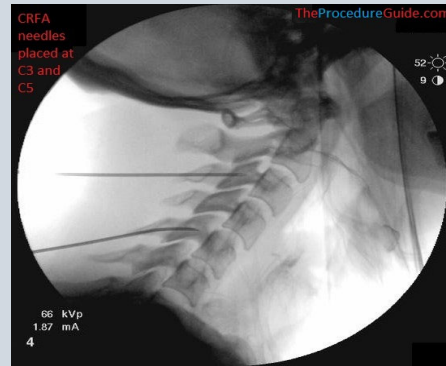


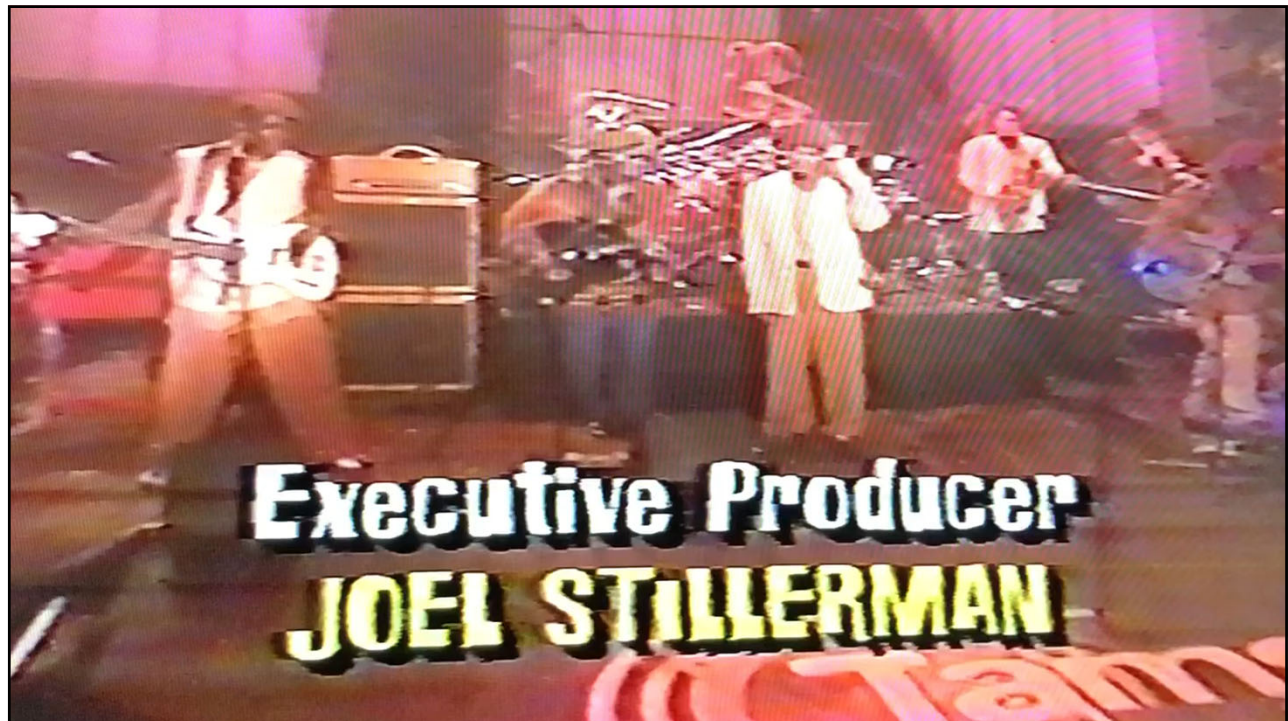
Medical Fallacies from Leeches to Ablations



A Presentation By Dennis G. Brown, M.D., J.D.

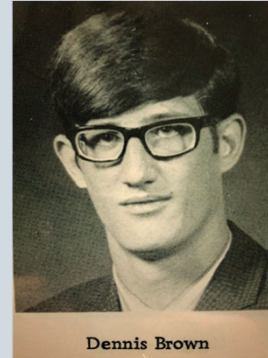
1

1



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Where It Began



3

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Where It's Going...

Medical Fallacies

Medical Causality

The Nature of Current Medical Records

Anatomy Class

Cervical Spine Conditions and Injuries

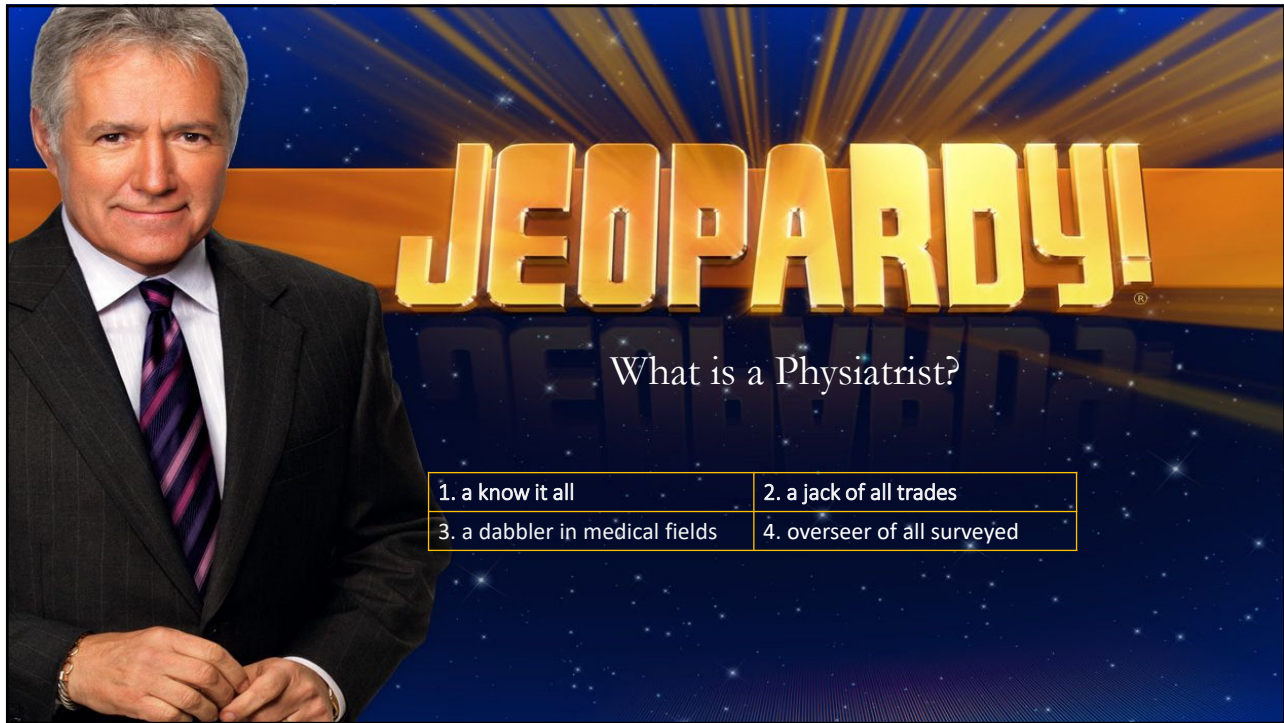


Logic connectors

$$\begin{aligned} p \wedge q \\ p \vee q \\ p \rightarrow q \\ p \leftrightarrow q \end{aligned}$$


4

4



5



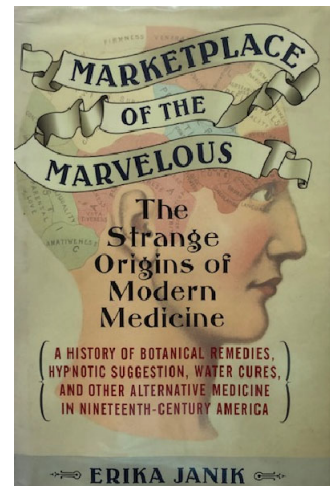
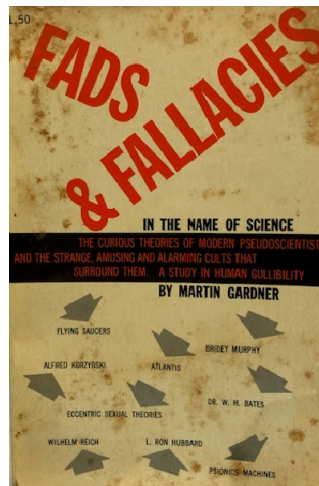
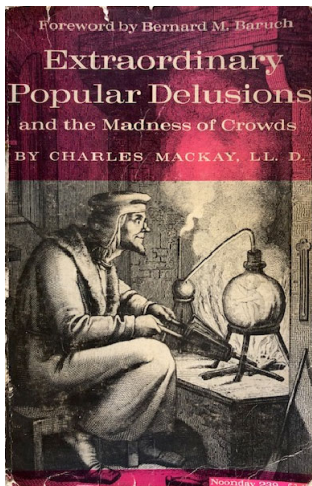
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Medical Fallacies

