

Neuroplasticity: The Curse and Hope of Chronic Pain

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- Tri-Cities Home Health
- Ryan Murphy Pain Coaching



Objectives

Attendees will develop an understanding of

1. The purpose of pain.
2. How protection gone rogue results in persistent pain.
3. How evidenced based approaches re-train the brain to unlearn pain.





NEUROPLASTICITY





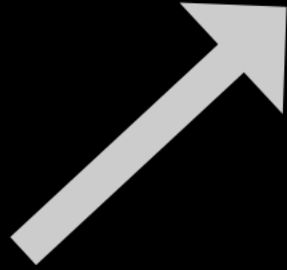


An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.¹



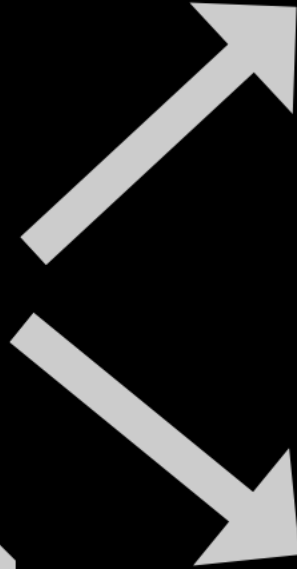
**Is there
Danger
or
Threat?**

Is there
Danger
or
Threat?



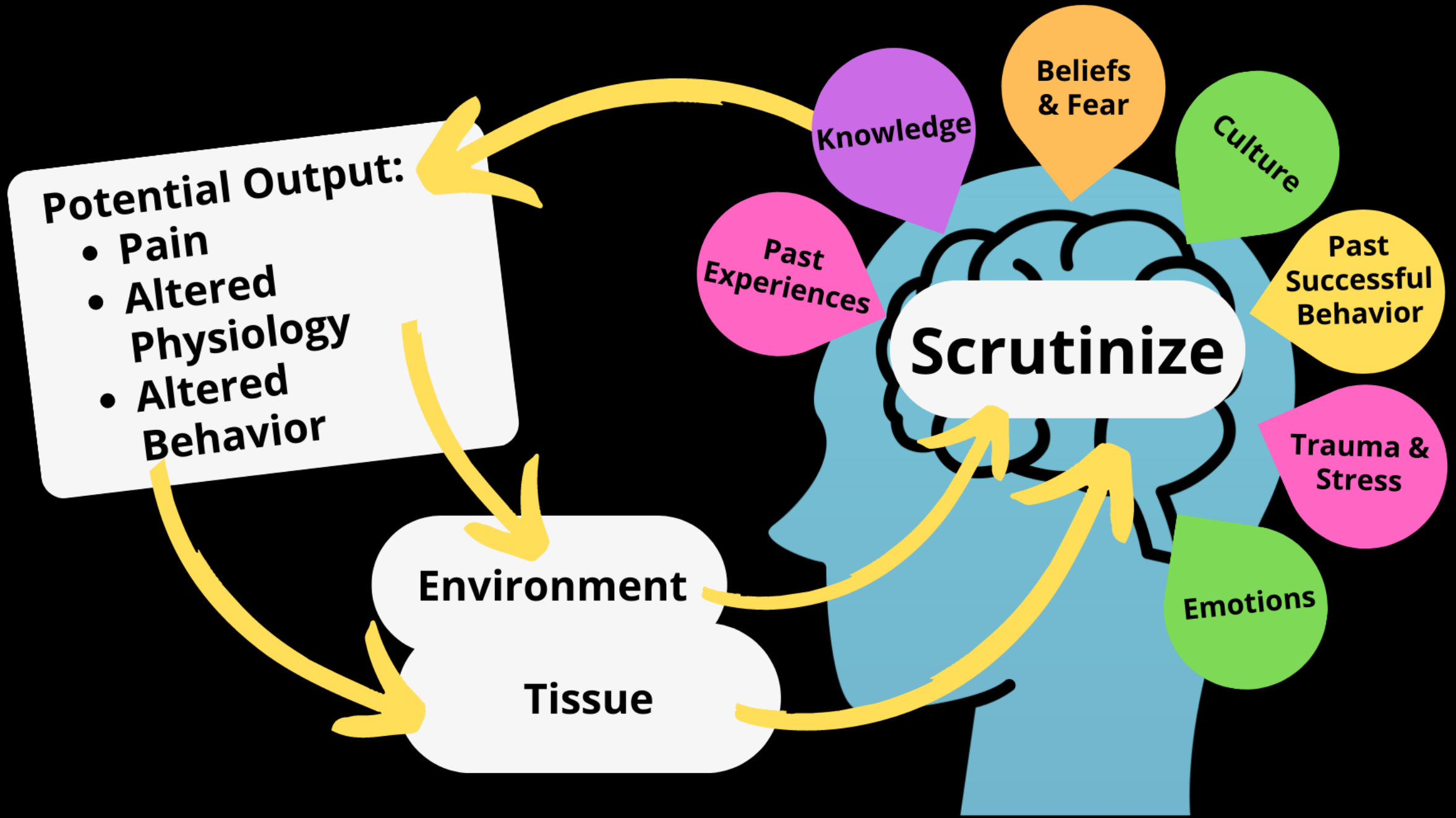
No, No Need to Protect

Is there
Danger
or
Threat?



