1. **The Cost-Effectiveness Paper…Now What?**

2. **Value-Based Modeling: Secrets from a Medical Director? Are you ready?**

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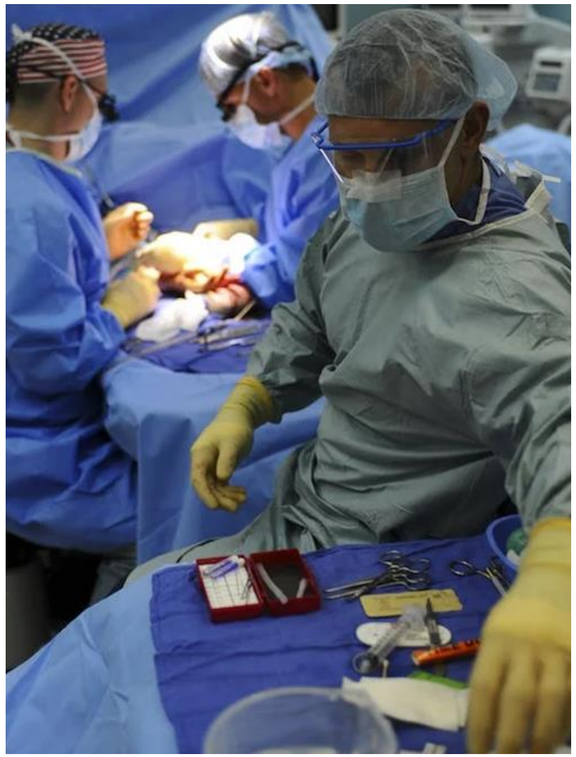
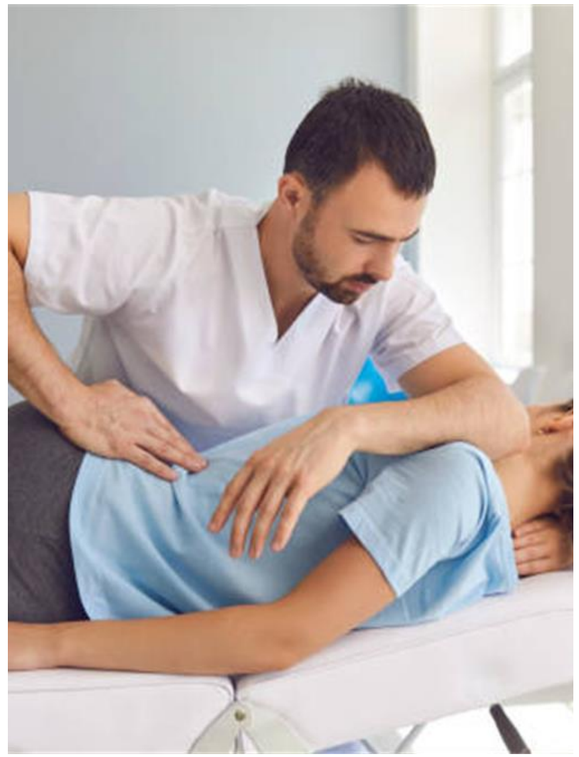
Presenter:

Dr. Ronald J. Farabaugh

Georgia Chiropractic Association website access:

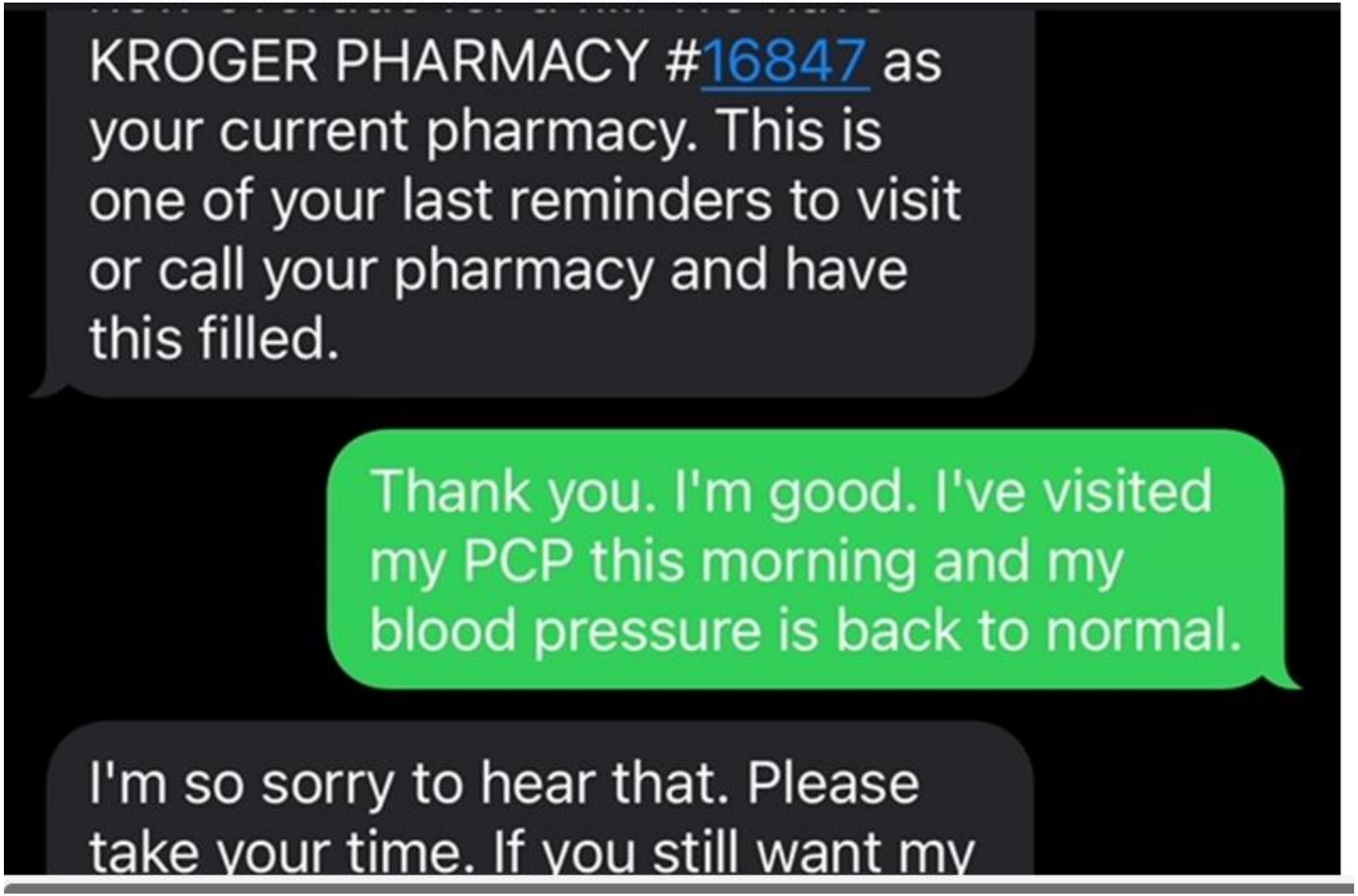
The Cost-Effectiveness paper completed…*Now what?*

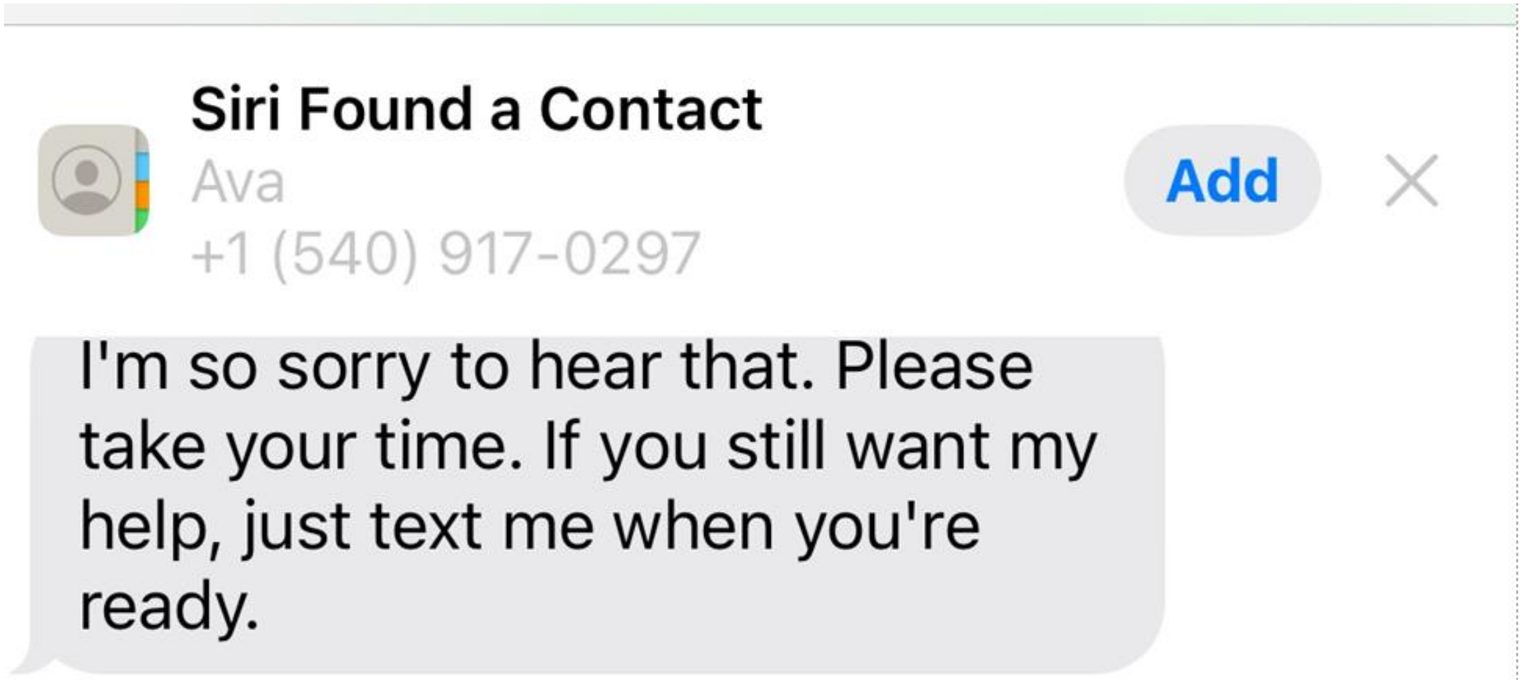




Conservative Care versus Medical Care

The “Why” Behind the Paper


KROGER PHARMACY #16847 as your current pharmacy. This is one of your last reminders to visit or call your pharmacy and have this filled.
Thank you. I'm good. I've visited my PCP this morning and my blood pressure is back to normal.
I'm so sorry to hear that. Please take your time. If you still want my


Siri Found a Contact
Ava
+1 (540) 917-0297
Add
I'm so sorry to hear that. Please take your time. If you still want my help, just text me when you're ready.

We're committed to your health Ronald. Have questions or need help with this refill? If so, I can put you in contact with your pharmacy now. Let me know a good time to connect you. - Ava. If not, you can text STOP to opt-out of these reminders.

June 3, 2024

Wed, Jun 5 at 3:45 PM

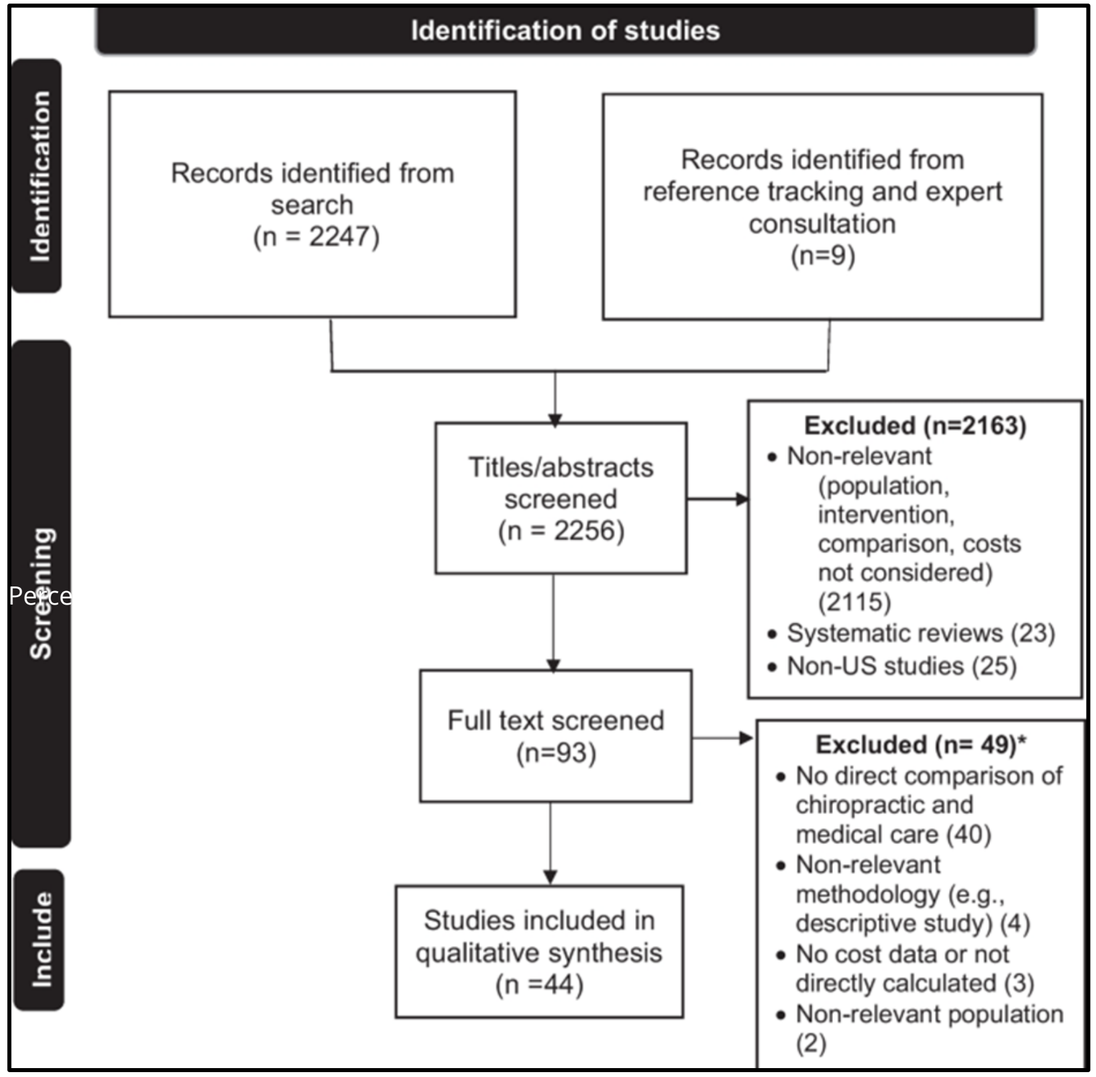
Hi again, this is your friendly update on your missed medication refill. You can call or visit KROGER PHARMACY #16847 to refill LOS****. I can also help connect you to KROGER PHARMACY #16847. Just give me a time that works.

Georgia Chiropractic Association: Discount Code = gachiro2024

Cost of chiropractic versus medical management of adults with spine-related musculoskeletal pain: a systematic review.

Farabaugh et al. Chiropractic & Manual Therapies (2024) 32:8

https://doi.org/10.1186/s12998-024-00533-4 SYSTEMATIC REVIEW



https://chiromt.biomedcentral.com/articles/10.1186/s12998-024-00533-4

Use QR code to access the paper directly through the Journal of Chiropractic and Manual Therapy.

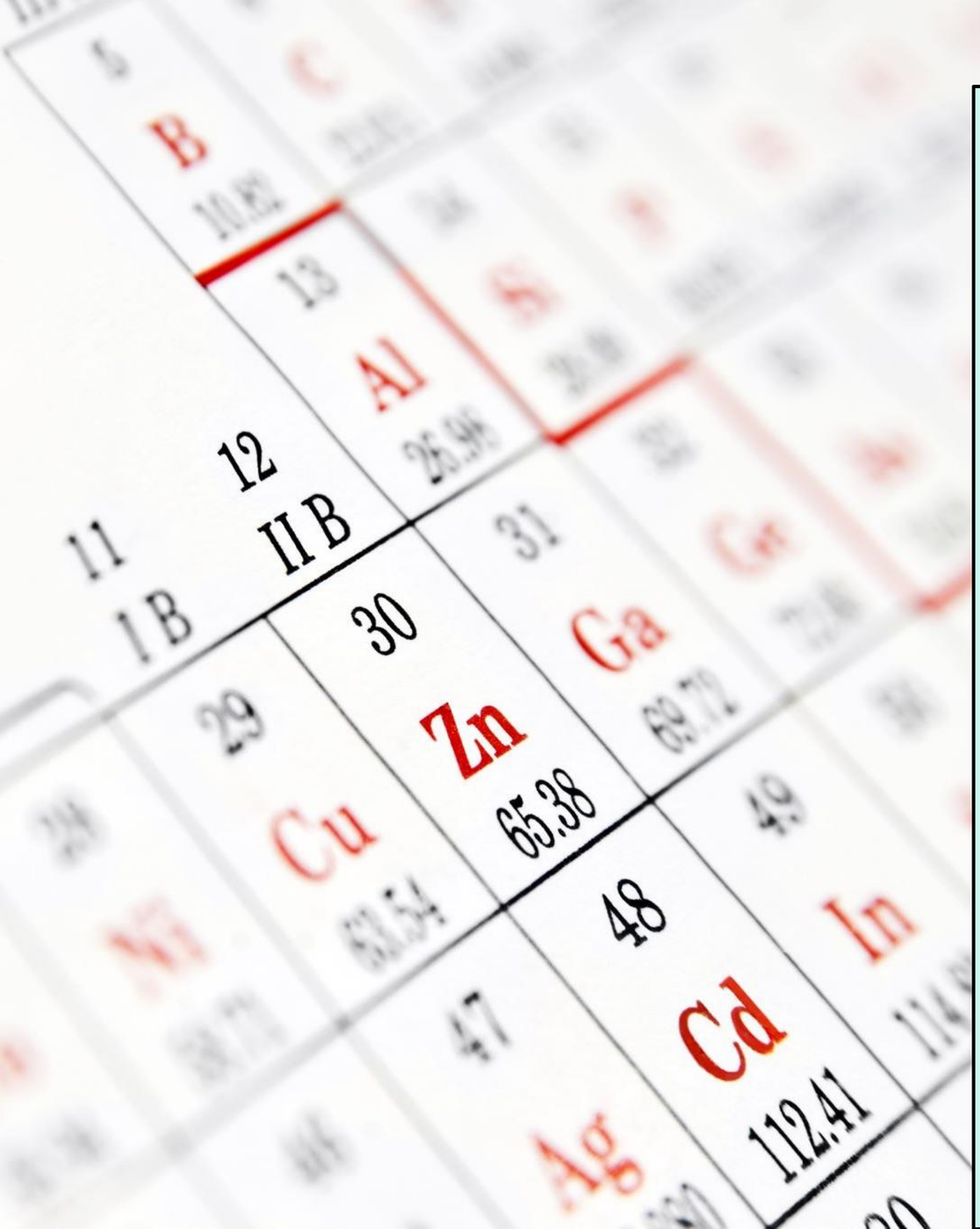
https://chiromt.biomedcentral.com/articles/10.1186/s12998-024-00533-4

Research Question:

- ***Is chiropractic management of spine-related musculoskeletal pain in U.S. adults associated with lower overall healthcare costs as compared to medical care?***

- **PICO:** To answer the research question, we formulated PICO elements (Population, Intervention, Comparison, Outcome) as follows:

  - ***P: U.S. adults with spine-related musculoskeletal pain***
  - ***I: Chiropractic management***
  - ***C: Medical care***
  - ***O: Healthcare costs and use of procedures estimated to increase***



Summary of Tables

- **Table 1.** Included studies, by study design and first author.
  - 4-Prospective cohort studies
  - 22-Cohort studies (retrospective/cross-sectional)
  - 17-Cost studies
  - 1-Randomized controlled trial
- **Table 2.** Summary of included studies 2018-2022

  17
- **Table 3.** Summary of included studies 1991-2017

  27
- **Table 4. Summary of findings for chiropractic management vs medical management, by year of publication.**

  44

- **Table 5 Association of chiropractic care with factors affecting costs, by study.**
  - **Green= chiropractic associated with either lower cost OR lower utilization**
  - **Yellow = cost OR utilization did not significantly differ between groups**
  - **Red= chiropractic associated either higher cost OR higher utilization**
  - **White = study did not evaluate this cost type OR utilization**

Table 5 Association of chiropractic care with factors affecting costs, by study

		Types of Cost					Factors Affecting Cost							
Author Lastname	Publication Year	Total Cost	Cost per episode of care	Insurance/ compensation cost	Long-term healthcare costs	Office visit costs	Diagnostic imaging	Opioids	Surgery	Hospitalization	DC as 1st provider	Injection procedures	Specialist visits	Emergency Department visits
Bezdjian (29)	2022													
Harwood (5)	2022													
Jin (36)	2022													
Whedon (9)	2022													
Anderson (27)	2021													
Anderson (28)	2021													
Davis (30)	2021													
Whedon (42)	2021													
Louis (39)	2020													
Davis (31)	2019													
Kazis (37)	2019													
Rhon (12)	2019													
Hong (33)	2017													
Fritz (32)	2016													
Hurwitz (35)	2016													
Leininger (52)	2016													
Weeks (40)	2016													
Weeks (41)	2016													
Keeney (26)	2013													
Graves (25)	2012													
Liliedahl (38)	2010													
Grieves (47)	2009													
Haas (48)	2005													
Nelson (54)	2005													
Legorreta (51)	2004													
Phelan (55)	2004													
Stano (61)	2002													
Smith (57)	1997													
Mosely (53)	1996													
Stano (62)	1996													
Carey (23)	1995													
Shekelle (56)	1995													

Types of Costs

- Total Costs
- Costs per episode of care
- Insurance/compensation costs
- Long-term healthcare costs
- Office visits costs

Types of services

Less use of advanced diagnostic imaging
Less opioid use
Fewer surgeries
Less hospitalizations
Fewer injection procedures
Fewer specialist visits including surgeon referrals
Fewer emergency department visits
Less downstream costs when chiropractor is 1st provider seen

What is the biggest mistake made by those concerned about costs (ex. Payors, entities which takes risk?)

Concepts:
Single vs dynamic forecasting!

In the **Carey** study DCs had higher costs per episode, but “why”?

Answer:

- DC serves as both the diagnostician + treating provider or therapist

The PCP visit is just the tip of the medical iceberg!

Initial SMT:

30% decrease in risk of imaging, injections or back surgery vs no SMT

Anderson BR, McClellan SW. Three Patterns of Spinal Manipulative Therapy for Back Pain and Their Association With Imaging Studies, Injection Procedures, and Surgery: A Cohort Study of Insurance Claims. J Manipulative Physiol Ther. 2021;44(9):683-9.

For both short and long -term prescriptions:

Conclusions:

Initial visits to chiropractors are associated with substantially decreased early and long-term use of opioids.

Incentivizing use of conservative therapists may be a strategy to reduce risks of early and long-term opioid use.

Kazis LE, Ameli O, Rothendler J, Garrity B, Cabral H, McDonough C, et al. Observational retrospective study of the association of initial healthcare provider for new-onset low back pain with early and long-term opioid use. BMJ open. 2019;9(9):e028633.

Risk for filling opioid prescription 56% lower for DC (hazard ratio 0.44)

Whedon JM, Uptmor S, Toler AWJ, Bezdjian S, MacKenzie TA, Kazal LA, Jr. Association between chiropractic care and use of prescription opioids among older medicare beneficiaries with spinal pain: a retrospective observational study. Chiropr Man Therap. 2022;30(1):5.

Cost of episodes with initial DC, adjusted for risk, were 20% less than with initial MD.

Liliedahl RL, Finch MD, Axene DV, Goertz CM. Cost of care for common back pain conditions initiated with chiropractic doctor vs medical doctor/doctor of osteopathy as first physician: experience of one Tennessee-based general health insurer. J Manipulative Physiol Ther. 2010;33(9):640-3.

Mean LBP care long-term costs with OAT 58% lower than SMT.

Total long-term costs 1.87 times higher for OAT

Whedon JM, Kizhakkeveettil A, Toler A, MacKenzie TA, Lurie JD, Bezdjian S, et al. Long-Term Medicare Costs Associated With Opioid Analgesic Therapy vs Spinal Manipulative Therapy for Chronic Low Back Pain in a Cohort of Older Adults. J Manipulative Physiol Ther. 2021;44(7):519-26.

Recommendations:

- **When considering this evidence, it may be in society's best interest for U.S. healthcare organizations and governmental agencies to consider modifying benefit designs to reduce barriers to access to chiropractic providers.**

- **Modifying or eliminating pre-authorization requirements, medical doctor gatekeepers, arbitrary visit limits, co-pays and deductibles may all be considered.**

- **Eliminating these barriers would allow easier access to chiropractic services, which based on currently available evidence consistently demonstrate reduced downstream services and associated costs.**

Conclusions

- **Patients with spine-related musculoskeletal pain who consulted a chiropractor as their initial provider incurred substantially decreased downstream healthcare services, and associated costs, resulting in lower overall healthcare costs compared with medical management.**
- **A primary limitation was related to the heterogeneity and sample sizes of the populations and retrospective data sets.**
- **While observational studies cannot prove causation, the recurrent theme of the data seems to support the utilization of chiropractors as the initial provider for an episode of spine-related musculoskeletal pain.**
- **Future studies using randomized designs will be helpful in clarifying and validating this trend.**

What are main take-aways from the Cost Effectiveness paper?

#1:

When patients use doctors of chiropractic, downstream services and associated costs are significantly reduced

#2:

Who the patient visits first matters!

Using chiropractic from the onset of an episode will reduce costs overall, not just costs related to chiropractic!!

So, we now have the ammo to fight against an unjust system! The question is, where do point our cannons?

Who will lead this fight for services expansion?

Any entity who is taking RISK!

1. Payors (not all of their book of business is at risk, but a significant % is making payors a suitable market. But who do you take that paper to?

    a) Medical director (little influence on plan design)

    b) Chief financial officer

    c) Actuarial companies/consultants providing the payors advice on benefit structure.

    d) Sales force.

    e) Payor clients (ex. Large self-insured employers, hospital systems, etc.)

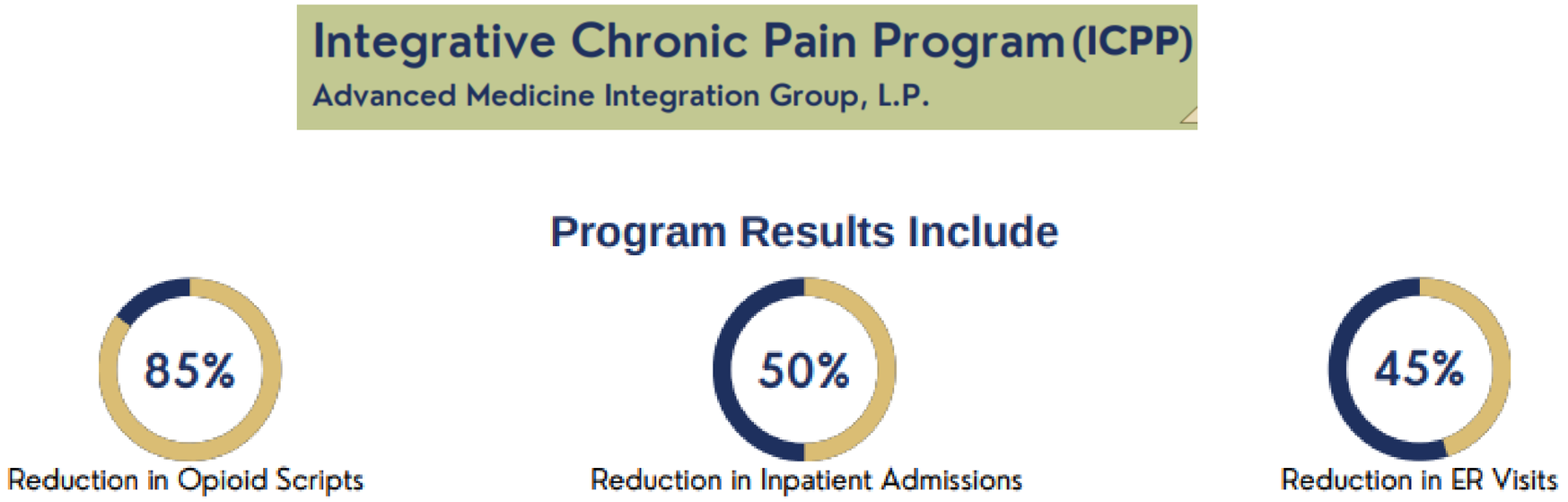
2. Medicaid in each state

3. Medicare

4. Employers
5. Unions
6. Legislators: local, state and federal
7. The VA
8. DoD
9. The Media, local, state, federal.
10. Large medical groups who also take risk.
11. Foundation for Chiropractic Progress (Sherry McAllister)

Bringing the Paper alive with program data!

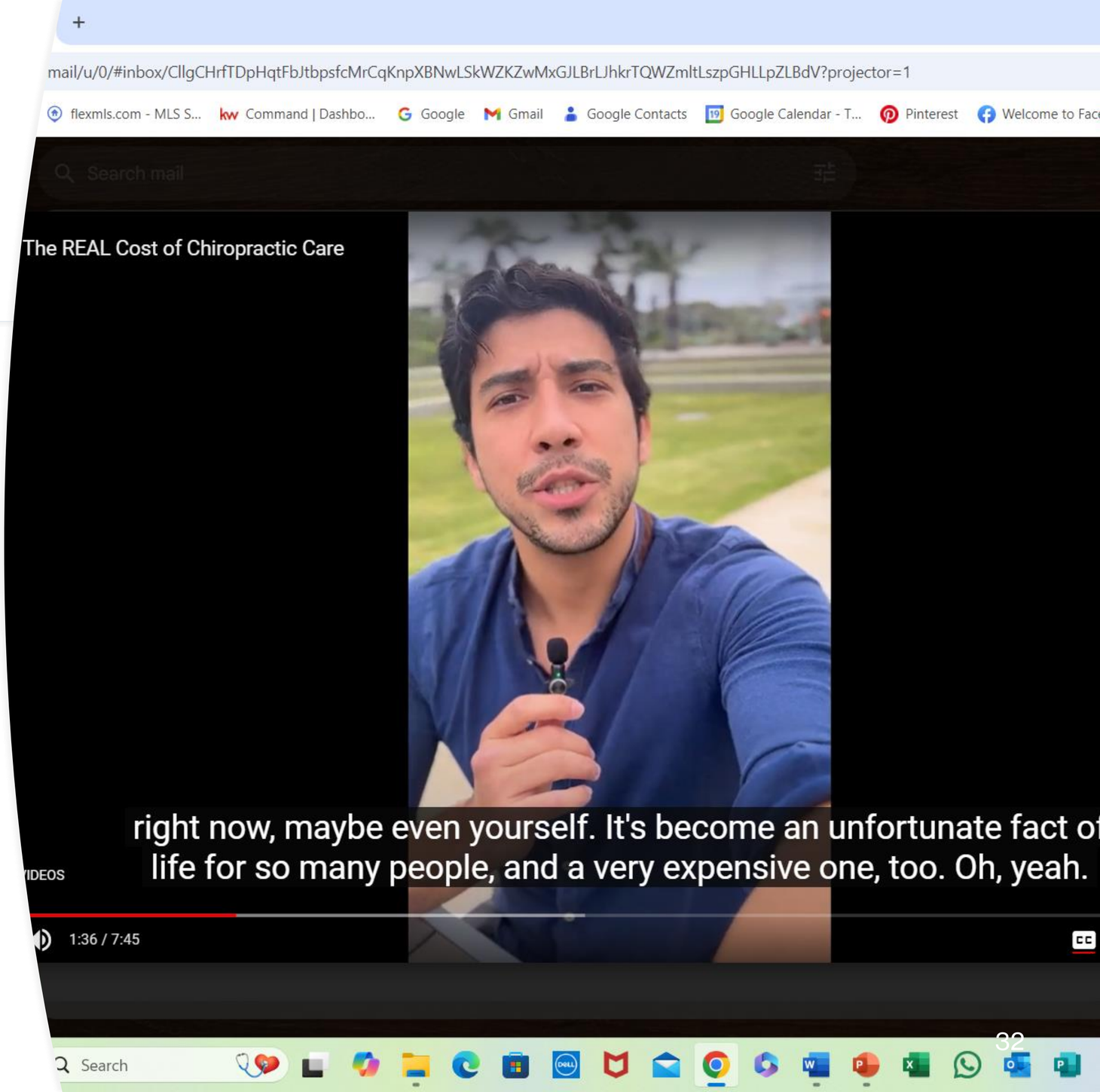
- Imagine adding a benefit that never existed! Further, imagine a world in which not only can DCs continue to treat severe chronic pain Medicaid patients, but also get paid well for doing so!!



Patient Education

- https://youtu.be/ZZdFxeJw0MY

The Magic of Artificial Intelligence



I WILL!!

DONE!!

THANK YOU

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Rfarabaugh@amibestmed.com

This lecture was sponsored by AMI Group and SideCar (Nathan Unruh-CEO)

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SIDECAR

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Value-Based Healthcare
Are you prepared?

Medical Director Insights on How to Reduce Friction and Stress Related to Insurance!

A glimpse behind the curtain of the insurance industry! What are they looking for in billing?

Of course, you get great outcomes…but at what cost?

- **The tale of two DCs!**
  (One lost….one thriving.)
- **Lessons from a referring PCP.**

Farabaugh Chiropractic Office

Quality Chiropractic Services Since 1982

About Dr. Farabaugh

- Past President-**Central Ohio Chiropractic Association**
- Past President-**Ohio State Chiropractic Association** (OSCA) 1996-1997
- Past President: **Ohio State Chiropractic Board** 2012-2013
- Appointed by **Governor's Voinovich and Strickland** for various committees and positions.
- Founder: **ChiroLtd and Chiropractic Bootcamp** seminars
- Past Chairman-The **Clinical Compass** (formerly the Council on Chiropractic Guidelines and Practice Parameters (CCGPP)
- **Published** ~ 15 papers (Clinical Practice Guidelines-CPGs) and a book chapter, etc.
- 2024 Appointed to The **Scientific Commission**/The Clinical Compass.
- **ODG Advisory Board**
- 2023 to Present: Chairman of **ACA Research Committee**
- Testimony/Expert opinion in over **100 malpractice cases**
- Fellow in **International College of Chiropractors**
- Elected: **CCE Councilor**-Cat. 2-Clinicians
- **AMI-National Physical Medicine Director**

Recommended Care Management Values to Reduce Stress and Friction

1. “If I can help you, I will tell you. If I cannot help you, I will tell you that as well and make a referral!”

