

Supplementary material

Study	Population (mean age)	Mean DOS (range)	Interventions	Duration of treatment	Follow up	Pain score	Function score
Abat et al. (2016)	N=64 athletes (31y)	29.2m	1)Electro-physiotherapy + eccentric exercise n=32 2)US-guided galvanic electrolysis + eccentric exercise n=32	8 weeks	0, 8w	-	VISA-P (0-100)
Agergaard et al. (2021)	N=44 athletes (30.6y)	7.1m (3-12m)	1)Moderate, slow resistance exercise n=23 2)Heavy slow resistance exercise n=21	Exercise for 12 weeks	0, 12w, 52w	NRS (0-10) – during sports	VISA-P (0-100)
Bahr et al. (2006)	N=35 athletes (40 tendons) (31y)	33m (6-100m)	1)Eccentric exercise (decline squat) n=20 tendons 2)Surgery n=20 tendons	Exercise for 12 weeks min	0, 12w, 26w, 52w	VAS (0-10) – during functional tests	VISA-P (0-100)
Breda et al. (2021)	N=76 athletes (24y)	>1y (median)	1) Progressive tendon-loading exercise n=38 2)Eccentric exercise n=38	Exercise for 24 weeks	0, 12w, 24w	-	VISA-P (0-100)

Cannell et al (2001)	N=19 athletes (26y)	3.6m (1.6-6.1m)	1)Eccentric exercise (drop squat) n=10 2)Concentric exercise n=9	Exercise daily for 12 weeks	0, 6w, 12w	VAS (0-10) - unspecified	-
Clarke et al. (2011)	N=60 tendons (46 patients) (36y) – unspecified population	11.1m	1)Injection of collagen-producing cells derived from dermal fibroblasts and suspended in autologous plasma + eccentric exercise n=33 2)Injection of autologous plasma + eccentric exercise n=27	Single-injection	0, 6w, 3m, 6m	-	VISA-P (0-100)
De Vries et al. (2016)	N=97 athletes (27y)	18m (?m-?m)	1)Patellar strap n=21 2)Sports taping n=18 3)Placebo taping n=16 4)No treatment n=14	1 week	0, 1w	VAS (0-100) – during and after sports	-
Dragoo et al. (2014)	N=23 (35y) – unspecified population	Not stated	1)Dry needling + eccentric exercise n=13 2)PRP + eccentric exercise n=10	A single treatment with dry needling and PRP Eccentric programme for the duration of the study	0, 3w, 6w, 9w, 12w, ≥26w	VAS (0-10) - unspecified	VISA-P (0-100)
Frohm et al. (2007)	N=20 athletes (27y)	Not stated (>3m)	1)Eccentric device (Bromsman) n=11	Supervised eccentric exercise twice weekly for 12 weeks	Weekly. Isokinetic tests 0, 12w	VAS (0-10) - unspecified	VISA-P (0-100)

			2)Eccentric exercise (decline squat) n=9				
Hoksrud et al. (2006)	N=33 athletes (42 tendons) (24.8y)	37m	1)Polidocanol injections n=17 2)Placebo injections n=16 (Groups crossed over at 12w)	Single-injection Further injection at 4w or 8w if persistent pain and neovascularization	0, 4m, 8m, 12m	-	VISA-P (0-100)
Holden et al. (2020)	N=21 athletes (26.5y)	24m (10-84m)	1) Isometric exercise n=21 2) Dynamic (isotonic) exercise n=21 The same group performed both interventions (cross-over)	A single session of each intervention	0, post-intervention	NRS (0-10) – during functional tests	-
Jonsson et al (2005)	N=19 tendons (15 athletes) (24.9y)	17.4m (8-72m)	1)Eccentric exercise (decline squat) n=10 tendons 2)Concentric exercise n=9 tendons	Exercise daily for 12 weeks	0, 12w	VAS (0-100) – during sports	VISA-P (0-100)
Kaux et al. (2016)	N=20 (30.3y) – unspecified population	17m	1)Single PRP injection + eccentric exercise n=10 2) Two PRP injections + eccentric exercise n=10	A single injection or two injections within a week	0, 6w, 3m, 12m	VAS (0-10) - unspecified	VISA-P (0-100)
Kaux et al. (2019)	N=33 athletes (29.4y)	>3m	1)PRP injection + eccentric exercise n=18	A single injection of PRP, 2 injections of HA 7 days apart	0, 6w, 3m	VAS (0-10) - unspecified	VISA-P (0-100)

			2)HA injection + eccentric exercise n=15				
Kongsgaard et al. (2009)	N=37 athletes (32.4y)	18.3m (>3-36m)	1)Corticosteroid injection n=12 2)Eccentric exercise n=12 3)Heavy slow resistance exercise n=13	2 injections over 4 weeks Exercise for 12 weeks	0, 12w, 24w	VAS (0-100) – during sports	VISA-P (0-100)
Lee et al. (2017)	N=34 athletes (22.6y)	33.6m	1)f-ESWT + eccentric exercise n=17 2)Sham ESWT + eccentric exercise n=17	6 sessions of ESWT over 6 weeks Eccentric exercise for 12 weeks	0, 12w	VAS (0-10) – during activity	VISA-P (0-100)
Lopez-Royo et al. (2021)	N=50 athletes (32.5y)	>3m	1) Dry needling + eccentric exercise n=16 2) Percutaneous needle electrolysis + eccentric exercise n=17 3) Eccentric exercise n=17	4 needling sessions over 8 weeks	0, 10w, 22w	VAS (0-10) – over last 24 hours	VISA-P (0-100)
Pietrosimone et al. (2020)	N=28 athletes (only N=13 used as remaining 15 asymptomatic) (19.6y)	>4m	1) Isometric exercise n=13 2)Sham transcutaneous electric nerve stimulator n=13	Single session	0, post-intervention	VAS (0-10) – during functional tests	-