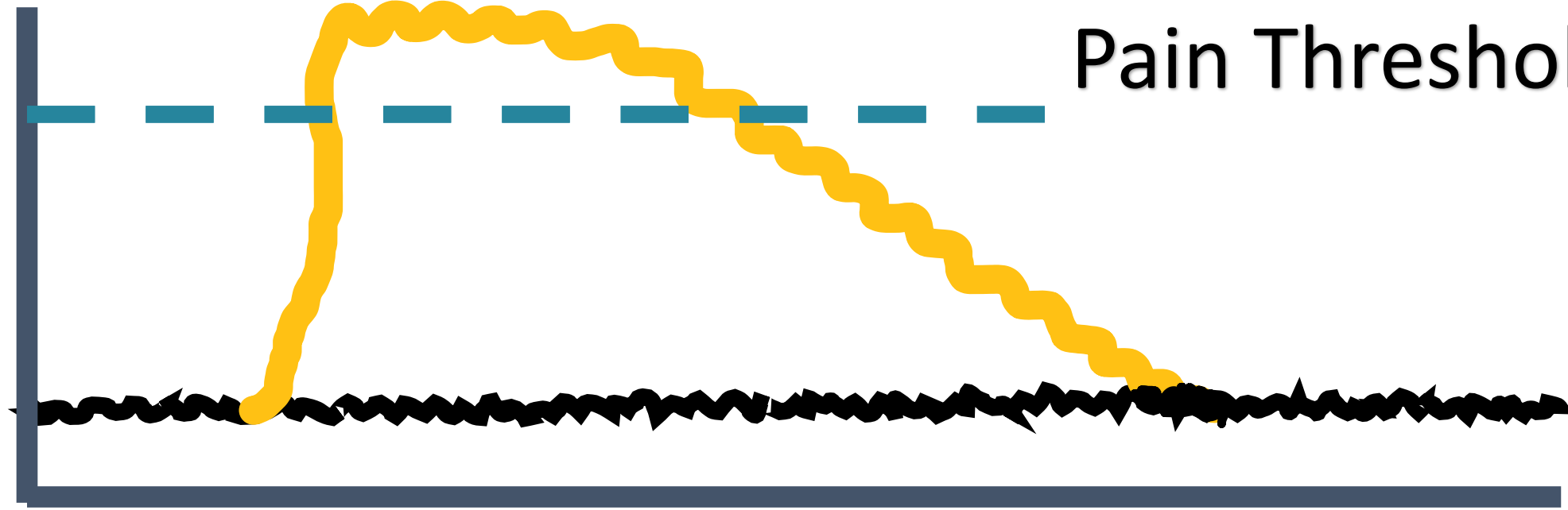
No, No Need to Protect

**Yes,
Produce Pain,
Promote
Protective Action**





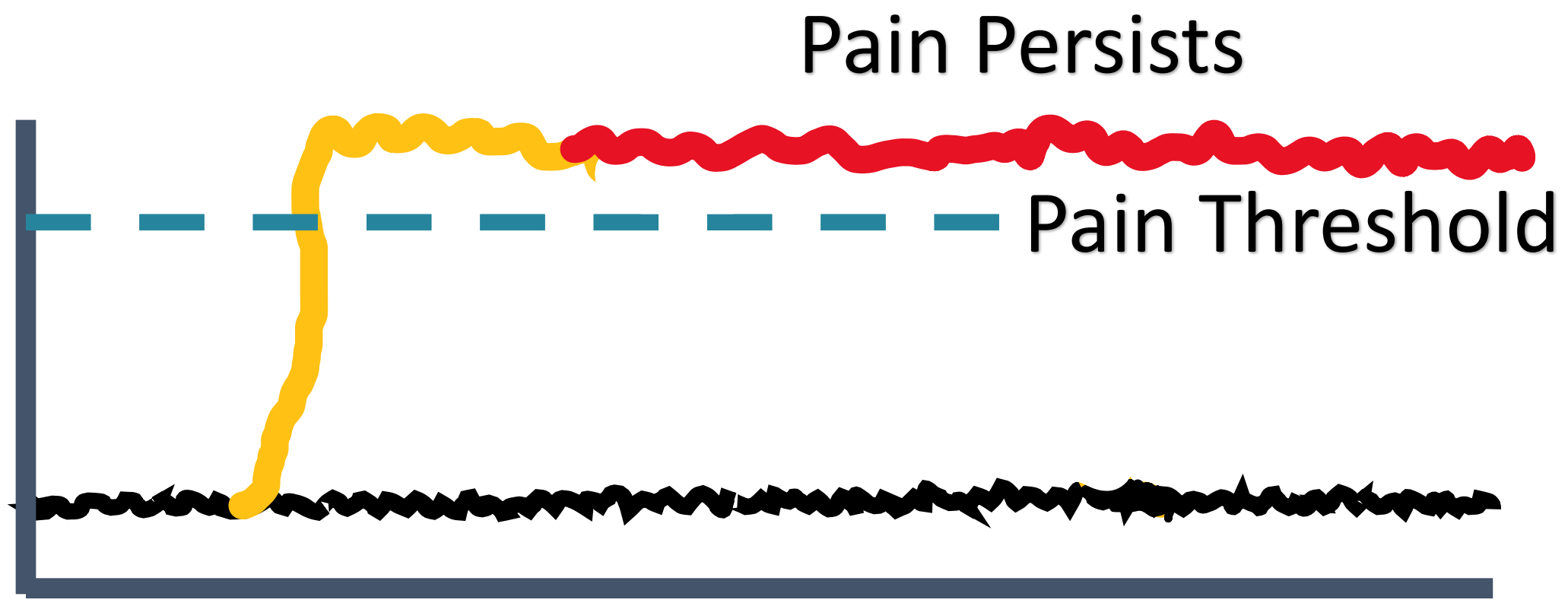
Threat/Danger



Pain Threshold

Time

Threat/Danger



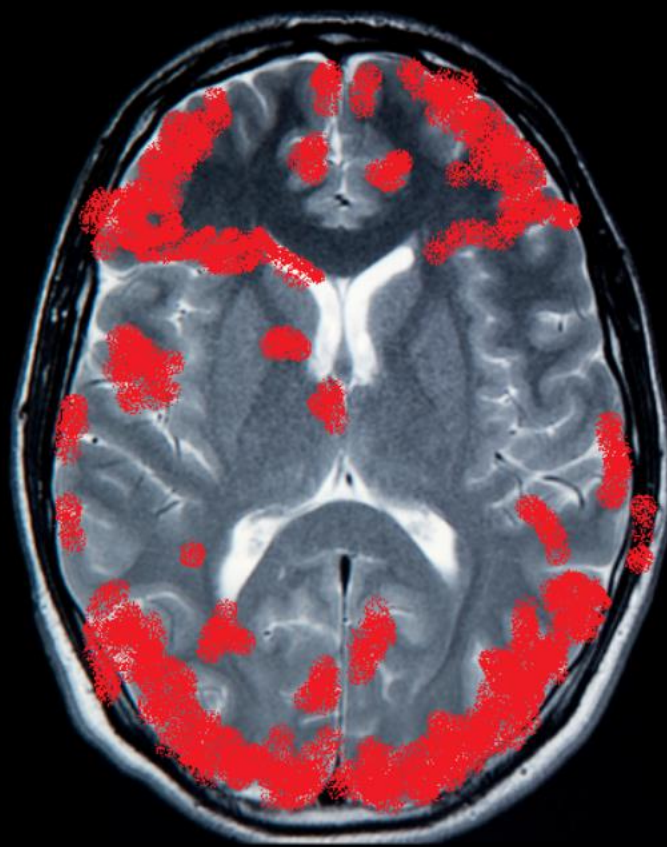
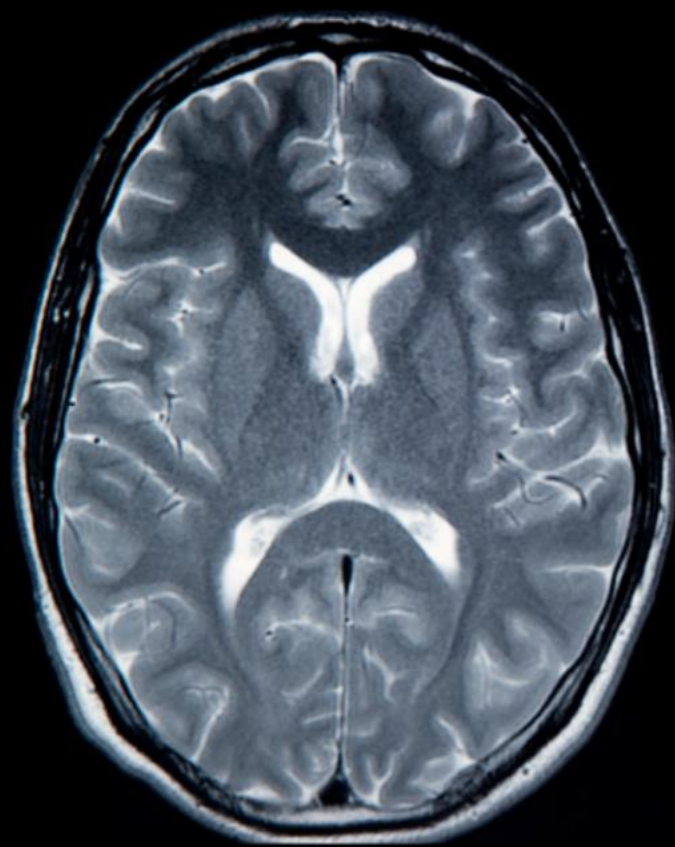
Pain Persists