2. “Give the patient what they need, and only what they need, always!”

TIP:
Just because you believe care is medically necessary, does not mean that it is within plan design and billable. Read the policy!!

What exactly IS Value-Based Modeling?

Definition:

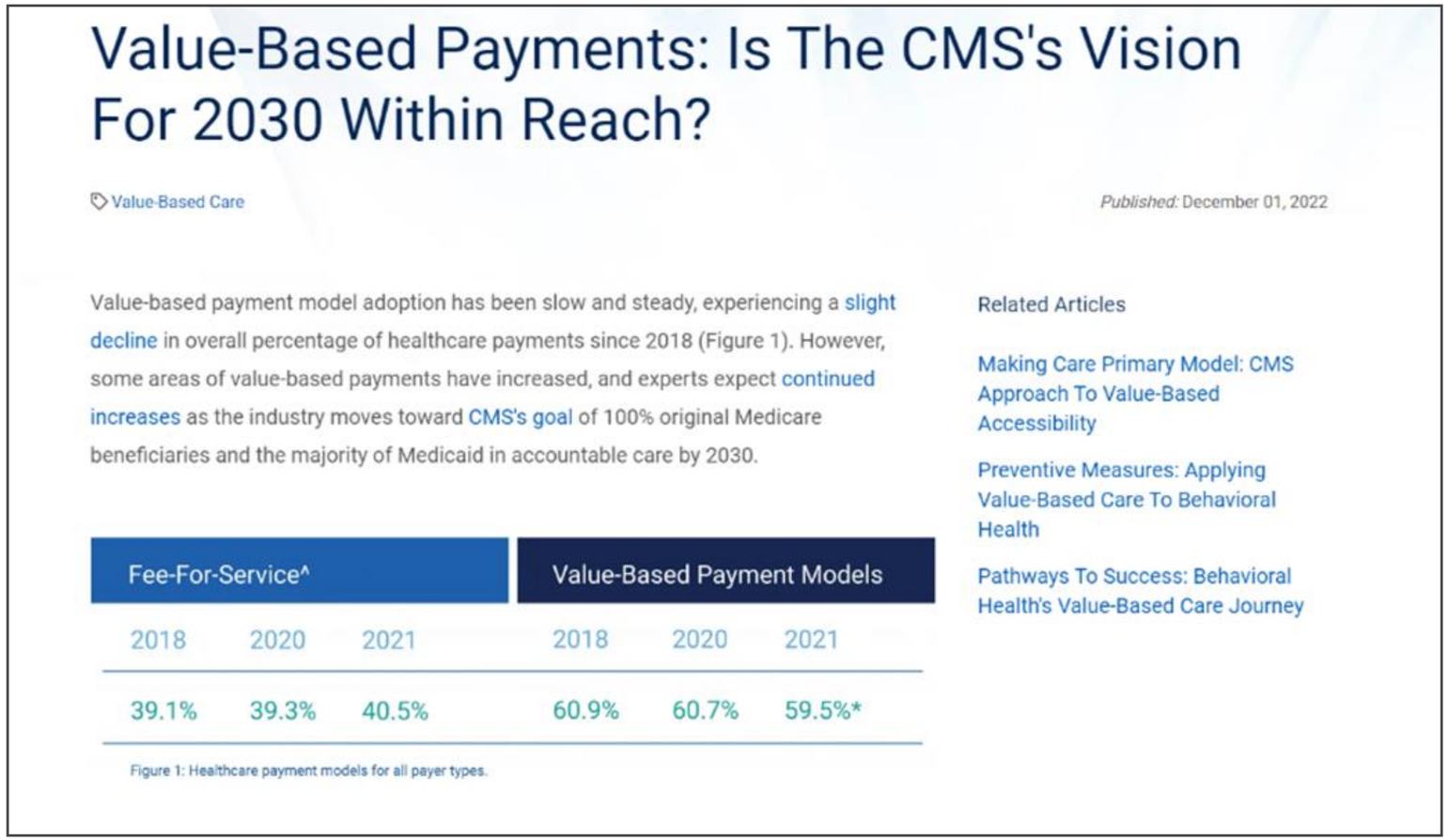
Healthcare reimbursement model that rewards clinically effective and financially efficient patient care.

Question:

What are the rewards?

What will happen to “fee-for-service”?

Value-Based Payments are Coming soon! Are you ready!



Value-Based Payments: Is The CMS's Vision For 2030 Within Reach?

Value-Based Care

Published: December 01, 2022

Value-based payment model adoption has been slow and steady, experiencing a slight decline in overall percentage of healthcare payments since 2018 (Figure 1). However, some areas of value-based payments have increased, and experts expect continued increases as the industry moves toward CMS's goal of 100% original Medicare beneficiaries and the majority of Medicaid in accountable care by 2030.

Fee-For-Service^			Value-Based Payment Models		
2018	2020	2021	2018	2020	2021
39.1%	39.3%	40.5%	60.9%	60.7%	59.5%*

Figure 1: Healthcare payment models for all payer types.

Related Articles

Making Care Primary Model: CMS Approach To Value-Based Accessibility

Preventive Measures: Applying Value-Based Care To Behavioral Health

Pathways To Success: Behavioral Health's Value-Based Care Journey

https://www.cms.gov/priorities/innovation/about/strategic-direction

Where We Are Now: Adoption of Value-Based Payment

The wide variety of current payment models may be categorized along a continuum, from legacy fee-for- service to global capitated payment. The Health Care Payment Learning & Action Network (HCP-LAN) defines four broad categories of payment (adapted in Table 1).[2] Efforts to promote value-based payment focus on moving as many providers and as much revenue as possible to the third and fourth categories.

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Health Care Access & Coverage | Brief

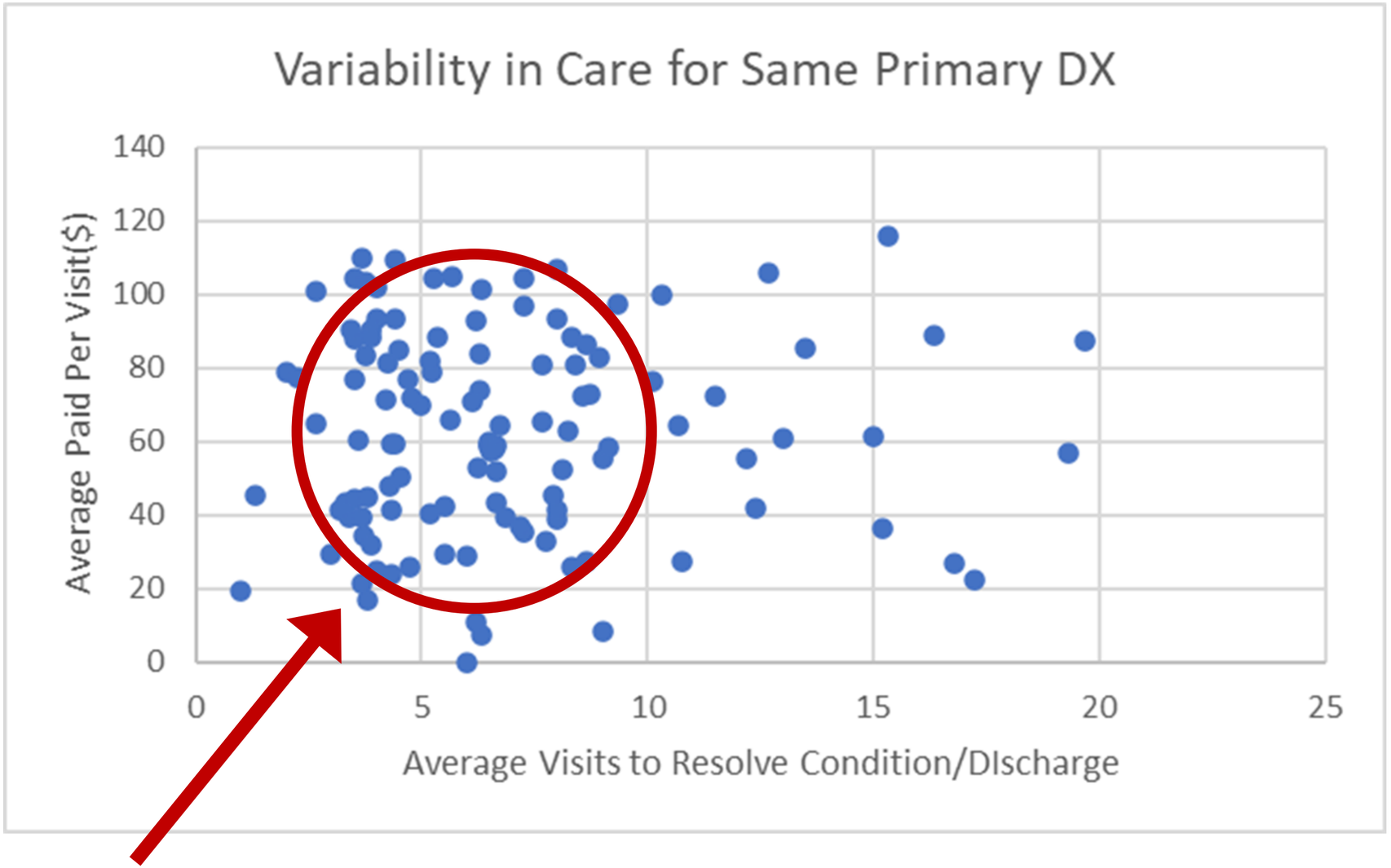
The Future of Value-Based Payment: A Road Map to 2030

White Paper

February 17, 2021

By: Rachel M. Werner, MD, PhD , Ezekiel J. Emanuel, MD, PhD , Hoangmai H. Pham, MD, MPH , and Amol S. Navathe, MD, PhD

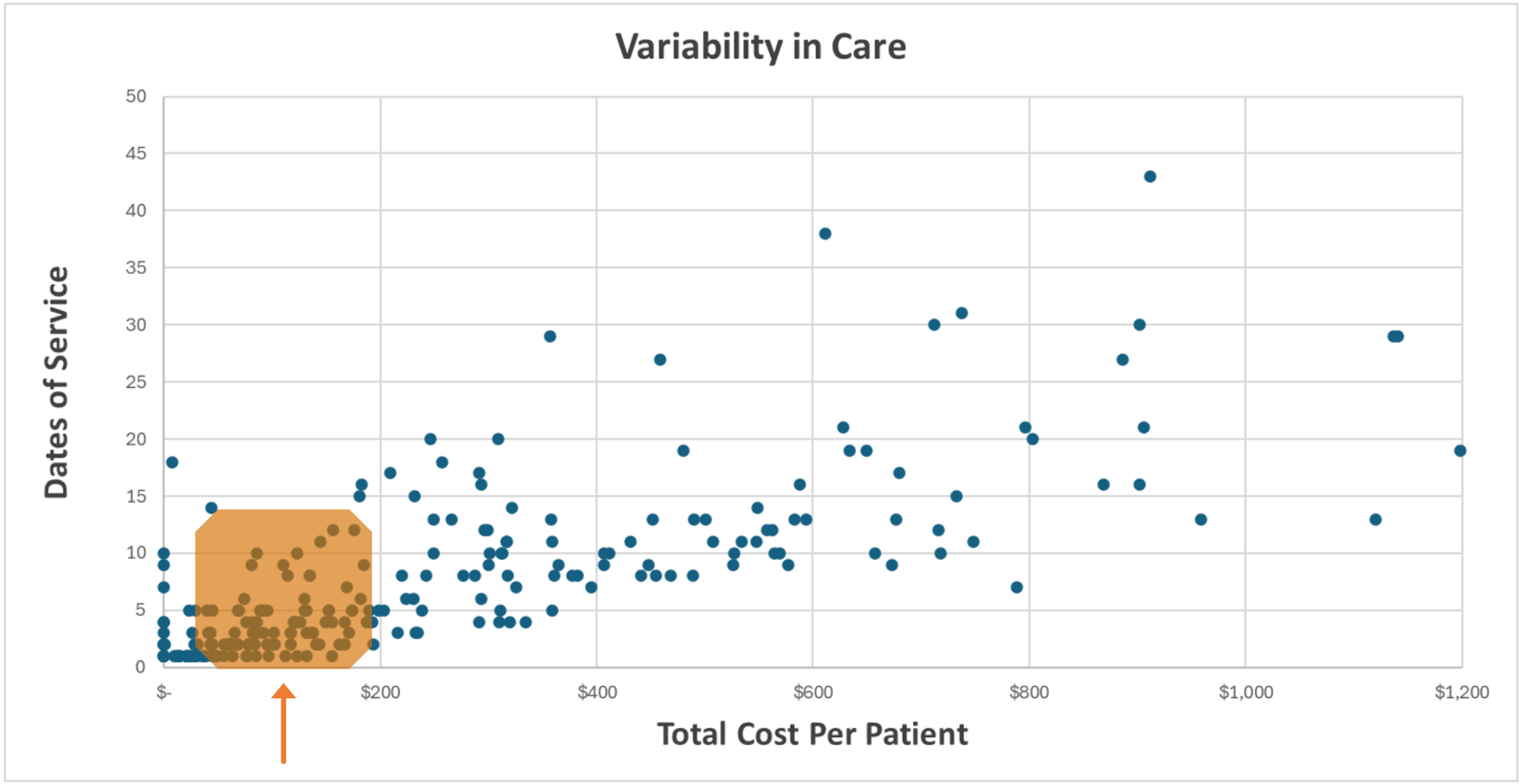
Why do payors struggle with chiropractors?



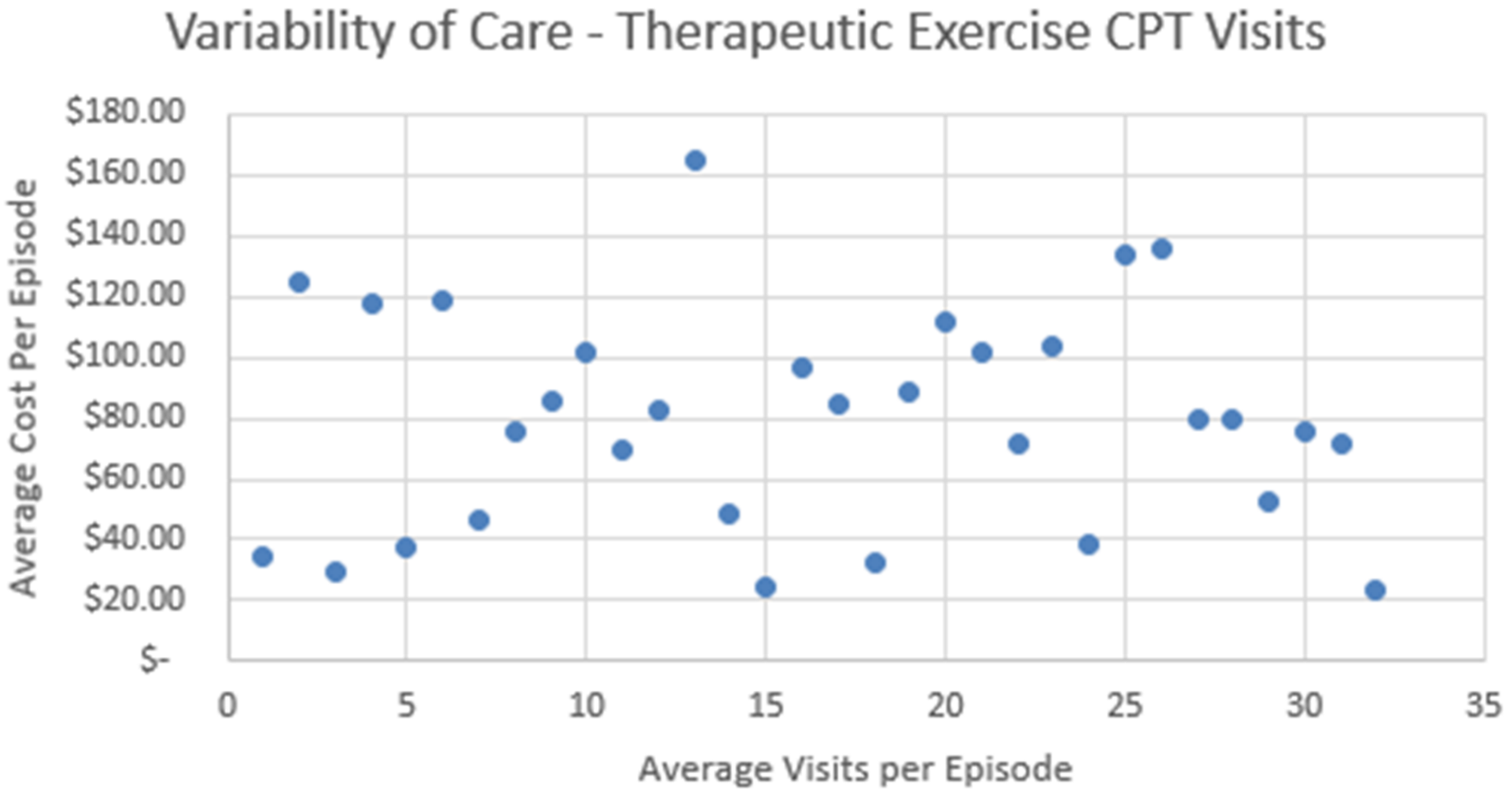
Care outside the expected ranges for a given DX are often targeted for review and evaluated for medical necessity.

Why are payors looking for solutions?

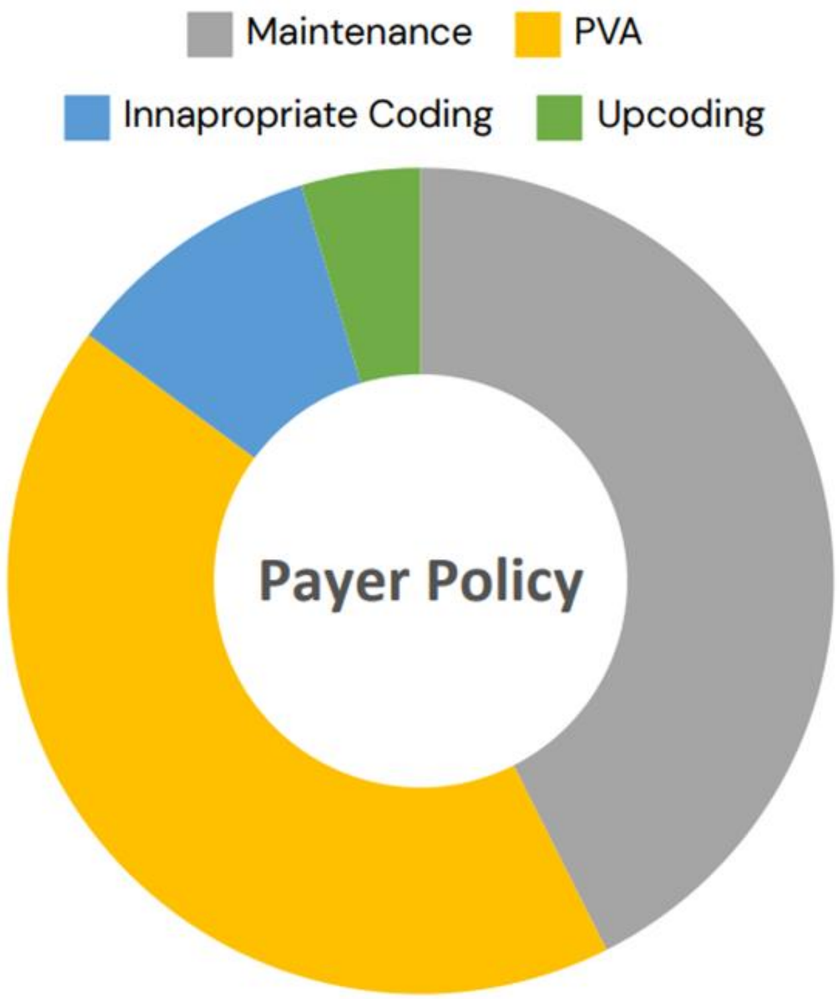
Treatment variability



Expected Variability of Care


Variability of Care - Therapeutic Exercise CPT Visits
Average Cost Per Episode
$180.00
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$-
0
5
10
15
20
25
30
35
Average Visits per Episode

Typical Chiropractic Network Spend



Solution:

DC Self-audit: Are you aware of the policy, and are you treating within the policy?

The job of Medical Directors....

1. Inform,
2. Monitor, and
3. Educate!

Top Six concerns:

- Maintenance care
- Upcoding of spine CMT codes (98940-98942)
- Use of extremity codes (98943)
- Manual Therapy (97140)
- Patterns of practice vs. medical necessity: The ongoing use of passive and active therapy codes.
- Diagnosis Accuracy

Issues of Concern by Third Party Payors

Maintenance Care

TIP:
Few if any payors provide a billable benefit related to manual therapy beyond the acute phase of recovery.

#1 Question: Can we treat beyond the pain relief phase of care?

"Chiropractic" vs Insurance

Historically many DCs treat following a practice management or technique protocol which includes everything from pain relief to biomechanical "correction" and postural restoration.

Without judging the merits of the philosophical or technique arguments, the real question is:

"Which stage(s) of care are within the plan design of the payor?"

Why is the transition necessary?

Medicare Guidelines, Section 2251.3:

"A treatment plan that seeks to prevent disease, promote health, and prolong and enhance the quality of life; or therapy that is performed to maintain or prevent deterioration of a chronic condition is deemed **not medically necessary**"...

Demystifying Reimbursement models

"Car Insurance": What does it pay for?

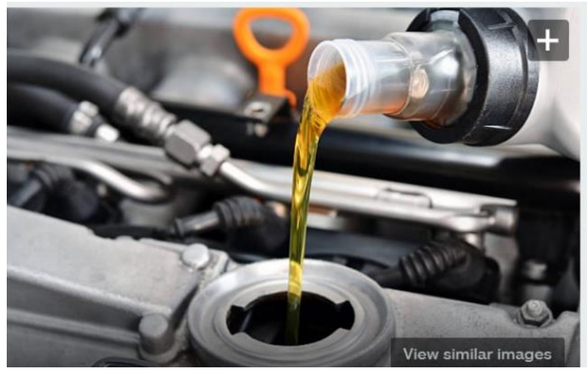
Accident repair

YES

Restoration

NO

Maintenance



NO

Demystifying Reimbursement models

"Health Insurance"

Acute Pain

Condition-based

YES

Remodeling

- **Loss of curve**
- **No pain**
- **Routine x-rays**

NO!

Wellness/Chronic

<u>Weekly-Monthly care:</u>

- **Wellness**
- **Ongoing chronic pain management.**

NO!

Bottom line….

- Insurance only pays for the **acute** condition, with a beginning and an end-point.
- They do not pay for **spinal remodeling** of an otherwise asymptomatic spine, and
- They do not pay for ongoing chronic pain management or maintenance care/wellness care.

NO DIFFERENT THAN CAR INSURANCE!

Conflicting information vs. Conflicting understanding?

“But the Customer Service Rep (CSR) said xxxxxxxx!”

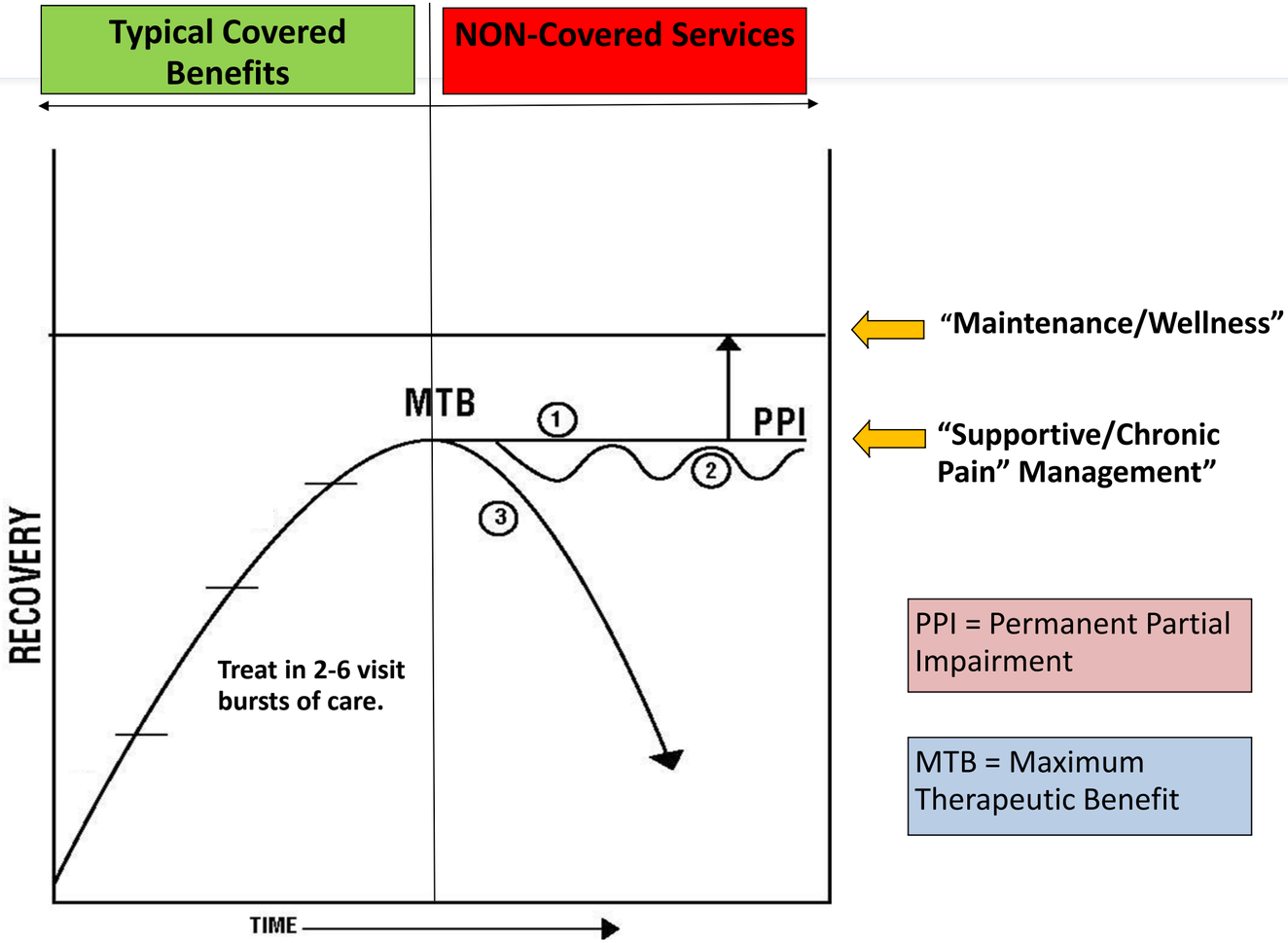
- It is helpful to remind the patient that to bill a service it must meet two criteria:

1. **Medically necessary**
2. **Within plan design**

- There are many services DCs provide that may be medically necessary and beneficial to the patient, but not within plan design.

TIP: It is important to remind yourself, and your patient, that guidelines are just that, guidelines. Additionally, the number of visits stated in a policy are not entitlements to care, but potential number of visits if care meets the two criteria stated above.

Understanding typical chiropractic care management, and how it differs from care which is either not medically necessary, or outside plan design.



"Maintenance/Wellness"

"Supportive/Chronic Pain" Management"

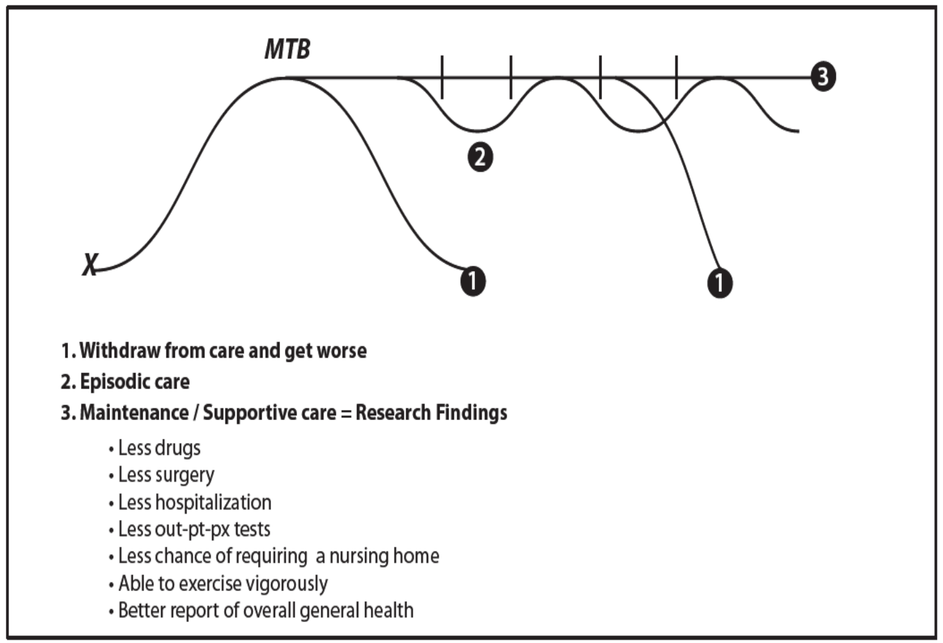
PPI = Permanent Partial Impairment

MTB = Maximum Therapeutic Benefit

Who explains to the patient what happens at the plateau in recovery? The DC or CA?

❑ ***Concept 5:***_____

At a certain point you're either 100% well, or as good as it's going to get. Then what?



1. Withdraw from care and get worse

2. Episodic care

3. Maintenance / Supportive care = Research Findings

- Less drugs
- Less surgery
- Less hospitalization
- Less out-pt-px tests
- Less chance of requiring a nursing home
- Able to exercise vigorously
- Better report of overall general health

If patients simply understood:

1. The benefits of joint mobility
2. The negative effects of joint tightness
3. The research, and
4. The cost issues.

Many would enthusiastically opt for "Wellness" [formerly maintenance] or "Chronic/recurrent and/or episodic" care [formerly supportive]. But be realistic and consider your own practice stats…most prefer pain relief!

Practice Principles

1. **Give patients what they need, and only what they need, nothing more, nothing less, ALWAYS!**

2. ***“If I can help, I’ll tell you. And if I cannot help you, I’ll tell you that as well and make the proper referral!”***

Issues of Concern by Third Party Payors

CMT Coding/upcoding

The Problem:

The use of subluxation and/or segmental dysfunction codes in an attempt to justify upcoding to 98941 or 98942.

Question:

Is it proper to submit asymptomatic subluxations codes to justify treating AND billing for additional regions of the spine?

NO!

TIP:
You cannot use just subluxation codes to justify billing another region of the spine.

Five Regions of the Spine

1. Cervical region (includes atlanto-occipital joint)
2. Thoracic region (includes costovertebral and costotransverse joints)
3. Lumbar region
4. Sacral region
5. Pelvic region (includes the sacro-iliac joint)

5 Extraspinal Regions

1. Head (including TMJ, excluding atlanto-occipital)
2. Lower Extremities
3. Upper Extremities
4. Rib cage (excluding costotransverse and costovertebral joints)
5. Abdomen

- **Medicare Documentation Job and Aid For Doctors of Chiropractic**
  - *Topic: Chiropractic Manipulative Therapy (CMT).*
  - https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/JobAidChiropracticServices-FactSheet-MLN1232664.pdf

Medicare Documentation Job and Aid For Doctors of Chiropractic

Subluxation

☐ Subluxation demonstrated by X-ray, date of X-ray: _____

- A CT scan and/or MRI is acceptable evidence if subluxation of spine is demonstrated
- Documentation of chiropractor's review of the X-ray/MRI/CT, noting level of subluxation
- The X-ray must have been taken reasonably close to (within 12 months prior or 3 months following) the beginning of treatment. In certain cases of chronic subluxation (for example, scoliosis), an older X-ray may be accepted if the beneficiary's health record indicates the condition has existed longer than 12 months and there is a reasonable basis for concluding that the condition is permanent.

or

☐ Subluxation demonstrated by physical examination (Pain, Asymmetry/misalignment, Range of motion abnormality, Tissue tone changes [P.A.R.T.]; at least 2 elements, 1 of which must be A. or R.)

- ☐ Include dated documentation of initial evaluation
- ☐ Primary diagnosis of subluxation (including level of subluxation)

☐ Documentation of presence or absence of subluxation must be included for every visit

☐ Any documentation supporting medical necessity

Medicare Documentation Job and Aid For Doctors of Chiropractic

Initial Evaluation

- ☐ History
  - ☐ Date of initial treatment
  - ☐ Description of present illness
  - ☐ Symptoms bearing a direct relationship to level of subluxation causing patient to seek treatment
  - ☐ Family history (if relevant) (recommended)
  - ☐ Past health history (recommended)
  - ☐ Mechanism of trauma (recommended)

Make it easy on yourself and report symptoms in the DX, otherwise records will need to be obtained to verify DX vs. CMT.

Typical Policy

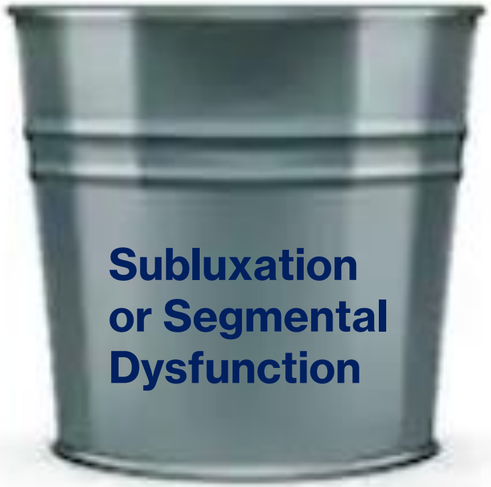
Indications for chiropractic services include all of the following:

1. Services are directed at neuro-musculoskeletal symptoms involving the spine, para-spinal soft tissues, and extremities.
2. Services provided are of the complexity and nature to require performance by a licensed chiropractor or provided under their direct supervision according to state licensure laws.
3. Subluxations of the spine must be evidenced with corresponding musculoskeletal symptoms.
4. Services are scheduled, modified, and discontinued appropriately based on the patient's response to treatment and are provided in accordance with an ongoing, written treatment plan and are appropriate for the diagnosis reported including documentation outlining quantifiable, attainable treatment goals.
5. Manipulation or Chiropractic Manipulation Therapy (CMT) is appropriate to reduce symptoms and/or to restore function that has been compromised by illness or injury.
6. Each region treated must be correlated with the patient's complaints and health assessment, as well as the member history, a clinical examination, and diagnosis.

