

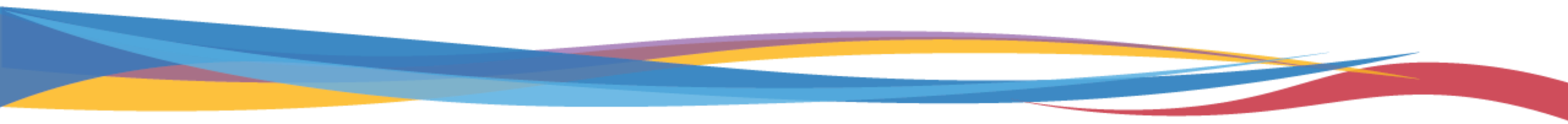
How to Explain Pain to Kids and Families



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

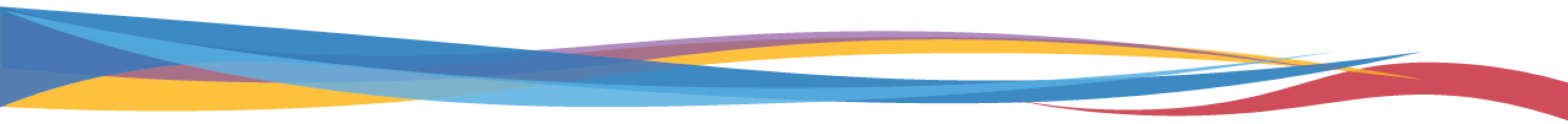
This program has received financial support from the Ministry of Health and Long Term Care



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



IMPORTANCE OF PAIN EDUCATION

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

KEY COMPONENTS TO PAIN EDUCATION

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



BASIC NEUROSCIENCE OF CHRONIC PAIN

PAIN DEFINITION

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



Pain Definition IASP 2020


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IASP Announces the 2021 Collaborative Research Grant Recipients

14 September 2021

Submissions are Being Accepted for World Congress Prizes and Awards

08 September 2021

September is Pain Awareness Month

01 September 2021

resembling that associated with, actual or potential tissue damage,” and is expanded upon by the addition of six key Notes and the etymology of the word pain for further valuable context.

- Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
- Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
- Through their life experiences, individuals learn the concept of pain.
- A person’s report of an experience as pain should be respected.
- Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
- Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experiences pain.

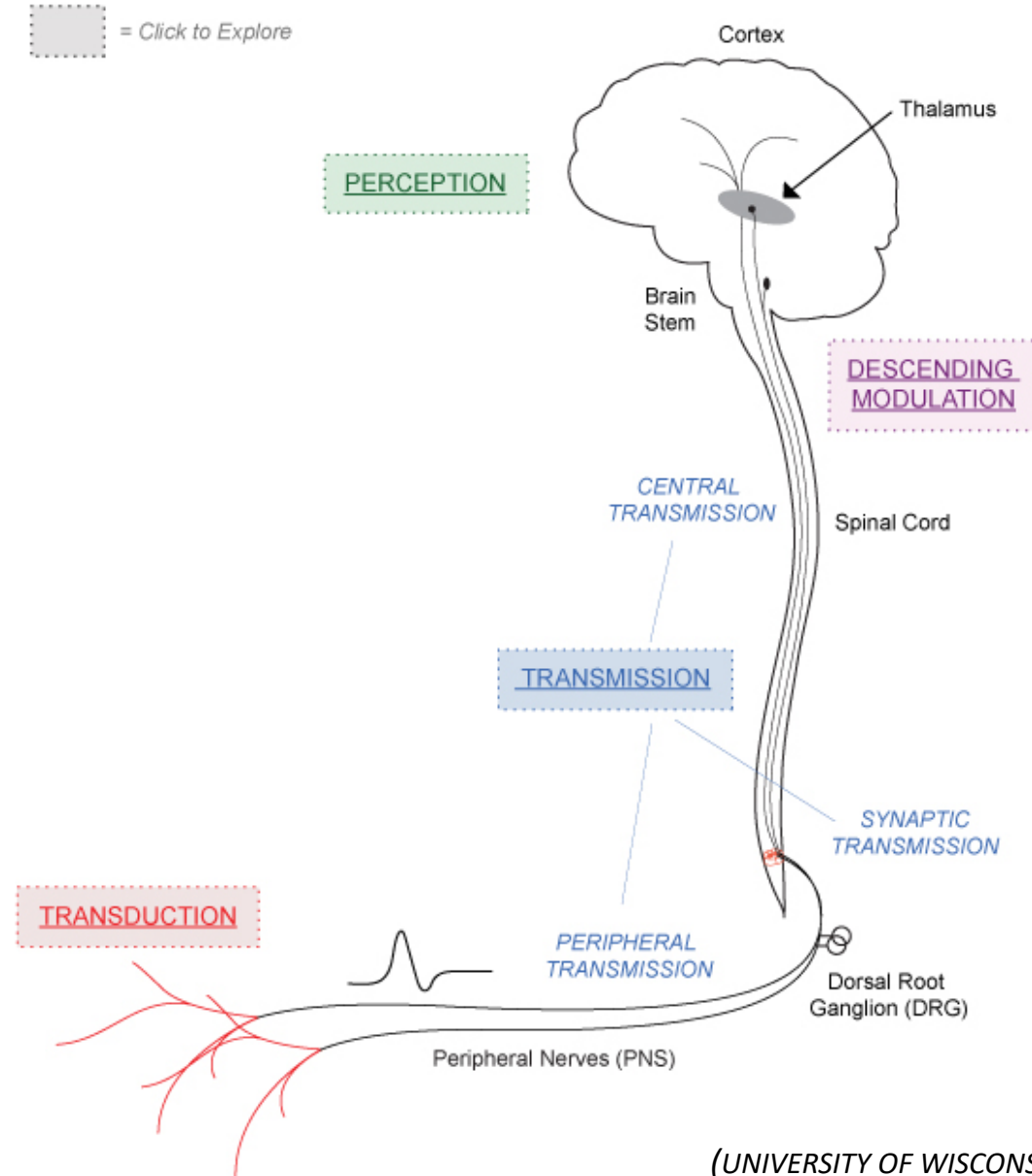
A multi-national, multidisciplinary Task Force developed the revised definition with input from all potential stakeholders, including persons in pain and their caregivers.

The revised definition was introduced in [this article](#) in the journal PAIN and a via a press release. An [infographic](#) also illustrates the changes.



