Practicing On Purpose

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Disclaimer

- The view expressed in this presentation are the views of the Author's own. While both presenters hold government appointments, the views shared here do not represent the view of VA, VHA, or Federal Government.
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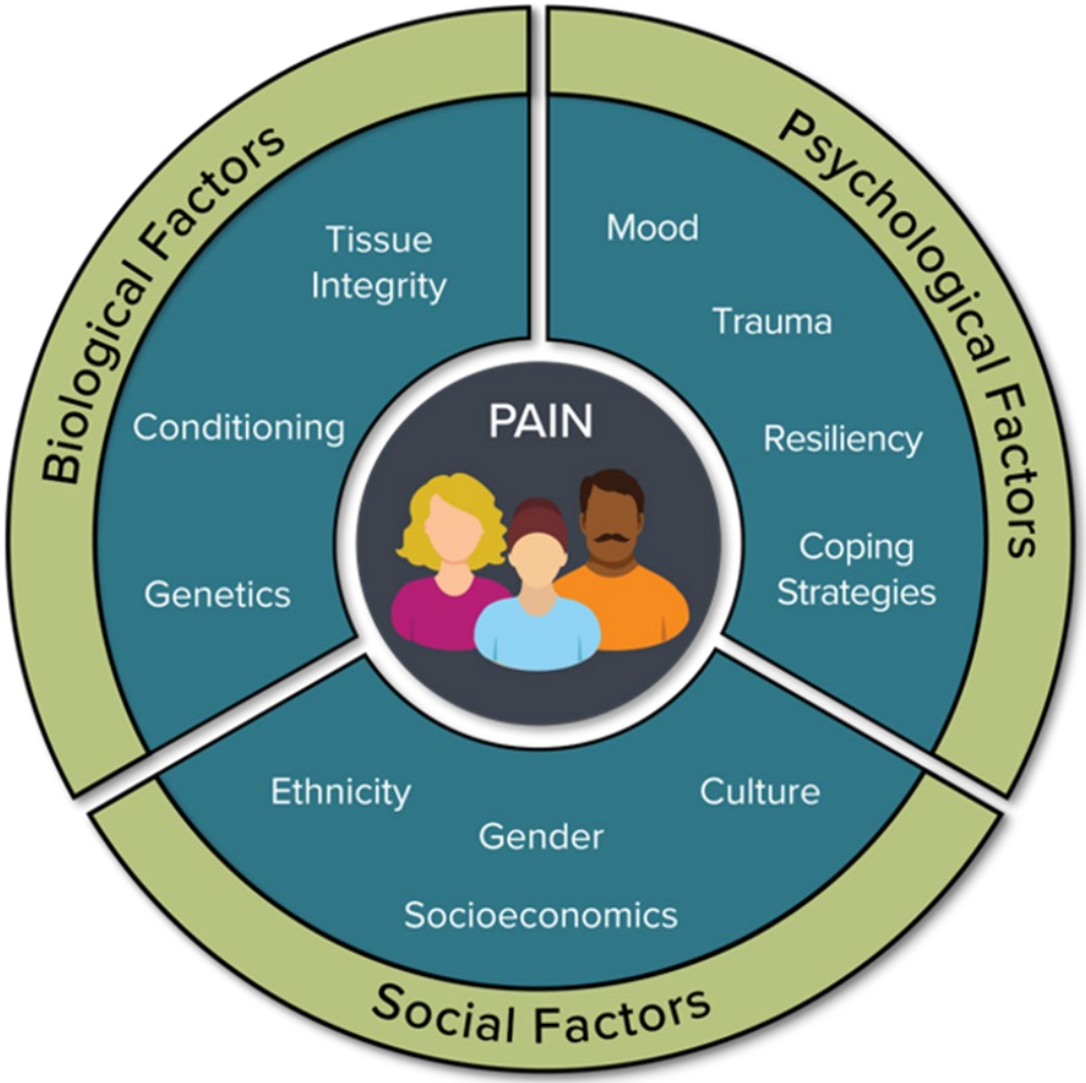
Road Map

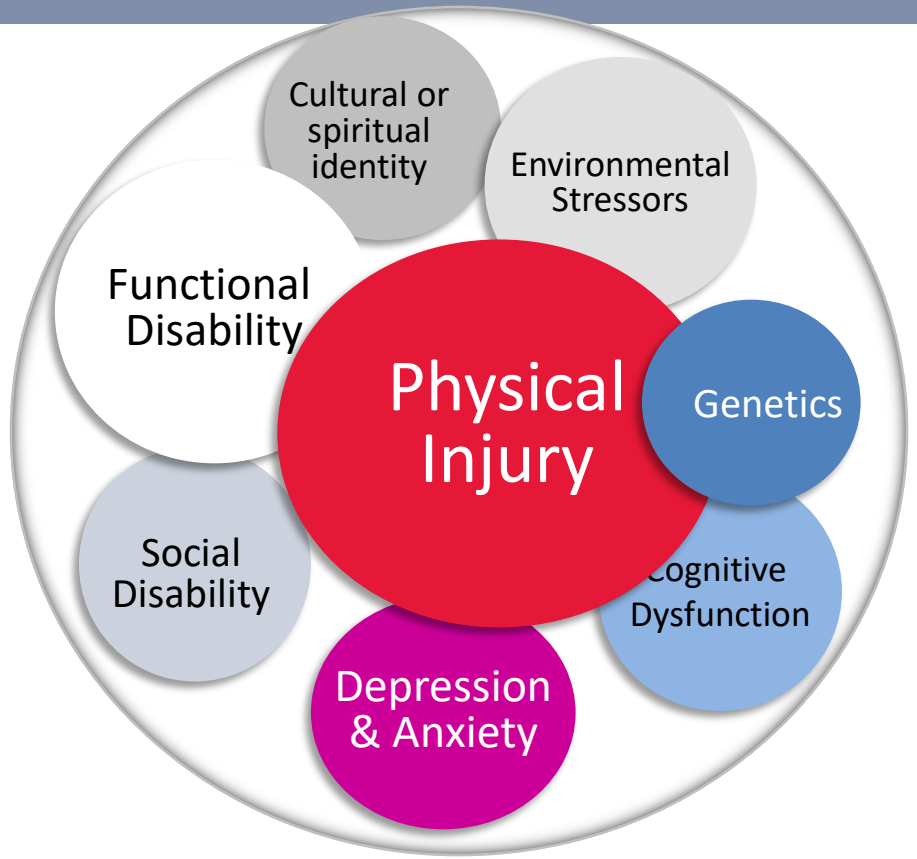
- The Biopsychosocial Approach
- Pain as Perception
- Signal vs. Noise: Making Sense of the Story
- Signal vs. Noise: Making Sense of the Exam
- Words that Heal (or Harm)
- Manual Therapy Reframed
- Treatment Planning
- Integration and Application: Practicing on Purpose



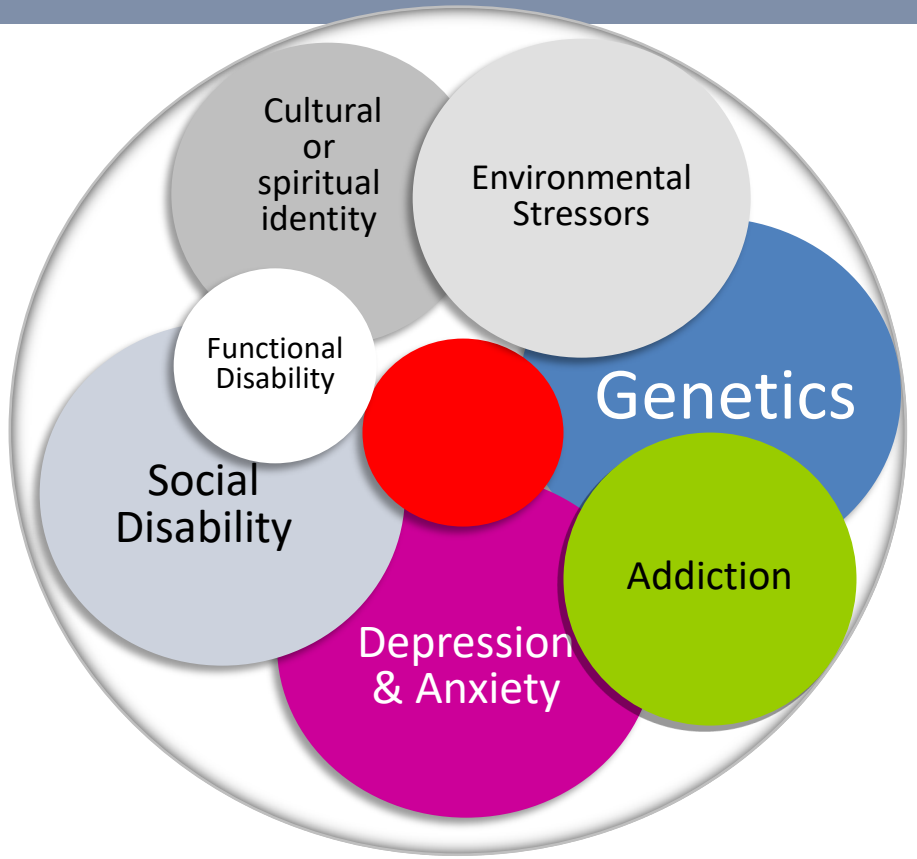
Biopsychosocial Model

- The biopsychosocial model is a **framework** for understanding health and illness that emphasizes the **complex interaction** of **biological, psychological, and social factors**, rather than a purely biomedical approach that focuses only on physical processes.

Patient "A" Pain 8/10



Patient "B" Pain 8/10



Jane

- 67-year-old female
- MVA with whiplash in 2012
- Neck pain initially, spreading to shoulder girdle and mid back.
- C-spine CT 2012: Unremarkable
- C-spine MRI 2020: Mild-moderate facet degenerative changes at C5-6, C6-7.

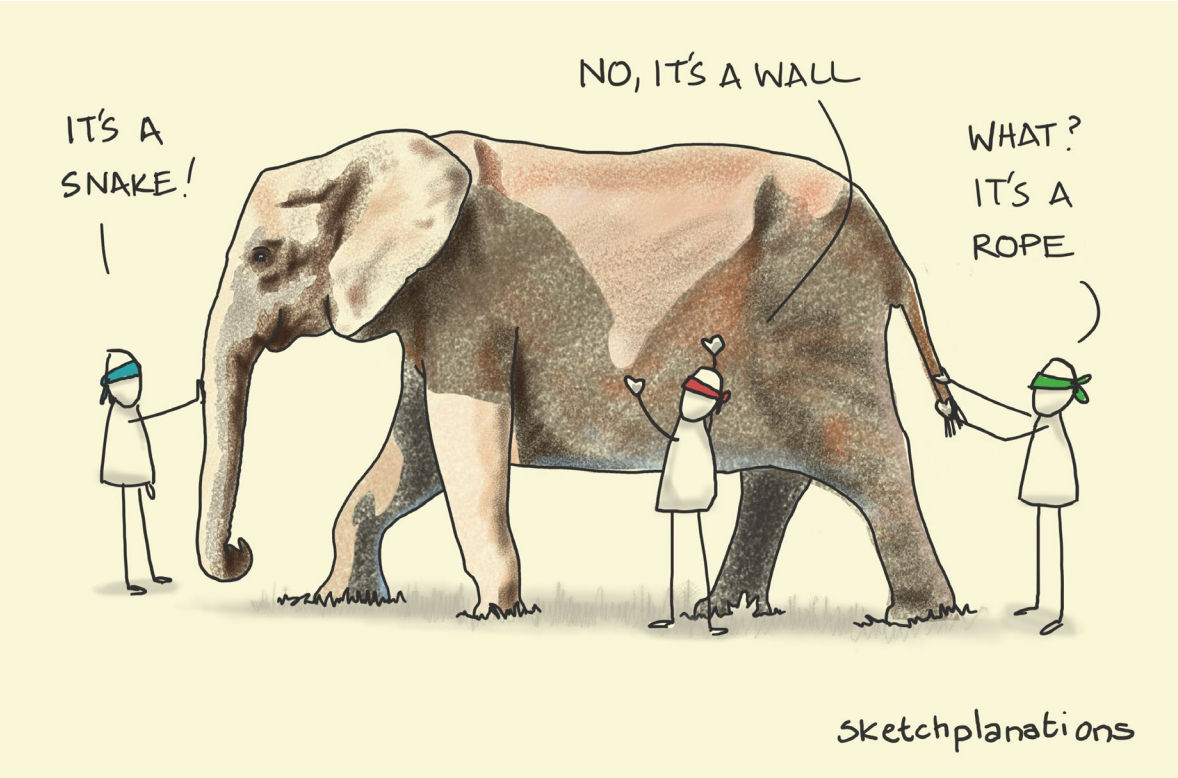
- Husband fatally injured in the accident
- No longer drives due to panic attacks and flares of neck pain
- Nightmares impact sleep
- Grieving her husband and loss of function
- Guilt impacting self-worth.

- Isolation – no longer drives to see friends, children, or grandchildren.
- Eats irregularly, mostly convenience food, and does not see the point in cooking for one.
- Poor sleep impacts mood and cognition. Finds social interaction challenging.
- Religious faith shaken in context of loss and chronic pain. No longer attends church.

We don’t treat pain.

We treat people with pain.

This is our jam.



Who thinks this is a good idea?

- World Health Organization (WHO)
- International Association for the Study of Pain (IASP)
- European Pain Federation (EFIC)
- U.S. Department of Health and Human Services (HHS)
- Centers for Disease Control and Prevention (CDC)
- U.S. Department of Veterans Affairs / Department of Defense (VA/DoD)
- American College of Physicians (ACP)
- American Physical Therapy Association (APTA) / Academy of Orthopaedic Physical Therapy (AOPT)
- American Psychological Association (APA)
- National Institute for Health and Care Excellence (NICE)
- British Pain Society
- PEER (Patients, Experience, Evidence, Research – Canada)
- Canadian Pain Task Force
- Australian Commission on Safety and Quality in Health Care
- Faculty of Pain Medicine, ANZCA (Australia & New Zealand College of Anaesthetists
- Australian Pain Society
- New Zealand Guidelines Group (NZGG) / ACC (re: Yellow Flags, LBP guides)
- German National Disease Management Guideline (NVL)
- Scottish Intercollegiate Guidelines Network (SIGN)

So what's the hold up?

