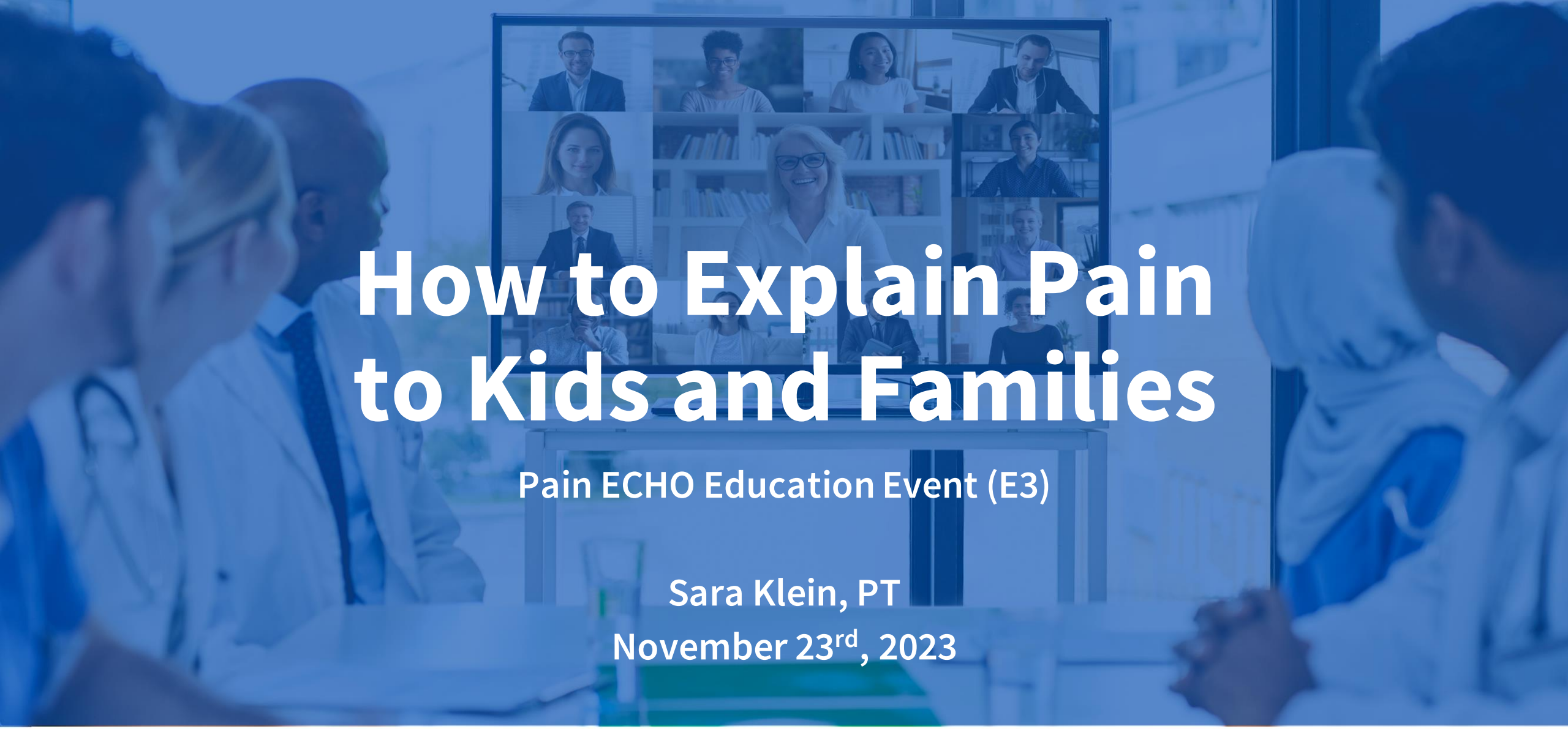

How to Explain Pain to Kids and Families

Pain ECHO Education Event (E3)

Sara Klein, PT

November 23rd, 2023

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Faculty/Presenter Disclosure

- **Faculty:** Sara Klein
- **Relationships with commercial interests:**
  - Grants/Research Support: None
  - Speakers Bureau/Honoraria: None
  - Consulting Fees: None
  - Other: Employee at SickKids

This program has received financial support from the Ministry of Health and Long Term Care

Learning Objectives

- By the end of this session, participants will be able to:

1. Understand importance of pain neuroscience as part of chronic pain treatment
2. Understand the basic neuroscience of chronic pain
3. Understand how to explain pain to children and their families in order to improve readiness for 3P approach for intervention

Case

- 14 year old with previous ankle fracture
- 9 months post cast removal, continues to have ankle pain.
- All imaging is normal
- Back, bilateral knee pain and abdominal pain
- Significant anxiety
- Walking tolerance: 5 minutes
- Not attending school
- Poor sleep pattern
- Missing all social outings

Quotes from the visit:

“My left leg is the “bad” leg. I broke it two years ago; the Dr said it was the worst break he had ever seen. It was broken into small pieces.”

“My leg kills me; the pain goes from my toes to the top of my thigh and it feels like daggers cutting into my skin. I really don’t want to move my leg.”

"My sister’s best friend had something like this and she was diagnosed with cancer, she had to have her leg cut off"

“I can’t go to school because if someone bumps my leg it stirs things up.I can’t do gym class, my teacher does not understand and she makes me do too much so my leg hurts even more"

"This will probably last forever…. I just don’t understand why it happened to me….”

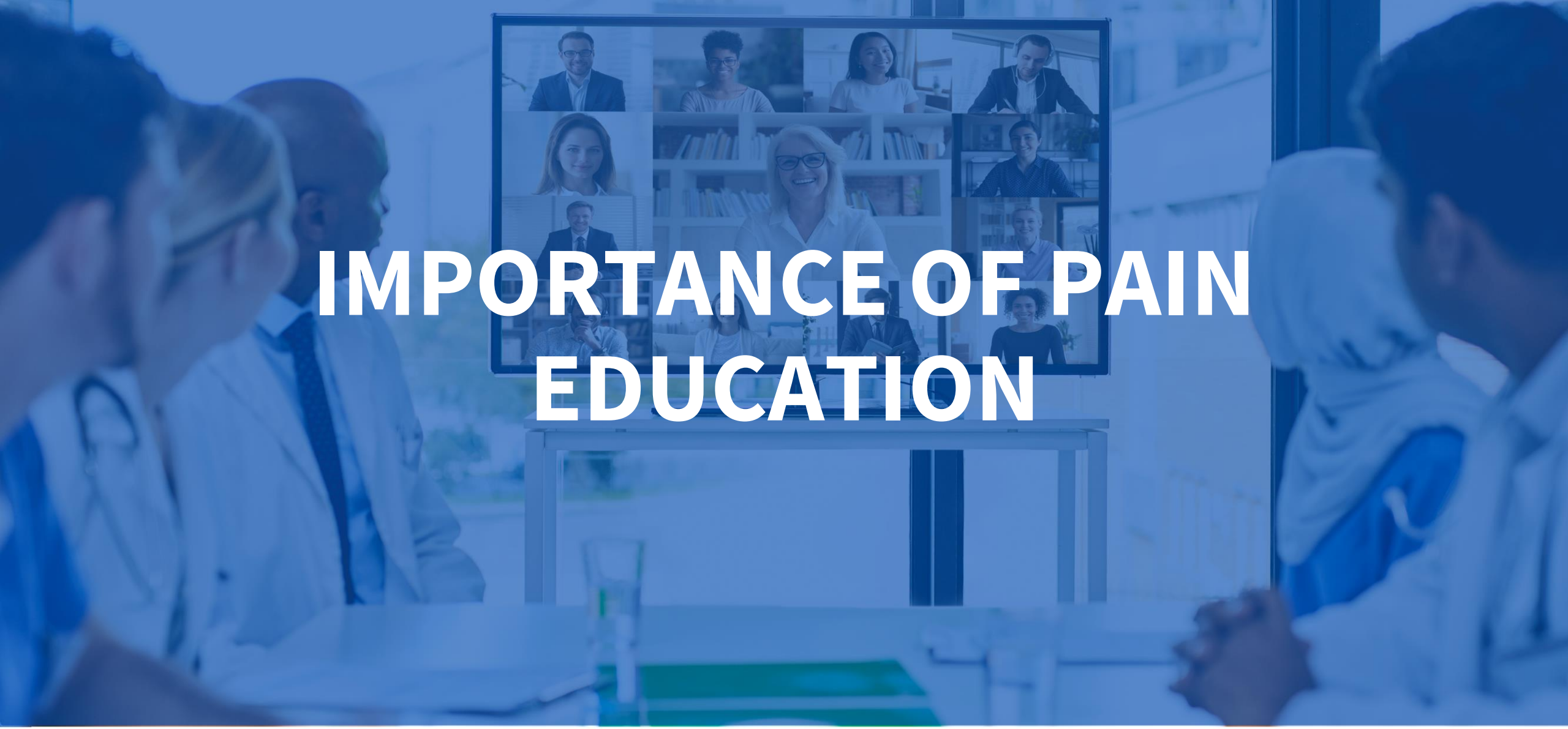
Treatment to date

- Pharm- OTC, no help
- Physical- Tried physio but caused more pain so stopped
- Psych- not interested. "It's not in my head"

Pain Clinic Recommends:

- Recommend 3 P approach
- Pharm: Tylenol and Advil PRN
- Psychological: CBT and ACT
- Physical: graded exercise

- How do you explain pain to this teen and family?
- How do you gain "buy-in" to your treatment plan
- She responds "so you're saying it's all in my head".



