Unraveling the Mystery of Severe and Chronic Neck Pain

_The elusive and treatable cause of most neck pain_

**Webinar Goal**

Explore the assessment and treatment of the most common injury to the neck

**Pretest**

1. Which structures in the cervical region are the most frequent cause of chronic pain?
   a) the occipital muscles
   b) the supraspinous ligaments
   c) the scalene muscles
   d) the sternocleidomastoid muscles

2. The most frequently injured ligament in the neck is the C4 supraspinous ligament. True or False?

3. The term whiplash refers to a specific injury. True or False?

4. Ligament injuries in the lower neck can cause headaches. True or False?

5. Most of cervical rotation takes place at the C5 vertebra. True or False?
The Neck — A Vulnerable Area

- Second most frequent site of injury
- Cervical pain affects 50 to 100 million Americans
- Often begins in an accident
- Most common is whiplash

What is Whiplash?

- Sudden, physical action of acceleration-deceleration force
- Can damage various structures in the neck
- Usually posterior-anterior, resulting from a rear-end collision
- Often accompanied by concussion

Neck pain can be triggered by:

1. Overstretching the neck
2. Body use on the job
3. Lack of exercise
4. Poor body use
Anatomy

Muscles
- Occipital muscles of the neck
- Splenius cervicis and splenius capitis
- Sternocleidomastoids
- Scalenes

Ligaments
- Supraspinous
Ligaments

• Interspinous

Ligaments

• Intertransverse

Discs

• Damaged intervertebral discs press into cervical nerves
• Cause severe, long-lasting pain
• Involved in only 3-5% of neck injuries
Muscles vs. Ligaments vs. Discs

- Muscles: Frequent cause of immediate, temporary pain
- Discs: Occasional severe, long-lasting injury
- Ligaments: Most common cause of chronic neck pain after whiplash — especially at C5, also C4 and C6

Assessment Tests

- Be sure the client sees a physician to test for serious damage
- Active tests: check for pain and limitation
- Passive tests: primarily assess the ligaments
- Resisted tests: assess the muscles
Active Tests

Tests 1–2: Active rotations

Tests 3–4: Active side flexion
Test 5: Active flexion

Test 6: Active extension

Passive Tests
Tests 7–8: Passive rotations

Test 9: Passive flexion

Test 10: Passive extension
Resisted Tests

Tests 11–12: Resisted rotations

Tests 13–14: Resisted side flexions
Test 15: Resisted flexion

Test 16: Resisted extension

Normal Range of Motion

Rotation: 90º

Side flexion: 45-60º

Flexion: chin to chest

Extension: face parallel to ceiling
Understanding the Assessment Test Results

- Muscle injury: Pain on resisted testing
- Ligament injury: Pain and limitation on passive testing (most commonly rotation; also flexion and extension)
- Disc injury: More complex results — weakness, reflex changes, numbness, asymmetrical limitation of movement

Mechanisms of Whiplash

- Forceful neck hyperextension followed rapidly by hyperflexion
- Causes tears in ligamentous and muscle tissues
- Leads to chronic scar tissue pattern
## Other Symptoms of Whiplash

- Headache (can become chronic)
- Shoulder pain
- Scapula pain at the medial border
- Dizziness
- Fatigue
- Jaw pain
- Arm pain
- Visual disturbances
- Tinnitus (ringing in the ears)
- Weakness in the arm
- In chronic cases various emotional states can include: depression, anger and frustration

## Other Common Mechanisms of Cervical Injury

- No use then sudden use

## Other Common Mechanisms of Cervical Injury

- Spondylolisthesis
Other Common Mechanisms of Cervical Injury

- Poor head and neck alignment

Other Common Mechanisms of Cervical Injury

- Loss of neck flexibility

Common Injury Patterns

- Most common: supraspinous ligaments (especially at C5)
- Sternocleidomastoid, splenius cervicis, and splenius capitis often painful and sore for a few weeks
- Injured muscles heal quickly
- Injured ligaments do not
Commonly Injured Structures
Vary by Body Area

- Thigh: Muscles
- Shoulder: Tendons or joint
- Neck: Ligaments (supraspinous and sometimes intertransverse)

Referred Pain Patterns in the Neck
Treatment

Friction Therapy:

Watch the video at the end of the Webinar

Myofascial Therapy
Craniosacral Therapy

Massage Therapy

Osteopathic or Chiropractic Manipulation
Alexander Technique
Feldenkrais Method

Exercise Therapy
(restoring full range of motion)

Flexibility Exercises
Occipital muscle tension

- The Neck Relaxer Device

Post-test

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Questions

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