4. **Not Medically Necessary and Not Covered:**
   Additional visits in the following circumstances are considered not medically necessary and not covered:
   - When there is no meaningful improvement within 30 calendar days of treatment despite treatment modification,
   - If therapeutic benefit has reached a plateau,
   - If the patient's condition becomes worse or regresses,
   - If the therapeutic goals have been reached,
   - If the patient has become asymptomatic,
   - If the patient or parent/caregiver can independently practice or self-administer the activities or services safely and effectively
   - If the services or activities are for the general good or welfare of the patient, such as exercise to promote overall fitness, flexibility, endurance, aerobic conditioning, maintenance of range of motion or strength, and weight reduction.

Three Buckets of Diagnoses

M99.01 Cervical Seg Dys
M99.23 Subluxation



M50.320 Cervical DDD
Q72.811 Congenital Shortening of right lower limb
M41.86 Scoliosis-Lumbar
M40.12 Kyphosis-Cervical

M54.5 Low Back Pain
M53.1 Cervicobrachial Syndrome

1. Pain-related
2. Injury. Ex. Strain, Sprain
3. Radicular: Ex. Radiculopathy, Cervical radiculitis, Sciatica, etc.

Which level of CMT can you bill given the following diagnoses?

NO	M99.01 Seg Dysfunction-Cervical
YES	M54.2 Cervicalgia
YES	G44.211 Episodic Headache
NO	M99.02 Seg Dysfunction-Thoracic
NO	M99.03 Seg Dysfunction-Lumbar
NO	M99.04 Seg Dysfunction-Sacral
NO	M99.06 Seg Dysfunction of hip
YES	M54.6 Pain in Thoracic spine

How many regions of the spine does this diagnostic grouping represent?

What level of CMT is appropriate given this set of diagnosis?

Answer: 98940

Which diagnostic codes reflect the pain reported by the patient?

YES	S33.6xxA SI sprain
NO	M99.02 Seg Dysfunction-Thoracic
NO	M99.03 Seg Dysfunction-Lumbar
NO	M99.04 Seg Dysfunction-Sacral
YES	M54.6 Pain in Thoracic spine

1. **How many regions of the spine does this diagnostic grouping represent?**

2. **What level of CMT is appropriate given this set of diagnosis?**

Answer: 98940

TIP: Remember that the "pelvic region" of the spine includes the SI joint. Therefore, an SI sprain or strain is still designated as ONE region of the spine, not two.

Extremity manipulation: 98943

Which style of case management is billable?

Condition/injury-based

- Patient complaint, pain, injury-related dysfunction, examination, diagnosis, treatment plan.

Philosophical or movement based.

- Creating neurological joint noise.
- May be beneficial to the patient, but just not billable.

98943-Extraspinal Manipulation

Expected care management items to justify billing 98943:

1. **Mechanism of injury**
2. **Patient complaint/injury/symptoms**
3. **Examination findings**
4. **Diagnosis**
5. **Treatment plan**
6. **Goals**
7. **Measureable outcomes**
8. **Discharge**

TIP:

- It is not appropriate to bill 98943 (or any other CPT code) on every patient at every visit.
    - Once MMI is reached, the treatment is no longer within plan design.

Issues of Concern by Third Party Payors

97140-Manual Therapy

TIP:
Avoid the “pattern of practice”, first visit to last of 97140, and active and passive therapies.

What is Manual Therapy (97140)?

97140

“Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes.”

Why? “Performed in order to increase **functional performance**, increase **ROM**, decrease **inflammation**, and reduce **muscle spasm**.”

Source: American Medical Association CPT 2021 Professional Addition

97140

- Remember: one cannot bill manual therapy on the same day, to the same anatomical region, as CMT.

- -59 signifies a separate anatomic region compared to CMT.

Review of Manipulation vs Manual Therapy

- Remember that manipulation codes (9894X) and the manual therapy code (97140) cannot be billed to the same region on the same date of service. Remember, the 97140 code –includes- manipulation.

Clinical Vignette:

- Patient presents with a lumbar strain and is treated with a lumbar manipulation.
- Patient is also treated with 10 minutes of trigger point therapy to the lumbar paraspinal musculature.

- ***In this case, either 98940 –or- 97140 can be utilized as they were performed on the same region. Not both!***

Manual Therapy (97140): Proper documentation and establishing medical necessity.

- **What should be documented to support the use of this code?**
  - **Four key elements** to document:
    1. What?
    2. Where?
    3. **Why?**
    4. How long?

Why? "Performed in order to increase **functional performance**, increase **ROM**, decrease **inflammation**, and reduce **muscle spasm**."

Question: Given the "Why" what needs documented to justify 97140?

TIP: Generic statements are not sufficient!

97124 vs 97140

- **97140: manual therapy to a specific muscle group**
- **97124: massage therapy**

These codes are NOT interchangeable.

TIP: must be done by a “qualified healthcare provider”.

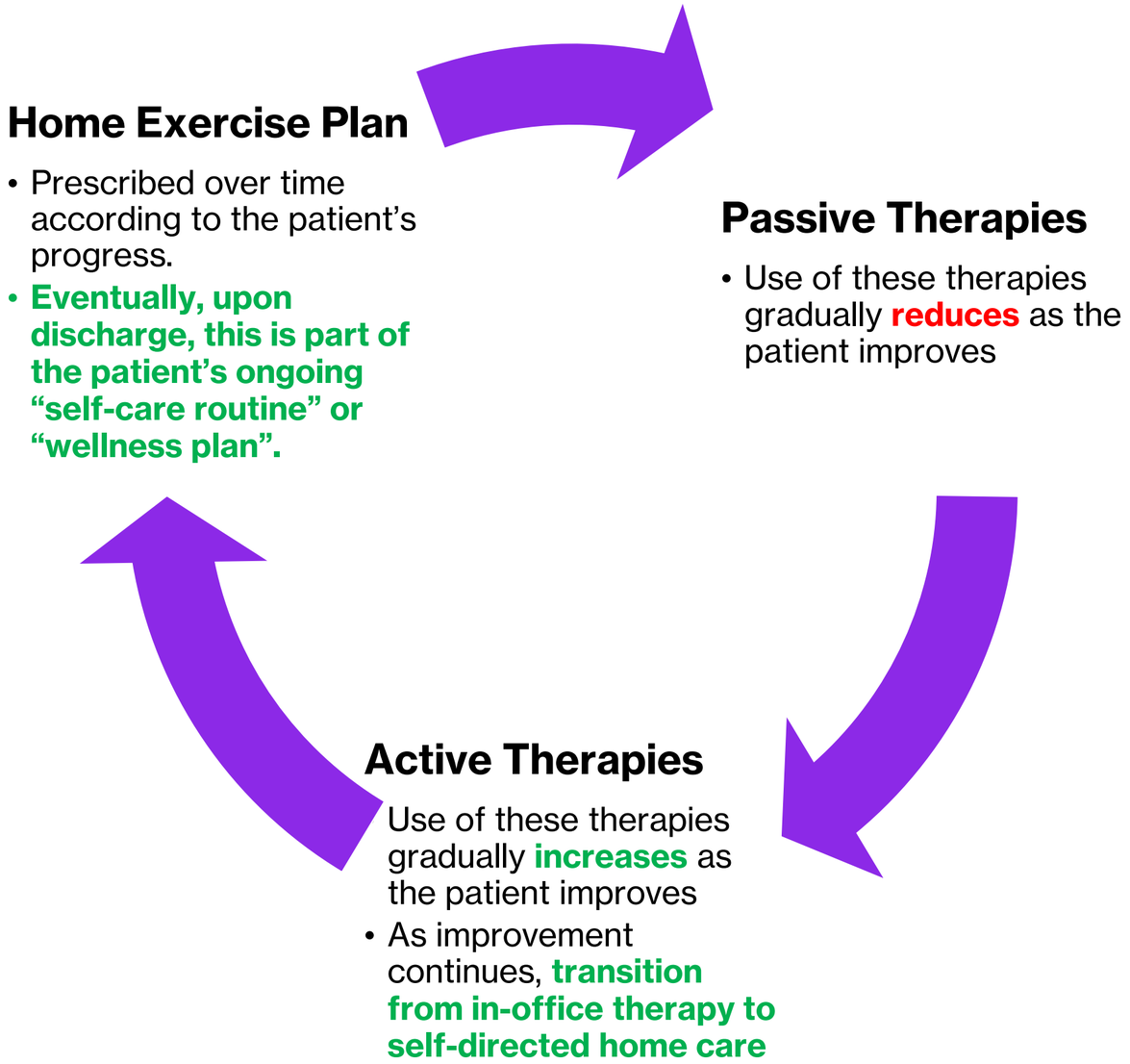
Issues of Concern by Third Party Payors

Pattern of practice vs. medical necessity:

The ongoing use of passive and active therapy codes.

TIP:
If you use any therapy first visit to last as a pattern of practice, on every patient, the odds of audit escalate dramatically.

General Expectations



Review of Specific Active and Passive Codes

97112 vs 97110 vs 97530

- What are the indications for each of these codes?
- What was provided for each code, and why?

97110-Therapeutic exercises

To develop strength, endurance, ROM, and flexibility

TIP:
Can you document how the services associated with this code are different than those associated with 97110?

97112-Neuromuscular Re-education

Movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities.

TIP:
Can you document how the services associated with this code are different than those associated with 97110?

97530 – Kinetic Activity

CPT code 97530 is Therapeutic Activity, the use of a skilled activity in therapy to improve a patient's overall health or functional capacity. These are **whole-body rehabilitative procedures** that utilize performance skills such as reaching, standing, dynamic postures, bending, lifting, or carrying.

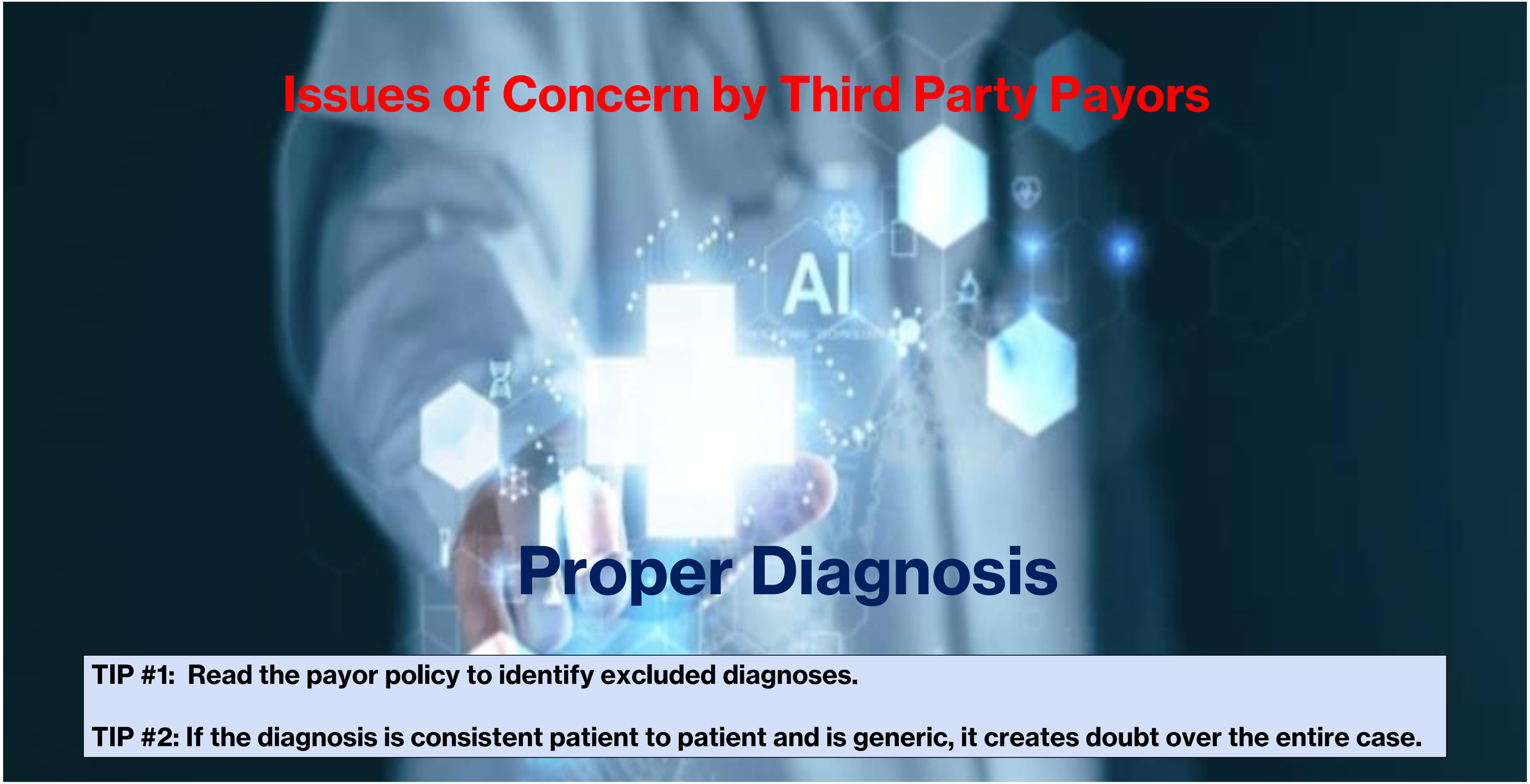
97014 vs 97032

- 97014: Supervised Electric stimulation
- 97032: Constant Attendance Electric stim

Question: When is it medically necessary to provide "Constant Attendance EMS"?

Tip: Just sitting in the room does not qualify for 97032

Issues of Concern by Third Party Payors



Proper Diagnosis

TIP #1: Read the payor policy to identify excluded diagnoses.

TIP #2: If the diagnosis is consistent patient to patient and is generic, it creates doubt over the entire case.

Subluxation codes: M vs S codes

M-Codes correspond to chiropractic or osteopathic biomechanical lesions.

- **M – Segmental Dysfunction (99.00-Head to 99.09-Abdomen)**
- **M – Subluxation Codes (99.10-Head to 99.19 Abdomen)**

S-Codes represent neurosurgical emergencies, trauma, spinal cord injury.

These codes are not synonymous or interchangeable.

LOW BACK PAIN

Question: **Is a diagnosis of simply “Low back pain” appropriate?**

As DCs, we need to get better at asking, “LBP....caused by what?”

If we do not know the cause, how can we determine the cure?

TIP:
Is the source of the pain:

1. **soft tissue,**
2. **joint,**
3. **disc or**
4. **nerve/radicular**?

Keep the diagnosis consistent with your examination findings.

M54.5-deleted

As of 10/1/2021 the code **M54.5 LUMBAGO/LOW BACK PAIN** is no longer a BILLABLE CODE and has been replaced with the following THREE CODE OPTIONS:

M54.50 Low back pain, unspecified
M54.51 Vertebrogenic low back pain
M54.59 Other low back pain

- Is **LBP** by itself ever a valid diagnosis? Or is it merely the symptom reported by the patient?
- What does "LBP, unspecified", or "Other LBP" mean, and when is it appropriate?
- **While "Other LBP" is certainly an option, why wouldn't a DC want to aspire to a more specific diagnosis. Ex. SI joint strain?**

Question during the consultation:
"Can you stand up and point to exactly where you have your pain?"

Vertebrogenic LBP

Normally associated with CLBP!

Pain Medicine, 23(S2), 2022, S63–S71
https://doi.org/10.1093/pm/pnac081
Editorial

OXFORD

Vertebrogenic Pain: A Paradigm Shift in Diagnosis and Treatment of Axial Low Back Pain

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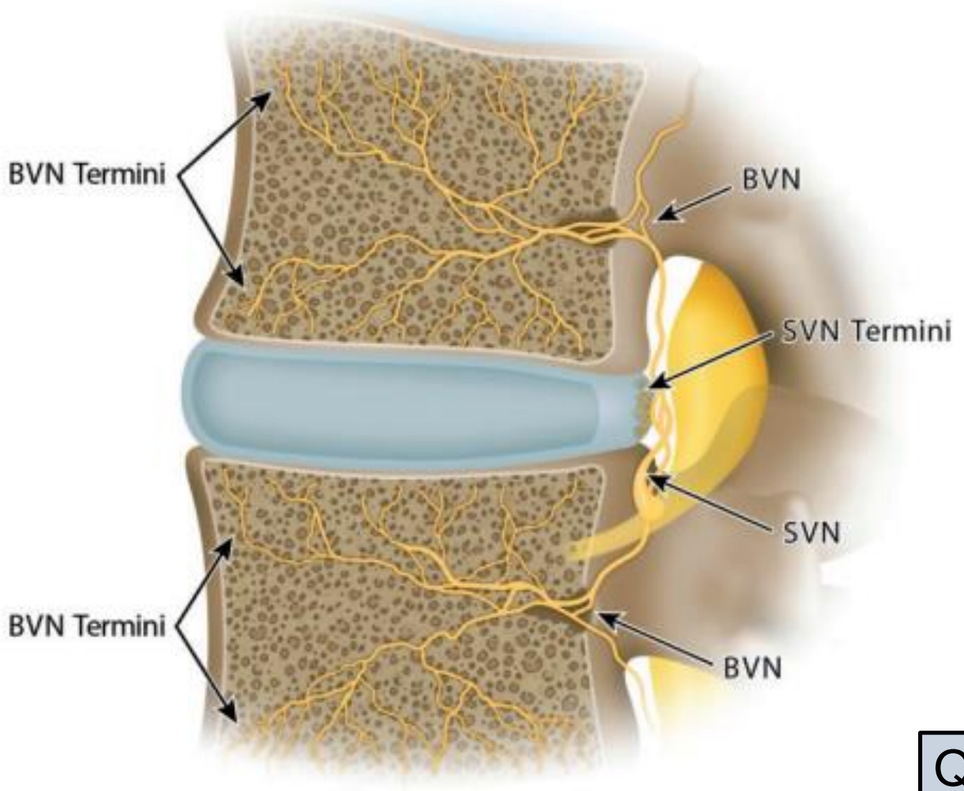
In the late 1990s, a team of researchers led by Dr. Heggeness reported that vertebral bodies were richly vascularized by vertebral capillaries and innervated by nociceptors that traced back to a single source, the ***basivertebral nerve.***

Subsequently, it was demonstrated that the BVN is a ***branch of the sinuvertebral nerve (SVN)*** *that enters the vertebral body through the foramen in its posterior wall, then it arborizes caudal and cephalad to densely innervate the vertebral endplates.*

Vertebrogenic LBP

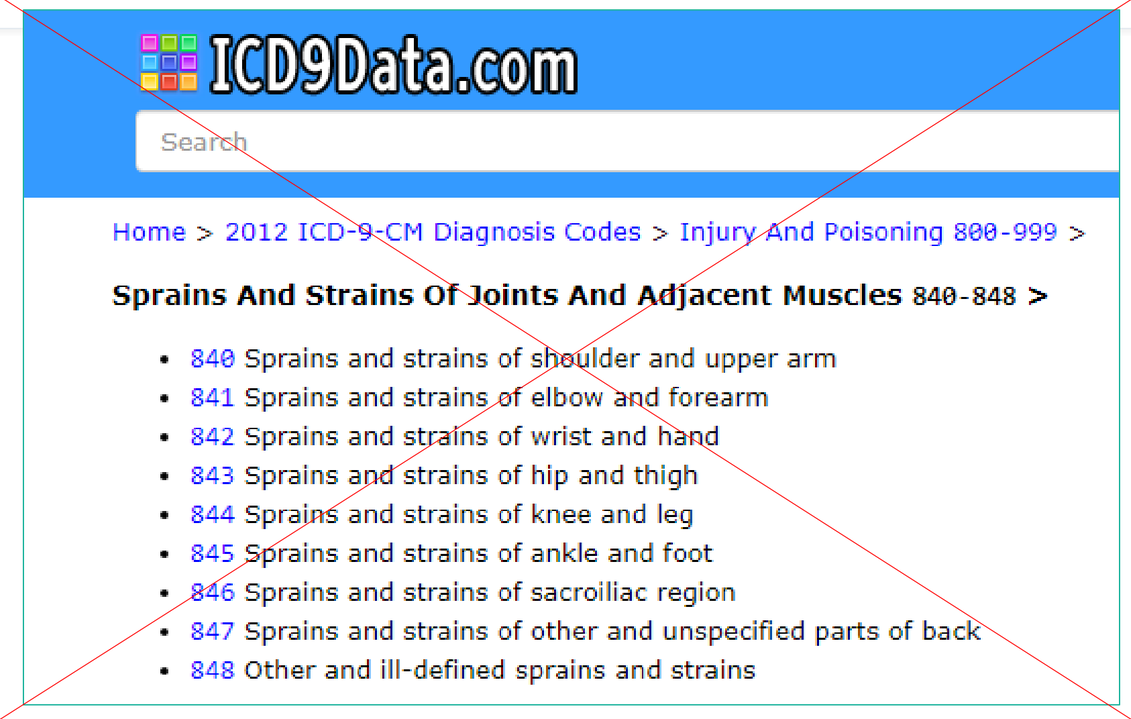


Imaging Characteristics of Vertebrogenic Pain: Endplate Defects and Modic Changes

A correlation between vertebral endplate pathology on MRI and LBP was first suggested in 1988 by ***Modic*** *et al. who found intraosseous* ***MRI changes adjacent to vertebral endplates defects*** *in individuals with chronic LBP. Inflammation and bone marrow changes surrounding endplate defects are visible as Modic changes (MC) on MRI.*

Question: Absent MRI, can you diagnose Vertebrogenic LBP?

Strain vs. Sprain



- These codes were originally combined into one heading.
- Many EHR systems did not properly convert these with the transition to ICD-10.
- There is a difference in prognosis and treatment for these two different injuries.

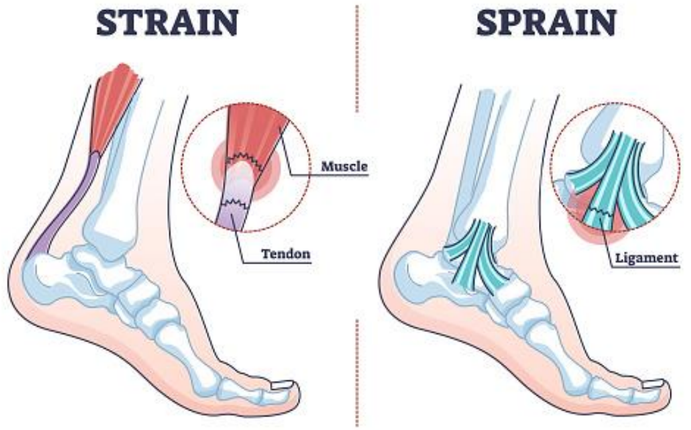
Strain

- “A muscle strain is an injury to a muscle or a tendon- the fibrous tissue that **connects muscles to bones**.”

  Mayo Clinic

Sprain

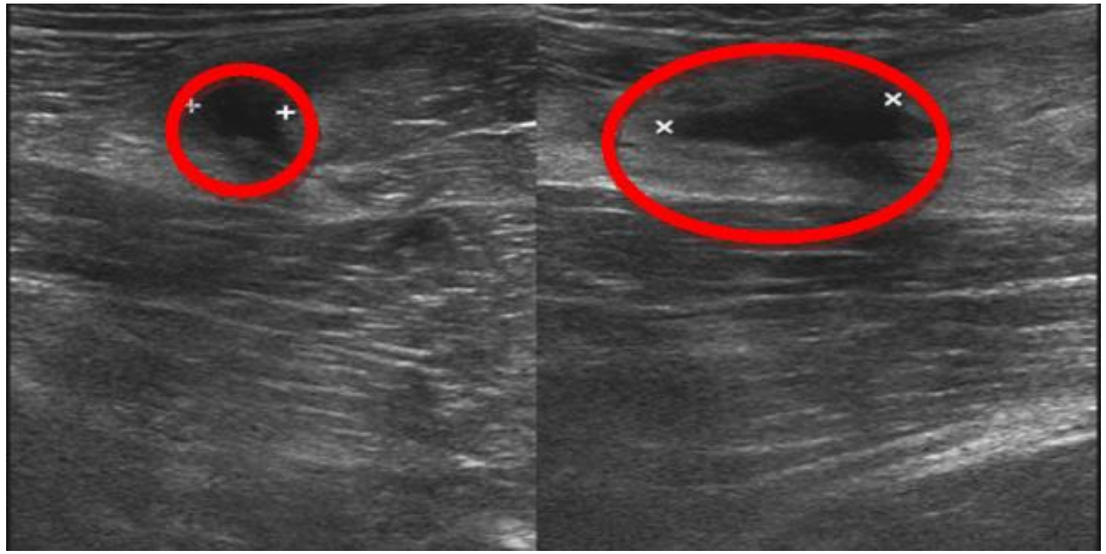
- “A sprain is a stretching or tearing of ligaments- the tough bands of fibrous tissue that **connect two bones together** in s.”



Diagnosing Strains and Sprains

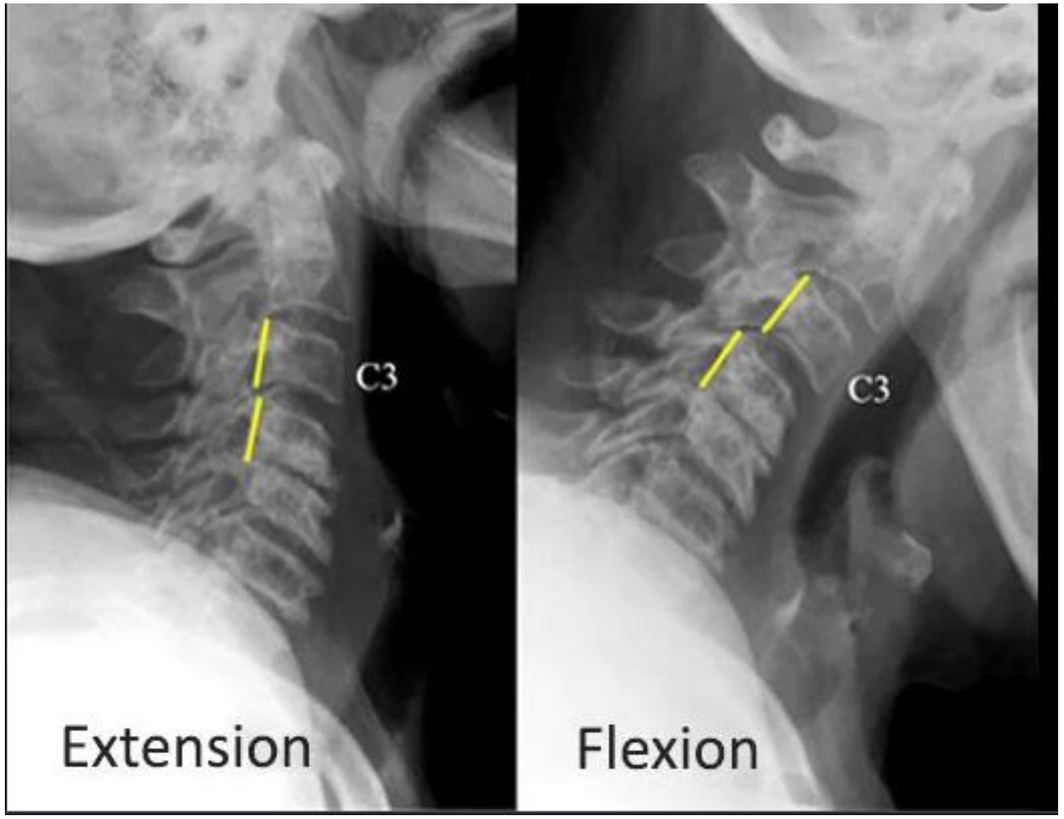
Strain

- History of Trauma
  - Pain is felt within the muscle and/or tendon.
- Motor strength
  - Motor strength may be reduced.
- Orthopedic tests
  - **Stability is maintained.**
- Visual Signs
  - Bruising/swelling/redness within the muscle belly/tendon.
- Imaging
  - May be seen via MRI or diagnostic ultrasound.



intechopen.com

Diagnosing Strains and Sprains

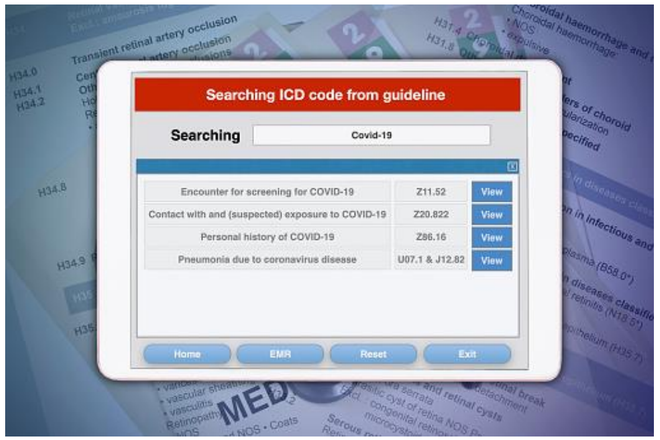


reference.medscape.com

Sprain

- History of Trauma
  - Pain is felt at the joint.
- Motor strength
  - Motor strength is preserved (unless there is also an active strain).
- Orthopedic tests
  - **Instability may be recognized via end-range joint play tests.**
- Visual Signs
  - Bruising/swelling/redness in and around the joint space.
- Imaging
  - May be seen with MRI, diagnostic ultrasound, or flexion/extension x-ray.

Typical Diagnostic Codes used by DCs



Strain

- Cervical Strain
  S16.1XXA
- Thoracic Strain
  S29.012A
- Lumbar Strain
  S39.012A
- Right Shoulder Strain
  S46.011A

Sprain

- Cervical Sprain
  S13.4XXA
- Thoracic Sprain
  S23.3XXA
- Lumbar Sprain
  S33.5XXA
- Right Shoulder Sprain
  S43.401A

Panniculitis

Panniculitis (**inflammation of the subcutaneous fat**) is a relatively uncommon condition that usually presents with inflammatory nodules or plaques. A wide variety of subtypes of panniculitis exist, including panniculitides related to infection, external insults, malignancy, and inflammatory diseases (table 1).Mar 7, 2022

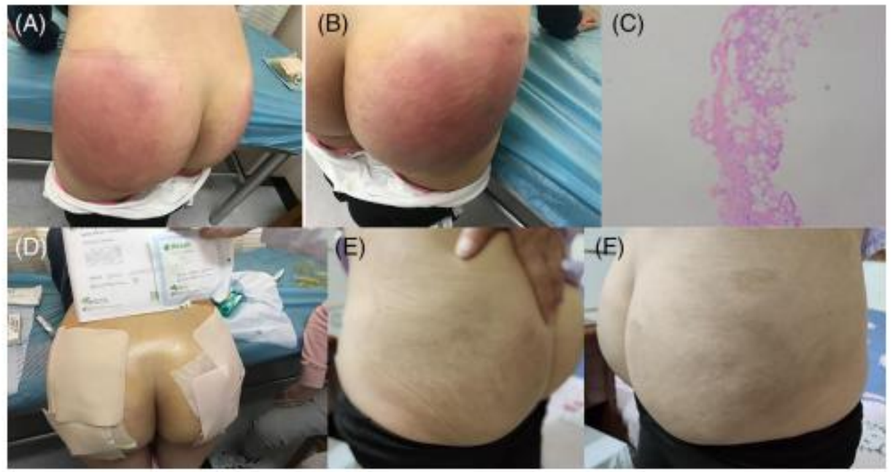


FIGURE 1 A, Pain and swelling of the left hip occurred after progesterone injection. B, The same symptoms appear in the right buttock. C, The occurrence of panniculitis was confirmed by pathology. D, The patient received physical therapy. E, The left hip recovered well. F, The right hip recovered well

Again, **facet syndrome is NOT synonymous** with Panniculitis!

Xiao et al. Panniculitis caused by progesterone injection can be treated by physical therapy. Dermatol Ther. 2021 Jan;34(1):e14501. doi: 10.1111/dth.14501. Epub 2020 Nov 12. PMID: 33141504 PMCID: PMC7900959 DOI: 10.1111/dth.14501

Enthesopathy

Enthesitis Diagnosis

Enthesitis is hard to diagnose. Patient presentation may include edema of affected joints, along with pain elicited on compression testing. Pt may report improved symptoms following exercise. **Diagnostic tools may include bloodwork for inflammatory markers as well as imaging of affected joints.**

Facet syndrome is NOT synonymous with enthesopathy!

Figure 2 Lateral radiograph of right elbow showing calcification of the right biceps brachii tendon (marked in black arrow).

Rimesh Pal et al. X-linked hypophosphatemia with enthesopathy. 2017 BMJ
http://dx.doi.org/10.1136/bcr-2017-220920.

Other problematic diagnoses

- Cervicocranial Syndrome
- Cervicobrachial Syndrome
- Neuralgia
- Radiculopathy
- Enthesopathy

Cervicobrachial Syndrome/Neuralgia/Radiculopathy

Homework: As a challenging exercise please complete the following chart to remind yourself what one must do to differentiate between these diagnoses?