IMPORTANCE OF PAIN EDUCATION

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EVIDENCE FOR PAIN EDUCATION

- Changes pain cognitions and physical performance (Moseley, Nicholas, & Hodges, 2004)
- Reconceptualize pain and reduce catastrophizing (Gallagher, McAuley, & Moseley, 2013)
- Improve knowledge and function (Louw et al., 2016)
- Minimize healthcare utilization (Louw et al., 2016)
- Positive impact on pain and physical performance (Louw et al., 2011)

PEDIATRIC PAIN EDUCATION

- Information and context has also been shown to modulate pain expectations and emotional response to pain
- Negative impact of diagnostic uncertainty and inaccurate information on pain experiences
- More research needed for Pain Neuroscience education in pediatric population

(Robins et al., 2016)

KEY COMPONENTS TO PAIN EDUCATION

- Include:
  - Use of helpful metaphors
  - Healing language
- Avoid:
  - Jargon
  - Technical language
  - Frightening metaphors

(Bedell, Graboys, & Bedell, 2004;
Gallagher et al., 2013)

BASIC NEUROSCIENCE OF CHRONIC PAIN

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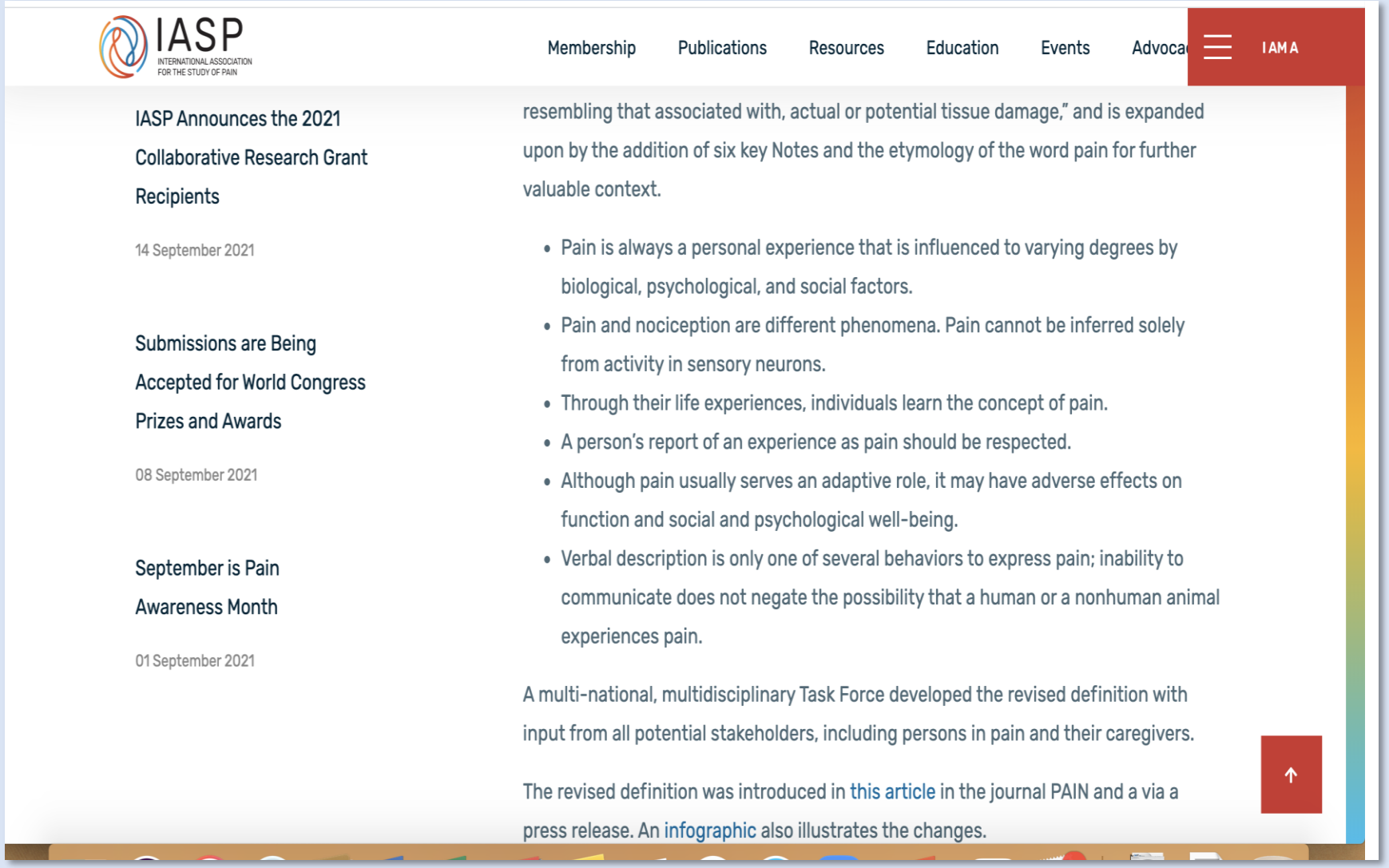
PAIN DEFINITION

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

(IASP, 2018)

Pain Definition IASP 2020



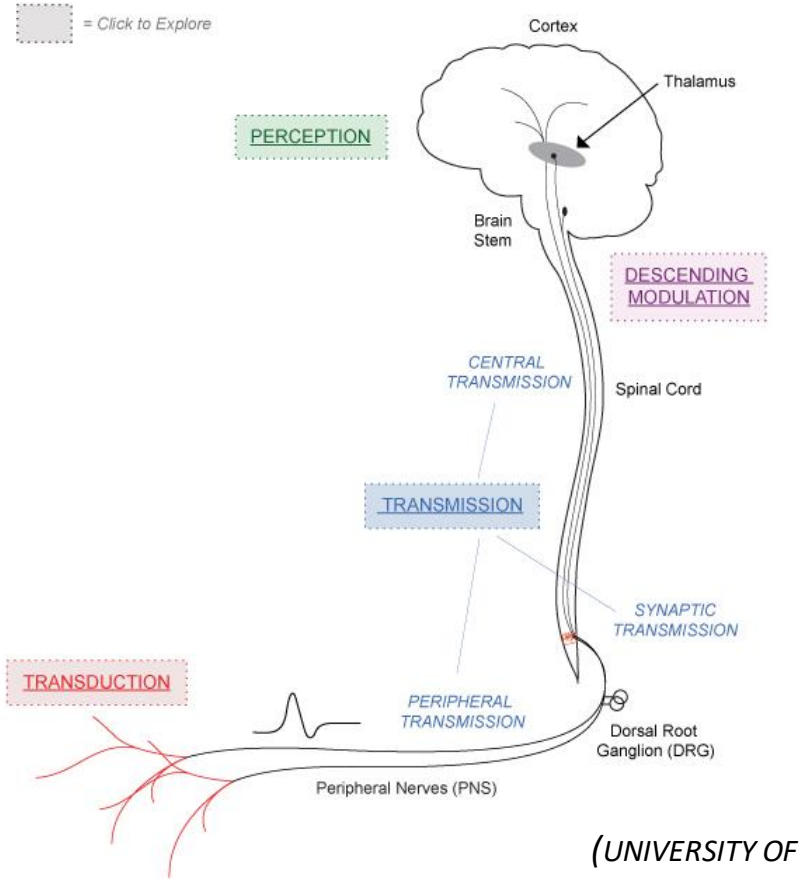
Traditional beliefs about pain

Pain is an indication of

- Tissue damage
- Biomechanical dysfunction
- Irritated tissue
- Imminent damage
- Unhealed or poorly healed tissue