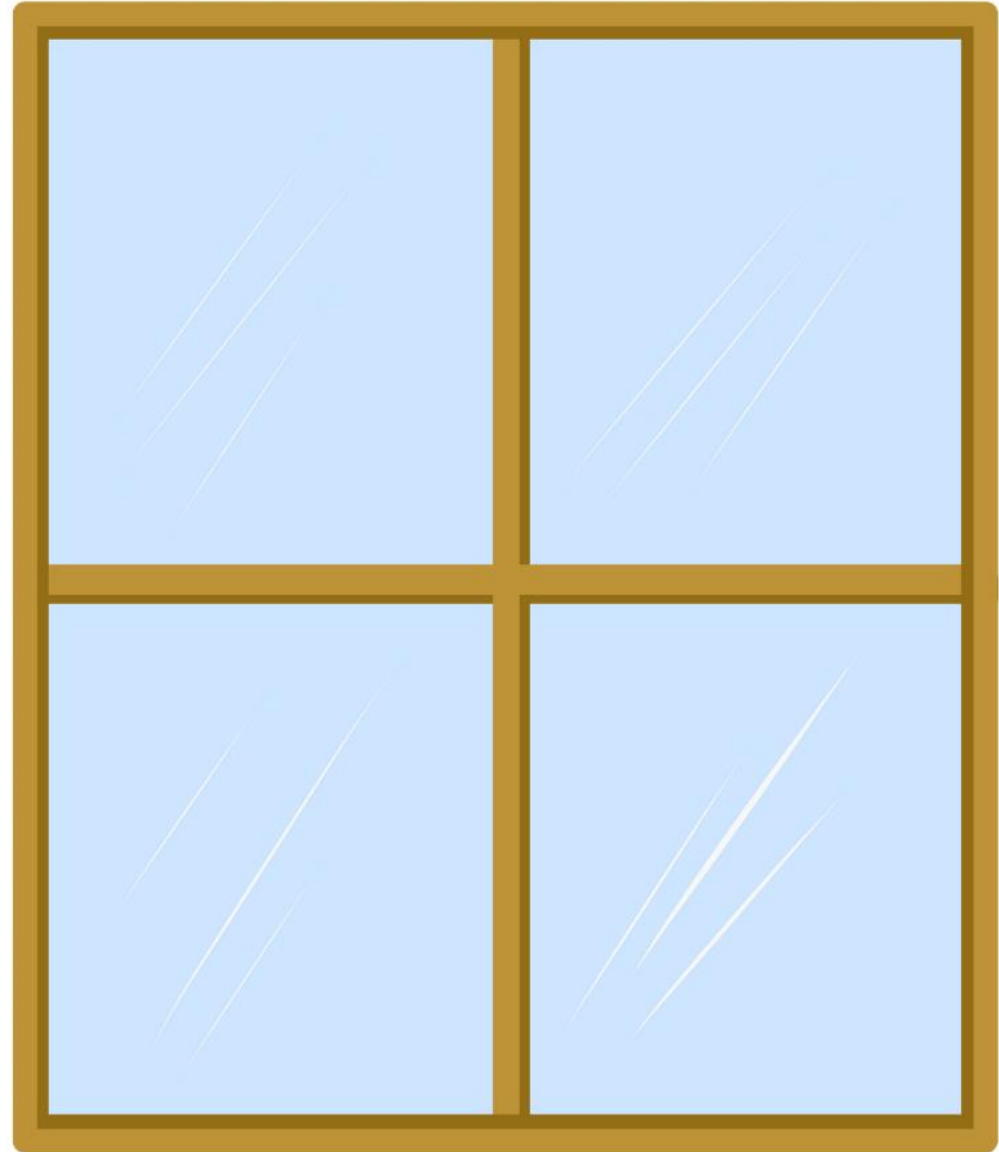
Pain Threshold

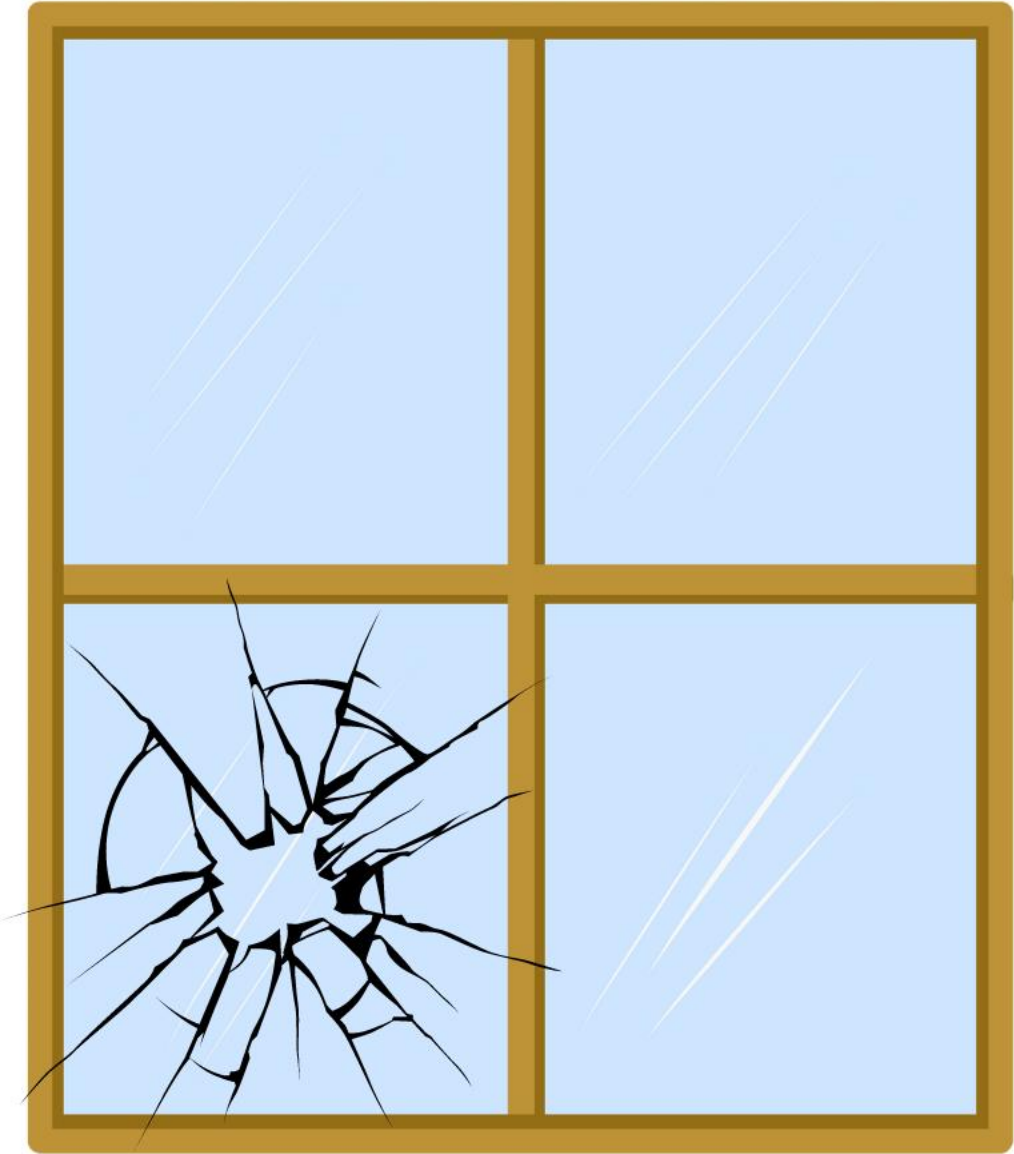
Time Days -> Weeks -> Months -> Years

A human brain is shown in a light blue color, centered against a dark blue background with bright, jagged lightning bolts. The brain is viewed from a slightly elevated, lateral perspective. The text is overlaid on the brain's surface.