7

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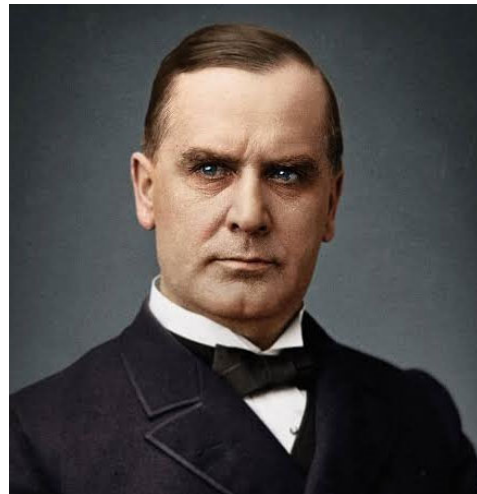
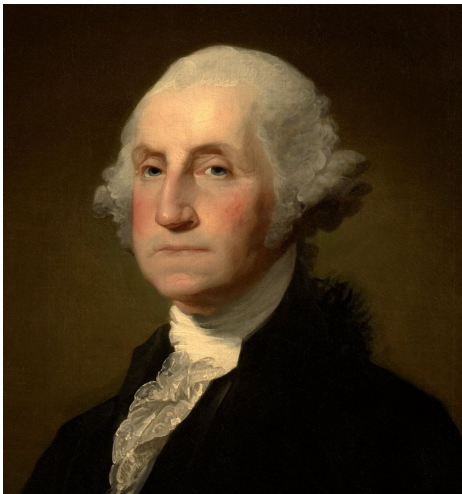
The Wonderful Influence
of
Imagination in the Cure of Diseases is Well Known



Franz Anton Mesmer 1734-1815

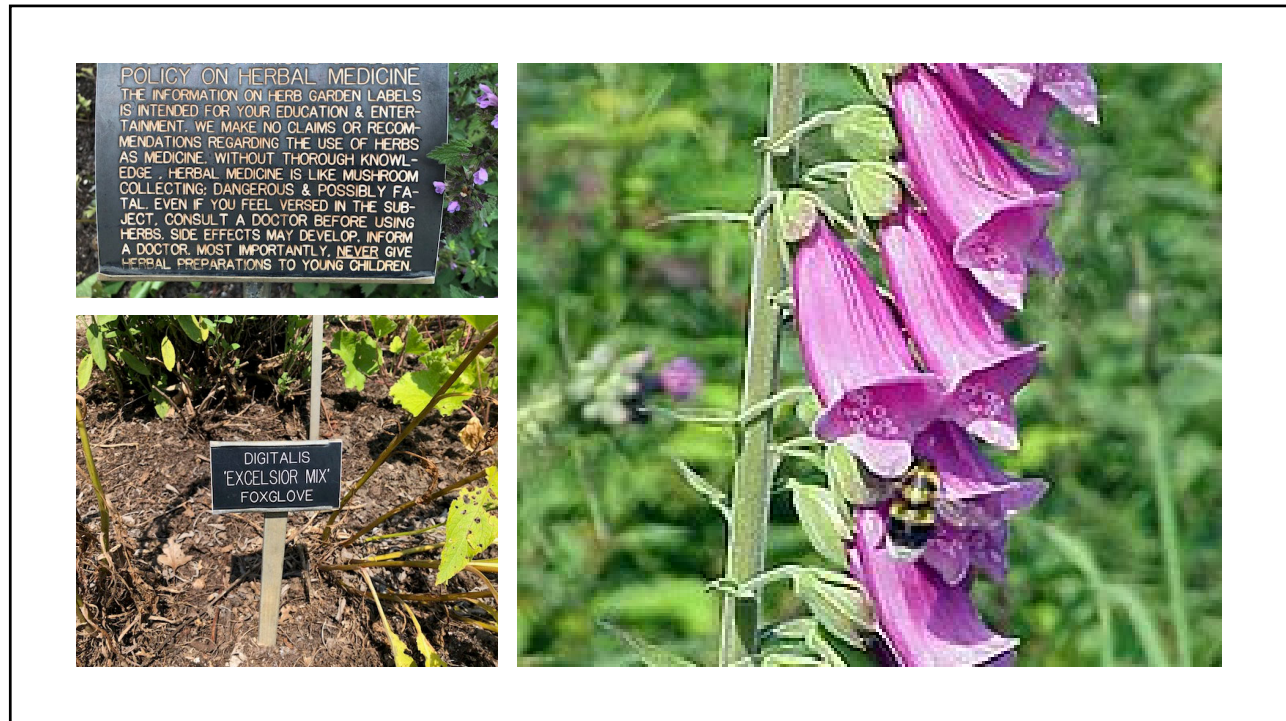
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11



12

More Medical Fallacies?

- Chymopapain Injection
- IDET Procedure
- Opioid Prescription
- Spine Discography (Spine Stimulation)
- Nerve Ablation?

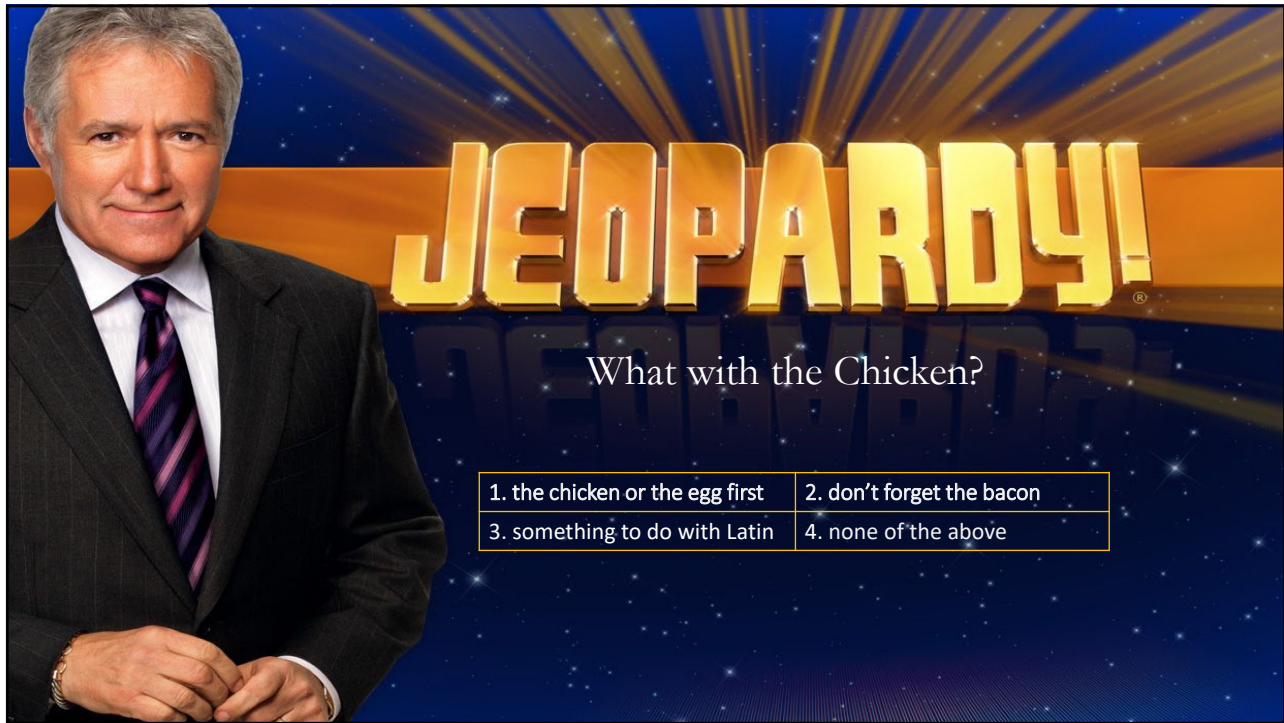


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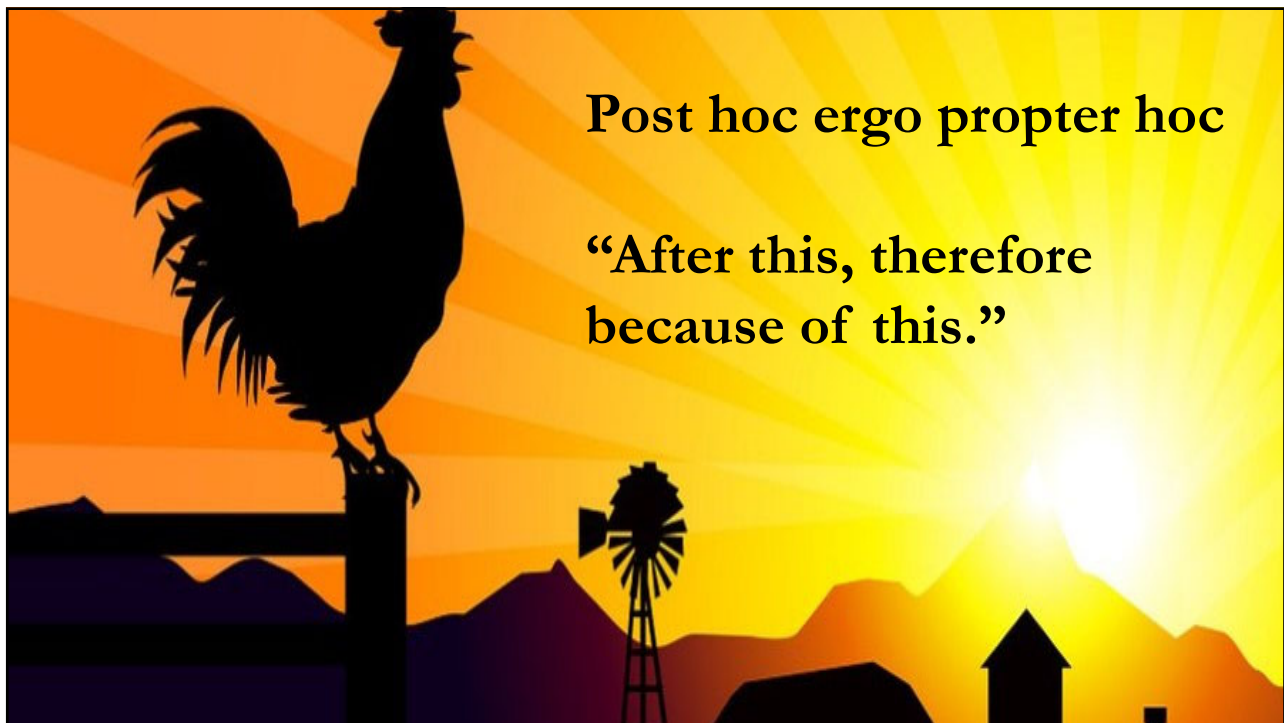
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16