Lack of Training → Access → Misaligned Incentives

Pain as Perception: Why the Brain is the Boss

Section 2

Perception vs. Reality

Dictionary

Definitions from Oxford La

per·cep

/pərˈsepSH(ə)n/

noun

the ability to see

"the normal limits to

- the state of being

"the perception of

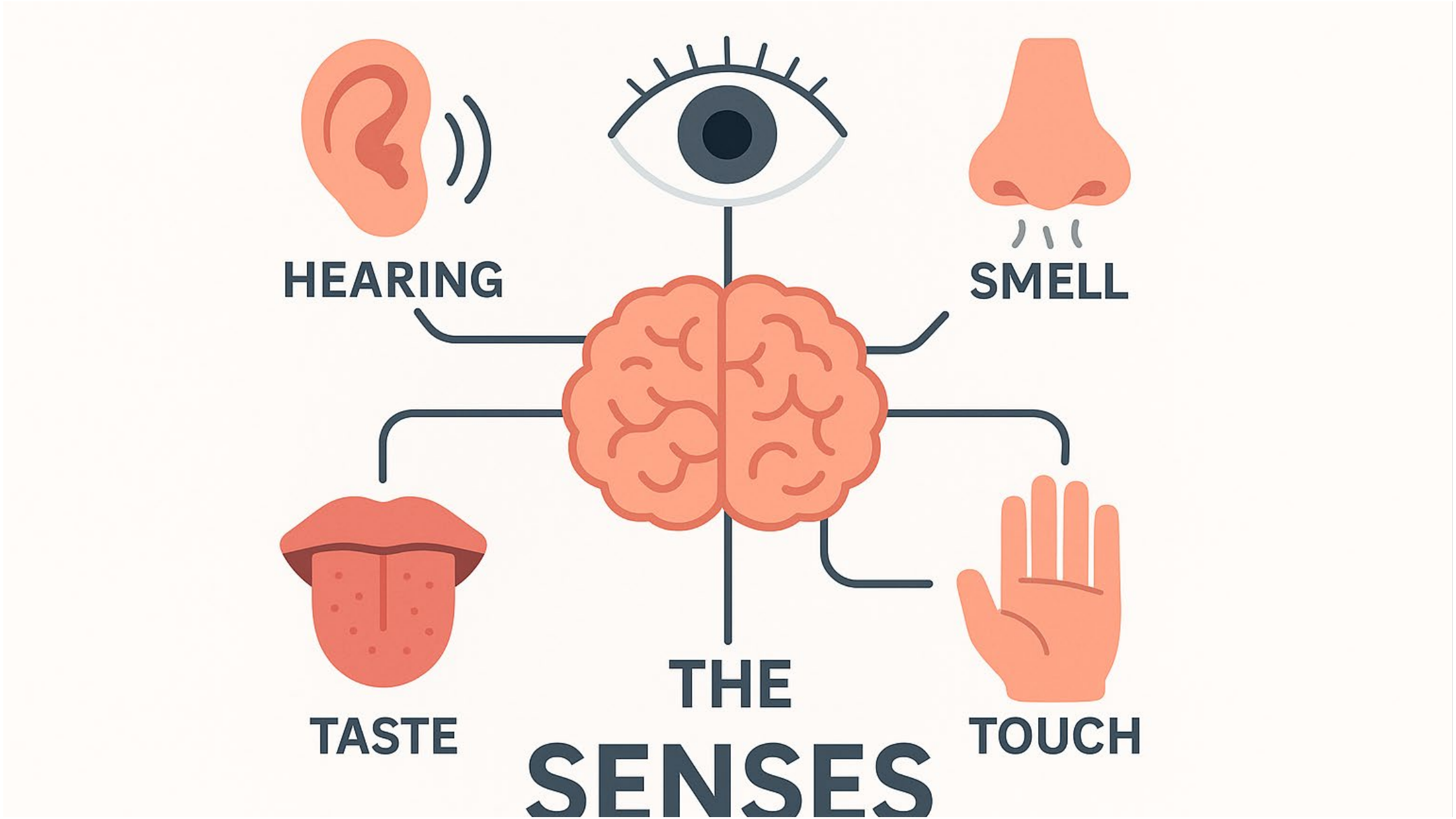
Similar: discernn

- a way of regarding

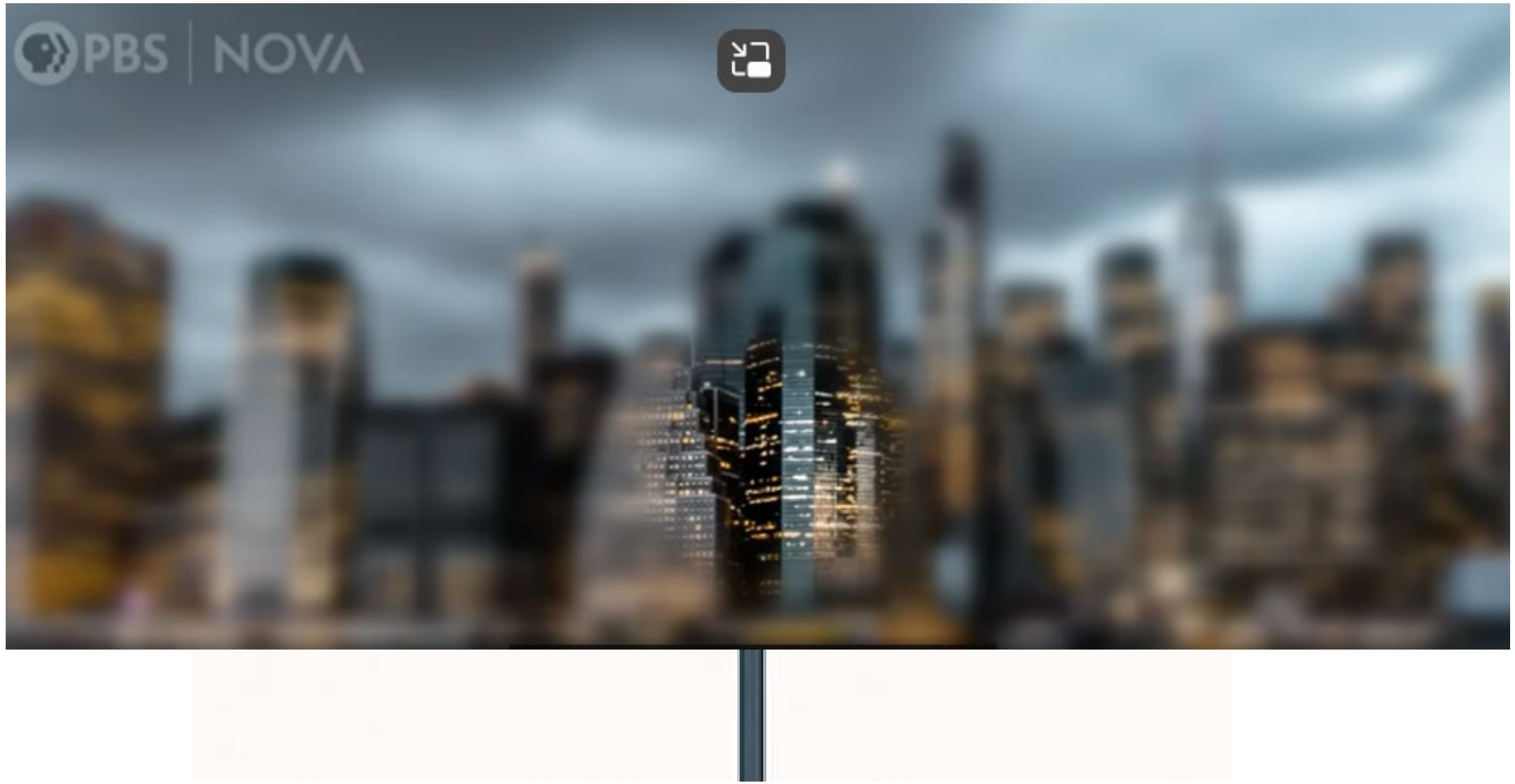
"Hollywood's perce

ed to an idealistic

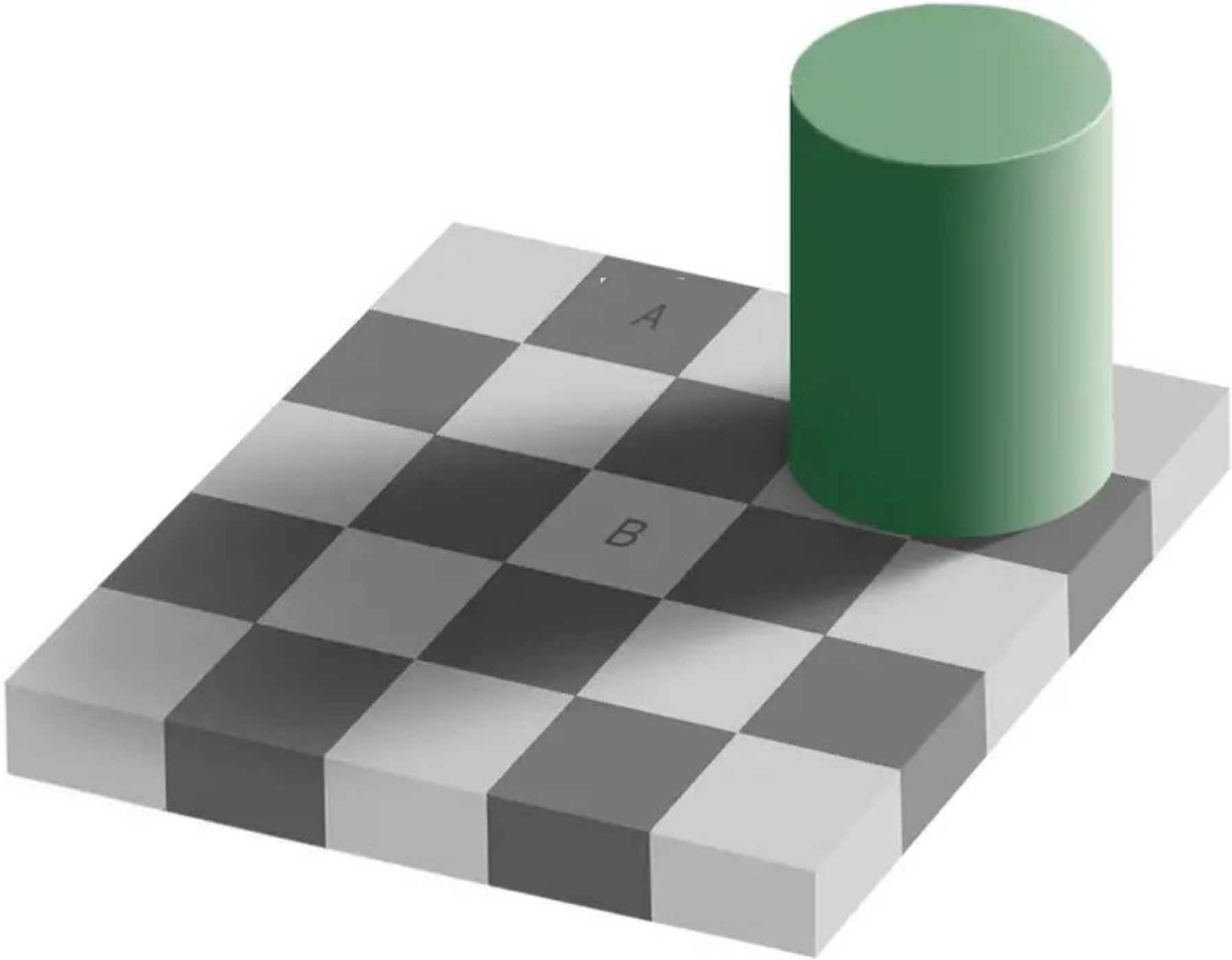
stence


