Debilitating Orthopedic Injury Sampler #1

The Neck: Whiplash & Central Ligament Sprains

Presented by Dr. Ben Benjamin

Instructor: Ben Benjamin, Ph.D.
Webinar Goal

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

Logistics

• Time: 1 hour
• Schedule:
  • Presentation 30–40 min
  • Questions 15–20 min
• Ongoing questions: Use Question box. If I don’t get to your question, ask me on my Dr Ben Benjamin Facebook page after the webinar.

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Questions to Keep in Mind

1. Which structures in the cervical region are the most frequent cause of chronic pain?
2. What is the most frequently injured ligament in the neck?
3. What does the term *whiplash* refer to?
4. Can injuries in the lower neck cause headaches?
5. Where does most of the cervical rotation take place?
6. Can cervical ligament injuries refer pain to the hand?

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?

A sudden, physical action of acceleration-deceleration force

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

Interspinous
Ligaments

Intertransverse

- Damaged intervertebral discs press into cervical nerves
- Cause severe, long-lasting pain
- Involved in only 3-5% of neck injuries

Discs

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- Cause severe, long-lasting pain
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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 especially at C4, C5, and C6

Assessment
Neck 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
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 11ï 12: Resisted rotations
Tests 13–14: Resisted side flexions

Test 15: Resisted flexion
Test 16: Resisted extension

Normal Range of Motion

Rotation: 90°
Side flexion: 45–60°
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

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

Spondylolisthesis
Other Common Mechanisms of Cervical Injury

Poor Head & Neck Alignment

Other Common Mechanisms of Cervical Injury

Loss of neck flexibility
Common Injury Patterns

- Most common: supraspinous ligaments
- 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 from your Webinar Link
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
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**Unraveling the Mystery of Cervical Pain**

1. Whiplash & Central Ligament Sprains
2. Client History & Treatment Options
3. TP7 Ligament Sprains
4. Lateral Ligament Sprains
5. Clinical Applications 1
6. Clinical Applications 2

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