

**PIO: What is the effectiveness of a thoracic high velocity low amplitude thrust (HVLAT) manipulation in patients with musculoskeletal disorders in the upper quadrant, a systematic review.**

**OVID search of Embase and Medline**

Musculoskeletal adj2 (pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Neck adj2 (pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Headache adj2 (disorder\* OR tension type OR cervicogenic OR migraine) OR (Cervical radiculopathy) OR (radicular adj2 (syndrome\* OR pain)) OR Cervical adj2 (nerve root OR disc OR (disc disease) OR impingement) OR Shoulder adj2 (pain OR disorder\* OR disease\* OR symptom\* OR problem\* OR imping\*) OR ( adhesive capsulitis) OR (frozen shoulder) OR Elbow adj2 (pain OR disorder\* OR disease\* OR symptom\* OR problem\* OR tennis) OR epicondylalgia OR epicondylitis OR Temporomandibular adj2 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Upper extremity adj2 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Upper quadrant adj2 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*)

AND

Thoracic OR (Thoracic adj2 spine) OR Thora\*

AND

Spinal manipulation OR Manipulation OR manipul\* OR adjustment OR Chiroprac\* OR (high adj2 (velocity OR low OR amplitude OR thrust )) OR treat\* OR therapy OR intervention OR SMT OR thrust OR mobilis\* OR mobiliz\* OR mobilization OR mobilization OR manual therapy OR osteopat\* OR physical therapy OR physio\* OR rehab\* OR management OR HVLA\*

AND

Pain OR (numerical rating scale) OR NRS OR (numerical pain rating scale) OR NPRS OR Disability OR disable\* OR (return to work) OR effectiveness OR effect\* OR patient adj2 (reported OR outcome OR measur\*) OR (recovery of function) OR activit\* adj2 (daily OR living OR life) OR Physical adj2 (examination OR test) OR Range adj2 motion OR Muscle adj2 strength OR Psychosocial\* OR (Neck disability index) OR NDI OR (Bournemouth adj2 neck) OR (patient specific functional scale) OR PSFS OR (shoulder pain and disability index) OR SPADI

AND

**Web of Science:**

Musculoskeletal NEAR/1 (pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Neck NEAR/1 (pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Headache NEAR/1 (disorder\* OR "tension type" OR cervicogenic OR migraine) OR (Cervical radiculopathy) OR (radicular NEAR/1 (syndrome\* OR pain)) OR Cervical NEAR/1 (("nerve root" OR disc OR "disc disease") OR impingement) OR Shoulder NEAR/1 (pain OR disorder\* OR disease\* OR symptom\* OR problem\* OR imping\*) OR "adhesive capsulitis" OR "frozen shoulder" OR Elbow NEAR/1 (pain OR disorder\* OR disease\* OR symptom\* OR problem\* OR tennis) OR epicondylalgia OR epicondylitis OR Temporomandibular NEAR/1 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Upper extremity NEAR/1 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*) OR Upper quadrant NEAR/2 (joint OR pain OR disorder\* OR disease\* OR symptom\* OR problem\*)

AND

Thoracic OR (Thoracic NEAR/2 spine OR spinal) OR Thoracal

AND

Spinal manipulation OR Manipulation OR manipulat\* OR adjustment OR Chiroprac\* OR (high NEAR/1 (velocity OR low OR amplitude OR thrust )) OR treat\* OR therapy OR intervention OR smt OR thrust OR mobilis\* OR mobiliz\* OR mobilization OR mobilization OR manual therapy OR osteopat\* OR physical therapy OR physio\* OR rehab\* OR management OR HVLA\*

AND

Pain OR measure\* OR (numerical rating scale) OR NRS OR (numerical pain rating scale) OR NPRS OR Disability OR disable\* OR (return to work) OR patient NEAR/1 (reported OR outcome OR measur\*) OR (recovery of function) OR activit\* NEAR/1 (daily OR living OR life) OR Physical NEAR/1 (examination OR test) OR Range NEAR/1 motion OR Muscle NEAR/1 strength OR Psychosocial\* OR (Neck disability index) OR NDI OR (Bournemouth NEAR/1 neck) OR (patient specific functional scale) OR PSFS OR (shoulder pain and disability index) OR SPADI