			Groups crossed-over				
Resteghini et al. (2016)	N=22 athletes (38.9y)	18m (5-36m)	1)Autologous Blood Injection + eccentric exercise n=11 2)Placebo injection + eccentric exercise n=11	Single injection	0, 1m, 3m, 12m	VAS (0-10) - unspecified	VISA-P (0-100)
Rigby et al. (2015)	N=31 (24.6y) – unspecified population	>1m <2y	1)Wired iontophoresis n=11 2)Wireless iontophoresis n=10 3)Sham iontophoresis n=10	2 weeks	0, 1w, 2w	NRS (0-100) – during functional tests	-
Rio et al. (2017)	N=29 athletes (23y)	35.8m (1-120m)	1)Isometric exercise n=13 2)Isotonic exercise n=16	4 weeks	0, daily pre- and post-exercise, 4w	NRS (0-10) – during functional tests	VISA-P (0-100)
Rio et al. (2015)	N=6 athletes (27y)	Not stated	1)Isometric exercise n=6 2)Isotonic exercise n=6 The same group performed both interventions (cross-over)	A single session of each intervention	0, post-intervention	NRS (0-10) – during functional tests	-
Rodas et al. (2021)	N=20 (34y) – unspecified general population	23.6m (>4m)	1) Bone marrow mesenchymal stem cells + exercise n=10	Group 1 received a sham saline injection at day 0 and bone marrow mesenchymal	0, 6m	VAS (0-10) – during functional tests	VISA-P (0-100)

			2) LP-PRP + exercise n=10 The exercises included isotonic, followed by concentric and then eccentric loading	stem cells injection 23 days later Group 2 received LP-PRP injections at days 0 and 23			
Scott et al. (2019)	N=61 athletes (32y)	2.1y (>6m)	1)LR-PRP n=20 2)LP-PRP n=21 3)Saline n=20	A single injection followed by 6 weeks of supervised exercise	0, 6w, 12w, 6m, 12m	NRS (0-10) – during activity	VISA-P (0-100)
Stasinopoulos & Stasinopoulos (2004)	N=30 athletes (28y)	Not stated	1)Eccentric exercise + stretching n=10 2)Pulsed ultrasound n=10 3)Transverse friction	4 weeks	0, 4w, 8w, 16w	Non-numerical scale	-
Steunebrink et al. (2013)	N=33 athletes (32.9y)	48w	1)Topical GTN + eccentric exercise n=16 2)Topical Placebo + eccentric exercise n=17	One patch daily for 12 weeks Eccentric exercise for 12 weeks	0, 6w, 12w, 24w	VAS (0-10) – during sports	VISA-P (0-100)
Taunton et al. (2003)	N=20 athletes (?y)	Not stated	1)ESWT n=10 2)Placebo ESWT n=10	3 to 5 sessions over 7 weeks	0, 5w, 12w	-	VISA-P (0-100)
Thijs et al. (2017)	N=52 athletes (27.3y)	23m (3-120m)	1)f-ESWT + eccentric exercise n=22 2)Sham ESWT + eccentric exercise n=30	Exercise (decline squat) for 12 weeks ESWT 3 sessions over 2 weeks	0, 6w, 12w, 24w	NRS (0-10) – during functional tests	VISA-P (0-100)

			Eccentric exercise (decline squat) twice daily for 12 weeks				
Van Ark et al. (2016)	N=29 athletes (23y)	35.8m (1-120m)	1)Isometric exercise n=13 2)Isotonic exercise n=16	4 weeks	0, 4w	NRS (0-10) – during functional tests	VISA-P (0-100)
Van der Worp et al. (2014)	N=43 athletes (31.1y)	35.5m (>3m)	1) f-ESWT + eccentric exercise n=21 2) r-ESWT + eccentric exercise n=22	3 sessions over 2 weeks	0, 7w, 14w	VAS (0-10) – during activities, sports and decline squat	VISA-P (0-100)
Vetrano et al. (2013)	N=46 athletes (26.9y)	18.2m (>3m)	1)LR-PRP n=23 2)f-ESWT n=23 Both groups received a home exercise programme	PRP 2 injections over 2 weeks ESWT 3 sessions over 1 week	0, 2m, 6m, 12m	VAS (0-10) – during functional tests	VISA-P (0-100)
Visnes et al (2005)	N=29 athletes (26.6y)	73.6m	1)Eccentric exercise (decline squat) n=13 2)Standard training n=16	Exercise twice daily for 12 weeks	0, 1-12w, 18w, 40w	VAS (0-10) – during exercise	VISA-P (0-100)
Wang et al. (2007)	N=50 athletes (54 tendons) (29.8y)	13.8m (6-64m)	1)ESWT n=27 2)“Conservative treatments” (NSAIDs, exercise, strap, physiotherapy) n=23	A single session of ESWT Duration of “conservative treatments” not stated	0, 1m, 3m, 6m, 12m, then once a year up to 53m	VAS (0-10) – on palpation and walking up and down stairs	VISA (0-100)
Warden et al. (2008)	N=37 (27y) – unspecified population	3.8y (>6m)	1)US + eccentric exercise n=17	US and exercise for 12 weeks	0, 12w	VAS (0-10) – during activity	VISA-P (0-100)