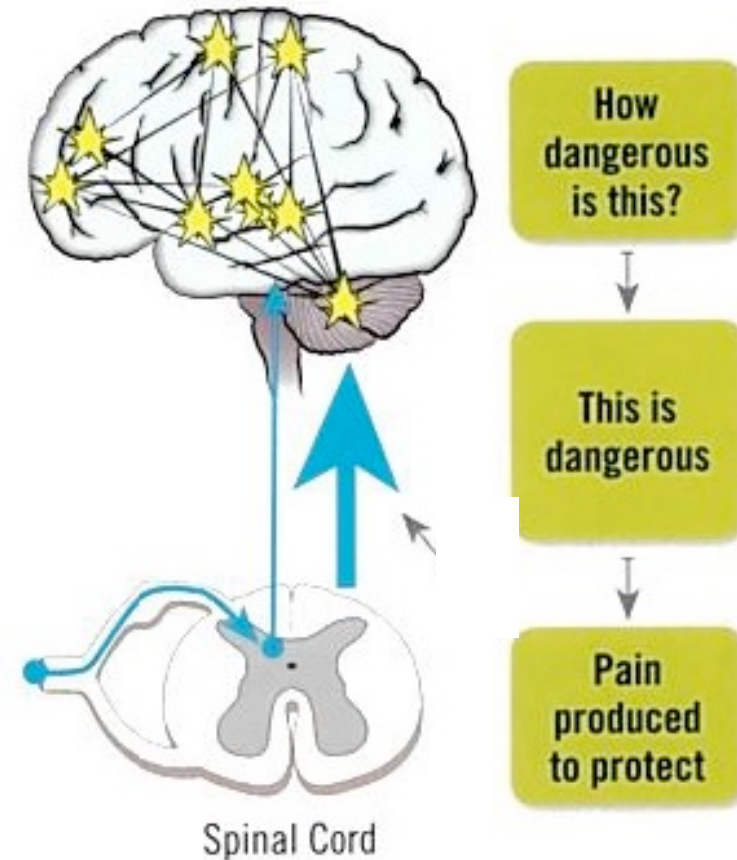
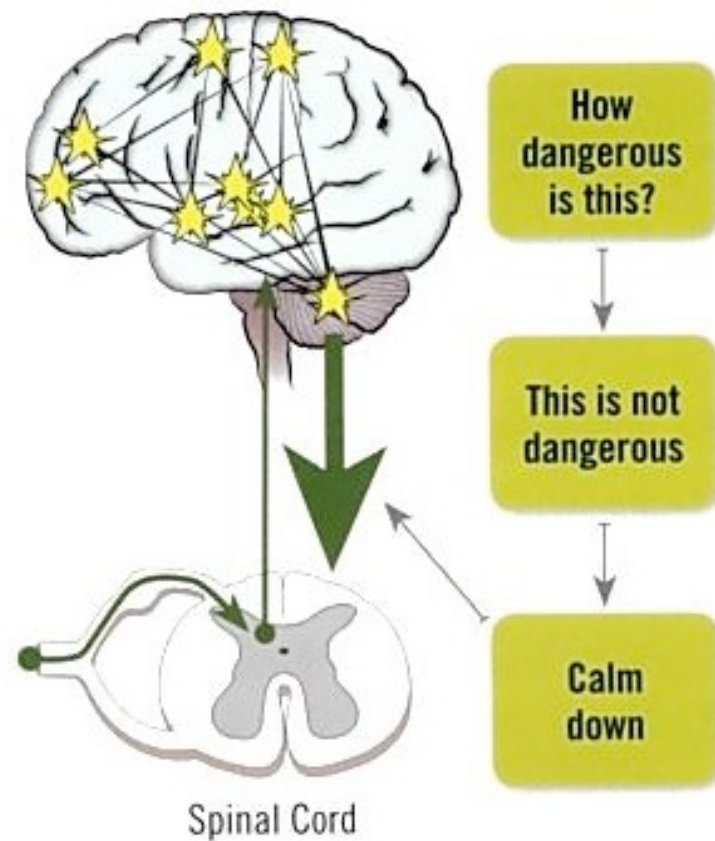
NEURAL PATHWAY

- 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

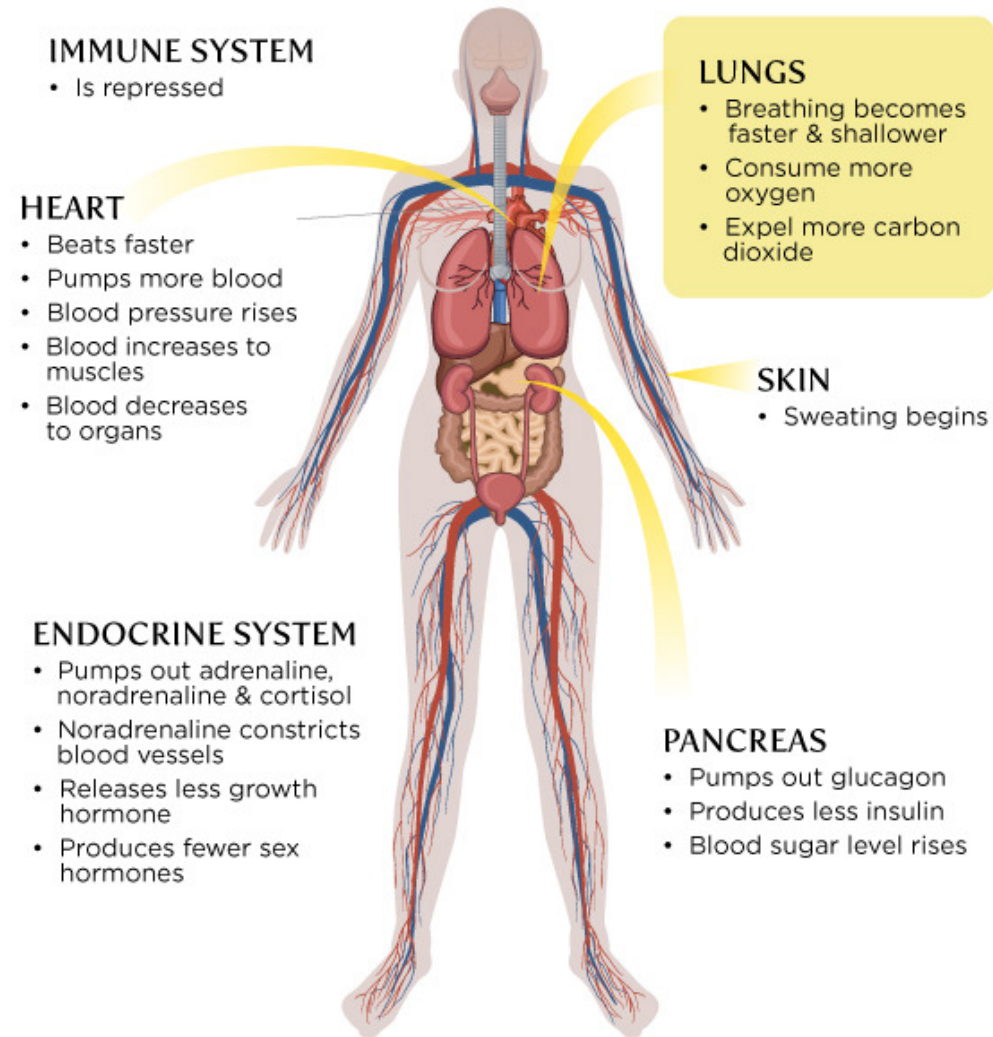


(UNIVERSITY OF WISCONSIN, 2010)