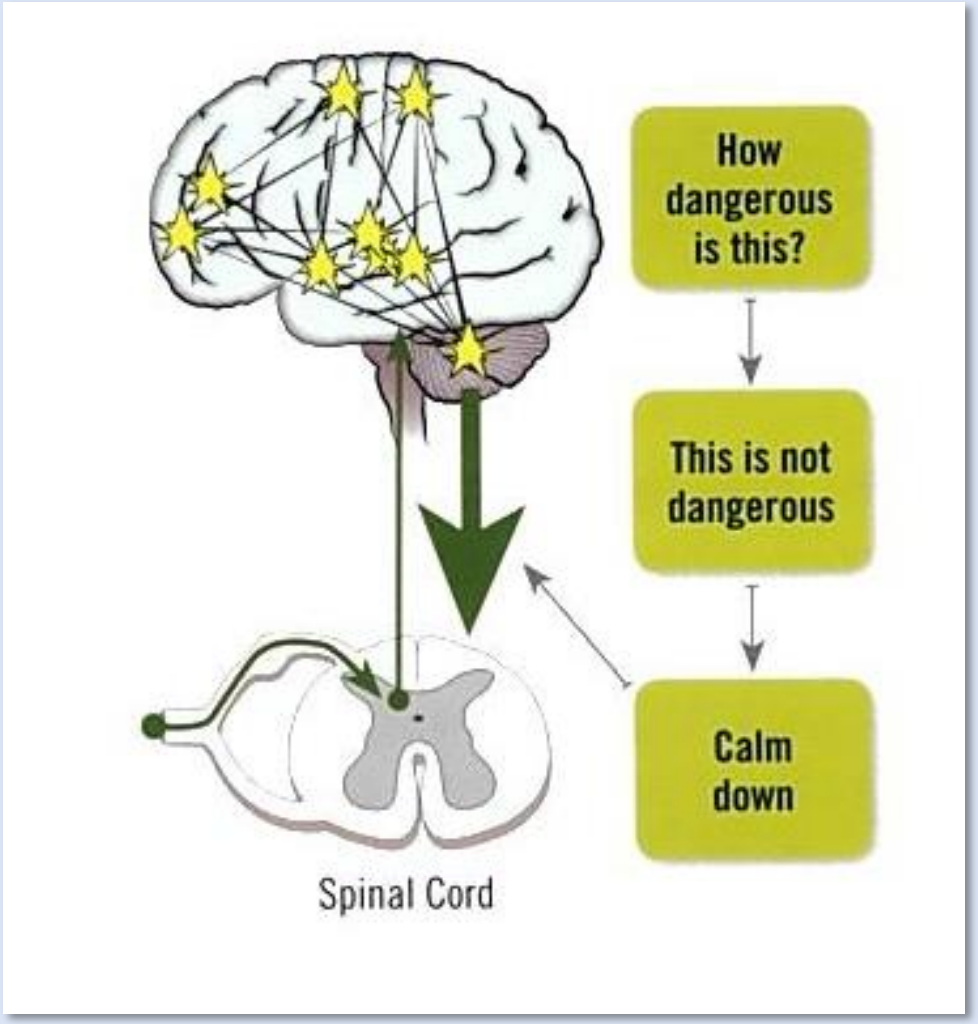
NEURAL PATHWAY

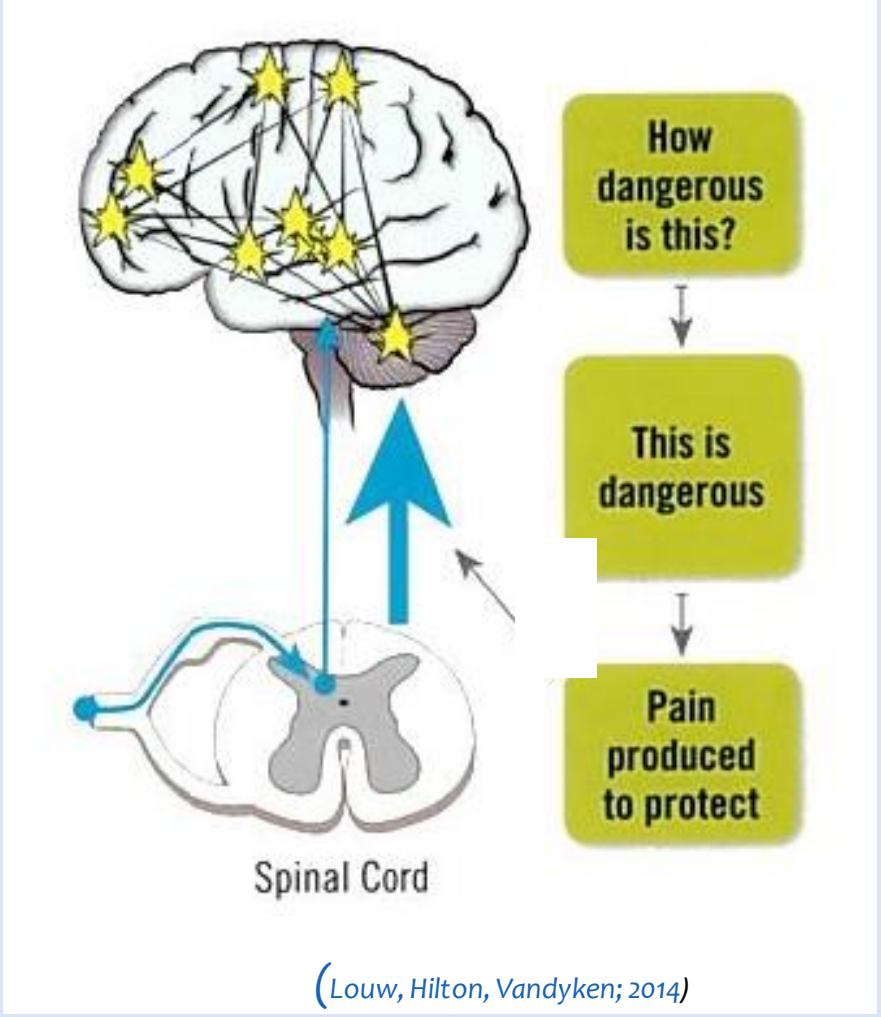
- Transduction: nociceptors activated by intense stimuli in periphery
- Transmission: action potentials conducted to CNS via 2 types of afferent neurons
- Perception: multiple areas of brain involved in recognizing event as pain
- Descending modulation: inhibition or facilitation of nociception through release of neurotransmitters



(UNIVERSITY OF WISCONSIN, 2010)