Direct Cause

Precipitation

Aggravation



Exacerbation

Recurrence

Medical Causality

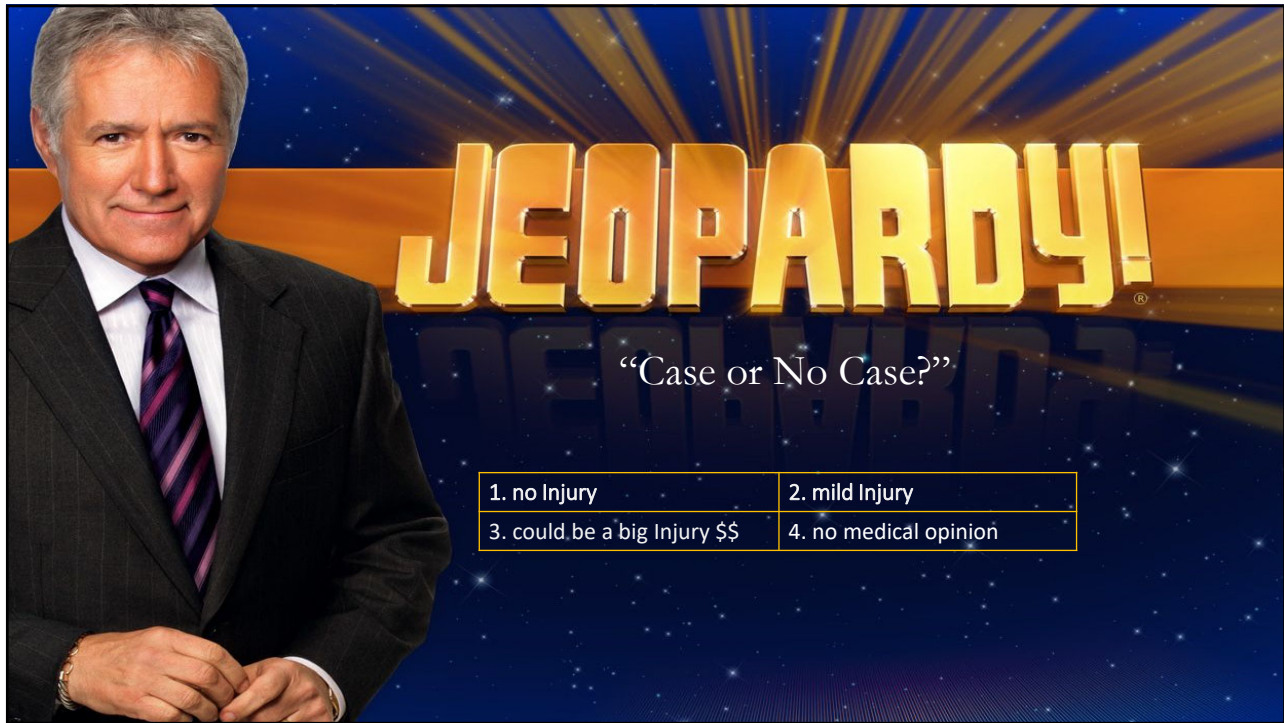
17

17

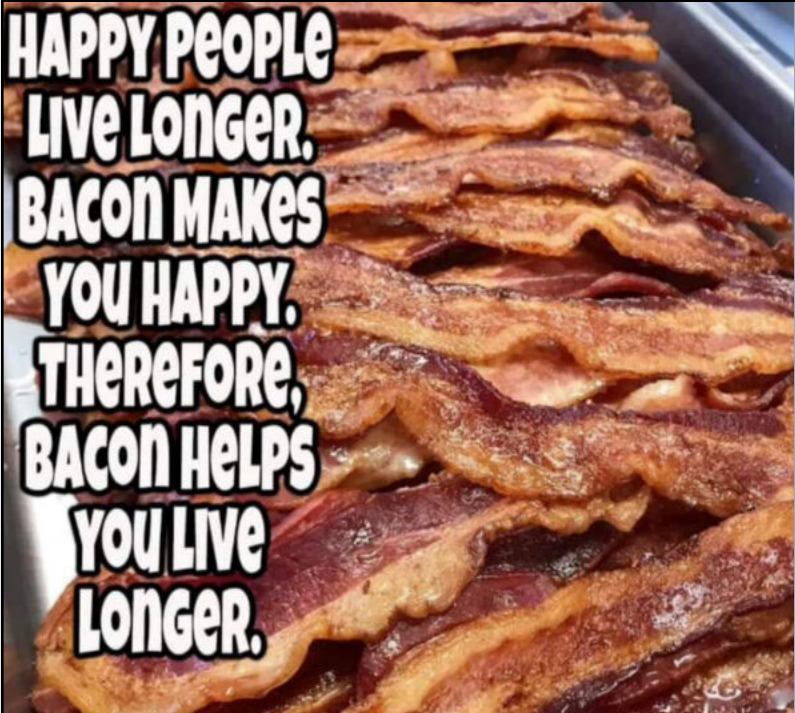



18

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19



**HAPPY PEOPLE
LIVE LONGER.
BACON MAKES
YOU HAPPY.
THEREFORE,
BACON HELPS
YOU LIVE
LONGER.**

Correlation (Association):

Two Factors (Variables) are Related but One Does Not Cause the Other

20

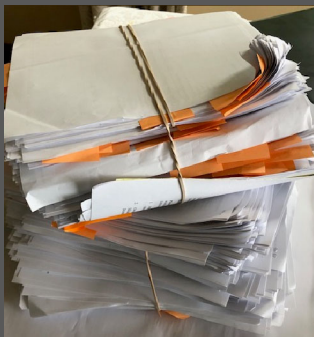
Correlation is not Causation

- Temporality
- The Strength of the Association Between Two Variables
- A Dose-Response Relationship
- Biologically Plausible Mechanism
- Repeatability of Study Findings



21

21



The Nature of Current Medical Records

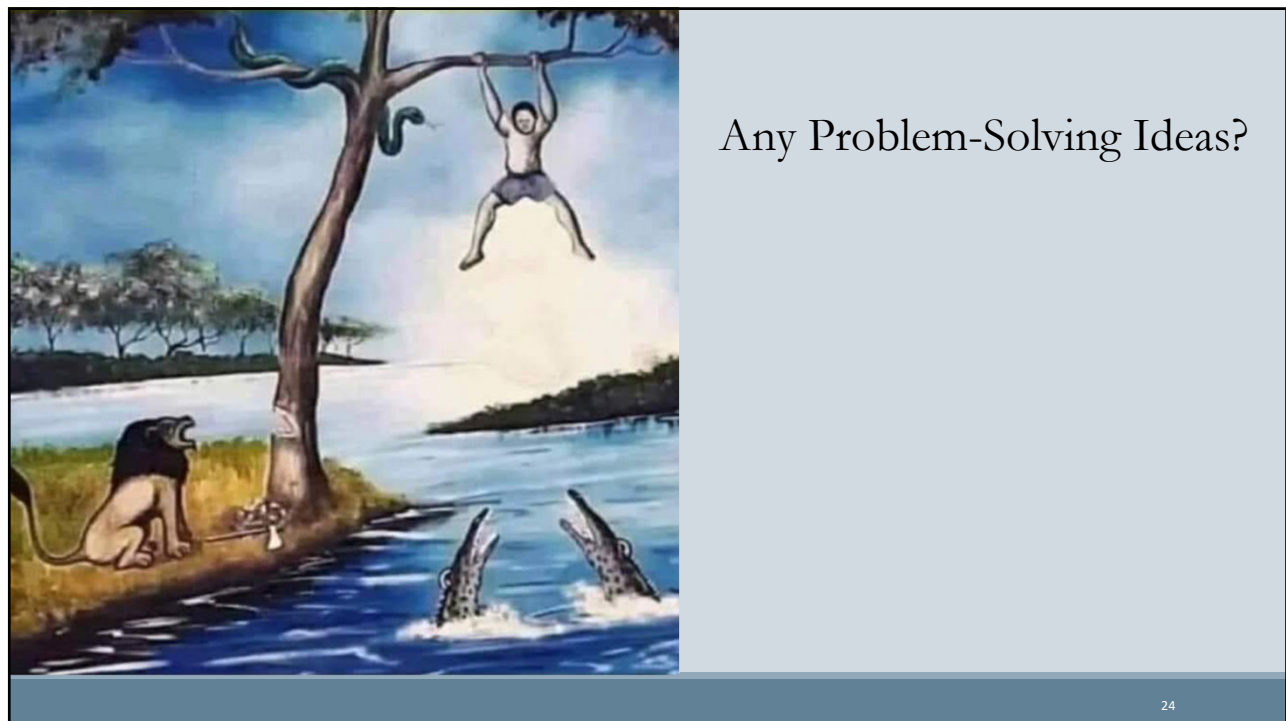
"This note was dictated using Dragon voice software and may contain errors as a result."