Condition:	Brief description of symptoms:	Can it be preliminarily diagnosed by physical exam alone, YES/NO?	Does is require additional diagnostic tests to confirm the diagnosis? If yes, which tests? (ex. MRI or NCV/EMG)
Cervicobrachial Syndrome			
Cervicobrachial Neuralgia			
Cervical Radiculopathy			
Brachial Radiculitis			

Odds and Ends

- Spondylosis *(facet syndrome?)*
- Scoliosis
- Degenerative disc/joint disease
- Abnormal postural
- Kyphosis

- Lumbar instabilities
- Muscle spasm
- Myalgia

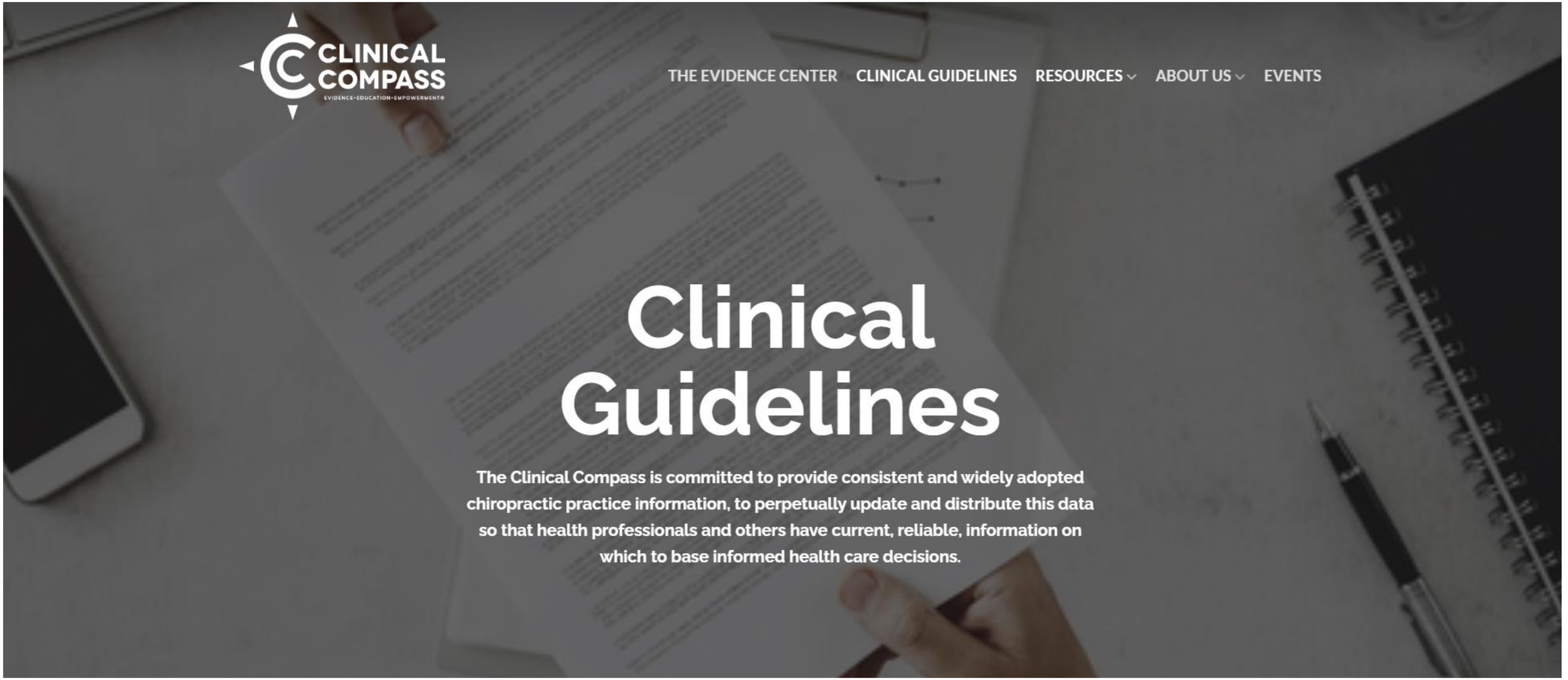
Question:
If CMS, or the payor contract, **requires symptoms** in the same region as the subluxation that caused the patient to visit the office, **but the condition you wish to report can be present without symptoms,** is it worth reporting as a diagnosis vs. a physical finding in your records?

TIP:
Put another way, even though ICD10 codes exist for these terms, should they really be used as stand-alone diagnoses, or are they more consistent with reportable physical findings that should be present in the clinical records?

Issues of Concern by Third Party Payors

Evaluation and Management Codes

TIP #:
Do your notes justify the level of E/M code billed? Was it necessary to conduct an E/M or could the normal pre and post manipulative assessment sufficed?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Clinical Guidelines
The Clinical Compass is committed to provide consistent and widely adopted chiropractic practice information, to perpetually update and distribute this data so that health professionals and others have current, reliable, information on which to base informed health care decisions.

THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 26, Number 10, 2020, pp. 884–901
Mary Ann Liebert, Inc.
DOI: 10.1089/acm.2020.0181

ORIGINAL ARTICLES

Best Practices for Chiropractic Management of Patients with Chronic Musculoskeletal Pain: A Clinical Practice Guideline

Cheryl Hawk, DC, PhD,[1] Wayne Whalen, DC, BSN,[2] Ronald J. Farabaugh, DC,[3] Clinton J. Daniels, DC, MS,[4] Amy L. Minkalis, DC, MS,[5] David N. Taylor, DC,[6] Derek Anderson, PhD,[4] Kristian Anderson, DC, MS,[7] Louis S. Crivelli, DC, MS,[8] Morgan Cark, DC,[9] Elizabeth Barlow,[10] David Paris, DC,[11] Richard Sarnat, MD,[3] and John Weeks[12]

Abstract

Objective: To develop an evidence-based clinical practice guideline (CPG) through a broad-based consensus process on best practices for chiropractic management of patients with chronic musculoskeletal (MSK) pain.

Design: CPG based on evidence-based recommendations of a panel of experts in chronic MSK pain management.

Methods: Using systematic reviews identified in an initial literature search, a steering committee of experts in research and management of patients with chronic MSK pain drafted a set of recommendations. Additional supportive literature was identified to supplement gaps in the evidence base. A multidisciplinary panel of experienced practitioners and educators rated the recommendations through a formal Delphi consensus process using the RAND Corporation/University of California, Los Angeles, methodology.

Results: The Delphi process was conducted January–February 2020. The 62-member Delphi panel reached consensus on chiropractic management of five common chronic MSK pain conditions: low-back pain (LBP), neck pain, tension headache, osteoarthritis (knee and hip), and fibromyalgia. Recommendations were made for nonpharmacological treatments, including acupuncture, spinal manipulation/mobilization, and other manual therapy; modalities such as low-level laser and interferential current; exercise, including yoga; mind–body interventions, including mindfulness meditation and cognitive behavior therapy; and lifestyle modifications such as diet and tobacco cessation. Recommendations covered many aspects of the clinical encounter, from informed consent through diagnosis, assessment, treatment

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[5]Palmer Center for Chiropractic Research, Davenport, IA, USA.

Improving Performance Metrics

Proper Use of Clinical Guidelines

Guidelines

Tips to Improve the Guideline Metric

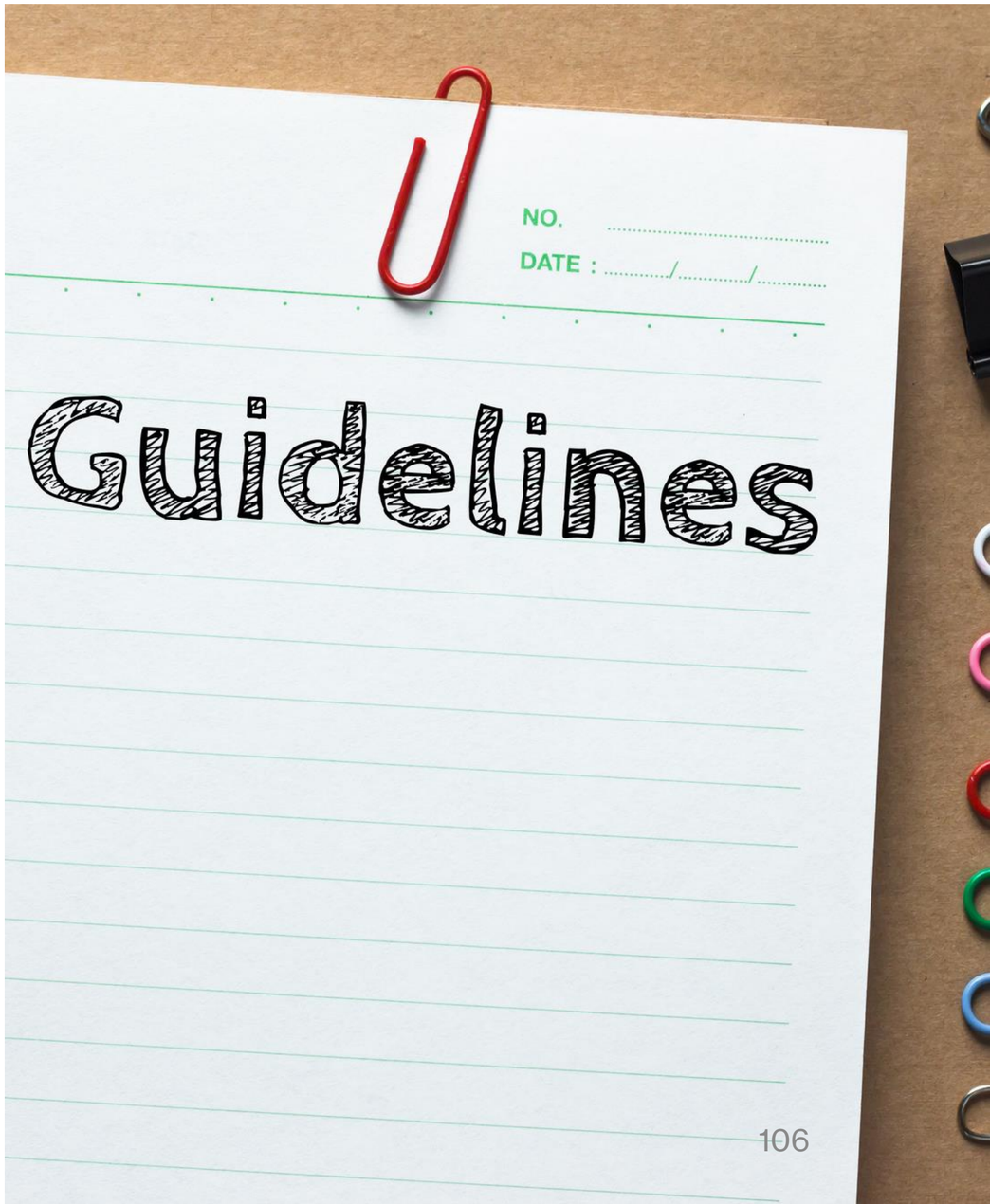
- Awareness of guidelines: The Clinical Compass. https://clinicalcompass.org/
- Read the latest Clinical Practice Guidelines: acute and chronic neck and LBP.
- Understand proper use of CPGs.
- **Guidelines should not be reduced to frequency and duration alone.**
- There is a myriad of important elements contained in a Clinical Practice Guideline (CPG).

TIP:
Clinical Guidelines do not represent limits to care, nor entitlements to care!

They should never be used as the sole reason for denial!!

IMPROVING PERFORMANCE METRIC GUIDLINES

- Guidelines are not meant to serve as treatment plans
- Always consider the progression of care and modify the treatment plan based upon patient response to treatment.
- Avoid old-fashioned treatment planning *(ex. Months of care from day 1)*
- **Treat in 2-6 visit bursts of care.**
- Remember, exacerbations typically require fewer visits!
- Not every patient will fit into a well-defined guideline box.



IMPROVING PERFORMANCE METRIC GUIDLINES

CONT'D

- **Document thoroughly,** noting complications, improvements, and other relevant issues in your assessment.

- As the **treatment plan evolves**, consider changes to frequency and modalities being utilized. The goal for every new case is to reach a point of MMI as quickly as possible for the good of the patient.

- Understand that "guidelines" are **much more than simple frequency and duration parameters.** Please consider guidelines in their totality versus just the number of visits for a condition.

IMPROVING PERFORMANCE METRIC GUIDLINES

CONT'D

Guidelines provide far more than frequency and duration parameters. They provide information and guidance related to:

- o Elements of a consultation
- o Elements of an examination/when E/Ms are necessary
- o Reassessments
- o Identifying red flags, yellow flags, etc.
- o Imaging
- o Informed consent
- o Complicating factors
- o Co-morbidities
- o Social Determinants of health
- o Developing a diagnosis
- o Establishing a plan of care
- o Home care advice
- o Co-management and referral
- o Discharge from active care
- o Treatment algorithms
- o Treatment modalities: passive and active therapy

AMI:
12-page resource available on how to avoid an audit!
(3-hour seminar or webinar)

- **TIP: Do not treat to a guideline. Treat based upon patient response to care and make adjustments accordingly based upon the success or failure of care.**

Clinical/Coding
Brain Teaser of the Day!

Can you bill insurance for
“technology/service”?

Presenter:

Dr. Ronald J. Farabaugh

What are your thoughts?

With the emergence of new technology, it is important to consider whether billing is appropriate, or not?

Research the appropriateness of billing!

Understand the codes and what is required to use and bill certain codes to describe the technology or service.

Can you bill 97110, therapeutic exercise, when using xxxxxx?

- **97110 is a time dependent code**: At a minimum the total number of minutes needs to be documented. Additionally, time in and out being could be recorded in the notes as an extra measure?
- **97110 is a supervised code**: Are you supervising the patient as they sit in a xxxxxxxx?
- **97110** must be supervised by a **license physician or qualified therapist**.
- **97110** is related to improvement in **ROM, flexibility or strength**. Where in the notes did the DC document a deficiency in ROM, flexibility or strength?

Can you bill 97110, therapeutic exercise?

97110 requires substantial documentation:

Expected care management items to justify billing 97110: What, Where, Why, How long?

1. Treatment plan
2. Goals
3. Measurable outcomes
4. Discharge

Is any of that documented as it relates to a xxxxxxxx?

Can you bill 97110, therapeutic exercise?

Does it pass the “smell test”?

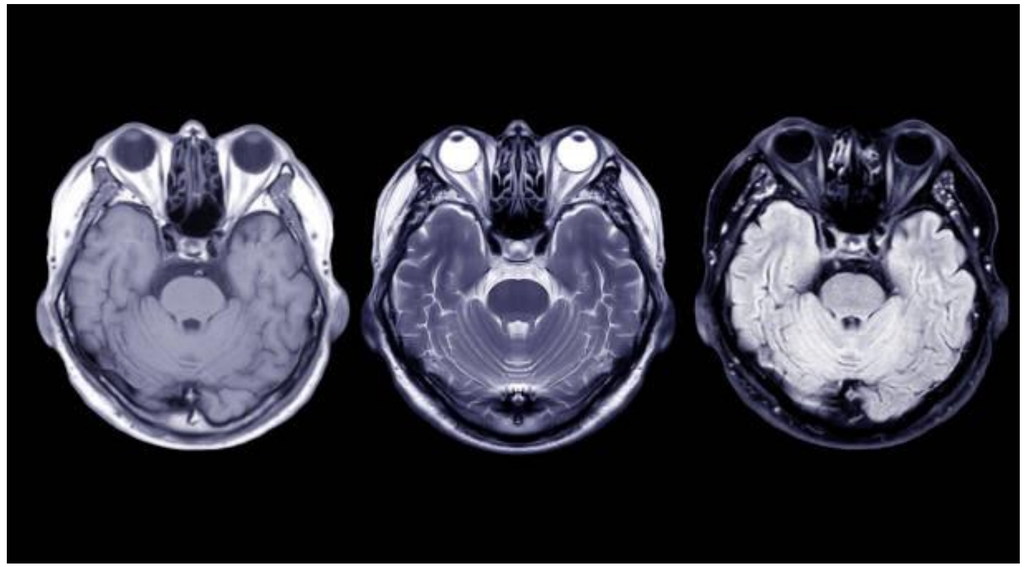
Can you realistically take a nap in a xxxxxxxx and consider that “therapeutic exercise”?

Can you bill 97112, neuromuscular re-education when using a xxxxxxxx?

- **97112** is related to improvement in **movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities.**
- Where in the notes did the DC document a deficiency in any of the above-mentioned issues?
- How can a **xxxxxxxx** improve any of the neurological issues mentioned above?

Can you bill 97112, neuromuscular re-education when using a xxxxxxxx?

- 97112 must be performed by a physician or licensed therapist.
- **Is the xxxxxxxx the equivalent of a physician, or licensed therapist?**



Can you bill 97140, Manual Therapy when using a xxxxxxxx?

- 97140 must be performed by a physician or licensed therapist.

- **Is the xxxxxxxx the equivalent of a physician, or licensed therapist?**
  Answer: NO!

Can you bill 97140, Manual Therapy when using a xxxxxxxx?

- **Definition:** “Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes.”

- Is a xxxxxxxx the equivalent of “mobilization/manipulation, lymphatic drainage or manual traction?” **Answer: NO!**

- **Additionally, how could one bill 97140 knowing it cannot be billed the same day as a CMT to the same region?**

Can you bill 97140, Manual Therapy when using a xxxxxxxx?

- 97140 is a time dependent code. Does the provider routinely document the total number of minutes?

- Lastly, **is there any literature** supporting the theory that a xxxxxxxx provides “mobilization/manipulation, manual lymphatic drainage, manual traction”?

Can you bill 97124, massage therapy, when using a xxxxxxxx?

- **97124** is a therapeutic procedure that describes massage therapy, including **effleurage, petrissage, and/or tapotement**, for one or more body areas every 15 minutes.
- It's a **timed code** that **qualified healthcare providers, such as physical and occupational therapists**, use.

Can you bill 97012, Mechanical Traction when using a xxxxxxxx?

- To bill **97012, mechanical traction**, one has to be able to document the **angle of pull and the pounds of pull/traction.**

- Is that possible to document when using a **xxxxxxxx**? Answer: NO.

Can you bill 97010, application of hot or cold packs, when using a xxxxxxxx?

- **Answer: NO.** Most payors no longer pay for ice/heat since that can be apply at home.

Can you bill 97026 (infrared) or 97028 (ultraviolet) when using a xxxxxxxx?

Can you bill 97024, diathermy when using a xxxxxxxx?

- Answer: NO. A massage therapy chair is not equivalent to diathermy, infrared or ultraviolet technology, nor can it be supported as a medically necessary therapy when simply sitting in a xxxxxxxx that happens to light up.

With the emergence of new technology, it is important to consider whether billing is appropriate, or not?

Research the appropriateness of billing!

Understand the codes and what is required to use and bill certain codes to describe the technology or service.

THANK YOU

Tennessee Chiropractic Association

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Rfarabaugh@amibestmed.com

This lecture was sponsored by AMI Group and SideCar (Nathan Unruh-CEO)

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Clinical Risk Management/Stroke/Informed Consent

Improving Awareness…Improving Patient Safety

1. **The Cost-Effectiveness Paper…Now What?**

2. **Value-Based Modeling: Secrets from a Medical Director? Are you ready?**

3. **Clinical Risk Management: Taking the Mystery out of the CVA issue!**

4. **Clinical Practice Guidelines-Using Them to Your Advantage!**

Presenter:

Dr. Ronald J. Farabaugh

What is

www.neck911usa.com

Exploring the story behind the story!

NEWS / PROFESSION

Chiropractic Enemy #1?

John W. Kinsinger, MD - The Man Behind Neck911USA.com

Editorial Staff

After an in-depth investigation leading to an exclusive interview, *Dynamic Chiropractic* has learned that John W. Kinsinger, MD, an anesthesiologist practicing in Edmond, Okla., is the man responsible for the creation of Neck911USA.com, an antichiropractic Web site allegedly run by "an international volunteer group of individuals" that consults people about complications resulting from neck manipulation.

In 1990, only two years out of medical school, Dr. Kinsinger began his quest to expose what he felt were the shortcomings of chiropractors. He began by calling and visiting chiropractors' offices with the sole purpose of determining if they met **his** standards for medical diagnosis and referral (a practice he has continued over the years). He then presented his "report" on Stephen Barrett's ChiroBase Web site.

www.neck911usa.com

Original Version
2004

NECK911USA.com

The Problem:

There are over 20 different kinds of stroke pathology that can happen as a result of neck manipulation.

Our Mission:

Neck911USA is a volunteer group of individuals who provide consultations on complications due to neck manipulation. Although most cases are due to chiropractic manipulation, Neck911USA is equally concerned about cases that arise from physical therapists or medical doctors.

Neck Manipulation
Can Cause
Injury or DEATH!

What Chiropractors are saying...

Database of victims...

Ahladiotis, Joanne Marie	27	Forest Hi
Ahmed, Shabbir	45	Brooklyn
Aiken, Terrance Andre	30	Staten Is
Ajala, Godwin	33	Jamaica,
Akwasi-Minkah, Nana	48	New York

Case Studies...

Send this site to a friend...

Name Email

Send Site

NECK911USA.com
NECK911USA.com
NECK911USA.com

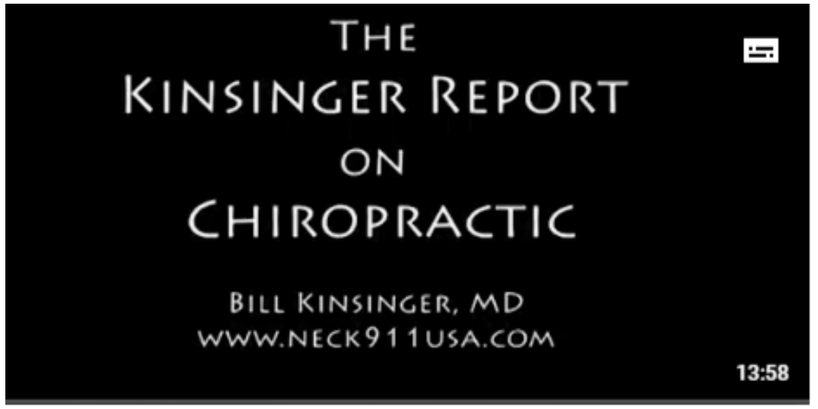

INJURED BY A
CHIROPRACTOR?
CALL 860 529 8826
WWW.NECK911USA.COM
Chiropractic Stroke Victims Awareness Group

Two can play that game.

I made my own bus!


1023
METRO BUS LINES
been the victim of a
BAD ANESTHESIOLOGIST?
CALL 1-888-SUE-THEM


CHIROPRACTIC KILLS
WAY LESS PEOPLE THAN MEDICINE



PatientSafety1st

Presented at OU Health Sciences Center in January 2008.

Kinsinger Report on Chiropractic -- Part 3

3K views • 13 years ago

PatientSafety1st

Presented at OU Health Sciences Center in January 2008.

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Dr. Robert Sheely

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In practice since 1980, Located in Middletown, Ohio -, Dr Robert B. Sheely has helped thou ...more

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Dr. Nathan Unruh - Beyond Bricks Podcast

Overview ---------- Join us for inspiring new epesode of the Beyond Bricks Podcast with **Dr. Ron Farabaugh**, ...

The Safety of Chiropractic…an updated perspective!

The Safety of Chiropractic - Dr. Ronald Farabaugh

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Dr. Ronald **Farabaugh** details the real facts about the **chiropractic** profession and the amazing history of its **safety**. Health care ...

24 chapters Introduction | Our Main Goal | Chiropractic Critic | Myths | Subluxation | History of Chiropractic |...

The Safety of Chiropractic - Dr. Ronald Farabaugh

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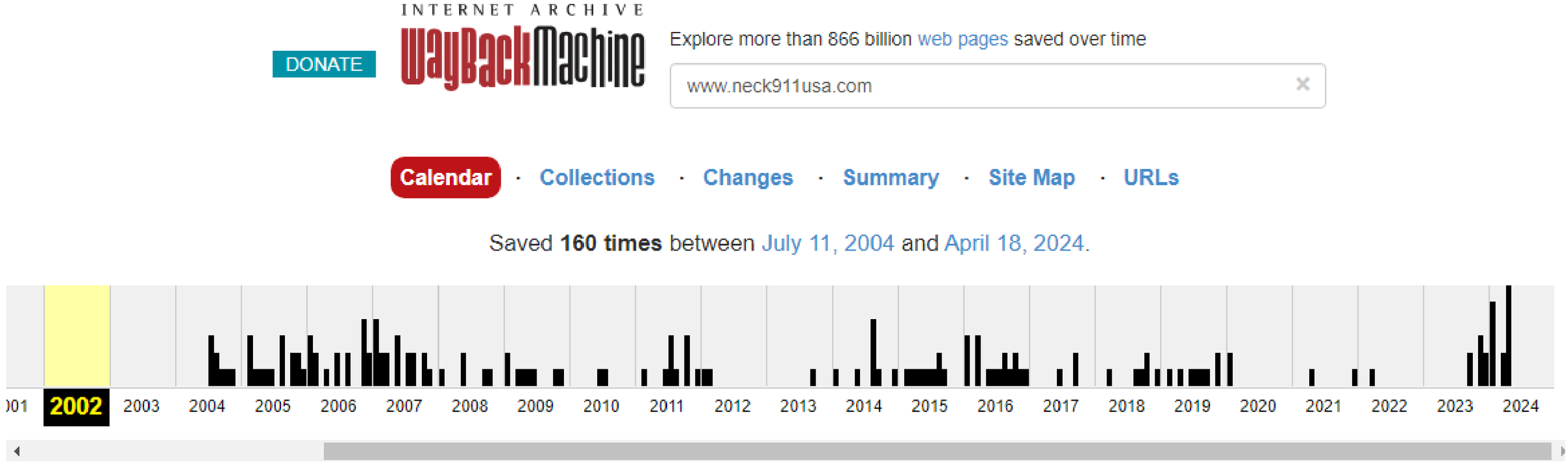
24 chapters Introduction | Our Main Goal | Chiropractic Critic | Myths | Subluxation | History of Chiropractic |...

https://www.youtube.com/results?search_query=Safety+of+Chiropractic-Farabaugh

No one was watching the store!!



www.neck911usa.com

New Version

2013

Ms Jensen was rushed to the hospital, where doctors found that her neck adjustment has **dissected four arteries.**

News > World > Americas

Georgia student suffers stroke and brain damage at routine chiropractor visit

Ms Jensen suffered traumatic brain damage following the chiropractic procedure

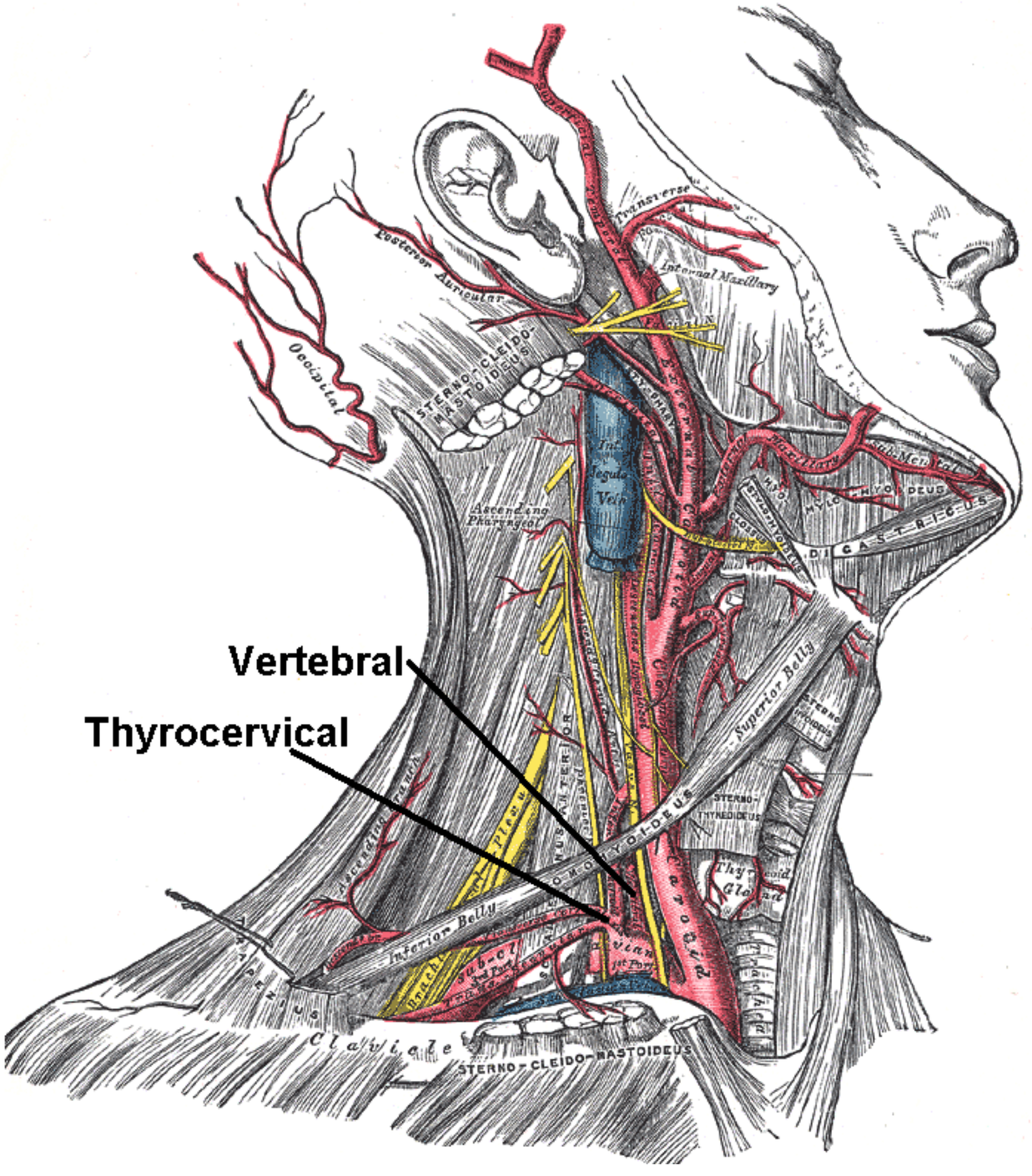
Graig Graziosi • Wednesday 06 July 2022 17:36 • 7 Comments

When arteries are dissected, blood can pool near the tears and form hematomas. Those hematomas can block further blood flow, resulting in cardiac arrest and potentially death.

Association vs. Causation

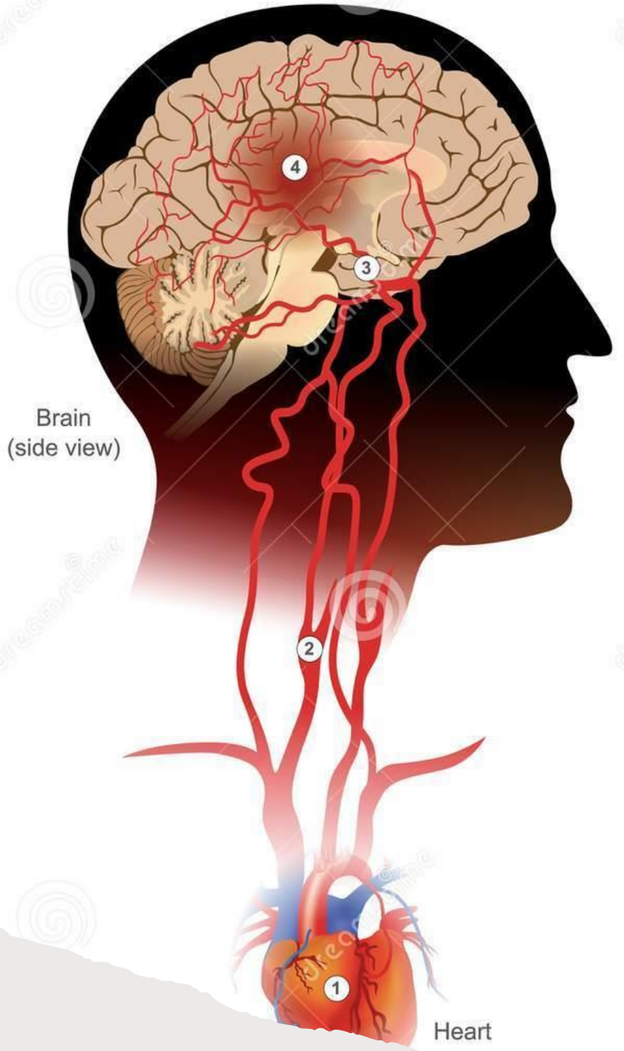
This is what guilt by association looks like!

Just because two things exist together at the same time doesn't mean one caused the other!


Vertebral
Thyrocervical
Posterior Auricular
Occipital
Transverse
Internal Maxillary
STERNO-CLEIDO-MASTOIDEUS
Int. Jugular Vein
Ascending Pharyngeal
Superior Belly
Inferior Belly
Clavicle
STERNO-CLEIDO-MASTOIDEUS

Ischemic Stroke

Hemorrhagic stroke



1. The arteries deliver oxygenated blood, glucose and other nutrients to the brain, and the veins carry deoxygenated blood back to the heart
2. Plaque in carotid artery
3. Cerebral arteries within brain
4. Location of brain tissue death (blood leaks outof from damaged artery)

Artery normal

Plaque causing thrombotic stroke, torn artery causing intracerebral

Very high blood pressure return and blood leaks out of from damaged artery

The Profession and Practice of Chiropractic: Common Myths, Safety, and Efficacy.
A review of the literature.

How Safe is Manipulation Compared to other Common Forms of Cervical Spine Treatment

The Inconvenient Truth That Certain Chiropractic Critics Do Not Want You To Know!

To help put this issue in perspective, keep in mind the following reality:

Medical/hospital mistakes, drug reactions, and inappropriate surgeries *3rd Leading Cause of Death in USA*

JAMA, July 26, 2000 Vol. 284. No. 4

- 225,000 deaths/yr = 3rd leading cause of death
- 3rd only to heart disease and cancer!!
- Estimates are for death only and do not include adverse effects associated with disability or discomfort.
- Estimates are low!

Death and Morbidity Rates of Common Medical Treatments (cont'd)

- "**In the 65-year period 1934 to 1999, there are only 37 cases of death known to have occurred in the world, from all types of SMT practitioners, with only 19 from that 65-year period being related to chiropractors or chiropractic manipulation** (and some may have already had a stroke in evolution, and therefore had an identical outcome even if they had not consulted a DC."

  (Current Concepts page 72)

- **NOTE: compare that to the reality the 16,500 people die annually from NSAID related complications.**

  (see BMJ and JAMA 2000)

The Math…

- 19 deaths in 65 years, compared to:
- 225,000 per year x 65 years = 14,625,000 for the medical profession.

- **14,625,000 / 19 = 769,736 deaths for every ONE death somehow associated with DCs**

- People who live in glass houses…

Cervical Transforaminal Epidural Steroid Injections More Dangerous Than We Think?

Scanlon, MD, et al. SPINE Volume 32, Number 11, pp 1249–1256 ©2007

- **Conclusions.** This study demonstrates a significant risk of serious neurologic injury after cervical TF-ESIs. A growing body of evidence supports an embolic mechanism, whereby inadvertent intra-arterial injection of particulate corticosteroid causes a distal infarct. Embolism to the distal basilar artery region can cause midbrain, pons, cerebellum, thalamus, temporal and occipital lobe infarctions.

The Basis for Recommending Repeating Epidural Steroid Injections for Radicular Low Back Pain: A Literature Review .

Novak MD, et al. Archives of Physical Medicine and Rehabilitation Volume 89, Issue 3, March 2008, Pages 543-552

Conclusions

- There does not appear to be any evidence to support the current common practice of a **series of injections**. Recommendations for further research are made, including a possible study design.