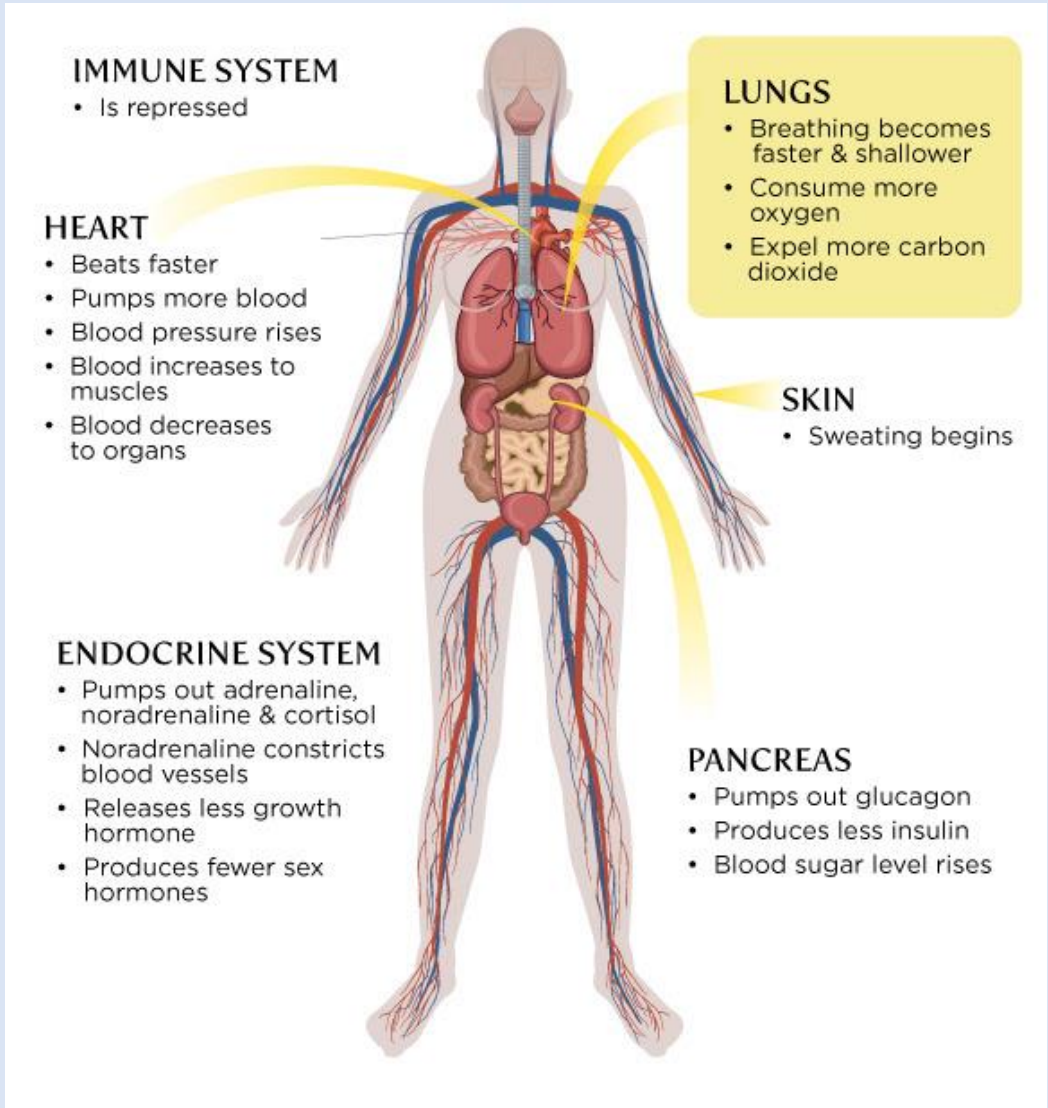
MODULATION OF PAIN





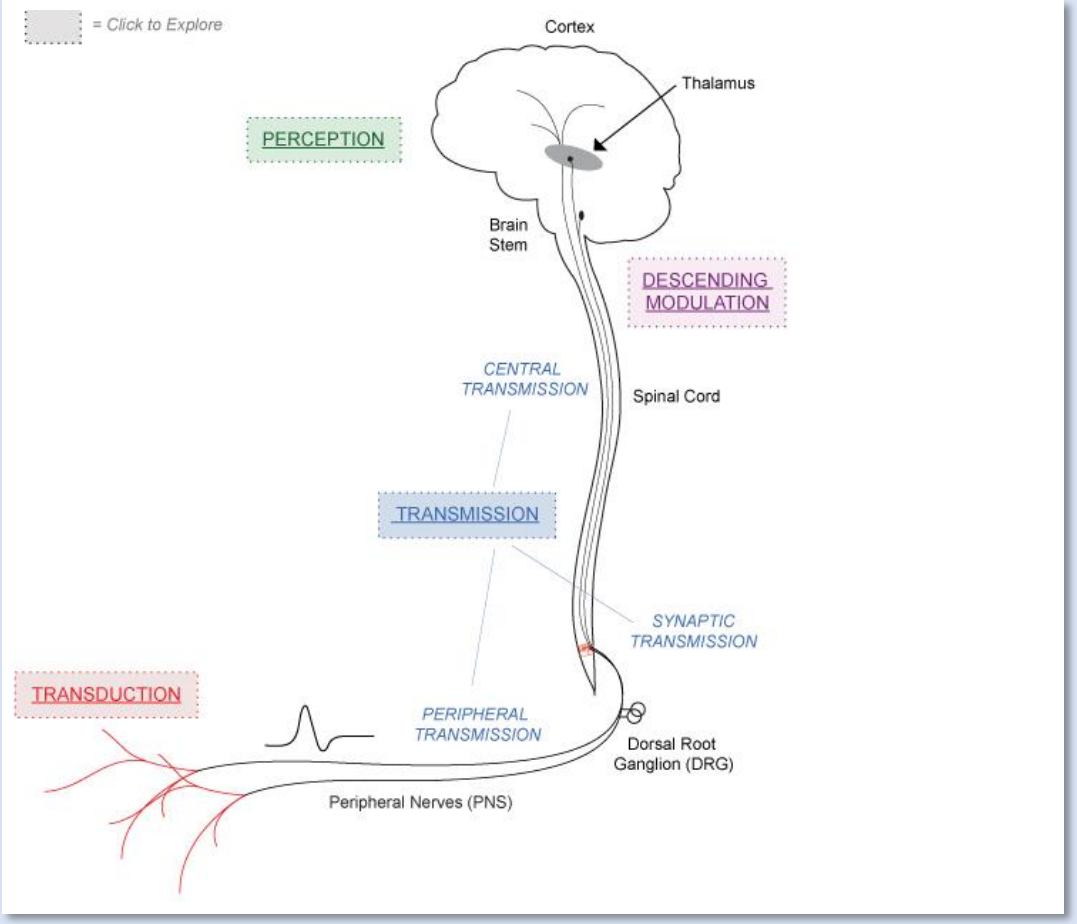
(*Louw, Hilton, Vandyken; 2014*)

PROTECTIVE SYSTEMS: FIGHT, FLIGHT or FREEZE

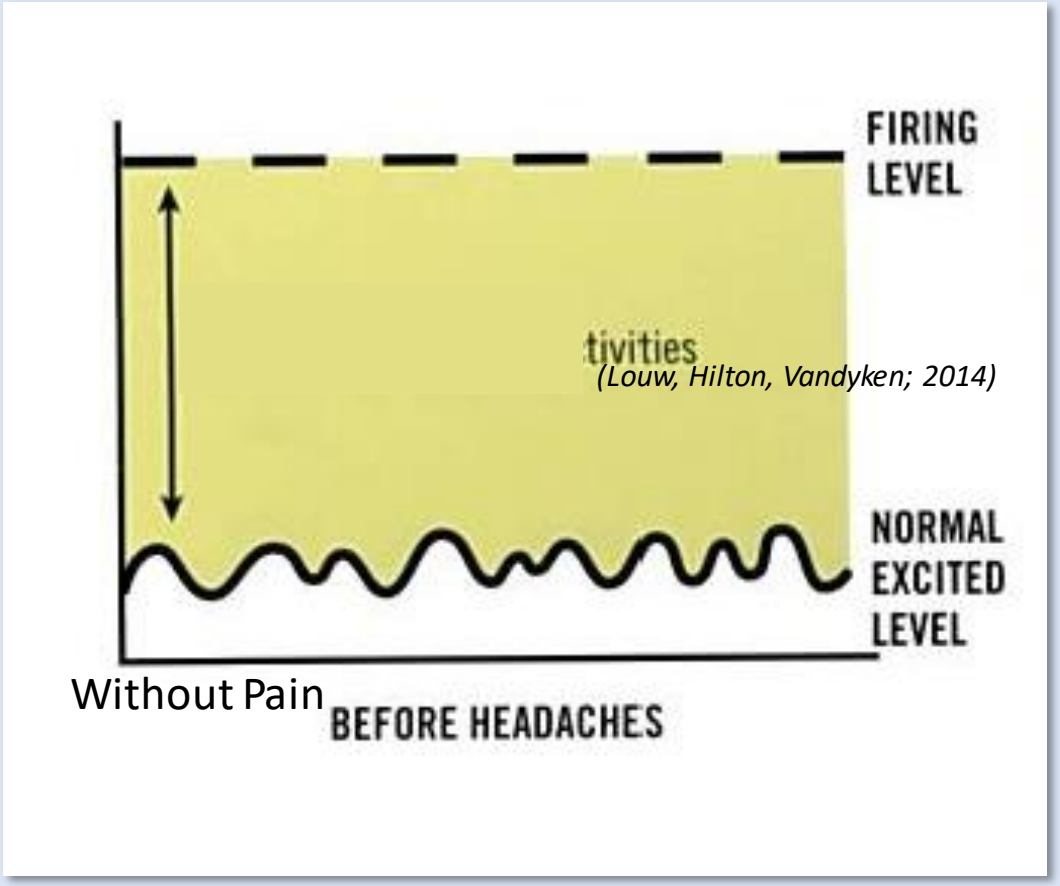


Changes with Chronic Pain

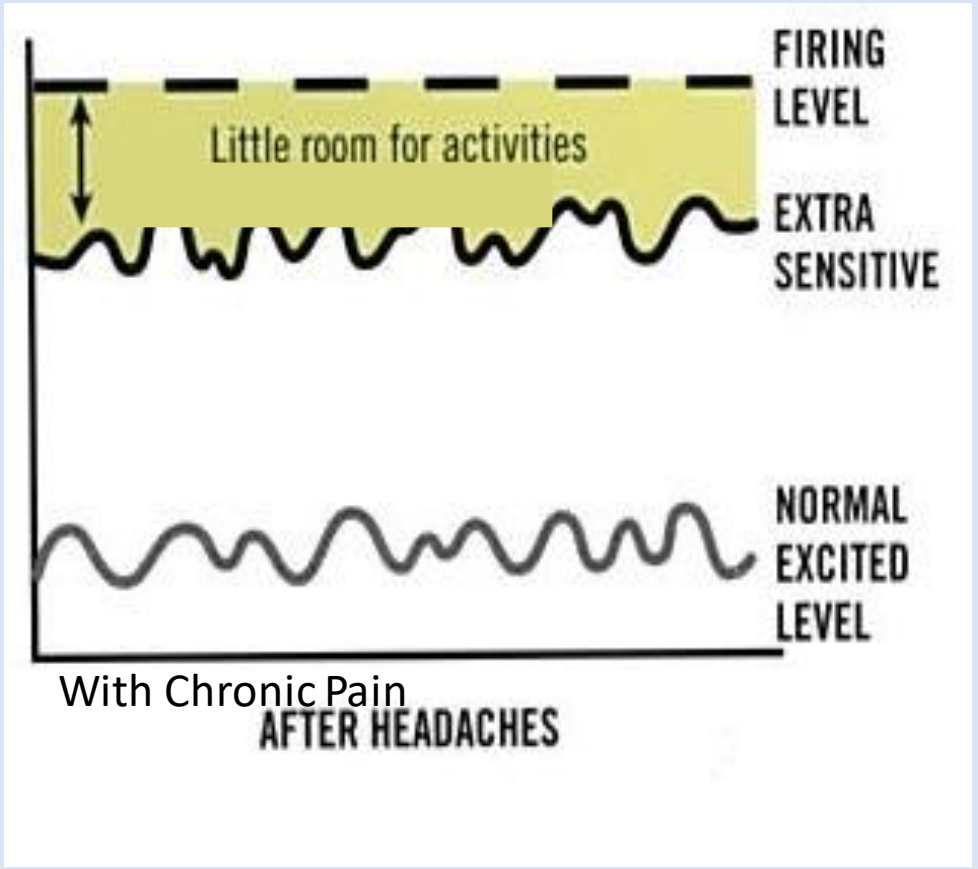
- Nerves fire more easily and frequently (hyperalgesia)
- Develop more "pain" receptors
- Misinterpret normal sensations of touch, stretch and movements as danger (allodynia)
- Inflammation as a protective response