22

22



23



24

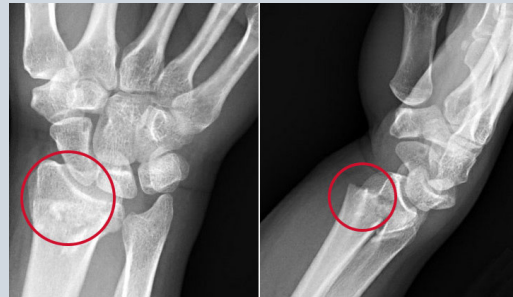
Soap Note

Subjective: DOI: 2/4/22. 32-year-old male fell and had immediate right arm pain. He thinks it's broke, no numbness.

Objective: It looks like he broke his right arm alright. X-ray confirms a right Colles Fracture.

Assessment: Right distal radius fracture

Plan: Fracture reduced in office and splinted. To see me in the office in one week.



25

25

The Claim

- EMPLOYER'S FIRST REPORT OF INJURY OR DISEASE
- Recorded Statement

EMPLOYER'S FIRST REPORT OF INJURY OR DISEASE

After injuries, employers subject to ch. 102, Wis. Stats., must report injuries resulting in death to the Department and to their insurance carrier, if insured, within one day after the death of an employee.

Non-Fatal Injuries: If the injury or occupational illness results in disability beyond the three-day waiting period, the employer, if insured, must notify its insurance carrier within 7 days after the date of injury or beginning of disability. Mandatory claims are to be reported to the insurance carrier only, not the Department.

Disability Reporting Requirements: If work results in injury and disability resulting in compensation lost time, with the exception of medicals, must be reported immediately to the Department via 102 or entered to the insurance carrier or self-insured employer within 14 days of the date of injury or beginning of disability. Employer may file claims for late reports to 900-267-5234.

Provision of your Social Security Number (SSN) is voluntary. Failure to provide it may result in an information processing delay. The Department of Workforce Development (DWD) administers the Worker's Compensation Act, Chapter 102 Wis. Stats. The purpose of this form is to assist with the transmission of information collected or required by Chapter 102. Completion of this form is voluntary and failure to complete and return this form may result in a delay in the administration of Chapter 102. DWD may use the personally identifiable information (PII) it obtains from you on this form for purposes other than those for which it is being collected.

Please refer to instructions on page 2 for completing this form.

Department of Workforce Development
Worker's Compensation Division
201 E. Washington Ave., Rm. C105
P.O. Box 7801
Madison, WI 53707
Invoicing Service Fax: (608) 260-2523
Telephone: (608) 264-1345
https://dwd.wisconsin.gov/wc/
e-mail: DWDWC@dwd.wisconsin.gov

Employee Name (Print, Middle, Last) _____ Social Security Number _____ Sex ☐ M ☐ F
City _____ State _____ Zip Code _____
Employee Home Telephone No. _____
Employee Street Address _____
Employee Mailing Address _____
City _____ State _____ Zip Code _____
Employee FEIN _____
Name of Worker's Compensation Insurance Co. or Self-Insured Employer _____
Name and Address of Third Party Administrator (TPA) Used by the Insurance Company or Self-Insured Employer _____ TPA FEIN _____
Wage at Time of Injury _____ Specify per hr., wk., mo., yr., etc. _____
Per _____ In-Addition to Wages, Check Boxes: ☐ Meals No. of Meals/Week _____
☐ Room No. of Days/Week _____
☐ Tips Avg. Weekly Amt. \$ _____
Is Worker Paid for Overtime? ☐ Yes ☐ No If Yes, After How Many Hours of Work Per Week? _____
For the 52 Week Period Prior to the Week the Injury Occurred, Report Below the Number of Weeks Worked in the Same Kind of Work, and the Total Weeks, Salaries, Commissions and Bonuses or Premiums Earned for Each Week.

No. of Weeks	Choose Amount Excluding Tips: \$	If Piece-Work, No. of Hrs. Excluding Overtime:
Employee's Usual Work Schedule When Injured:	Start Time _____	Hours per Day _____ Hours per Week _____ Days per Week _____
Employee's Usual Full-Time Schedule for This Type of Work at Time of Employee's Injury:	_____	_____
Part-Time With the Same Schedule? <input type="checkbox"/> Yes <input type="checkbox"/> No	Are There Other Part-Time Workers Doing the Same Work? <input type="checkbox"/> Yes <input type="checkbox"/> No	Number of Full-Time Employees Doing the Same Type of Work _____
Injury Date: <input type="checkbox"/> Yes <input type="checkbox"/> No	Last Day of Injury: <input type="checkbox"/> AM <input type="checkbox"/> PM	Date Employer Notified: <input type="checkbox"/> Yes <input type="checkbox"/> No
Did Injury Cause Death? <input type="checkbox"/> Yes <input type="checkbox"/> No	State of Death: <input type="checkbox"/> Compensation Injury? <input type="checkbox"/> Yes <input type="checkbox"/> No	Did Injury Occur Because of: <input type="checkbox"/> Substance <input type="checkbox"/> Failure to Use Safety Device <input type="checkbox"/> Other _____
Was Employee Treated in an Emergency Room? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was Employee Hospitalized Overnight as an In-Patient? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name and Address of Treating Practitioner and Hospital _____
Case Number from the OSHA Log _____		
Injury Description - Describe Activities of Employee When Injury or Illness Occurred and What Tools, Machinery, Objects, Chemicals, Etc. Were Involved _____		
What Happened to Cause This Injury or Illness? (Describe How the Injury Occurred) _____		
What Was the Injury or Illness? (State the Part of Body Affected and How it Was Affected) _____		
Report Prepared By _____	Work Phone Number () _____	Position _____
Date Signed _____		

WRC-12 (R. 10/2023) **SEND REPORT IMMEDIATELY - DO NOT WAIT FOR MEDICAL REPORT**

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Now What?

In a Lumbar Yard Institute First Report dated April 2, 2022, C. McCracken, DC stated:

History of Injury: On 2/4/22 patient fell at work and hit head and right arm. . . . The right arm fracture healed. The patient is not satisfied with current treatment and came into our office for a second opinion to be evaluated and treated. . . .

Description: (1) Head Injury. (2) Concussion w/o Loss of Consciousness. (3) Post-Traumatic Headaches/Acute/Sub-Acute. (4) Cervicogenic Cephalgia. (5) Sprain of Joint and Ligaments of Other Parts of Neck. (6) Strain of Muscle, Fascia, Tendons at Neck Level. (7) Cervical Radiculitis/Right. (8) Cervical Pain. (9) Muscle Spasm/Right Side/C-Sp. (10) Paresthesia/Intermittent/Right Upper Extremity. (11) Spinal Effusion and Swelling. (12) Cervical Segmental Dysfunction. (13) Cervical/Right Upper Extremity Muscle Weakness. (14) Contusion of the Right Shoulder. (15) Sprain of other Specified Parts/Right Shoulder Girdle. (16) Strain of other Muscles, Tendons, and FASCIA, at Upper Shoulder Level/Right/Initial Encounter. (17) Shoulder Pain/Right. (18) Shoulder Effusion/Right. (19) Shoulder Stiffness/Right. (20) Segmental Dysfunction/RUE. (21) Thoracic Spine Pain. (22) Thoracic Segmental Dysfunction. (23) Unspecified Injury/Lower back/Initial Encounter. (24) Lower Back Pain. (25) Lumbar Radiculopathy/Bilateral Lower Extremities. (26) Lumbar Spine Segmental Disorder. (27) Other Cause or Strike by Thrown, Projected or Falling Object/Initial Encounter. (28) Work-Related Injury.

27

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When Medical Doctors Do It Too

In an Ur Pain, My Gain Neck and Back Cure Progress Note dated March 17, 2023, Dr. V. Clumsy stated:

Differential Diagnosis Includes: discogenic pain, cervical spondylosis, cervical radiculopathy, rotator cuff impingement and/or tendinopathy/tears, carpal tunnel syndrome, ulnar neuropathy, brachial plexopathy, peripheral neuropathy; lumbar radiculopathy, myofascial pain syndrome, peroneal neuropathy, and plexopathy.

28

28

“Not That I Can Remember”

Past Medical History

Mr. Doe denied **ever** experiencing neck, upper back, right shoulder/arm pain before the February 4, 2022, work incident.

Past Medical Records

In a Bad to the Bone Health Center Provider Note dated January 3, 2022, K. Ninja, DC stated:

Introduction Sentence: Mr. Doe presents for new patient exam. **Subjective:** Pain in neck. States pain has been present for the past 2 months. Pain migrates into upper back, and right shoulder. Pain is sharp. Pain originally started after working at home remodeling basement.

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The Devil Is In The Details

a.k.a. Ignore the Fine Print at Your Own Risk

Review of Systems: Musculoskeletal: No neck pain, no myalgias.

Examination: General: No acute distress ... Neck: Non-tender. Normal range of motion.

A Franciscan Health Care Cervical Spine MRI scan interpretation dated November 10, 2022, indicates:

History: Severe right sided-neck and right shoulder pain. No injury. . . . **Impression:** Mild uncovertebral spurring, predominantly on the left at C5-C6 in an otherwise negative exam.

A Franciscan Health Care Initial Physical Therapy Note dated November 11, 2022, indicates:

History: Continued severe pain: Played golf yesterday

30

30

A History Followed by a Jab

Physical Examination

Constitutional: NAD

Psychiatric: Alert, awake, and oriented.