			2)Sham US + eccentric exercise n=20				
Willberg et al. (2011)	N=52 tendons (45 athletes) (26y)	22m (6-60m)	1)Sclerosing polidocanol injections n=26 2)Arthroscopic surgery n=26	Polidocanol maximum 3 injections 6 weeks apart A single treatment with surgery	0, 2w, 6-8w, 6m, 12m	VAS (0-10) – during sports and at rest	-
Young et al. (2005)	N=17 athletes (27.3y)	Not stated	1)Eccentric exercise (decline squat) n=9 2)Eccentric exercise (step squat) n=8	12 weeks	0, 12w, 12m	VAS (0-10) – during activity	VISA-P (0-100)
Zwerver et al. (2011)	N=62 athletes (25y)	7.7m	1)f-ESWT n=31 2) Sham ESWT n=31	ESWT 3 sessions over 2 weeks	0, 1w, 12w, 22w	VAS (0-10) - during activities, sports and functional tests	VISA-P (0-100)

Suppl. Table 1. Characteristics of the included randomised controlled trials (participants, interventions, comparators and outcome measures). ESWT, extracorporeal shockwave therapy; f-ESWT, focal ESWT; GTN, glyceryl trinitrate; m, months; HA, hyaluronic acid; LP-PRP, leucocyte-poor PRP; LR-PRP, leucocyte-rich PRP; NRS, numerical rating scale; NSAIDs, non-steroidal anti-inflammatory drugs; PRP, platelet-rich plasma; r-ESWT, radial ESWT; US, ultrasound; VAS, visual analogue scale; VISA-P, Victorian Institute of Sports Assessment – Patellar; w, weeks; y, years.

Study (year)	Internal Validity (Cochrane's Collaboration Tool for Assessing Risk of Bias)							Overall risk	Justification
	Selection bias		Performance bias	Detection bias	Attrition bias	Reporting bias	Other		
	Random sequence generation	Allocation concealment	Blinding of patients and staff	Blinding of outcome measures	Completeness of outcome data	Selective reporting			
Abas et al. (2016)	Low	?	High	?	Low	High	High (no power calculation)	High	Single-blinded, inappropriate reporting of results, concealment process and blinding of assessment not described
Agergaard et al. (2021)	Low	Low	High	Low	Low	Low	Low	Low	-
Bahr et al. (2006)	Low	Low	High	High	Low	Low	Low	High	Non-blinded
Breda et al. (2021)	Low	Low	High	Low	Low	Low	Low	Low	-
Cannell et al (2001)	Low	Low	High	Low	Low	Low	High (no power calculation, small population)	High	Single-blinded, small population
Clarke et al. (2011)	Low	?	Low	Low	Low	Low	Low	Low	-
De Vries et al. (2016)	High	?	High	?	High	Low	Low	High	Inappropriate randomisation. Single-blinded, significant loss to follow up (29%)
Dragoo et al. (2014)	Low	Low	Low	Low	Low	Low	High (baseline age difference)	Low	-
Frohm et al (2007)	?	?	High	?	Low	Low	High (no power calculation, small population)	High	Single-blinded, small population, randomisation/concealment process and blinding of assessment not described
Hoksrud et al. (2006)	Low	Low	Low	Low	Low	Low	Low	Low	(Only "treatment period 1" of study included in systematic review)
Holden et al. (2020)	Low	Low	Low	High	Low	Low	Low	Low	-

Jonsson et al (2005)	?	?	High	?	High	Low	High (population not enough for power)	High	Single-blinded, small population, randomisation/concealment process and blinding of assessment not described, significant loss to follow up (21%)
Kaux et al. (2016)	?	?	?	?	?	Low	High (no power calculation, small population, baseline difference in pain)	High	Small population, baseline differences between groups (may reflect inappropriate randomisation), no details available for selection, performance, detection and attrition bias
Kaux et al. (2019)	?	?	High	High	?	Low	High (baseline difference in pain)	High	Non-blinded, baseline differences between groups (may reflect inappropriate randomisation), randomisation/concealment process not described
Kongsgaard et al. (2009)	Low	?	High	Low	Low	Low	Low	Low	-
Lopez-Royo et al. (2021)	Low	Low	Low	Low	Low	Low	Low	Low	-
Lee et al. (2017)	?	?	High	?	Low	Low	Low	High	Single-blinded, randomisation/concealment process and blinding of assessment not described
Pietrosimone et al. (2020)	Low	Low	High	Low	Low	Low	Low	Low	-
Resteghini et al. (2016)	Low	Low	Low	Low	?	Low	Low	Low	-
Rigby et al. (2015)	Low	Low	?	High	?	Low	High (baseline difference in pain, small population, no power calculation, acute and chronic tendinopathy patients)	High	Single-blinded, baseline difference between groups (may reflect inappropriate randomisation), no details about completeness of outcome data, no power calculation, mixture of acute and chronic tendinopathy patients