Dangers of NSAID use

- “The author has been **unable to find any evidence-based clinical research to indicate beneficial effects of non-steroidal anti-inflammatory drugs (NSAIDs) in the treatment of cervical-spine pain syndromes**; and yet NSAIDs are the most common prescribed first-line treatment by medical practitioners (about 5% of all prescriptions)”. **(Current Concepts page 74)**

Dangers of NSAID use (cont’d)

- Brandt noted that not only is there evidence that **NSAIDs favorably influence the progression of joint breakdown in osteoarthritis**, he also noted that there are several animal studies and human clinical studies that have **implicated NSAIDs in the acceleration of joint destruction**. NSAIDs are not without potential serious risks (GI hemorrhage, renal dysfunction, hypersensitivity reactions, liver damage, central nervous system damage and anemia). **(Current Concepts page 74)**

Dangers of NSAID use (cont'd)

- Dabbs and Lauretti: "…**it is seen that the risk of serious injury with NSAIDs use is 400 times greater than SMT (spinal manipulative therapy); and the risk of death with NSAID use is 160 times greater**."

- "The increased risk of death resulting from NSAID use is 1,500 times greater than the risk of tetraplegia following cervical SMT."

  (Current Concepts page 75)

A Risk Assessment of Cervical Manipulation vs. NSAIDs for the Treatment of Neck Pain. Dabbs et al.

JMPTVol. 18, number 8 Oct. 1995; 18:530-6.

- ***"The best evidence indicates that cervical manipulation for neck pain is much safer than the use of NSAIDs, by as much as a factor of several hundred times.*** *There is no evidence that indicates NSAID use is any more effective than cervical manipulation for neck pain."*

- Death rate for NSAID-associated GI problems at 0.04% per yr among OA patients receiving NSAIDs, or 3,200 deaths in the US per year.

- **He (Brandt) also noted that there are several animal studies and human clinical studies that have actually implicated NSAIDs in the acceleration of joint destruction.**

NSAIDs May Not Be Best Bet for Low Back Pain

News Author: Pauline Anderson,
CME Author: Laurie Barclay, MD
January 25, 2008 Cochrane Database of Systematic Reviews

- **…..literature on drug relief for low back pain (LBP) suggests that the popular nonsteroidal anti-inflammatory drugs (NSAIDs) are no more effective than other drugs such as acetaminophen, narcotic analgesics, and muscle relaxants.**
- **….also found that NSAIDs had more adverse effects than placebo and acetaminophen but fewer effects than muscle relaxants and narcotic analgesics.**
- **In addition, evidence from the review suggests that no one NSAID is clearly more effective than another.**
- **“For acute LBP, evidence is conflicting that NSAIDs are more effective than simple analgesics or bed rest, *and moderate NSAIDs are not more effective than other drugs, physiotherapy, or spinal manipulation.”***

NSAID Risk Summary

“Ulcers Final diagnosis: NSAIDs-Induced Acute Renal Failure (ARF)”

- GI bleeding
- Atrial Fib
- Stroke and CV mortality and morbidity
- Erectile Dysfunction
- Exercise-induced intestinal injury by Ibuprofen in athletes
- Increased risk of death and recurrent MI
- Dementia
- Hematologic Malignancies
- Tylenol: liver failure

Spinal manipulation causes NONE of the above. Which is safer?

You be the judge!

Which available common medical treatments for back and neck pain are more researched and proven to be safe and effective compared to spinal manipulation?

Answer: NONE.

- Neck brace
- Surgery: micro-discectomy, fusion.
- Pain management/ESI
- OTCs/NSAIDs
- Tylenol
- Narcotics/muscle relaxants/anti-inflammatories
- Bed rest
- Bracing

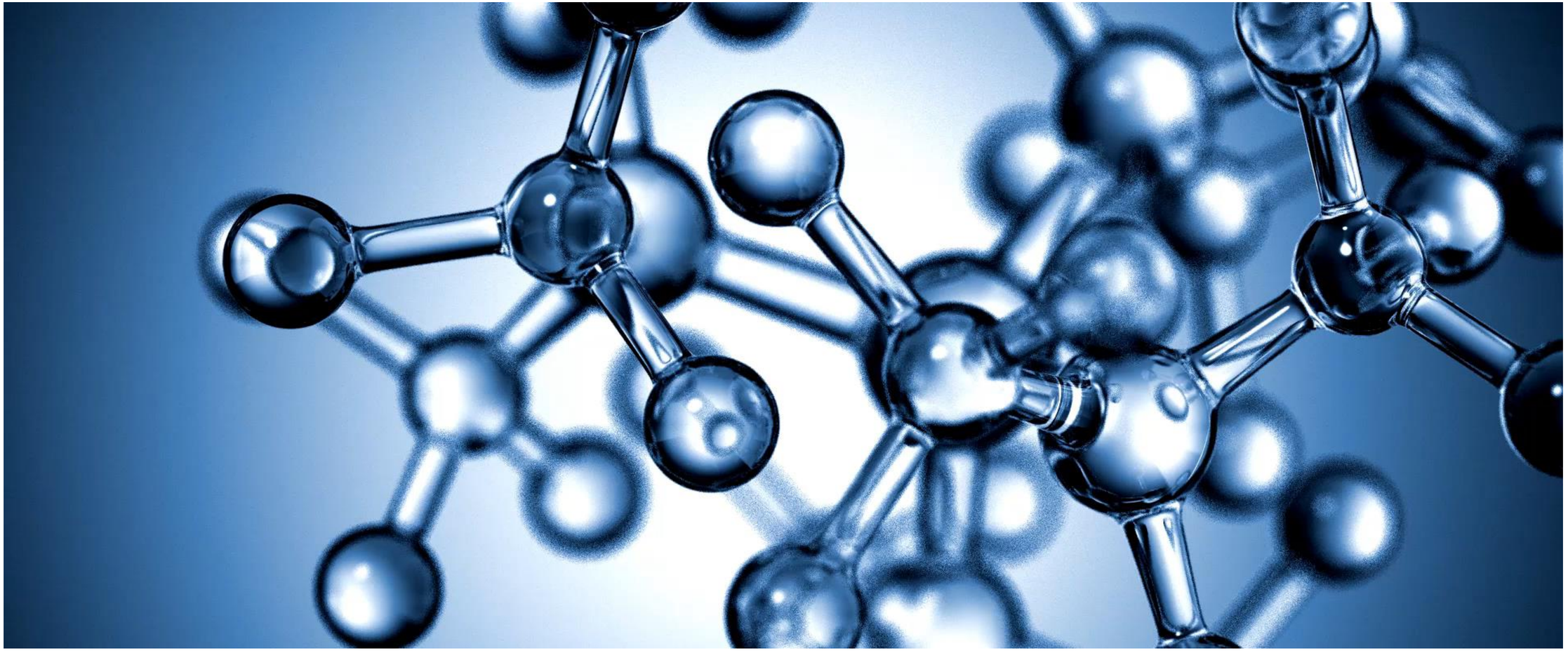
Death and Morbidity Rates of Common Medical Treatments

- "Chiropractic procedures are the safest procedures in the provision of human health care services, when compared to know mortality and morbidity rates in medical practice." **(Current Concepts page 72)**

- USA: 1: 2,000,000 neck manipulations
- Canada: 1:3,846,153 neck manipulations
- Other sources: as low as 1:5,000,000

Material Risk: What is it?

What are the obligations of a DC, and what are the material risks associated with spinal manipulation?



Issue #1: Standard of care regarding disclosure of material risks

- A physician may fall below the standard of care if the physician fails to disclose to the patient material risks of therapy or treatment.

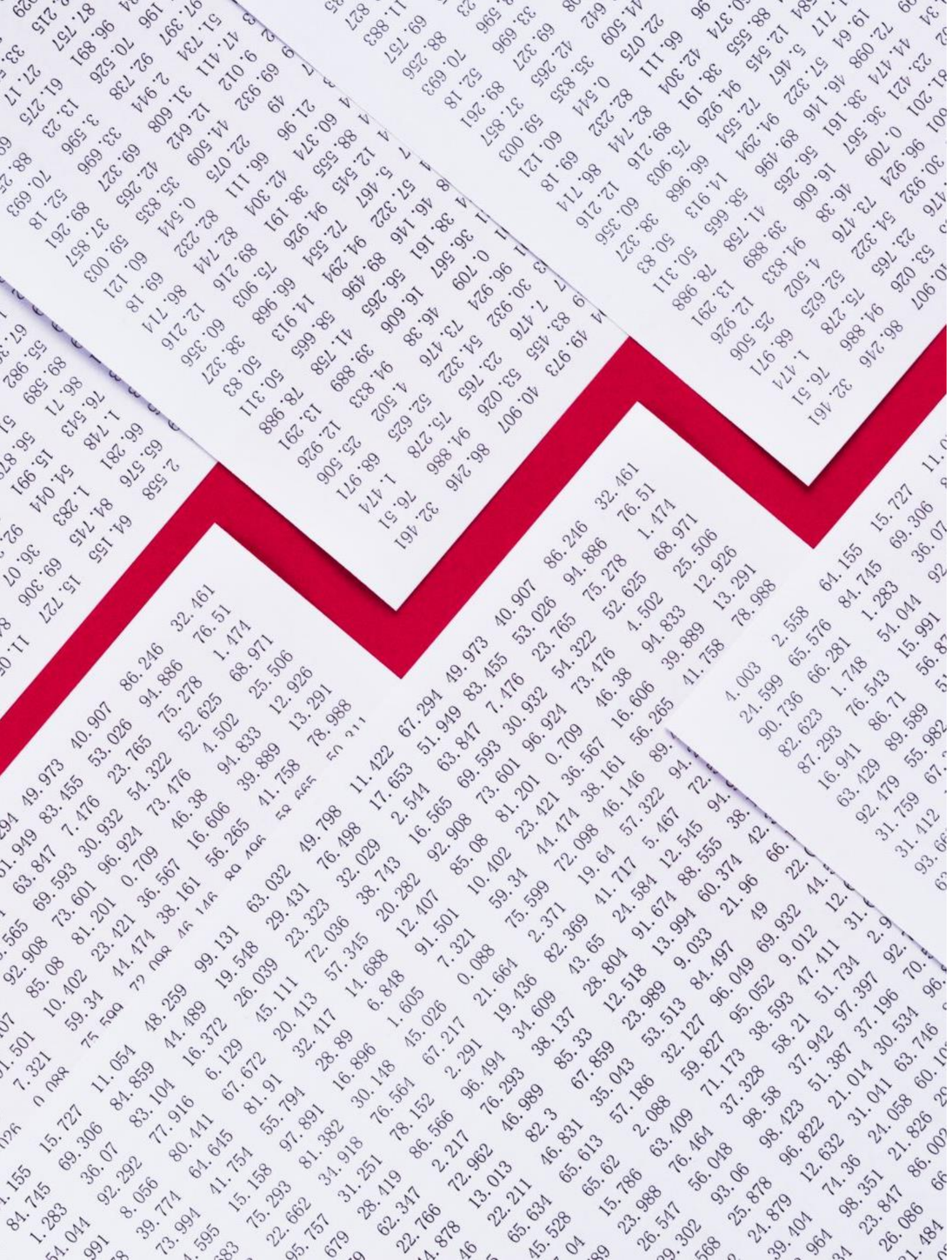
Disclaimer: *Dr. Farabaugh is not an attorney. An attorney was consulted to develop the slides related to material risk and the attorney reviewed these slides for accuracy. Be sure to check with your own attorney as state law and standards may vary by state.*

Question: What is a “Material Risk”?

What risk a reasonably prudent DC would disclose to a reasonably prudent patient about the proposed therapy or treatment. (not necessarily YOUR patient involved in the case)

If it is a remote risk, it need not be disclosed.

Under OHIO law, a DC is required to obtain an informed consent (Gonzales vs. DC) before treating the patient, otherwise it is technically considered battery.



Issue #2: Undisclosed material risk.

- For there to be a legal cause of action under Ohio law, the undisclosed MR has to occur as a result of the treatment, and had the MR been disclosed a reasonable prudent person would not have proceeded with the proposed treatment.

Issue #3:
What is a reasonably prudent person?

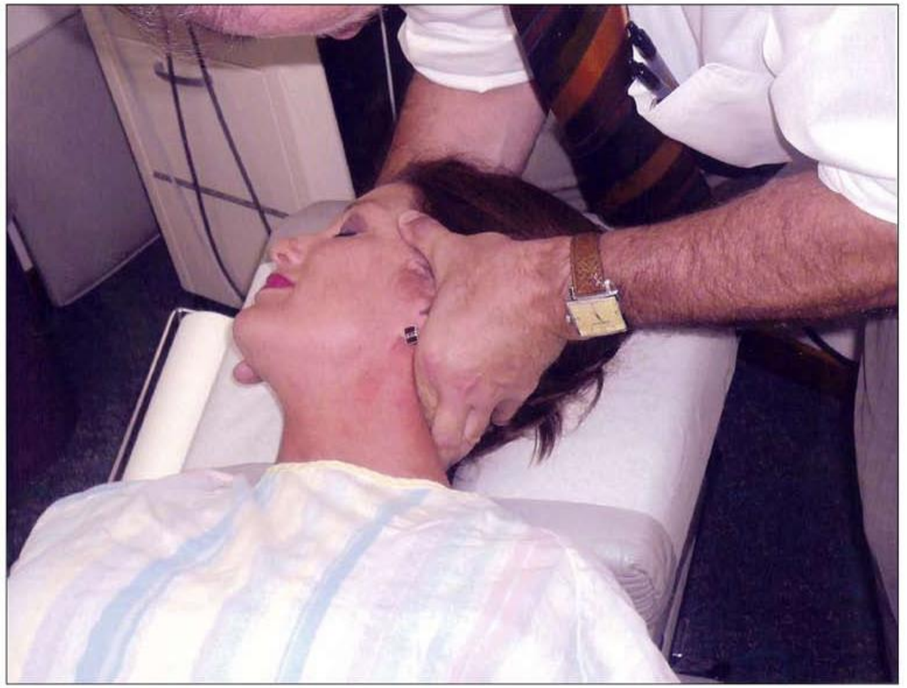
Reasonably prudent person: in the shoes of the plaintiff what would he/she have done if disclosure had been provided?

Note: the patient obviously has a potential bias, thus the standard pertains to a <u>reasonably prudent person</u> IN THE SHOES of the plaintiff!

Who provides SMT is a matter of public safety!

- **Sitting thru a weekend course, watching the video, and setting up on 20 patients does not qualify one to utilize SMT**

Are you Adequately Trained to Perform this Chiropractic Procedure??



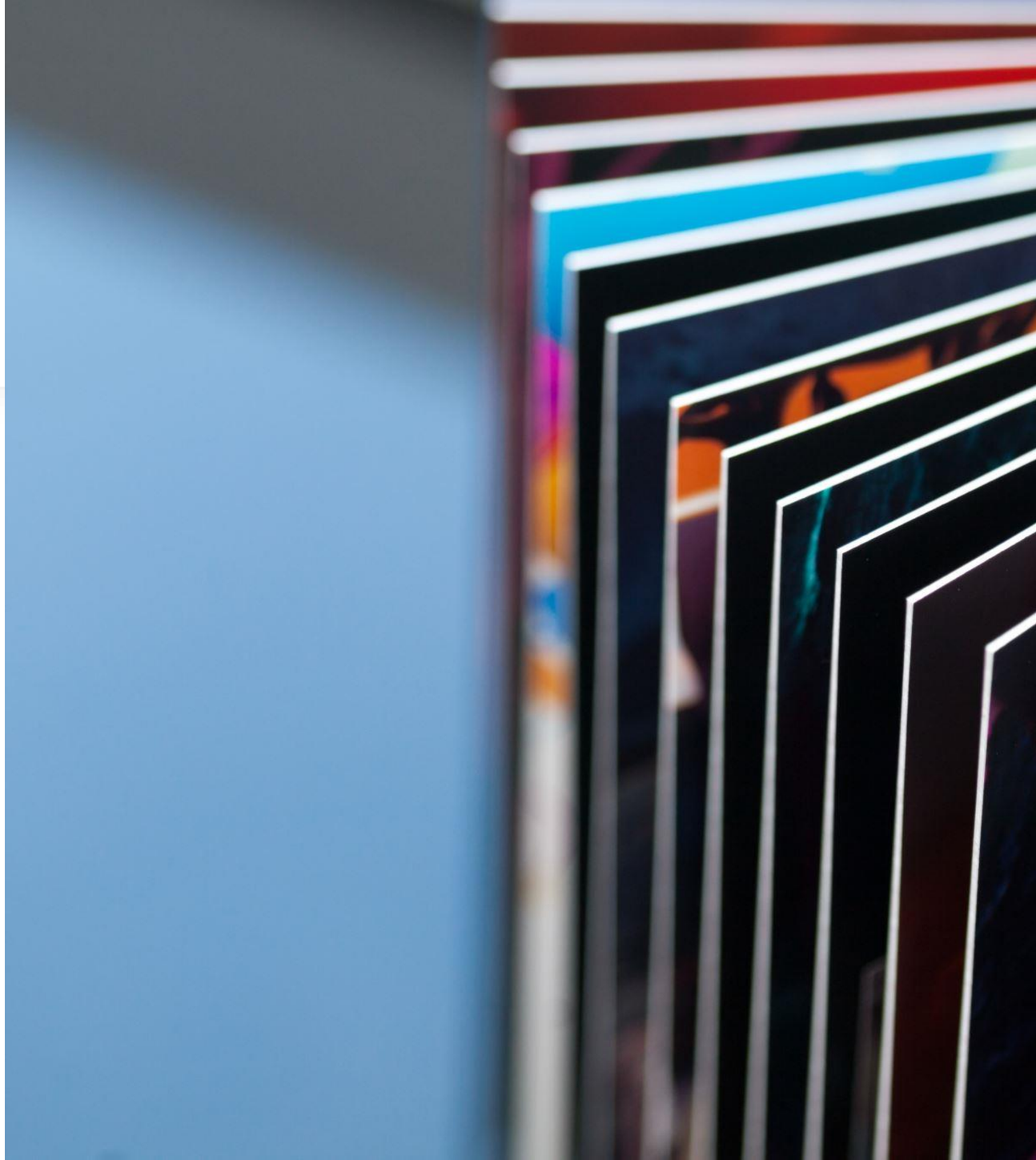
No? In our opinion neither are massage and physical therapists, athletic trainers, acupuncturists, physician assistants, yoga instructors, high school coaches etc. Public safety requires that those individuals wishing to perform a chiropractic adjustment or spinal manipulation be adequately trained. This measure will help ensure patient safety by requiring minimum training standards for those who wish to attempt this medical procedure.

Are you <u>Adequately Trained</u> to See the Cancer on This X-Ray??:

No? In our opinion neither are massage and physical therapists, athletic trainers, acupuncturists, physician assistants, yoga instructors, high school coaches and others etc. Public safety requires that those individuals wishing to perform a chiropractic adjustment or spinal manipulation be adequately trained in X-ray diagnosis and must have the clinical skills to provide a differential diagnosis. This measure will help ensure patient safety and will require that those who wish to attempt this medical procedure be adequately trained to provide both an X-ray and differential diagnosis.

Safety of Spinal Manipulation

A review of the literature.



Is there a causal relationship between spinal manipulative therapy (SMT) and stroke?

- “The best scientific evidence available has shown no causative relationship between appropriately applied spinal manipulation and stroke events.
- The incidence of stroke in the population as a whole is no different (2 per 100,000 persons annually) than among those who receive manipulation treatment of the neck.”
- **(Current Concepts page 62)**

Cassidy et al. **Risk of Vertebrobasilar Stroke and Chiropractic Care. Results of a Population-Based Case-Control and Case-Crossover Study.** Spine 2008;33:S176–S183

- **Conclusion.** VBA stroke is a very rare event in the population. The increased risks of VBA stroke associated with chiropractic and PCP visits is likely due to patients with headache and neck pain from VBA dissection seeking care before their stroke. ***We found no evidence of excess risk of VBA stroke associated chiropractic care compared to primary care.***

- ***NOTE: There is a reason DCs pay only about $150/month in malpractice insurance. Chiropractic care is very safe!***

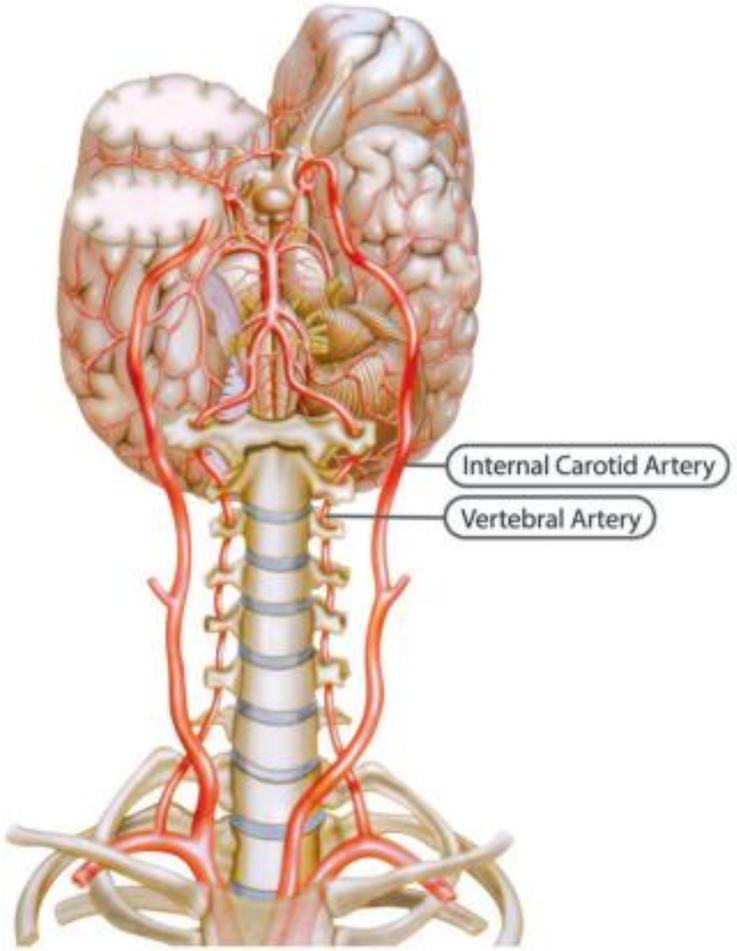
Chaibi et al. **A risk-benefit assessment strategy to exclude cervical artery dissection in spinal manual-therapy: a comprehensive review.** Ann Med. 2019 Mar;51(2):118-127. doi: 10.1080/07853890.2019.1590627. Epub 2019 Apr 6. PMID: 30889367 PMCID: PMC7857472 DOI: 10.1080/07853890.2019.1590627.

"The World Health Organization regards manual mobilization and/or spinal manipulative treatment conducted by chiropractors to be a safe and effective treatment with few, mild, transient AEs, such as local soft tissue tenderness and tiredness on the treatment day.

A few case studies have reported serious AEs following cervical spinal manipulative therapy (SMT), but whether there is a causal relationship between cervical SMT and CAD (cervical artery dissection) has not been determined because of the methodological design, low level of evidence and low prevalence."

Classic chicken and egg discussion!

i.e. whether the **CAD symptoms lead the patient** to seek cervical manual-therapy or whether the **cervical manual-therapy provoked** CAD along with the non-CAD presenting complaint.



Carotid Artery:

Any disruption to the ANTERIOR circulation can cause:

- Retinal and/or cerebral ischemic symptoms, namely, hemiparesis, hemisensory loss, neglect, aphasia, gaze deviation, dysarthria, and monocular visual loss.

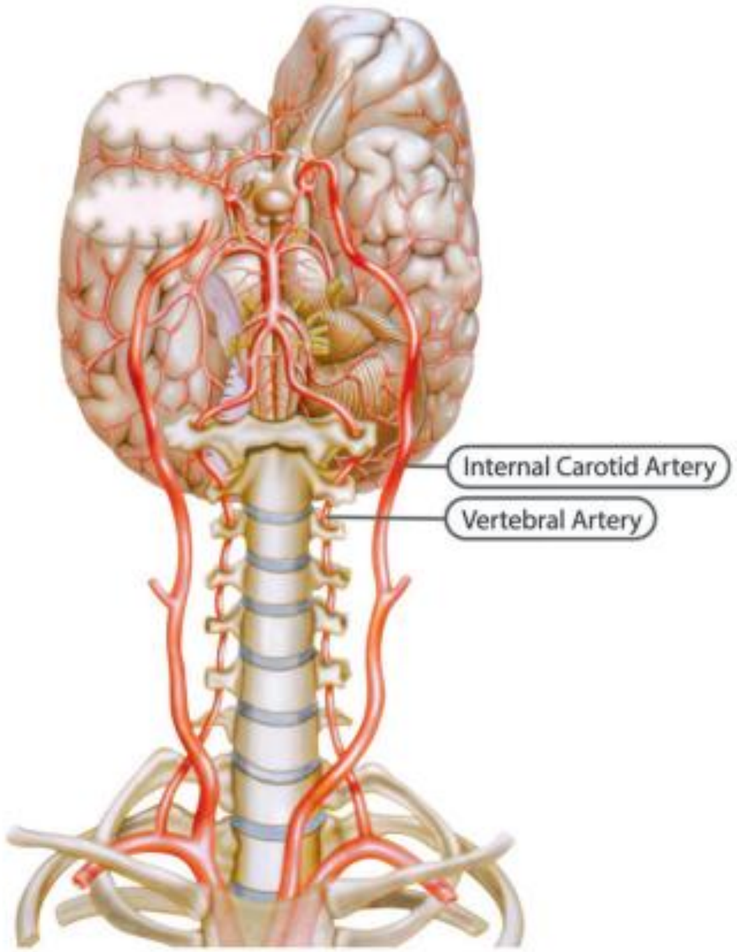
- The location of pain symptoms from an ICAD can vary, but neck pain commonly involves the periorbital, frontal, or upper anterior cervical region and is unilateral and ipsilateral to the affected cervical artery

- **Headache**: migraine or cluster headaches with its unilateral pain location

    - **Migraines** often presenting with nausea, vomiting, and photo- and phonophobia

    - **Cluster headaches** have one or more associated symptoms such as ipsilateral tearing, injection, rhinorrhoea, nasal stenosis, miosis, and/or ptosis.

Chaibi et al. **A risk-benefit assessment strategy to exclude cervical artery dissection in spinal manual-therapy: a comprehensive review.**

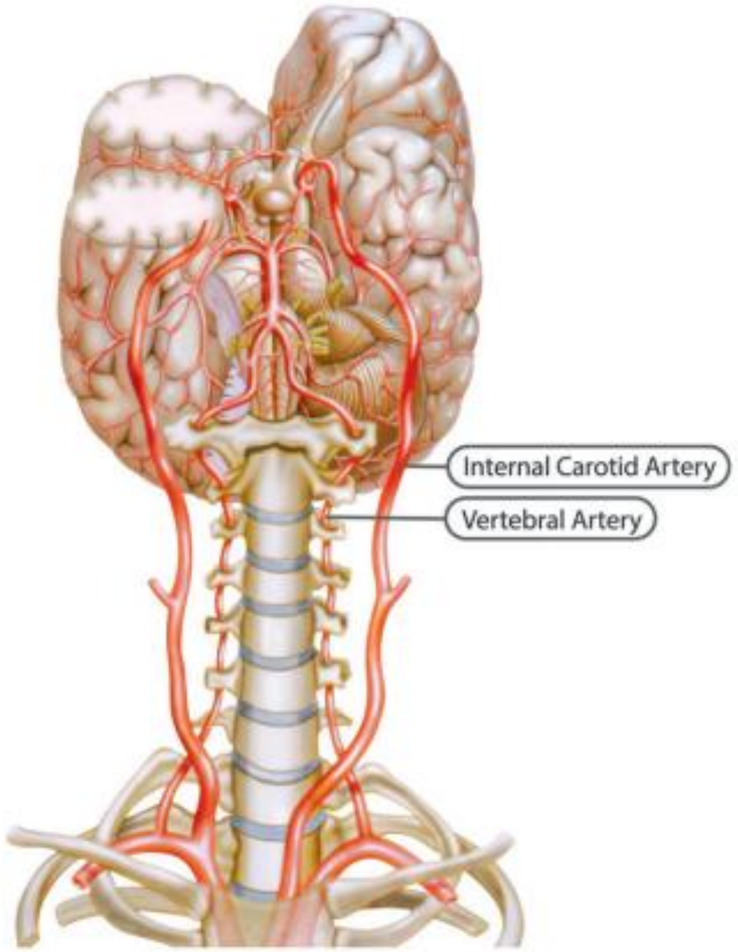


However, when coexisting CAD is responsible for neck pain, **the pain is often sudden, sharp, severe, steady and different from previously experienced neck pain.**

In general, pain due to a vascular condition tends to present as throbbing, pounding, pulsing, and/or beating, while musculoskeletal pain conditions usually have an aching, sore, heavy, hurting, deep, cramping, and/or dull character.

Chaibi et al. **A risk-benefit assessment strategy to exclude cervical artery dissection in spinal manual-therapy: a comprehensive review.**

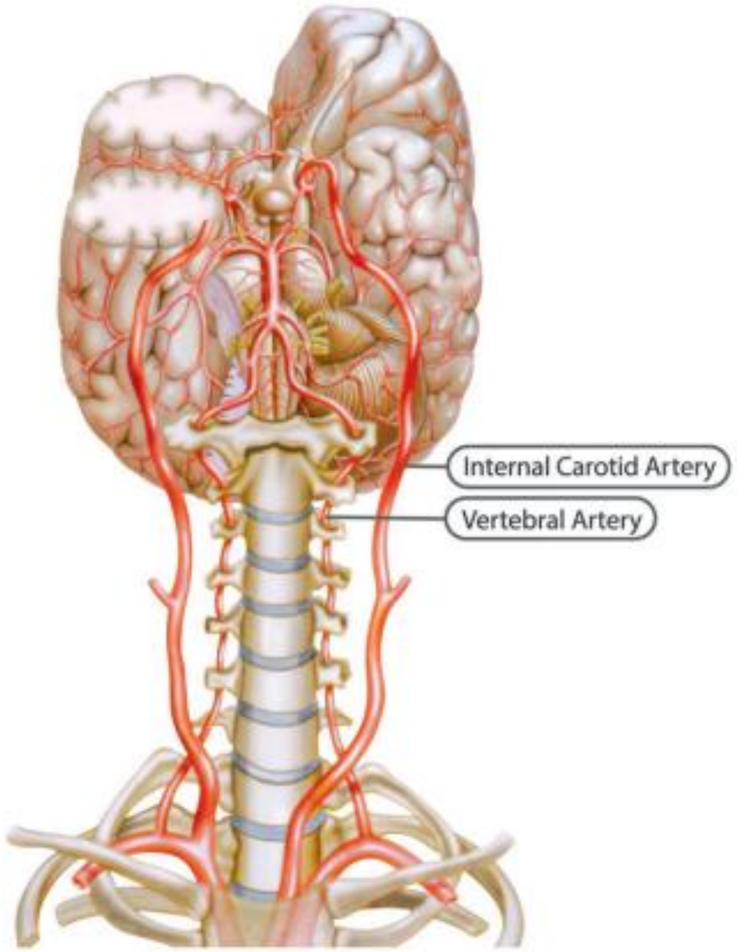
Vertebral Artery:



Any disruption to the POSTERIOR circulation can cause:
Any disruption to the posterior circulation
might, therefore, produce brainstem ischaemic symptoms, namely:

- ipsilateral loss of pain and
- Contralateral temperature sensation in the body,
- ipsilateral hemiparesis, nausea, vomiting, vertigo, nystagmus, diplopia, dysphagia, dysarthria, dysphonia, and/or cerebellar ischemic symptoms, such as ataxia, vertigo, and/or nystagmus.
- The location of pain symptoms in VAD varies.

Chaibi et al. **A risk-benefit assessment strategy to exclude cervical artery dissection in spinal manual-therapy: a comprehensive review.**



Important Risk Factors

NOTE: a thorough hx is exceptionally important!

Environmental risk factors:

- Recent acute respiratory infection;
- hyperhomocysteinaemia,
- namely, B-6, -9, and 12 vitamin deficiency;
- a low body mass index and
- Low cholesterol;
- smoking; and
- pulsating tinnitus

Inherited risk factors include:

- medical and/or family history of arterial anomalies and/or CAD, respectively,
- connective tissue disorders, i.e. Ehlers–Danlos syndrome type IV, Marfan's syndrome,
- Osteogenesis Imperfecta, or
- Loeys–Dietz syndrome *(enlargement of the aorta)*

Chaibi et al. **A risk-benefit assessment strategy to exclude cervical artery dissection in spinal manual-therapy: a comprehensive review.**

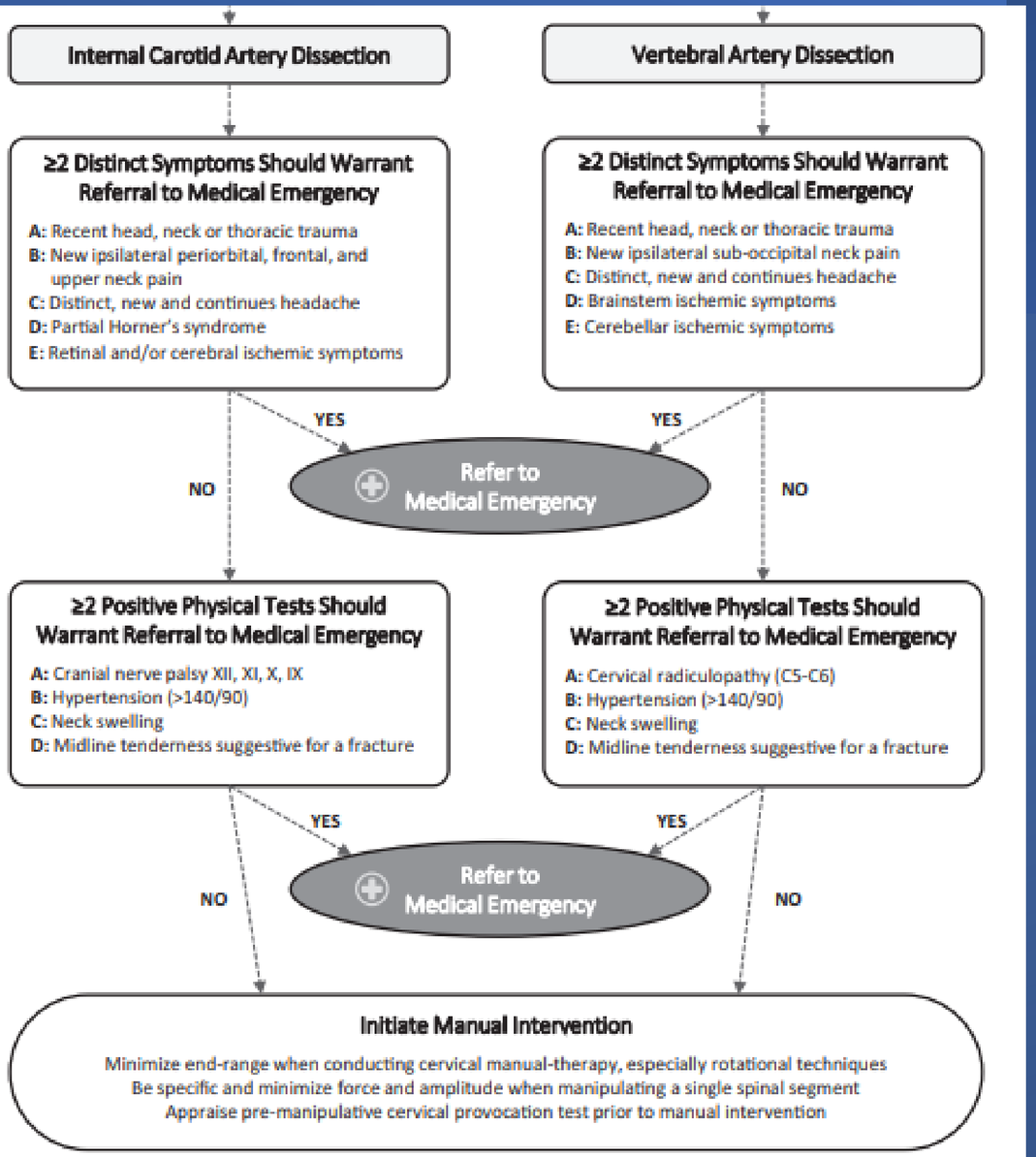


Figure 3. Step-by-step risk–benefit assessment strategy tool to exclude cervical artery dissection.