Musculoskeletal Exam

Upper Limbs: No evidence of any atrophy in the upper limbs is noted. On both shoulders contour is normal. No evidence of any effusion or swelling is noted. Upon palpation is not tender. No instability is noted. Range of motion is normal. Circumduction is normal (165 to 180 degrees). Abduction is normal (165 to 180 degrees). Forward flexion is normal (165 to 180 degrees). Scapular protraction/retraction is normal. Bicipital tendon is normal. Yergason test is negative. Elbow flexion is normal. Extension is normal. Elbow joint (superior radioulnar) stability is normal. Pronation/supination is normal, without limb discrepancy. On both forearms contour is normal. No evidence of any effusion or swelling is noted. Medial epicondyle is normal. Ulnar nerve is normal. Lateral epicondyle is normal. Thumb is normal. Abductors/extensors of the thumb are normal. Carpal tunnel signs (Tinel, Phalen and resisted motion) are normal. Intrinsic function is normal. Small joints in the fingers who normal findings. Arterial assessment is normal (all).

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The Dreaded Transmittal Letter

DOI: February 4, 2022

DOB: August 12, 1992

[Subjective]: Non-resolved neck, right shoulder, right arm, low back, and right leg pain.

Claimant with the above complaints following a fall and a conceded right forearm fracture that healed. He treated with PMD, orthopedist, chiropractors, and currently is in physical therapy and pain management.

[Objective]: X-rays and December 15, 2023, imagining studies results as indicated.

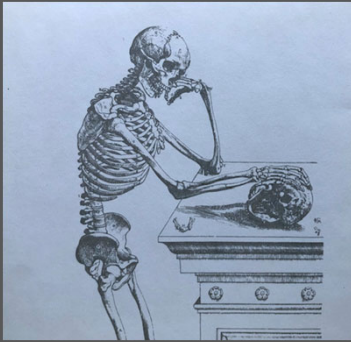
[Assessment]: Concerns regarding causation of evolving multiple bodily complaints with delay in onset and treatment and with lengthy ongoing medical treatment without reported improvement.

Our investigation revealed...

[Plan] Causation, reasonable medical treatment, MMI, any PPD and temporary/permanent work restrictions, and necessity for future medical treatment...

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Anatomy Class

33

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A Woman with Hand Numbness

Subjective: Chief Complaint/History of Present Illness: A 40-year-old left-handed woman complains of two-month numbness in her right thumb and index finger. She is employed as a typist.

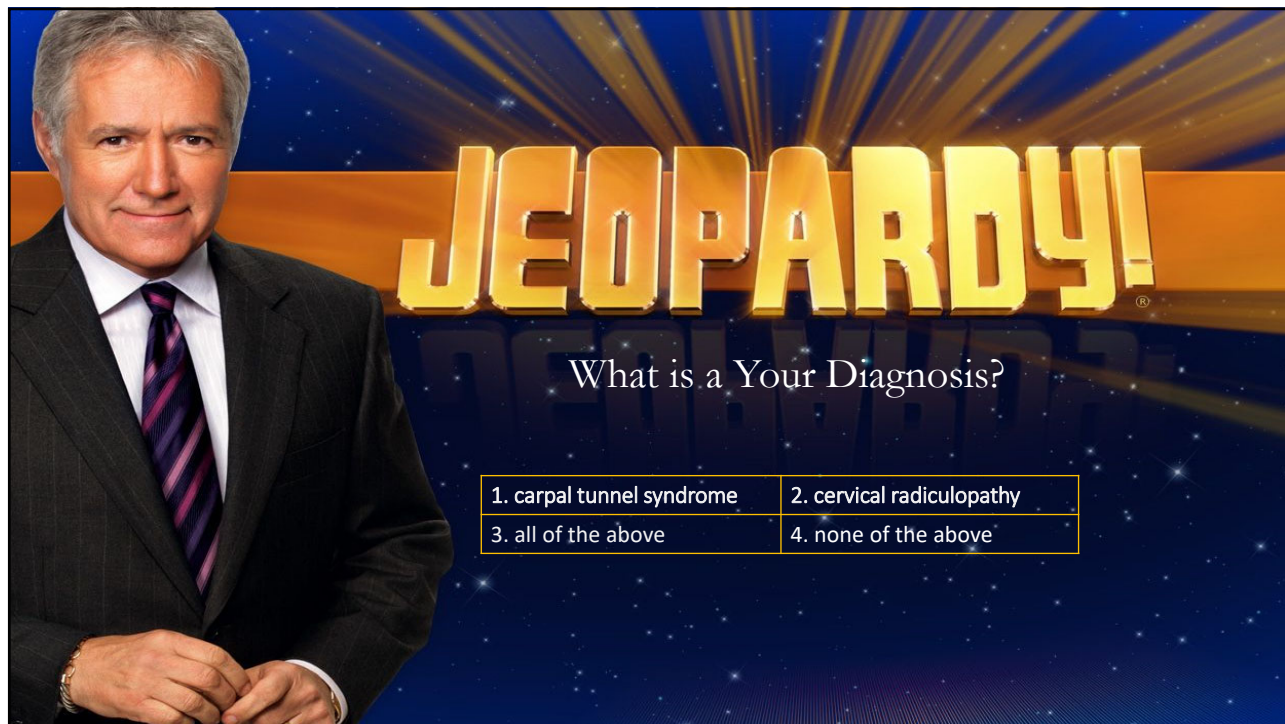
Objective: Examination (and Diagnostic Studies if any): Reported decreased sensation to light touch in the right thumb and index finger.

(Assessment):

(Plan):

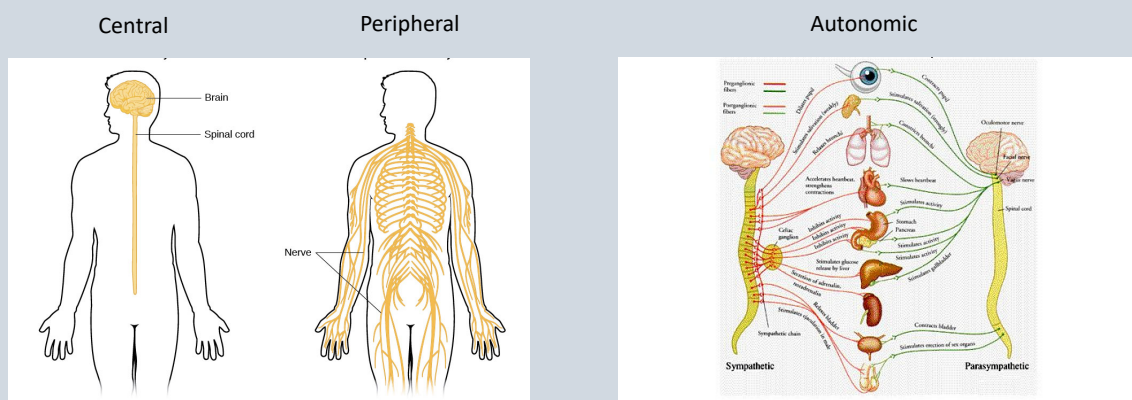
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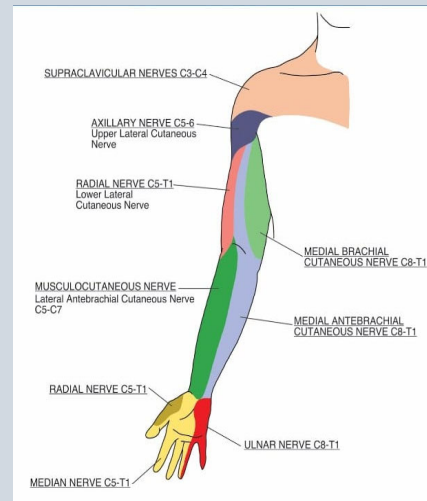
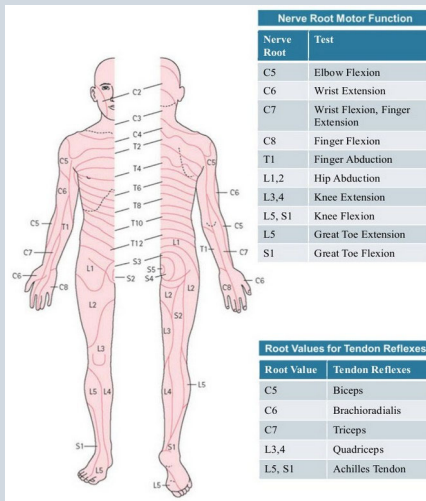
Central, Peripheral, and Autonomic Nervous Systems



36

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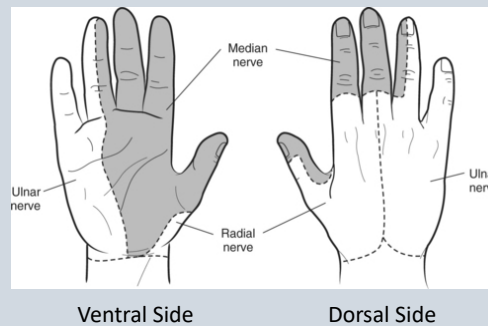
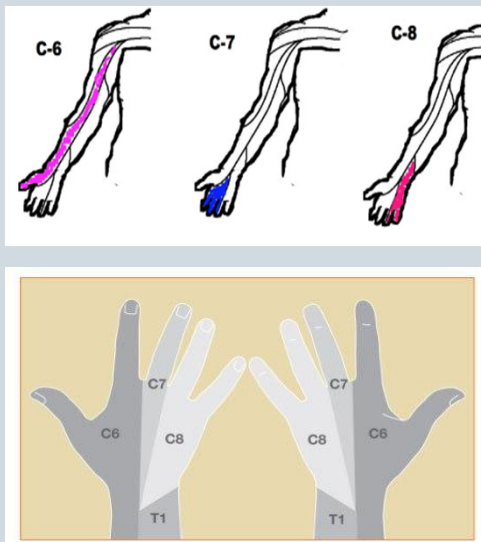
Dermatomes, Myotomes, and Peripheral Nerves



