



YOGA MEDICINE

EDUCATION. EXPERIENCE. RESULTS.

Pain Science

BY MARNIE HARTMAN, PT

THE OFFICIAL DEFINITION OF PAIN

"Pain is an unpleasant sensory and emotional experience associated with actual or potential damage or described in terms of such damage"

<http://www.iasp-pain.org>

FIVE KEY POINTS ABOUT PAIN

1. Pain does not provide a measure of the state of the tissues.
2. Pain is modulated by many factors from across somatic, psychological and social domains.
3. The relationship between pain and the state of the tissues becomes less predictable as pain persists.
4. Pain can be conceptualized as a conscious correlate of the implicit perception that tissue is in danger.
5. Nociception is neither sufficient nor necessary for one to experience pain. Adapted from Moseley, Understand and Explain Pain 2009

PERIPHERAL NERVOUS SYSTEM

The communication system

- Peripheral nerves
- Ion Channels
- Neurotransmitters
- Sensors and Receptors
- Synapse

Pain then is an output of your brain. Not an Input from your body.

This means that Pain's primary purpose is to demand action as a means of protection. Pain does not actually communicate a level of tissue damage.

Moseley, noi ep 2016.

DEFINITION OF PERSISTENT PAIN

Pain that remains present past what is considered normal or average healing time, typically believed to be between 3-6 months. Louw , Puentedura. Therapeutic Neuroscience Education 2013

TALKING ABOUT PAIN

Recognition without threat — How do you feel today?

Threatening language — What is your pain today?

THE NEUROPHYSIOLOGY OF PAIN

1. It is possible to have pain and not know about it.
 - » False – Conscious Experience
2. When part of your body is injured, special pain receptors convey the pain message to your brain.
 - » False – nociception is communicated not pain
3. Pain only occurs when you are injured or at risk of being injured.
 - » False – pain can occur at anytime the brain decides it is important for your biological survival.
4. When you are injured, special receptors convey the danger message to your spinal cord.
 - » True
5. Special nerves in your spinal cord convey 'danger' messages to your brain.
 - » True
6. Nerves adapt by increasing their resting level of excitement.
 - » True
7. Chronic pain means that an injury hasn't healed properly.
 - » False – pain can be present without injury or after injuries have healed.
8. Worse injuries always result in worse pain
 - » False – many factors contribute to the intensity of pain, little of which has to do with the severity of the injury.
9. Descending neurons are always inhibitory.
 - » False - this pathway can be inhibitory or facilitatory.
10. Pain occurs whenever you are injured.
 - » False – injury is not necessary for the neuromatrix to be triggered.
11. When you injure yourself, the environment that you are in will not affect the amount of pain you experience, as long as the injury is exactly the same.
 - » False – the environment will play a significant role in determining the pain.
12. The brain decides when you will experience pain.
 - » True

RECOMMENDED RESOURCES ON PAIN

Explain Pain Butler, Moseley

Explain Pain Supercharged Butler, Moseley

Painful Yarns, Moseley

Therapeutic Neuroscience Education, Louw, Puentedura

YOGA AND PAIN

How can yoga be used to treat pain?

- Soothing the system
- Mindfulness movement and meditation
- Checking reactions, thought patterns
- Changing beliefs – real but not true
- Breath work –when everything hurts just breathe
- Choosing to be comfortable in the uncomfortable
- Leaning into discomfort (but not jumping off)
- Learning to let go – what can be controlled – what can't

RAIN AND PAIN

R – Recognize what is happening

A – Allow life to be just as it is

I – Investigate inner experience with kindness

N – Non-Identification

SAMPLE PRACTICE

- Supine – hook lying – hand on heart hand on belly – 10 long slow breaths
- Pelvic tilts
- Single knee to chest
- Double knee to chest
- Piriformis
- Knee to opposite shoulder (Glut med)
- Hamstring glides
- Inner Spiral
- Abdominal drawing in
- Supine – hook lying – hand on heart hand on belly – 10 long slow breaths

A FEW KEY POINTS

- Open and close with mediation, mindfulness or pranayama
- Relax – areas that don't need to play don't get to play
- Slow gentle movements that are at least initially held for short duration
- Repetition to allow observation of reactions and practice to change those reactions
- Blood flow/blood flow/blood flow
- Keep it simple
- Dosing – set them up for success
- Slow graded progression
- Give them homework