blume 2015  [37]  USA	I: Eccentric progressive resistance exercise (PRE)  C: Concentric progressive resistance exercise  F&D: 20 Sessions for 6 wks.	A: >18  D: I: 28.2 (23.6) C: 20.6 (26.6)	55 [38]  I: 18 C: 20	Ø:  I: 50.1 (16.9) C: 48.6 (14.6)	20/14  I: 10/8 C: 10/6	3 positive tests: Hawkins-Kennedy Neer ADD-Test	AROM Constant UCLA  T1	„Both eccentric and concentric PRE programs resulted in improved function, AROM, and strength in patients with SAIS.“	Some tests used to rule out RC tears (excluded)
38	Boeck 2012  [38]  Brasil	I: Exercises in Closed Kinetic Chain  C: Exercises in Open Kinetic Chain  F&D: 20 Sessions for 6 wks.	A: Not Specified  D: Not Specified	20 [14]  I: 7 C: 7	Ø: 55.57 (11.85)  I: 54.71 (12.84) C: 56.43 (11.74)	13/1  I: 7/0 C: 6/1	3 positive tests: Hawkins-Kennedy Jobe Neer Yocum  MRI (stage I/II)	DASH AROM  T1	„Closed kinetic chain exercises have major improvements in mobility, functionality and strength.“	Small Sample Study  For AROM: No data Extractable

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39	Bron 2011  [39]  Netherlands	I: Comprehensive Treatment of Muscle Trigger Points (MTrPt) in Shoulder Muscles  C: A Wait-and-See Approach  F&D: 12 Sessions once weekly for a maximum of 12 wks.	A: 18-65  D: >6	75 [72]  I: 37 C: 35  ITT I: 34 C: 31	Ø  I: 42.8 (11.7) C: 45.0 (13.2)	44/21  I: 21/13 C: 23/8	Only mentioned in the introduction	DASH VAS  T1	„Intervention group had better outcomes on all outcome measures after 12 weeks of a comprehensive MTrPt treatment program than did those on the waiting list. Justifies a search for an alternative explanation of shoulder pain, regardless of whether the patient is diagnosed with SIS.”	<b>Female: +</b>  <b>Unilateral</b>
40	Brox 1993  [40]  Norway	1: Surgery + Exercise  2: Supervised Exercise  3: Detuned Laser  F&D: 12 Sessions, twice weekly for 6 wks.	A: 18-66  D: >3	195 [125]  ITT I: 45 (13) 2: 50 3: 30 (8)	Ø  1: 48 2: 47 3: 48 3: 2	59/79  I: 16/29 2: 15/30 3: 28/20	2 of 3 isometric Tests positive  Injection Test	VAS  T1/T3	„After six months both active treatments were significantly better than placebo in reducing pain and improving function, but neither was significantly better than the other.“	No data Extractable
41	Brox 1999  [41]  Norway	1: Surgery + Exercise  2: Supervised Exercises  3: Detuned Laser  F&D: 12 Sessions, twice weekly for 6 wks.	A: 18-66  D: >3	195 [125]  I: 39 2: 45 3: 29	Ø  1: 48 (26- 66) 2: 47 (23 -65) 3: 48 (24- 65)	59/79  I: 16/29 2: 15/30 3: 28/20	2 of 3 isometric Tests positive  Injection Test	NEER score VAS  T6 (>2 yrs.)	„After 2 1/2-years of follow-up, both arthroscopic surgery and supervised exercises are better treatments than placebo. Patients who do not improve on a supervised exercise regimen should be considered for surgery, but the prognosis is poor in patients receiving regular pain medication or on sick leave.“	Data extracted for longest follow-up

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42	Byun 2011  [42]  South Korea	I: Triamcinolone acetone + Lidocaine + Hyaluronate  C: Triamcinolone acetone + Lidocaine  F&D: Once weekly for 3 wks.	A: Not Specified  D: Not Specified  Co: Comment	26 [26]  I: 13 C: 13	Ø: 55.4 (10.9)  I: 55.5 (12.1) C: 55.4 (10:0)	20/6  I: 10/3 C: 10/3	Hawkins– Kennedy Neer  Painful Arc  US	AROM SDQ SFA VAS  T1	„There is an additive effectiveness in improving shoulder movement and function, including active internal rotation when Hyaluronate are used adjunctively with steroid.“	<b>Female: +</b>
43	Byun 2014  [43]  South Korea	1: injection of triamcinolone and lidocaine 2: 2 injections of triamcinolone and lidocaine, two wks. apart 3: 2 injections of triamcinolone and lidocaine, one week apart  F&D: 40 mg (1.0 mL) of triamcinolone and 5.0 mL 0.5% lidocaine (total 6 mL)	A: Not Specified  D: Not Specified  Co: Full thickness tears	26 [30]  1: 10 2: 10 3: 10	Ø: 55.4 (10.9)  1: 63.3 (10.0) 2: 63.9 (8.0) 3: 60.2 (7.9)	14/16  1: 5/5 2: 4/6 3: 5/5	Hawkins– Kennedy Neer  Painful Arc  US	AROM SDQ VAS  T1/T2	„It may be more effective in pain relief for patients with periarticular disorder to receive subacromial bursa injections twice with 2-wk interval, as opposed to once.“	No data Extractable
44	Calis 2011  [44]  Turkey	1: Moist Heat + US + Exercise 2: Moist Heat + Laser + Exercise 3: Moist Heat + Exercise  F&D: 15 Sessions for 3 wks.	A: 18–65  D: 1: 3 (1-12) 2: 3 (1-24) 3: 3 (1-24)	52 [52]  1: 21 2: 15 3: 16	Ø  1: 55.42 (12.4) 2: 46.2 (12.14) 3: 50.34 (13.69)	35/17  1: 14/7 2: 10/5 3: 11/5	Diagnostic test for SIS were applied.  MRI: Stage 2 (according to Zlatkin's)	AROM Constant VAS  T1	„Laser and ultrasound could not be found superior to each other in the treatment of SIS. Exercise treatment forms the base for the conservative treatment.“	<b>Female: +</b>
45	Camargo 2015  [45]  Brazil	I: Exercise + manual therapy  C: Exercise alone  F&D: 4 wks.	A: 18–65  D: I: 47.1 (57.82) C: 38.4 (51.1)	93 [46]  I: 23 C: 23	Ø  I: 35.9 (12.08) C: 32.6 (10.73)	22/24  I: 13/10 C: 9/14	Hawkin's Kennedy Jobe Neer Resisted tests  Painful arc	AROM DASH VAS  T1	„Adding manual therapy to an exercise protocol did not enhance improvements in scapular kinematics, function, and pain in individuals with shoulder impingement syndrome.“	

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46	Celik 2009  [46]  Turkey	I: Exercise based on Shoulder Flexion below 90° of Abduction + Ice + TENS + US  C: Exercise based on Shoulder Flexion Exercise over 90° Abduction + Ice + TENS + US  F&D: 10 Sessions in 2 wks.	A: Not Specified  D: >6	30 [30]  I: 17/15 C: 16/15	Ø 52	23/7	Hawkins– Kennedy Neer Jobe	VAS Constant  T1/T4	“The exercise program below 90 degrees (painfree range of motion) resulted in additional improvements in VAS and face scores in SIS.”	<b>Female: +</b>
47	Celik 2009  [47]  Turkey	I: 9 ml Bupivacaine + 1 ml Betamethasone + Exercise + TENS + Ice + US  C: Exercise + TENS + Ice + US  F&D: 15 Sessions for 3 wks.	A: 30-70  D: >6	56 [56]  I: 28 C: 28	Ø 50 (31-68)  I: 50.8 (31-68) C: 49.2 (31-68)	40/16  I: 21/7 C: 19/9	Neer Hawkins– Kennedy Jobe	VAS AROM Constant  T2	„The use of sub-acromial injection for pain control in the subacromial space provided better result in exercise program and it was found successful results in functional score and in range of motion when compared to the control group.“	
48	Celik 2009  [48]  Turkey	I: Intermittent US + Exercise + TENS + Ice  C: Placebo US + Exercise + TENS + Ice  F&D: 15 Sessions for 3 wks.	A: >40  D: >6	36  I: 20 C: 16	Ø 51 (40-69)	29/7	Hawkins– Kennedy Jobe Neer  MRI (stage II)	VAS AROM Constant  T1/T2	“There is no need to add intermittent ultrasound to the standard treatment of patients with a diagnosis of SIS.”	<b>Female: +</b>
49	Cha 2014  [49]  Korea	I: Rehabilitation Exercise (Warm-up, Work-out, and Cool-down)  C: Controls without Rehabilitation Exercise  F&D: 3 times weekly for 12 wks.	Young baseball players  D: I: 5.64 (1.22) C: 6.06 (1.44)	30 [30]  I: 16 C: 14	Ø  I: 22.57 (1.79) C: 21.31 (1.74)	Males only	Pain during Apprehension Relocation Test  Hawkins– Kennedy Neer Jobe	VAS  T1	„It was found that the Rehab program balanced between internal and external rotators and lowered the fatigue level.“	Athletes Males only
50	Chard 1988  [50]  Great Britain	Portable Pulsed Electromagnetic Fields (PPEF)  I: Low dose (2 hrs.) (PPEF)  C: High dose (8 hrs.) (PPEF)  F&D: For 8 wks.	A: >18  D: >3	49 [49]  I: 25/19 C: 24	Ø  I: 50.8 C: 52.8	18/25  I: 10/9 C: 8/16	Pain aggravated by movement and against resistance	VAS  T1	„Patient choice might lie between intensive treatment for a shorter time, or less consuming treatment over a longer period.“	

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51	Chavez-Lopez 2009  [51]  Mexico	Blind or Ultrasound-guided Injection of  I: Methylprednisolone (MTP)  C: Triamcinolone (TMC)  F&D: One Single Injection	A: Not Specified  D: wks. I: 26 C: 28  Co: 3 in each group with rheumatoid arthritis. (mentioned in discussion)	24 [24]  I: 12 C: 12	∅  I: 50.5 (38–68) C: 52 (38–77)	21/3  I: 10/2 C: 11/1	Neer Yergason	AROM VAS  T1	„In the 2 weeks post injection the results concerning pain and functional impairment in our study were the same between MTP and TMC. Treatment with MTP tend to have a more rapid effect in relief of pain than TMC in patients with painful shoulder.“	<b>Female: +</b>  No data Extractable
52	Chen 2006  [52]  Taiwan	I: Ultrasound guided Injection  C: Blind Injections  F&D: Combination of 1 ml of Betamethasone + 1 ml of 1% Lidocaine. One Single Injection	A: Not Specified  D: >1	40 [40]  I: 20 C: 20	∅ 53 (30-66)	Female 33%	Painful Arc Reduced ROM	AROM  T1	„Ultrasound guided injection can result in significant improvement in shoulder abduction.“	Male: +
53	Cheng 2007  [53]  Hong Kong	I: Clinic based Work Hardening (CWH)  C: Work based Hardening  F&D: 4 wks.	A: Not Specified  D: Not Specified	103 [94]  I: 48 C: 46	∅  I: 32.1 (10.33) C: 32.6 (10.13)	22/72  I: 13/35 C: 9/37	Work-related rotator cuff tendinitis: Confirm the sign and symptoms for the diagnosis of disorders	AROM SPADI  T1	„Showed that workplace-based rehab intervention is more effective than conventional clinic-based rehabilitation programs in terms of decrease in perceived pain and disability, improvement in functional capabilities and prevention of further work disability.“	Male: +  No data for VAS Extractable
54	Choi 2013  [54]  South Korea	1: Triamcinolone 20 mg + Info + Exercise  2: Hyaluronidase 1,500 IU + Triamcinolone 20 mg + Info + Exercises  3: Triamcinolone 40 mg + Info + Exercise  F&D: Once a week for 2 wks.	A: Not Specified  D: Not Specified	30 [30]  1: 10 2: 10 3: 10	∅  1: 56.3 (6.8) 2: 55.7 (8.0) 3: 56.2 (7.9)	15/15  1: 4/6 2: 6/4 3: 5/5	Hawkins–Kennedy Neer  Painful Arc  US	AROM SDQ VAS  T1/T2	„Hyaluronidase has little additive effect in subacromial bursa injection for reducing the dosage of steroid.“	

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55	Chou 2010  [55]  Taiwan	I: Sodium Hyaluronate  C: Placebo NACL  F&D: 5 Injections for 5 wks.	A: 35-80  D: >3 I: 12.5 (15.1) C: 11.7 (17.86)	65 [54]  I: 27/25 C: 27/26	∅  I: 51.16 (7.84) C: 52.38 (8.95)	32/19  I: 16/9 C: 16/10	Pain around the shoulder Positive impingement sign  Imaging diagnosis	Constant VAS  T1/T2	„The ARTZ @Dispo group had a better constant score and VAS score than those in the placebo group 6 weeks after.“	<b>Female: +</b>
56	Cift 2015  [56]  Turkey	I: Tenoxicam (NSAID)  C: Methylprednisolone acetate  F&D: Home based Exercise for all. 3 injection of Tenoxicam, a week apart	A: Not Specified  D: Not Specified	40 [40]  I: 20 C: 20	∅  I: 45.3 (32-67) C: 46.5 (29-73)	22/18  I: 10/10 C: 12/8	Hawkins–Kennedy Neer Painful Arc  MRI	AROM DASH VAS  T2/T5	„Both subacromial tenoxicam and steroid injections may be successfully used in the treatment of patients with impingement syndrome.“	
57	Citaker 2005  [57]  Turkey	I: Mobilizations + Hotpacks + Theraband + Exercise  C: PNF + Theraband + Exercise  F&D: 20 Sessions followed by 3 wks. of Theraband-Exercise in both groups.	A: Not Specified  D: Not Specified	40 [40]  I: 20 C: 20	∅  I: 52.80 (9.86) C: 55.5 (8.95)	Not specified	Clinically and Radiological documented	AROM UCLA VAS  T1	„Mobilization and PNF methods are both effective, but mobilization is a painless technique and therefore was better tolerated than PNF.“	
58	Cloke 2008  [58]  Great Britain	1: Exercise + Manual Therapy (EMTP)  2: Steroids  3: Exercise + Manual Therapy (EMTP) + Steroids  4: Control  F&D: 6 Sessions in 18 wks.	A: >18  D: <6	186 [112]  1: 29 2: 28 3: 29 4: 27	∅: 54.8 (23-88)	64/48	Painful Arc  Pain during active ABD without Resistance	OSS  T1	„No significant changes in the OSS in any of our groups at intervention end or trial end. There was a trend toward improved OSS in all groups at 1 year but an interesting decline in scores at trial end in those who had received injections as a sole treatment or along with Exercise and Manual Therapy Package (EMTP).“	