MODULATION OF PAIN

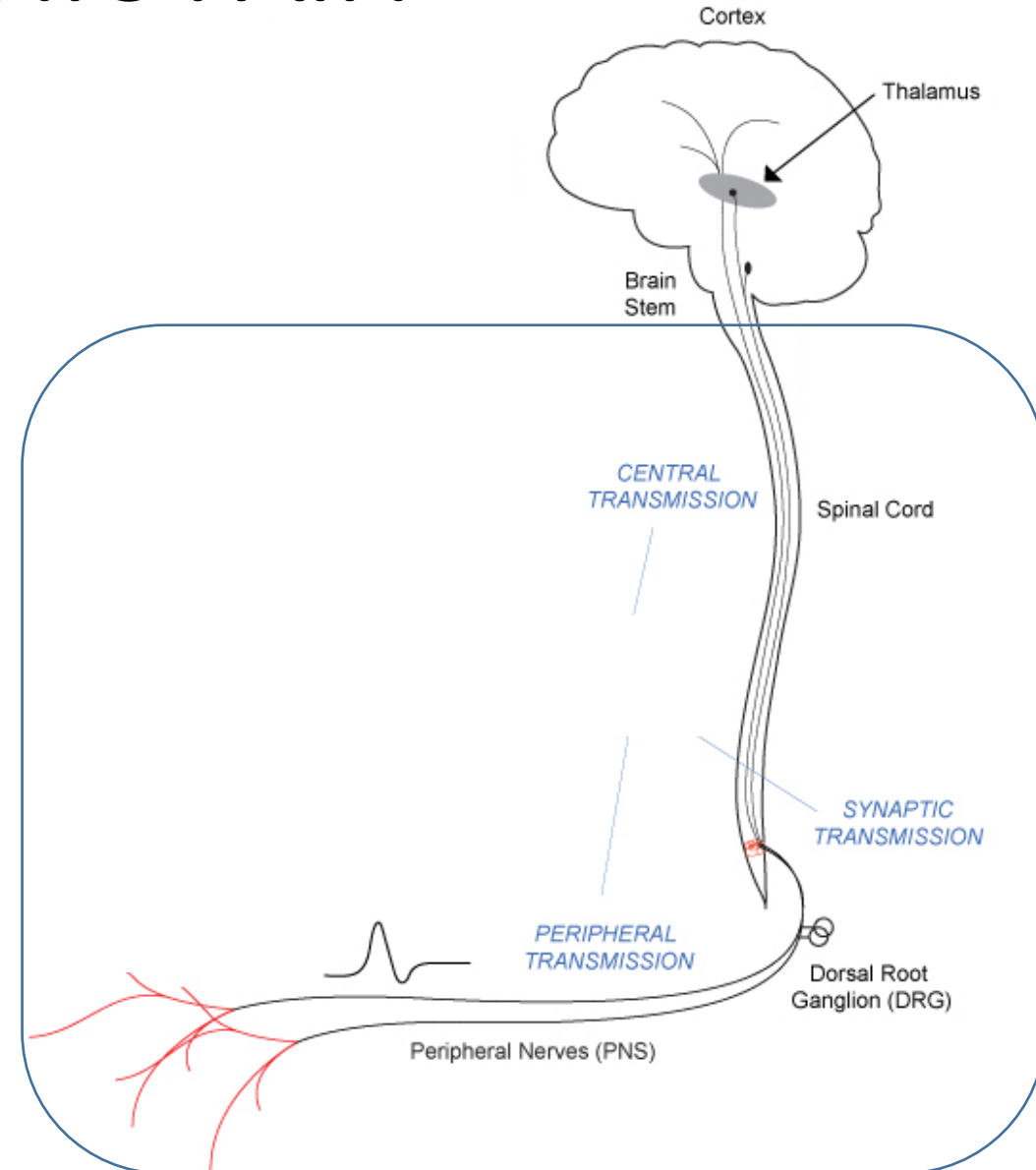


PROTECTIVE SYSTEMS: FIGHT, FLIGHT or FREEZE

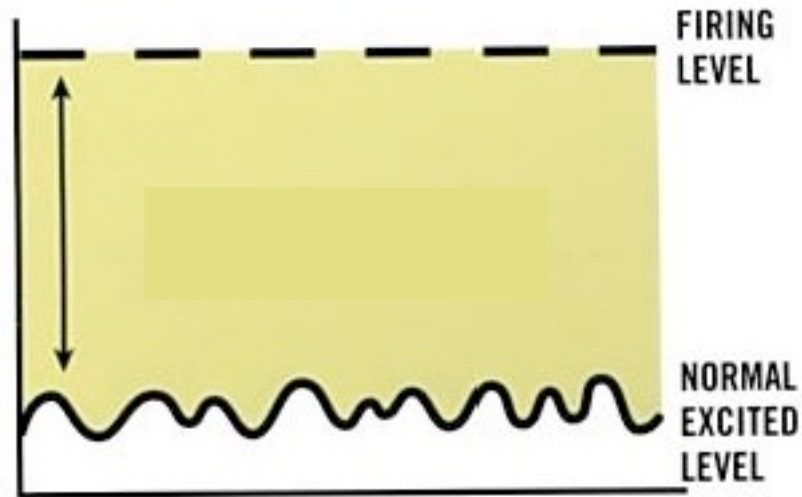


CHANGES WITH CHRONIC PAIN

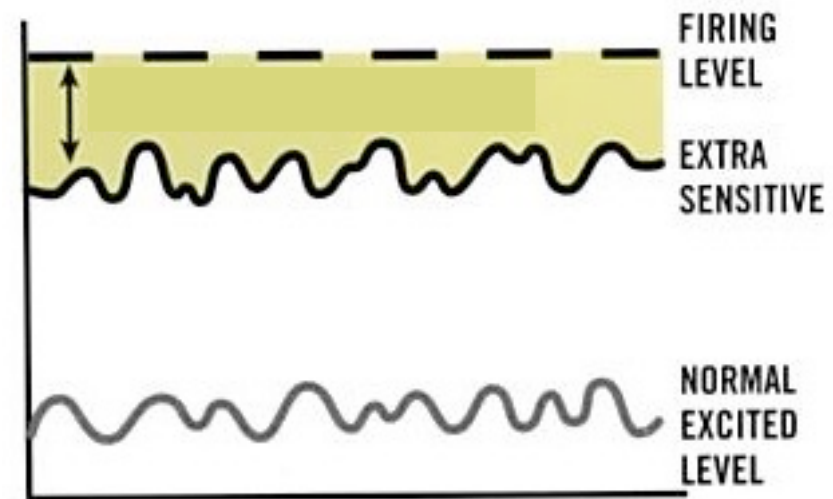
- Nerves fire more easily and frequently (hyperalgesia)