**Functional changes in
the CNS's detection of
threat/danger⁴**

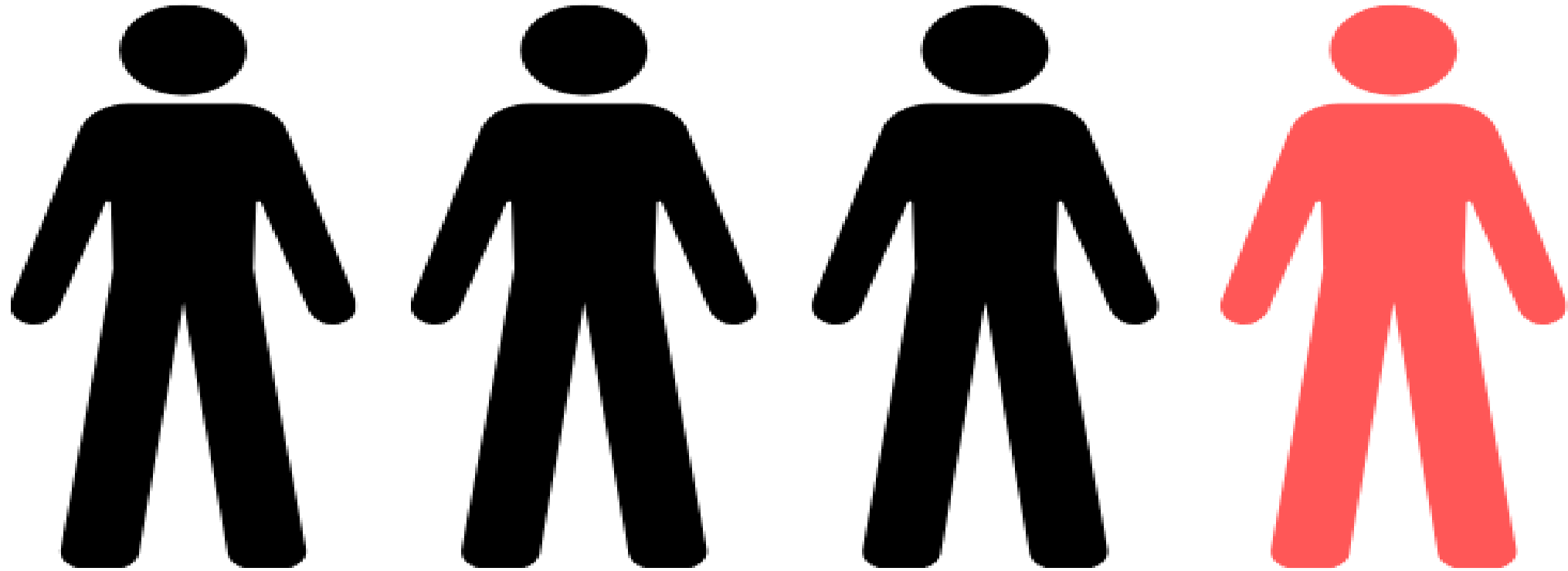










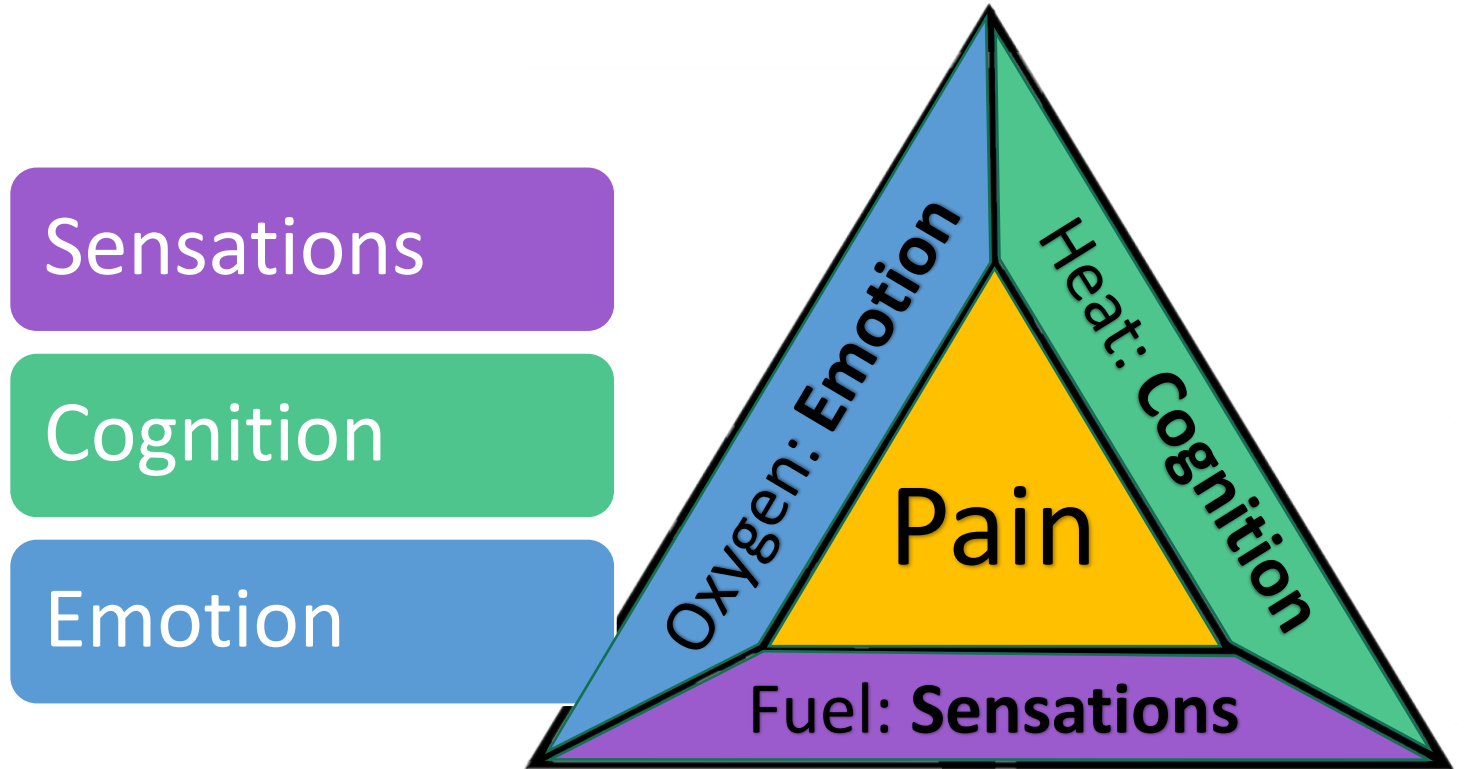








How
evidenced
based
approaches
re-train the
brain to
unlearn pain





Emotional Awareness & Expression Therapy (EAET) VA Pain Study¹⁵

- Conceptual model for EAET
 - Chronic pain is brain-based etiology ***resulting from*** emotional factors
 - EAET encourages the disclosure, expression, and processing of avoiding emotions and engagement in health behaviors.

