

MANUAL THERAPY FOR THE CERVICAL AND THORACIC SPINE

Scott Lawrance, DHSc, LAT, ATC, MSPT, CSCS

Clinical Professor, Director of Athletic Training Education

Department of Health and Kinesiology



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Learning Objectives

1. Identify conditions of the cervical and thoracic spine where manual therapy is an appropriate intervention.
2. Appraise the literature base for efficacy of manual therapy when treating cervical and thoracic spine conditions.
3. Choose appropriate joint mobilizations and manipulations for the cervical and thoracic spine.
4. Practice manual therapy techniques to demonstrate proper application in a patient population.
5. Describe how manual therapy is a treatment adjunct within a larger treatment plan of care.

What We Will Do and What We Won't Do...

- We Will:

- Accomplish the learning objectives
- Focus on some simple and practical mobilizations/manipulations that are quick, easy to perform, and have high utility in an active and athletic population

- We Won't:

- Discuss detailed arthrokinematics, physiology, or pathology
- Explore a wide range of mobilizations or manipulations in the spine that are considered more advanced

WHAT DOES THE LITERATURE SAY?

Appraise the literature base for efficacy of manual therapy when treating cervical and thoracic spine conditions

Effects of Joint Mobilization

- Mechanical effects
 - Improves mobility via tissue stretch and break up of scar tissue
- Neurophysiological effects
 - Stimulates mechanoreceptors to decrease pain and spasm
- Nutritional effects
 - Improved synovial fluid movement and nutrient exchange in articular cartilage

Evidence of Cervical and Thoracic Spine Manual Therapy

- Positive outcomes observed with both mobilization and manipulation techniques on cervical spine pain
 - Cervical spine mobilization provided short term benefit for patients with acute pain
 - Manipulations more effective in subacute or chronic pain than mobilizations
- Manipulations and mobilization both beneficial treating cervicogenic headaches

Evidence of Cervical and Thoracic Spine Manual Therapy

- Stronger outcomes when combined with exercise
- Greater short-term pain relief with manual therapy than exercise alone
- Thoracic spine manipulation has been shown to decrease pain in mechanical cervical spine pain

WHEN TO USE?

Identify conditions of the cervical and thoracic spine where manual therapy is an appropriate intervention

Contraindications for Mobilization/Manipulations

- Contraindicated for:
 - Acute inflammatory process
 - Inflammatory conditions
 - Osteoporosis
 - Bone disease
 - Bone fractures
 - Congenital bone deformities
 - Ligamentous rupture
 - Herniated disks with nerve compression
 - Malignancy
 - Vascular disorders

Cervical Artery Dysfunction

- Can we screen for this?
 - Vertebral artery test
 - Athlete is supine, examiner is seated at the head with hands supporting the subjects head
 - Examiner slowly extends, rotates and laterally flexes the cervical spine
 - Positive: dizziness, slurred speech, nausea, nystagmus or loss of consciousness
 - Indication: vertebral artery occlusion

Would you Perform a Joint Mob on Any of These Athletes?

Relative Contraindications for Mobilization

- Hypermobility (Beighton Index)
- Pregnancy
- Joint effusion
 - Can do grade I/II for pain modulation
- Psychosocial concerns
 - Neurosis, hysteria, depression

HOW DO I DO IT?

Choose appropriate joint mobilizations and manipulations for the cervical and thoracic spine

Mobilization/Manipulations Indications

- Grades I and II - primarily **used for pain**
 - Pain must be treated prior to stiffness
 - Painful conditions can be treated daily
- Grades III and IV - primarily **used to increase motion**
 - Stiff or hypomobile joints should be treated 3-4 times per week – alternate with active motion exercises
- Grade V – primarily **dysfunctional mid- or end-range joint motion**
 - Manipulations that have state law/practice act and training implications

Joint Mobilization Application

- Patient should be relaxed
- Explain purpose of treatment & sensations to expect to patient
- Evaluate BEFORE & AFTER treatment (comparable sign)
- Use proper body mechanics
- Be aware/potentially remove jewelry
- Begin & end treatments with Grade I or II oscillations
- Stop the treatment if it is too painful for the patient

LET'S PRACTICE!