- Develop more "pain" receptors
- Misinterpret normal sensations of touch, stretch and movements as danger (allodynia)
- Inflammation as a protective response



CHANGES WITH CHRONIC PAIN



Without Pain

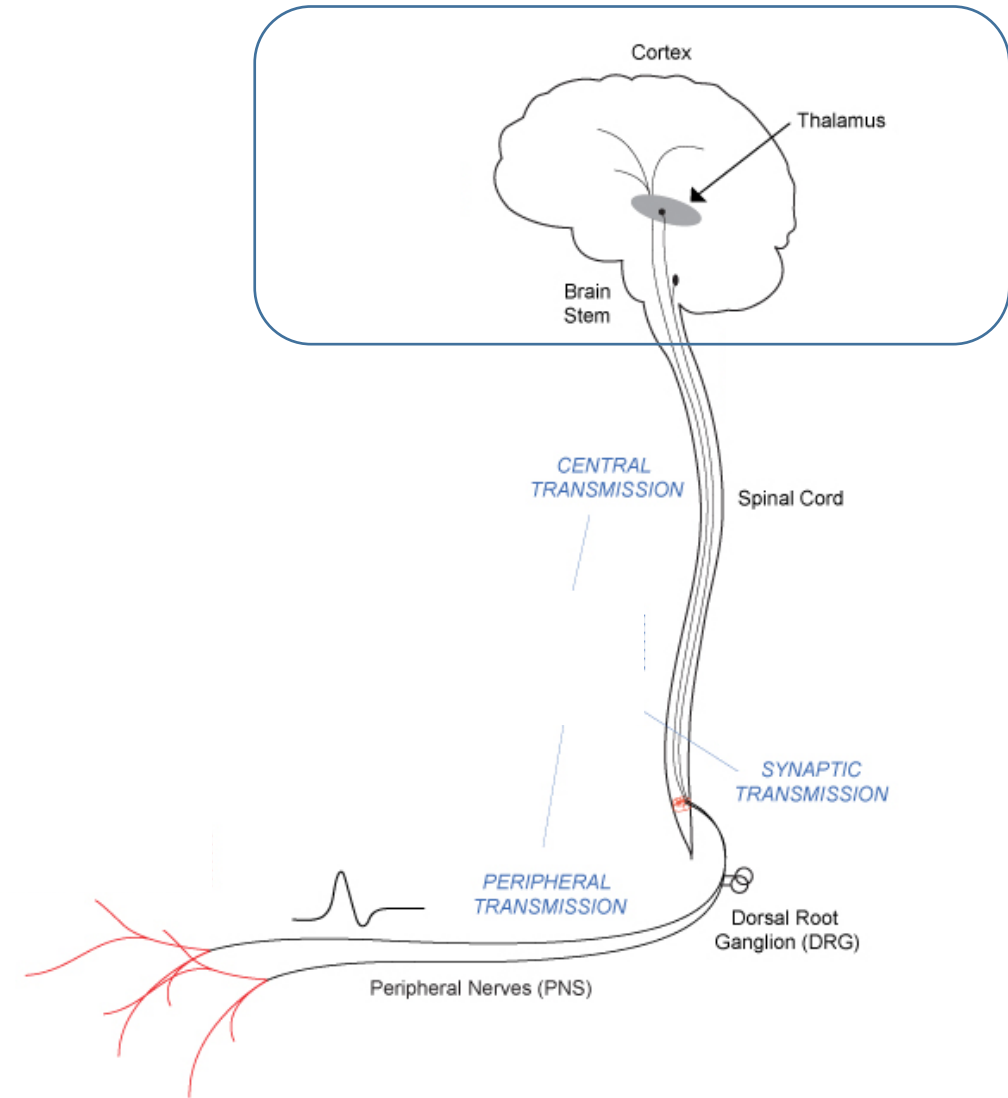


With Chronic Pain

(Louw, Hilton, Vandyken; 2014)