37

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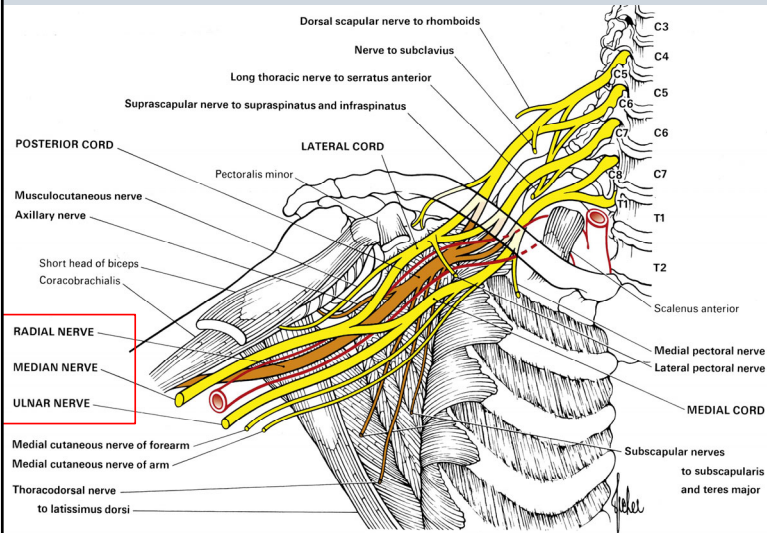
Dermatome vs. Peripheral Nerve Distribution



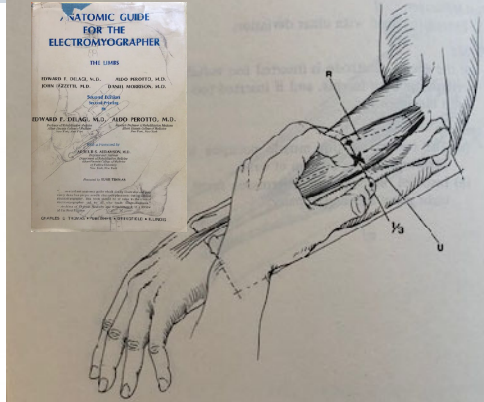
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Spaghetti: Brachial Plexus



Extensor Digitorum Communis and Extensor Digiti Quinti Proprius



Innervation

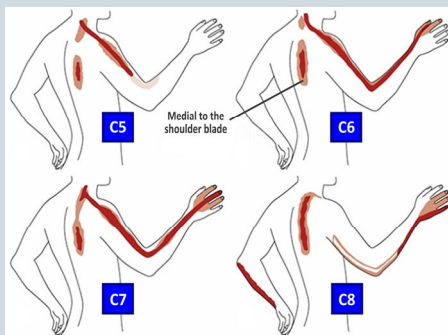
Posterior Interosseus Nerve, Radial Nerve, Posterior Cord, Posterior Division, Middle and Lower Trunk, C7,C8

39

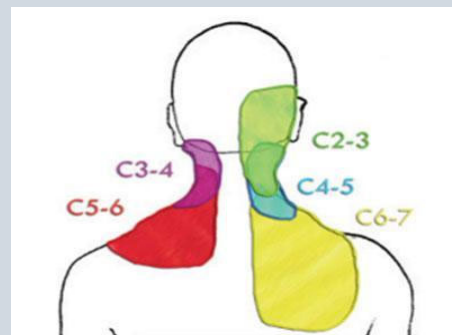
39

The “yin-yang” of Neck Pain

Radiculopathy (“Pinched Nerve”)



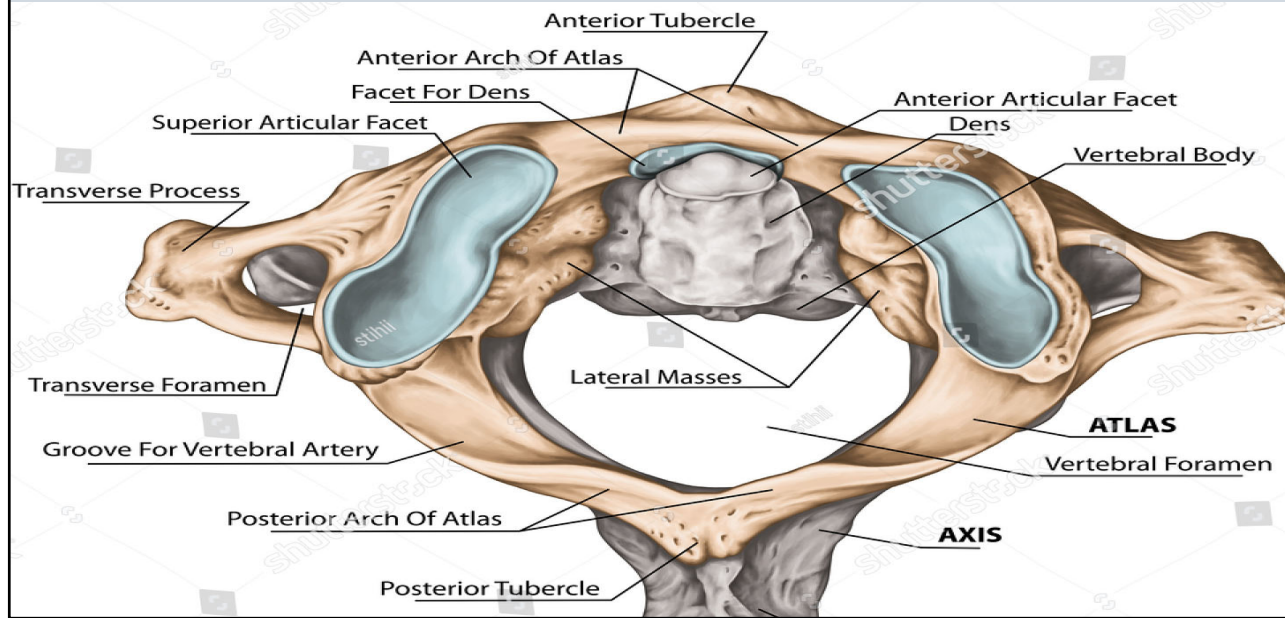
Axial or Referred Pain



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Cervical Spine Anatomy

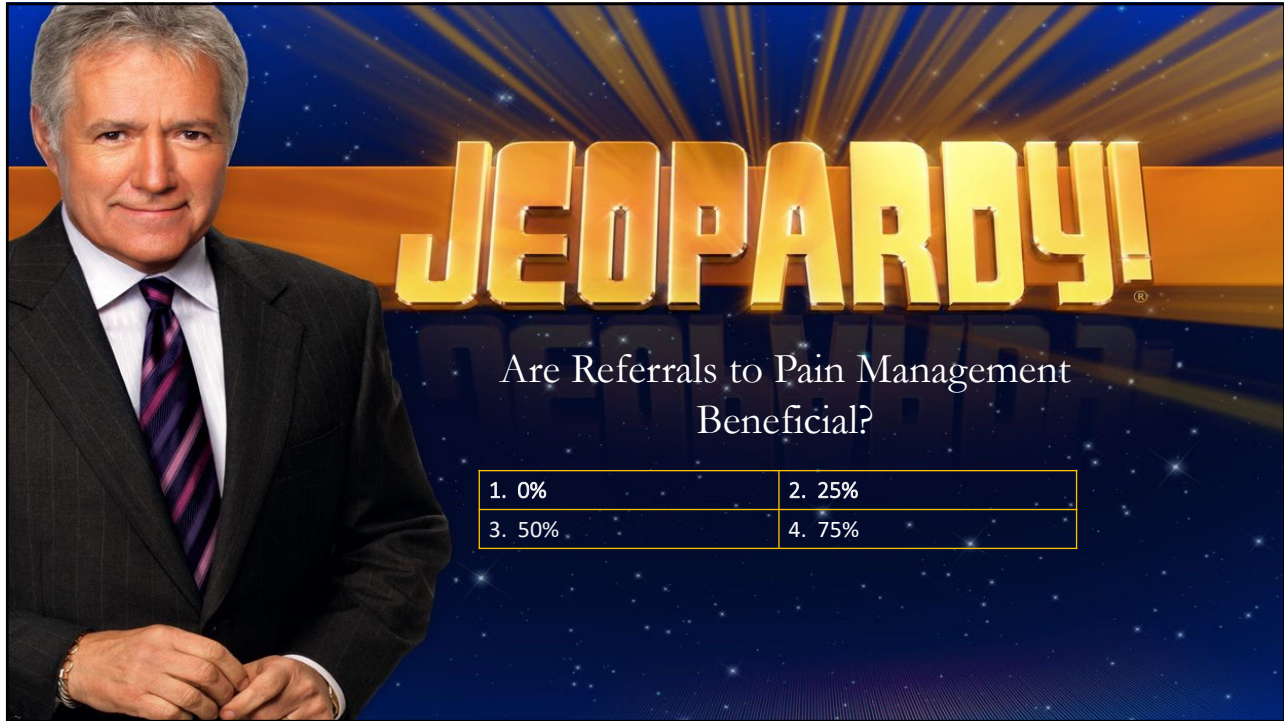


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Cervical Spine Anatomy

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JEOPARDY!

Are Referrals to Pain Management Beneficial?