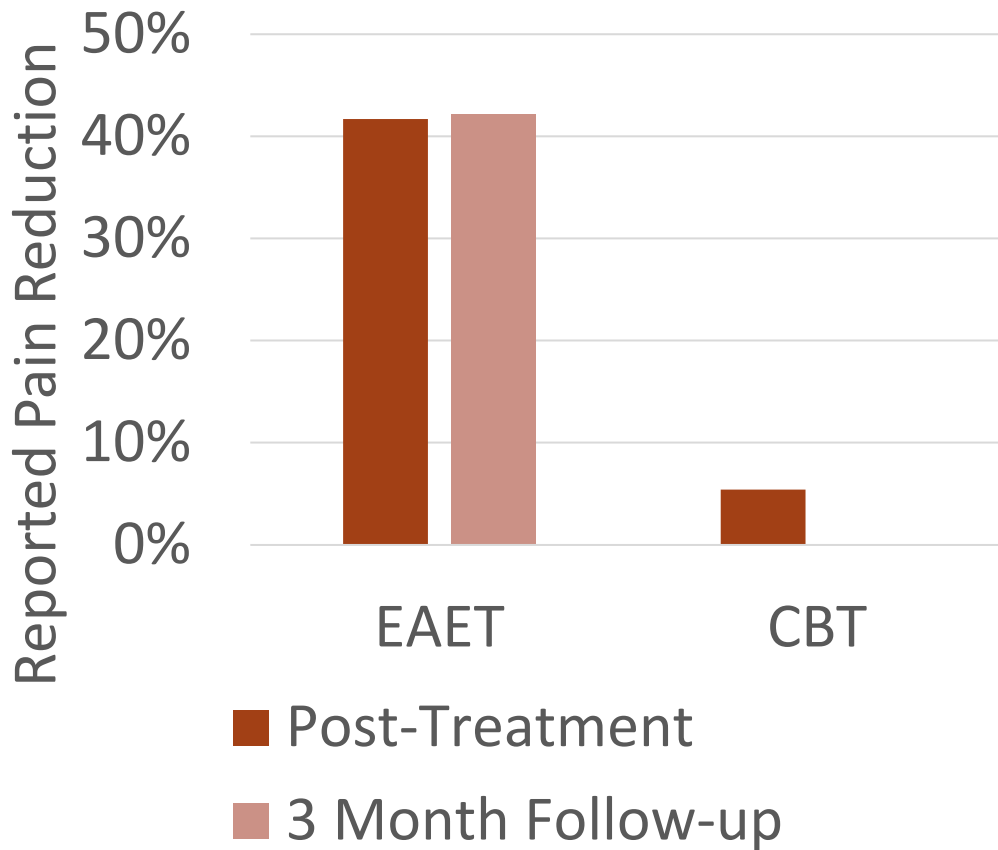


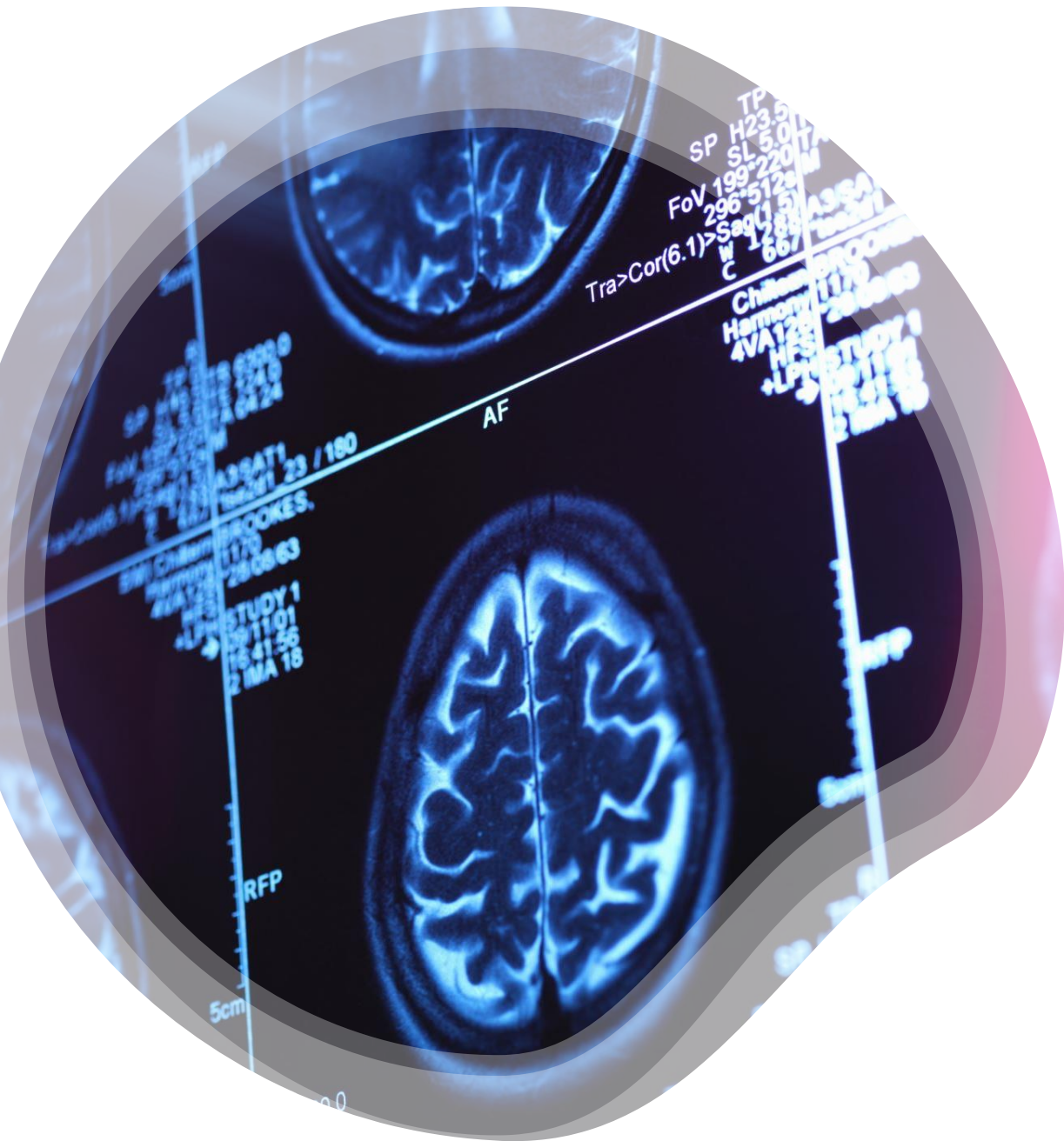
EAET - VA Pain Study

- Older Adults in the L.A. VA Health System
- Mean Age: 73.5 y/o
- 53 participants in study, 92% males
- EAET treatment group vs. CBT control group



VA Pain Study Results





Pain Repossessing Therapy (PRT)