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59	Cole 2015  [59]  Australia	I: Ultrasound-guided steroid injection  C: Blind steroid injection  F&D: One single Injection of methylprednisolone and lidocaine.	A: >18  D: wks. I: 16 (2-108) C: 26 (1-108)	55 [51]  I: 25 C: 26	∅  I: 42 (23-62) C: 46 (19-68)	28 / 23	Clinical signs of impingement  US	VAS ASES  T2	„No significant differences were found in the clinical outcome when comparing ultrasound-guided subacromial injections to blind subacromial injections for SIS.“	Bilateral included and treated.
60	Conroy 1998  [60]  USA	I: Joint mobilization + Comprehensive Treatment  C: Comprehensive Treatment  F&D: 3 Times in 3 wks.	A: Not Specified  D: Not Specified	14 [14]  I: 7 C: 7	∅  I: 55.0 (10.2) C: 50.7 (16.5)	6/8	Hawkins–Kennedy Neer  Painful Arc  Subacromial compression test	AROM Pain  T1	„Preliminary evidence that the use of joint mobilization relieves pain over a 24 hour.“	Small Sample Study
61	Cook 2014  [61]  USA	I: Shoulder + Neck Treatment  C: Shoulder Treatment only  F&D: 3 Times in 3 wks.	A: >18  D: wks. I: 11.7 (4.6)  I: 12.9 (17.6) C: 10.4 (10.6)	78 [74]  I: 36 C: 32	∅: 52.6 (14.1)  I: 54.1 (12.9) C: 51.0 (15.5)	31/37  I: 13/23 C: 18/14	Hawkins–Kennedy Neer  Painful Arc  Pain during active shoulder movements	Quick DASH PASS VAS  T1	„Subjects did not experience additional benefit when a cervical mobilization on a tender cervical segmental level was added to a comprehensive shoulder treatment.“	
62	Crawshaw 2010  [62]  Great Britain	I: Injection combined + Exercise + Manual Therapy  C: Exercise + Manual Therapy alone  F&D: One Single Shot and Comprehensive Therapy as many Sessions as deemed necessary	A: >40  D: wks. I: 14 (10–26) C: 17 (12–28)	1132 [232]  I: 115 C: 117  Week 12: I: 99 C: 106	∅  I: 57.2 C: 54.9	127/302  I: 60/115 C: 67/117	Hawkins–Kennedy Neer  A non-capsular pattern of restriction	SPADI (Pain and Disability)  T4	„Steroid injection combined with exercise is of similar effectiveness to exercise only at 12 weeks. A third of patients treated with exercise and manual therapy alone do not improve sufficiently by 12 weeks and will opt for a steroid injection.“	Male: +

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63	De Freitas 2014  [63]  Brasil	I: Pulsed Electromagnetic Field (PEMF)  C: Placebo Group  F&D: 9 Sessions in 3 wks.	A: 35-67  D: I: 22.0 (17.7) C: 21.2 (19)  CO: Unilateral shoulder	61 [56]  I: 26 C: 30	Ø  I: 50.0 (8.2) C: 50.8 (8.2)	36/20  I: 16/10 C: 20/10	Neer  US	Constant UCLA VAS  T3	„Pulsed electro-magnetic field (PEMF) proved to be effective in improving function and pain in individuals with SIS.“	<b>Unilateral</b>
64	Dejaco 2016  [64]  Netherland	I: Eccentric exercise  C: Conventional exercise  F&D: physio session 9 in 12 wks., 12 weeks of daily exercise training	A: 18-65  D: I: 16.9 (16.8) C: 23.1 (23.8)  CO: Unilateral shoulder	41 [36]  I: 20 C: 16	Ø  I: 50.2 (10.8) C: 48.6 (12.3)	19/17  I: 10/10 C: 9/7	Empty can test Hawkins– Kennedy Neer	AROM Constant VAS  T2/T3/T4	„Based on the results, clinicians should take into account that performing two eccentric exercises twice a day is as effective as performing six concentric/ eccentric exercises once a day in patients with rotator cuff tendinopathy.“	<b>Unilateral</b>
65	Delgado-Gil 2015  [65]  Spain	I: Mobilization with Movement  C: Sham Manual Contact  F&D: 4 Sessions in 2 wks.	A: Not Specified  D: >3 I: 9.2 (6.7) C: 11.7 (7.9)	87 [42]  I: 21 C: 21	Ø 45.65  I: 55.4 (7.8) C: 54.3 (7.9)	34/8  I: 17/4 C: 17/4	2 positive Tests: Hawkins- Kennedy Jobe Neer	AROM VAS  T1	„Who received 4 sessions of MWM exhibited significantly better outcomes for pain during shoulder flexion, pain-free range of shoulder flexion motion.“	<b>Female: + Unilateral Immediate effects</b>
66	Devereaux 2015  [66]  Canada	I: Pre-cut kinesiology tape + Exercise  2: NSAID + Exercise  3: Exercise only  F&D: 4 Session in two wks.	A: > 18  D: Not Specified	106 [100]  1: 33 2: 29 3: 38	Ø  1: 50.0 (11.9) 2: 44.0 (10.5) 3: 50.0 (13.3)	39/61  1:11/22 2: 8/21 3:20/18	Hawkins- Kennedy Neer  Painful arc	Constant NPRS SST  T1	„The improvements in pain and function observed with an NSAID or Pre-cut Tape as adjuvant treatments were no greater than with rehab exercise alone.“	



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67	Di Lorenzo 2006  [67]  Italy	I: Suprascapular Nerve Block and Rehabilitation (SSNB)  C: Rehabilitation  F&D: SSNB: 2 Shots in 2 wks.	A: Not Specified  D: <2 out of 4 weeks at the time of diagnosis  Co: Crossover	200 [40]  I: 20 C: 20	Ø 45.65  I: 46.02 (12.69) C: 45.10 (12.01)	22/18  I: 13/7 C: 9/11	Painful Arc Gerber Jobe Pate  Positive Impingement Test	VAS  T1	„During early rehabilitation phases nerve blocks allow a reduction painkiller assumption, a return to more normal sleep pattern, and an increase in the overall rehab process comfort, collaboration and mood.“	
68	Dickens 2005  [68]  Great Britain	I: Physiotherapy prior to Surgery  C: Controls prior to Surgery  Patients who were placed on the Waiting List for Surgery were asked.  F&D: 1-2 Times per week until they felt, that they need no more supervision.	A: Not Specified  D: Not Specified	85 [85]  I: 45 C: 40	Ø  I: 55 (27-68) C: 54 (26-73)	37/48  I: 19/26 C: 18/22	Clinical findings  Injection Test: 3 blind steroids injections at 6 weekly intervals	Constant  T3	„It confirms that a physiotherapy program is of benefit.“	
69	Dilek 2015  [69]  Turkey	I: Proprioceptive exercise + Conventional physiotherapy  C: Conventional physiotherapy  F&D: 2 Sessions per week for 6 wks.	A: 25-65  D: I: 16.96 (22.18) C: 17.10 (24.55)	136 [63]  I: 31 C: 30	Ø  I: 50.06 (10.83) C: 48.2 (9.74)	42/19  I: 23/8 C: 19/11	Hawkins-Kennedy Neer  MRI	VAS WORC ASES  T1	„No additional positive effect on other clinical parameters was observed.“	<b>Female: +</b>
70	Djordjevic 2012  [70]  Serbia	I: Mobilization with Movement + Kinesiotaping  C: Supervised Exercise  F&D: 10 Sessions in 2 wks.	A: Not Specified  D: I: 4.7 (0.6) C: 4.8 (0.9)	20 [20]  I: 10 C: 10	Ø  I: 51.80 (5.3) C: 54.1 (6.8)	7/13  I: 4/6 C: 3/7	Hawkins-Kennedy Neer	AROM  T1	„MWM and KT may be useful therapy modalities in improving active ROM in painful shoulder.“	

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71	Dogan 2010  [71]  Turkey	I: Low Level Laser (LLL) Therapy + Exercise + Cold Pack  C: Placebo LLL Therapy + Exercise + Cold Pack  F&D: 14 Sessions, 5 Times a wk. for 3 wks.	A: Not Specified  D: I: 11.66 (18.04) C: 15.27 (25.13)	52 [52]  I: 30 C: 22	Ø: 53.59 (11.34)  I: 53.7 (12.6) C: 53.45 (9.64)	33/19  I: 20/10 C: 13/9	Detailed physical and neurologic examination  MRI	AROM SPADI VAS  T1	„Results showed improvements on pain severity, ROM and functional status of the patients with SAIS. However no superiority over placebo laser therapy was observed.“	
72	Dogu 2012  [72]  Turkey	I: Ultrasound Guided Corticosteroid Injection  C: Blind Corticosteroid Injection  F&D: One Single Shot	A: Not Specified  D: >3 I: 7.43 (5.37) C: 9.74 (7.67)	50 [46]  I: 23 C: 23	Ø  I: 55.17 (9.24) C: 56.74 (8.02)	31/15  I: 15/8 C: 16/7	Hawkins–Kennedy Jobe Neer  MRI	Constant VAS  T2	„Blind injections given in the subacromial region were as reliable as US-guided injection accuracy and could therefore be used in daily routines.“	
73	Ekeberg 2009  [73]  Norway	I: Local group: Ultrasound Guided Corticosteroid + Lidocaine Injection in the subacromial Bursa + Lidocaine Injection in the Gluteal Region  C: Systemic group: Corticosteroid + Lidocaine Injection in the Gluteal Region and Ultrasound Guided Lidocaine Injection in the subacromial Bursa	A: >18  D: >3 50% >1 yr.  <1 yr.: I: 32 of 53 C: 30 of 52	312 [106]  I: 53 C: 52	Ø  I: 51 (11) C: 50	65/41  I: 32/21 C: 33/20	Pain on two of 3 isometric tests Hawkins–Kennedy	SPADI WORC  T1/T2	„Local ultrasound guided corticosteroid injection is unlikely to be substantially more effective than systemic corticosteroid injection for short term improvement of pain and disability in rotator cuff disease.“	
74	Engebreetsen 2009  [74]  Norway	I: Supervised Exercise  C: Radio Corporeal Shock Wave Therapy (ESWT)  F&D: Two 45-min. Sessions weekly for 12 wks.	A: 18-70  D: >3  50% >1yr I: 34 von 52 C: 30 von 52  CO: Unilateral pain	141 [104]  I: 52 C: 52	Ø  I: 48.8 (20.6) C: 45.1 (22.1)	52/52  I: 26/26 C: 26/26	Hawkins – Kennedy  Dysfunction or pain on ABD  Pain on 2 of 3 isometric tests	SPADI VAS  T1/T2	„After 18 weeks, supervised exercises were better than radial extracorporeal shock-wave treatment (ESWT) in terms of the primary outcome variable SPADI.“	<b>Unilateral</b>

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75	Engebretsen 2011  [75]  Norway	I: Supervised Exercise  C: Radio corporeal Shock Wave Therapy (ESWT)  F&D: Two 45-minute Sessions weekly for 12 wks. Once a week for 4 to 6 weeks, treating 3 to 5 tender points each time.	A: 18-70  D: >3 50% >1yr I: 34 of 52 C: 30 of 52  Co: Unilateral pain	141 [104]  I: 52 C: 52  At 1 yr.: I: 49 C: 48	Ø  I: 49 (9.3) C: 47 (11.7)	52/52  I: 26/26 C: 26/26	Hawkins – Kennedy  Dysfunction or pain on ABD  Pain on 2 of 3 isometric tests	SPADI VAS  T5	„ No significant difference between the supervised exercise (SE) and radial extra-corporeal shock-wave treatment (ESWT) groups at the 1-year follow-up.“	<b>Unilateral</b>  Same study as Engebretsen (2009)
76	England 1989  [76]  Great Britain	1: Active Laser Therapy  2: Dummy Laser Therapy  3: Drug Therapy (Naproxen)  F&D: 6 Sessions in 2 wks.	A: >18  D: >4 wks. 12.5 wks. (5-56)	30 [30]  I: 10 C: 10	Ø 48 (18-78)	15/15  Not specified	Pain on resisted Abduction	AROM VAS  Not specified	„These results demonstrate the effectiveness of laser therapy in tendonitis of the shoulder.“	Small Sample Study  No data Extractable
77	Eslamian 2012  [77]  Iran	I: Gallium-arsenide Low Power Laser + Physiotherapy  C: Physiotherapy only  F&D: 10 Sessions, 3 Times a wk.	A: I: 25-68 C: 25-75  D: Not Specified	50 [50]  I: 25 C: 25	Ø  I: 50.16 (12.10) C: 50.28 (11.74)	26/24  I: 10/15 C: 16/9	Impingement Test  Hawkins– Kennedy  Painful Arc	AROM VAS  T3	„Gallium-arsenide low power laser combined with conventional physiotherapy is superior to routine physiotherapy from the view of decreasing pain and improving patient's function.“	
78	Eyigor 2010  [78]  Turkey	I: Steroids + Exercise  C: TENS + Exercise  F&D: 15 Sessions, 5 Times per wk. for 3 wks.	A: 18-80  D: >3 I: 8.9 (5.1) C: 8.6 (4.5)	50 [40]  I: 20 C: 20	Ø  I: 60.8 (12.5) C: 57.6 (9.92)	29/11  I: 15/5 C: 14/6	US	AROM SDQ SF36 VAS  T1/T3	„Conventional TENS and intra-articular injection of corticosteroid are efficient application in terms of pain, ROM, disability and quality of life in the treatment of rotator cuff tendinitis.“	<b>Female: +</b>
79	Farfaras 2014  [79]  Sweden	1: Physiotherapy according to Böhmer 2: Open acromioplasty 3: Arthroscopic acromioplasty  F&D: 5 local physiotherapy centres	A: 18-80  D: > 6 Most more than 13 mos.	95 [87]  1: 34 2: 24 3: 29	Ø  1: 49.9 (9.3) 2: 52.4 (9.5) 3: 48.9 (8.9)	28/27  1: 8/13 2: 8/7 3: 12/7	Subacromial Pain longer than 6mths.  US	AROM Constant SF36 Watson  T6	„The Constant score, other clinical assessments and subjective health-related QoL revealed no significant differences between the 3 groups two to three years after intervention in patients with SAIS.“	