HEARING
SMELL
TASTE
TOUCH
THE
SENSES

Vision

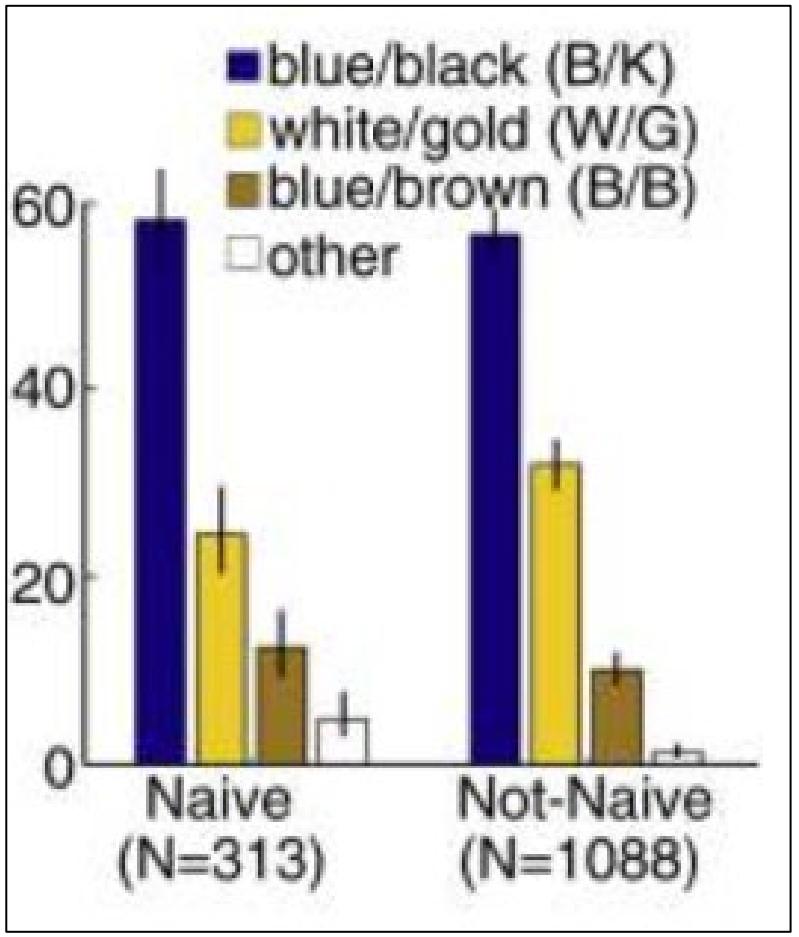


https://www.youtube.com/watch?v=HU6LfXNeQM4

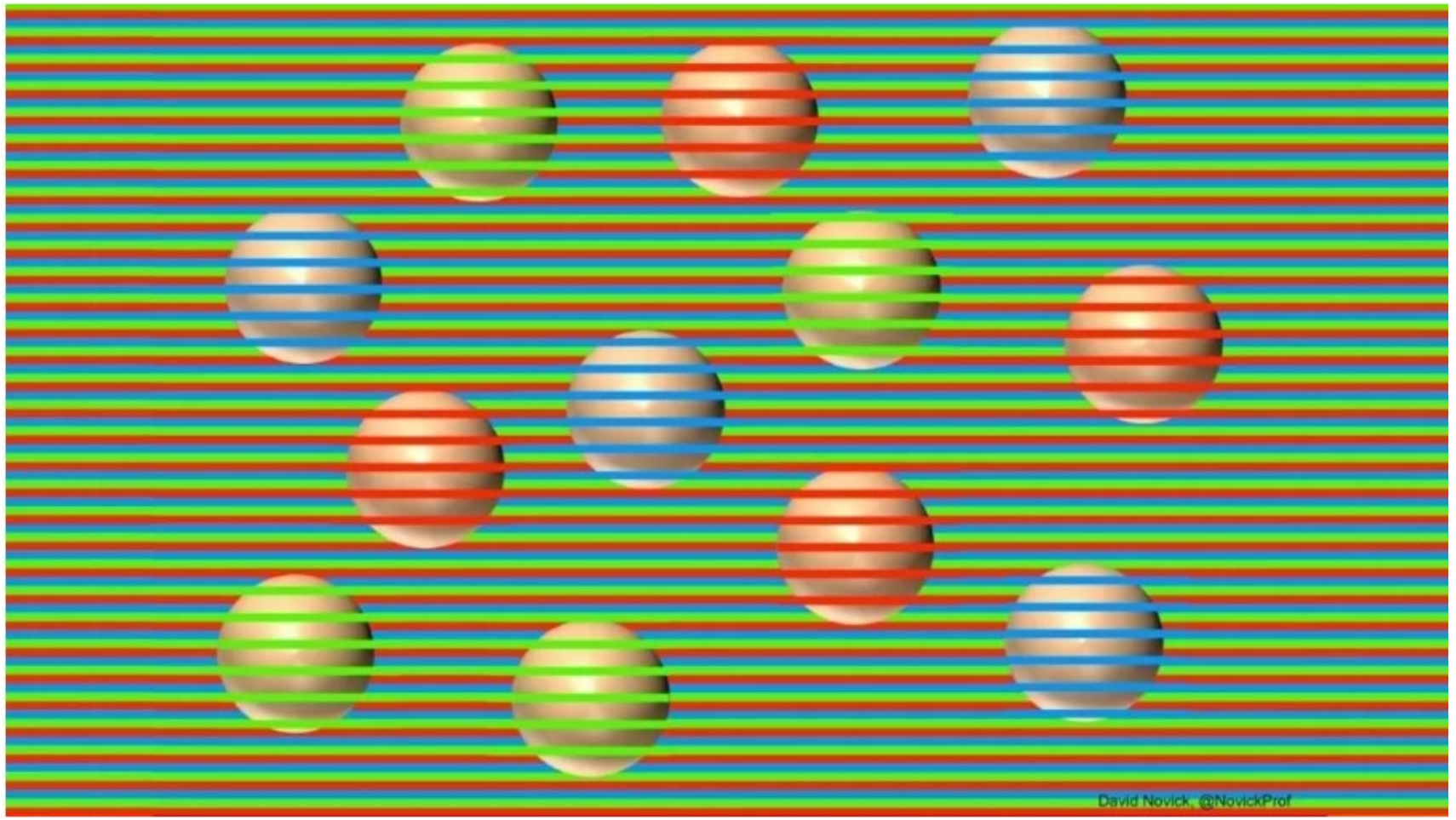

A
B

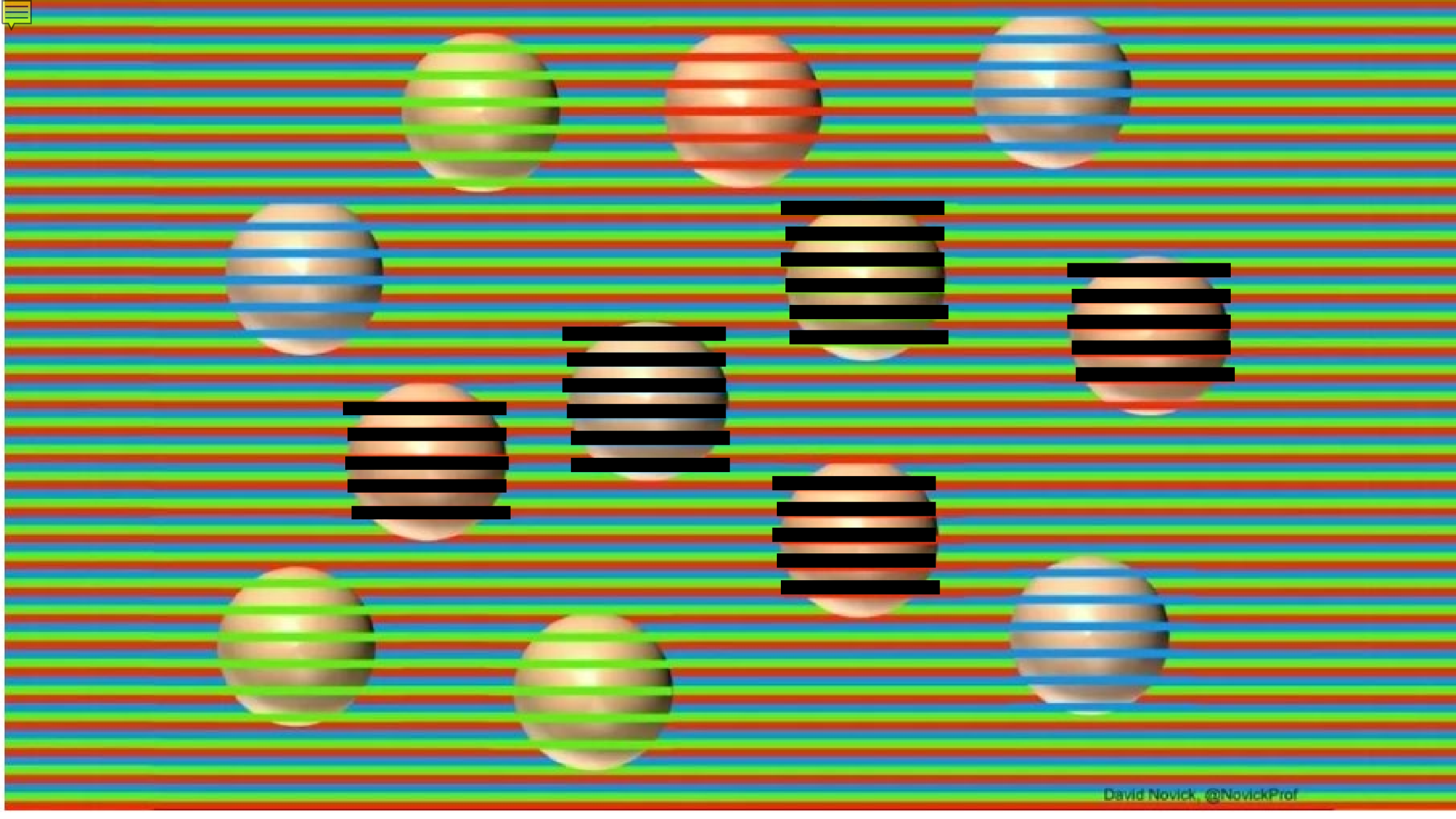
Vision:
What Color is the Dress?

Vision:
What Color is the Dress?

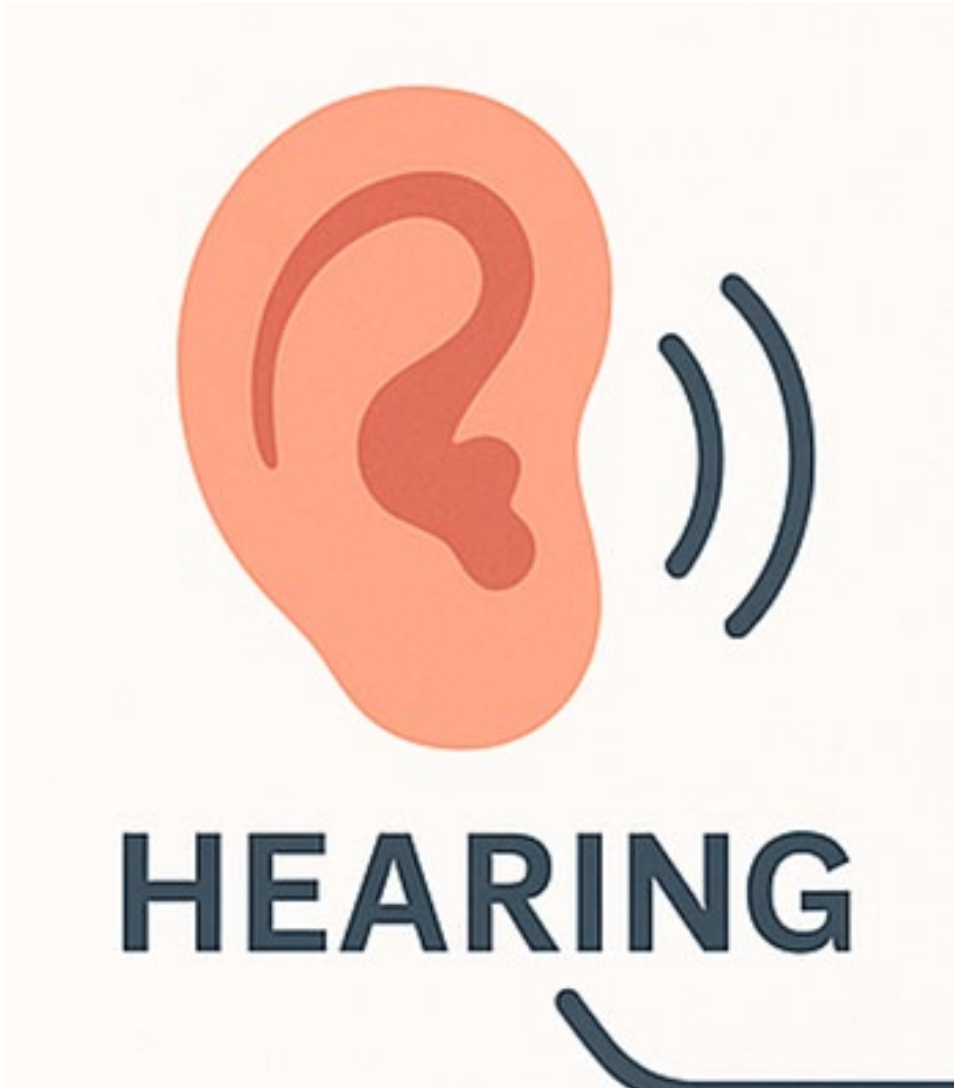


Lafer-Sousa R, Hermann KL, Conway BR. Striking individual differences in color perception uncovered by 'the dress' photograph. Curr Biol. 2015 Jun 29;25(13):R545-6.