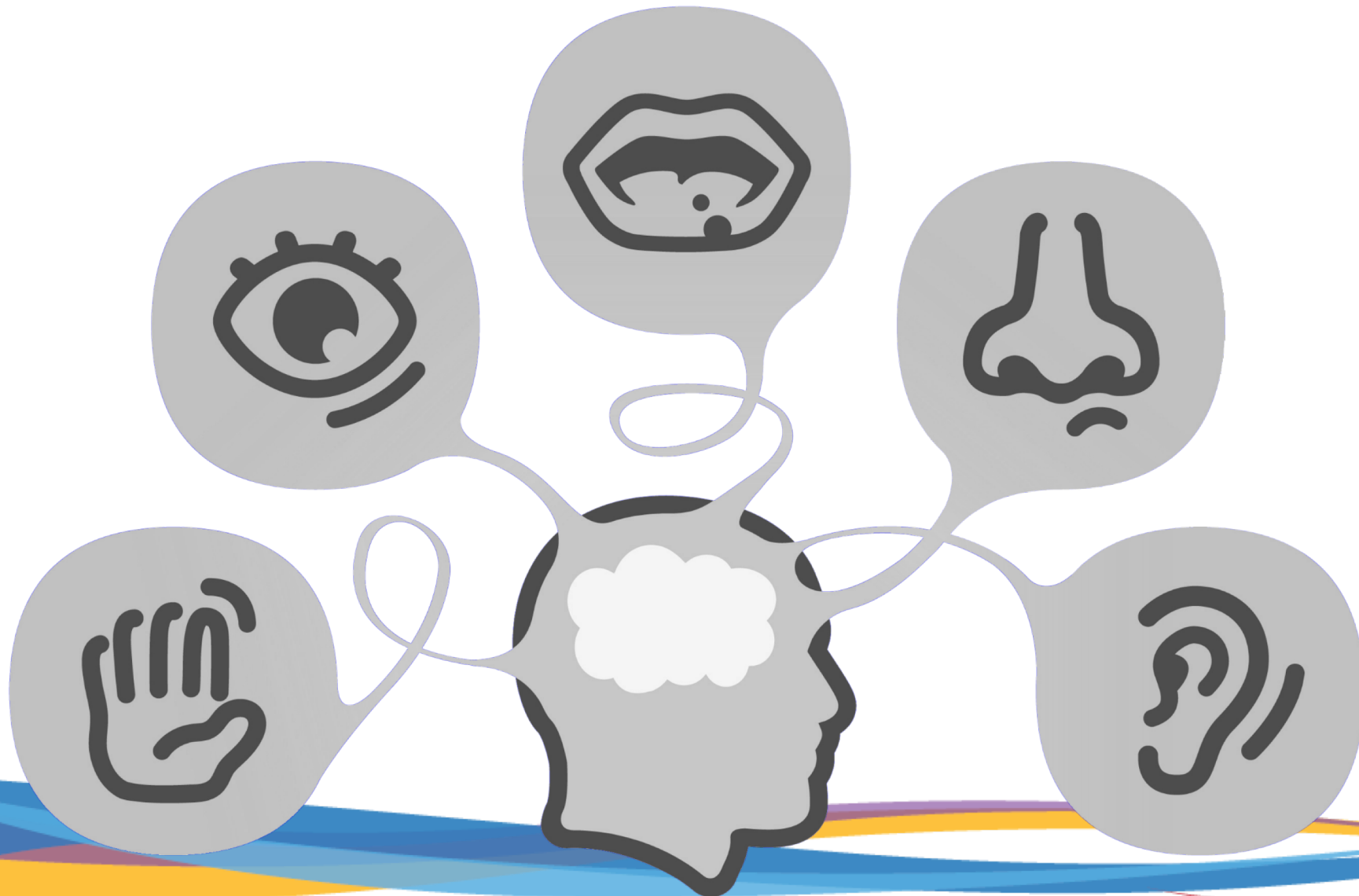
CHANGES WITH CHRONIC PAIN

- 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

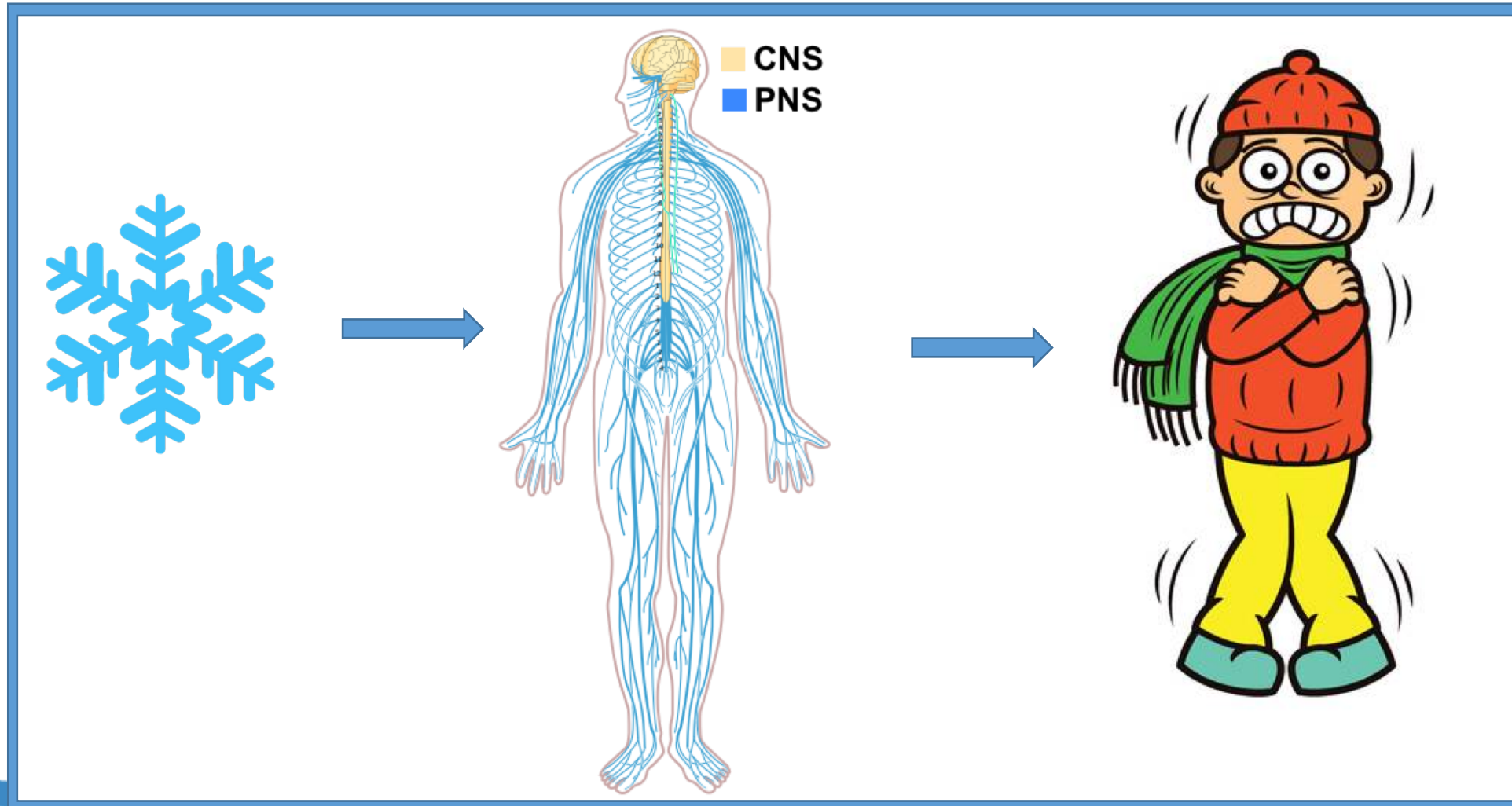


HOW TO EXPLAIN TO KIDS...