Conclusions:

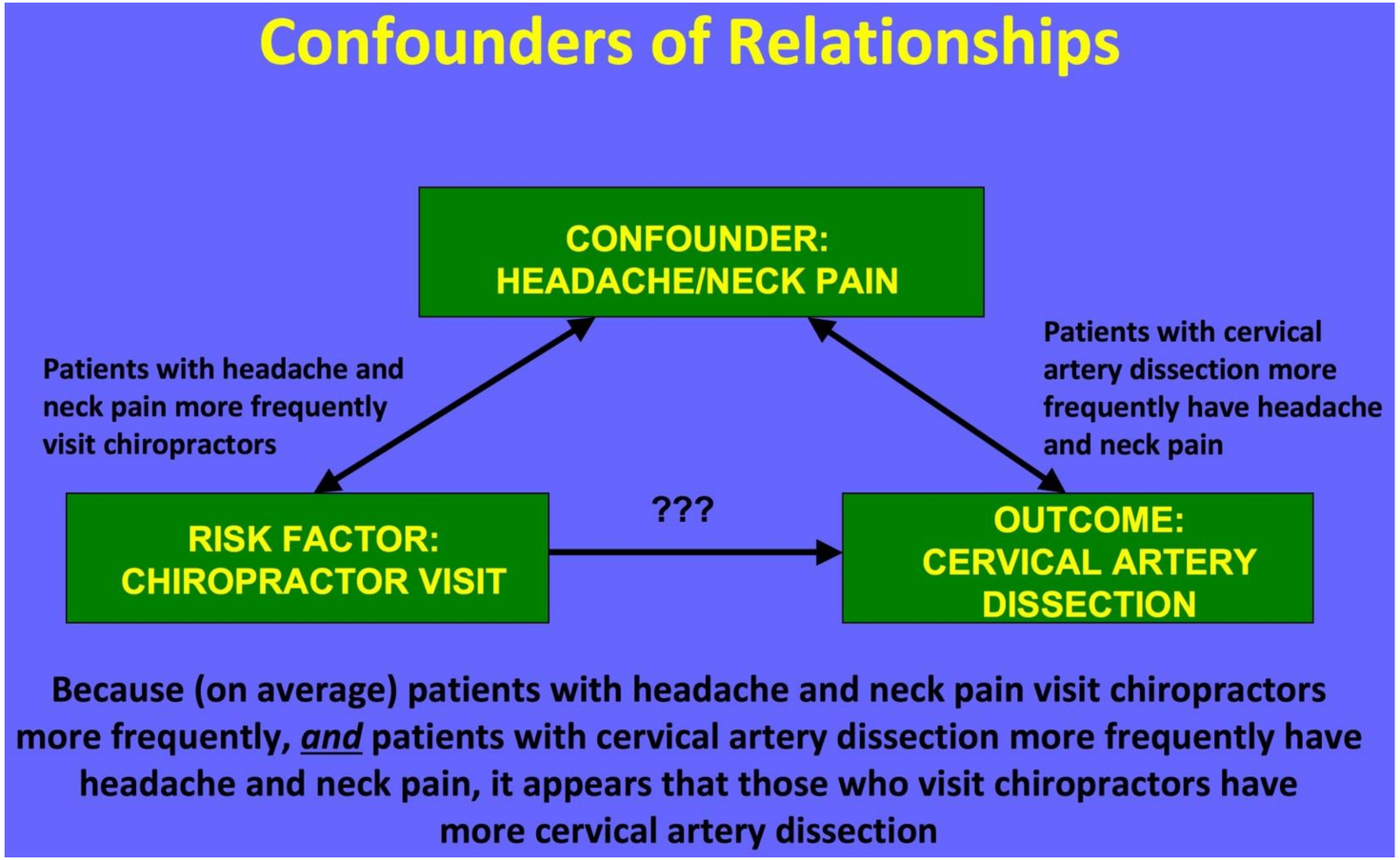
The quality of the published literature on the relationship between chiropractic manipulation and CAD is very low. Our analysis shows a small association between chiropractic neck manipulation and cervical artery dissection. **This relationship may be explained by the high risk of bias and confounding in the available studies**, and in particular by the known association of neck pain with CAD and with chiropractic manipulation.

There is no convincing evidence to support a causal link between chiropractic manipulation and CAD.

Belief in a causal link may have significant negative consequences such as numerous episodes of litigation.

Church et al. **Systematic Review and Meta-analysis of Chiropractic Care and Cervical Artery Dissection: No Evidence for Causation**. 2016 Feb 16;8(2):e498. doi: 10.7759/cureus.498. PMID: 27014532 PMCID: PMC4794386 DOI: 10.7759/cureus.498

- Church et al. **Systematic Review and Meta-analysis of Chiropractic Care and Cervical Artery Dissection: No Evidence for Causation**. 2016 Feb 16;8(2):e498. doi: 10.7759/cureus.498. PMID: 27014532 PMCID: PMC4794386 DOI: 10.7759/cureus.498



“The most likely potential confounder in this case is *neck pain*. Patients with neck pain are more likely to have CAD (80% of patients with CAD report neck pain or headache), and they are more likely to visit a chiropractor than patients without neck pain (Figure *3*).”

“While severe trauma most certainly causes dissection, it may be debated whether the situation in chiropractic care is analogous.”

Source of data: Administrative data were used to identify exposures to chiropractic and PCP care.

Conclusions:

We found no significant association between exposure to chiropractic care and the risk of VBA stroke. We conclude that manipulation is an unlikely cause of VBA stroke. The positive association between PCP visits and VBA stroke is most likely due to patient decisions to seek care for the symptoms (headache and neck pain) of arterial dissection. We further conclude that using chiropractic visits as a measure of exposure to manipulation may result in unreliable estimates of the strength of association with the occurrence of VBA stroke.

Our results add weight to the view that chiropractic care is an unlikely cause of VBA strokes. However, the current study does not exclude cervical manipulation as a possible cause or contributory factor in the occurrence of VBA stroke.

Kosloff et al. **Chiropractic care and the risk of vertebrobasilar stroke: results of a case-control study in U.S. commercial and Medicare Advantage populations.** Chiropr Man Therap. 2015 Jun 16;23:19. doi: 10.1186/s12998-015-0063-x. eCollection 2015. PMID: 26085925 PMCID: PMC4470078 DOI: 10.1186/s12998-015-0063-x

Whedon et al. **Risk of traumatic injury associated with chiropractic spinal manipulation in Medicare Part B beneficiaries aged 66 to 99 years.** Spine (Phila Pa 1976). 2015 Feb 15;40(4):264-70. doi: 10.1097/BRS.0000000000000725. PMID: 25494315 PMCID: PMC4326543

Results:

The adjusted risk of injury in the chiropractic cohort was lower as compared to the primary care cohort (hazard ratio 0.24; 95% CI 0.23–0.25). The cumulative probability of injury in the chiropractic cohort was 40 injury incidents per 100,000 subjects, as compared to 153 incidents per 100,000 subjects in the primary care cohort.

Among subjects who saw a chiropractic physician, the likelihood of injury was increased in those with a chronic coagulation defect, inflammatory spondylopathy, osteoporosis, aortic aneurysm and dissection, or long-term use of anticoagulant therapy.

- **The proportion of subjects in the chiropractic cohort with injuries within seven days of an office visit was 28 per 10,000, as compared to 36 per 10,000 in the primary care cohort.**

- **It is unlikely that chiropractic care is a significant cause of injury in older adults. The lower risk in the chiropractic cohort may suggest to some that chiropractic care is protective against injury in older adults. However, there is no evidence for such an effect.**

Leach. **Patients with symptoms and signs of stroke presenting to a rural chiropractic practice.** J Manipulative Physiol Ther. 2010 Jan;33(1):62-9. doi: 10.1016/j.jmpt.2009.11.004. PMID: 20114102 DOI: 10.1016/j.jmpt.2009.11.004

Common presenting complaints were:

- unilateral arm weakness and
- slurred speech;
- episodic loss of vision,
- dysphagia,
- dysphonia, and
- same-sided leg weakness.

Six patients: 2 died; 4 referred: 77-year-old white female, 71-year-old white male, 59-year-old white male, and 24-year-old Hispanic female. Three of the 4 surviving patients were eventually diagnosed with stroke, and one with seizure disorder.

Conclusions: Patients with symptoms and signs of stroke may infrequently present to chiropractic physicians for evaluation and treatment.

Prevention, screening, early identification of stroke symptoms and signs, and referral for prompt treatment are cornerstones of the national stroke policy as espoused by the Centers for Disease Control.

Support for chiropractic management of acute, subacute and chronic spine pain. Consider these nationally accepted guidelines

- **AHCPR: Agency for Health Care Policy and Research**
- **NCQA: National Council on Quality Assurance**
- **American College of Physicians/American Pain Society: Annals of Internal Medicine**
- **ACOEM: American College of Occupational and Environmental Medicine.**
- **ODG: Official Disability Guideline**
- **Milliman and Roberston**
- **CCGPP: Council on Chiropractic Guidelines and Practice Parameters. The most comprehensive review of the literature in the history of our country.**
- **Bronfort. Evidence-informed management of chronic low back pain with spinal manipulation and mobilization. Spine J. 2008 Jan-Feb;8(1):213-25.**

Chou, et al. **Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society Low Back Pain Guidelines Panel*** 2 October 2007 | Volume 147 Issue 7 | Pages 478-491

Recommendation 7: For patients who do not improve with self-care options, clinicians should consider the addition of nonpharmacologic therapy with proven benefits—for **acute** low back pain, **spinal manipulation**; for **chronic** **or subacute** low back pain, intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, **spinal manipulation**, yoga, cognitive-behavioral therapy, or progressive relaxation (weak recommendation, moderate-quality evidence).

Side note: Is it ever acceptable to recommend anything less than the most evidence-based treatment to a patient?

Answer: No. Conclusion: DCs and medical professionals of all types need to work closer together for the good of the patients we serve.

Source: “Current Concepts in Spinal Manipulation and Cervical Arterial Incidents” © 2006

- 2001 Terret. Misuse of the Literature by Medical Authors (page 105).
- Was an injury caused by a chiropractic physician?
- Answer: **Actual injury caused by medical practitioners, medical specialists, osteopaths, physiotherapists, naturopaths, the patient, a kung fu practitioner, a blind masseur, a wife, and a barber in India**

Evaluating the risk for stroke

Risk factors and examination

Possible Risk Factors All Physicians Need to Know

Despite the exceptionally low risk, every physician should be aware of the following risk factors:

1. Dizziness, unsteadiness, giddiness, and vertigo
2. Sudden severe pain in the side of the head and/or neck, ***which is different from any pain the patient has had before***
3. Age <45
4. Migraine
5. Connective Tissue disease (Autosomal dominant polycystic kidney disease, Ehlers-Danlos Type IV, Marfan Syndrome, Fibromuscular Dystrophy)
6. Recent infection, particularly upper respiratory.

(Current Concepts page 44)

Recognize the 3 “N’s

1. Nausea
2. Nystagmus (rhythmic, oscillating motions of the eyes)
3. Numbness

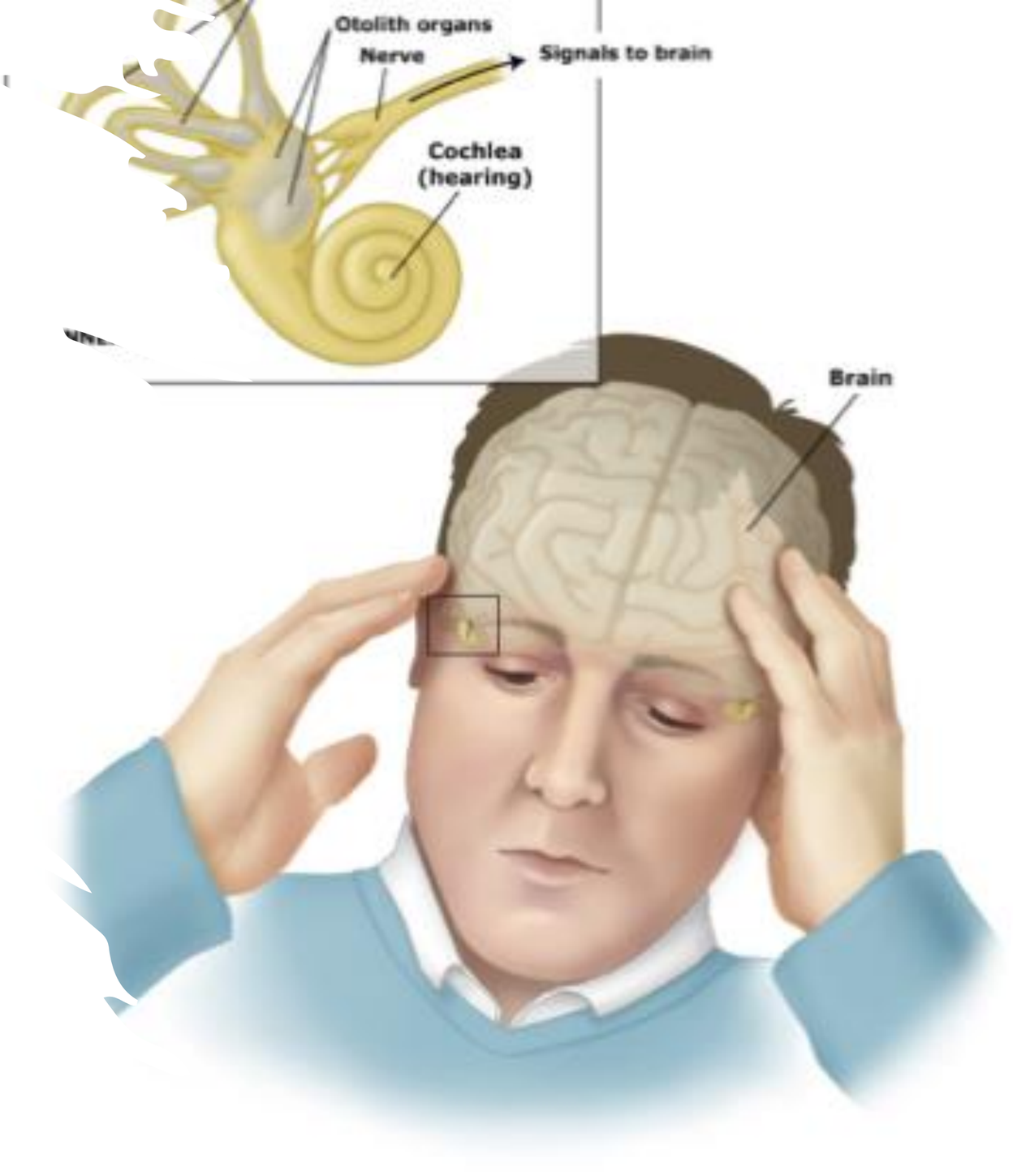
Recognize the four “F”s.

- Female
- Forty
- Fat
- Fertile (on birth control)
- ***[indications also for gall bladder]***

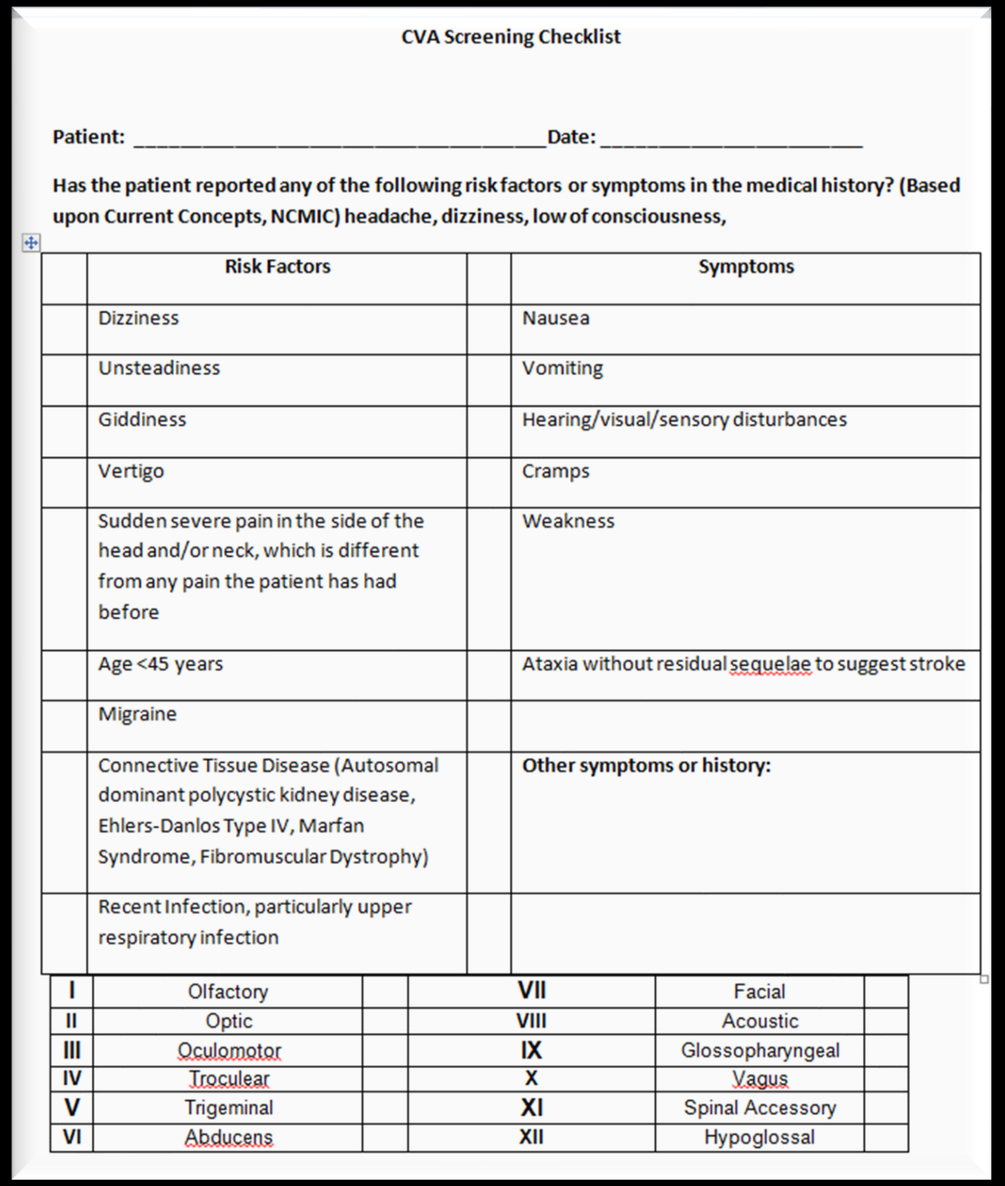
Recognize the five “D”s.

1. Dizziness
2. Diplopia (double vision caused by a defective function of the extraocular muscles or a disorder of the nerves that innervate (stimulate) the muscles.)
3. Dysarthria (slurred, slow, and difficult to produce (difficult to understand). May also have problems controlling the pitch, loudness, rhythm, and voice qualities of speech.)
4. Dysphagia (difficulty swallowing and may also experience pain while swallowing.)
5. Drop attacks

- Note: Drop attacks are common; the patient suddenly loses muscle tone and falls to the ground without losing consciousness. One of the types of central vertigo, seen with **disorders of the brainstem and CNS** as opposed to peripheral vertigo from sensory end organs (ears, eyes).



CVA Screening Checklist



CVA Screening Checklist

Patient: _____ **Date:** _____

Has the patient reported any of the following risk factors or symptoms in the medical history? (Based upon Current Concepts, NCMIC) headache, dizziness, low of consciousness,

	Risk Factors		Symptoms
	Dizziness		Nausea
	Unsteadiness		Vomiting
	Giddiness		Hearing/visual/sensory disturbances
	Vertigo		Cramps
	Sudden severe pain in the side of the head and/or neck, which is different from any pain the patient has had before		Weakness
	Age <45 years		Ataxia without residual sequelae to suggest stroke
	Migraine		
	Connective Tissue Disease (Autosomal dominant polycystic kidney disease, Ehlers-Danlos Type IV, Marfan Syndrome, Fibromuscular Dystrophy)		**Other symptoms or history:**
	Recent Infection, particularly upper respiratory infection		

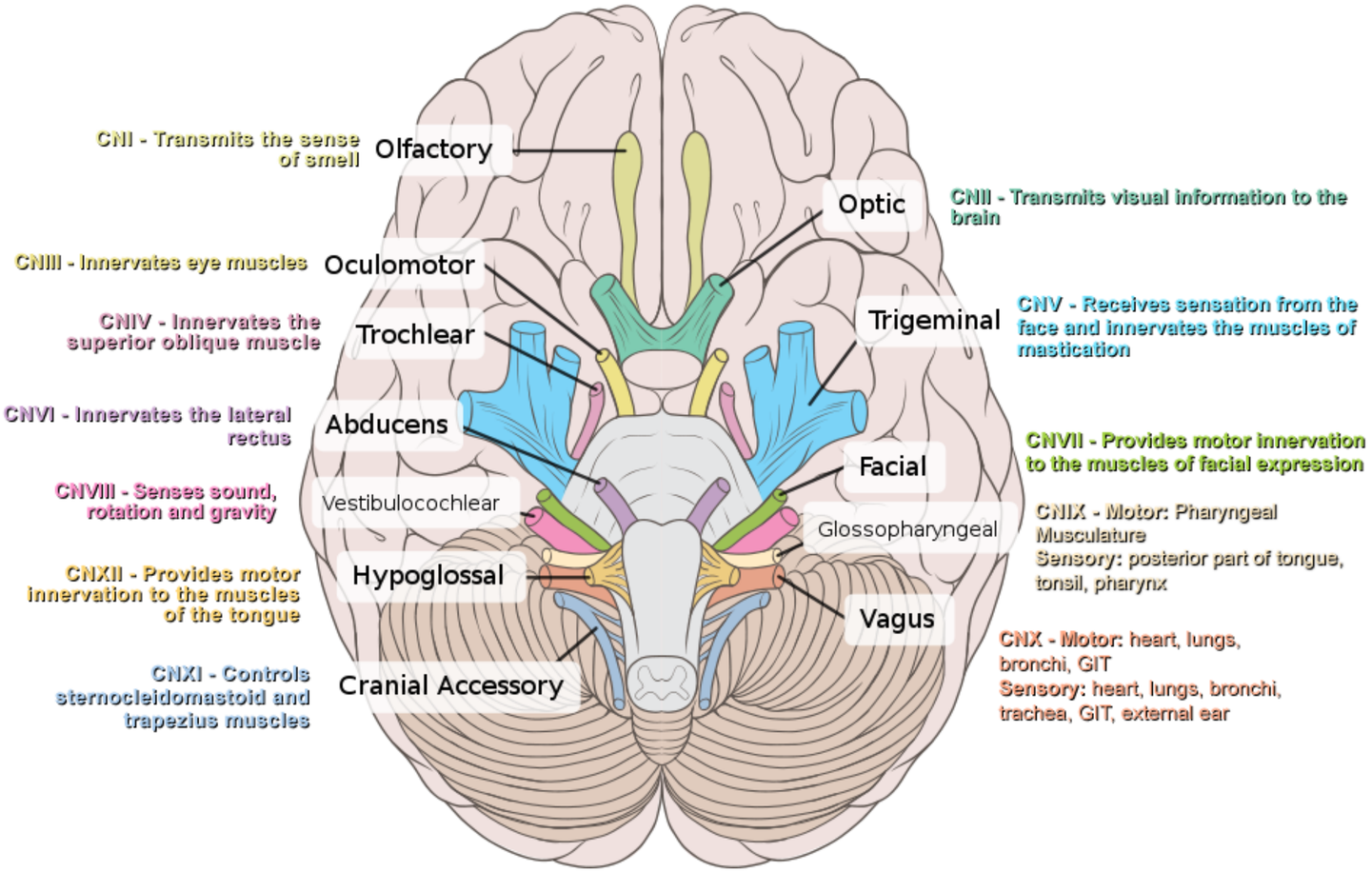
I	Olfactory		VII	Facial	
II	Optic		VIII	Acoustic	
III	Oculomotor		IX	Glossopharyngeal	
IV	Trocular		X	Vagus	
V	Trigeminal		XI	Spinal Accessory	
VI	Abducens		XII	Hypoglossal	

The Safety of Spinal Manipulation

Examination

Cranial Nerves

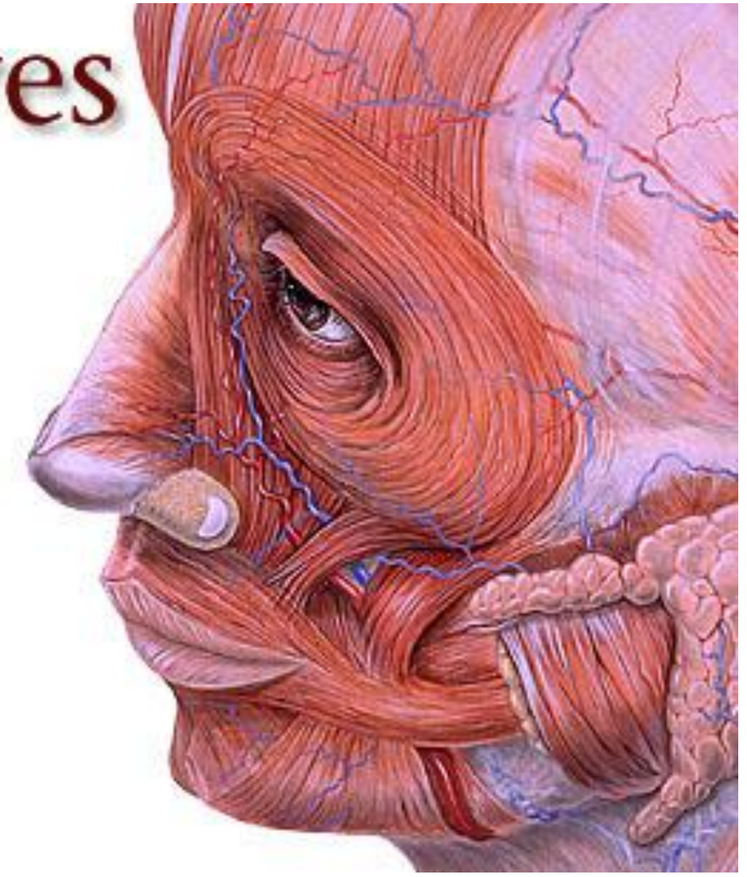
Cranial Nerves



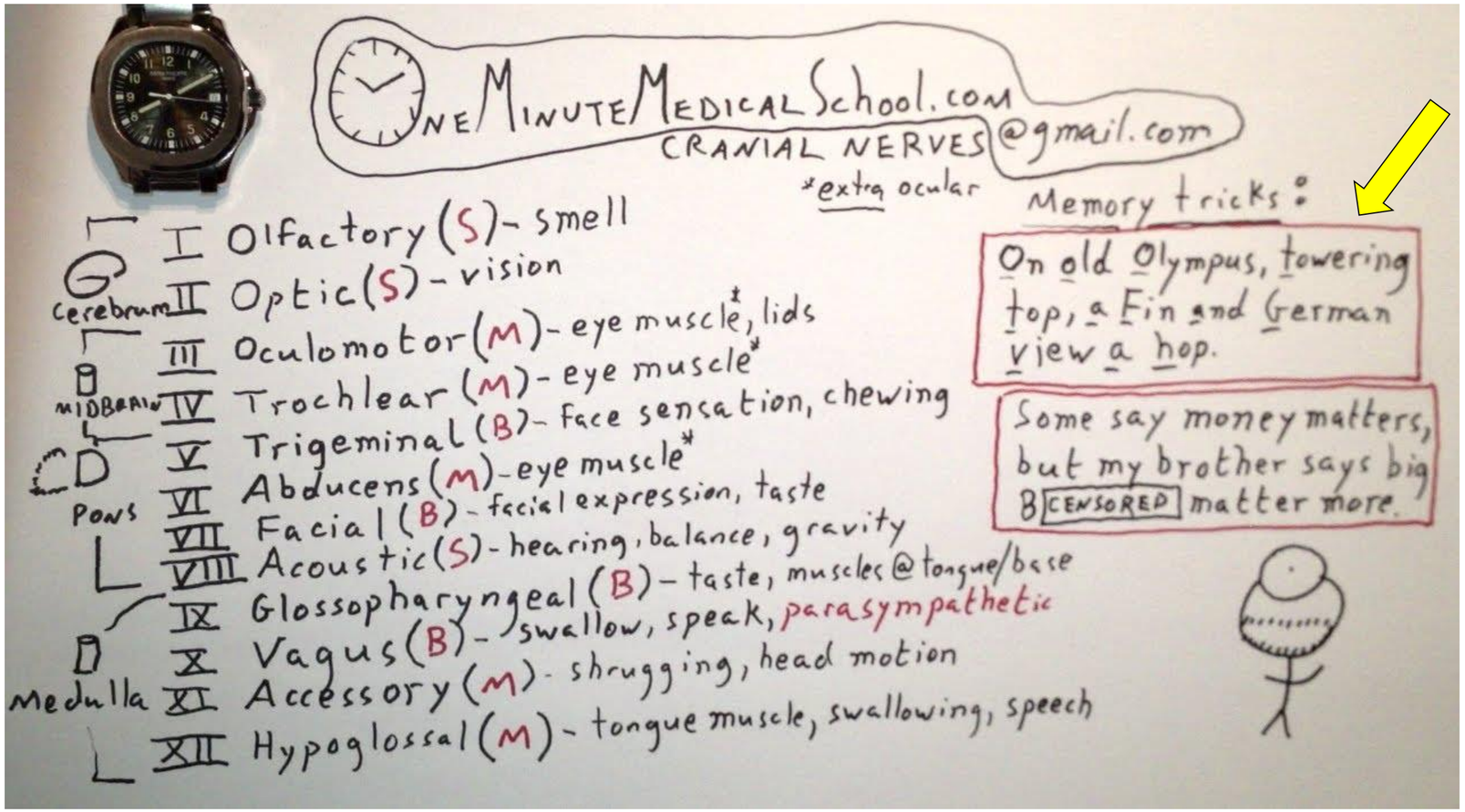
Cranial Nerves

Cranial Nerves

I	Olfactory
II	Optic
III	Oculomotor
IV	Trochlear
V	Trigeminal
VI	Abducens
VII	Facial
VIII	Vestibulocochlear
IX	Glossopharyngeal
X	Vagus
XI	Accessory
XII	Hypoglossal



Cranial Nerves



CN I: Olfactory

- Rash, deformity of nose.
- **Test each nostril** with essence bottles of **coffee**, vanilla, peppermint.

CN II: Optic

- With patient wearing glasses, test each eye separately on **eye chart**/ card using an eye cover.
- **Examine visual fields by confrontation by wiggling fingers 1 foot from pt's ears, asking which they see move.**
  • Keep examiner's head level with patient's head.
- If poor visual acuity, map fields using fingers and a quadrant-covering card.
- Look into fundi.

CN III, IV, VI: Oculomotor, Trochlear, Abducens

- Look at pupils: shape, relative size, ptosis.
- **Shine light in from the side to gauge pupil's light reaction.**
  • Assess both direct and consensual responses.
  • Assess afferent pupillary defect by moving light in arc from pupil to pupil. Optionally: as do arc test, have pt place a flat hand extending vertically from his face, between his eyes, to act as a blinder so light can only go into one eye at a time.

CN III, IV, VI: Oculomotor, Trochlear, Abducens

- "**Follow finger with eyes without moving head": test the 6 cardinal points in an H pattern.**
  • Look for failure of movement, nystagmus [pause to check it during upward/ lateral gaze].
- **Convergence by moving finger towards bridge of pt's nose.**
- Test accommodation by pt looking into distance, then a hat pin 30cm from nose.
- If MG suspected: pt. gazes upward at Dr's finger to show worsening ptosis.

CN V: Trigeminal

- **Corneal reflex: patient looks up and away.**
  • Touch cotton wool to other side.
  • Look for blink in both eyes, ask if can sense it.
  • Repeat other side [tests V sensory, VII motor].
- **Facial sensation: sterile sharp item on forehead, cheek, jaw.**
  • **Repeat with dull object**. Ask to report sharp or dull.
  • If abnormal, then temperature [heated/ water-cooled tuning fork], light touch [cotton].

CN V: Trigeminal

- Motor: pt opens mouth, **clenches teeth** (pterygoids).
  • **Palpate temporal, masseter muscles as they clench.**
- Test jaw jerk:
  - Dr's finger on tip of jaw.
  - Grip patellar hammer halfway up shaft and tap Dr's finger lightly.
  - Usually nothing happens, or just a slight closure.
  - If increased closure, think UMNL, esp pseudobulbar palsy.

CN VII: Facial

- Inspect facial droop or asymmetry.
- Facial expression muscles: pt looks up and wrinkles forehead.
  • Examine wrinkling loss.
  • Feel muscle strength by pushing down on each side [*UMNL* preserved because of bilateral innervation].
- Pt shuts eyes tightly: compare each side.
- **Pt grins: compare nasolabial grooves.**
- **Also: frown, show teeth, puff out cheeks.**
- Corneal reflex already done. See *CN V*.