David Novick, @NovickProf

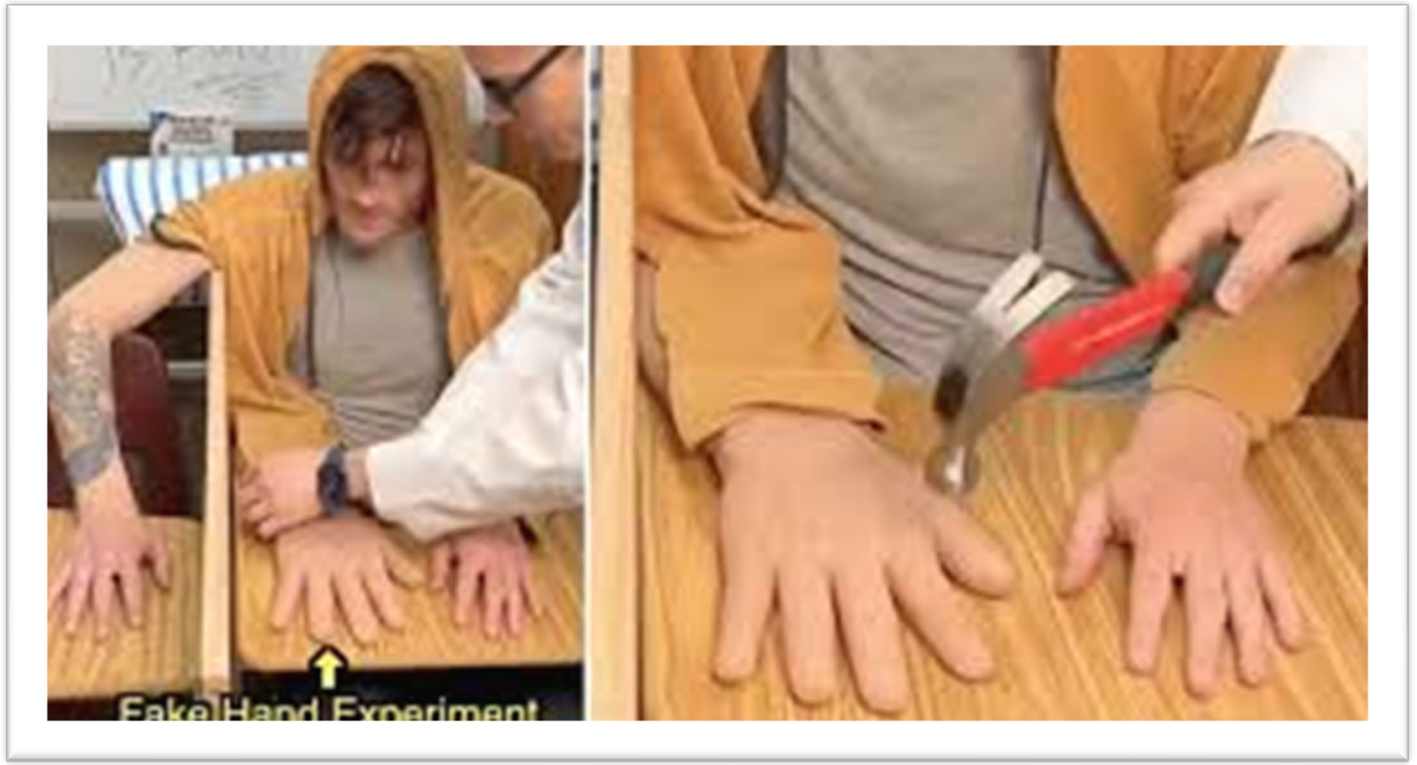

David Novick, @NovickProf

Sound

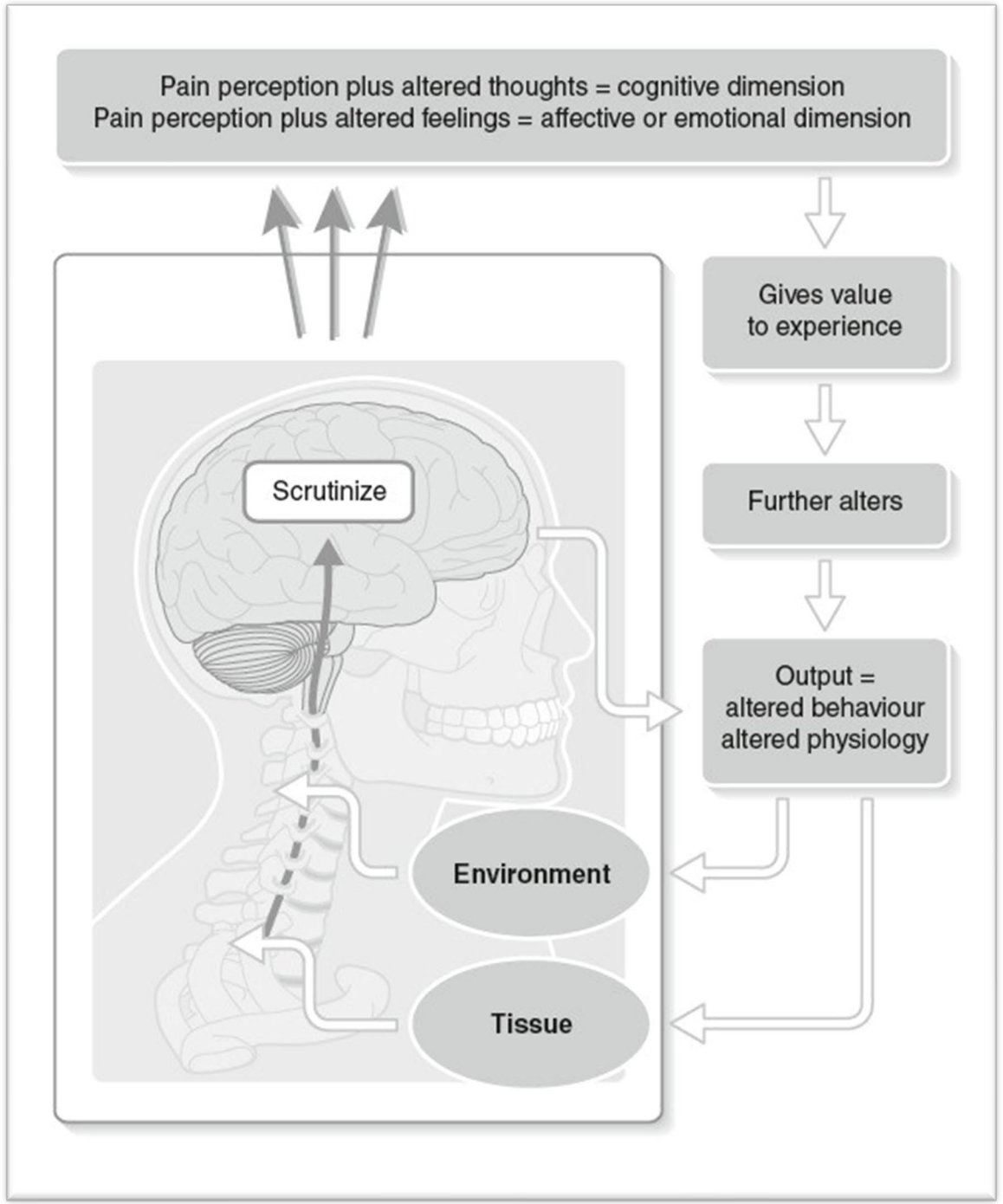


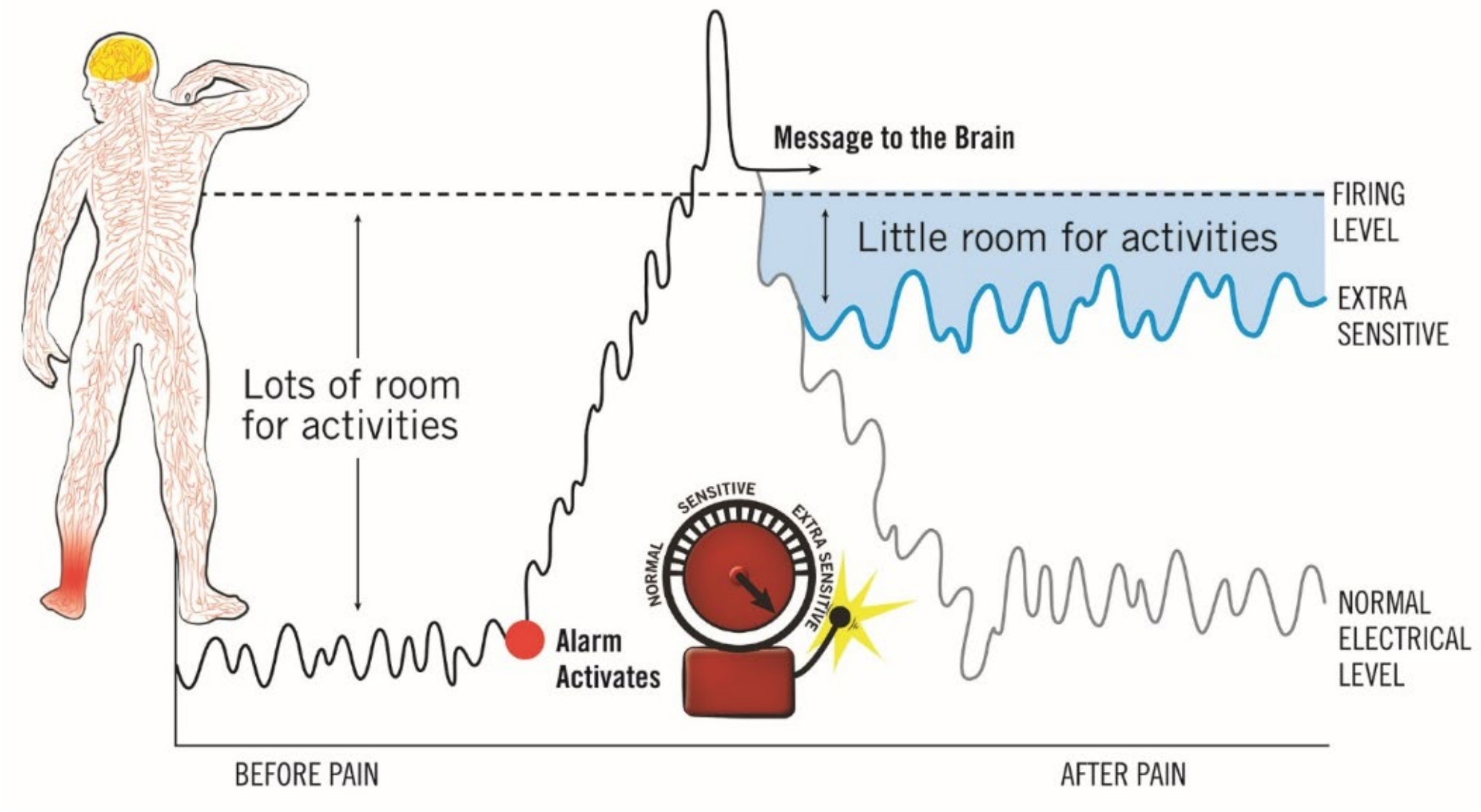

4
AUDIO
ILLUSIONS

Now I need a volunteer?

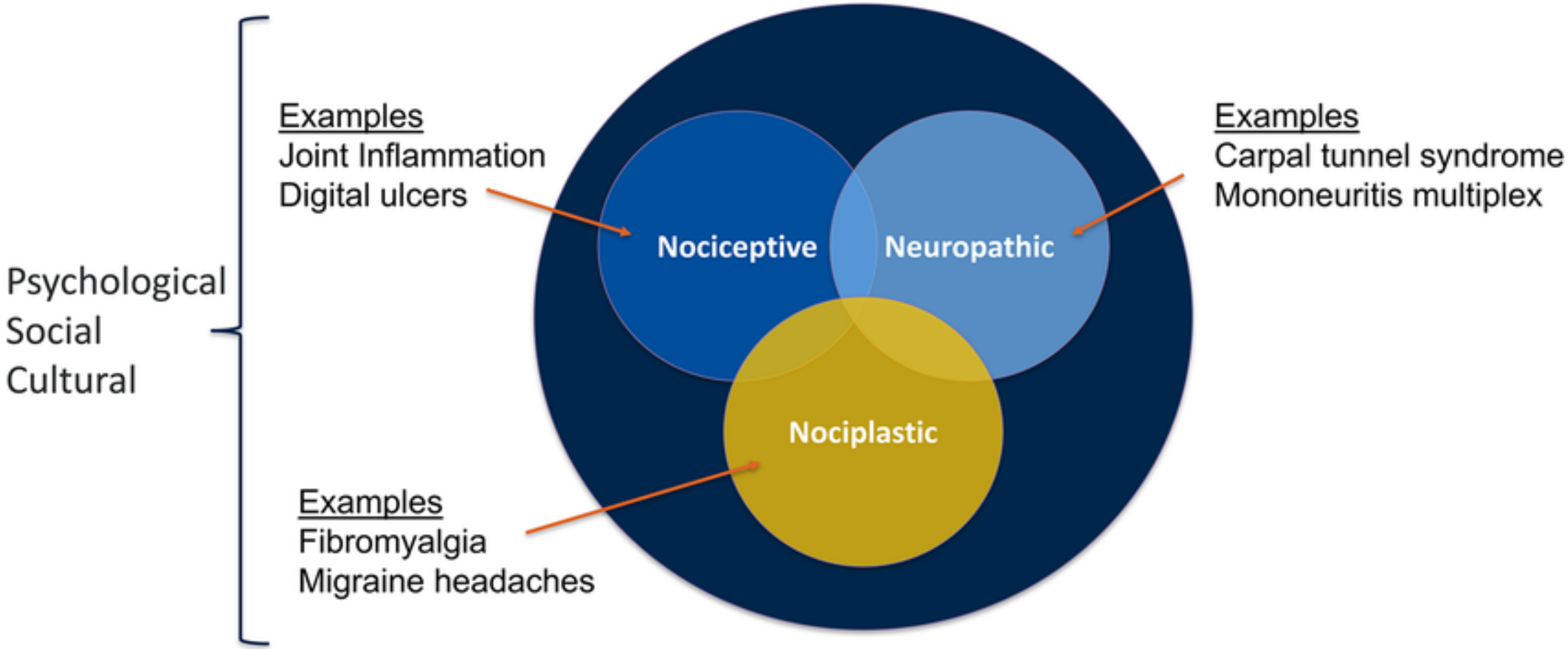


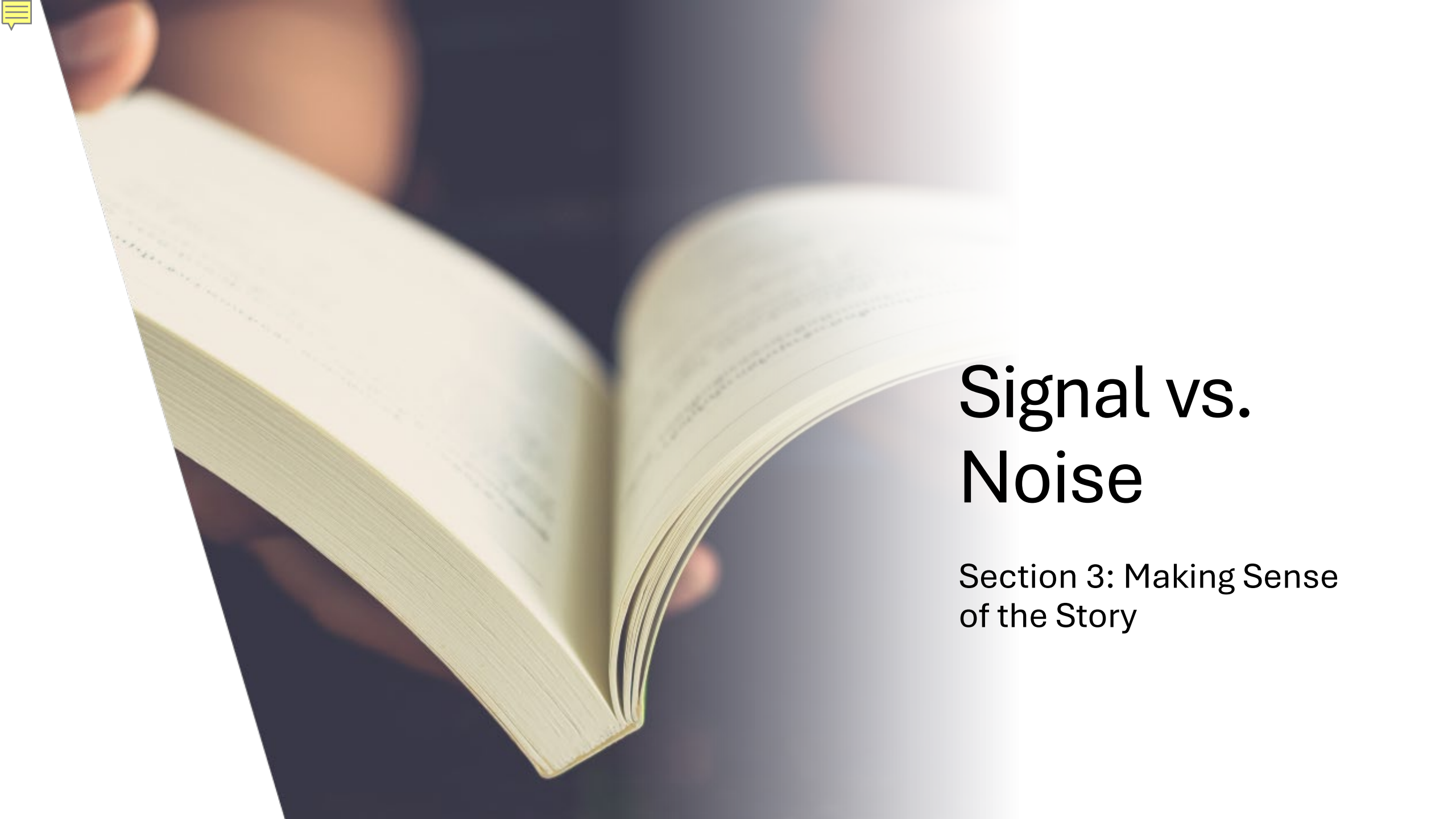
Pain is not an Input, It is only and Output





- Louw A, Zimney K, O'Hotto C, Hilton S. The clinical application of teaching people about pain. *Physiother Theory Pract*. 2016;32(5):385-395. doi:10.1080/09593985.2016.1194652


Psychological
Social
Cultural
Examples
Joint Inflammation
Digital ulcers
Nociceptive
Neuropathic
Nociplastic
Examples
Carpal tunnel syndrome
Mononeuritis multiplex
Examples
Fibromyalgia
Migraine headaches



Signal vs. Noise

Section 3: Making Sense of the Story

A place to tell stories

Environment

Clinician Appearance

Screens (attentiveness)

Power Differential

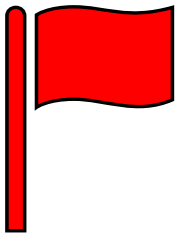
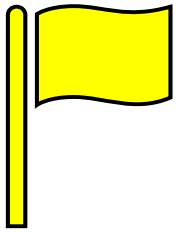
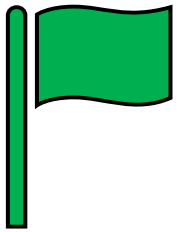
Trauma Informed (path to doorway)

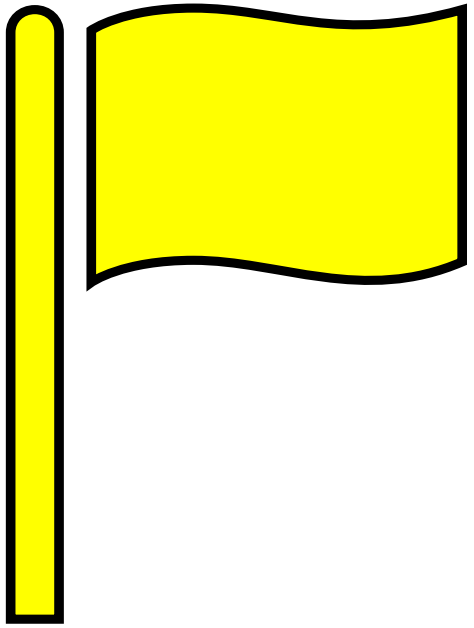
Listen

1 minute

Uninterrupted

Flags

Flag	Category	Examples
	Serious Pathology	Progressive weakness, bowel/blader changes, new headaches > age 50, trauma
	Psychosocial Factors	Unhelpful beliefs about pain, worries, fears, anxiety, etc.
	Positive Factors	Optimism, resilience, high self-efficacy, good social support



I’ve got a lot of wear and tear
I have to baby my back
I don’t want to “throw it out” again
There’s no way I can work again

I can’t lift
After 40, everything goes to hell
My back is shot
Bad backs run in my family
Once you hurt your back, it never really heals
My discs are slipped

My SI joint keeps popping out
It’s bone on bone back there
If I lift that, I’ll wreck my spine for good
It’s degeneration, so it’s permanent
My body has betrayed me
My back is a ticking time bomb
It’s only a matter of time ‘til I’m in a wheelchair