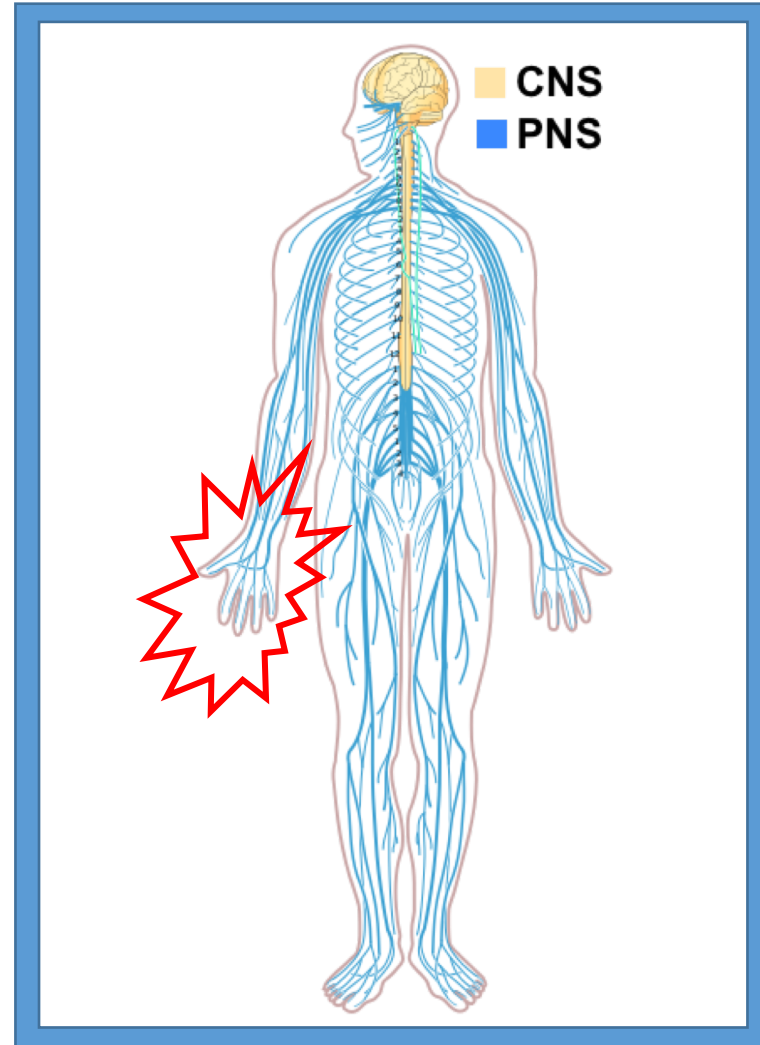
NEUROSCIENCE



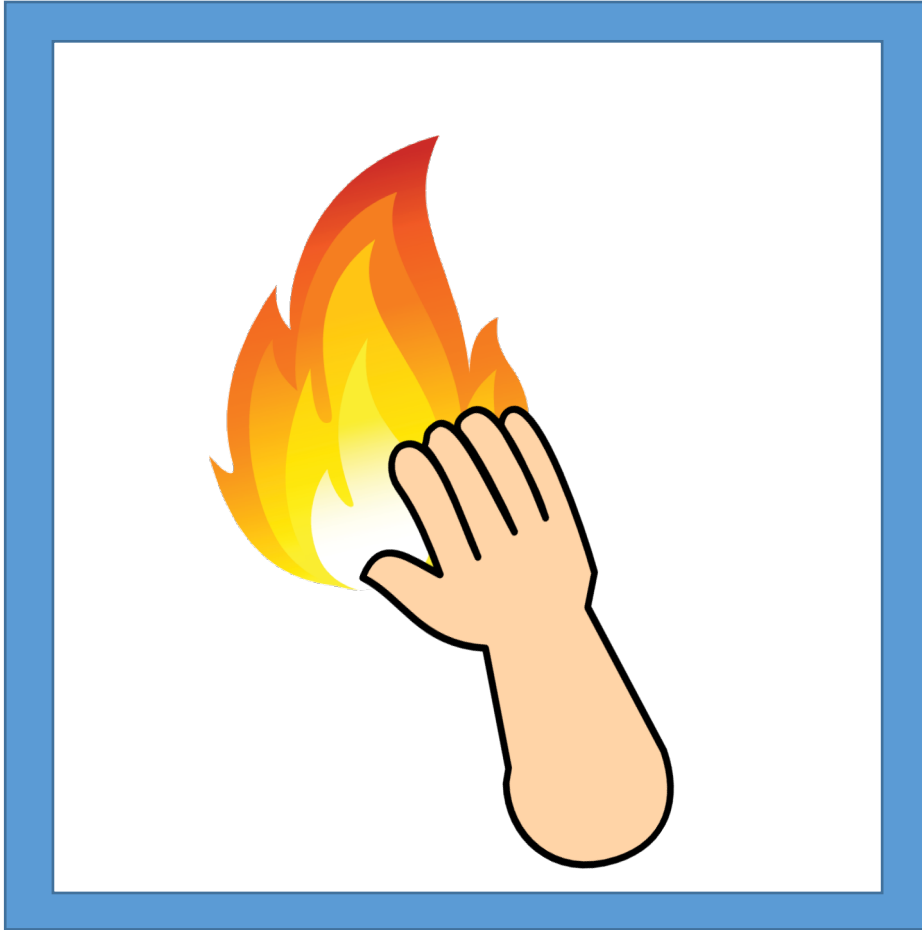
NEUROSCIENCE



NEUROSCIENCE OF PAIN FOR KIDS



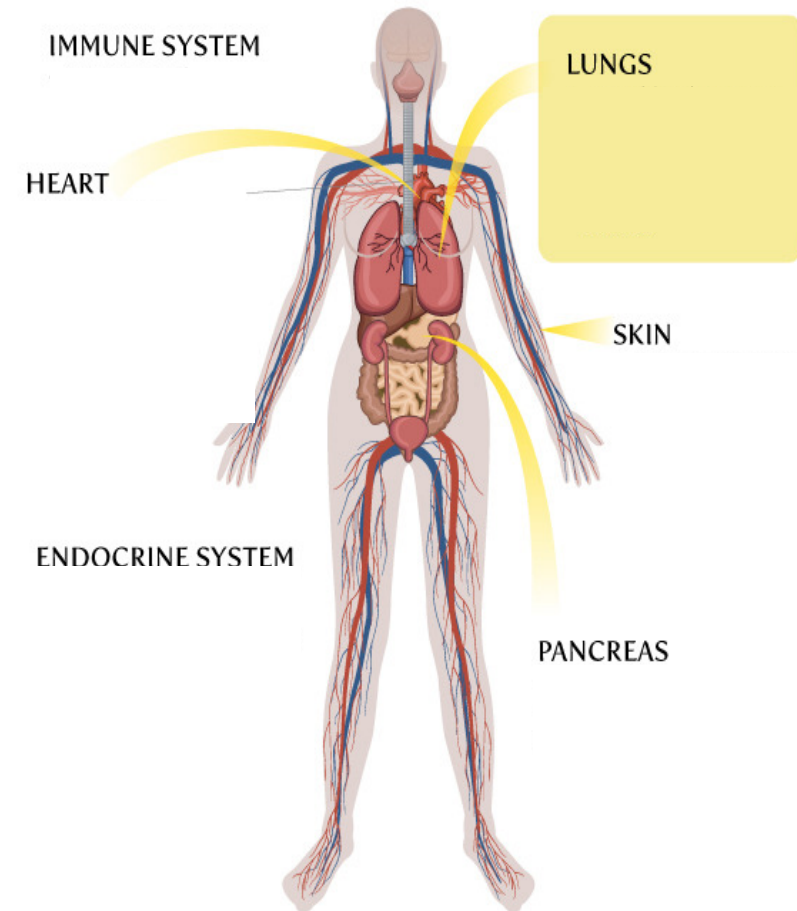
PAIN AS PROTECTIVE RESPONSE



MODULATION OF PAIN



FIGHT, FLIGHT or FREEZE FOR KIDS



CHRONIC PAIN FOR KIDS



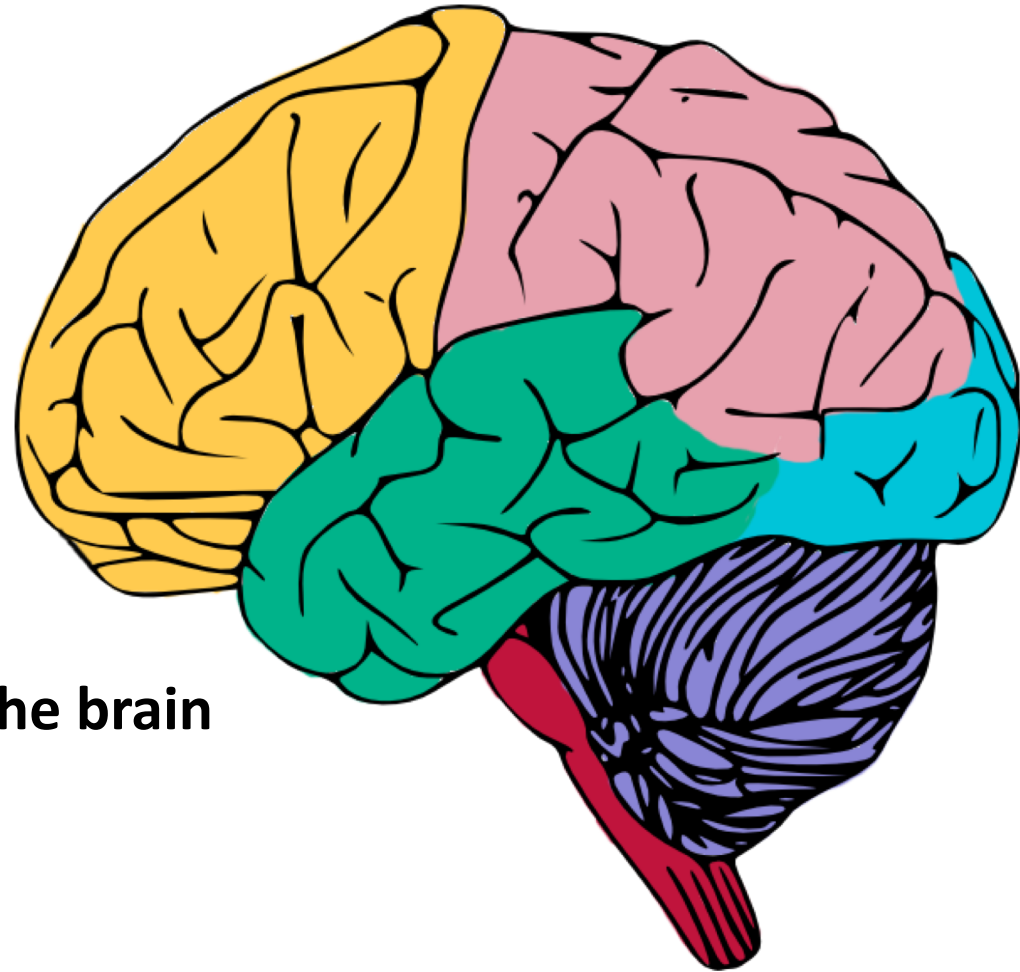
CHRONIC PAIN METAPHORS FOR KIDS



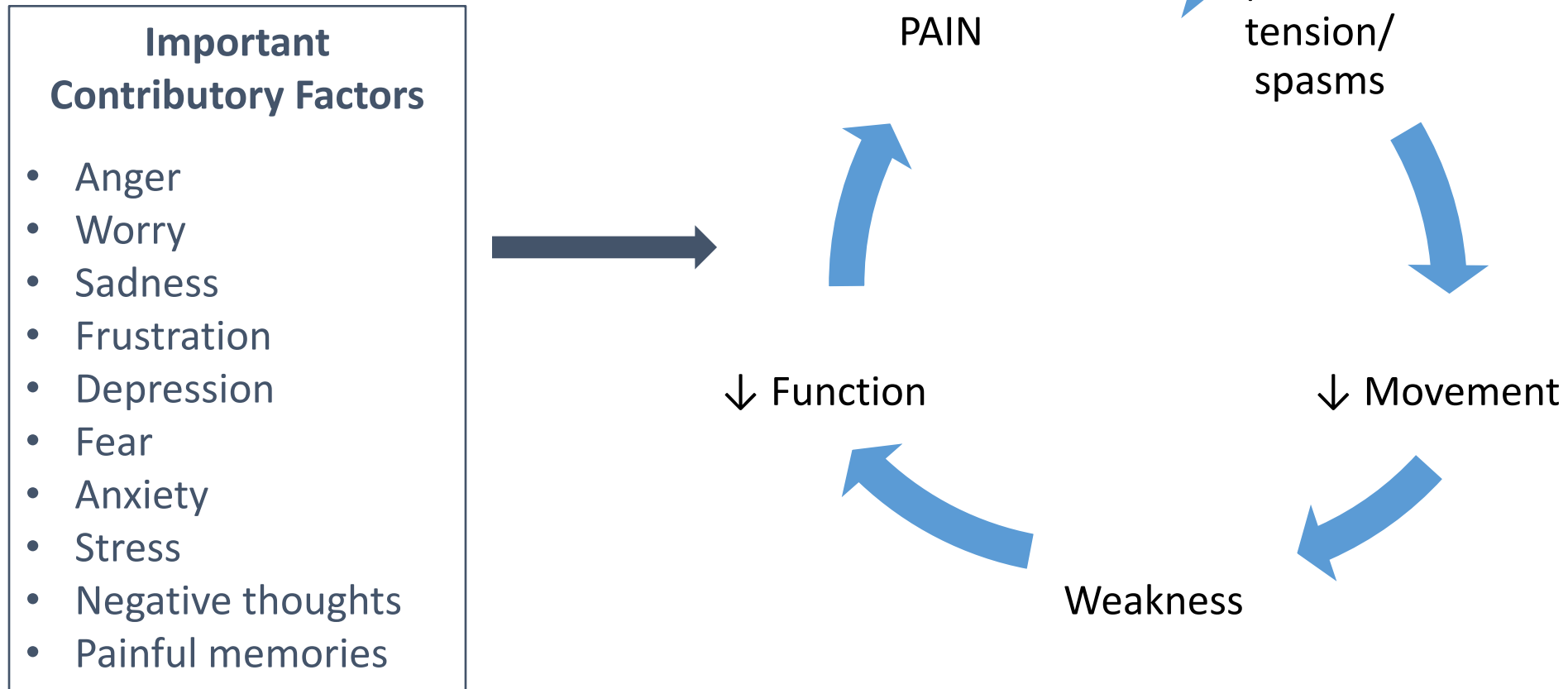
PAIN IN THE BRAIN

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