CN VIII: Vestibulocochlear (Hearing, Vestibular rarely)

- Dr's hands arms length by each ear of pt.
  • Rub one hand's fingers with noise on one side, other hand noiselessly.
  • Ask pt. which ear they hear you rubbing.
  • Repeat with louder intensity, watching for abnormality.
- **Weber's test: Lateralization**
  • 512/ 1024 Hz [256 if deaf] vibrating fork on top of patients head/ forehead.
  • "Where do you hear sound coming from?"
  • Normal reply is midline.

CN VIII: Vestibulocochlear (Hearing, Vestibular rarely)

- Rinne's test: Air vs. Bone Conduction
  - 512/ 1024 Hz [256 if deaf] vibrating fork on mastoid behind ear. Ask when stop hearing it.
  - When stop hearing it, move to the patients ear so can hear it.
  - Normal: air conduction [ear] better than bone conduction [mastoid].
- If indicated, look at external auditory canals, eardrums.

CN IX, X: Glossopharyngeal, Vagus

- Voice: hoarse or nasal.
- **Pt. swallows, coughs** (bovine cough: recurrent laryngeal).
- Examine palate for uvular displacement. (unilateral lesion: uvula drawn to normal side).
- **Pt says "Ah":** symmetrical soft palate movement.
- **Gag reflex** [sensory IX, motor X]:
  • Stimulate back of throat each side.
  • Normal to gag each time.

CN XI: Accessory

- From behind, examine for trapezius atrophy, asymmetry.
- **Pt. shrugs shoulders (trapezius).**
- Pt. turns head against resistance: watch, palpate SCM on opposite side.

CN XII: Hypoglossal

- Listen to articulation.
- Inspect tongue in mouth for wasting, fasciculations.
- **Protrude tongue: unilateral deviates to affected side.**

Cranial Nerve Assessment

Nerve	Name	Function	Test
I	Olfactory	Smell	Have patient smell a familiar odor
II	Optic	Visual Acuity Visual Field	Have patient identify fingers Check peripheral vision
III	Oculomotor	Pupillary Reaction	Shine Light in the eye
IV	Troculear	Eye Movement	Follow finger without moving the head
V	Trigeminal	Facial Sensation Motor Function	Touch the face Have the patient hold mouth open
VI	Abducens	Motor Function	Lateral Eye movements
VII	Facial	Motor Function Sensory	Smile, wrinkle face, puff cheeks Tastes
VIII	Acoustic	Hearing Balance	Snap fingers by the ear Rhomberg's Test
IX	Glossopharyngeal	Swallowing and Voice	Swallow and say "AH"
X	Vagus	Gag Reflex	Use tongue depressor
XI	Spinal Accessory	Neck Motion	Shoulder shrugging
XII	Hypoglossal	Tongue Movement and Strength	Stick out tongue apply resistance with a tongue depressor

What to Do if symptoms are present but tests are negative?

- When in doubt……send to the ER.

- After vitals are taken, ortho/neuro exam conducted, and cranial nerves assessed, **consider milder forms of treatment.**

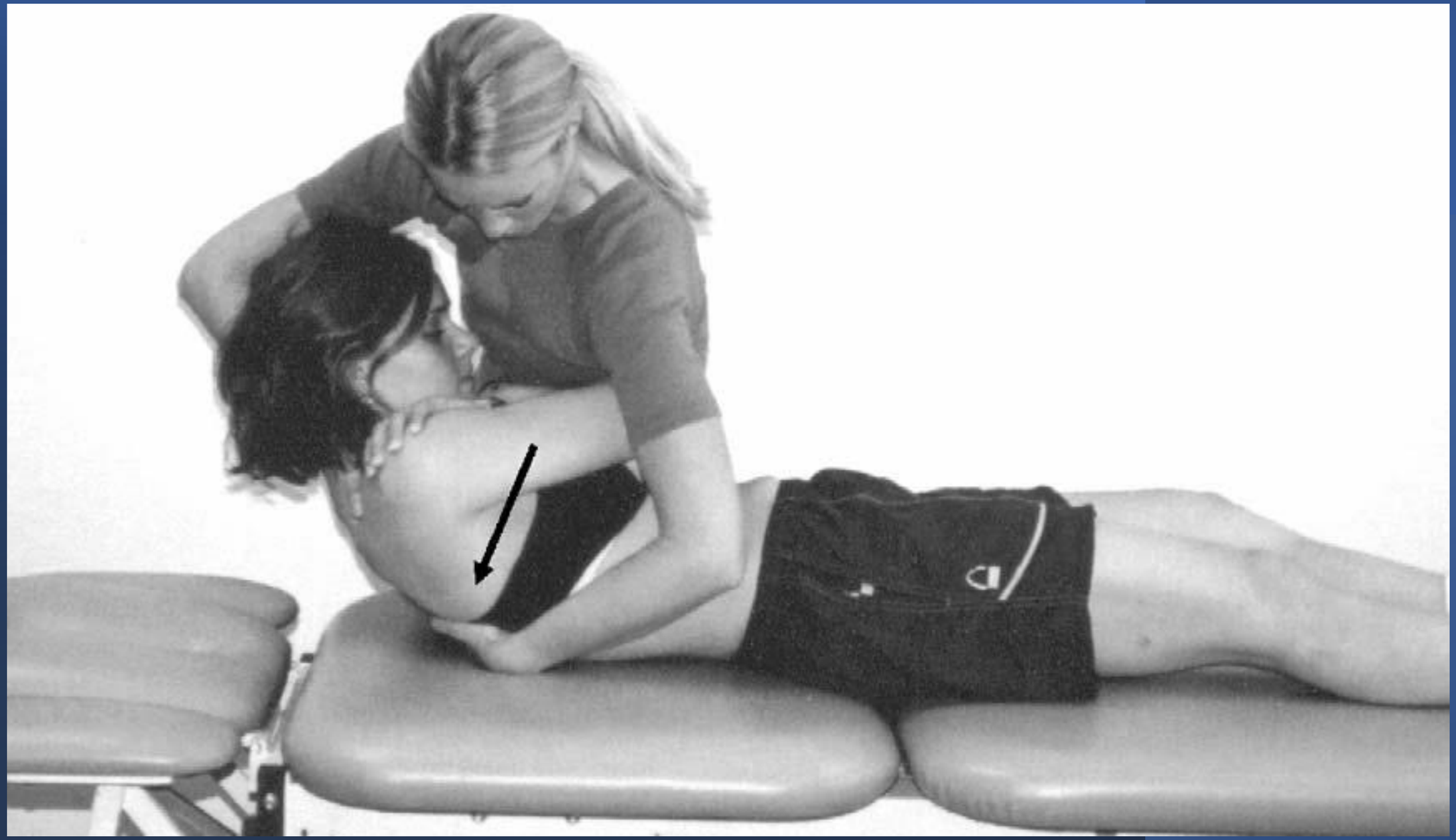
  - ***PT, Arthrostim, Activator, active release technique, NUCCA, thoracic manipulation, referral for meds, etc.***

Tip: You do NOT have to perform HVLA on every patient, every visit!

Cleland et al. Immediate effects of thoracic manipulation in patients with neck pain: a randomized clinical trial. Manual Therapy 10 (2005) 127–135

- Sixty-eight patients were screened for eligibility during a six-month period from January 2003 to June 2003.

- **Thoracic spine manipulation results in immediate improvements in perceived levels of cervical pain in patients with mechanical neck pain**. Given the concern regarding the risks of cervical spine manipulation, perhaps thoracic spine manipulation is a reasonable alternative, or supplement to, cervical manipulation and mobilization to maximize the patient's outcome at a **reasonably low level of risk**.



Browder et al. **Intermittent cervical traction and thoracic manipulation for management of mild cervical compressive myelopathy attributed to cervical herniated disc: a case series** J Orthop Sports Phys Ther. 2004 Nov;34(11):701-12. doi: 10.2519/jospt.2004.34.11.701. PMID: 15609490 DOI: 10.2519/jospt.2004.34.11.701

- CONCLUSIONS: Intermittent cervical traction and **manipulation of the thoracic spine seem useful for the reduction of pain scores and level of disability in patients with mild cervical compressive myelopathy attributed to herniated disc.** A thorough neurological screening exam is recommended prior to mechanical treatment of the cervical spine.

Conclusion Regarding Safety of Spinal Manipulation

- “On analysis, SMT as delivered by chiropractors is one of the most conservative, least invasive and safest of procedures in the provision of health care services.”

- “The risks of SMT pale when compared to known medical risks. **Chiropractors, by their training and skill in SMT and special emphasis on the spine, are the best positioned to deliver this mode of health care to the public.”**

  (Current Concepts page 76)

The Cincinnati Pre-hospital Stroke Test

- **Facial Droop**
- Normal: Both sides of face move equally
  - Abnormal: One side of face does not move at all
- **Arm Drift**
- Normal: Both arms move equally or not at all
  - Abnormal: One arm drifts compared to the other
- **Speech** : Patient uses correct words with no slurring (Your name, Date/Day, “Who is the President of the United States”?)
  - Abnormal: Slurred or inappropriate words or mute

Cincinnati Pre-hospital Stroke Scale

1. FACIAL DROOP: *Have patient show teeth or smile.*

Normal: both sides of the face move equally

Abnormal: one side of face does not move as well as the other side

2. ARM DRIFT: *Patient closes eyes & holds both arms out for 10 sec.*

Normal: both arms move the same or both arms do not move at all

Abnormal: one arm does not move or drifts down compared to the other

3. ABNORMAL SPEECH: *Have the patient say "you can't teach an old dog new tricks."*

Normal: patient uses correct words with no slurring **Abnormal:** patient slurs words, uses the wrong words, or is unable to speak

INTERPRETATION: If any 1 of these 3 signs is abnormal, the probability of a stroke is 72%.

The Cincinnati Pre-hospital Stroke Test

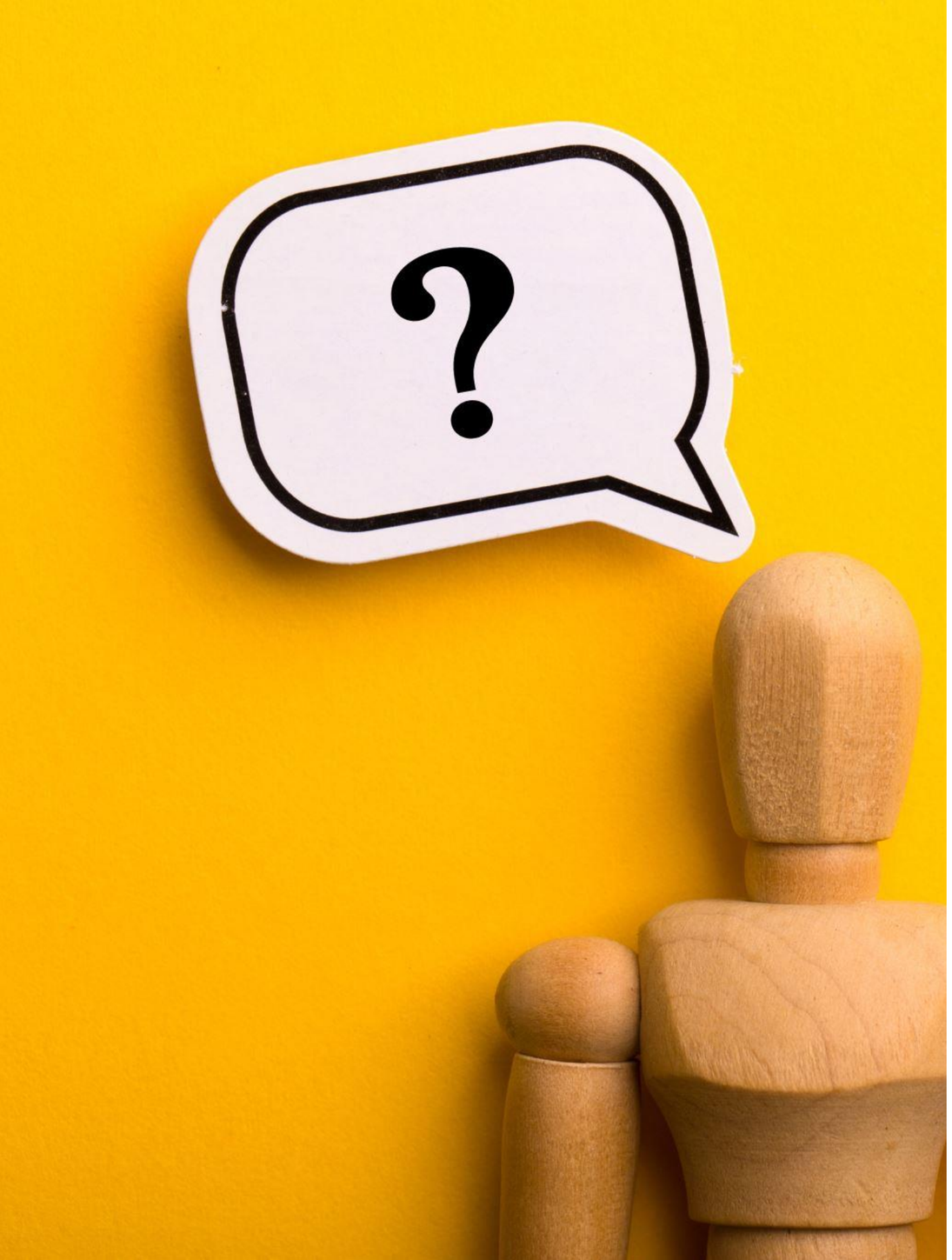
Patients with 1 of these 3 findings as a new event have a 72% probability of an ischemic stroke. If all 3 findings are present the probability of an acute stroke is more than 85%

*****A stroke is a medial emergency, if you are experiencing or observe someone suffering from any of these symptoms, please call 911!**

References:

Hurwitz AS, Brice JH, Overby BA, Evenson KR (2005). "Directed use of the Cincinnati Prehospital Stroke Scale by laypersons". *Prehosp Emerg Care* 9 (3): 292–6

Kothari RU, Pancioli A, Liu T, Brott T, Broderick J. "Cincinnati Prehospital Stroke Scale: reproducibility and validity." Ann Emerg Med 1999 Apr;33(4):373-8



What to Do if the Worst Happens

- **Do NOT re-adjust a patient** if, following a neck adjustment, he or she experiences any of the following symptoms:
  - Loss of consciousness
  - Visual field disturbances
  - Difficulty with speech or swallowing
  - Weakness or numbness
  - Or any other unusual neurological S/S

What to Do if the Worst Happens

- If the patient is clearly in serious distress, **call 911** immediately
- If the pt is conscious and the s/s are vague, allow him/her to rest quietly while under close **observation…for a reasonable time.**
- If the s/s do not resolve or if they worsen, the pt should be hospitalized. **While not required as a standard of care, it may be a good idea while the pt is being transported to call ahead to the ER** physician so that the pt can receive proper care ASAP.

What to Do if the Worst Happens

- The emergency tx of choice for a confirmed VB dissection is immediate administration (within 3 hours of onset) of **anticoagulant therapy.**
- Be sure to document your findings and actions immediately
- DO NOT alter your treatment notes

Informed Consent

Turning concerns and fears into long-term recommendations

Elements of Informed Consent

- **Disclaimer: Dr. Farabaugh is not an attorney. You should seek legal counsel when implementing this type of form or check with your malpractice carrier.**

Patient Name: _____

To the patient: Please read this entire document prior to signing it. It is important that you understand the information contained in this document. Please ask questions before you sign if there is anything that is unclear.

The nature of the chiropractic adjustment.
The primary treatment we use as a Doctor of Chiropractic is spinal manipulative therapy. We will use that procedure to treat you. We may use my hands or a mechanical instrument upon your body in such a way as to move your joints. That may cause an audible "pop" or "click", much as you have experienced when you "crack" your knuckles. You may feel a sense of movement.

Analysis/Examination/Treatment
In addition to spinal manipulation, we may use a variety of other therapies and examination procedures. As a part of the analysis, examination, and treatment, you are consenting to the following procedures:

___spinal manipulative therapy
___palpation
___orthopedic testing
___Activator instrument spinal/extremity adjustment
___vital signs
___range of motion testing

Material Risks

The material risks inherent in chiropractic adjustment.

As with any healthcare procedure, there are certain complications which may arise during chiropractic manipulation (CMT) and therapy. However studies have shown that any observed association between vertebral artery dissection (VAD) and stroke with CMT is likely attributed to patients with an undiagnosed VAD who seek care for neck pain and headache before the onset of a stroke.[i] As a result we examine our patients thoroughly before initiating any treatment to be sure that treatment is appropriate. I will make every reasonable effort during the examination to screen for contraindications to care; however, if you have a condition that would otherwise not come to my attention, it is your responsibility to inform me.

Probability of Risks occurring.

The probability of those risks occurring.
Chiropractic is a safe and comfortable form of health care for most people. If a potential risk is identified, you will be informed and offered either treatment or a referral to the appropriate health care specialist for evaluation and care.

_____ _____**Soreness:** It is not uncommon to experience some localized soreness following a manipulation. This type of soreness is usually minor and occurs most often following the initial few visits. It is similar to the soreness you may experience after exercise.

Fracture

_____ _____**Fracture:** Fractures caused from spinal manipulation are extremely rare, so rare that an actual number of incidences per manipulation have never been determined. Patients suffering from bone weakening conditions like Osteoporosis are in a higher risk category. Alternative forms of spinal manipulation are utilized for this type of patient.

TIA/Stroke

_____ _____**TIA/Stroke:** Overview: Spinal manipulation is clearly one of the safest forms of treatment for cervical spine pain. The incidence of serious adverse events, stroke, or death is very rare.[ii] **Researchers found no evidence of excess risk of VBA stroke associated chiropractic care compared to primary care**.[iii] The risk was as low as 1.46 adverse events per 10,000,000 manipulations.[iv] The risk of artery dissection was as low as 1 per 5,846,381 cervical manipulations.[v]

What about NSAIDs and Tylenol? To put it in perspective, non-steroidal anti-inflammatory drugs (NSAIDs) kill approximately 16,500 people per year annually in the US.[vi] And Tylenol toxicity is now the leading cause of liver failure in the US.[vii,viii] Spinal manipulation is safer than NSAIDs by a factor of several hundred times.[ix]

Note: Screening tests are performed when necessary to rule out high-risk patients. Alternative spinal adjusting is utilized when necessary to minimize potential risks.

Disc Injury/Other Complications

_____ _____**Ruptured/Herniated Disc:** There have been some reports of herniated or ruptured discs caused by spinal manipulation. Alternative spinal adjusting methods are often utilized to minimize the risk and help the patient recover from serious disc-related pain.

_____ _____**Other complications** include but are not limited to: fractures, disc injuries, dislocations, muscle strain, cervical myelopathy, costovertebral strains and separations, and burns.

Other Treatment Options

The availability and nature of other treatment options.

Other treatment options for your condition may include:

- Self-administered, over-the-counter may include:
- Medical care and prescription drugs such as anti-inflammatory, muscle Relaxants and pain-killers
- Hospitalization
- Surgery

If you chose to use one of the above noted "other treatment" options, you should be aware that there are risks and benefits of such options and you may wish to discuss these with your primary medical physician.

Remaining Untreated, or Undertreated

The risks and dangers attendant to remaining untreated or undertreated.

Remaining untreated may allow the formation of adhesions and reduce mobility which may set up a pain reaction further reducing mobility. Over time this process may complicate treatment making it more difficult and less effective the longer it is postponed. Early intervention to restore normal function and compliance with the treatment program are both essential in an effort to prevent the condition from progressing to a chronic pain state. [x], [xi], [xii], [xiii], [xiv], [xv].

Signature of Patient

DO NOT SIGN UNTIL YOU HAVE READ AND UNDERSTAND THE ABOVE.
PLEASE CHECK THE APPROPRIATE BLOCK AND SIGN BELOW

I have read [ ] or have had read to me [ ] the above explanation of the chiropractic adjustment and related treatment. I have discussed it with Dr. XXXXXX and/or _____ and have had my questions answered to my satisfaction. **By signing below I state that I have weighed the risks involved in undergoing treatment and have decided that it is in my best interest to undergo the treatment recommended. Having been informed of the risks, I hereby give my consent to that treatment.**

Patient Name (please print):_____

Patient Signature:_____ Date:_____

Signature of Doctor: _____ Date:_____

References

References:

[i] Cassidy JD, Boyle E, et al. Risk of vertebrobasilar stroke and chiropractic care: results of a population-based case control and case crossover study. Spine 2008;33(Suppl):S176–S183.

[ii] Cassidy S176-183

[iii] Cassidy S176-183

[iv] Safety of chiropractic interventions: a systematic review. Spine (Phila Pa 1976). 2009 May 15;34(11):E405-13.Gouveia LO, Castanho P, Ferreira JJ. Department of Neurology, Hospital de Santa Maria, Lisbon, Portugal.

[v] Haldeman S, Carey P, et al. Clinical perceptions of the risk of vertebral artery dissection after cervical manipulation: the effect of referral bias. Spine J. 2002 Sep-Oct;2(5):334-42.

[vi] Singh Gurkirpal, MD, Recent Considerations in Nonsteroidal Anti-Inflammatory Drug Gastropathy, The American Journal of Medicine, July 27, 1998, p. 31S.

[vii] Fontana RJ. Acute liver failure including acetaminophen overdose. Med Clin North Am. 2008 Jul;92(4):761-94, viii.

Risk Assessment and Response

What would you do if…….

Considerations

- Symptoms
- Risk Factors
- Vitals/Cranial exam

When faced with certain facts, what do you do?

A. IC, followed by **HVLA CMT** (Note: on NPs, vitals…always)

B. IC, followed by **cranial exam, vitals**, then HVLA CMT

C. IC, followed by **cranial exam, vitals, then low force CMT.**

D. IC, followed by cranial exam, vitals, **no tx, refer to PCP and/or specialist, or dx tests** (MRA, MRI, CT, etc.)

E. IC, followed by cranial exam, vitals, no tx, **referral to ER.**

F. Rescue posture, call **911**

Patient: Jane

- 33-year-old female-recent onset neck pain
  - Just woke up with pain. 5/10 on VAS
  - BP: 120/80
  - 10-year history of ingesting BCPs
  - No other S/S.

What do you do?

Patient: Debbie

- 33-year-old female-recent onset neck pain
  - Just woke up with pain.
  - BP: 120/80
  - 5/10 on VAS
  - 10-year history of ingesting BCPs
  - Mother suffered a stroke at age 45.
  - Mild dizziness and headache for 3 days (6/10 on VAS)

  - What do you do?

Patient: John

- 67-year-old male-recent onset neck pain
  - **Just woke up with pain unlike any pain he’s ever experienced.**
  - BP: 210/108
  - 9/10 on VAS
  - Advanced DDD, DJD C3-C7
  - Rigid ROM-reduced 80% with pain
  - Family history of stroke, mother suffered a stroke at age 45.
  - Nausea, dizziness, blurred vision, and constant headache for 3 days (8/10 on VAS)
  - Abnormal cranial nerve exam and risk factors present

  - What do you do?

Patient: Elena

- 44-year-old female
  - Garden variety neck pain; no specific mechanism of injury, 3 weeks hx.
  - 7/10 on VAS, BP: 124/84.
  - Neck spasms, loss of cervical curve/kyphosis
  - Rigid ROM-reduced 80% with pain
  - Family history of stroke, mother suffered a stroke at age 45.
  - Normal cranial nerve exam and no other risk factors present
  - Immediate after CMT she becomes nauseated, vomits, slurred speech, and cannot stand without assistance, severe neck pain.

  - What do you do?

The following clinical vignettes were real life cases treated in my office. What would YOU do in each circumstance?

- A few comments and questions:
  - Would you have x-rayed these patients?
  - Would you have ordered additional diagnostic tests on these patients?
  - Would you have performed cranial nerve exams and vitals on these patients?
  - Would you have made a referral to another specialist?
  - Would you have adjusted those patients?
  - If adjusted, what techniques would you have used?

Patient #1:

- Patient #1 history: 27 yo male. MC: Upper cervical spine pain, began years ago, cause? At age 8 dissected vertebral artery in base of skull, which healed on its own. Headaches on and off since.
- Recent tests (last year), MRI, suggested that everything at this point is fine. Dull ache. Exac: sitting, trying to hold neck up. Remissed: laying down, cracking it himself via lateral flexion.
- Prev tx: DC in NC, MD-Carolina xxxxxxxxx, who order MRI. Dr. xxxxxxx with xxxxxxxxxxxxxxx order MRI and CTs which were also negative.
- S/S: Patient ingesting anti-depressant, migraines. Patient also had CTS in both wrists which required CT release, but s/s returning. Thoracic: OK LB: prolonged sitting, across base of LB. No leg pain.

Patient #2:

- Patient #2 history: 45 yo male. MC: Left lower cervical which began 4-5 years ago after jumping off his porch. While jumping he caught his leg forcing him to basically dive headfirst into the grille of his truck. Neck painful and headaches ever since.
- Today: left lower cervical which radiate into left occiput area resulting in frequent headaches. Pain-aching. Exac: prolonged sitting, riding his Harley. Remissed: nothing.
- Prev tx: Family practice PCP recommended traction, followed by surgery if necessary.
- S/S: headaches, occiput area (can be entire head); no other. Does get numbness in left hand, but he believes due to CTS. Thoracic: tight. LB: OK.

Patient #3:

- Patient #3 history: 35 yo female. MC: Right upper cervical, worse on the right, causing her to have headaches, and no amount of medication is helping reduce the pain.
- “This is worse head and neck pain that I’ve ever had”.
- Began (this episode) Tuesday night/evening, cause ? Dull ache to constant throbbing in upper cervical. Exac: not laying down. Remissed: laying down in certain positions.
- 8-9/10 on VAS. No arm pain. s/s: feeling hot and cold, no fever. Thoracic: none. LB: OK.
- No trauma. Patient on BCPs. No family history of stroke/TIA.

Key points to consider:

1. VA dissections can occur in young patients.
2. The best current evidence suggests there is a genetic predisposition for arterial dissection.
3. There is no valid screening test for dissection. The so-called George's test has been shown to have poor sensitivity and specificity.
4. What this means is a negative test does not rule out dissection, and a positive test does not rule in dissection.
5. An acute dissection is literally a tear in arterial wall. This can cause a lot of pain, but not always….but is NOT associated with any cranial nerve signs.
6. Cranial nerve signs are only present if the dissection leads to an embolus, which breaks loose and travels upward…leading to an ischemic stroke.

Discussion

THANK YOU

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This lecture was sponsored by AMI Group and SideCar (Nathan Unruh-CEO)

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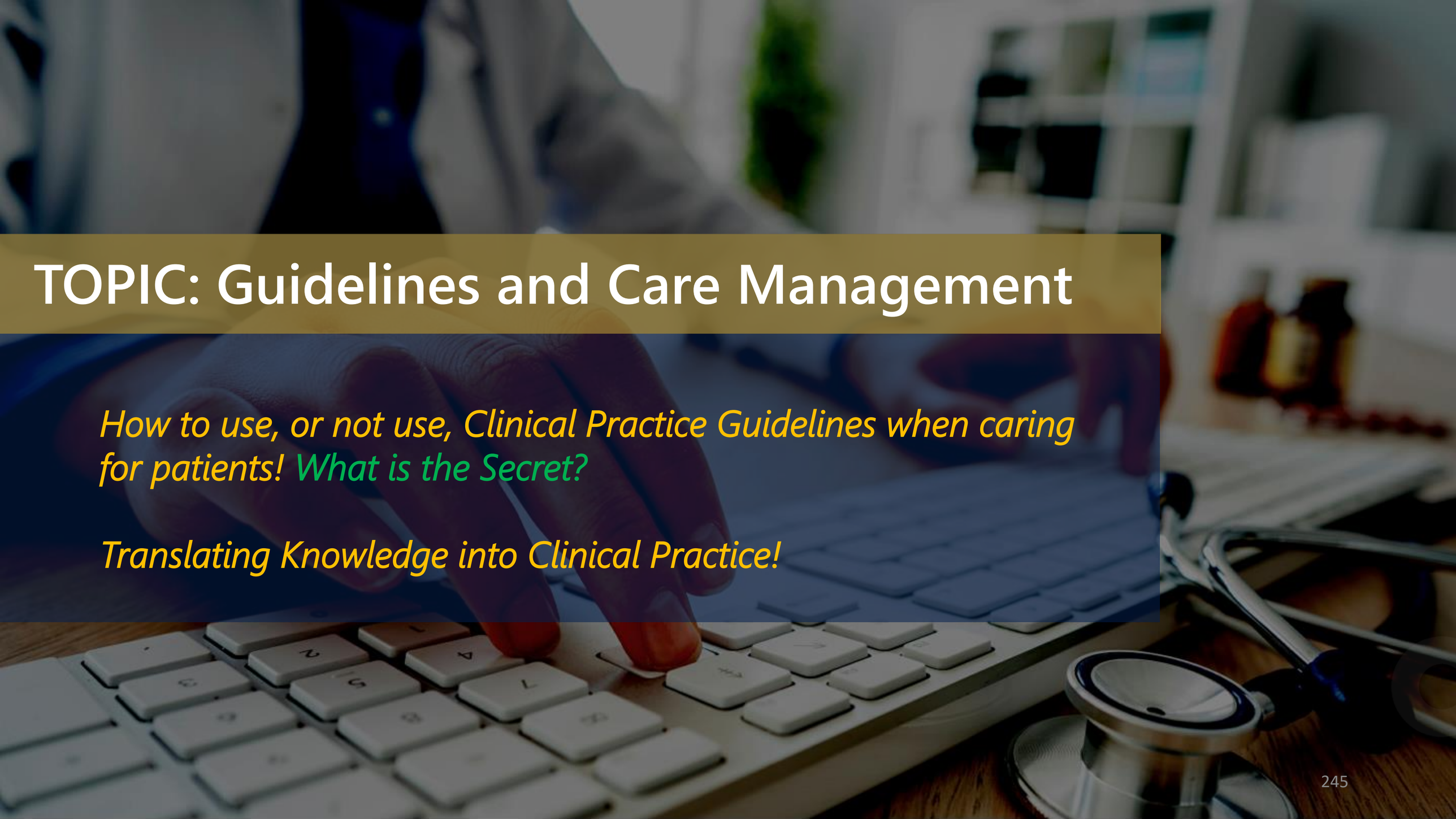
SIDECAR

1. The Cost-Effectiveness Paper…Now What?
2. Value-Based Modeling: Secrets from a Medical Director? Are you ready?
3. Clinical Practice Guidelines-Using Them to Your Advantage!
4. Clinical Risk Management: Taking the Mystery out of the CVA issue!

Presenter:

Dr. Ronald J. Farabaugh



TOPIC: Guidelines and Care Management

How to use, or not use, Clinical Practice Guidelines when caring for patients! What is the Secret?

Translating Knowledge into Clinical Practice!

What is a Clinical Practice Guideline?

Why should you care?

- ***TIP: It's not just about the number of visits!***

- ***"But I only treated this patient "x" times, which is within guidelines! What's the problem!!!"***

David Sackett:

"The Father of Evidence-based medicine"

- **"Evidence-Based Medicine"** means **integrating individual clinical expertise** with the best available external **clinical evidence from systematic research**.

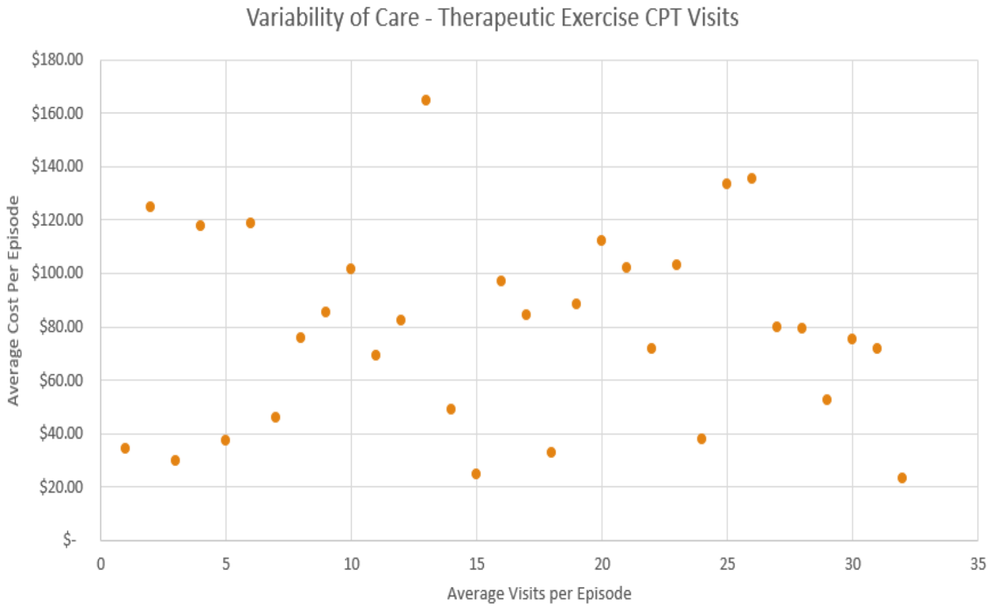
- **Good doctors use both** individual clinical expertise and the best available external evidence, and neither alone is enough.