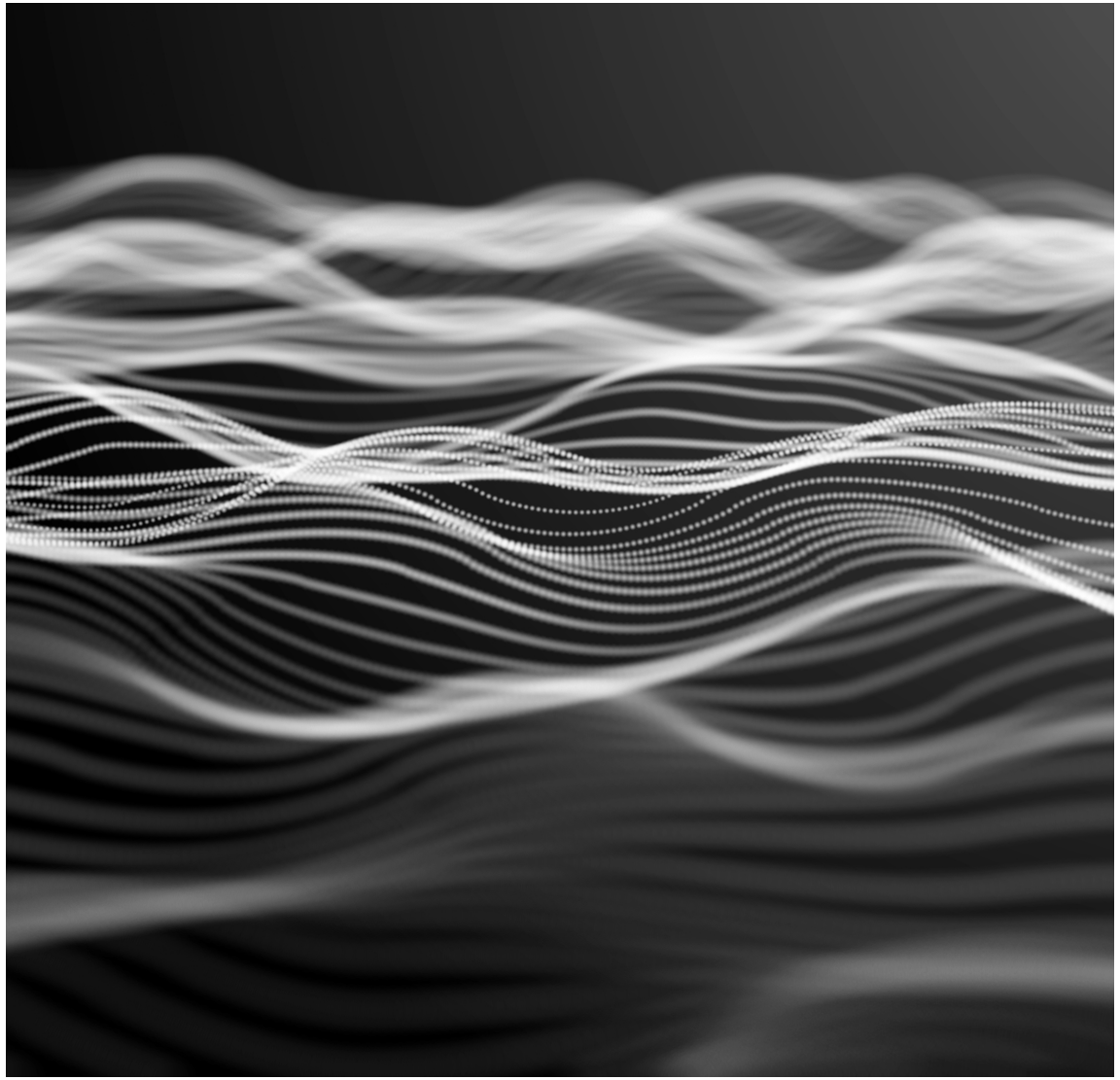
Questions worth Asking

- What is important to you?
- What do you think is causing this pain?
- What have you been told?
- What are you worried about?
- How do you think you can get better?
- What do you think the barriers are to getting better?

What is important to you?
I want to be able to pick up my grandchild.
What do you think is causing this pain?
Arthritis. It's like my joints are rusting out.
What have you been told?
I've got degenerative disc disease. They don't give out new backs.
What are you worried about?
That I'm going to end up hunched over and broken, like my father was.
How do you think you can get better?
I'm not sure that I can, but I guess I have some hope, or I wouldn't be here.
What do you think the barriers are to getting better?
Age, mostly. But if there's a way, I've got the will.

Signal vs Noise:

Part 2: Pattern Recognition



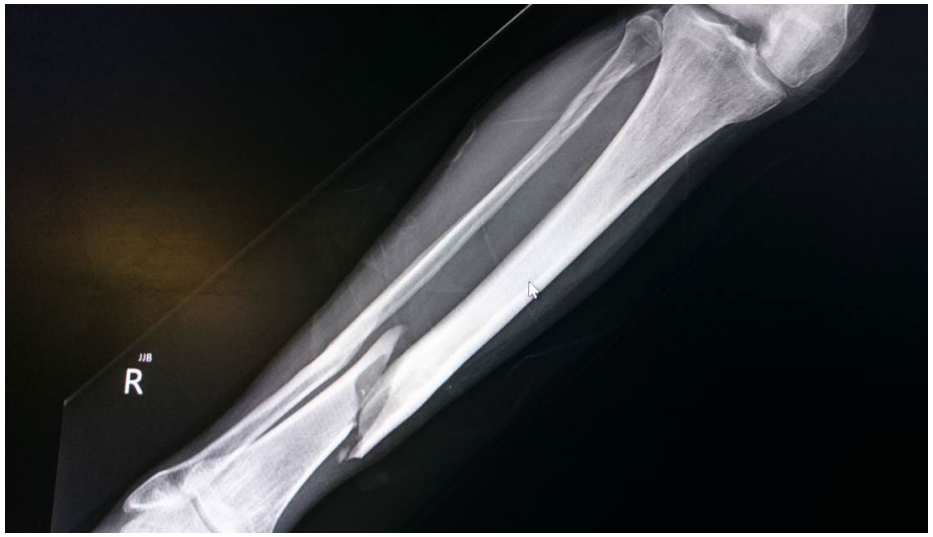
Fundamental Components of the History

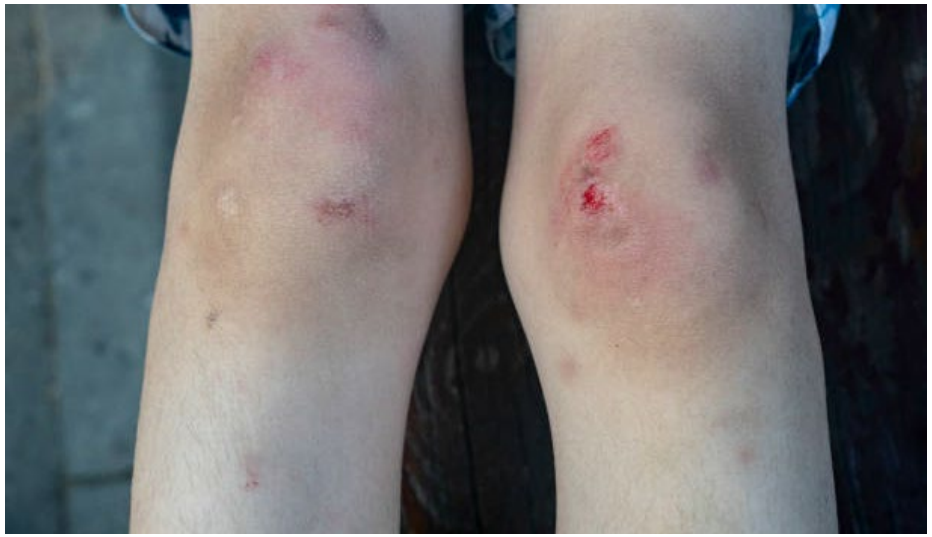
PMH, family hx, social hx, past treatments, imaging/labs

O	P	Q	R	S	T
Onset	Provoking & Palliating Factors	Quality of the Pain	Region Radiation	Severity	Timing

Nociceptive (tissue issue/inflammation)

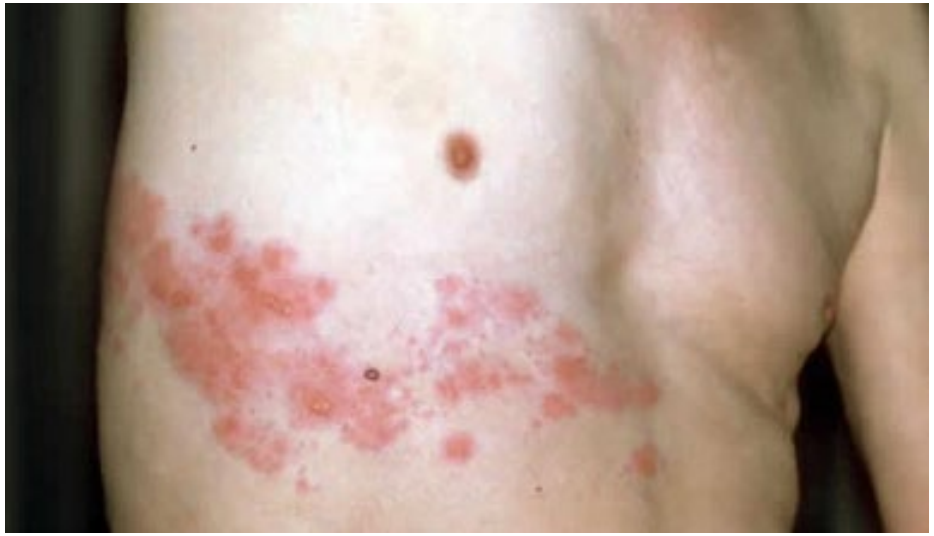
- Core idea: Pain proportional to tissue load or inflammation
- Pattern: Localized, anatomically plausible
- Descriptors: Dull, aching, throbbing; sharp with movement
- Aggravators: Movement, load, posture
- Relievers: Rest, unloading, NSAIDs, pacing
- Clues: Swelling, stiffness, mechanical/inflammatory story
- Soundbite: “It hurts when I bend or lift; resting helps.”

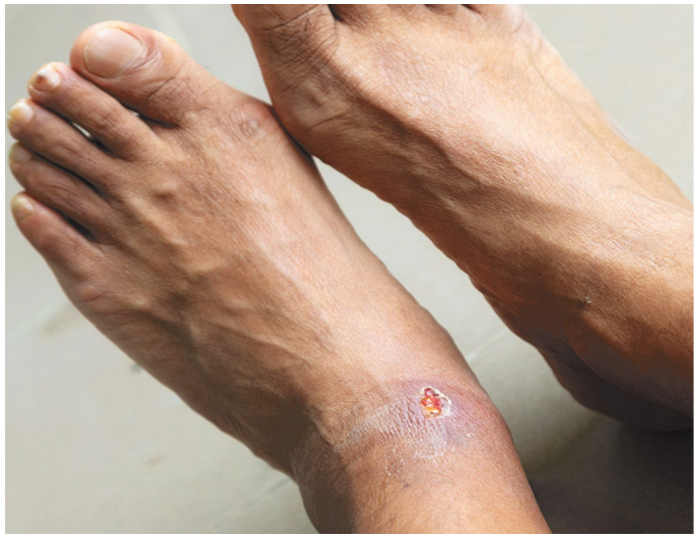




Neuropathic (nerve lesion/disease)

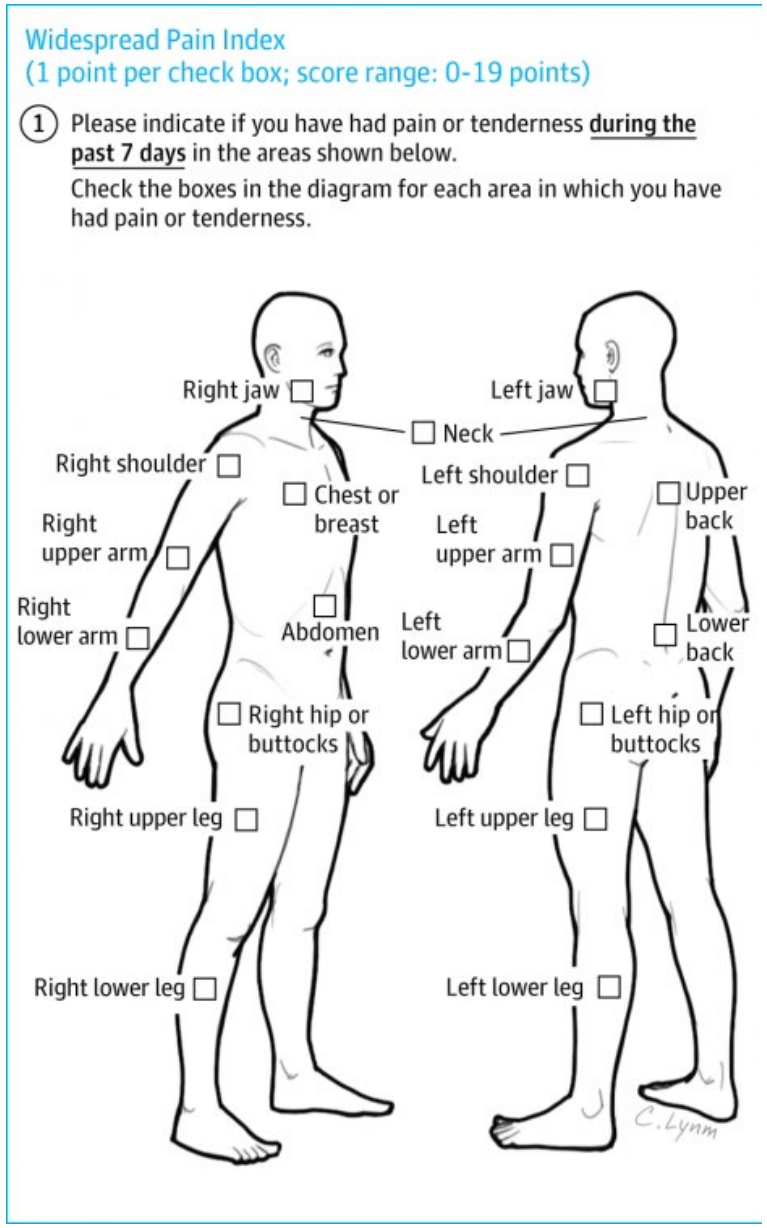
- Core idea: Pain from nerve damage, neuroanatomic
- Pattern: Dermatomal or peripheral nerve territory
- Descriptors: Burning, electric, shooting, stabbing, numb/tingle
- Aggravators: May be spontaneous; light touch/temp (allodynia)
- Relievers: Variable; neuropathic agents
- Clues: Numb patches, pins/needles, weakness
- Soundbite: “It’s like electricity down my arm. Clothes hurt my skin.”





Nociplastic (altered processing)

- Core idea: Widespread, disproportionate pain without clear tissue/nerve lesion
- Pattern: Migratory, bilateral, “all over”
- Descriptors: Diffuse, pressure-like, fluctuating
- Aggravators Stress, poor sleep, exertion
- Relievers: Pacing, hygiene; inconsistent
- Clues: Fatigue, “fibro-like,” sensory hypersensitivity, IBS/TMJD overlap
- Soundbite: “It moves around. Everything just… hurts.”



Bill is a 42-year-old male with shoulder, bilateral knee and hip, low back, and neck pain. He also contends with persistent daily headaches.

He yawns frequently during the interview, reporting poor sleep. He seems perplexed with his symptoms that come and go “without rhyme or reason”.

He saw a rheumatologist who said it was “all in my head”.

Sheila is a 60-year-old female with sharp and sometimes throbbing knee pain that worsens with walking and prolonged standing.

Improved with rest, ice, and NSAIDs. Better with a knee sleeve. No numbness, tingling, or radiating pains.

Occasional give-way, associated with sharp pains.

Doug is a 68-year-old male develops a painful rash along the right T7 dermatome, describing sharp, burning pain with tingling. The rash's vesicles have crusted and healed, but the pain persists.