CHANGES WITH CHRONIC PAIN



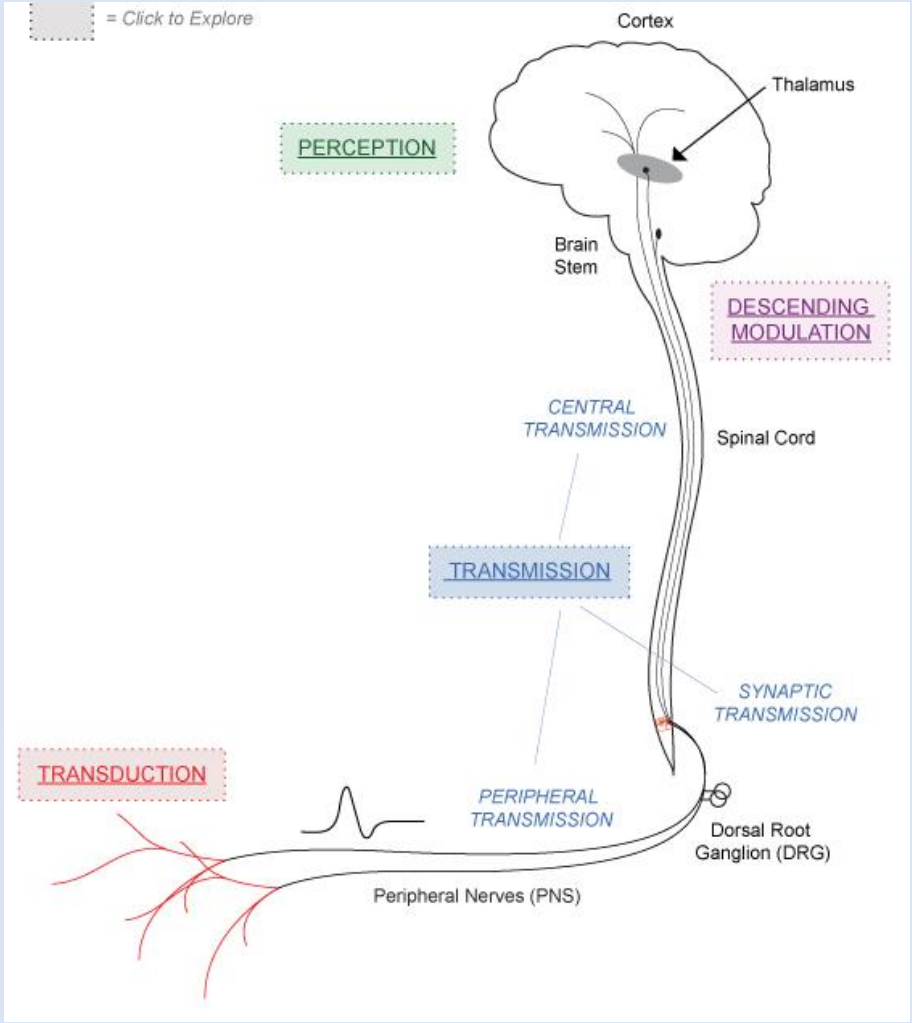
(Louw, Hilton, Vandyken; 2014)



(Louw, Hilton, Vandyken; 2014)

CHANGES WITH CHRONIC PAIN

- The nerve network to detect danger become stronger and faster
- Releases hormones that stimulate fight or flight response
- More neurons pay attention to the painful area
- The area that maps the body part that is in pain changes



HOW TO EXPLAIN TO KIDS...

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TRUE or FALSE

All pain is real

True or False

Pain can be protective/helpful

TRUE or FALSE

The only way to treat chronic pain is through medication

TRUE or FALSE

Chronic pain is pain that is “all in your head”