Boulder Back Pain Study¹⁶

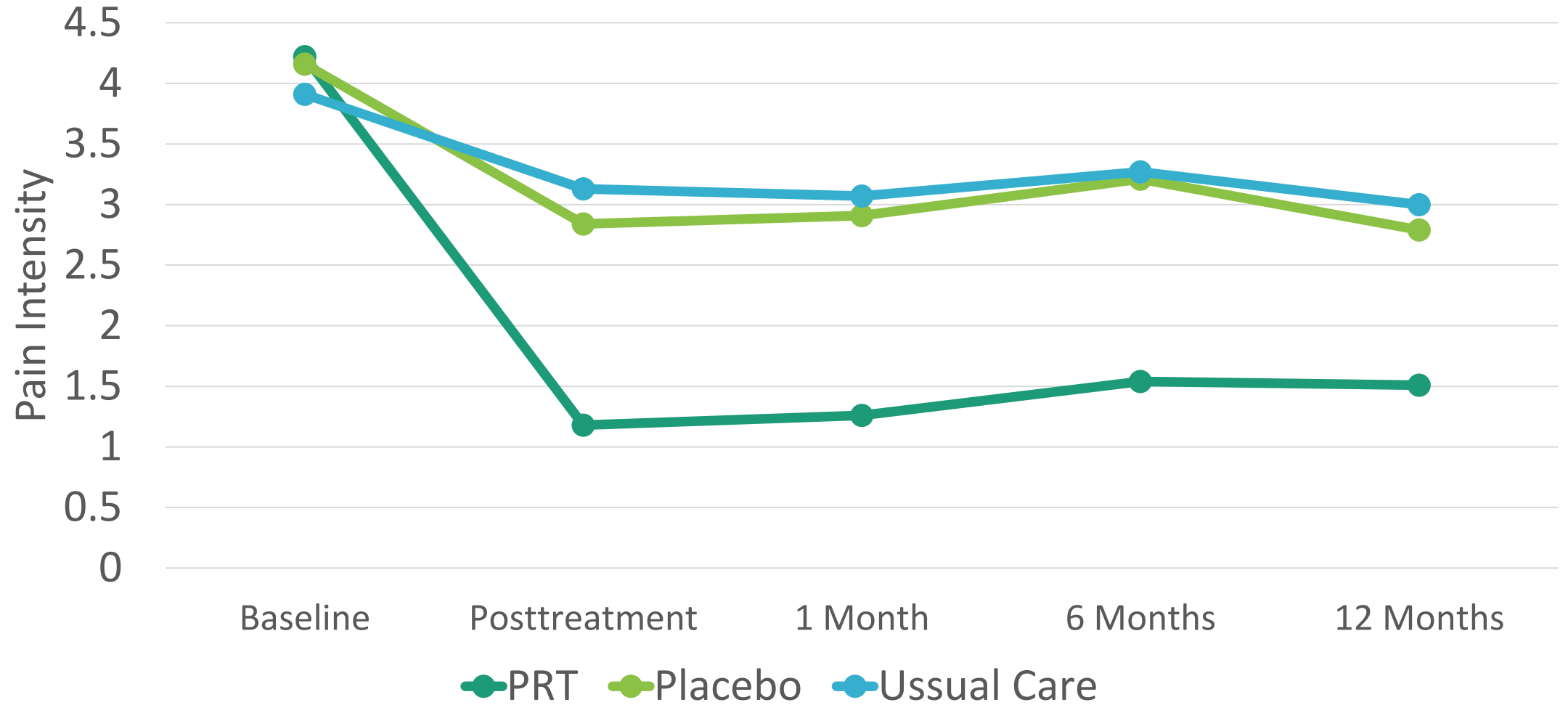
- Chronic pain results from neuroplastic change in which non-dangerous somatosensory is fearfully appraised as tissue damage.
- PRT emphasizing patient education & teaches re-appraisal of somatosensory information during graded exposure to activities.