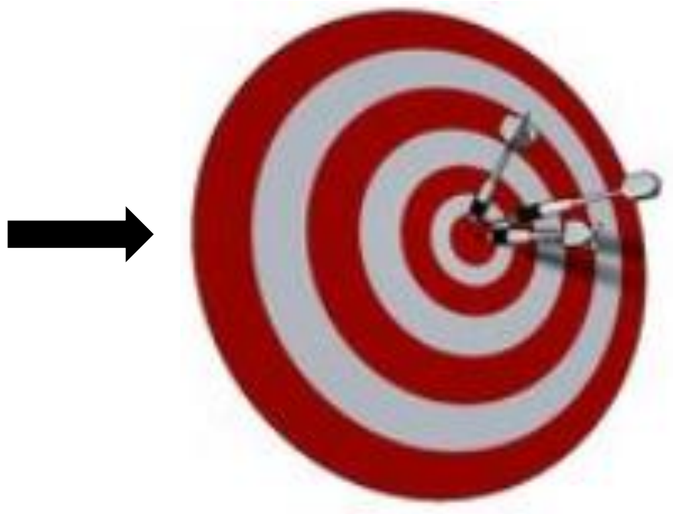
- *"Without clinical expertise, **practice risks becoming tyrannized by external evidence**, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient. Without **current best external evidence, practice risks becoming rapidly out of date**, to the detriment of patients."*

Sackett DL. Evidence-based medicine. Semin Perinatol 1997;21:3-5

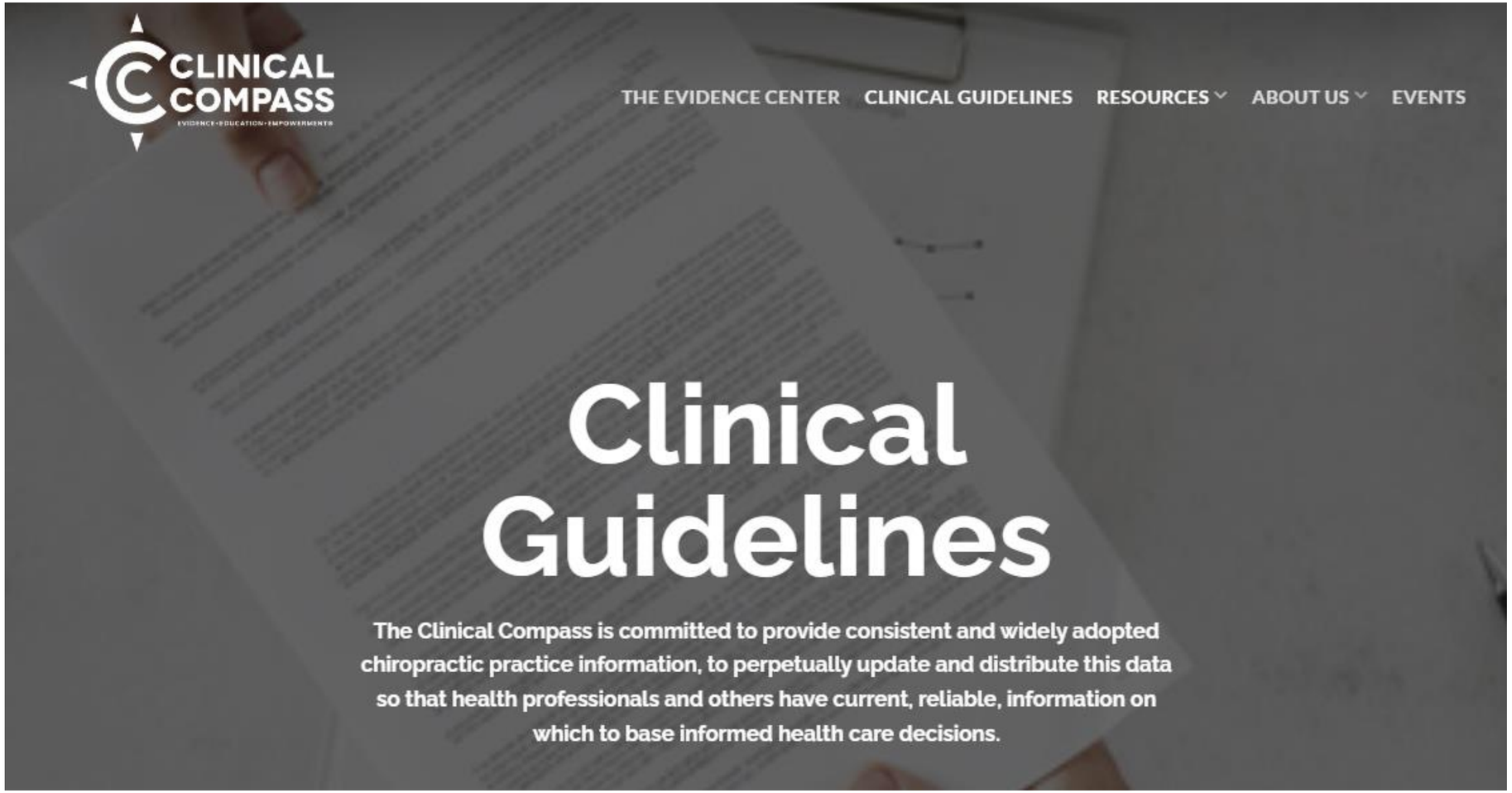
To society/insurance:
Chiropractic is like a box of chocolates!

What can be done to reduce variability of care?





The Clinical Compass



https://clinicalcompass.org/resources/clinical-guidelines/

References: Clinical Practice Guidelines

2019 Whalen et al. **Best-Practice Recommendations for Chiropractic Management of Patients With Neck Pain.** J Manipulative Physio Ther. 2019 Nov;42(9):635-650. Epub 2019 Dec 20. PMID: 31870638 DOI: 10.1016/j.jmpt.2019.08.001

2020 Hawk, Whalen, Farabaugh et al. **Best Practices for Chiropractic Management of Patients with Chronic Musculoskeletal Pain**: A Clinical Practice Guideline. J Altern Complement Med. 2020 Oct;26(10):884-901. Epub 2020 Jul 30. PMID: 32749874 PMCID: PMC7578188 DOI: 10.1089/acm.2020.0181

References: Clinical Practice Guidelines

2022 Whalen, Hawk, Farabaugh et al. **Best Practices for Chiropractic Management of Adult Patients With Mechanical Low Back Pain: A Clinical Practice Guideline for Chiropractors in the United States**. JMPT Volume 45, Issue 8p551-565 October 2022

2024 Keating et al. **Clinical Practice Guideline for Best Practice Management of Pediatric Patients by Chiropractors: Results of a Delphi Consensus Process**. J Integr Complement Med. 2024 Mar;30(3):216-232. doi: 10.1089/jicm.2023.0010. Epub 2023 Oct 30. PMID: 37902954 PMCID: PMC10954607 DOI: 10.1089/jicm.2023.0010

General Rules/Facts Related to the Proper Use versus Misuse of Guidelines

- All guidelines serve merely as background information to assist doctors in the clinical decision-making process.

- A guideline serves as a **“compass” for care**, not a cookbook for care.
- Therefore, do NOT tx to a guideline!
- **Guidelines are not entitlements to care, nor limits in care!**
- Each patient is unique, and treatment recommendations must be based on the specific factors pertaining to the individual case.

Question: What should I do if a consultant denies my care for exceeding a guideline?

- Guidelines are only one piece of evidence to consider when considering the medical necessity of care.

  - ❑ **evidence/research,**
  - ❑ **clinical experience/decision-making,**
  - ❑ **patient values**

- Additional factors include risk stratification, process of care, response to care, documentation, etc.

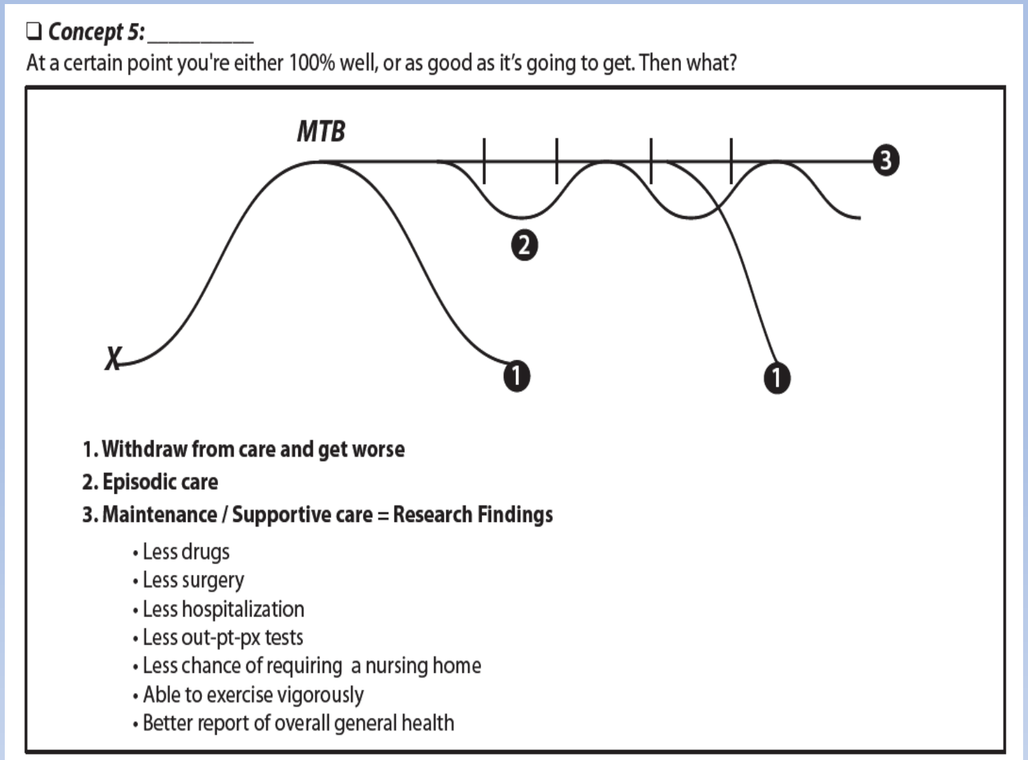
- Again, guidelines are not cookbooks with rigid dosages for treatment.

Let’s cut to the chase!

What is the Secret to Effective Guideline Implementation?

- **2-6 visits, followed by evaluation of pain and function,**
- **Repeat,**
- **Plateau in recovery…Discharge with two options,**

1. **Acute episodes**
2. **Wellness/Lifestyle Choices**



Best practice recommendations for chiropractic management of patients with neck pain

Whalen, Farabaugh, Hawk et al. J Manipulative Physiol Ther. 2019 Nov;42(9):635-650. doi: 10.1016/j.jmpt.2019.08.001. Epub 2019 Dec 20.

https://pubmed.ncbi.nlm.nih.gov/31870638/

Neck Pain Best Practices

- Neck pain is a leading cause of disability
- Most people with neck pain will continue to have neck pain

- Goals of this paper:
  - **help chiropractors provide better care and reduce variability**
  - Help payors and regulators understand what *best practices* in the chiropractic care of neck-related conditions looks like.
  - Help bridge the gaps between Clinical Practice Guidelines (CPG) and common practice issues

What is unique about this paper?

Existing CPG's rely only on the highest quality evidence, but this leaves gaps when there is no highest level evidence, or conflicting recommendations between CPG's

This Best Practice guideline uses the highest level evidence from existing CPG's and **addresses the gaps in recommendations using a modified Delphi process** involving 50 experienced chiropractors.

Practical Application:

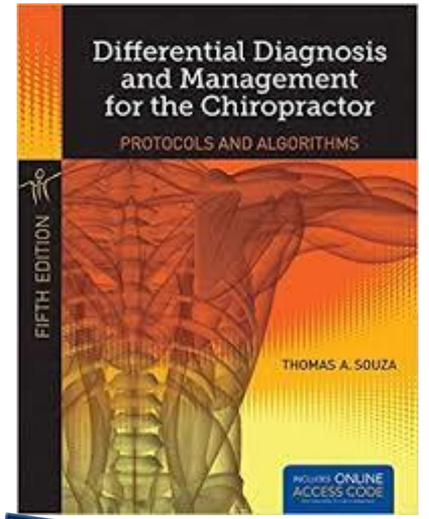
- This paper will give providers **reliable information on which to base practice decisions**
- Provides a **beginning- to- end framework** for evaluating and treating patients with neck pain
- Also provides other **stakeholders with appropriate parameters** for chiropractic management of neck pain

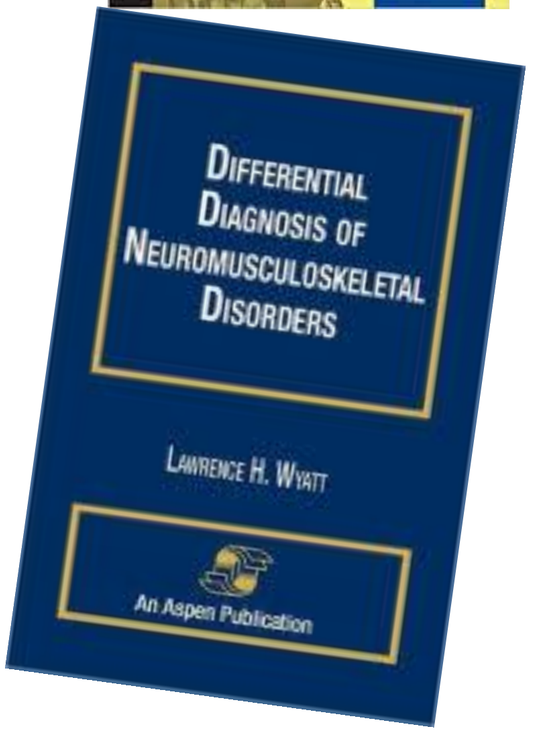
Summary of Best Practice Approach to Neck Pain:

- Obtain a thorough **history**
- Conduct a condition relevant **examination**
- Evaluate for potential **Red Flags or Yellow** Flags
- Obtain **imaging** studies as appropriate
- Develop a **plan of care** and obtain patient agreement and **consent** to treat

Best Practices continued:

- Evaluate for and document complicating factors which might delay recovery
- Develop a diagnosis or differential diagnoses
- Provide appropriate patient reassurance and home care advice
- Determine whether co-management or referral is indicated
- Treat in brief **6-12 visit trials**, and evaluate for treatment effectiveness.





NOTE: Value-based healthcare is more conservative. Suggestion: start with **2-6 visit** bursts of care, followed by evaluating pain and function at a minimum.

More on Best Practices

- Perform **brief evaluations with each visit**, and more thorough evaluations periodically as indicated.
- **Consider modifications in the treatment plan as indicated.**
- Consider appropriate **referral**, including for psychological evaluation.
- **Determine whether the patient is improving, worsening or has plateaued at each visit, and discharge as indicated.**
- Encourage and provide home and self-care approaches.
- Document what you do, and why you do it, and the results.

Red Flags

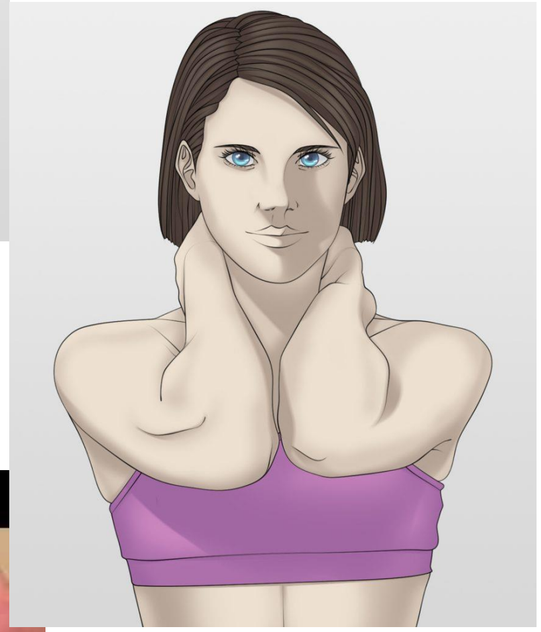
Not necessarily a **contraindication** to you managing the patient; it is a finding that requires **further diagnostic investigation** or referral before possible conservative care begins

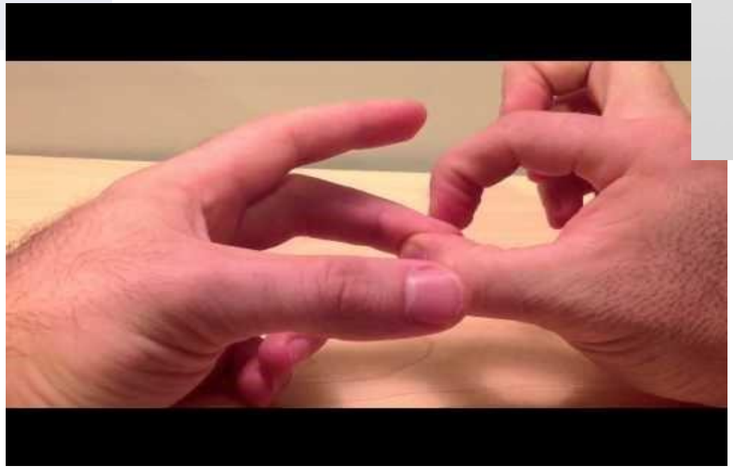
History: Red Flags

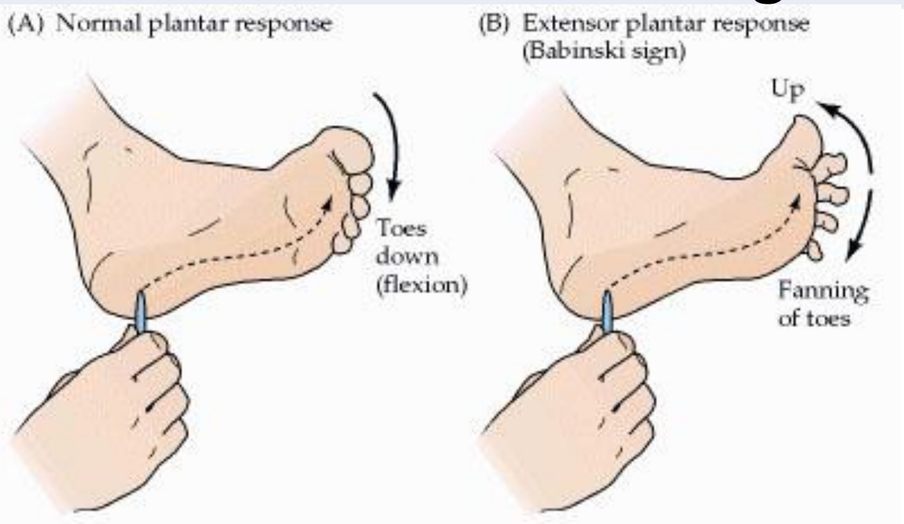
- Known connective tissue disease
- Osteopenia
- Significant trauma or infection
- Unexplained/novel neck pain especially ages <20 or >55
- Cancer
- Unexplained weight loss
- Severe nocturnal pain
- Confusion/altered consciousness
- Visual or speech disturbances
- Weakness or loss of sensation

Exam Red Flags

- Abnormal upper extremity sensory, motor or deep tendon reflexes
- Fever > 100°F
- Nuchal rigidity
- Positive Rust, Lhermitte, Hoffman or Babinski sign





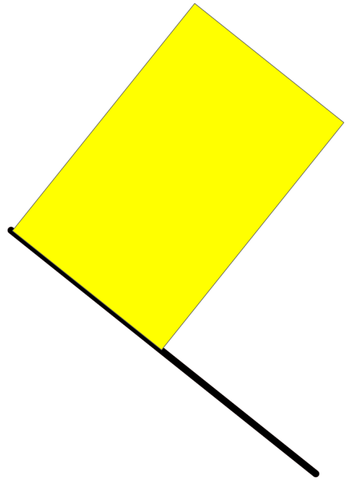


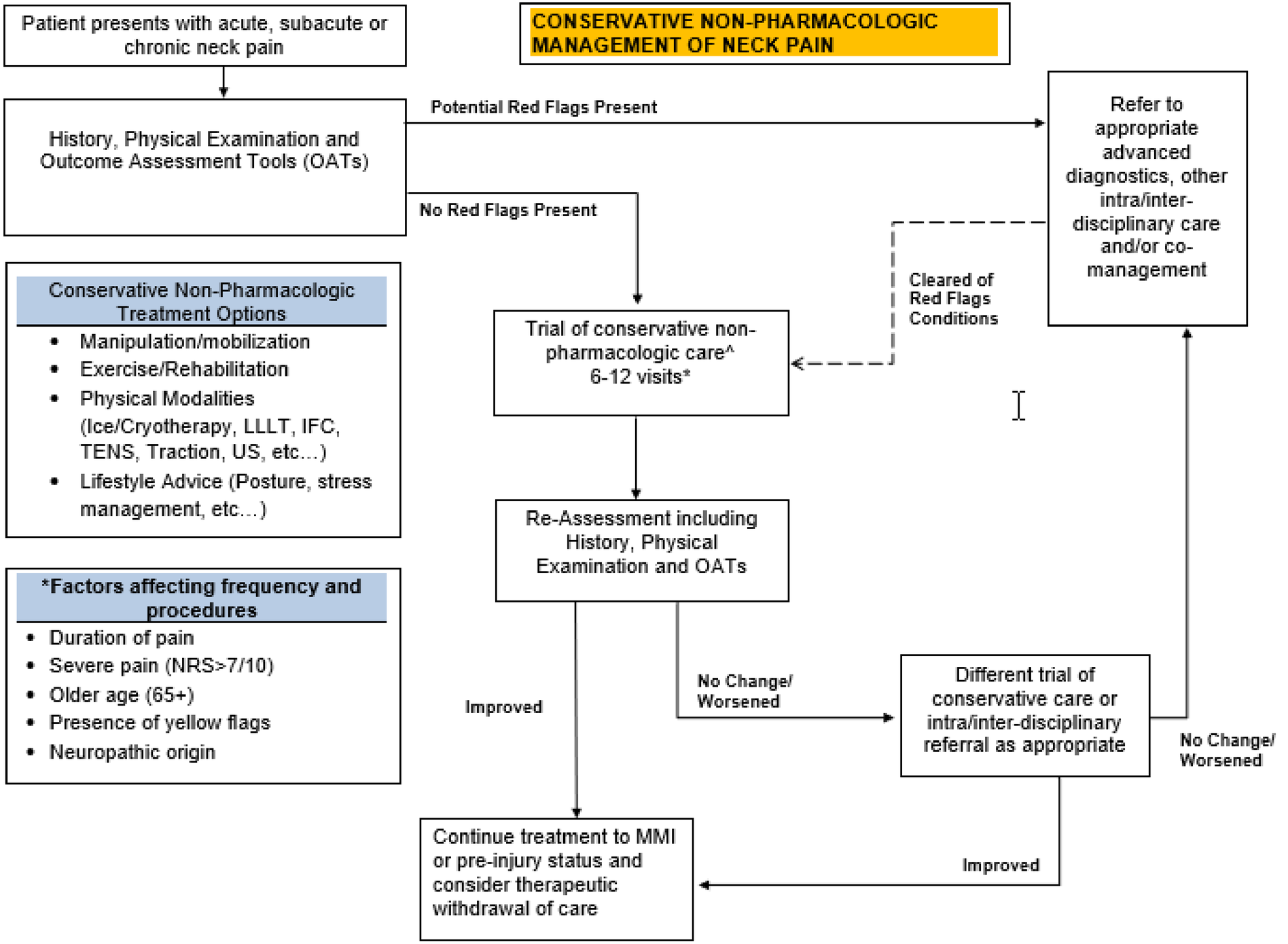
“Yellow Flags”

The term “yellow flags” refers to **psychosocial factors** which might predict poorer outcomes of musculoskeletal pain.

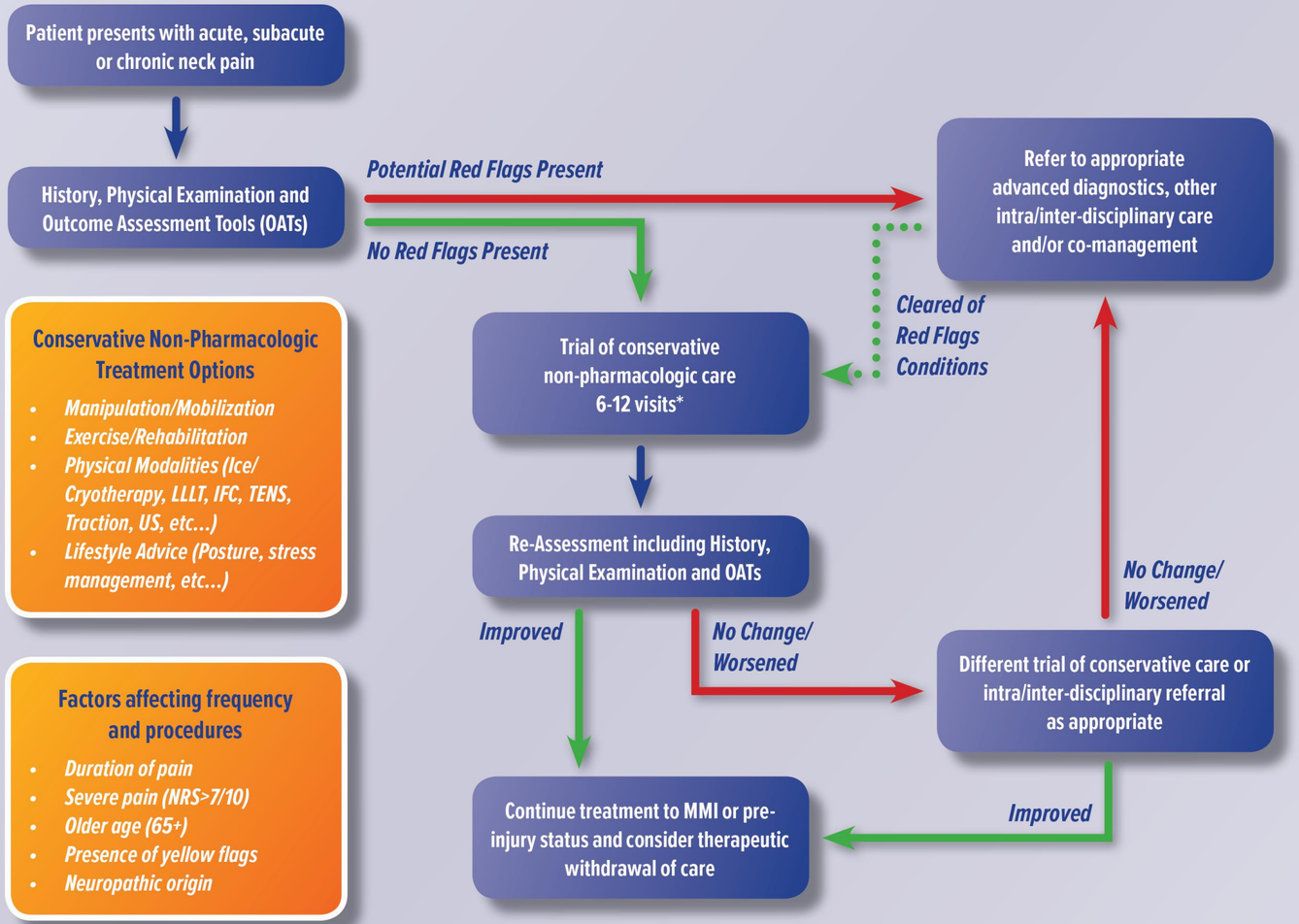
Some examples include:

- Belief that pain is harmful
- Belief that activity should be avoided
- Negative attitude, depression, job dissatisfaction
- Work-related stress
- Lack of social support
- Current compensation and claims issues related to neck pain




CONSERVATIVE NON-PHARMACOLOGIC MANAGEMENT OF NECK PAIN
Patient presents with acute, subacute or chronic neck pain
History, Physical Examination and Outcome Assessment Tools (OATs)
Potential Red Flags Present
No Red Flags Present
Refer to appropriate advanced diagnostics, other intra/inter-disciplinary care and/or co-management
Cleared of Red Flags Conditions
Conservative Non-Pharmacologic Treatment Options
Manipulation/mobilization
Exercise/Rehabilitation
Physical Modalities (Ice/Cryotherapy, LLLT, IFC, TENS, Traction, US, etc…)
Lifestyle Advice (Posture, stress management, etc…)
Trial of conservative non-pharmacologic care^ 6-12 visits*
Re-Assessment including History, Physical Examination and OATs
*Factors affecting frequency and procedures
Duration of pain
Severe pain (NRS>7/10)
Older age (65+)
Presence of yellow flags
Neuropathic origin
Improved
No Change/ Worsened
Different trial of conservative care or intra/inter-disciplinary referral as appropriate
No Change/ Worsened
Improved
Continue treatment to MMI or pre-injury status and consider therapeutic withdrawal of care

CONSERVATIVE NON-PHARMACOLOGIC MANAGEMENT OF NECK PAIN



General treatment recommendation principles

Avoid basing treatment recommendations on **philosophy, habitual practice procedures**, or financial considerations.

Frequency and duration of treatment should be **consistent with severity** of the presenting complaint, history and examination findings.

Treatment should include an initial trial of care, 6-12 visits, to **determine the success or failure of treatment** and the possible need for additional diagnostic tests or referral, including multidisciplinary, multimodal care.

In general, there should be **diminishing reliance** on passive care and a shift toward active care and patient self-reliance.

NOTE: Value-based healthcare is more conservative. Suggestion: start with **2-6 visit** bursts of care, followed by evaluating pain and function at a minimum.

Appropriateness of Diagnostic Imaging

- Imaging is indicated in the initial assessment of patients with acute neck pain when myelopathy, suspicion of significant ligamentous injury or presence of other **red flags** is noted

- The American College of Radiology reports that it is usually appropriate to perform A-P and lateral views of the cervical spine as a first study in patients with:
  1) **Chronic neck pain** with or without a history of trauma;
  2) A history of **malignancy**;
  3) A history of **neck surgery** in the distant past.

- Diagnostic imaging for the purpose of **identifying spinal degeneration** is **not recommended**. Spinal degenerative changes are often present in pain-free individuals

- **There is no high-quality evidence to suggest that serial or follow-up radiography of the cervical spine is a useful tool with high clinical yield**

Documenting Consent

Effective October 7, 2011. California Code of Regulations, Title 16, Div. 4, Article 2, Section 319.1 provides that:

- **Informed Consent:** (a) **A licensed doctor of chiropractic shall verbally and in writing inform each patient of the material risks of proposed care.** "Material" shall be defined as a procedure inherently involving known risk of serious bodily harm. The chiropractor shall obtain the patient's written informed consent prior to initiating clinical care. The signed written consent shall become part of the patient's record.

- (b) A violation of this section constitutes unprofessional conduct and may subject th13 licensee to disciplinary action.

- NOTE: Authority cited: Sections 1000-4(b), and 1000-10, Business and Professions Code (Chiropractic Initiative Act of California Slats. 1923 p. 1xxxviii). Reference: Sections 1000-4(b) and 1000-10, Business and Professions Code (Chiropractic Initiative Act of California Slats. 1923 p. 1xxxviii).

Table 5. Initial treatment frequency for NAD/WAD

Condition	Frequency/Duration	Comments
Acute/subacute episodic—moderate to severe	Initial trial of 6-12 visits over 2-4 weeks	Additional 6-visit trials appropriate with demonstration of clinically meaningful improvements in pain/function. Complicating factors may influence frequency/duration of care.
Chronic-episodic—mild	2-6 visits over 1-4 weeks	
Chronic-ongoing—moderate to severe and/or deterioration of function in absence of care	1-2x/month for up to 6-12 months	Re-evaluate every 6-12 visits to determine need for further care.

Interval reassessments

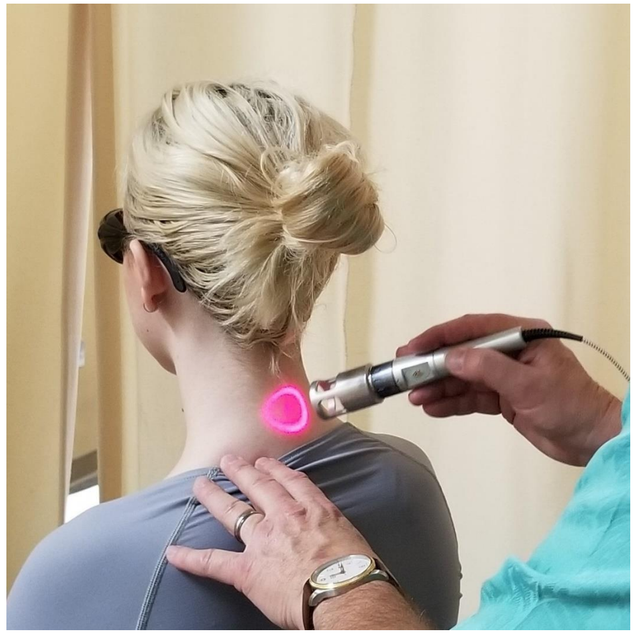
- Reassessments should be conducted at regular intervals to document clinical status. Typically, during the acute, intensive treatment phase, these should be performed **every 6-8 visits** and may include:

NOTE: In a Value-based model assessment **every 2-6 visits** may be more appropriate!

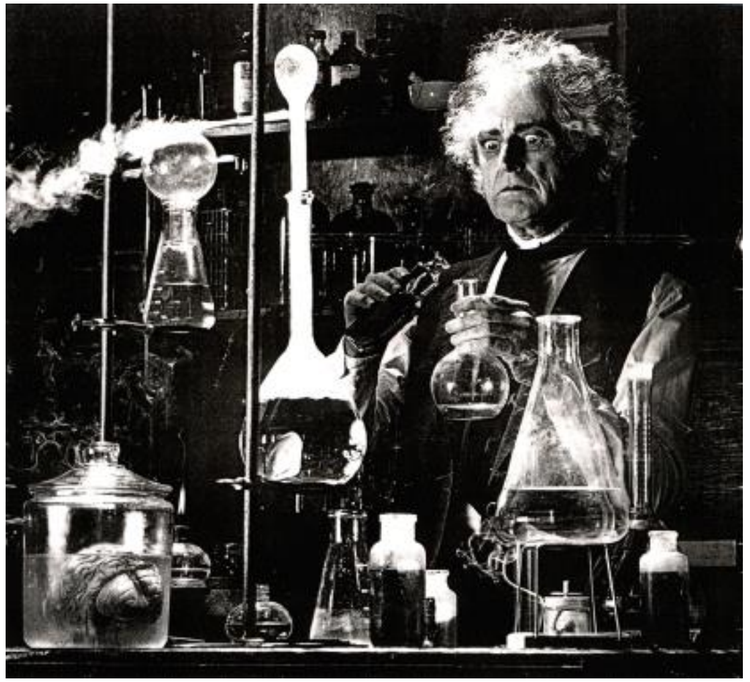
- **Subjective** complaints including numerical pain scales
- A relevant condition severity-based detailed or **focused physical examination**
- Appropriate **outcome assessment** tools
- **Barriers to recovery**

Treatment modalities evaluated:

- Manipulation/mobilization
- Therapeutic exercise
- Massage therapy
- TENS/ electrical stimulation
- Traction
- Low level laser therapy (LLLT)
- Acupuncture
- others



Treatment Recommendations



- For patients with more severe pain, or with signs of potential neurological involvement, consider **early co-management** with a neurologist, orthopedist, pain management specialist or physical medicine and rehabilitation (PMR) specialist.

- Patients with evidence of **progressive neurologic deficits** (weakness, reflex changes, stroke symptoms, myelopathy, balance issues, etc.) should be referred for further evaluation.

What DON'T we know? Lots!

- What type of manipulation works best
- What dose of manipulation works best
- * How to determine where to manipulate
- What exercises work best for neck pain

* Triano et al. Review of methods used by chiropractors to determine the site for applying manipulation. Chiropr Man Therap. 2013 Oct 21;21(1):36. doi: 10.1186/2045-709X-21-36.

Conclusion:

A set of best practice recommendations for chiropractic management of patients with neck pain based on the best available evidence reached a high level of consensus by a large group of experienced chiropractors.

The recommendations indicate that manipulation and mobilization as part of a multi-modal approach are front line approaches to patients with uncomplicated neck pain.

Discussion

THANK YOU

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