Rio et al. (2017)	Low	Low	High	High	High	Low	High (no exclusion criteria)	High	Non-blinded, significant loss to follow up (38%), no exclusion criteria
Rio et al. (2015)	Low	Low	High	?	Low	Low	High (acute and chronic tendinopathy patients)	High	Single-blinded, no description of blinding of assessment, mixture of acute and chronic tendinopathy patients
Rodas et al. (2021)	Low	?	High	Low	Low	Low	High (small population)	High	Small population, concealment process not described
Scott et al. (2019)	High	Low	Low	High	Low	High	Low	High	Single-blinded, inappropriate randomisation, inadequate reporting of results (no p values)
Stasinopoulos & Stasinopoulos (2004)	Low	?	High	Low	Low	High	High (no power calculation, small population, no baseline pain data)	High	Single-blinded, small population, no baseline pain data, non-clinically relevant outcome measures (categorical pain scale)
Steunebrink et al. (2013)	Low	Low	?	?	Low	Low	High (baseline difference in pain)	High	Baseline difference between groups (may reflect inappropriate randomisation), blinding processes not described
Taunton et al. (2003)	?	Low	High	Low	Low	Low	High (no power calculation, only mean values reported for results)	High	Patients not blinded any more at 12 week follow up, randomisation process not described, small sample with no power calculation, inadequate reporting of results)
Thijs et al. (2017)	Low	Low	Low	Low	Low	Low	Low	Low	-
Van Ark et al. (2016)	Low	Low	High	High	High	Low	High (acute and chronic tendinopathy patients)	High	Non-blinded, significant loss to follow up (38%), no exclusion criteria
Van der Worp et al. (2014)	Low	Low	Low	Low	Low	Low	High (population not enough for power)	Low	-
Vetrano et al. (2013)	Low	?	High	Low	Low	Low	? (no power calculation but large population)	Low	-

Visnes et al (2005)	High	?	High	?	Low	Low	High (no power calculation, small population)	High	Inappropriate randomisation/concealment, single-blinded, blinding of assessment not described, small population
Wang et al. (2007)	High	?	High	?	Low	High	Low	High	Single-blinded, inappropriate randomisation, inappropriate reporting of results, concealment process and blinding of assessment not described
Warden et al. (2008)	Low	Low	Low	Low	High	Low	High (no power calculation, small sample)	Low	-
Willberg et al. (2011)	Low	Low	High	High	Low	Low	Low	High	Non-blinded
Young et al. (2005)	Low	Low	High	Low	Low	Low	High (no power calculation, small population)	High	Single-blinded, small population
Zwerver et al. (2011)	Low	Low	Low	Low	Low	Low	High (population not enough for power but large)	Low	-

Suppl. Table 2. Risk of bias assessment for the included studies with justification where studies deemed as high overall risk of bias.

Comparison	Study	Pain (VAS 0-10)			MD VAS (95% CI)			Function (VISA-P 0-100)			MD VISA-P (95% CI)		
	Follow up	ST	MT	LT	ST	MT	LT	ST	MT	LT	ST	MT	LT
Eccentric (1) vs Concentric (2) exercise	Cannell et al (2001)	↔	-	-	-1.2 (-2.4, 0)	-	-	-	-	-	-	-	-
	Jonsson et al (2005)	↓	-	-	-4.4 (-5.6, -3.2)	-	-	↑	-	-	+44.6 (35, 54.2)	-	-
Overall Eccentric (1) vs Concentric (2) exercise (Certainty of Evidence)		↔ (low)	-	-	-2.8 (-5.9, 0.3)[^] (low)	-	-	-	-	-	-	-	-
f-ESWT + Eccentric exercise (1) vs sham ESWT + Eccentric exercise (2)	Lee et al. (2017)	↔	-	-	+0.6 (-0.8, 2.1)	-	-	↔	-	-	-2.1 (-7.8, 3.6)	-	-
	<u>Thijs et al. (2017)</u>	↔	↔	-	-0.3 (-1.6, 1)	+0.3 (-0.6, 1.2)	-	↔	↔	-	-1.5 (-8.3, 4.3)	-2.9 (-9.1, 3.3)	-
Overall f-ESWT + Eccentric exercise (1) vs sham ESWT + Eccentric exercise (2) (Certainty of Evidence)		↔ (moderate) [^] ^	-	-	+0.1 (-0.8, 1) (moderate) [^] ^	-	-	↔ (moderate) ^^	-	-	-1.8 (-8, 4.4) (moderate) [^] ^	-	-
Isometric (1) vs Isotonic (2) exercise – immediate post-intervention outcomes	<u>Holden et al. (2020)</u>	↔*	-	-	+0.3 (1.3, -0.7)	-	-	-	-	-	-	-	-
	Rio et al. (2015)	↓*	-	-	-4.3 (-7.4, -1.2)	-	-	-	-	-	-	-	-
	Rio et al. (2017)	↓*	-	-	-0.9 (-1.1, -0.7)	-	-	↔	-	-	N/A	-	-
Overall Isometric (1) vs Isotonic (2) exercise – immediate post-intervention outcomes (Certainty of Evidence)		↔ (low) [^] ^^	-	-	-1 (-2.6, 0.5) (low) ^{^^}	-	-	-	-	-	-	-	-
<u>Isometric exercise (1) vs sham TENS (2) –</u>	<u>Pietrosimone et al. (2020)</u>	↔	-	-	-0.1 [-1.1, 0.9]	-	-	-	-	-	-	-	-