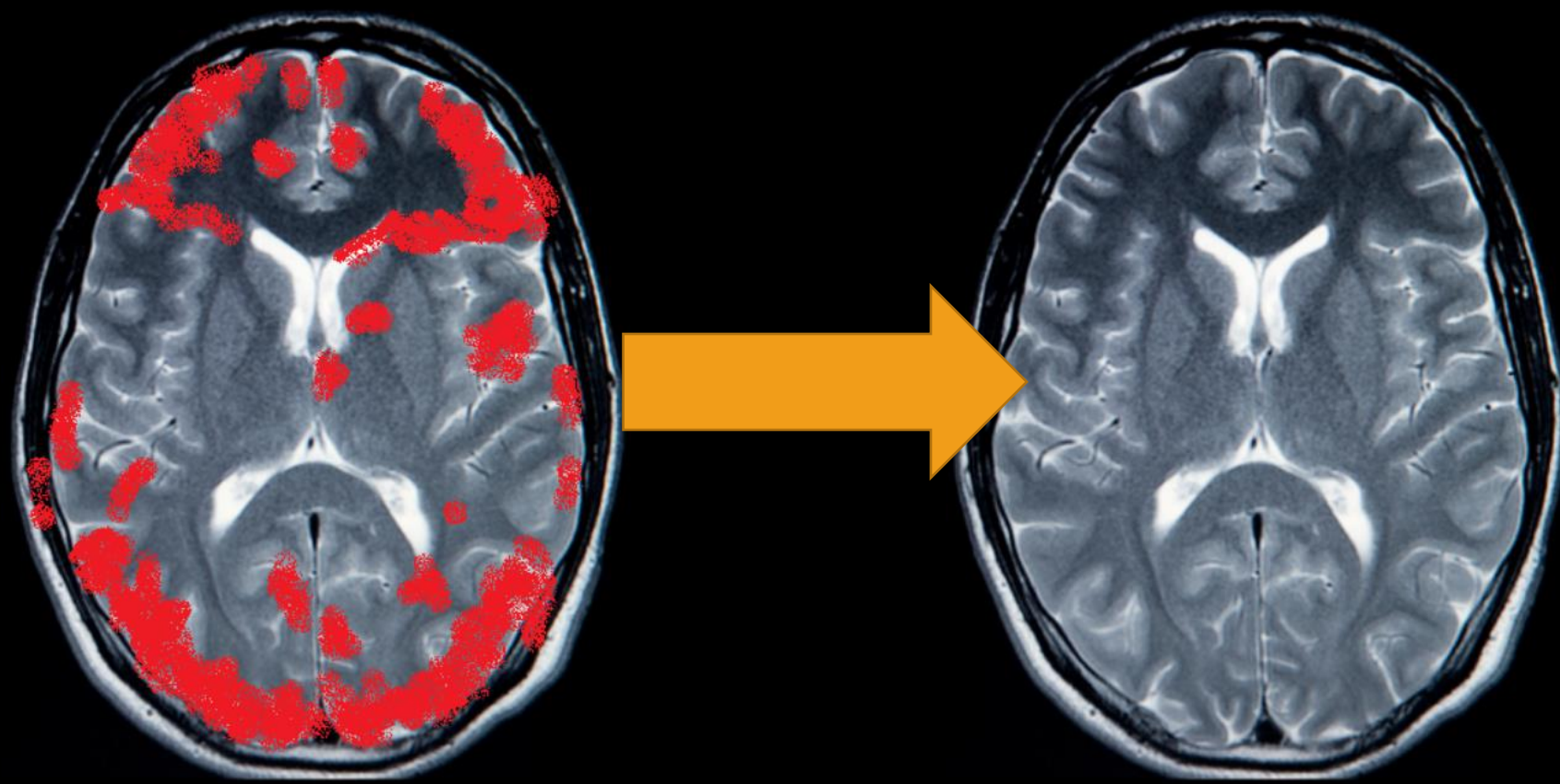
PRT - Boulder Back Pain Study

- Adults in Boulder Colorado, Back Pain ≥ 4 out of 10 at screening and for > 6 mo.
- Mean Age: 41.1 y/o
- 151 participants in study
- 3 Groups
 - PRT treatment group
 - Usual care control group
 - Open label placebo



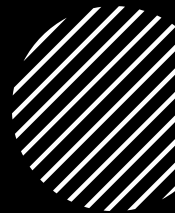
PRT - Boulder Back Pain Study







How to Distinguish Neuroplastic Chronic Pain



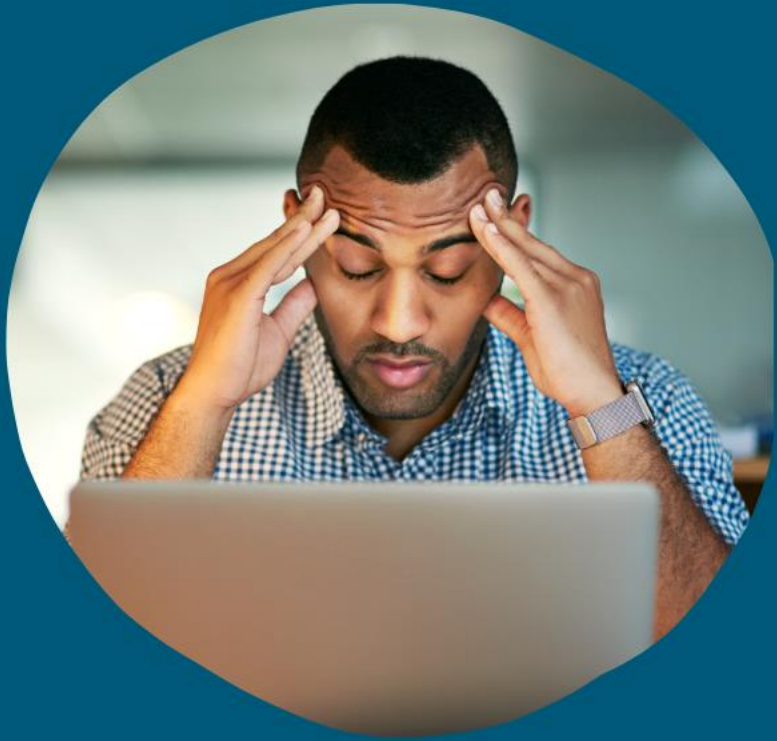
Rule out physical/structural source of pain