AND

randomised OR randomized OR random\* OR (Clinical trial) OR RCT

**SCOPUS; also used for CINAHL**

Musculoskeletal W/2 pain OR Musculoskeletal W/2 disorder\* OR Musculoskeletal W/2 disease\* OR Musculoskeletal W/2 symptom\* OR Musculoskeletal W/2 problem\* OR Neck W/2 pain OR Neck W/2 disorder\* OR Neck W/2 disease\* OR Neck W/2 symptom\* OR Neck W/2 problem\* OR Headache W/2 disorder\* OR Headache W/2 "tension type" OR Headache W/2 cervicogenic OR Headache W/2 migraine OR "Cervical radiculopathy" OR radicular W/2 syndrome\* OR radicular W/2 pain OR radicular W/2 Cervical W/2 "nerve root" OR Cervical W/2 disc OR Cervical W/2 "disc disease" OR Cervical W/2 impingement OR Shoulder W/2 pain OR Shoulder W/2 disorder\* OR Shoulder W/2 disease\* OR Shoulder W/2 symptom\* OR Shoulder W/2 problem\* OR Shoulder W/2 imping\* OR "adhesive capsulitis" OR "frozen shoulder" OR Elbow W/2

pain OR Elbow W/2 disorder\* OR Elbow W/2 disease\* OR Elbow W/2 symptom\* OR Elbow W/2 problem\* OR Elbow W/2 tennis) OR epicondylalgia OR epicondylitis OR Temporomandibular W/2 joint OR Temporomandibular W/2 pain OR Temporomandibular W/2 disorder\* OR Temporomandibular W/2 disease\* OR Temporomandibular W/2 symptom\* OR Temporomandibular W/2 problem\* OR "Upper extremity" W/2 joint OR "Upper extremity" pain OR "Upper extremity" disorder\* OR "Upper extremity" disease\* OR "Upper extremity" symptom\* OR "Upper extremity" problem\* OR "Upper quadrant" W/2 joint OR "Upper quadrant" W/2 pain OR "Upper quadrant" W/2 disorder\* OR "Upper quadrant" W/2 disease\* OR "Upper quadrant" W/2 symptom\* OR "Upper quadrant" W/2 problem\*

AND

Thoracic OR Thoracic W/2 spine OR Thoracic W/2 spinal OR Thora\*

AND

"Spinal manipulation" OR Manipulation OR manipul\* OR adjustment OR Chiroprac\* OR high W/2 velocity OR high W/2 low OR high W/2 amplitude OR high W/2 thrust OR treat\* OR therapy OR intervention OR SMT OR "spinal manipul\* therapy" OR thrust OR mobilis\* OR mobiliz\* OR mobilization OR mobilization OR manual therapy OR osteopat\* OR "physical therapy" OR physio\* OR rehab\* OR management OR HVLA\* OR "manipulative technique\*"

AND

Pain OR measure\* OR "numerical rating scale" OR NRS OR "numerical pain rating scale" OR NPRS OR Disability OR disable\* OR "return to work" OR effectiveness OR effect\* OR patient W/4 reported OR patient W/4 outcome OR patient W/4 measur\* OR "recovery of function" OR activit\* W/2 daily OR activit\* W/2 living OR activit\* W/2 life OR Physical W/2 examination OR Physical W/2 test OR Range W/2 motion OR Muscle W/2 strength OR Psychosocial\* OR "neck disability index" OR NDI OR Bournemouth W/2 neck OR Bournemouth W/2 question\* OR "patient specific functional scale" OR PSFS OR "shoulder pain and disability index" OR spadi

AND

randomised OR randomized OR random\* OR "Clinical trial" OR RCT

### **Index to Chiropractic Literature**

'Thoracic manipulation' AND random\*

### **PEDro database**

Thorac\* AND manip\*