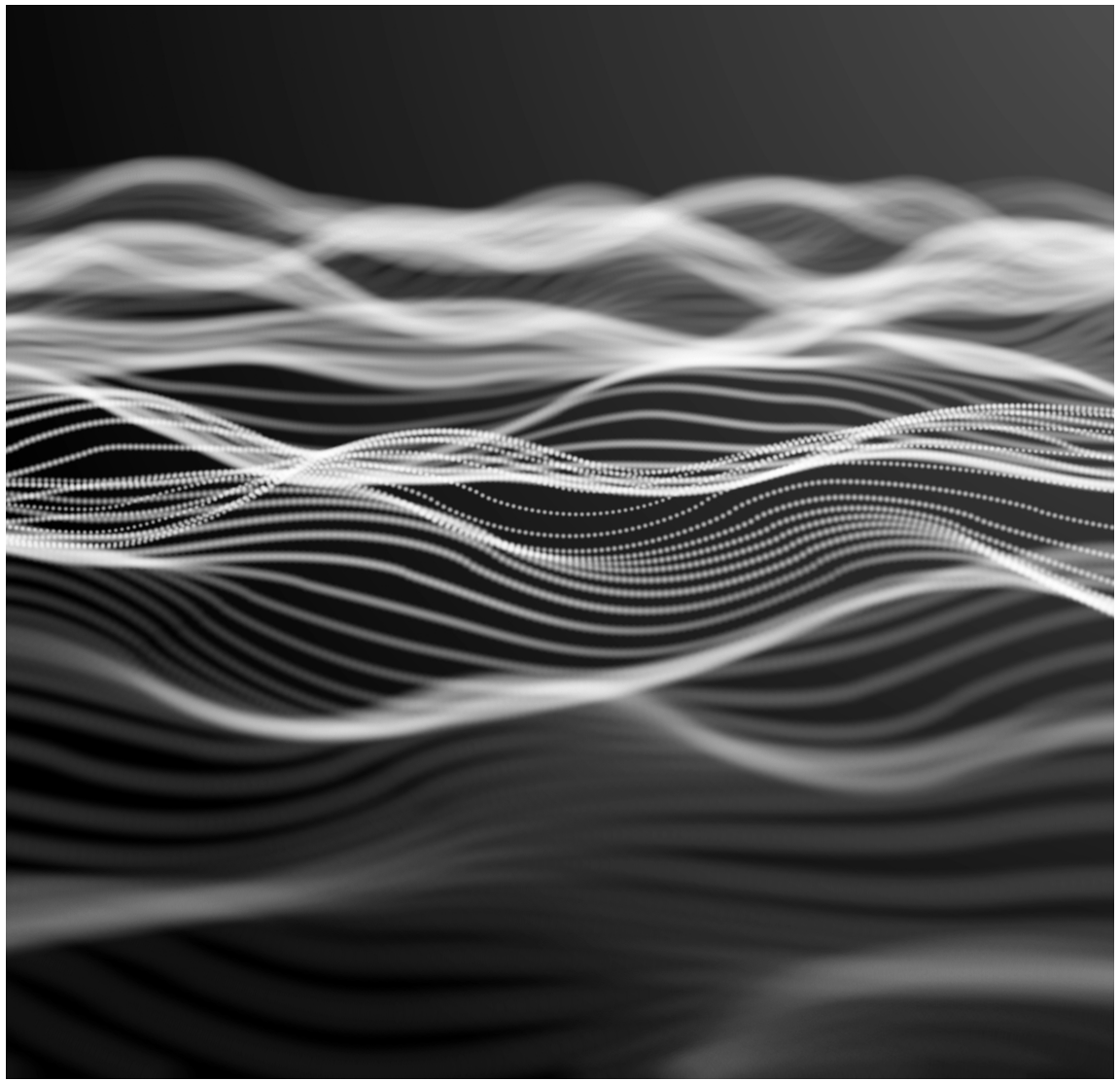
He can not tolerate wearing a shirt and props his arm up, so it does not rub on his side.

A 55-year-old with sharp pain localized to the right inguinal area, reliably reproducible with load bearing and hip flexion. He takes one stair at a time, or risks falling. He also describes burning pain and intermittent tingling in the right buttock, posterior thigh, and lateral foot, worse after prolonged sitting.

“My leg falls asleep and sometimes it aches, but I can deal with that. It’s the pain in the front that keeps me from walking.”

Signal vs Noise:

Making Sense of the Examination

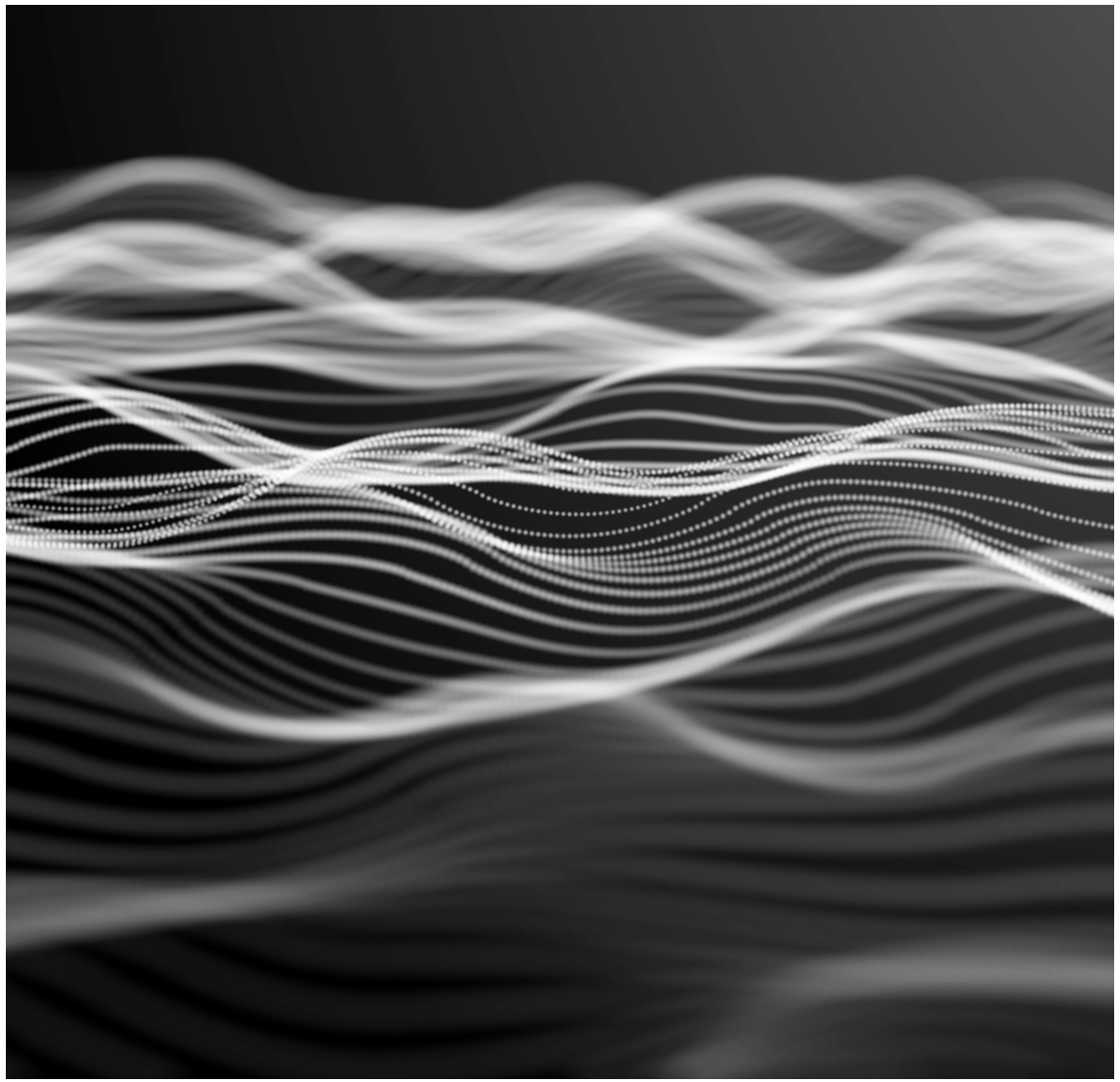


TED: A Doctor’s Touch Abraham Verghese

What is the physical Exam for?

- Rule out serious pathology
- Narrow the differential

- Validation
- Reassurance
- Build therapeutic alliance
- Complete the ritual



What to Always do in an exam

- Ask permission
- Sign-post
  - PTSD
  - Trauma

What to Prioritize in an exam

- Strength
- Sensation
- Reflexes
- Pathological Reflexes
  - Hoffman, Tromner, Babinski, Clonus

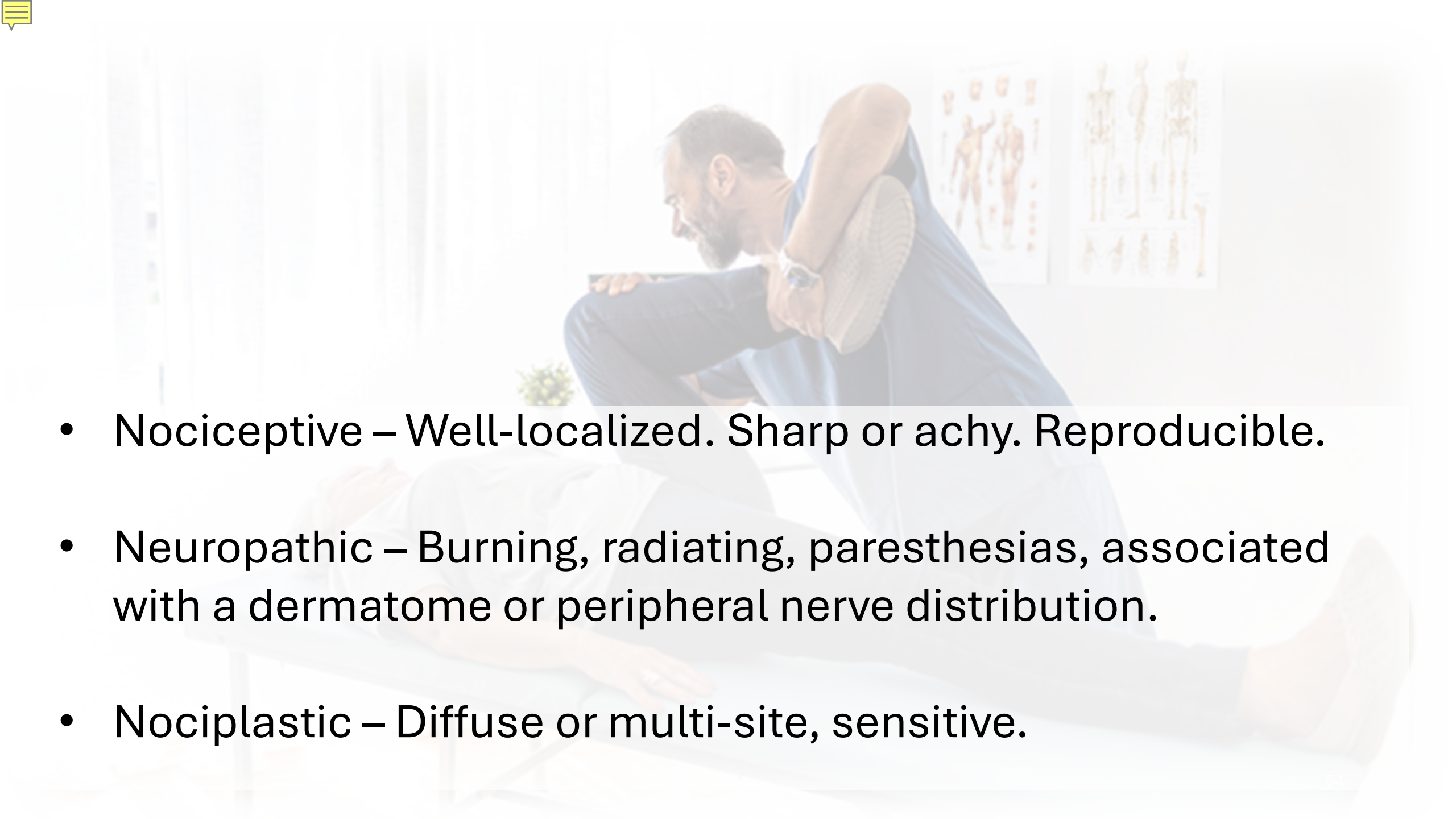
Reflexes

- Use adequate resistance
  - Gravity for plantar flexion
- Get a decent hammer
- Pathological reflexes every time, for reps and to get used to normal.

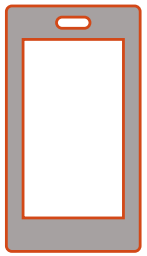
What about provocative Tests?

- Useful, to a point
- Variable specificity and sensitivity
- Select carefully; more tests = more false positives
- Clusters
  - Laslett – SIJ
  - Wainner – Cervical Radiculopathy
  - Cook – Cervical Myelopathy*

Phenotyping: How does pain behave?



- Nociceptive – Well-localized. Sharp or achy. Reproducible.
- Neuropathic – Burning, radiating, paresthesias, associated with a dermatome or peripheral nerve distribution.
- Nociplastic – Diffuse or multi-site, sensitive.



Communication

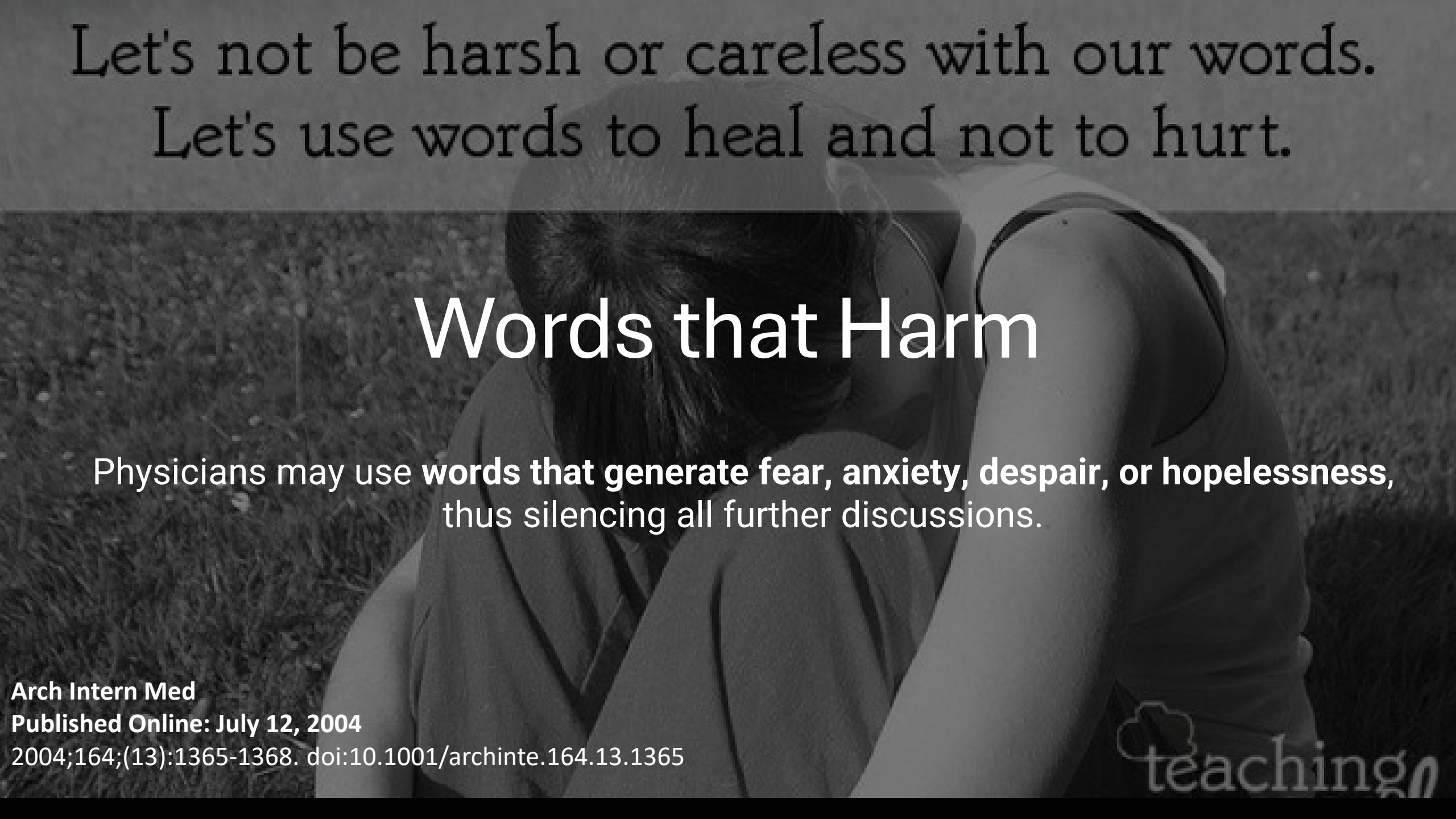
Barries Present?