immediate post-intervention outcomes													
Isometric (1) vs Isotonic (2) exercise – 4-week outcomes	Van Ark et al. (2016)	↔	-	-	-0.5 (-2.6, 1.6)	-	-	↔	-	-	-1 (-11.1, 9.1)	-	-
Moderate, slow resistance (1) vs heavy, slow resistance (2) exercise	Agergaard et al. (2021)	↔	-	↔	-0.6 (-1.3, 0.1)	-	-0.5 (-1, 0)	↔	-	↔	+0.9 (-12.8, 14.6)	-	+1.8 (-11.8, 15.4)
Eccentric exercise decline squat (1) vs standard/step squat (2)	Young et al. (2005)	↑	-	↔	+1.4 (-1.3, 3.5)	-	+0.2 (-0.7, 1.1)	↔	-	↑	+7 (-1.6, 15.6)	-	+9 (0.4, 17.6)
Progressive tendon-loading exercise (1) vs eccentric exercise (2)	Breda et al. (2021)	-	-	-	-	-	-	↔	↑	-	+1.4 (-5.5, 8.3)	+8.7 (1.2, 16.2)	-
Eccentric exercise (1) vs Surgery (2)	Bahr et al. (2006)	-	-	↔	-	-	+0.8 (-0.1, 1.7)	↔	↔	-	+9 (0.9, 17.1)	0 (-8.6, 8.6)	-
LR-PRP injection + exercise (1) vs Saline injection + exercise (2)	Scott et al. (2019)	↔	↔	↔*	+1.1 (-0.7, 2.9)	+0.8 (-0.9, 2.5)	+2.6 (0.8, 4.4)	↔	↔*	↔*	-6 (-20.9, 8.9)	-17 (-32.3, -1.7)	-22 (-38.7, -5.3)
LP-PRP injection + exercise (1) vs Saline injection + exercise (2)	Scott et al. (2019)	↔	↔*	↔	-1.1 (-3, 0.8)	-1.9 (-3.7, -1.1)	-0.5 (-2.3, 1.3)	↔	↔	↔	+2 (-13.8, 17.8)	+1 (-14.3, 16.3)	-5 (-20.8, 10.8)
LR-PRP injection + exercise (1) vs LP-PRP injection + exercise (2)	Scott et al. (2019)	↔*	↔*	↔*	+2.2 (0.4, 4)	+2.7 (1, 4.4)	+3.1 (1.2, 5)	↔	↔*	↔*	-8 (-24.7, 8.7)	-17 (-33.7, -0.3)	-17 (-35.4, 1.4)

BM-MSK + exercise vs LP-PRP injection + exercise (2)	Rodas et al. (2021)	-	↔	-	-	+1.3 (-0.7, 3.3)	-	-	↔	-	-	-2.2 (-23.9, 19.5)	-
Patellar strap (1) vs Sports taping (2)	De Vries et al. (2016)	↔	-	-	+0.2 (-0.8, 1.2)	-	-	-	-	-	-	-	-
Patellar strap (1) vs no treatment (2)	De Vries et al. (2016)	↔	-	-	-0.3 (-1.3, 0.7)	-	-	-	-	-	-	-	-
Sports taping (1) vs no treatment (2)	De Vries et al. (2016)	↔	-	-	-0.5 (-1.5, 0.5)	-	-	-	-	-	-	-	-
Electrophysiotherapy + eccentric exercise (1) vs USGT + eccentric exercise (2)	Abat et al. (2016)	-	-	-	-	-	-	↓	-	-	-12.5 (-21.4, -3.6)	-	-
Dry Needling + Eccentric exercise (1) vs PRP + Eccentric exercise (2)	<u>Dragoo et al. (2014)</u>	↔	↔	-	+1.5 (0, 3)	+1.1 (-0.1, 2.3)	-	↓	↔	-	-20.2 (-31.3, -10.1)	+3.3 (-8.2, 14.4)	-
Dry Needling + Eccentric exercise (1) vs PNE + Eccentric exercise (2)	<u>Lopez-Royo et al. (2021)</u>	↔	↔	-	+0.4 (-0.6, 1.4)	-0.4 (-1.3, 0.5)	-	↔	↔	-	-0.1 (-6.7, 6.5)	-3.4 (-12.5, 5.7)	-
Dry Needling + Eccentric exercise (1) vs Eccentric exercise (2)	<u>Lopez-Royo et al. (2021)</u>	↔	↔	-	+0.7 (-0.4, 1.8)	-0.5 (-1.5, 0.5)	-	↔	↔	-	-4.3 (-12, 3.4)	-3.2 (-11.4, 5)	-
PNE + Eccentric exercise (1) vs Eccentric exercise (2)	<u>Lopez-Royo et al. (2021)</u>	↔	↔	-	+0.3 (-0.7, 1.3)	-0.1 (-1.2, 1)	-	↔	↔	-	-3.6 (-11.3, 4.1)	+0.8 (-7.3, 8.9)	-
PRP injection + eccentric exercise (1)	Kaux et al. (2019)	↔	-	-	-0.9 (-1.9, 0.1)	-	-	↔	-	-	-8 (-17.8, 1.8)	-	-

