PAIN

DEFINITION:

Pain perception is a product of nociceptive input that is progressively modified at the spinal cord and brain levels to provide a perception of pain, which may have little to do with the initial stimulus intensity.

PAIN HAS MANY VALUABLE FUNCTIONS

- IT OFTEN SIGNALS INJURY OR DISEASE
- GENERATES A WIDE RANGE OF ADAPTIVE BEHAVIOURS
- PROMOTES HEALING THROUGH REST

DESPITE THESE BENEFICIAL ASPECTS OF PAIN, THERE ARE NEGATIVE FEATURES THAT CHALLENGE OUR UNDERSTANDING OF THE PUZZLE OF PAIN.

NEGATIVE FEATURES OF PAIN

- PERSISTENT PHANTOM LIMB PAIN AFTER AMPUTATION OR TOTAL SPINAL CORD TRANSECTION

PAIN IS A PERSONAL, SUBJECTIVE EXPERIENCE INFLUENCED BY CULTURAL LEARNING, THE MEANING OF THE SITUATION, ATTENTION, AND OTHER PSYCHOLOGICAL VARIABLES

Reference: WIREs Cogn Sci 2013, 4:1–15. Doi: 10.1002/wcs.1201

PHYSICAL PAIN

SIGNALS THE PRESENCE OF NOXIOUS, TISSUE-DAMAGING CONDITIONS

EMOTIONAL PAIN

AN UNPLEASANT SENSORY AND EMOTIONAL EXPERIENCE ASSOCIATED WITH THE ACTUAL OR POTENTIAL TISSUE DAMAGE OR DESCRIBED IN TERMS OF SUCH DAMAGE

PHYSIOLOGY OF PAIN

- Nociceptors Are The Receptors For Pain. They Are Free Nerve Endings Found In Every Tissue Of The Body, Except For The Brain.
- Intense Thermal, Mechanical Or Chemical Stimuli Can Activate Nociceptors.
- Tissue Irritation Or Injury Releases Chemicals (Prostaglandins, Kinins, Potassium Ions) That Stimulate Nociceptors
- Pain May Persist Long After The Pain-Producing Stimulus Is Removed Because Pain-Mediating Chemicals Linger, And Because Nociceptors Exhibit Very Little Adaptation. This phenomenon is the focus of much investigation. Current research suggests that pain persistence may also be the result of stimulus arising from the glial cells within the CNS.

TYPES OF PAIN:

There are 2 types of Pain: FAST and SLOW

FAST: Pin prick

- Occurs usually within 0.1 seconds after a stimulus is applied
- Nerve impulse transmits along a medium diameter myelinated A fiber
- This pain is also known as acute, sharp, pricking
- Fast pain is not felt by deeper tissues of the body

TYPES OF PAIN:

SLOW: Tooth ache

- Occurs a second or more after the stimulus is applied
- It then gradually increases in intensity over a period of several seconds/minutes
- Nerve impulses are transmitted along unmyelinated C fiber
- This type of pain also referred to as chronic, burning, aching, or throbbing pain
- Slow pain can occur in skin and deeper tissues, or internal organs

GATE CONTROL THEORY

Melzac and Wall's Gate Control Theory of Pain- The "gate" is a network of nerves in the spinal region. When closed, the gate can block the transmission of slow moving small fiber pain impulses to the brain. The blocking occurs by stimulating the larger, fast moving sensory nerve fibers through stimulation of the proprioceptive and cutaneous nerve receptors, therefore pain intensity can temporarily be reduced over a period of minutes or hours through additional sensory input.

The closing of the "gate" can be achieved by:

- Instinctively rubbing, massaging, or brushing the skin the way one does when injured.
- Deep focal massage including frictions
- Rhythmic movement of the body including oscillations of joint play techniques

ACUTE PAIN

- Either a symptom of a disease, condition or a temporary aspect of medical treatment
- Acts as a warning sign
- It is usually of sudden onset and easily localized
- Client can usually describe the pain and usually subsides with or without treatment

CHRONIC PAIN

- Is a major health problem for approximately 25% of the population
- It is pain that persists or recurs for indefinite periods of time, usually longer that 6 months
- Usually has an obscure onset and characteristics and quality changes over time
- Anxiety, sleep disturbances and depression are common
- Usually diffuse and poorly localized
- Affected and modified by the following: culture, environment, emotional state, sleep deprivation, opiate effects, gender, patient related activities such as cigarette smoking or continued heavy labour with multiple re-injuries