TRUE or FALSE

Two people can have the same injury and experience different amounts of pain

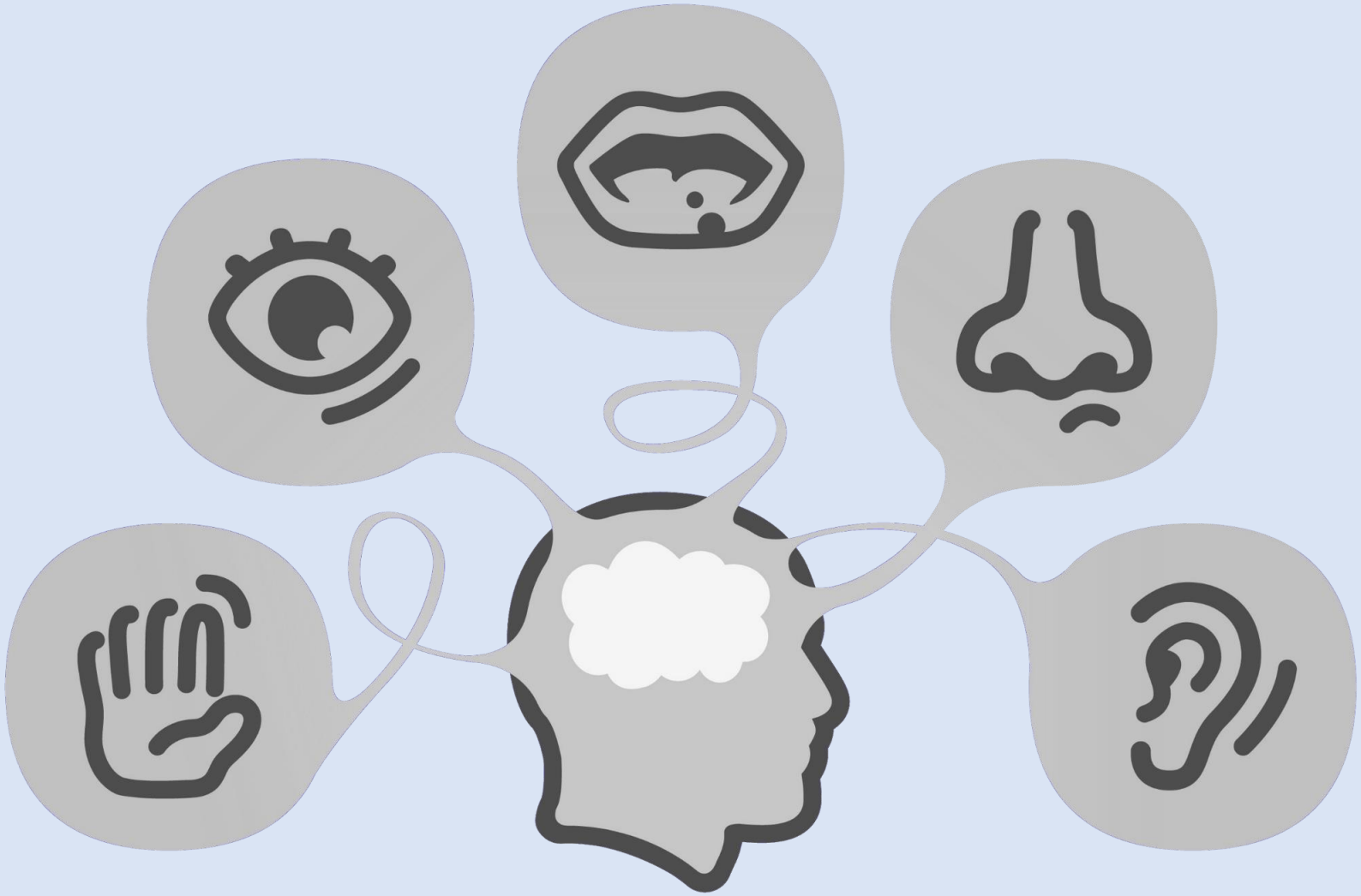
TRUE or FALSE

Only adults have chronic pain.
Not kids or teenagers

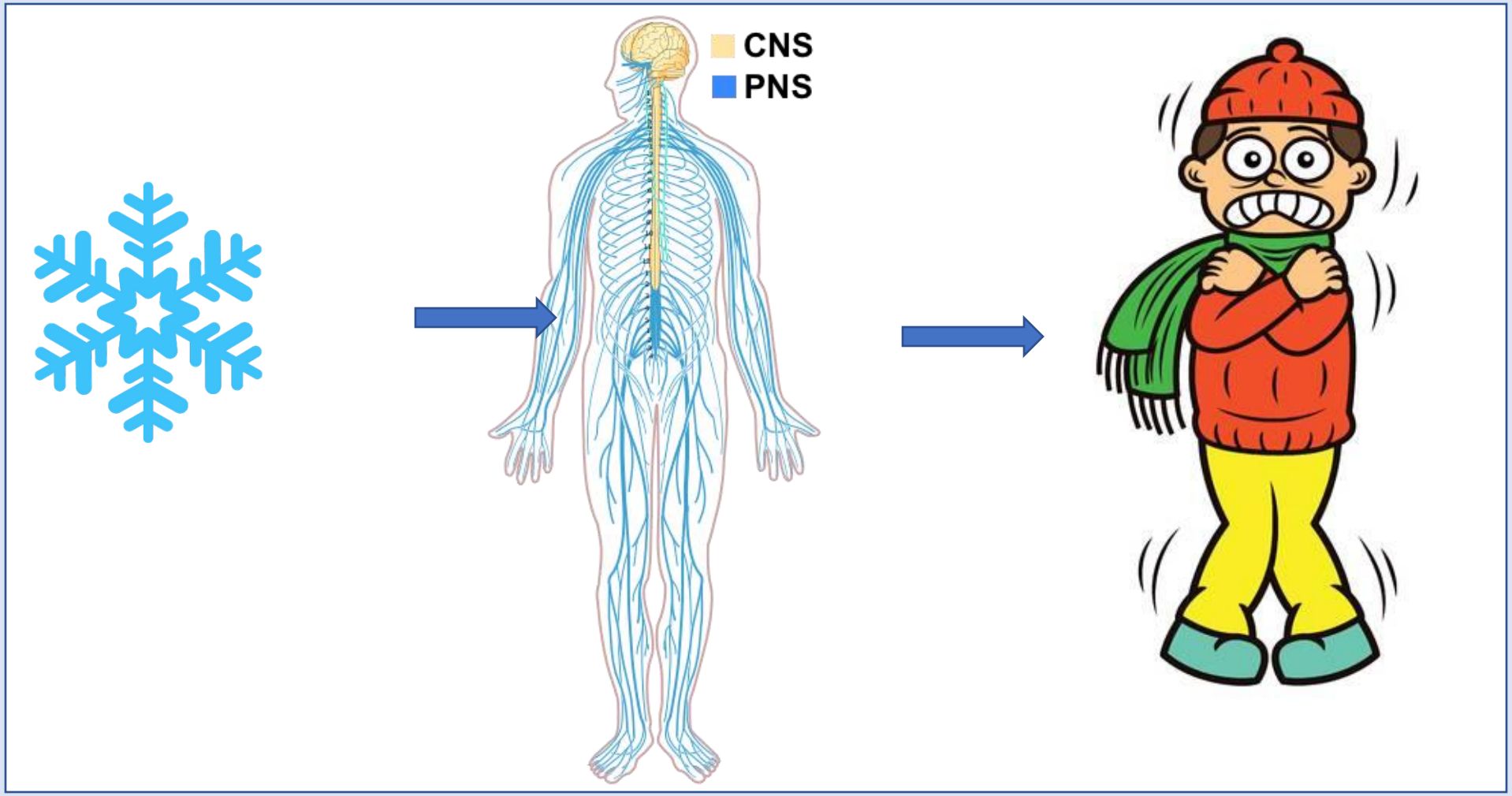
TRUE or FALSE

You can only experience pain if you have a bruise or are bleeding

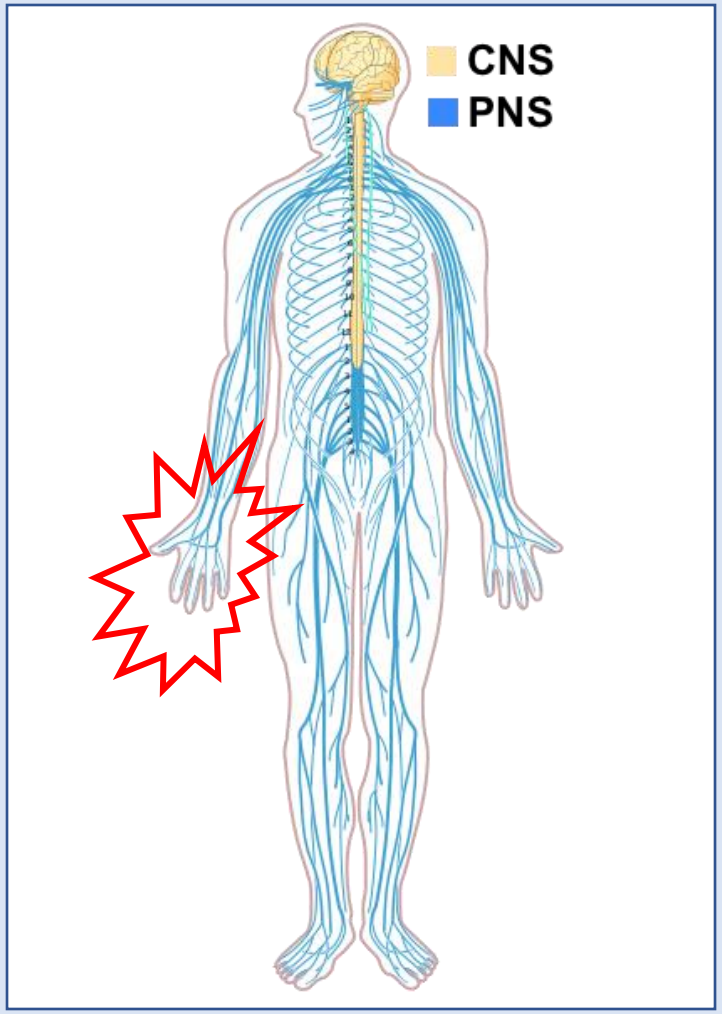
NEUROSCIENCE



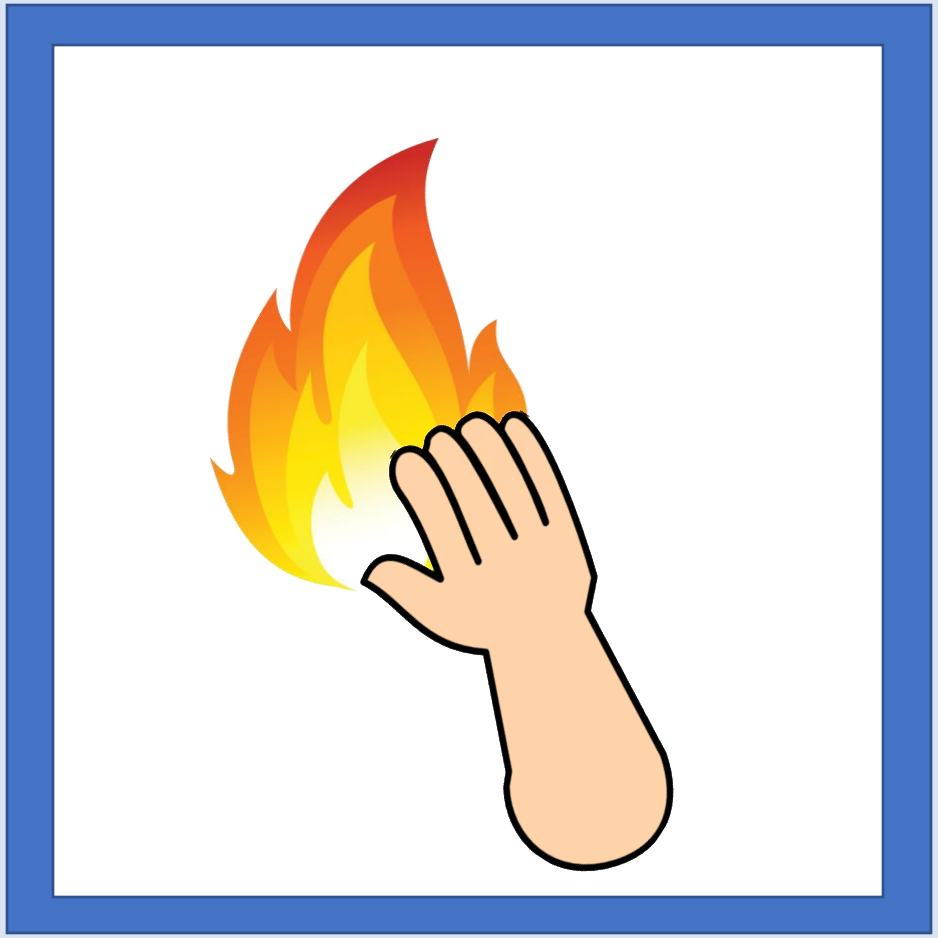
NEUROSCIENCE



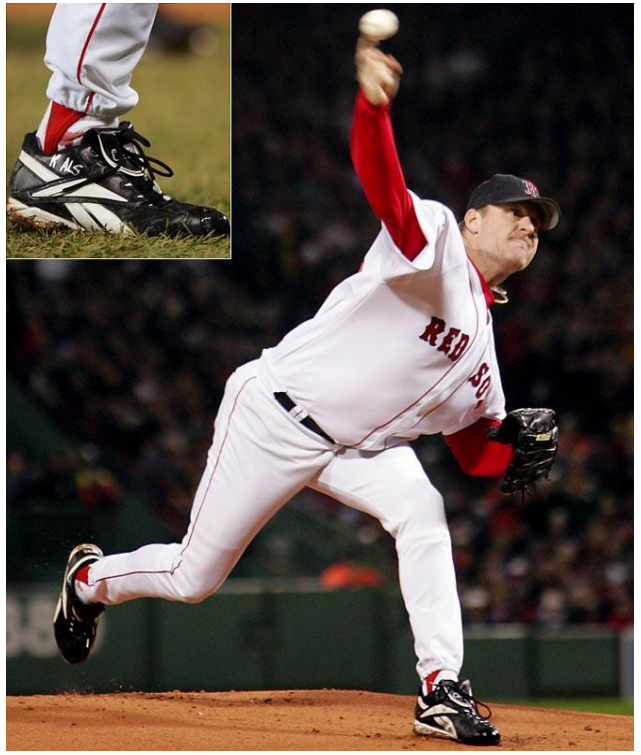