vs HA injections + eccentric exercise (2)														
<u>Polidocanol injections (1) vs placebo injections (2)</u>	<u>Hoksrud et al. (2006)</u>	-	-	-	-	-	-	-	↑	-	-	+10 (0.1, 19.9)	-	
<u>Injection of collagen-producing cells + eccentric exercise vs Injection of autologous plasma + eccentric exercise</u>	<u>Clarke et al. (2011)</u>	-	-	-	-	-	-	↑	↑	-	+11 (5.1, 16.9)	+8.1 (2.4, 13.7)	-	
<u>Eccentric exercise (1) vs Eccentric device (overload) (2)</u>	Frohm et al (2007)	↔	-	-	0 (-0.6, 0.6)	-	-	↔	-	-	-2 (-15.6, 11.4)	-	-	
<u>Single PRP injection + Eccentric exercise (1) vs two PRP injections + Eccentric exercise (2)</u>	Kaux et al. (2016)	↔*	-	↔*	-2 (1.2, 2.8)	-	-3.4 (-4.1, -2.7)	↔	-	↔	+11 (2.3, 19.7)	-	-1 (-9.1, 7.1)	
<u>Corticosteroid injection (1) vs Eccentric exercise (2)</u>	<u>Kongsgaard et al. (2009)</u>	**	↔	-	-1.2 (0, 2.4)	0 (-1.2, 1.2)	-	**	↓	-	-4 (-10.9, 2.9)	-23 (-32.4, -13.8)	-	
<u>Corticosteroid injection (1) vs Heavy Slow Resistance exercise (2)</u>	<u>Kongsgaard et al. (2009)</u>	**	↑	-	+0.2	+2.1	-	**	↓	-	-4 (-13.1, 5.1)	-30 (-38.9, -21.1)	-	
<u>Heavy Slow Resistance (1) vs Eccentric (2) exercise</u>	<u>Kongsgaard et al. (2009)</u>	**	↔	-	-1.4 (-2.5, -0.3)	-1.1 (-2.2, 0)	-	**	↔	-	0 (-6.5, 6.5)	-7 (-14.6, 0.4)	-	

<u>Autologous blood + eccentric (1) vs Saline + eccentric (2)</u>	<u>Resteghini et al. (2016)</u>	↔	-	↔	+0.3 (-1.9, 2.5)	-	+0.6 (-1.6, 2.8)	↔	-	↔	+4.2 (-10, 18.4)	-	-0.6 (-14.8, 13.6)
Wired (1) vs Wireless (2) iontophoresis	Rigby et al. (2015)	↔	-	-	-0.5 (-2.1, 1.1)	-	-	-	-	-	-	-	-
Wired (1) vs Sham (2) iontophoresis	Rigby et al. (2015)	↔	-	-	-1.1 (-3.1, 1.1)	-	-	-	-	-	-	-	-
Wireless (1) vs Sham (2) iontophoresis	Rigby et al. (2015)	↔	-	-	-1.6 (-3.4, 0.2)	-	-	-	-	-	-	-	-
Eccentric exercise + stretching (1) vs pulsed US (2)	Stasinopoulos & Stasinopoulos (2004)	↓	-	-	-	-	-	-	-	-	-	-	-
Eccentric exercise + stretching (1) vs transverse friction (2)	Stasinopoulos & Stasinopoulos (2004)	↓	-	-	-	-	-	-	-	-	-	-	-
Pulsed US (1) vs transverse friction (2)	Stasinopoulos & Stasinopoulos (2004)	↔	-	-	-	-	-	-	-	-	-	-	-
Topical GTN + Eccentric exercise (1) vs Placebo + Eccentric exercise (2)	Steunebrink et al. (2013)	-	↔	-	-1.7 (-3.1, -0.3)	-0.5 (-2, 1)	-	-	↔	-	+4.1 (-3.7, 11.9)	-0.9 (-8.9, 7.1)	-
<u>f-ESWT + Eccentric exercise (1) vs r-ESWT + Eccentric exercise (2)</u>	<u>Van der Worp et al. (2014)</u>	↔	-	-	+0.1 (-1, 1.2)	-	-	↔	-	-	+6.3 (-1.6, 14.2)	-	-

<u>LR-PRP (1) vs ESWT (2)</u>	<u>Vetrano et al. (2013)</u>	↔	↓	↓	-1 (-1.8, -0.2)	-1.8 (-2.6, -1)	-2 (-2.8, -1.2)	↔	↑	↑	+5.7 (-1.2, 12.6)	+13.8 (-7.2, 20)	+14.5 (8, 21)
<u>Eccentric exercise (1) vs Standard training (2)</u>	Visnes et al (2005)	-	-	-	-	-	-	↔	-	-	-1 (-9.2, 7.2)	-	-
<u>ESWT (1) vs “Conservative treatments” (2)</u>	Wang et al. (2007)	-	-	↓	-	-	-4.7 (-5.7, -3.7)	-	-	↑	-	-	+47.7 (39.8, 55.6)
<u>US + Eccentric exercise (1) vs Sham US + Eccentric Exercise (2)</u>	<u>Warden et al. (2008)</u>	↔	-	-	+0.3 (-0.8, 1.4)	-	-	↔	-	-	-1.1 (-8.7, 6.5)	-	-
<u>Sclerosing polidocanol injections (1) vs Arthroscopic surgery (2)</u>	Willberg et al. (2011)	-	-	↑	-	-	-	-	-	-	-	-	-
<u>f-ESWT (1) vs Sham ESWT (2)</u>	<u>Zwerver et al. (2011)</u>	↔	↔	-	-0.2 (-1.2, 0.8)	-0.4 (-1.4, 0.6)	-	↔	↔	-	+0.8 (-4.7, 6.3)	+0.8 (-4.7, 6.3)	-
	Taunton et al. (2003)	-	-	-	-	-	-	↑	-	-	+3.7 (CI n/a)	-	-