Practice manual therapy techniques to demonstrate proper application in a patient population

Legal Concerns

- Prior to performing any manual therapy skills, clinicians need to ensure that they are legally able to perform the skills in their home states as guided by their practice acts

Cervical Spine Posterior-Anterior Mobilization

- Prone posterior-anterior mobilizations (PA's)
 - Used for general mobility/pain control (Grade I/II) or for mobility (Grade III/IV)
 - Treatment plane is inclined about 45 degrees
- Can also be performed in a supine position
 - “Hook” spinous process with radial side of index finger and pull toward your eyes
- Other options:
 - Mulligan NAGs, SNAGs, MWMs
 - Self Mobilizations

Cervical Spine Sidegliding Mobilization

- Supine position
 - Used for general mobility/pain control (Grade I/II) or for mobility (Grade III/IV)
 - When used there are sidebending and/or rotation deficits

Cervical Spine Manual Traction

- Traction with both hands
- Pull with up to 5-10 points of pressure (approximate weight of head)
- There are many variations in technique – find one that works for you

Thoracic Spine Posterior-Anterior Glide

- Prone posterior-anterior mobilizations (PA's)
 - Used for general mobility (Grade III/IV)/pain control (Grade II/III)
 - Treatment plane is at 60 degrees
 - Patient in prone position, PA force applied

Thoracic Spine “Pistol” Technique

- Used for thoracic spine flexion/extension
- Effective for segmental manipulation
 - First roll the patient toward you, to place your hand on the level you want to perform the thrust to
 - Roll the patient over your leverage hand
 - Sidebend the patient away from you
 - The patient grasps their opposite shoulders placing their elbows as close to together as possible
 - Thrust hand cups the top elbow and your sternum is over your hand for leverage
 - Leverage wrist is extended, radially deviated, and forearm is pronated
 - Take up the slack in the shoulders and forearms by pushing the patient into GH extension
 - Mobilization and thrust performed in the direction of the forearms, NOT A/P
 - Patient inhales and in the middle of the exhale (don't wait until the end as pts tense) perform a quick abdominal thrust in the A/P and superior direction

Thoracic Spine Seated Technique

- Used for thoracic spine flexion/extension
- Effective for segmental manipulation of mid-thoracic spine

Thoracic Spine Seated Technique

- Used for thoracic spine flexion/extension
- Effective for segmental manipulation of upper-thoracic spine

WHAT ELSE SHOULD I BE DOING?

Describe how manual therapy is a treatment adjunct within a larger treatment plan of care

How do you follow-up?

- After mobilizing the joint, need to follow-up with mobility exercises
 - Reinforce the new mobility gained and new movement pattern
 - Home program vs. in clinic/athletic training room
- Correct underlying postural deficiencies
- Rebalance the joint (if needed)
 - Soft tissue stretching/mobility
 - Muscular strengthening

Common Deficit Profile

■ Cervical Spine

- Forward head posture/Upper Cross Syndrome
- Hypertonic suboccipital muscles
- Hypertonic sternocleidomastoid muscle
- Hypotonic deep neck flexors
- Overactive scalenes
- Overactive levator scapulae

■ Thoracic Spine

- Hypomobile segments/Reduced thoracic rotation
- Asymmetric rotation

Suboccipital Release

- First step if patient has cervicogenic HA or if you are teaching cervical retraction
- Need to facilitate relaxation of suboccipitals and issue HEP

Cervical Retraction

- Start supine before progressing to upright position

Deep Neck Flexor Strengthening

- Start with a chin tuck
- Try to lift head off ground
 - Do not let SCM perform movement!
 - Start with small lifts and progress height

General Flexibility

Thoracic Spine Mobility

Thoracic Spine Dynamic Mobilization Exercises

Questions?

Scott Lawrance, DHSc, LAT, ATC, MSPT, CSCS

Purdue University

800 W University Drive

West Lafayette, IN 47907

(765) 496-0502

slawranc@purdue.edu

 @SELawrance

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