NEUROSCIENCE OF PAIN FOR KIDS



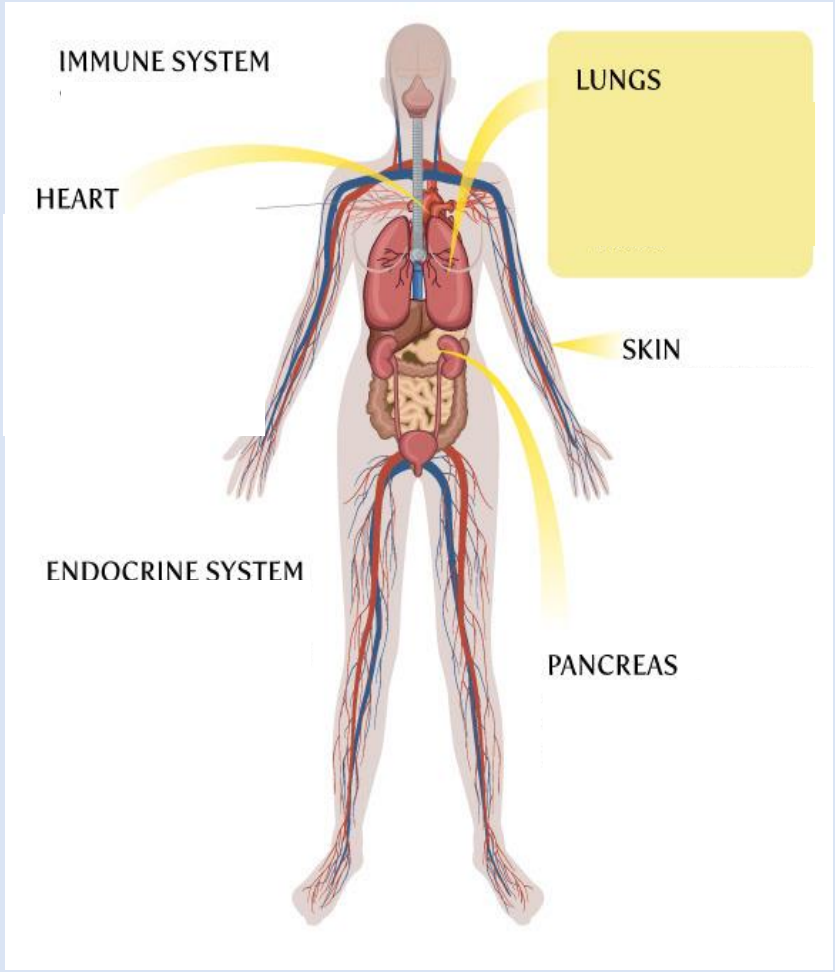
PAIN AS PROTECTIVE RESPONSE



MODULATION OF PAIN



FIGHT, FLIGHT or FREEZE FOR KIDS



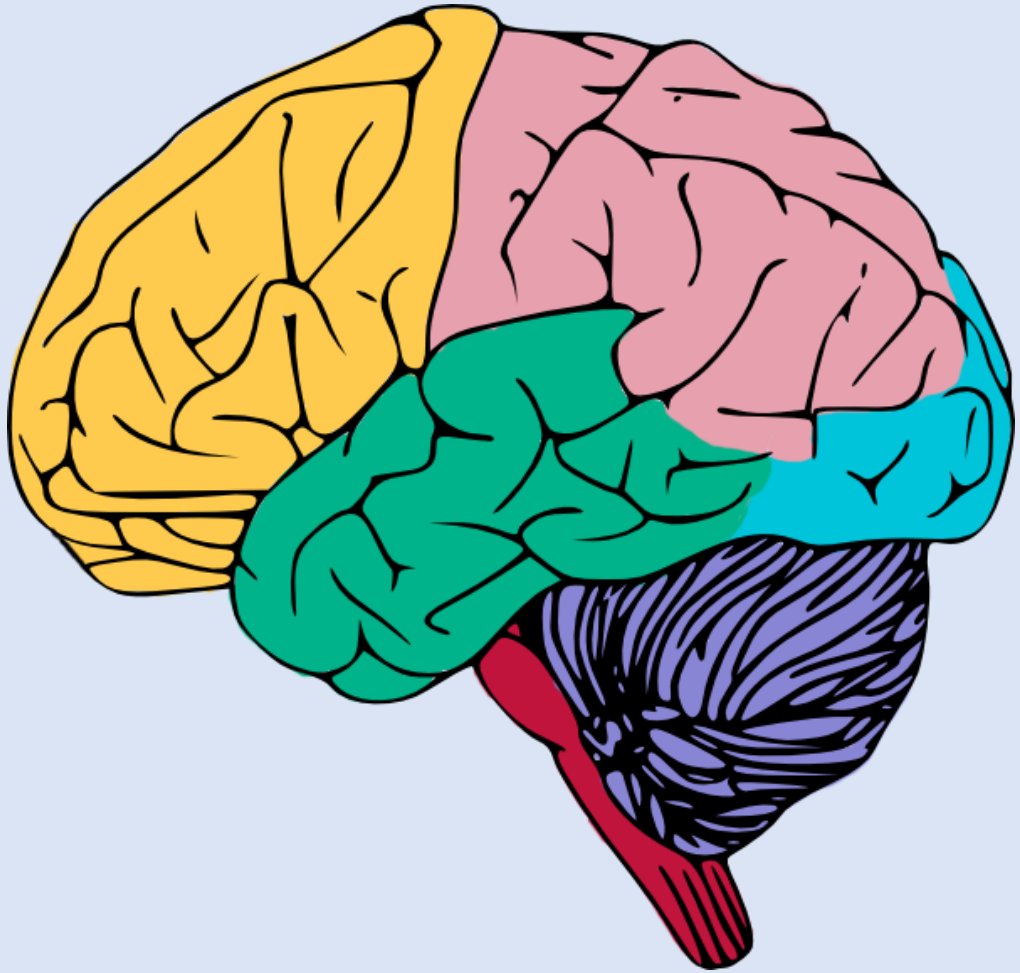
CHRONIC PAIN FOR KIDS

CHRONIC PAIN METAPHORS FOR KIDS

PAIN IN THE BRAIN

- Memory centre
- Learning centre
- Emotional centre
- Thought centre
- Sensory system

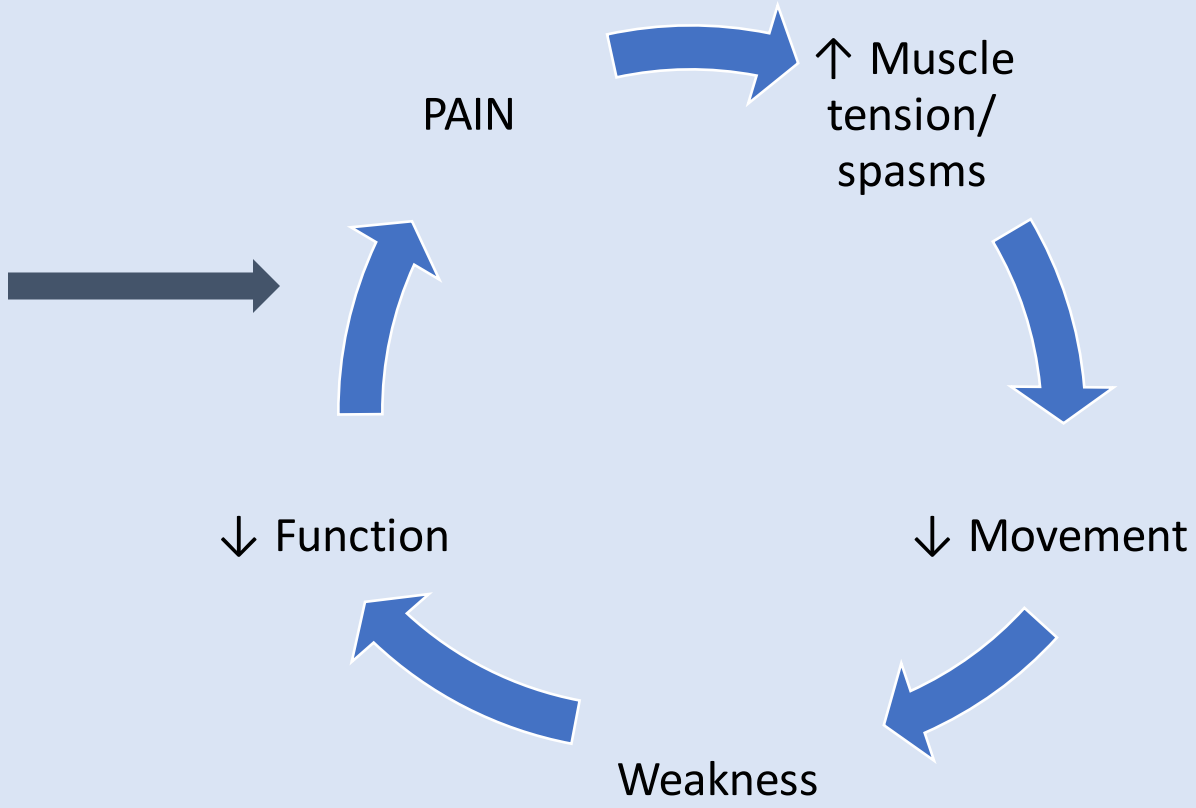
There is no single pain centre in the brain