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80	Galasso 2012  [80]  Italy	I: Extracorporeal Shock Wave Therapy (ESWT)  C: Sham Extracorporeal Shock Wave Therapy  F&D: 2 Sessions 7 days apart	A: >18  D: I: 45.36 (34.33) C: 61.22 (24.04)	20 [20]  I: 11 C: 9	Ø  I: 50.7 (8.44) C: 51.11 (13.26)	9/11  I: 4/7 C: 5/4	MRI	Constant  T2/T3	„Demonstrated that patients suffering from NCST (non calcific tendinopathy of the supraspinatus) may benefit from low energy shock waves, at least in the short-term.”	Small Sample Study  <b>Unilateral</b>
81	Garcia 2015  [81]  Spain	I: Ultrasound + Exercise  2: Iontophoresis + Exercise  3: Exercise  F&D: 15 Sessions in 3 wks.	A: >18  D:  For all: 60% >6 mos.	175 [88]  I: 30 2: 26 3: 32	Ø  1: 61.9 (13.0) 2: 57.7 (17.3) 3: 56.9 (12.3)	47/31  1:15/12 2: 13/9 3:19/10	Hawkins– Kennedy  Painful Arc Isometric tests Palpation	Constant DASH  T2/T3	„In patients with SIS improvements in pain, strength, range of motion, and vitality showed that a combination of ultrasonophoresis and an exercise program are better than exercise alone.”	<b>Female: +</b>  Not possible to extract standardize d data
82	Gialanella 2011  [82]  Italy	1: Steroid Injection of 40 mg Triamcinolone acetate (TA)  2: 2 Steroid Injection of 40 mg Triamcinolone 21 days apart  3: No Treatment	A: >75  D: 1: 6.6 (5.2) 2: 4.4 (2.7) 3: 5.2 (2.6)  Co: Full thickness RCT	60 [60]  1: 20 2: 20 3: 20	Ø  1: 78.7 (6.6) 2: 77.3 (4.9) 3: 79.4 (4.5)	55/5  1: 18/2 2: 19/1 3: 18/2	MRI US	Constant VAS  T3/T4	„We found that intraarticular injection of TA improves pain relief in RCT for up to 3 months and additional injections after 21 days do not increase TA therapeutic effect.”	<b>Female: +</b>  Full thickness RCT
83	Giombini 2006  [83]  England	1: Hyperthermia  2: Ultrasound  C: Passive Exercise  F&D: 1: 12 Sessions, 3/a week for 4 wks. 2: 3/a week Ultrasound 3: Passive Exercises 5 min. a day, twice a day for 4 wks.	A: >18  D: 4 8 (2.3)	159 [37]  1: 14 2: 12 3: 11	Ø  1: 25.3 (4.8) 2: 28.6 (6.6) 3: 26.3 (6.2)	8/29  1: 2/12 2: 4/8 3: 2/9	Hawkins– Kennedy Neer  Empty can  Resisted testing  US	Constant VAS  T1/T2	„Hyperthermia is effective in the management of established supraspinatus tendinopathy.”	Male: +

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84	Goeksu 2015  [84]  Turkey	I: Subacromial Injection/local anaesthetic + home exercise  C: Kinesio Taping + home exercise  F&D: I: One single shot C: Taping three times with 3 days interval	A: 20-50  D: >12 wks. I: 2.33 (0.78) C: 2.37 (0.81)	81 [67]  I: 34 C: 33	Ø  I: 42.63 (6.88) C: 43.45 (6.39)	48/13  I: 25/5 C: 23/8	Hawkins – Kennedy Jobe Painful arc  MRI	AROM VAS SPADI  T1/T2	„Although the improvement in pain at rest, abduction ROM measures and disability were better with local injection, KT may be an alternative non invasive method to local subacromial injection for patients suffering from SIS.“	<b>Female: +</b>
85	Granviken 2015  [85]  Norway	I: Home exercises  C: Supervised exercises + home exercises  F&D: C: 10 supervised treatments for 6 wks.	A: 18-65  D: >12 wks. I: 12 (6-36) C: 17 (10-48)	509 [46]  I: 23 C: 23	Ø  I: 48.2 (9.8) C: 47.6 (10.0)	10/12  I: 5/6 C: 5/6	Hawkins – Kennedy Infraspinatus test Painful arc	AROM NPRS SPADI  T1	„Home exercises and supervised exercises are similarly effective for people with SAIS.“	<b>Unilateral</b>
86	Guimaraes 2015  [86]  Brasil	I: Mobilisation with Movements  C: Sham Technique  F&D: 4 session of treatment Crossover	A: 18-65  D: >1 week I: 31.9 (21.6) C: 31.0 (37.9)	92 [27]  I: 14 C: 13	Ø  I: 30.3 (6.9) C: 31.9 (9.2)	15/12  I: 8/6 C: 7/6	Hawkins – Kennedy Neer Jobe Painful arc	AROM SPADI  T1	„The MWM technique was no more effective than a sham intervention in improving shoulder ROM during external rotation and abduction, pain, and function in patients with shoulder impingement syndrome.“	
87	Guler 2009  [87]  Turkey	I: Ketoprofen + Lidocaine Phonophoresis + Rehab Program (TENS + Hot Pack + Exercise)  C: Ketoprofen Phonophoresis + Rehab Program (TENS + Hot Pack + Exercises)  F&D: 15 Sessions	A: Not Specified  D: I: 12 (2-24) C: 8 (1-24)	70 [70]  I: 37 C: 33	Ø 55.54 (9.97)  I: 54.29 (8.06) C: 56.93 (11.72)	39/31  I: 24/13 C: 15/18	Hawkins – Kennedy Neer  MRI	AROM UCLA VAS  T1/T3	„Ketoprofen and lidocaine prilocaine phonophoresis were more effective on pain and ROM than ketoprofen phonophoresis alone in the 3rd month after treatment in patients with SIS.“	

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88	Haahr 2005  [88]  Denmark	I: Physiotherapy  C: Surgery Arthroscopy  F&D: 19 Sessions in 12 wks.	A: 18-55  D: <1 yr. I: 13/43 C: 7/41  >1 yr. I: 29/43 C: 34/41	90 [90]  I: 43 C: 41	Ø  I: 44.5 (1.2) C: 44.3 (1.3)	58/26  1: 29/14 C: 29/12	Painful Arc  Hawkins– Kennedy  Injection Test	VAS Constant  T1/T3/T5	„Found similar improvements in the two treatment groups, as measured by the Constant score and the pain and dysfunction score.”	
89	Haahr 2006  [89]  Denmark	I: Physiotherapy  C: Surgery arthroscopy  F&D: 19 Sessions in 12 wks.	A: 18-55  D: <1 yr. I: 13/43 C: 7/41  >1 yr. I: 29/43 C: 34/41	90 [90]  I: 43 C: 41	Ø  I: 44.5 (1.2) C: 44.3 (1.3)	58/26  1: 29/14 C: 29/12	Hawkins– Kennedy  Painful Arc  Injection Test	Constant  T6	„Found similar improvements in the two treatment groups, as measured by the Constant score and the pain and dysfunction score. Greatest gain occurred within the first 3 months.”	Same study as Haahr (2005)
90	Haake 2001  [90]  Germany	I: Extracorporeal Shock Wave Therapy (ESWT)  C: Radiotherapy  F&D: I: ESWT 3 Sessions in 3 wks.	A: Not Specified  D: >6 I: 29 (9-120) C: 24 (6-72)	50 [50]  I: 16 C: 14	Ø  I: 52.1 (32-64) C: 53.6 (39-66)	15/15  I: 8/8 C: 7/7	Supraspinatus tendinitis	Constant  T2/T3/T5	„No statistically significant differences were proven between ESWT and radiotherapy.”	
91	Haghighat 2015  [91]  Iran	I: Ultrasound-guided steroid injection  C: Blind injection  F&D: 40mg methylprednisolone with 1cc lidocaine 2%	A: Not Specified  D: I: 1.8 (0.54) C: 1.87 (0.48)	48 [40]  I: 20 C: 20	Ø  I: 50.45 (6.78) C: 52.3 (7.48)	25/15  I: 12/8 C: 13/7	Hawkins- Kennedy Neer  Painful Arc  US	AROM SPADI VAS  T2	“Our findings suggest that US image guided can improve the shoulder function of patients with impingement syndrome, and can be considered in comprehensive care programs of these patients for fast speed of rehabilitation.”	

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92	Haik 2014  [92]  Brasil	I: Mid Thoracic Spine Manipulation  C: Sham Thoracic Manipulation  F&D: One Sessions with up to 3 Manipulations	A: Not Specified  D: I: 49 (96) C: 42.6 (66)  Co: Asymptomatic also controlled	50 [50]  I: 25 C: 25	∅  I: 33.8 (12.2) C:29.7 (9.3)	18/32  I: 11/14 C: 7/18	Hawkins- Kennedy Jobe Neer  Painful Arc  Resisted testing	NPRS  T1	„Results suggest that shoulder pain immediately decreases in subjects with SIS after thoracic spine manipulation.“	Male: +
93	Heron 2016  [93]  Great Britain	1: Open chain resisted band exercise  2: Closed chain exercises  3: Minimally loaded range of movement exercise  F&D: 3 sessions in 6 wks., home exercises twice daily	A: Not Specified  D: > 3mths. 1: 49 (96) 2: 42.6 (66) 3:	120 [120]  1: 40 2: 40 3: 40	∅  1: 50.4 2: 49.8 3: 49.5	18/32  1: 16/24 2: 18/22 3: 15/25	Empty can test Hawkins- Kennedy  Resisted testing	SPADI  T1	„Open chain, closed chain and range of movement exercises all seem to be effective in bringing about short term changes in pain and disability in patients with rotator cuff tendinopathy.“	
94	Holmgren 2012  [94]  Sweden	I: Specific Exercise  C: Control Exercise  F&D: 6-7 Sessions in 10 wks.	A: 30-65  D: I: 24 (6-120) C: 12 (6-156)	152 [102]  I: 51 C: 46	∅  I: 52 (9) C: 52 (8)	36/61  I: 14/37 C: 22/24	3 positive Tests of: Hawkins- Kennedy Jobe Neer Patte  Injection Test	Constant DASH EQ-5d VAS  T1	„This specific exercise strategy is effective in improving shoulder function and pain in patients with persistent SAIS, in whom earlier conservative treatment has failed. By extension, this could reduce the need for surgery within 3 months.“	Same study as Björnsson Hallgren (2014)  Male: +
95	Hong 2011  [95]  South Korea	1: 40 mg Triamcinolone  2: 20 mg Triamcinolone  3: Placebo	A: 20-70  D: >1 1: 8.9 (10.6) 2:13 (12.1) 3:8.6 (9.2)	271 [90]  1: 30 2: 30 3: 30  1: 27 2: 25 3: 27	∅  1: 50.8 (9.9) 2: 48.6 (13.0) 3: 51.0 (10.0)	47/32  1: 17/10 2: 15/10 3: 15/12	Hawkins- Kennedy Jobe Neer Yocum Clinically diagnosed peri- articular disorder of the shoulder	AROM SDQ VAS  T1/T2/T3	„Initial use of a low dose is encouraged because there was no difference in efficacy according to dose, and the effect of corticosteroid lasted up to 8 wks.“	

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96	Hoyek 2004  [96]  France	I: Motor imagery (MI) and Comprehensive Physiotherapy  C: Comprehensive Physiotherapy  F&D: 10 Sessions of 1 hr.; 3 Times a wk.	A: 35-65  D: Not Specified	16 [16]  I: 8 C: 8	Ø 46.31 (9.02)	8/8  I: 4 /4 C: 4/4	MRI (Stage II)	AROM Constant VAS  T1	„MI may help in relieving pain and enhancing shoulder mobility in a stage II impingement syndrome.“	Small Sample Study
97	Jensen 2014  [97]  USA	I: Corticosteroid Injection  C: Heated Lidocaine + Tetracaine Patch  F&D: I: One Single Shot C: Twice daily for 4 hrs. for 2 wks., one for the next 2 wks.	A: >18  D: >2 wks.  Co: Unilateral	60 [46]  I: 23 C: 23	Ø  I: 51.5 (10.0) (18-68)  C: 50.5 (12.4) (28-72)	15/31  I: 6/17 C: 9/14	Hawkins– Kennedy Neer  Average pain: >4 on NRS 10	PQAS  T1	„The findings support the importance of assessing both pain qualities and time course of treatment as outcome domains.“	<b>Unilateral</b>
98	Johansson 2005  [98]  Sweden	1: Acupuncture + Home Exercise  C: Ultrasound + Home Exercise  F&D: Twice a week for 10 Sessions	A: 30-65  D: >2	88 [85]  I: 44 C: 41  3 mo. I: 42 C: 34 6 mo. I: 37 C: 32	Ø  I: 49 C: 49 (8)	59/26  I: 32/12 C: 27/14	Painful Arc  Hawkins– Kennedy Jobe Neer  Injection Test	Combined score of UCLA, AL and Constant  T1/T3/T4/ T5	„Indicates that a physical therapy strategy with a combination of acupuncture and home exercises is more beneficial for most patients with SIS.“	<b>Female: +</b>