There is no single pain centre in the brain



PERSISTENT PAIN CYCLE



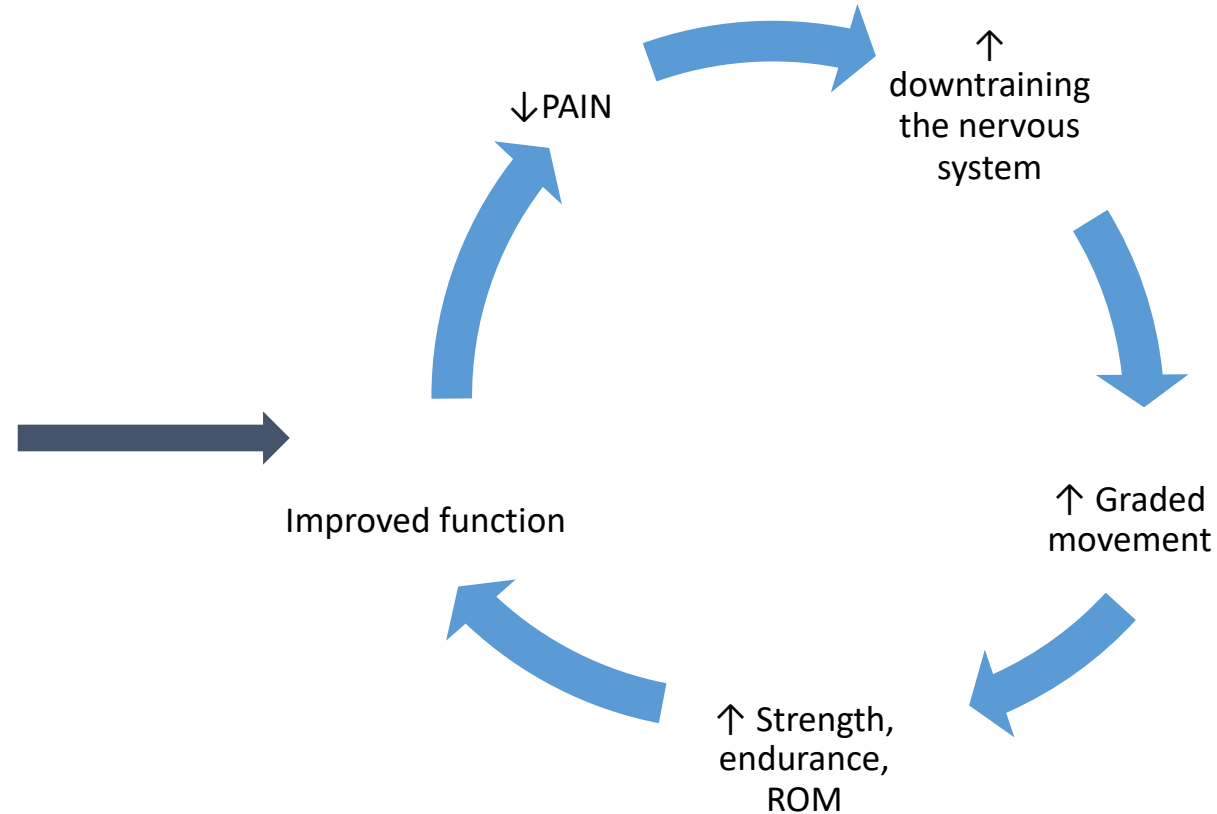
PERSISTENT PAIN CYCLE METAPHOR



REVERSING THE PAIN CYCLE

Important Contributory Factors

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



REVERSE THE PAIN CYCLE

Psychology:

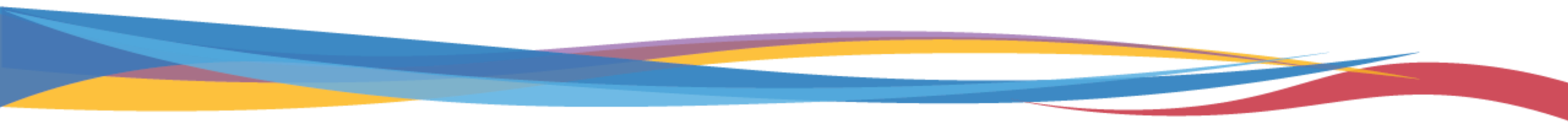
- role of the brain in perception of danger
- role of emotions and physiological responses and their relation ship to pain

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

- 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/jlwn9rC3rOI>

5. What is Chronic Pain ?

<https://www.mycarepath.ca/understanding-pain/what-is-chronic-pain>

6. Tame The Beast

<https://www.tamethebeast.org/>

<http://www.ucalgary.ca/pip369/mod7/tempain/theories>

SELF-MANAGEMENT RESOURCES

1. **MyCarePath**

www.mycarepath.ca

2. **PainBytes**

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

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