Education

- Upbringing
- Schooling
- Coaching

Explanations

- Other providers
- Home Life
- Social Media



Words that Harm

Physicians may use **words that generate fear, anxiety, despair, or hopelessness**, thus silencing all further discussions.

Arch Intern Med
Published Online: July 12, 2004
2004;164;(13):1365-1368. doi:10.1001/archinte.164.13.1365

Things we hear.....

Patient has fibromyalgia, myalgic encephalitis, chronic fatigue

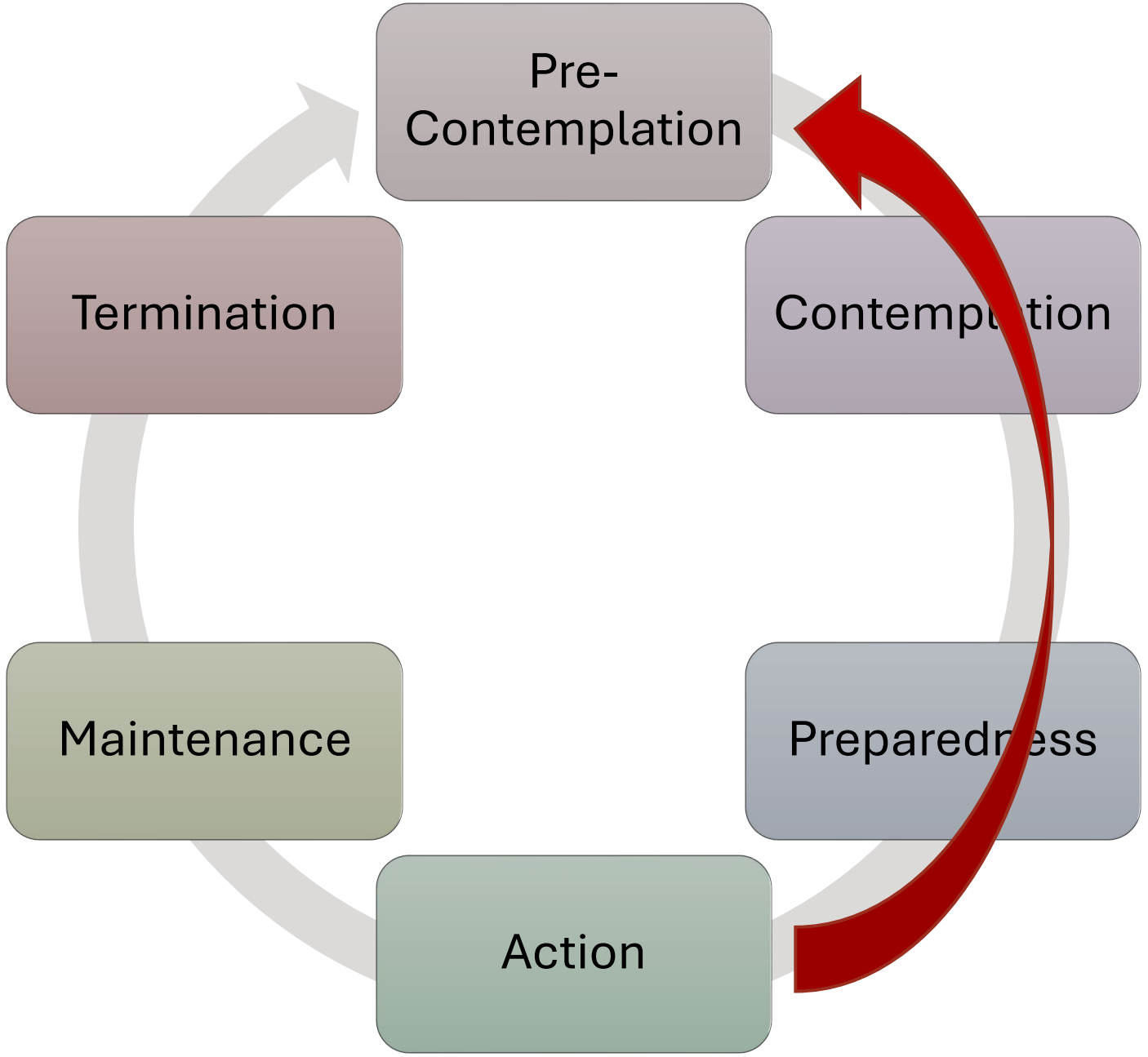
man with ongoing pain who had broken her ankle and was concerned it wasn’t healing as it should.

Said to a daughter whose father has severe dementia who was no longer able to hold his head up.

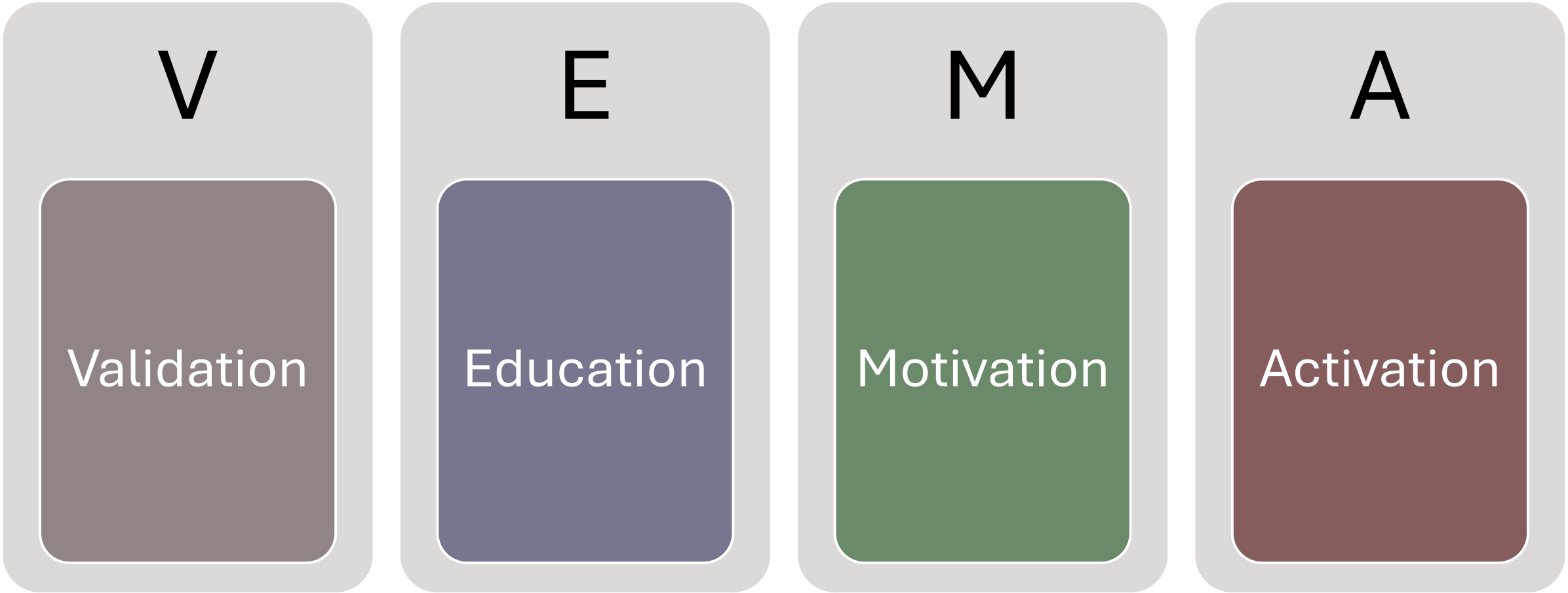
Said to a man with newly diagnosed psoriatic arthritis.

Based on this comment, he resigned from work so he and his wife could enjoy what was left of his ‘walking years’. Yet there’s actually a good chance that he won’t end up in a wheelchair.

Communication: Which direction did that discussion move the patient?



V-E-M-A Model



Validation

01

Until a patient feels validated in their experience, they will not move forward and make a change.

02

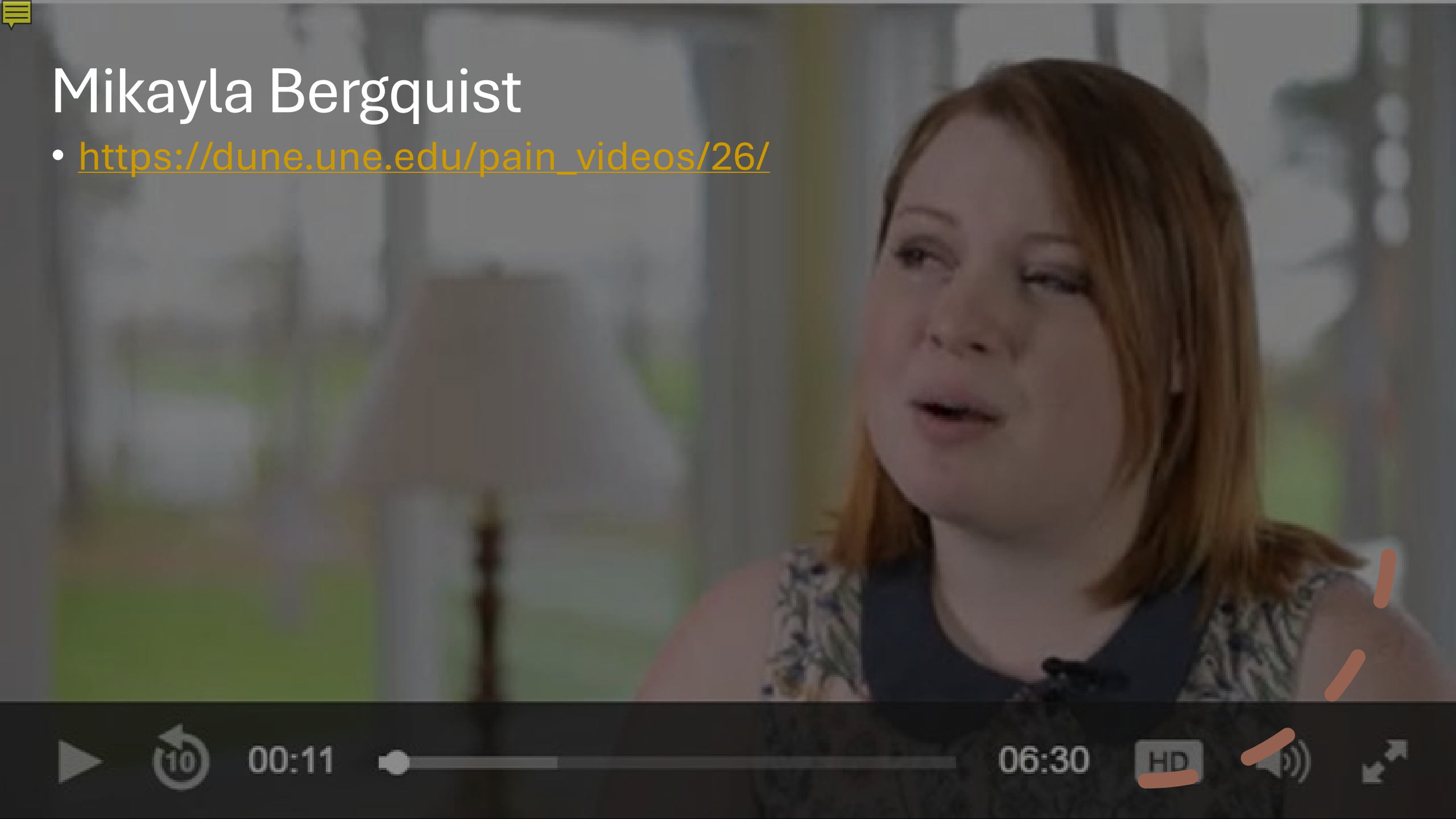
It helps ensure patient’s pain experience isn’t dismissed

03

It builds trust and allows the patient to accept guidance moving them forward in their care.

Mikayla Bergquist

- https://dune.une.edu/pain_videos/26/



Education

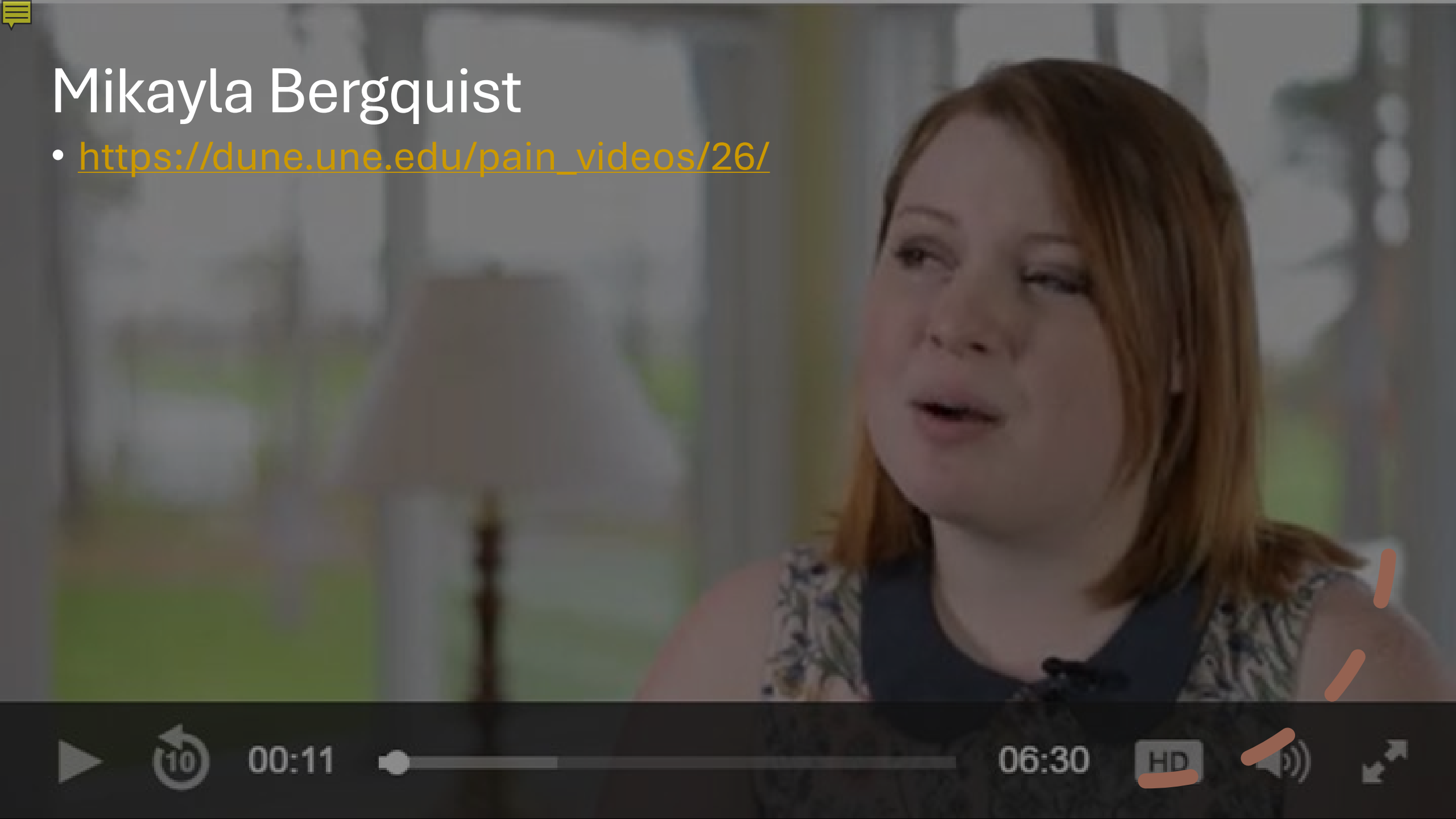
What are of education is needed?