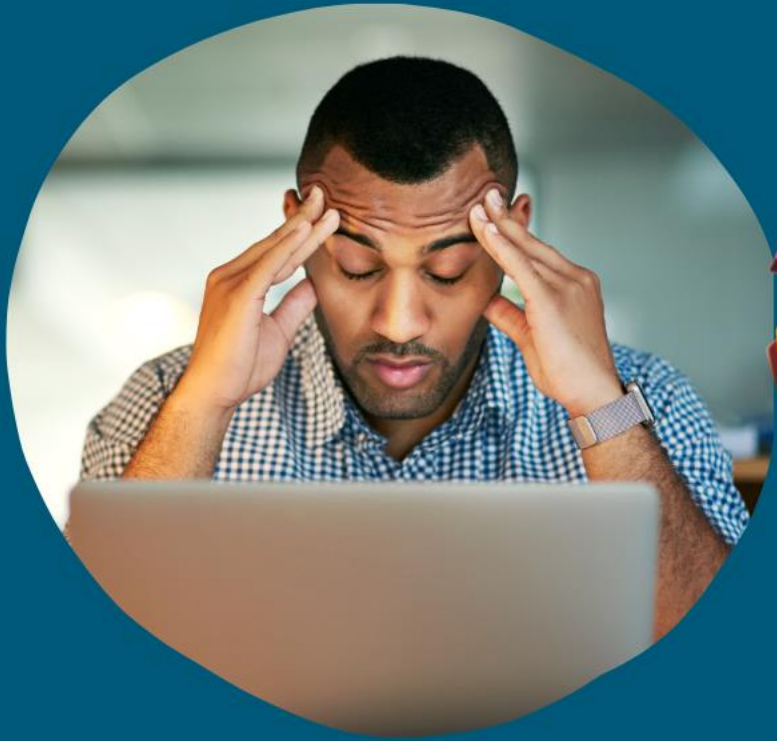


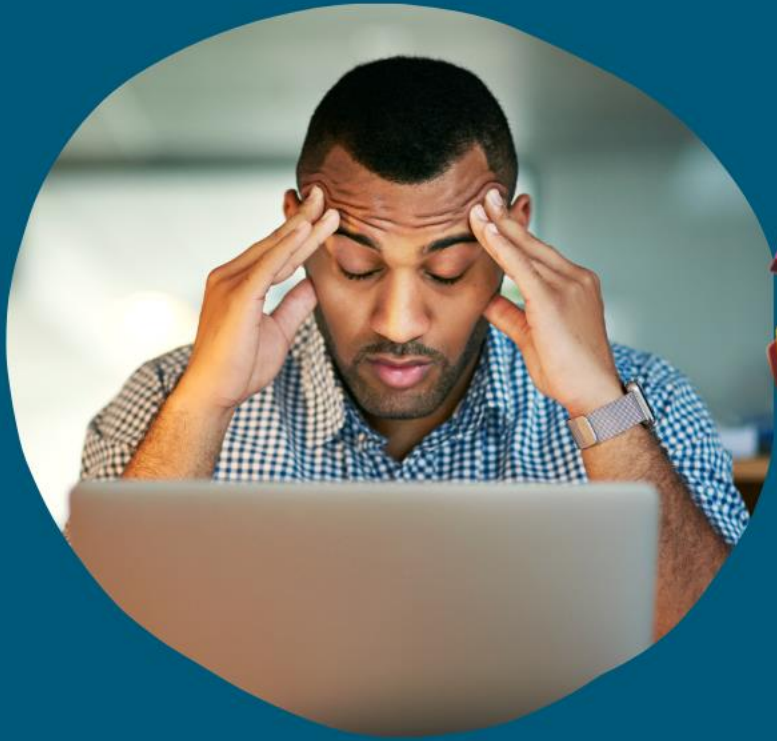
Assess for emotional and cognitive psychosocial risk factors



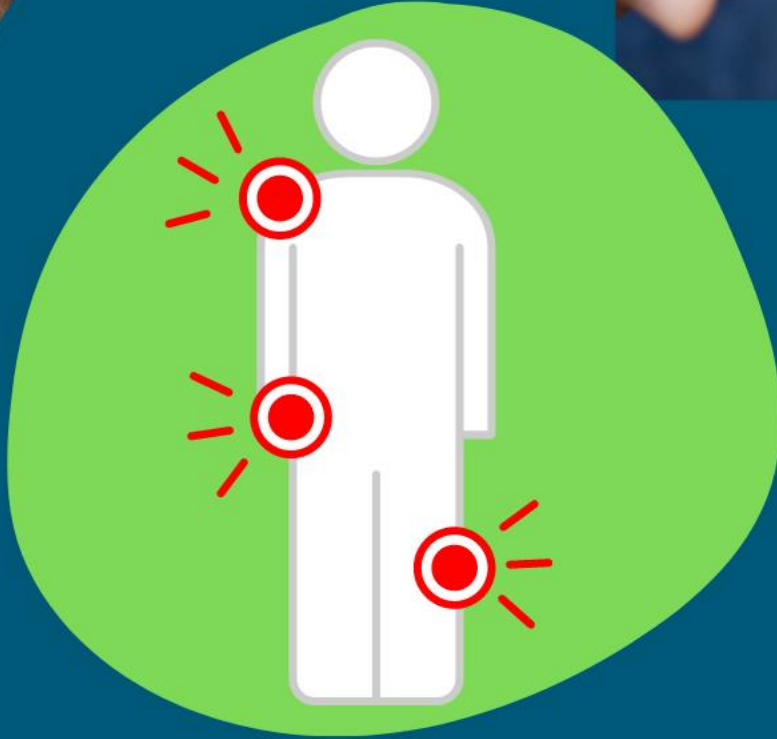
Assess for “Neuroplastic Pain Presentation Patterns”













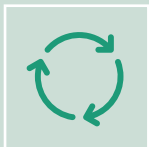
Summary



Neuroplastic changes in the CNS are the primary cause for chronic pain.



These changes are fueled by an underlying psychosocial characteristics.



Evidence suggested addressing underlying psychosocial patient characteristics reduces pain and is consistent with reversing maladaptive neuroplastic changes in the CNS.

References

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Appendix A: Common Psychosocial Risk Factors for Developing Chronic Pain⁶⁻¹³

- Stressful Personality Traits
- Adverse Childhood Experiences
- Trauma
- Unrecognized Negative Emotions
- Fear and Belief
- Stress
- Poor Self-Care Skills
- Catastrophizing Personalities
- Stressful Environments

Appendix B: Common Presentation Patterns for Chronic Pain⁷

- Pain lasting greater than 3 months
- Pain originated without injury
- May appear or worsen during a time of stress
- Symptoms are inconsistent
- Large number of symptoms
- Symptoms spread or move
- Symptoms triggered by things that have nothing to do with the body
- Symmetrical symptoms
- Delayed pain
- Lack of physical diagnosis or many diagnosis
- Pain does not improve or only temporary improvement with medical interventions

Appendix C: Neuroplastic Pain Referral Resources

- **Pain Reprocessing Therapy**

- Online directory of practitioners includes Pain Reprocessing Therapy certified practitioners and coaches by state.
- <https://www.painreprocessingtherapy.com/directory-of-practitioners>

- **The Psychophysiologic Disorders Association**

- Online practitioner directory includes mental health practitioners by state.
- <https://ppdassociation.org/directory>

Appendix C: Neuroplastic Pain Referral Resources

- **Ryan Murphy Pain Coaching**

- Online: www.facebook.com/ryanwaynemurphy
- Email: murphypaincoaching@gmail.com

- Ryan is a Pain Reprocessing Therapy certified physical therapist.
- **Group Pain Mastery Classes in Tri-Cities will begin Fall of 2023.**
- For class referral information, email me or direct message via my Facebook page.