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99	Johansson 2011  [99]  Sweden	I: Corticosteroid Injection (40 mg Methylprednisolone) + 8–10 ml 1 % Prilocaine.  C: Acupuncture + Home Exercise  F&D: Twice weekly (30 min) for 5 wks.	A: Not Specified  D: >2  <3 mos. I: 12 /49 C: 20/42  4-6 mos. I: 23/49 C: 13/42  7-12 mos. I: 9 /49 C: 7/42 Rest >12 mos.	233 [123]  I: 49 C: 42	Ø  I: 50 (9) C: 51 (9)	53/38  I: 27/22 C: 26/16	Hawkins – Kennedy Neer  Injection Test (1 and 2)	Adolfsson– Lysholm shoulder scale  T2/ T3/ T4/ T5	„Both treatments can be recommended for patients with SIS attending primary care facilities.“	
100	Just 2009  [100]  Germany	I: Physiotherapy + Manual Therapy  C: Physiotherapy  F&D: 6 Sessions (30 min) in 4 wks.	A: >18–80  D: >6 wks.	46 [42]  I: 20 C: 22	Ø  I: 52.7 C: 57.1	22/20  I: 9/11 C: 13/9	Clinical Tests for Bursitis and Impingement	Constant VAS  T1	„The subjects with manual therapy showed a significant improvement of shoulder flexion arm mobility.“	
101	Kachingwe 2008  [101]  USA	1: Supervised Exercise only  2. Supervised Exercise with Glenohumeral Mobilizations  3: Supervised Exercise with Movement Technique (MWM Mulligan)  4: Control Group receiving only Advice  F&D: One Sessions per week for 6 wks.	A: 18-74  D: 1. 32.5 (60.2) 2. 19.2 (24.6) 3. 22.6 (17.4) 4. 70.0 (92.4)	33 [33]  1: 8 2: 9 3: 9 4: 7	Ø  1: 47.3 2: 43.4 3: 48.9 4: 45.6	16/17  1: 4/4 2: 5/4 3: 4/5 4: 3/4	Painful movement Hand behind back or head  Hawkins– Kennedy Neer	AROM SPADI VAS  T1	“Physical therapy inter- ventions of glenohumeral mobilizations and MWM in combination with a supervised exercise program resulted in a higher percentage of change (but not statistically significant) from pre- to post- treatment in decreasing pain and improving function com-pared to the supervised exercise only and control groups.”	

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102	Karthikeyan 2010  [102]  Great Britain	I: 40 mg Methylprednisolone  C: 20 mg Tenoxicam  F&D: One Single Shot	A: >18  D: >3 I: 8 (2-12) C: 10 (2.12)	58 [58]  I: 27/26 C: 31/30	Ø  I: 60 (36-88) C: 58 (36- 75)	26/32  I: 11/16 C: 15/16	Painful Arc  Hawkins – Kennedy	Constant DASH OSS  T1/T2	“A single sub-acromial corticosteroid injection of 40 mg of methylprednisolone provided a significantly better outcome than a single injection of 20 mg of Tenoxicam.”	
103	Kassolik 2013  [103]  Poland	I: Classical Swedish Massage  C: Massage based on Tensegrity Principle  F&D: 10 Sessions in 2 weeks, each lasted 20 min.	A: >18  D: <3	47 [35]  I: 15 C: 15	Ø  Not Specified	Not specified	Painful Arc	AROM McGill PQ  T1/T2	“Increases in passive and active ROMs for flexion and abduction in patients who had massage based on the tensegrity principle compared with those who received classic massage.”	
104	Kaya 2011  [104]  Turkey	I: Kinesiotaping and Home Exercise  C: Physiotherapy (US + TENS +Hot Pack) + Home Exercise  F&D: 3 tapes in 2 weeks or Program for 2 wks.	A: 18-70  D: >6 I: 6.3 (4.3) C: 7.2 (4.9)	60 [60]  I: 30 C: 30	Ø  I: 56.2 (7.2) C: 59.5 (7.9)	Not specified	Painful Arc Empty can  Hawkins– Kennedy	DASH VAS  T1	“Kinesiotaping (KT) has been found to be more effective than the local modalities at the first week and was similarly effective at the second week of the treatment.”	
105	Kaya 2014  [105]  Turkey	I: Exercise + Manual Therapy  C: Exercise + Kinesiotaping  F&D: 6 wks. of related Interventions	A: 30-60  D: I: 6-28 C: 6-26	89 [60]  I: 26 C: 28	Ø  I: 47.15 (9.44) C: 50.85 (5.17)	33/21  I: 16/10 C: 17/11	Hawkins- Kennedy Neer  Painful Arc Sulcus Sign	DASH VAS  T1	“Kinesiotaping may have an adjunct effect of reducing night pain.”	
106	Kelle 2014  [106]  Turkey	1: Steroid + Home Exercise  2: Low Level Laser Therapy + Home Exercise  3: Sham Laser + Home Exercise  F&D: 2 Injection with Interval of 10 Days 2 and 3: 9 Sessions of Low Level Laser	A: >18  D: >3 1:16.6 (1- 120) 2: 18.7 (1- 120) 3: 15.0 (2- 120)	135 [135]  1: 45/45 2.: 45/38 3.: 45/31	Ø  1: 48.7 (18-77) 2: 50.7 (29-74) 3: 48.0 (19-76)	105/30  1: 35/10 2: 36/9 2: 34/11	Impingement Test  Neer  MRI (stage I/II)	Nottingha m health profile (NHP) UCLA VAS  T1/T3/T4	„Study demonstrated the positive effects of both low-level laser treatment and local corticosteroid injection in patients with SIS.“	<b>Female: +</b>

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107	Kesikburun 2013  [107]  Turkey	I: Platelet-Rich Plasma Injection + Exercise  C: Saline Injection + Exercise  F&D: The exercise program lasted a total of 6 wks.	A: 18-70  D: >3 I: 8.5 (3-36) C: 10 (2-48)	40 [40]  I: 20 C: 20	∅  I: 45.5 (11.8) C: 51.4 (10.0)	27/13  I: 13/7 C: 14/6	Pain on movement  Overhead throwing activity  MRI	AROM SPADI WORC  T1/T2/T3/T5	„Platelet rich plasma (PRP) injection was found to be no more effective in improving quality of life, pain, disability, and shoulder range of motion than placebo in patients with chronic RCT who were treated with an exercise program during a 1-year follow-up study.“	<b>Female: +</b>  No data Extractable
108	Ketola 2009  [108]  Finland	I: Supervised Exercise  C: Arthroscopy followed by a similar Exercise	A: 18-60  D: >3	140 [140] I: 70 C: 70	∅ 47.1 (23-60)	88/52  I: 47/23 C: 41/29	Clinical sign of shoulder impingement Neer  Lidocaine test MRI	SDQ VAS  T5	„Structured exercise treatment seems to be the treatment of choice for SIS.“	<b>Female: +</b>
109	Ketola 2013  [109]  Finland	I: Supervised Exercise  C: Arthroscopy followed by a similar Exercise	A: 18-60  D: >3	140 [140] I: 70 C: 70	∅ 47.1 (23-60)	88/52  I: 47/23 C: 41/29	Clinical sign of shoulder impingement Neer  Lidocaine test MRI	SDQ VAS  T6	„The effects of the arthroscopic acromioplasty may have been overestimated due to regression to the mean and the natural long-term course of the SIS.“	<b>Female: +</b>  Follow up study from Ketola (2009)
110	Kibar 2016  [110]  Turkey	I: Laser acupuncture  C: Sham laser acupuncture  F&D: 15 sessions in 3 wks.	A: >18-70  D: >3	125 [73]  I: 36 C: 37	∅  I: 64.5 (31-75) C: 63 (32-70)	43/19  I: 21/9 C: 22/10	Hawkins–Kennedy Neer  MRI Stage I or II	AROM SPADI VAS  T1	„The positive results of the present study should lead to further laser acupuncture studies with combinations of different acupuncture points, at different wavelengths, and with long-term follow-up periods.“	<b>Female: +</b>

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111	Kim 2012  [111]  South Korea	I: Corticosteroid injection  C: Hyaluronate injection  F&D: Once a week for 3 wks.	A: >40  D: >3  Co: Comment	105 [105]  I: 42 C: 38	∅  I: 55.9 (7.9) C: 54.1 (7.7)	52/28  I: 25/17 C: 27/11	Hawkins– Kennedy Neer  US MRI	AROM ASES VAS  T1/T2/T3	„Hyaluronate injection can improve the functional outcomes in impingement syndrome and can be a more effective means of pain relief than corticosteroids, at least in the short term.”	<b>Female: +</b>
112	Kleinhenz 1999  [112]  Germany	I: Acupuncture  C: Placebo Needling  F&D: 8 Sessions in 4 wks.	A: 18-50  D: >1  Co: Athletes	109 [52]  I: 25 C: 27  I: 22 C: 23	∅  I: 33.72 (7.91) C: 37.37 (10)	21/31  I: 12/13 C: 9/18	RCT due to sport  US (Stage I or II)	Modified Constant  T1	„Acupuncture with penetration of the skin was shown to be more effective than a similar therapeutic setting with placebo needling in the treatment of pain.”	Same data as in Streitberger et al. (2000)
113	Kocyigit, 2012  [113]  Turkey	I: Low-Frequency TENS  C: Sham TENS  F&D: Within one treatment of 30 min.	A: 25-65  D: I: 5.5 (1.5-12) C: 7.8 (1-24)	20 [20]  I: 10 C: 10	∅  I: 49.2 (40-55) C: 44.7 (24-64)	12/8  I: 5/5 C: 7/3	3 positive Tests:  Painful Arc  Hawkins– Kennedy Jobe Neer	VAS  T1	„We suggest that a 1- Sessions low-frequency TENS may induce analgesic effect through modulation of discriminative, affective and motor aspects of central pain perception.”	
114	Kocyigit, 2016  [114]  Turkey	I: Kinesio Taping  C: Sham Taping  F&D: Taping was repeated every four days, three times.	A: 18-70  D: wks. (range 4-204)	55 [45]  I: 22 (21) C: 23 (20)	∅  I: 50.6 (10.1) C: 49.2 (8.8)	28/13  I: 15/6 C: 13/7	3 positive Tests:  Painful Arc  Hawkins– Kennedy Jobe Neer	AROM Constant NHP VAS  T1/T2	„Kinesio Taping and sham taping generated similar results regarding pain and Constant Scores.”	<b>Female: +</b>

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115	Krischak 2013  [115]  Great Britain	I: Occupational Therapy  C: Home Based Exercise Therapy  F&D: 3x/week for 8 wks. Exercise: Guide Booklet	A: 18 -75  D: >6 <6 mos.: 6/10 >6 mos.: 4/4  Co: Unilateral, Full Thickness Tear	65 [43]  I: 23 C: 20  I: 22 C: 16	Ø  I: 53.7 (12.9) C: 56.4 (10.8)	12/24  I: 8/8 C: 4/16	One positive Sign of Impingement	AROM Constant VAS  T1	“Using home-based exercises, improvements in pain, ROM, and strength, comparable to prescribed occupational therapy, can be expected.”	<b>Unilateral</b>
116	Kromer 2013  [116]  Germany	I: Individually Adapted Exercises (IAEX) + Individualized Manual Physiotherapy (IMPT)  C: Individually Adapted Exercises (IAEX) only  F&D: 10 Sessions in 5 wks.	A: 18-75  D: >4 wks.  I: 27.4 (28.4) C: 40.8 (53.4)	188 [90]  I: 46 C: 44	Ø  I: 50.1 (12,2) C: 53.7 (9.9)	46/44  I: 22/24 C: 24/20	Painful Arc Resistance Test  Hawkins – Kennedy Neer	SPADI VAS  T1/T2	„Individually adapted exercises were effective in the treatment of patients with shoulder impingement syndrome. Individualized manual physiotherapy contributed only a minor amount to the improvement in pain.“	
117	Kromer 2014  [117]  Germany	I: Individually Adapted Exercises (IAEX) + Individualized Manual Physiotherapy (IMPT)  C: Individually Adapted Exercises (IAEX) only  F&D: 10 Sessions in 5 wks.	A: 18-75  D: >4 wks.  I: 27.4 (28.4) C: 40.8 (53.4)	188 [90]  I: 46 C: 44	Ø  I: 50.1 (12,2) C: 53.7 (9.9)	46/44  I: 22/24 C: 24/20	Painful Arc Resistance Test  Hawkins – Kennedy Neer	SPADI VAS  T5	„Although the results of this study suggest that additionally applied manual interventions are of no benefit. Exercises should be considered a basic treatment, because they are less expensive and carry less risk than, for example, shock-wave therapy or surgery.“	Follow up study from Kromer et al. (2013)
118	Kurtais 2004  [118]  Turkey	I: US + Hot Packs + Electrotherapy + Exercise  C: Sham Us + Hot Packs + Electrotherapy + Exercise  F&D: 15 Sessions in 3 wks.	A: Not Specified  D: >4 wks.  I: 8.68 (8.84) (1-36) C: 8.11 (10.81) (1-42)	40 [40]  I: 19 C: 19	Ø  I: 54.16 (8.22) (38-69) C: 54.0 (9.8) (35-69)	26/12  I: 12/7 C: 14/5	Painful shoulder  MRI/US	HAQ SDQ VAS  T1	„It is apparent that adding US to a well- planned intervention regimen has no benefit.“	<b>Female: +</b>

