

Pain Science: Theory & Application for Yogis

Part 1: Theory

IMPORTANT TERMS & CONCEPTS FROM THE COURSE, in order of appearance:

Cartesian model of pain - the older model of pain in which pain is an input from the periphery (as opposed to an output from the CNS)

nociceptors - specialized sensory receptors that detect potentially noxious/dangerous stimuli (external or internal)

2 types of nociceptors:

A-fibers - myelinated, fast-conducting

C-fibers - unmyelinated, slower-conducting

sensation - the awareness of changes in the internal and external environment (input)

perception - the conscious interpretation of those sensation (output)

The gate control theory of pain - theory proposed by Melzack & Wall in 1965 that formed the foundation of modern pain science: nonnoxious input suppresses painful output by inhibiting spinal cord dorsal root nociceptors

dorsal horn - the part of the spinal cord containing the cell bodies of sensory neurons (including nociceptors)

descending modulation - the method by which the brain can influence nociception (turning it up or down) by sending neurotransmitters through descending (top-down) modulatory circuits

acute pain - short-term pain usually associated with a recent injury

chronic/persistent pain - long-term pain (2+ months)

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IMPORTANT TERMS, cont'd:

pathologize - regard or treat something as medically abnormal or unhealthy

catastrophize - viewing pain as overwhelming and uncontrollable

fear avoidance - not moving an area out of fear of hurting it

hypervigilance - an enhanced state of sensory sensitivity accompanied by an exaggerated scan or search for threatening information

DIM - things that the brain might see as credible evidence of "Danger In Me"

SIM - things the brain might see as credible evidence of "Safety in Me"

placebo - a positive expectation of an otherwise neutral event or action that causes positive consequences like pain reduction

nocebo - a negative expectation of an otherwise harmless event or action that causes negative consequences like pain

graded exposure - progressive introduction of threatening movements in a way that causes the nervous system to feel less threatened by them

biopsychosocial model of pain - the modern working model of pain in which pain is seen as the multifactorial result of any number of influences from the biological, psychological, and sociological realms

biomedical model of pain - pathoanatomical searches for a singular cause for chronic problems

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IMPORTANT TERMS, cont'd:

postural structural biomechanical model - treats chronic pain as the result of a singular postural, structural, or biomechanical cause

kinesiopathological model - same as above ^

neuromatrix - a widely-distributed neural network in the brain that integrates multiple inputs to produce the output of pain (as well as our felt experience of our whole body in any moment)

neurosignature / neurotag - the output of the neuromatrix - e.g. an experience of pain

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FURTHER READING RECOMMENDATIONS:

Lorimer Moseley - bodyinmind.org, tamethebeast.org

David Butler - noigroup.com

Greg Lehman - greglehman.ca

Todd Hargrove - bettermovement.org

PainScience.com