1. 0%	2. 25%
3. 50%	4. 75%

43

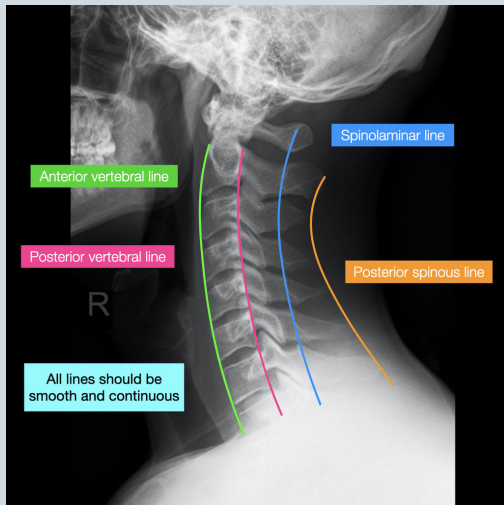


Cervical Spine
Conditions and Injuries

44

44

The Natural Degeneration of the Spine: Which one is painful?



45

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JEOPARDY!

Which one hurts?

1. left x-ray	2. right x-ray
3. left and right x-rays	4. unknown

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“Loss of the Normal Cervical Lordosis”

In the x-rays below, the green line represents normal spine alignment while the red line highlights abnormal deterioration and misalignment over time

NORMAL

ABNORMAL

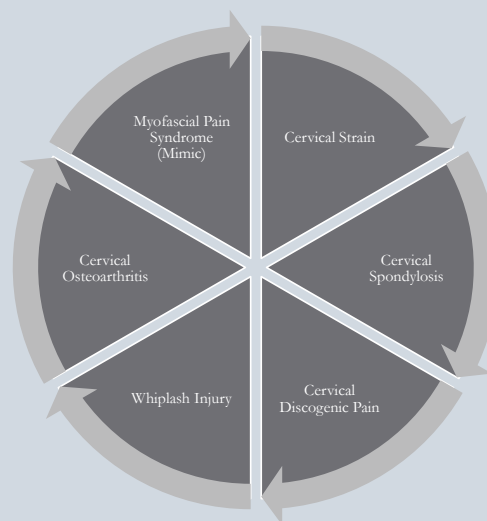


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Compressive Cervical Radiculopathy a.k.a. “Pinched Nerve”

1. Herniated Disc
2. Cervical Spondylosis with Foraminal Stenosis and Nerve Root Impingement
3. Cervical Spondylotic Myelopathy

The Other Stuff (a.k.a. The Usual Suspects)

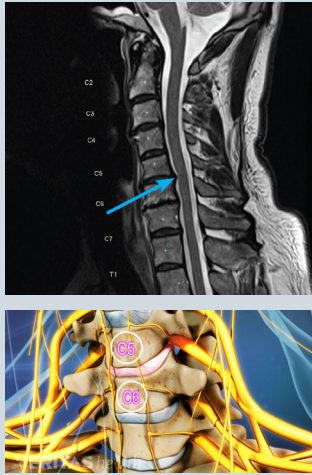


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Compressive Cervical Radiculopathy “Pinched Nerve”

Disc Herniation C6



Cervical Spondylosis



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Symptoms and signs of cervical root lesions

Root	Pain	Numbness	Weakness	Reflex-affected
C5	Neck, shoulder, scapula	Lateral arm (in distribution of axillary nerve)	Shoulder abduction, external rotation, elbow flexion, forearm supination	Biceps, brachioradialis
C6	Neck, shoulder scapula, lateral arm, lateral forearm, lateral hand	Lateral forearm, thumb and index finger	Shoulder abduction, external rotation, elbow flexion, forearm supination and pronation	Biceps, brachioradialis
C7	Neck shoulder, middle finger, hand	Index and middle finger, palm	Elbow and wrist extension (radial), forearm pronation, wrist flexion	Triceps
C8	Neck shoulder, medial forearm, fourth and fifth digits, medial hand	Medial forearm, medial hand, fourth and fifth digits	Finger extension, wrist extension (ulnar), distal finger flexion, extension, abduction and adduction, distal thumb flexion	None
T1	Neck, medial arm and forearm	Anterior arm and medial forearm	Thumb abduction, distal thumb flexion, finger abduction and adduction	None

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The Spurling's Maneuver



Maximum Cervical Compression Test

Foraminal Compression Test
Spurling's Test



51

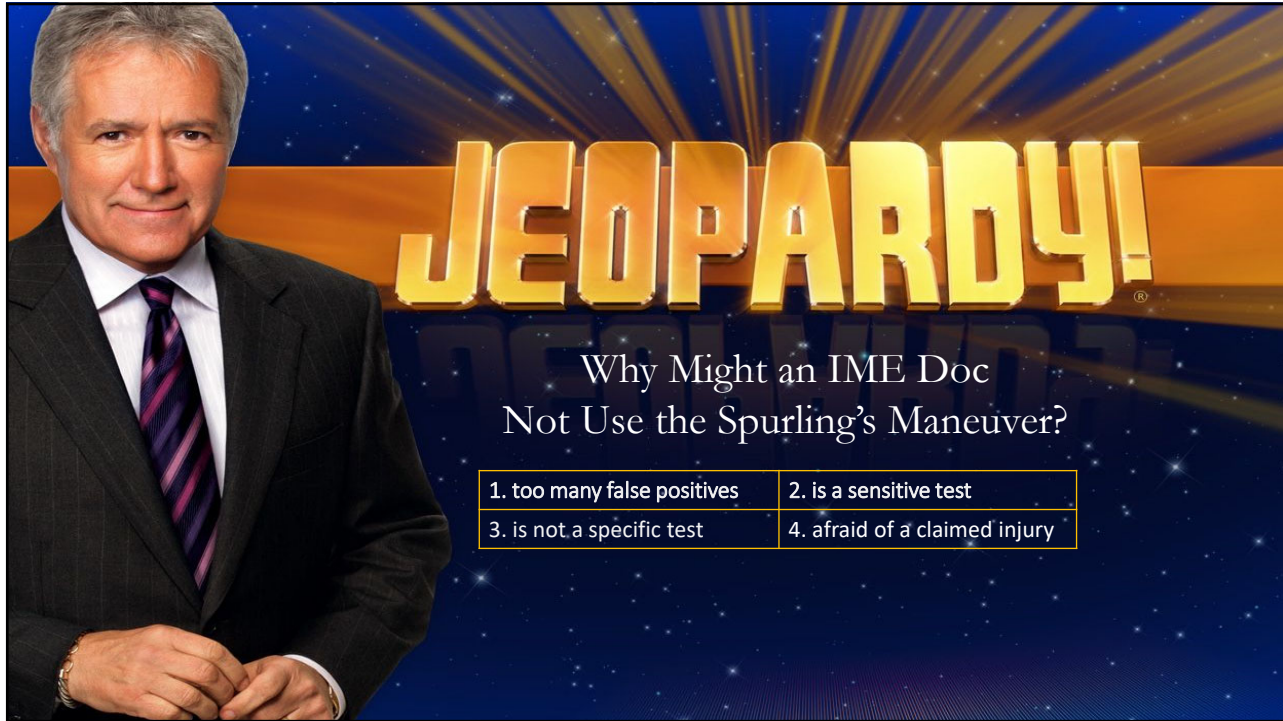
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The Spurling's Maneuver



52

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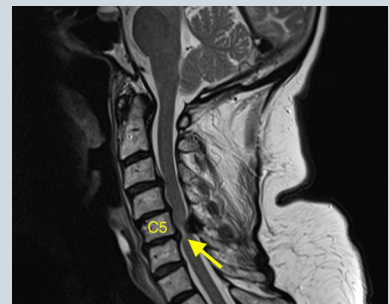
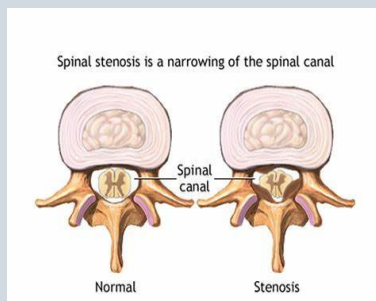


Why Might an IME Doc Not Use the Spurling's Maneuver?

1. too many false positives	2. is a sensitive test
3. is not a specific test	4. afraid of a claimed injury

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Cervical Spinal Stenosis and Myelopathy

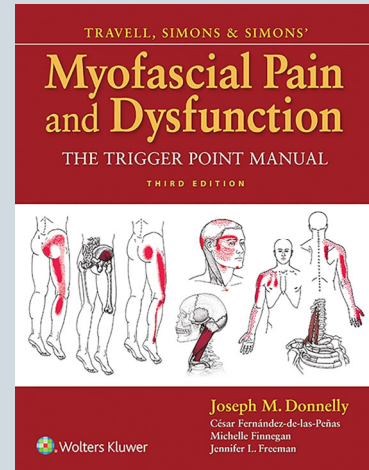
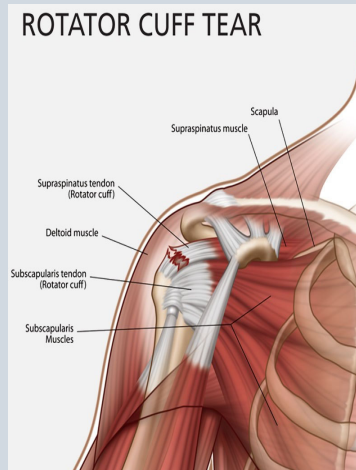


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Musculoskeletal Mimics of Cervical Radiculopathy

- Shoulder
- Elbow
- Forearm
- Wrist/Hand
- Myofascial Pain Syndrome
- Vascular and Autonomic



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Differential Diagnosis of Cervical Radiculopathy vs. the Musculoskeletal Mimics

Differential Diagnosis of Cervical Radiculopathy

Muscle Weakness
Loss of Reflex
Dermatomal Sensory Loss

Spurling's Positive
Neck Traction Test

CT Positive
MRI Positive
Needle EMG/NCS Positive

Differential Diagnosis of Musculoskeletal Mimics of Cervical Radiculopathy

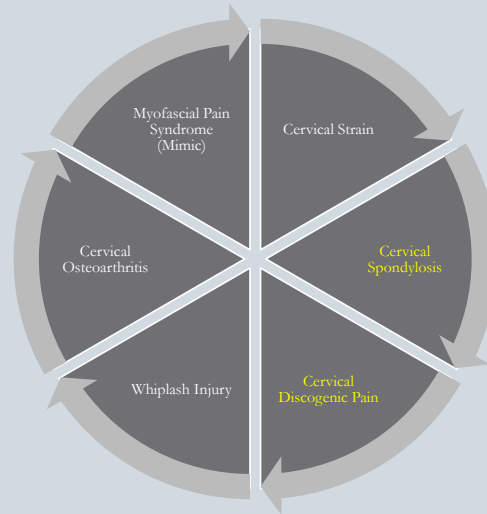
Tenderness to Palpation

Relief with Targeted Injection at Site of Pathology
Painful or Change in ROM

56

56

Remember the “Other Stuff?”