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119	Lee 2011  [119]  Korea	I: Botulinum Toxin (BT)  C: Steroids injection (2 mL 0.5 % Lidocaine and Triamcinolone 40 mg)  F&D: One single Injection	A: Not Specified  D: >2  1.8.2 (5.5) 2.8.2	97 [61]  I: 31 C: 30  ITT	∅  I: 57.9 (10.1) 2. 55.8 (9.1)	36/25  I: 17/14 C: 19/11	Hawkins – Kennedy Neer	DASH NRS  T2/T3	„Botulinum toxin (BT) Type B showed more persistent clinical benefits in pain reduction and functional improvement than steroid in patients with SB or SIS. These results suggest that BT type B could be a useful strategy for re-placing steroids as a treatment for SB or SIS.“	
120	Lewis 2005  [120]  Great Britain	I: Thoracic and Scapular Taping intended to change their Posture.  C: Thoracic and Scapular Sham Taping intended to change their Posture.  F&D: One hour passive washout period between the two protocols.	A: 18-75  D: >1 wk. Years. I: 1.5 (4.0) (0.1-22) C: 0.8 (1.0) (0.4-5.0)	60 [60]  I: 30 C: 30	∅  I: 47.9 (15.3) C. 49.9 (5.1)	25/35  I: 13/17 C: 12/18	Painful Arc  Hawkins – Kennedy Neer	AROM VAS  T1	„There may be a short- term improvement in the range of shoulder flexion and scapular plane abduction in asymptomatic subjects and those with SIS.“	<b>Unilateral</b>
121	Lewis 2016  [121]  Great Britain	1: Shoulder advice and weekly exercise group  2: Shoulder advice and weekly exercise group and 6 acupuncture sessions  3: Shoulder advice and weekly exercise group and 6 electro-acupuncture sessions  F&D: (Six 50-55 min. sessions), once a week for 6 weeks as a circuit program	A: >18  D:  Median/range 1: 6 (4-12) 2: 6 (4-12) 3: 6 (3-12)	227 [227]  1: 73 2: 77 3: 77	∅  1: 54.47 (13.24) 2. 52.08 (14.35) 3: 53.95 (12.89)	118/109  1: 40/33 2. 41/36 3: 37/40	Painful Arc  Hawkins – Kennedy Neer	AROM OSS SPADI  T1/T4/T5	„Neither acupuncture nor electro-acupuncture were found to be more beneficial than exercise alone in the treatment of subacromial pain syndrome. These findings may support clinicians with treatment planning.“	<b>Unilateral</b>

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122	Littlewood 2014  [122]  Great Britain	I: Self-Managed Exercise Group  C: Usual Physiotherapy Treatment Group  F&D: 4 or 8 funded Sessions in 4 wks.	A: >18  D: >3 38.6 (3-168) I: 29 (3-120) C: 49 (3-168)	45 [24]  I: 12 C: 12	Ø 63.2 (44-79)  I: 62.6 (46-76) C: 63.9 (44-79)	12/12  I: 7/5 C: 5/7	Painful Arc Isometric tests	SPADI SF-36  T3	„This pilot RCT appear to offer a suitable foundation upon which to conduct a substantive study to evaluate the clinical and cost-effectiveness of a self-managed exercise program versus usual physiotherapy treatment for chronic rotator cuff disorders/tendinopathy.“	<b>Pilot study</b>
123	Littlewood 2015  [123]  Great Britain	I: Self-Managed Exercise Group  C: Usual Physiotherapy Treatment Group  F&D: 4 or 8 funded Sessions in 4 wks.	A: >18  D: >3 I: 11.7 (3-78) C: 17.3 (3-120)	86 [86]  I: 42 C: 44	Ø 63.2 (44-79)  I: 53.8 (23-83) C: 55.6 (23-80)	43/43  I: 25/17 C: 18/26	Painful Arc Isometric tests	SPADI SF-36  T3	„This study does not provide sufficient evidence of superiority of one intervention over the other in the short-, mid- or long-term and hence a self-management programme based around a single exercise appears comparable to usual physiotherapy treatment.“	
124	Lombardi 2008  [124]  Brasil	I: Progressive Resistance Training  C: Waiting List and then started Program 2 month later  F&D: Twice a week for 8 wks.	A: Not Specified  D: >2  I: 13.9 (2.6) C: 13.7 (9.6)	60 [60]  I: 30 C: 30	Ø  I: 56.3 (11.6) 2. 54.8 (9.4)	46/14  I: 21/9 C: 25/5	Hawkins–Kennedy Neer	DASH VAS  T2	„Who underwent progressive resistance training exhibited improvements regarding pain and function.“	<b>Female: +</b>
125	Ludewig 2003  [125]  USA	I: Therapeutic Exercise Program  C: Control Group  F&D: Exercise program for 3 wks.	A: Not Specified  D: Not Specified  Co: Construction workers	77 [77]  I: 34 C: 33	Ø  I: 48.0 (1.8) C: 49.2 (1.8)	98% male  2/75	Overhead work  Painful Arc Resisted tests  Hawkins – Kennedy Jobe Neer	SRQ SPADI  T1	„Home exercise program showed significant positive improvements in shoulder function and reductions in symptoms for construction workers with routine exposure to overhead work.“	Male: +

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126	Maenhout 2013  [126]  Belgium	I: Traditional Training (TT) + Heavy-Load Eccentric  C: Traditional rotator cuff strength training (TT)  F&D: 1 Sessions a week (30min) for 6 weeks, every other week till 3 months.	A: >18  D: >3	83 [61]  I: 31 C: 30	Ø  1: 40.2 (12.9) 2: 39.4 (13.1)	36/25  I: 16/15 2: 20/10	2 of 3 Tests positive:  Painful Arc Resisted testing  Hawkins– Kennedy Jobe Neer	SPADI  T1	„Supports the integration of an eccentric training program into a multimodal rehabilitation program. In addition, this study provided evidence that combining a limited amount of physiotherapy treatment Sessions with a home exercise program is highly effective.“	
127	Martins 2012  [127]  Brasil	I: Physiotherapy (Strength + Stretch + Cryotherapy)  C: Additional Proprioceptive Exercises  F&D: 2 Sessions weekly for six wks.	A: Not Specified  D: Not Specified	20 [18]  I: 8 C: 8	Ø <40yrs:	14/2  I: 7/1 C: 7/1	Impingement sign	WORC OSI VNS  Not Specified	„The proprioceptive exercises were important in the treatment of musculoskeletal disorders, however the results did not allow us to determine which treatment was the most effective.“	Small Sample Study  No data Extractable
128	Marzetti 2014  [128]  Italy	I: Neurocognitive therapeutic exercise  C: Traditional therapeutic exercise  F&D: 3 Sessions per week for 5 wks.	A: >18  D: >3 Not specified	76 [48]  I: 24 C: 24  ITT 1: 24 2: 24	Ø  1: 62.6 (13.9) 2: 61.6 (11.2)	27/21  I: 15/9 C: 12 /12	Resisted testing  Hawkins- Kennedy Neer  MRI	ASES Constant Quick DASH VAS  T1/T3/T4	„Pain, range of motion, skills and function of the shoulder can greatly benefit from neurocognitive rehabilitation.“	
129	McClatchie 2009  [129]  Canada	I: Cervical glide mobilization  C: Placebo  F&D: Both treatments within two days	A: >18  D: >6 wks.  Co: Unilateral pain below 43 %	21 [21]  I: 7 C: 14  I: 14 C: 7	Ø 49.8 (9.8)	14/7	Painful Arc	AROM VAS  T1	„Cervical lateral glide mobilizations can decrease the intensity of shoulder pain with movement into shoulder abduction, and this treatment effect is beyond placebo.“	<b>Female: +</b>  Crossover



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130	Melchiorre 2014  [130]  Italy	1: Muscle Shortening Manoeuvre  2: Traditional Physiotherapy  3: Control (Traction)  F&D: 1: Only once for 10 min. 2: 10 Sessions in 4 wks.	A: >18-65  D: >6	60 [60]  1: 20 2: 20 3: 20	Ø 58.6 (34-86)	24/36	Painful Arc  Neer sign	VAS  T1/T2	„Our results show that MSM is a simple, not invasive and efficient approach for mild SIS without tendon degeneration or rupture. This manoeuvre allows a rapid relief of pain with a persistent functional reset.“	No data Extractable
131	Melegati 2000  [131]  Italy	1: Physiotherapy 2: ESWT and Physiotherapy 3: Postural Hygiene + Joint Economy  F&D: 1: Physiotherapy 6 times / 3 weeks interval (Codman + Stretching + Resistance) 2: 3 ESWT in 3 wks. + 6 Sessions of Physiotherapy	A: 18-65  D: Not Specified	90 [90]  1 30 2: 30 3: 30	Ø  1 53.66 (7.36) 2: 53.66 (8.98) 3: 55.76 (13.08)	59/31  1: 23/7 2: 17/13 3: 19/11	Neer (stage I/II)	Constant  T5	„There is a rationale for the employment of ESWT in situations of this kind.“	<b>Female: +</b>
132	Miller 2009  [132]  Australia	I: Taping with Routine Physiotherapy  C: Routine Physiotherapy only  F&D: 6 Tapes in 2 wks.	A: 18-70  D: >6 wks.  Co: Unilateral, Pilot Study	22 [22]  I: 10 C: 12 I: 6 C: 11	Ø  I: 62 (51- 67) C: 54.5 (45-62)	12/10  I: 7/3 C: 5/7	Hawkins – Kennedy	VAS AROM SPADI  T1/T2	„Suggest a short-term role for scapula taping as an adjunctive treatment in the management of shoulder impingement problems.“	
133	Min 2013  [133]  USA	I: Injection of 60 mg Ketorolac  C: Injection of 40 mg Triamcinolone  F&D: One Single Injection	A: >18.  D: >1 Not Specified	48 [48]  I: 17 C: 15	Ø  I: 39.6 (9.4) C: 39.1 (10.5)	7/25  I: 4/13 C: 3/12	Hawkins– Kennedy Neer  Painful Arc	VAS UCLA  T2	„While both triamcinolone and ketorolac are effective in the treatment of isolated subacromial impingement, ketorolac appears to have equivalent if not superior efficacy all the while decreasing patient exposure to the potential side-effects of corticosteroids.“	Male: +

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134	Moezy 2014  [134]  Iran	I: Exercise Therapy  C: Physical Therapy  F&D: 18 Sessions	A: 18-75  D: I: 5.31 (4.46) C: 6.64 (4.08)	98 [72]  I: 36 (33) C: 36 (35)	∅  I: 47.77 (7.85) C: 48.15 (13.81)	55/13  I: 25/8 C: 30/3	Hawkins Neer  Painful Arc  Impingement Test	AROM VAS  T1	„The scapular stabilization based exercise intervention was successful in increasing shoulder range, decreasing forward head and shoulder postures and m. pectoralis minor flexibility.“	<b>Female: +</b>  <b>Unilateral</b>
135	Moghtaderi 2013  [135]  Iran	I: 20 mg of Sodium Hyaluronate (Fermatron™)  C: Normal Saline 0.9%  F&D: Once weekly for 3 wks.	A: 30-80  D: >6 Not Specified	40 [40]  I: 20 C: 20	∅  Not specified	26/14  I: 12/8 C: 14/6	Hawkins– Kennedy  Neer Shoulder pain  US: Pathology	Constant VAS  T1  T3 (Constant)	„Case group had significantly better constant scores than the placebo group at the 12th week after the last injection and improvement of VAS scores each week after the injections.“	
136	Montes- Molina 2012  [136]  Spain	I: Interferential Light Therapy  C: Conventional Light Therapy  F&D: 10 Sessions	A: >18  D: Not Specified	34 [30]  I: 13 C: 15	∅  I: 59.2 (11.0) C: 59.0 (8.9)	22/8  I: 12/3 C: 10/5	MRI US	UCLA VAS  T1	„This modality of light therapy has resulted to be useful in reducing pain during some shoulder analytical movements, opening a new way that deserves to be explored.“	<b>Female: +</b>  <b>Unilateral</b>
137	Moosmayer 2010  [137]  Norway	I: Surgery  C: Physiotherapeutic Exercise  F&D: Treatment Sessions of 40 min for 6-12 wks.	A: >18  D: I: 12.3 (18.7) C: 9.8 (9.8)  Co: Traumatic and non- traumatic tears	103 [103]  I: 52/51 C: 51/42	∅  I: 59 (44- 75) C: 61 (46- 75)	30/73  I: 15/37 C: 15/36	Painful Arc Impingement sign Passive range >140 °  MRI: (Stage II) US/MRI: Full thickness tear	ASES Constant  T4/T5	„Larger treatment benefits in terms of outcome scores after one year were found for surgical treatment of rotator cuff tears compared to physiotherapy.“	Male: +