Suppl. Table 3. Results of compared interventions from included studies shown a) qualitatively based on the direction of effect [“Pain (VAS 0-10)” and “Function (VISA-P 0-100)”] and b) quantitatively [“MD VAS (95% CI)” and “MD VISA-P (95% CI)”]. Where mean differences (MD) are reported, for pain VAS the minus (-) sign favours intervention “1” and the plus (+) sign intervention “2”; for VISA-P, the plus (+) sign favours intervention “1” and the minus (-) sign intervention “2”. Where the direction of effect is reported, for pain VAS, the “down” arrow (↓) favours intervention “1” at statistical significance, the “up” arrow (↑) intervention “2” and the “equal” arrow (↔) shows no statistical difference for the compared interventions; for VISA-P, the “up” arrow (↑) favours intervention “1” and the “down” (↓) arrow intervention “2”. Underlined comparisons and studies are those of low risk of bias.

BM-MSC, bone marrow mesenchymal stem cells; ESWT, extracorporeal shockwave therapy; f-ESWT, focal ESWT; GTN, glyceryl trinitrate; m, months; LP-PRP, leucocyte-poor PRP; LR-PRP, leucocyte-rich PRP; NRS, numerical rating scale; NSAIDs, non-steroidal anti-inflammatory drugs; PNE, percutaneous needle electrolysis; PRP, platelet-rich plasma; r-ESWT, radial ESWT; TENS, transcutaneous electric nerve stimulation; US, ultrasound; USGT, ultrasound-guided galvanic therapy; VAS, visual analogue scale; VISA-P, Victorian Institute of Sports Assessment – Patellar; w, weeks; y, years

^Meta-analysis abandoned due to substantial heterogeneity ($I^2=83\%$)

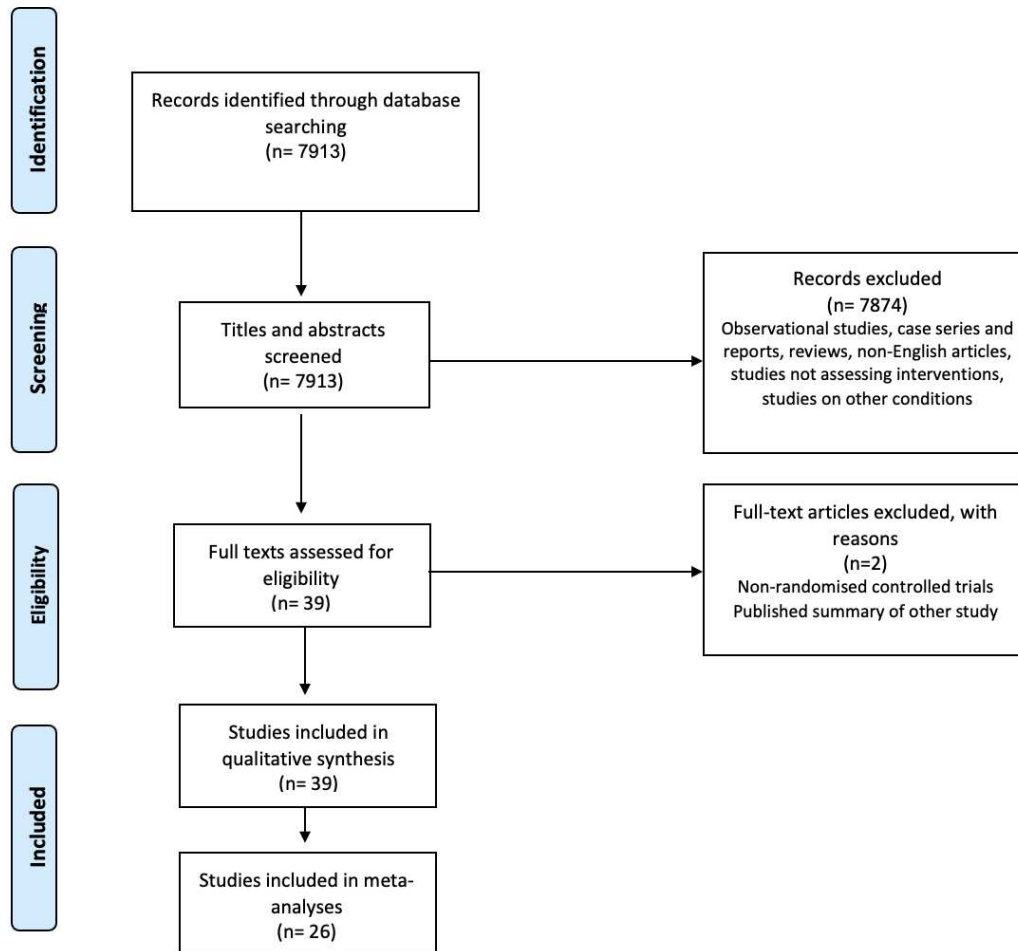
^^ Strength of evidence downgraded for high overall risk of bias