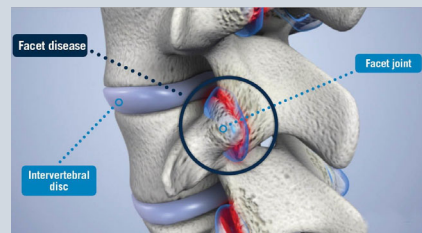
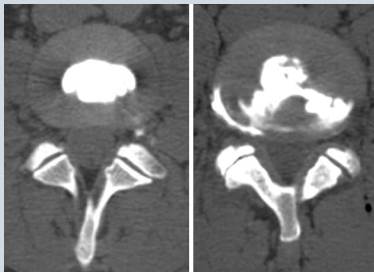


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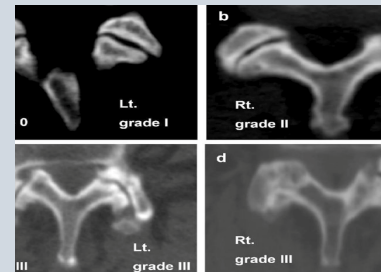
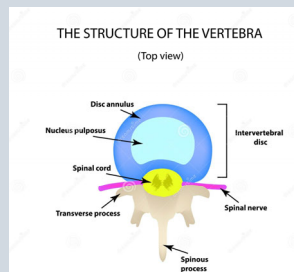
57

Degeneration of the Intervertebral Discs and the Facets

Internal Disc Disruption (IDD) of the Intervertebral Disc



Spondylosis of the Facet Joints (Zygapophysial Joints)

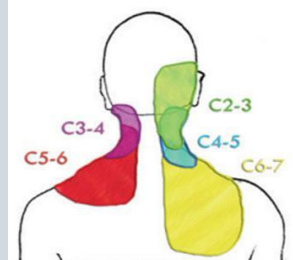


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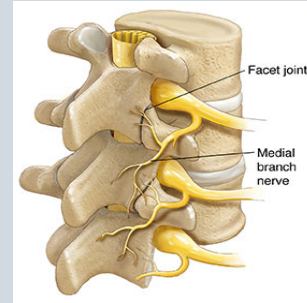
58

Axial and/or Referred Pain Facet Joints or Intervertebral Discs?

Discogenic Pain?



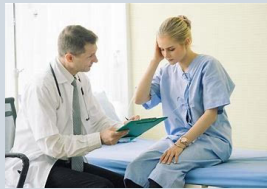
Spondylosis: Facet Joint Pain?



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Evidenced-Based Medical Treatment for Neck Pain



- Reassurance and Education (advice)
- Remain Active (advice)
- Encourage Physical Exercise (advice)
- Continue/return to work (advice)

Brown's Based Medical Treatment for Neck Pain



- "Keep Calm and Carry On"
- Heat
- Lumbar Roll
- Physical Therapy
- Exercise
- Participate in Something (and Especially if Fun)
- Need for Psychologic and/or Mind-body Therapies? Yoga, Tia Chi, or Qigong
- Don't Smoke
- p.s. Drink a lot of water

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Ornaments



- NSAIDs or Acetaminophen
- Manipulation
- Dry Needling and Trigger Point Injections
- Massage Therapy
- Acupuncture
- **Cervical Medial Branch Blocks and Percutaneous Radiofrequency neurotomy?**

Waste of Time and Money



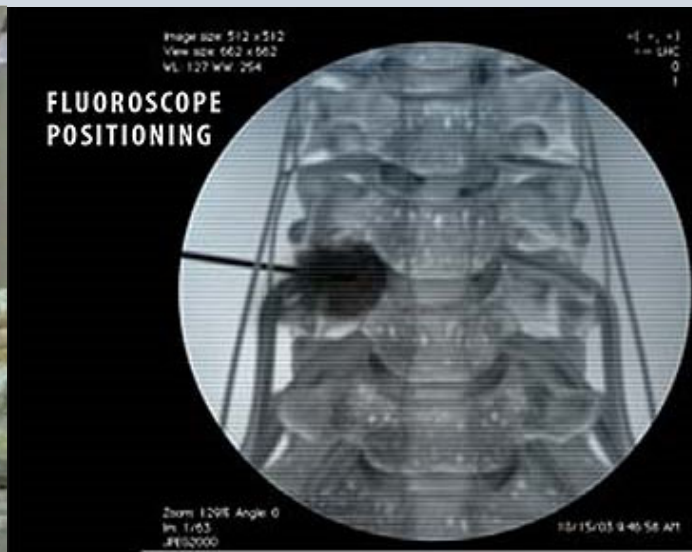
- Cervical Collar
- Laser Therapy
- Cervical Traction
- Botulinum Toxin Injections
- Transcutaneous Electrical Nerve Stimulation
- Electromagnetic Therapy
- Surgical Intervention for Persistent Nonradicular Neck Pain

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Your Chances of Being Killed by a Goat
are Low but Never Zero



Risks of a Cervical Epidural Steroid Injection



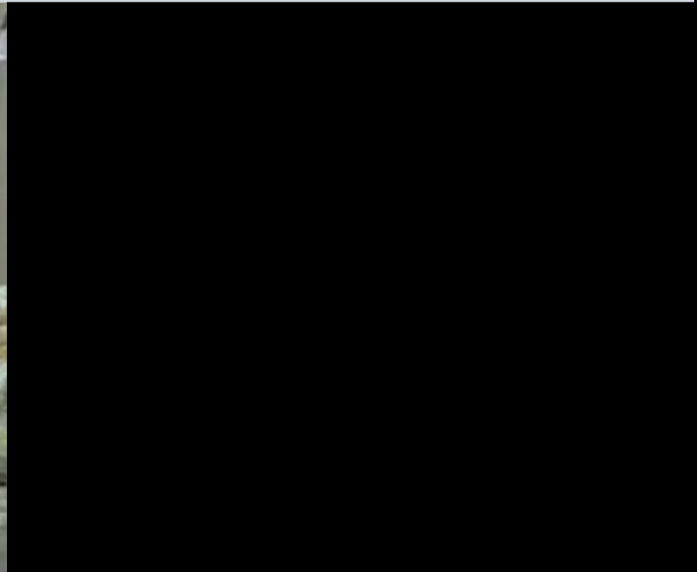
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62

Your Chances of Being Killed by a Goat
are Low but Never Zero



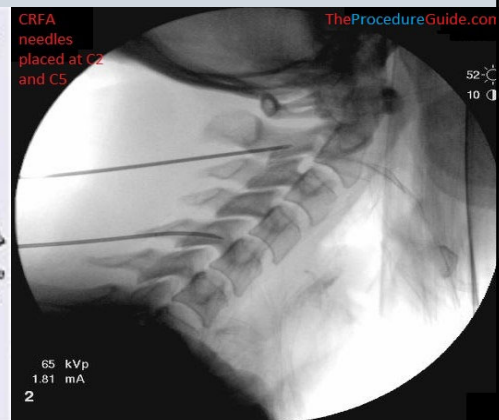
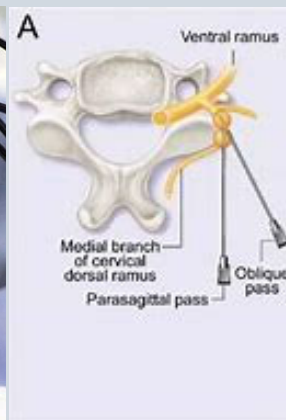
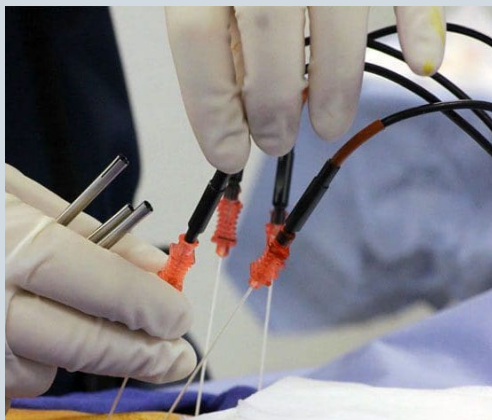
Risks of Cervical Epidural Steroid Injection



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Cervical Spine Medial Nerve Ablations (RFA)



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