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138	Moosmayer 2014  [138]  Norway	I: Surgery  C: Physiotherapeutic Exercise  F&D: Treatment Sessions of 40 min for 6-12 wks.	A: >18  D: I: 12.3 (18.7) C: 9.8 (9.8)  Co: Traumatic and non traumatic tears	103 [103]  I: 52/51 C: 51/42	Ø  I: 59 (7.5) C: 61 (7.6)	30/73  I: 15/37 C: 15/36	Painful Arc Impingement sign Passive range >140 °  MRI: (Stage II) US/MRI: Full thickness tear	ASES Constant  T4/T5	„Although primary repair of small and medium-sized rotator cuff tears was associated with better outcome than physiotherapy treatment, the differences were small and may be below clinical importance.“	Male: +
139	Mulligan 2016  [139]  USA	I: Comprehensive rehabilitation program including scapular + rotator cuff exercises  C: Standardized rotator cuff exercises  F&D: 4 week program/ crossover	A: 18-80  D: wks. I: 40.0 (34.3) C: 29.2 (29.9)  Co: crossover	270 [50] 40  I: 25/20 C: 25/20	Ø  I: 50.8 (11.1) C: 49.4 (10.6)	26/25  I: 15/5 C: 11/9	Hawkins–Kennedy Neer Painful Arc  Resisted testing  Stage I or II	ASES NPRS  MRI  T1/T3	„Patients with SAIS demonstrate improvement in pain and function with a standardized program of physical therapy regardless of group exercise sequencing.“	
140	Munday 2007  [140]  South Africa	I: Shoulder Manipulation to acromioclavicular joint, rips, scapula + glenohumeral joint  C: Placebo Intervention (Detuned Ultrasound)  F&D: 8 Sessions in 3 wks.	A: <40  D: >6 wks.	30 [30]  I: 15 C: 15	Ø  I: 22 (16-38) C: 23 (19-32)	14/16	Hawkins–Kennedy Jobe Neer Speed Painful Arc  Stage I or II	AROM Mc Gill Pain VAS  T2	„Chiropractic adjustment (manipulation) was superior to placebo in the short-term treatment (7 weeks) of SIS.“	For AROM no data Extractable
141	Naredo 2004  [141]  -Spain	1: Blind Injection of 20 mg Triamcinolone  2: US-guided Injection of 20 mg Triamcinolone  F&D: One Single Injection	A: Not Specified  D: >1 I: 10.2 (1-70) I: 10.2 (14.7) C: 11.9 (14.9)	41 [41]  I: 20 2: 21	Ø 52.4 (24-76)  I: 51.9 (13.8) C: 52.9 (11)	27/14  I: 12/8 2: 15/6	„Appropriate shoulder tests.“	SFA VAS  T2	„Ultrasound guidance may be the method of choice for injection corticosteroid in patients with painful shoulder.“	Female: +
142	Nykanen 1995  [142]  Finland	I: US + Physiotherapy in Rehab Centre  C: Placebo US + Physiotherapy in Rehab Centre  F&D: 10-12 Sessions in 3-4 wks.	A: 31-81  D: >2  Co: 58/ 72 (war veterans)	73 [73]  I: 35 C: 37	Ø  I: 66 (6) C: 67 (9)	11/61  I: 6/29 C: 5/32	Painful Arc Painful movement	Pain-Index ADL- Index  T4/T5	„Results discourage the adding of pulsed ultrasound therapy with the variables used to the conservative treatment of painful shoulders.“	Male: +

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143	Osteras 2010  [143]  Norway	I: High Dosage Exercise  C: Low Dosage Exercise  F&D: 3 Sessions weekly for 12 wks.	A: 18–60  D: >3  I: 3.6 (5.1) C: 3.1 (4.3)  Co: Unilateral	90 [61]  I: 31 C: 30  T5 I: 15 C: 23	∅  I: 46.1 (11.2) C: 41.8 (14.5)	25/36  I: 13/20 C: 12/16	Positive subacromial Impingement Test	SRQ VAS  T1/T4/T5	„Very positive and interesting to observe that during the follow-up period, assessing pain and function after 6 and 12 months, the high dosage [91] medical exercise therapy group continued to get better, while subjects in the low dosage (LD) exercise group were slowly getting worse.“	<b>Unilateral</b>
144	Otadi 2012  [144]  Iran	I: Laser + Exercise  C: Ultrasound + Exercise  F&D: 10 Sessions for 4 wks.	A: Not Specified  D: Not Specified	77 [44]  I: 23 C: 21	∅  I: 49.48 (8.5) C: 48.05 (7.9)	44 (female)	Painful Arc Isometric tests  Impingement Test	Constant VAS  T1/T3	„Methods of treatments were effective, safe and inexpensive therapeutic options for patients with shoulder tendinitis.“	<b>Only Female</b>
145	Ozgen 2012  [145]  Turkey	I: Sodium Hyaluronate (SH) Application + TENS +US + Hot Packs  C: Physical Therapy Modalities (PTM) + TENS + US + Hot Packs  F&D: 3 Injections in 3 wks., Physiotherapy Modalities not further explained	A: >18  D: I: 8.75 (4.96) (4-15) C: 9.17 (9.9) (1-14)	40 [24]  I: 12 C: 12	∅  I: 58.67 (9.8) C: 52.50 (8.83)	18/6  I: 9/3 C: 9/3	Clinical manifestation MRI	AROM VAS  T1/T3/T6	„Physical therapy modalities and SH application supplemented by home exercise programs were similar effects in short- and long term for shoulder tendinitis which causes pain in shoulder and SH application may be a better alternative with regard to effectiveness and side effects for other treatment methods applied intraarticular.“	<b>Female: +</b>  Data for AROM not Extractable

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146	Paoloni 2005  [146]  Australia	I: Topical Glyceryl Trinitrate Patch (GTN)  C: Placebo Patch  F&D: Left in situ for 24 hours and then replaced with a new quarter patch	A: >18  D: <3  I: 15 C: 13  Co: A few N with bilateral Shoulder pain	53 [53]  I: 26 C: 27	∅  I: 53 C: 49	29/24  I: 13/13 C: 16 /11	Hawkins – Kennedy  Impingement signs  Empty can position  MRI	AROM  T1/T2/T3/T 4	„The use of continuous topical GTN therapy for supraspinatus tendinopathy resulted in significantly improved shoulder pain with activity, at rest, and at night; significantly increased shoulder range of motion in abduction, flexion and internal rotation.“	<b>Bilateral</b>
147	Park 2013  [147]  Korea	I: Stabilization Exercise + Heat + US + Laser Interferential  C: Ordinary Physical Treatment + Heat + US + Laser Interferential  F&D: 12 Sessions for 4 wks.	A: Not Specified  D: I: 6.73 (5.19) C: 6.40 (4.37)	30 [30]  I: 15 C: 15	∅  I: 61.53 (7.68) C: 60.93 (7.04)	23/7  I: 12/3 C: 11/4	Diagnosed with shoulder impingement: Not Specified	Constant VAS  T1	„In the present study, active flexion, active abduction, passive flexion, and abduction were significantly increased (p<0.05) in the experimental group.“	<b>Female: +</b>
148	Pekyavas 2016  [148]  Turkey	1: Home exercise only 2: Exercise and Kinesio Taping 3: Exercise, Kinesio Taping and manual therapy 4: Exercise, Kinesio Taping, manual therapy and high intensity laser  F&D: 1-4: Home exercise daily; 15 min. 2-4: 3 sessions per week for two weeks.	A: Not Specified  D: > 3 Not specified	75 [70]  1: 15 2: 20 3: 16 4: 19	∅  1:40.6 (11.7) 2: 49.4 (12.6) 3: 45.5 (15.5) 4: 51.1 (14.3)	Not specified	Diagnosed with shoulder impingement: Not Specified	AROM SPADI VAS  T1	„Further studies with follow-up periods are required to determine the advantages of these treatments conclusively.“	
149	Penning 2012  [149]  Netherland	1: Hyaluronic acid injections  2: Corticosteroid injections  3: NaCl injections  F&D: All patients received the first injection.	A: >18  D: 35% <26 w 65% >26 w	222 [159]  1: 51/44 2: 53/45 3: 55/48	∅  1: 53 (12) 2: 52 (9) 3: 54 (11)	84/75  1: 27/24 2: 26/27 3: 31/24	Painful Arc	SDQ VAS  T1/T2/T3/T 4	„Clinically, this study does not support the use of hyaluronic acid injections in the treatment of subacromial impingement. Corticosteroid injections seem to be effective in the short term.“	

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150	Penning 2014  [150]  Netherland	1: Hyaluronic acid injections  2: Corticosteroid injections  3: NaCl injections  F&D: All patients received the first injection.	A: >18  D: 35% <26 w 65% >26 w	222 [159]  1: 51/44 2: 53/45 3: 55/48	Ø  1: 53 (12) 2: 52 (9) 3: 54 (11)	84/75  1: 27/24 2: 26/27 3: 31/24	Painful Arc	SDQ VAS  T1/T2/T3/T4	„The triamcinolone acetonide group showed a faster reduction in pain after injection compared to the hyaluronic acid and NaCl group..... it is necessary to repeat triamcinolone acetonide injections more than two times..“	Same study Data not extracted
151	Perez-Merino 2015  [151]  Spain	1: Ultrasound  2: Phonophoresis with Dexketoprofen  3: Iontophoresis with Dexketoprofen  F&D: All 3 groups received standardized exercise therapy and cryotherapy; 5 sessions/week; 20 sessions.	A: Not Specified  D: 1: 7.4 (6.1) 2: 8.0 (8.8) 3: 6.7 (8.0)	72 [99]  1: 32 2: 33 3: 34	Ø  1: 54.2 (10,5) 2: 52,9 (9,6) 3: 56,1 (8,1)	57/42  1: 18/14 2: 21/12 3: 18/16	US	VAS Constant DASH  T1/T2	“Results support the use of ultrasound, phonophoresis with dexketoprofen and iontophoresis with dexketoprofen for the treatment of SIS.”	
152	Peters 1997  [152]  Germany	I: Surgery  C: Conservative Therapy		72 [72]  I: 32 C: 40	Ø  1:56 (37-78) 2: 59 (37-82)	26/46  I: 14/18 C: 12/28	Painful Arc Injection Test Resistive ABD, Flex, ER  Stage II	Subjective shoulder rating scale  T: >4 years	“Surgery and conservative interventions showed similar results over 4 years.”	No data Extractable
153	Petri 2004  [153]  USA	1: Celecoxib 200 mg Bid  2: Naproxen 500 mg Bid  3: Placebo  F&D:	A: >18  D: Acute phase less than 7 days	306 [306]  1: 98 2: 100 3: 108	Ø  1: 47.9 2: 48 3: 50.5	109/197  1: 35/63 2: 38/62 3: 36/72	Painful Arc  Painful movement	AROM VAS  T1	„Celecoxib 200 mg bid provided analgesic efficacy in patients with acute shoulder tendinitis and/or bursitis without compromising tolerability.“	Male: +
154	Plafki 2000  [154]  Germany	1: 10 ml of pure 0.5 % Bupivacaine  2: 10mg of Triamcinolone acetonide with 10 ml of pure 0.5 % Bupivacaine  3: 4mg of Dexamethasone with 10 ml of pure 0.5 % Bupivacaine  F&D: One Single Injection	A: Not Specified  D: >3 1: 17.3 2: 15.1 3: 18.2	50 [50]  1: 10 2: 20 3: 20	Ø  1: 43.4 (29-61) 2: 42.3 (29-63) 3: 44.8 (27-60)	16/34  1: 4/6 2: 6/14 3: 6/14	Hawkins– Kennedy Neer		„Supports the efficacy and importance of sub acromial steroid injections for patients with chronic refractory impingement syndrome. Short-term results indicate that surgery may be prevented in at least half of them.“	No data Extractable

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155	Polimeni 2003  [155]  Italy	1: Shoulder Rehabilitation  2: Shoulder Rehabilitation + Radar  3: Shoulder Rehabilitation + Diadynamic Current  4: Shoulder Rehabilitation + US  F&D: 10min passive, 20min assisted exercise for 10 days	A: Not Specified  D: <3	50[50]  Not specified	Ø 56 (28-85)	36/14	Impingement Test Jobe Yergason	Constant  T1/T2	„All patients experienced improvement with treatment, but the association of physical therapy and functional rehab did not seem to lead to added benefit for the patient.“	No data Extractable
156	Pons 2001  [156]  Spain	I: Nitroglycerin Patch of 5 mg  C: Steroid Injection and Lidocaine  F&D: Patch for 3 days	A: Not Specified  D: <6 wks. Not specified	48 [48]  I: 24 C: 24	Ø 61	33/15	Gerber Jobe  Pate  Painful Arc	VAS  T2	„Treatment with NTG is not a clear alternative to infiltration of corticosteroids in patients with RCT, because of its lack of effectiveness and because of the greater number of patients who had adverse events that lead them to abandon treatment.“	No data Extractable
157	Rabini 2012  [157]  Italy	I: Local Microwave Diathermy  C: Injection of 40 mg Methylprednisolone acetate  F&D: I: 12 Sessions for 4 wks. C: Injection every other wk., 3 Times	A: >18  D: >3  I: 13.1 (9.1) C: 15.5 (20.4)	204 [92]  I: 46 C: 46	Ø  I: 56.6 (11.6) C: 59.2 (7.1)	61/31  I: 31/15 C: 30/16	Hawkins-Kennedy  Resisted break test  MRI	Constant DASH VAS  T1/T3/T4	„Local hyperthermia and subacromial corticosteroid injections improved shoulder function and pain relative to baseline in patients affected by rotator cuff tendinopathy, with no differences between treatments.“	
158	Radnovich 2014  [158]  USA	I: Heated Lidocaine + Tetracaine Patch (HLT)  C: Injection of Triamcinolone  F&D: I: Twice daily for 14 days C: One Single Injection	A: >18  D: >2 wks.	65 [60]  I: 29 C: 31	Ø  I: 55.5 (12.1) C: 51.4 (10.2)	21/39  I: 12/17 C: 9/22	Hawkins-Kennedy Neer	AROM VAS  T1/T2	„Short-term, non-invasive treatment with the HLT patch has similar efficacy to sub acromial corticosteroid injections for the treatment of pain associated with SIS.“	Male: +