What is the patient’s perception?

What have they been told?

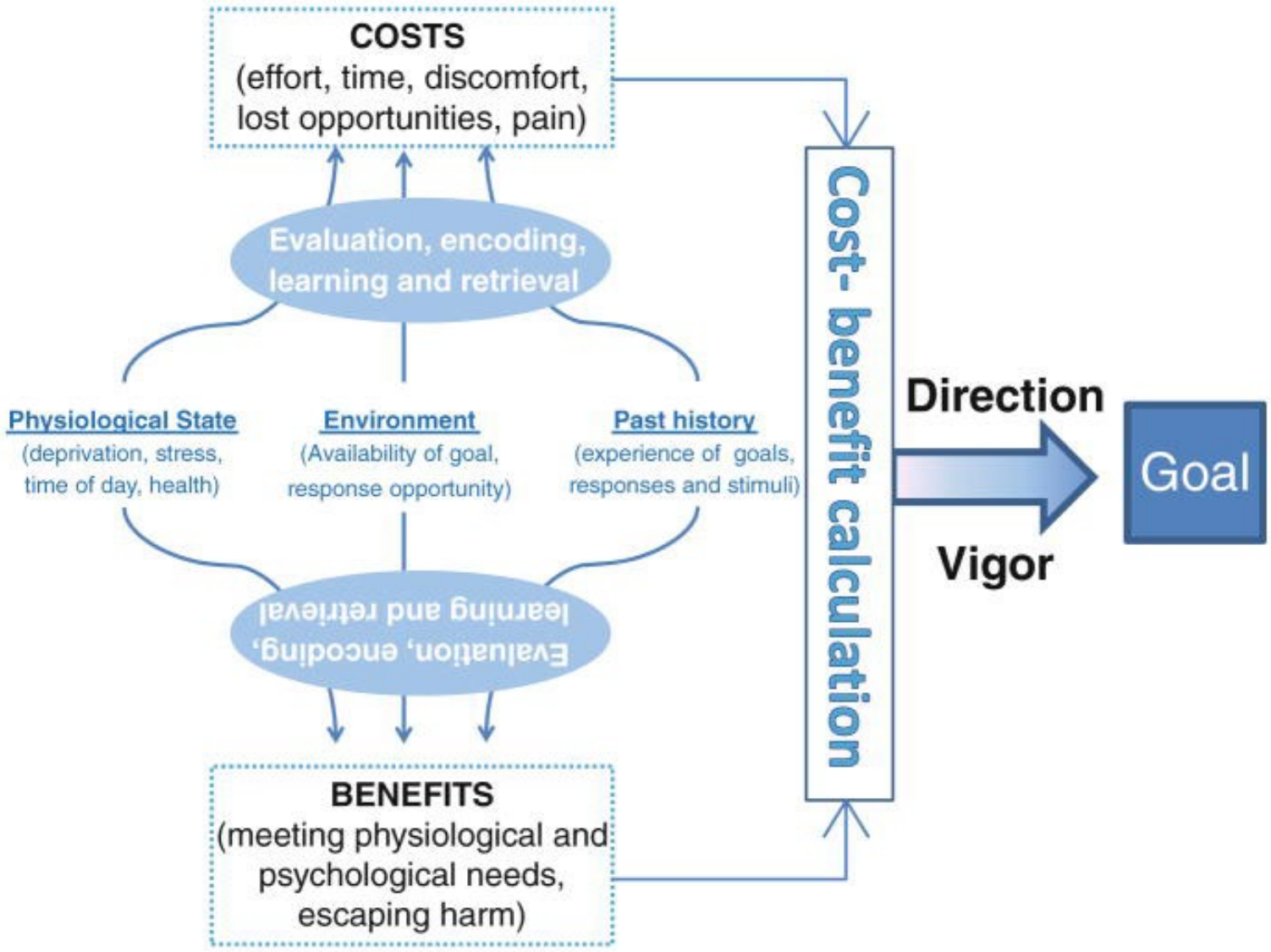
Mikayla Bergquist

- https://dune.une.edu/pain_videos/26/



Motivation: Energizing of behavior in pursuit of a goal

Curr Top Behav Neurosci. 2016;27:1–12.
doi: 10.1007/7854_2015_402



Activation

Reframing Manual therapy

- Why Reframe?
- It works, but…
- Traditional explanations don’t fit the evidence
- Structural stories can increase fear and dependency
- Modern mechanisms provide a more empowering narrative

What do we think is happening?

PLoS One. 2025 Mar 18;20(3):e0319586. doi: 10.1371/journal.pone.0319586. eCollection 2025.

The mechanisms of manual therapy: A living review of systematic, narrative, and scoping reviews

Damian L Keter [1], Joel E Bialosky [2 3], Kevin Brochetti [1], Carol A Courtney [4], Martha Funabashi [5 6 7], Steve Karas [8], Kenneth Learman [9], Chad E Cook [10 11 12]

Autonomic and neurovascular changes	• Modulation of a revved up nervous system
Neurological	• Reduced pain-pressure threshold • Descending inhibition
Neurochemical	• Endorphins • Oxytocin
Contextual/psychological	• Safety in movement

What’s probably not happening

- Young et al., 2024 (Systematic review): Credible studies show **no lasting alignment change**; **facet gapping appears only in side-posture and vanishes in neutral**; all vertebral-position studies were not credible.
- Cramer et al., 2013 (RCT, MRI): **Facet joints gap after SMT/positioning**, but spacing **returns to normal when scanned in neutral/supine**. No evidence the vertebrae stay “re-aligned.”
- Langenfeld et al., 2025 (Systematic review): **Facet gapping findings are short-lived** and posture-dependent; stiffness effects inconsistent; biomechanical changes rarely link to clinical outcomes.
- Maiers et al., 2025 (Secondary analysis): **Radiographic features did not predict who improves** after 12 weeks of SMT + exercise

How to think about manual therapies

- Changing the nervous system… but not alignment.
- Reducing sensitivity
- Window of opportunity
- Pair with active strategies and education
- Grade activity
- Improve resilience and confidence

Impression and Treatment Planning

Comprehensive impression

Organize your thoughts

Paint a full picture of the patient experience

- Useful to future you and other providers

Useful document for guiding treatment planning

Components

- Red flags
- Global diagnostic impression (including phenotype)
- Yellow Flags
- Supporting information
- Barriers/Strengths
- Goals
- Insight

Nate

- Red flags
- Global diagnostic impression (including phenotype)
- Yellow Flags
- Supporting information
- Barriers/Strengths
- Goals
- Insight

40-year-old male referred for low back and left lower extremity pain. There are no red flags: no bowel or bladder change, no saddle numbness, fever, weight loss, or progressive weakness.

Most consistent with L5 radiculopathy as evidenced by pain and paresthesia radiating to the lateral leg and dorsal foot. Dominant phenotype is neuropathic pain. This is evidenced by the following: Straight-leg raise and slump testing reproduce the leg symptoms. Sensation to light and sharp touch is reduced over the right lateral leg and dorsal foot (L5 dermatome). There is trace weakness of dorsiflexion and EHL is weak (grade 4/5); both are innervated by the L5 nerve. Reflexes are intact and equal bilaterally and pathological reflexes (clonus and Babinski) are absent.

Barriers include pain-related fear and avoidance with concern for “making it permanent”. He is sleeping only 4-5 hours, which is not conducive to recovery. Strengths include desire to return to full work duty and to play soccer with his kids. Extension-biased and side-glide positions provide relief, suggesting that the pain is modifiable.

Nate has concerns about a “slipped disc crushing a nerve” and worries that if he bends wrong, the effects may be permeant. He expects imaging and surgery may be necessary but wants to avoid surgery if possible. He is motivated to improve and seems open to learning about his condition and how conservative approaches could help.

Treatment Planning: Three Pillars

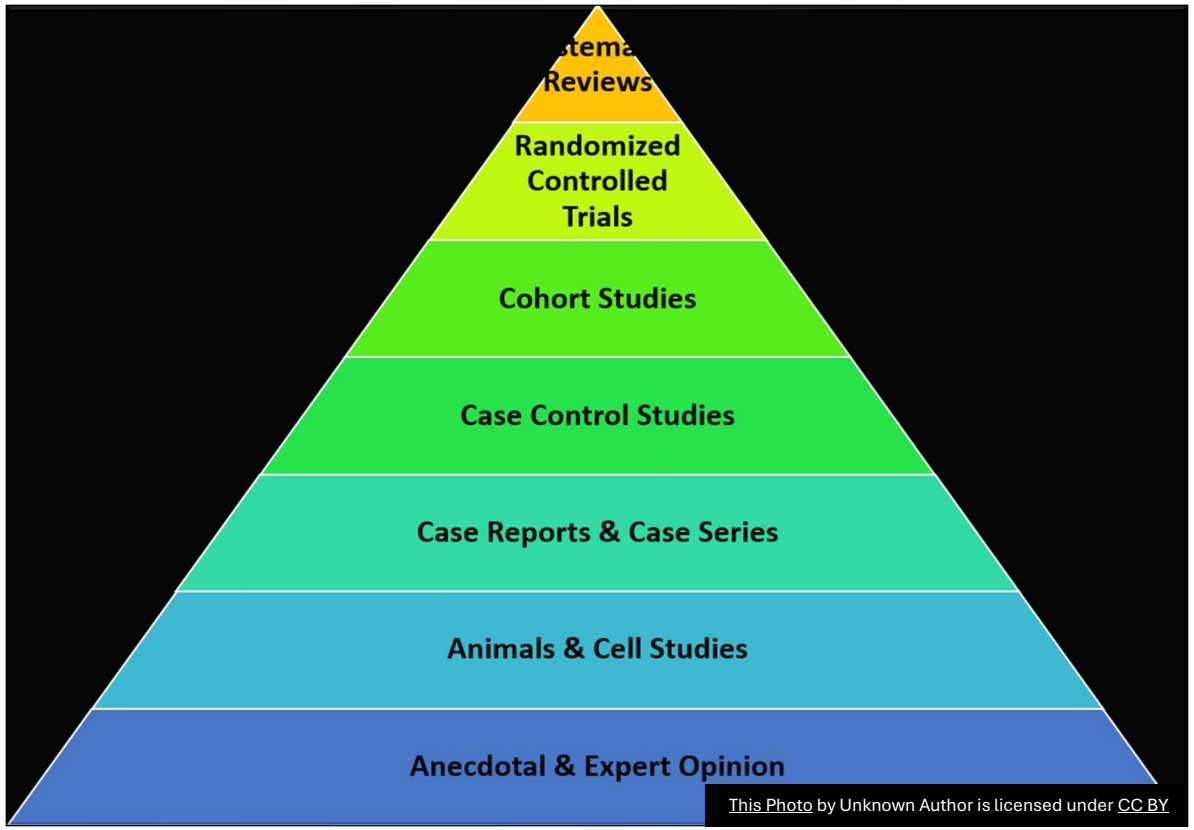
Best evidence

Personal expertise

Patient preference

Considering the Best Evidence

- Is it generalizable to your patient?
- Statistical Significance ≠ Clinical Significance
- Are you confident in the journal and author?
- Evidence hierarchy



Personal experience

- Paucity of evidence
- Gestalt
- Knowledge of/relationship with specific providers

Patient preference

More likely to adhere to a plan they help make

Time or financial constraints

Evidence for several treatments may be similar

Past experiences can drive expectations

Patients ask for treatments they think will work – placebo

What are the patient's goals?

Case 1

36 y/o female with fibromyalgia

Evidence: CBT, graded exercise, manual therapies, acupuncture, duloxetine

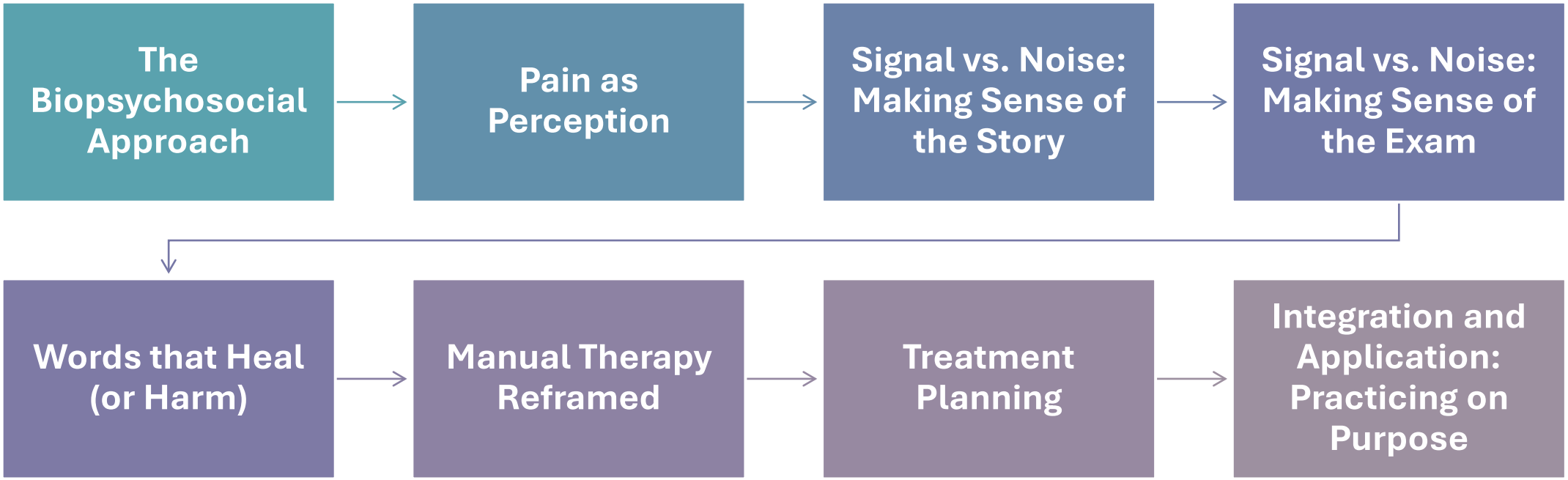
Personal experience: Passive treatments ineffective as monotherapy

Patient preference: Does not want meds. Wants acupuncture. Poor experience with rehab exercise.

Case 2 (Nate)

- 40 y/o male with right L5 radiculopathy.
  - 3 weeks, stable dorsiflexor weakness, sleep disturbance, job in jeopardy (financial stress)
  - Evidence: Most acute radiculopathies improve, and discs often resorb. Rehabilitative approach is recommended. Manual therapies and epidural steroid injection could each be helpful in the short term. Expectation management is important regarding return to work.
  - Personal Experience: Poorly managed acute pain can result in sensitization, especially when sleep is impacted.
  - Patient Preference: Desires immediate intervention, open to interventional procedures and manual therapies. Wants to avoid surgery. Return to full work performance is a priority.

Summary


The Biopsychosocial Approach
Pain as Perception
Signal vs. Noise: Making Sense of the Story
Signal vs. Noise: Making Sense of the Exam
Words that Heal (or Harm)
Manual Therapy Reframed
Treatment Planning
Integration and Application: Practicing on Purpose

Summary

- Discussion vs. Dictatorship
- Perception vs. Reality
- Experience is individualized
- Treatment plan needs to be individualized

Conclusion

Seek to understand the person to understand the pain, then the clinician learns the lesson and has the potential educate/motivate the person to change the pain.