^^^ Strength of evidence downgraded for high overall risk of bias and indirectness of evidence

*Differences appear significant both clinically and statistically. However, the authors state that there were no statistically significant differences

**No inter-group statistical tests at 12 weeks

N/A, not available

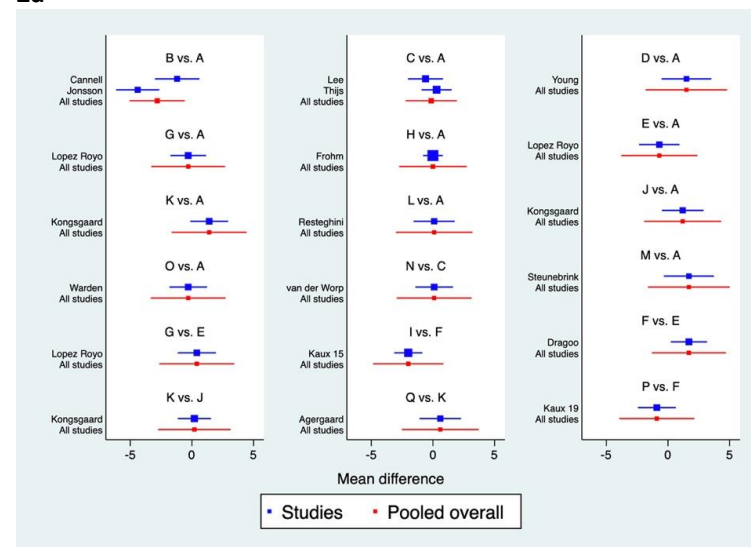
**Figure 1. PRISMA 2009 Flow Diagram**

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

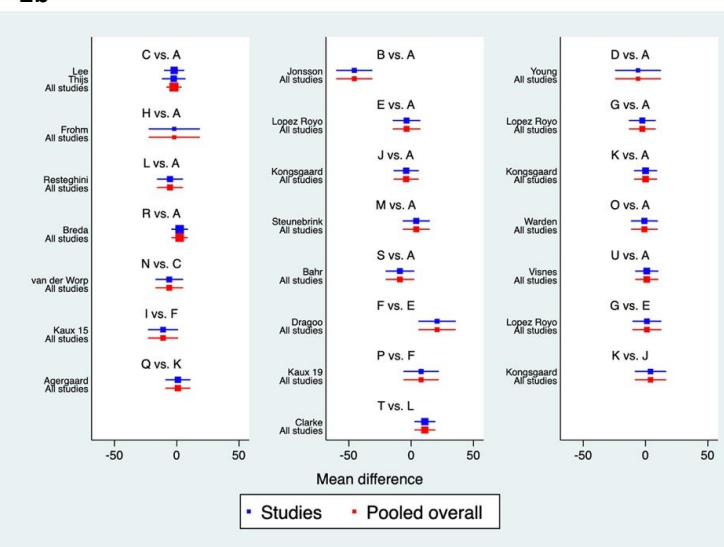
Suppl. Figure 1. PRISMA flowchart showing the article selection process

Suppl. Figure 2a&b. Network forest plots for all included interventions in the network meta-analysis for short-term pain VAS (2a) and VISA-P (2b). A, eccentric exercise – decline squat; B, concentric exercise; C, focal extracorporeal shock-wave therapy + eccentric exercise; D, eccentric exercise - step squat; E, dry needling + eccentric exercise; F, platelet-rich plasma injection + eccentric exercise; G, percutaneous needle electrolysis + eccentric exercise; H, eccentric device; I, two platelet-rich plasma injections + eccentric exercise; J, corticosteroid injection; K, heavy slow resistance exercise; L, autologous blood injection + eccentric exercise; M, topical glyceryl trinitrate + eccentric exercise; N, radial extracorporeal shock-wave therapy + eccentric exercise; O, ultrasound therapy + eccentric exercise; P, hyaluronic acid injection + eccentric exercise; Q, moderate slow resistance exercise; R, progressive tendon loading; S, surgery; T, collagen-producing cells + eccentric exercise; U, no treatment.

2a



2b



Suppl. Figure 3a&b. Network rank line showing probabilities of each intervention ranking at each position for their effectiveness for short-term pain VAS (3a) and VISA-P (3b).

A, eccentric exercise – decline squat; B, concentric exercise; C, focal extracorporeal shock-wave therapy + eccentric exercise; D, eccentric exercise - step squat; E, dry needling + eccentric exercise; F, platelet-rich plasma injection + eccentric exercise; G, percutaneous needle electrolysis + eccentric exercise; H, eccentric device; I, two platelet-rich plasma injections + eccentric exercise; J, corticosteroid injection; K, heavy slow resistance exercise; L, autologous blood injection + eccentric exercise; M, topical glyceryl trinitrate + eccentric exercise; N, radial extracorporeal shock-wave therapy + eccentric exercise; O, ultrasound therapy + eccentric exercise; P, hyaluronic acid injection + eccentric exercise; Q, moderate slow resistance exercise; R, progressive tendon loading; S, surgery; T, collagen-producing cells + eccentric exercise; U, no treatment.

3a