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159	Rahme 1998  [159]  Sweden	I: Surgery  C: Physiotherapy only  F&D: C: Advice and Exercise	A: Not Specified  D: >1yr  Co: 10 resulted on initial trauma	42 [42]  I: 21 C: 21	Ø 42 (28- 63)	23/19	Impingement Sign Impingement Test	AROM VAS  T3/T4/T5	"Data suggest that surgical treatment is more effective than a standardized physiotherapy regime."	
160	Razavi 2004  [160]  Sweden	I: Exercise and acupuncture  C: Exercise and TENS  F&D: 10 Sessions, 1-2 times per week	A: Not Specified  D: Not Specified I: 12 (0.5- 168) C: 12 (0.5 240)	40 [37]  I: 16 C: 17	Ø  I: 49.5 (27-77) C: 53 (28- 61)	12/21  I: 4/12 C: 8/9	Resistance Test	AROM  T1/T4	„Acupuncture has no or little effect on rotator cuff tendinitis in comparison to placebo TENS.“	
161	Rha 2013  [161]  South Korea	I: Platelet-Rich Plasma Injection  C: Dry Needling  F&D: I: 2 Injections	A: Not Specified  D: >6  I: 9.6 (3.6) C: 9.2 (3.2)	70 [39]  I: 20 C: 19	Ø  I: 52.2 (9.5) C: 53.9 (11.6)	22/17  I: 11/9 C: 11/8	Painful Arc Impingement sign  MRI	SPADI AROM  T1/T3/T4	„Autologous platelet-rich plasma injections lead to a progressive reduction in pain and disability when compared to dry needling, although dry needling itself also shows un-expectedly good results in some patients with rotator cuff disease. This benefit is still present at six months after treatment.“	
162	Rhon 2014  [162]  USA	I: 40 mg Triamcinolone  C: Manual Physical Therapy  F&D: Up to 3 Injections versus 6 Sessions	A: 18-65  D: I: 6.5 (13.9) C: 4.9 (4.4)  Co: Unilateral	242 [104]  I: 52 C: 52  1yr: I: 52 C: 46	Ø  I: 42 C: 40	31/67  I: 14/38 C: 17/29	Not specified	NPRS SPADI GRC  T5	„Manual physical therapy and CSI produced similar outcomes in the treatment of patients with SIS. However, patients receiving CSI had more shoulder-related health care use through 1 year.“	Male: +  <b>Unilateral</b>



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163	Saeed 2013  [163]  Ireland	I: Musculoskeletal Ultrasonography (MSUS) – Methylprednisolone acetate  C: Palpation Guided - Methylprednisolone acetate  F&D: One single Injection	A: 21-85  D: >3 wks. 1. 19.64 (1.84) 2. 20.02 (1.52)	100 [100]  90 shoulders I: 50 59 shoulders C: 50 66 shoulders	Ø 57.7 (21-85)	65/35	Shoulder functions test for impingement	AROM SFT VAS  T2/T3	„We conclude MSUS-guided shoulder injection is superior to Palpation-guided injection in managing shoulder pain.“	<b>Female: +</b>  <b>Bilateral</b>
164	Sahin 2016  [164]  Turkey	1: NSAID  2: NSAID and Kinesio Taping  3: NSAID, Kinesio Taping and one steroid injection  F&D: 1-3: Home exercise daily for 4 wks. 2-4: Kinesio Tape: Renewed after 3 days	A: Not Specified  D: 1- 6 mos. In weeks 1: 7.7 (14.8) 2: 7.2 (9.7) 3: 8.2 (8.9)	123 [102]  1: 33 2: 33 3: 34	Ø  1: 54:0 (9.8) 2: 51.5 (11.0) 3: 53.1 (14.4)	78/21  1: 25/8 2: 26/7 3: 27/6	Hawkins–Kennedy Neer Jobe	SDQ UCLA VAS  T1	“Addition of KT or subacromial corticosteroid injection to NSAID treatment seems to have better/similar effectiveness in patients with SIS. Therefore, kinesiotaping might serve as an alternative treatment in case (injection of) corticosteroids are contraindicated.”	
165	San Segundo 2007  [165]  Spain	I: Pulsed Ultrasound + Exercise  C: Sham Ultrasound + Exercise  F&D: 15 Sessions in 3 wks.	A: 18–70  D: >3 I: 10.2 (11.4) C: 12.6 (11.1)	34 [34]  I: 17 C: 17	Ø  I: 52.6 (10.9) C: 56.9 (9.4)	29/5  I: 14/3 C: 15/2	Tests for sub acromial syndrome	Constant VAS  T1	„US therapy has not been demonstrated to be more effective than sham for the treatment of shoulder pain secondary to rotator cuff disease.“	<b>Female: +</b>
166	Santamato 2009  [166]  Italy	I: High Intensity Laser Therapy (HILT)  C: Ultrasound Therapy  F&D: 10 Sessions in 2 wks.	A: Not Specified  D: >1 I: 8.7 (8.8) C: 8.1 (10.8)	77 [70]  I: 35 C: 35	Ø 54.1 (9)  I: 54.2 (8.2) C: 54.0 (9.8)	42/28  I: 20/15 C: 22/13	Hawkins–Kennedy Neer (Stage I/II)  Painful Arc  Injection Test US	Constant Simple shoulder test VAS  T1	“HILT was shown to have greater benefit for SAIS than US therapy in reducing pain and improving the articular movement, functionality, and muscle strength of the affected shoulder.”	

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167	Santamato 2016  [167]  Italy	I: Extracorporeal shockwave therapy (ESWT) and isokinetic exercise  C: Extracorporeal shockwave therapy (ESWT) alone  F&D: 3 sessions over 10 days	A: >18  D: >1 I: 7.5 (4.2) C: 7.6 (3.8)	77 [70]  I: 15 C: 15	Ø 54.1 (9)  I: 39.4 (3.9) C: 41.1 (6.0)	16/14  I: 9/6 C: 7/8	Hawkins– Kennedy Neer (Stage I/II)  Painful Arc  Injection Test US/MRI	Constant VAS  T1 /T3	“In subjects with SAIS, combined administration of focused ESWT and IE for the rotator cuff resulted in greater reduction of pain, as well as superior functional recovery and muscle endurance in the short to medium term, compared with ESWT alone.”	
168	Saunders 1995  [168]  Great Britain	I: Low Level Laser  C: Sham Laser  F&D: 9 Sessions, Advice in 3 wks.	A: 35-65  D: =1 I: 3.86 (2.4) C: 3.32 (1.9)	24 [24]  I: 12 C: 12	Ø  I: 49.8 (8.12) (37-63) C: 50.7 (8.31) (39-64)	12/12	Referred from GP's with supraspinatus tendinitis  Impingement Empty can test Hawkins	AROM VAS  T1	„Laser therapy, advice and education improved certain symptoms of supraspinatus tendinitis.“	For AROM no data Extractable
169	Saunders 2003  [169]  Great Britain	1: Low Power Laser Therapy + Advice  2: Ultrasound + Advice  3: Advice  F&D: 9 Sessions in 3 wks.	A: 35-80  D: >1 1: 6.8 (6.4) (2-24) 2: 6.8 (5.6) (2-12) 3: 7.4 (3.5) (2-12)	36 [36]  1: 12 2: 12 3: 12	Ø  1: 53.5 (12.2) (37-75) 2: 56.3 (13.8) (37-77) 3: 59.6 (10.9) (39-76)	17 /19  1: 6/6 2: 7/5 3: 4/8	Painful shoulder  Empty can test	Oswestry VAS  T1	„The dose of laser therapy used in the study, advice and education improve the symptoms of supraspinatus tendinosis. US also improved the symptoms, but was not significantly different from the control group that received advice only.“	No data Extractable
170	Schmitt 2001  [170]  Germany	I: Low Energy Extracorporeal Shock Wave (ESWT)  C: Sham Low Energy Extracorporeal Shock Wave  F&D: 3 Sessions in 3 wks.	A: >18  D: >6  Co: 10 Sessions physiotherapy and 2 sub-acromial infiltrations	40 [40]  I: 20 C: 20	Ø 52 (29-66)	20/20	MRI	Constant VAS  T2/T3	„The use of low-energy ESWT in the treatment of tendinitis of the supraspinatus is time consuming, expensive and probably ineffective compared with sub acromial injections.“	

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171	Schmitt 2002  [171]  Germany	I: Extracorporeal Shock Wave Therapy (ESWT)  C: Sham Extracorporeal Shock Wave Therapy  F&D: 3 Sessions in 3 wks.	A: Not Specified  D: >6  Co: 10 Sessions Physiotherap y and 2 sub- acromial Infiltrations	40 [39]  I: 19 C: 20	Ø  I: 53.3 (9.4) C: 54.2 (7.8)	11/10  I: 8/4 C: 3/6	Pain with ABD and external rotation	VAS  T5	There was no effect one year after the application of ESWT on pain or function in patients having a chronic condition of tendinitis of the supraspinatus."	Blinding was disclosed for patients not improved. Therefore we take values up to 12 week. Same results in Schmitt 2001.
172	Schofer 2009  [172]  Germany	I: High Energy Extracorporeal Shock Wave (ESWT)  C: Low Energy Extracorporeal Shock Wave  F&D: 3 Sessions in 3 wks.	A: >18  D: >6  Co: 10 Sessions physiotherapy and 2 sub- acromial infiltrations	40 [40]  I: 20/19 C: 20/18	Ø 53 (28-71)	21/19	MRI	Constant VAS  T3/T5	„No statistically significant differences were found between the outcome of high-energy and low-energy ESWT treatment of rotator cuff tendinopathy.“	
173	Senbursa 2007  [173]  Turkey	I: Manual Therapy + Conservative Therapy  C: Conservative + Self Therapy  F&D: 12 Sessions in 4 wks.	A: 30-55  D: Not Specified	30 [30]  I: 15 C: 15	Ø  I: 48.1 (7.5) C: 49.5 (7.9)	Not specified	Painful range of movement  Impingement Tests  Neer	VAS  T1	“Manual therapy applied by experienced physical therapists combined with supervised exercise in a brief clinical trial might be better and earlier than exercise alone for increasing strength, decreasing pain, and improving function.”	

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174	Senbursa 2011  [174]  Turkey	1: Supervised Exercise  2: Manual Treatment  3: Home Based Exercise  F&D: 3 times a week for 12 wks. No sporting activities for 12 wks.	A: 33-55  D: Not Specified	77 [77]  1: 25 2: 30 3: 22	∅  1: 48.2 (7.9) 2.: 50.5 (10.6) 3: 48.0 (9.0)	Not specified	Hawkins– Kennedy Neer  MRI (stage I/II)	VAS  T1	“Showed the effectiveness of manual therapy in supraspinatus tendinopathy. The use of manipulative therapy may help relieve the pain and increase the shoulder range of motion. It may also shorten the treatment period and reduce the treatment cost.”	No data Extractable
175	Shakeri 2013  [175]  Iran	I: Kinesiological Taping  C: Standardized Placebo Taping  F&D: For three days and then taped with the same method used before.	A: Not Specified  D: >1 wk. up 6 mos.  I: 7.63 (7.43) C: 9.33 (10.48)	30 [30]  I: 15 C: 15	∅  I: 46.53 (13.31) C: 46.6 (14.24)	15/15  I: 8/7 C: 7 /8	Painful Arc Pain at resisted movement  Hawkins Jobe Neer Yocum	AROM VAS  T1	Kinesio Taping (KT) produced an immediate improvement in pain intensity during movement and in the measure of nocturnal pain. However, no longer term effects of KT existed after one week.”	
176	Shibata 2001  [176]  Japan	I: Sodium Hyaluronate  C: Steroid Injection  F&D: Once a week for 5 wks.	A: Not Specified  D: I: 5.8 (5.4) C: 4.7 (5.7)  Co: Full thickness tears	78 [78]  I: 38 C: 40	∅  I: 59.5 (9.1) C: 62.4 (8.6)	23/55  I: 11/27 C: 12/28	MRI	AROM UCLA  T2/T4	“We noted improvement in symptoms and disability after injecting sodium hyaluronate (SH) into the shoulder joints with a rotator cuff tear.”	Male: +
177	Simsek 2013  [177]  Turkey	I: Kinesio Tape  C: Placebo Tape  F&D: Written in Turkish.	A: 18–70  D: Not Specified	[38]  I: 19 C: 19	∅ 51 (18- 69)	25/13  I: 11/ 8 C: 14/5	Hawkins– Kennedy Neer	Anketi- DASH AROM Constant VAS  T1	<b>No English abstract available.</b>	