Persistent Pain Cycle

Important Contributory Factors

- Anger
- Worry
- Sadness
- Frustration
- Depression
- Fear
- Anxiety
- Stress
- Negative thoughts
- Painful memories

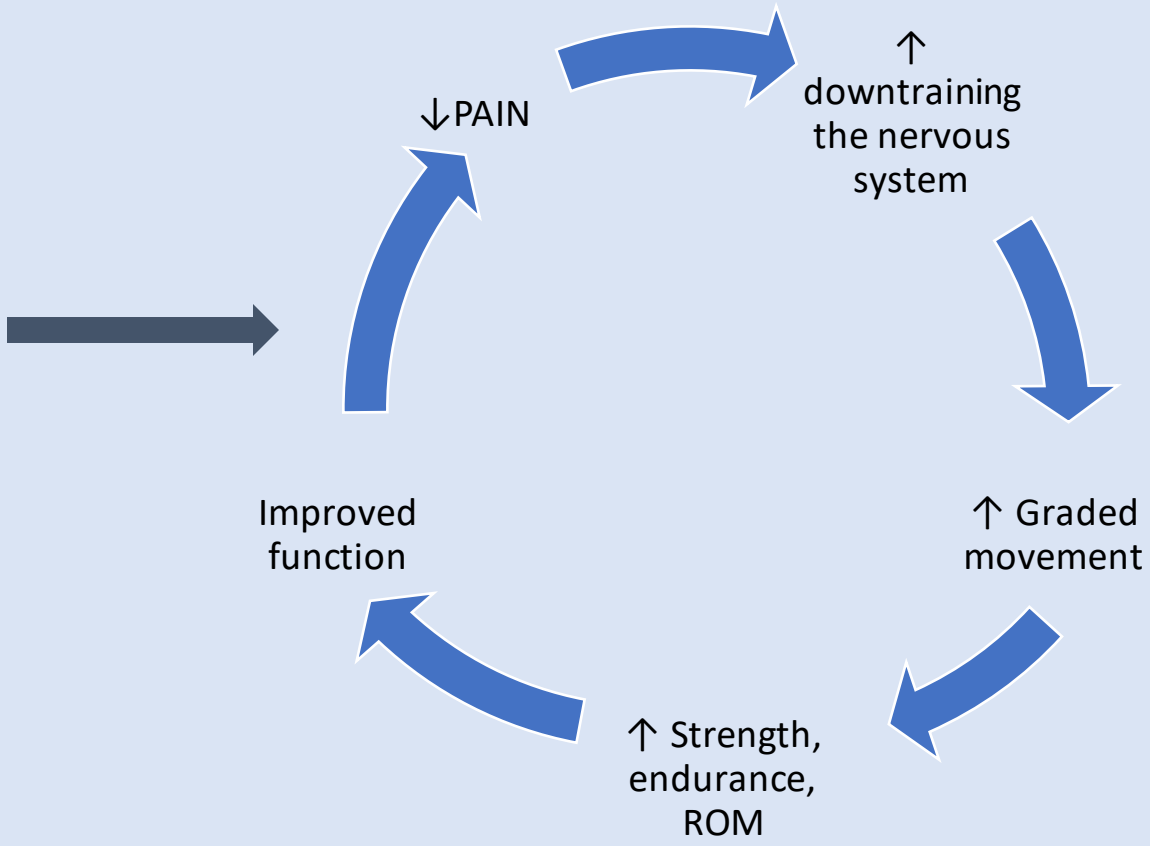


PERSISTENT PAIN CYCLE METAPHOR

Reversing the Pain Cycle

Important Contributory Factors

- Higher self-esteem
- Positive mental attitude
- Decreased stress
- Release of endorphins
- Pride
- Good sleep hygiene



Pain Clinic Recommends:

- Recommend 3 P approach
- Pharm: Tylenol and Advil PRN
- Psychological: CBT and ACT
- Physical: graded exercise

- How do you explain pain to this teen and family?
- How do you gain "buy-in" to your treatment plan
- She responds "so you're saying it's all in my head".

REVERSE THE PAIN CYCLE

Psychology:

- role of the brain in perception of danger
- role of emotions and physiological responses and their relationship to pain

Physical:

- reduce fear of movement and activity avoidance
- retrain nerves sensitivity and remaps the brain
- improve mobility
- avoid secondary sequela of poor mobility

Pharmacological

- helps support functional rehabilitation
- reduce nerve sensitivity

Language to avoid

http://ppl.childpain.org/issues/v15n1_2013/v15n1_coakley.shtml

- Chronic degenerative changes
- Negative test results
- Instability
- Wear and tear
- Neurological
- Don’t worry
- Tear
- Damage
- Paresthesias
- Trapped nerve
- Lordosis
- Kyphosis
- Bulge/herniation
- Disease
- Effusion
- Chronic
- Diagnostic
- You are going to have to live with this forever

RESOURCES

EDUCATIONAL RESOURCES

1. Understanding pain – and what's to be done about it in 10 minutes
https://www.youtube.com/watch?v=KfYC6zfrV80&feature=youtu.be

2. Understanding Pain in less than 5 minutes, and what to do about it!
https://youtu.be/C_3phB93rvI

3. TEDxAdelaide - Lorimer Moseley - Why Things Hurt
https://youtu.be/gwd-wLdIHjs

4. Understanding Pain: Brainman chooses
https://youtu.be/jIwn9rC3rOI

5. What is Chronic Pain ?
https://www.mycarepath.ca/understanding-pain/what-is-chronic-pain

6. Tame The Beast
https://www.tamethebeast.org/

7.http://www.ucalgary.ca/pip369/mod7/tempain/theories

SELF-MANAGEMENT RESOURCES

1. **My**CarePath

www.mycarepath.ca

2. PainBytes

http://www.aci.health.nsw.gov.au/chronic-pain/painbytes

References

Bedell, S.E., Graboys, T.B., & Bedell, E. (2004). Words That Harm, Words That Heal. *Archives of Internal Medicine, 164*(13), 1365-1368. doi:10.1001/archinte.164.13.1365

Gallagher, L., McAuley, J., & Moseley, G.L. (2013) A randomized-controlled trial of using a book of metaphors to reconceptualize pain and decrease catastrophizing in people with chronic pain. *The Clinical Journal of Pain, 29*(1), 20-25. doi: 10.1097/AJP.0b013e3182465cf7.

Louw, Hilton, Vandyken (2014) Why Pelvic Pain Hurts, Neuroscience Education for Patients with Pelvic Pain. *International Spine and Pain Institute (USA)*

Louw, A., Zimney, K., Puentedura, E.J., & Diener, I. (2016). The efficacy of pain neuroscience education on musculoskeletal pain: A systematic review of the literature. *Physiotherapy Theory and Practice, 32*(5), 332-355. doi: 10.1080/09593985.2016.1194646

Louw, A., Diener, I., Butler, D.S., & Puentedura, E.J. (2011). The Effect of Neuroscience Education on Pain, Disability, Anxiety, and Stress in Chronic Musculoskeletal Pain. *Archives of Physical Medicine and Rehabilitation, 92,* 2041-2056. https://doi.org/10.1016/j.apmr.2011.07.198

Moseley, G.L., Nicholas, M.K., & Hodges, P.W. (2004). A randomized controlled trial of intensive neurophysiology education in chronic low back pain. *The Clinical Journal of Pain,* 20(5), 324-330. http://dx.doi.org/10.1097/00002508-200409000-00007

NOI Group. (2017). Explain Pain in real time. Retrieved from https://noijam.com/2017/06/02/explain-pain-in-real-time/

Robins, H., Victoria Perron, V., Heathcote, L.C., Simons, L.E. (2016). Pain Neuroscience Education: State of the Art and Application in Pediatrics. Children, 3 (43), 1-17. doi:10.3390/children3040043

Simons, L.E.; Smith, A.; Kaczynski, K.; Basch, M. Living in fear of your child's pain: The Parent Fear of Pain Questionnaire. Pain 2015, 156, 694–702. [CrossRef] [PubMed]

University of Calgary. (n.d.). Retrieved Aug 8, 2016 from http://www.ucalgary.ca/pip369/mod7/tempain/theories