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178	Speed 2002  [178]  Great Britain	I: Extracorporeal Shock Wave Therapy (ESWT)  C: Placebo Shock Wave Therapy  F&D: 3 Sessions at monthly intervals	A: >18  D: >3 I: 23 (31) (3-169) C: 23.3 (21) (3-104)  Co: Unilateral	74 [74]  I: 34 C: 40	∅  I: 50.7 (26-72) C: 54.2 (25-75)	43/31  I: 21/13 C: 22/18	Impingement Sign  Painful Arc	SPADI VAS  T1/T3	"We conclude that there is a significant and sustained placebo effect after moderate doses of ESWT in patients with tendonitis of the rotator cuff, but there is no evidence of added benefit when compared with sham."	<b>Unilateral</b>
179	Streitberger 2000  [179]  Germany	I: Acupuncture  C: Sham, without Penetration of the Skin  F&D: 2 Sessions (20min) for 4 wks.	A: >18  D: >1  Co: Athletes	52 [52]  I: 25 (-3) C: 27 (-4)	∅  Not Specified	Not Specified	Not Specified	Constant  T2	"Acupuncture in the treatment of rotator cuff tendinitis was more effective than placebo needling without penetration of the skin."	Same data as in Kleinhenz et al. (1999)
180	Struyf 2013  [180]  Belgium	I: Scapular Dynamic Stability + Positioning  C: Ultrasound + Friction + Eccentric Rotator Cuff Training  F&D: 9 Sessions, 1-3 times per week, for 3-8 wks.	A: >18  D: >1	27 [22]  I: 10 2: 12	∅  I: 45.4 (15.1) C: 46.2 (13.5)	10/12  I: 5/5 C: 5/7	At least 2 of 3 tests: Hawkins–Kennedy Jobe Neer	SDQ VNRS  T3	"A scapular-focused treatment approach showed promising clinical results in a group of patients with SIS."	
181	Subasi 2012  [181]  Turkey	I: Water Based Exercise + Physiotherapy (Us, Heat, Tens)  C: Land Based Exercise + Physiotherapy (Us, Heat, Tens)  F&D: 10 days ROM-training and 10 days strength-training	A: Not Specified  D: I: 10 (13.2) C: 8.9 (7.5)  Co: A few bilateral	57 [57]  I: 29 C: 28  Co: 70 shoulders	∅  I: 56.2 (11.3) C: 58.3 (88.3)	36/21  I: 15/14 C: 21/7	Hawkins–Kennedy Neer  Painful Arc  Injection Test	SPADI Western Ontario (Worc) VAS  T2	"We considered that combination of physical therapy and water-based exercise is an effective approach in SIS management."	<b>Bilateral</b>
182	Subasi 2014  [182]  Turkey	I: Steroid Bethamethasone + Prilocaine + Exercise  C: Kinesiological Taping + Exercise  F&D: 3 months exercise training C: Once a week three times	A: Not Specified  D: >1 I: 2.7 (1.3) C: 2.9 (1.5)	70 [70]  I: 35 C: 35	∅  I: 54.29 (10.4) C: 53.46 (10.7)	47/23  I: 27/8 C: 20/15	Hawkins–Kennedy Neer Speed Yergason  Painful Arc	AROM SPADI VAS  T3	"Kinesiological taping and steroid injection in conjunction with an exercise program can be beneficial in the rehabilitation of SIS."	<b>Female: +</b>

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183	Szczurko 2009  [183]  Canada	I: Naturopathic Treatments  C: Standardized Physical Exercises  F&D: 12 Sessions in 12 wks.	A: 18-65  D: >6 wks.  Co: Unilateral	103 [89]  I: 43 C: 42	Ø  I: 50.7 (8.16) C: 50.9 (7.86)	50/35  I: 25/18 C: 25/17	Neer Speed	AROM SPADi VAS  T1	"Naturopathic care (NC) and PE provided significant improvements, with greater improvement in shoulder function in the NC group compared with the PE group."	<b>Unilateral</b>
184	Thelen. 2008  [184]  USA	I: Treatment Kinesio Tape  C: Sham Kinesio Tape  F&D: Twice with interval of 3 days	A: 18-50  D: <6  I: 19 (5-35) C: 8 (5 -30)  Co: College students	42 [42]  I: 21 C: 21	Ø  I: 21.3 (1.7) C: 19.8 (1.5)	6/36  I: 2/19 C: 4/17	Hawkins- Kennedy  Pain onset prior to 150°  Empty can test	AROM SPADi VAS  T1	"Kinesio Tape (KT) may assist clinicians to obtain immediate improvement in pain-free shoulder abduction ROM. However, over time, KT appears to be no more efficacious than sham taping at decreasing shoulder pain intensity or disability."	Male: +
185	Valtonen 1978  [185]  Finland	1: Local steroid subacromial injection  2: Gluteal injection  3 Placebo  F&D: One single injection	A: 30-80  D: Not Specified	180 [180]  1: 90 2: 60 3: 30	Ø  Not Specified	131/49	Not Specified	VAS AROM  T1/T2	"Results indicate that betamethasone is a good treatment for supraspinatus tendinitis."	No data Extractable
186	Van Rensburg 2012  [186]  Great Britain	I: Spinal Thrust and Physical Therapy  C: Physical Therapy  F&D: Once weekly for 6 wks.	A: 18-65  D: >1 wk. I: 9 (1-24) C: 5 (4-6)  Co: Pilot study	35 [9]  I: 6 C: 3	Ø  I: 53 (41- 60) C: 60 (58- 65)	3/6  I: 2/4 C: 1/2	Hawkins- Kennedy Neer  Painful Arc	DASH  T1	"The possibility that addition of thoracic spine treatment reduces the number of treatment Sessions to gain good shoulder function leads to consideration of a cost-benefit analysis in a future definitive study."	Small Sample Study

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187	Vecchio 1993  [187]  Great Britain	I: Low Level Laser  C: Sham Low Level Laser  F&D: Twice weekly for 8 wks.	A: Not Specified  D: 14.9 (4-48)	35 [35]  I: 19 C: 16	Ø 54.4 (17-77)	25/10  I: 11/8 C: 14/2	Cyriax Criteria  Painful Arc	VAS  T1	"Conclude that standard low level laser is no better than placebo in treatment of rotator cuff tendinitis."	<b>Female: +</b>
188	Vecchio 1993  [188]  Great Britain	I: Lignocaine Injection  C: Steroid + Lignocaine Injection  F&D: One single injection	A: Not Specified  D: wks. I: 4 (2-8) C: 5 (3.5-9.5)	35 [55]  I: 27 C: 28	Ø  I: 56.5 (52-69) C: 56.0 (45-68.5)	32/23	Cyriax Criteria  Resistance Test	AROM VAS  T1/T2/T3	"Conclude that subacromial steroid methylprednisolone and lignocaine is no better than lignocaine alone in treatment of early RCT."	
189	Vecchio 1993  [189]  Great Britain	I: Suprascapular Nerve Block  C: Sham Nerve Block with Saline  F&D: One Single Shot	A: Not Specified  D: I: 30.3 C: 33.6  Tears: I: 48.0 C: 40.5	28 [28]  I: 10 C: 5  Tears: I: 5 C: 8	Ø:  I: 54.8 C: 47.6  Tears: I: 70 C: 70	6/9  I: 4/6 C: 2/3  Tears: I: 3/2 C: 6/2	Shoulder Pain >6 months  Cyriax Criteria  2 local steroid Injections	AROM VAS  T1/T2/T3	"Suprascapular nerve block is an effective but temporary form of analgesia for rotator cuff lesions."	Small Sample Study
190	Walther 2004  [190]  Germany	1: Guided self Training (Theraband)  2: Conventional Physiotherapy  3: Functional Brace (12 hrs. a day)  F&D: Over a period of 12 C: 10 to 30 Sessions	A: Not Specified  D: 1: 23 (3-72) 2: 32 (2-120) 3: 27 (5-60)	60 [60]  1: 20 2: 20 3: 20	Ø  1: 48.6 (25-61) 2: 51.5 (37-66) 3: 48.6 (25-61)	26/34  1: 11/9 2: 9/11 3: 6/14	Injection Test	Constant VAS  T1	"All three groups showed a significant improvement in shoulder function as well as a significant reduction in pain."	No data Extractable

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191	Watson J. 2008  [191]  Great Britain	General Practitioner Training: Trained/Untrained  I: Oral and Steroid Injection  C: Oral and Lignocaine Injection  F&D: One Single Shot	A: >16  D: <12 1: Trained 6.5 (1-40) 2: Untrained 8 (1-52) 3: Experts 7 (1-40)  Co: Unilateral /Bilateral	200 [200]  I: 99 C: 101  At 1 year: I: 91 C: 88	Ø 1: Trained 59 (14.2)  2: Untrained 58.09 (11.52)  3: Experts: 54.55 (15.79)	1: Trained 55/51  2: Untrained 27/22  3: Experts 23/22	Clinical diagnosis of rotator cuff tendinitis.  Mild restrictions of passive movement acceptable.	BSDQ  T1	"Training GPs in the diagnosis and treatment of shoulder disorders does not make any difference to the outcome, in terms of pain and disability, 1 year later. Further, there is no advantage to injecting steroid in a group with predominant rotator cuff disorder."	
192	Werner 2002  [192]  Germany	I: Standardized Home-Training  C: Physiotherapy  F&D: 10 Sessions in 3 mos.	A: Not Specified  D: I: 23 C: 32	40 [40]  I: 20 C: 20	Ø:  I: 52 (40- 66) C: 51.5 (37-66)	20/20  I: 11/9 C: 9/11	Clinical Exam  US	Constant  T1	"Self training after instruction showed no difference to physiotherapist- supervised exercises in the non-operative treatment of SIS."	No data Extractable
193	White 1986  [193]  USA	I: Oral Indomethacin 100 mg /day plus Saline Injection  C: Placebo Capsule plus Local Corticosteroid 40 mg Triamcinolone  F&D: Second injection if necessary	A: Not Specified  D: >3	40 [40]  I: 15 C: 15	Ø (22-81) I: 54 (15) C: 55 (15)	25/15  I: 15/5 C: 10/10	Painful Arc Painful Movement  Injection Test	VAS  T1/T2	"Study suggests that there is essentially no difference in the short term efficacy of oral non steroidal therapy compared to local corticosteroid injection."	
194	Wiener 2005  [194]  Great Britain	I: Physiotherapy  C: Wait and See  F&D: 10 Sessions in 4 wks.	A: Not Specified  D: Not Specified	17 [17]  I: 8 C: 9	Not Specified	Not Specified	Painful Arc  No further explained	McGill PDI  T1	"Physiotherapy helps to build up the muscular strength of the cuff but the influence on pain remains essential to improve weakness in painful movements."	Small Sample Study



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195	Wright 2016  [195]  USA	I: Cervicothoracic spinal thrust/non-thrust manipulation in addition to shoulder manual therapy and exercise  C: Manual therapy and exercise  F&D: two times per week for 45-min sessions, until discharge at 4 wks. Home exercise	A: >18  D: Not specified in mean/SD	64 [21]  I: 12/10 C: 9/8	∅  I: 46.3 (15.9) C: 39.1 (15.8)	9/9  I: 5/5 C: 4/4	Hawkins– Kennedy  Painful Arc	AROM NPRS SPADI  T1	“The results indicated that in this study the addition of cervicothoracic spinal thrust/ non-thrust to the shoulder-only treatment did not significantly improve pain or function in those patients with a clinical diagnosis of SIS when the cervical spine was cleared for involvement.”	
196	Yavuz 2014  [196]  Turkey	I: Low Level Laser Therapy + Hot Pack + Exercise  C: US Therapy + Hot Pack + Exercise  F&D: 10 Sessions for 2 wks.	A: Not Specified  D: I: 6.7 (4.8) C: 6.3 (5.2)	39 [31]  I: 16 C: 15	∅  I: 44.2 (8.2) C: 45.3 (9.8)	14/17  I: 7/9 C: 7/8	Hawkins– Kennedy Neer  Painful Arc  Injection Test  MRI (Stage I/II)	SPADI VAS  T2/T3	“That efficacy of both treatments were comparable to each other in regarding reducing pain severity and functional disability in patients with SAIS.”	
197	Yazmalar 2016  [197]  Turkey	I: Continuous Ultrasound, TENS and exercise  C: Sham ultrasound, TENS and exercise  F&D: 15 sessions in 3 weeks	A: 18-65  D: >3 I: 14.15 (13.27) C: 11.63 (12.95)	173 [51]  I: 26 C: 25/24	∅  I: 53.77 (11.01) C: 50.0 (29.05)	22/28  I: 10/16 C: 12/12	Hawkins– Kennedy Neer  MRI	SPADI NHP  T1	“Our study showed that US does not have any benefits on SIS. TENS + exercise program are not effective on anxiety, depression and fatigue, however TENS + exercise program are effective on pain, disability and sleep disturbance in patients with SIS.”	

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198	Yeldan 2009  [198]  Turkey	I: Low Level Laser + Exercise  C: Placebo + Exercise  F&D: program for 3 wks.	A: Not Specified  D: I: 6.5 (4.52) C: 6.42 (4.79)	67 [67]  I: 34 C: 33/26	∅  I: 55.32 (8.73) C: 55.0 (8.75)	47/13  I: 25/9 C: 22/4	At least 3: Painful Arc Pain with resisted ABD  Hawkins – Kennedy Neer	DASH Constant VAS  T1	„No fundamental differences between low level laser therapy (LLLT) and placebo when they are supplementing an exercise program for rehabilitation of patients with SIS.”	<b>Female: +</b>  No data Extractable
199	Yildirim 2013  [199]  Turkey	I: Ultrasound (4 min) + Superficial Heat + TENS + Exercise  C: Ultrasound (8 min) + Exercise  F&D: 15 Sessions	A: Not Specified  D: Not Specified  I: 8.34 (4.86) C: 6.66 (4.91)	100 [100]  I: 50 C: 50	∅  I: 55.4 (7.63) C: 54.7 (8.67)	61/39  I: 34/16 C: 27/23	Hawkins– Kennedy Neer Yergason Jobe  Painful Arc Drop arm  MRI	Constant UCLA VAS  T1	“Ultrasound therapy was effective at decreasing pain and improving functionality. We showed that 8 minutes of ultra- sound administration was more effective than 4 minutes at relieving pain and improving functionality.”	
200	Yilmaz 2008  [200]  Turkey	1: 40 mg Methylprednisolone acetate: Sub- acromial  2: 40 mg Methylprednisolone acetate: Deltoid  3: 40 mg Methylprednisolone acetate: Gluteal  F&D: One Single Injection	A: Not Specified  D: >3  11 (3-48)	30 [30]  1: 10 2: 10 3: 10	∅ 52 (23- 67)	18/12	Impingement sign  Speed  MRI	Constant VAS  T3	“Intra-deltoid steroid delivery may be an appropriate alternative to avoid rotator cuff injury associated with repeated sub-acromial injections.”	No data Extractable

Legend: Articles written in English language (n = 193), German language (n = 5), Others (n = 2). Studies were performed in Asia (n = 65), Turkey and Iran (n = 52), Europe (n = 97), North- and South-America (n = 29), Australia (n = 4) and four in South Africa.

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