

PHYSIOLOGY OF ACUTE PAIN

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The International Association for the Study of Pain defines "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Pain is always subjective. It is a sensation in a part of the body, but is also unpleasant, and therefore also an emotional experience."

The Pain pathway has

- a. Peripheral receptors
- b. Neural pathways
- c. Spinal cord mechanism and long tracts
- d. Brain stem, thalamus, cortex and other areas.
- e. Descending pathways.

There are 2 distinct responses to a painful stimulus, a "first pain" and a "second pain". First pain is sharp, pricking and is localized. The receptors are high threshold mechanoreceptors which are specific nociceptors. Second pain is dull and aching and poorly localized. Receptors are polymodal nociceptors. Visceral pain is a type of second pain.

"First pain" is conveyed to the dorsal horn of the spinal cord in small myelinated A delta fibres. "Second pain" is conveyed in non myelinated c fibres. These fibres make initial connections in the laminae of the spinal grey matter, form local interconnections and ascend in the spino-reticular diencephalic pathway or the spinothalamic tract.

Pain sensation is modulated from 3 main areas, cortex, thalamus and brainstem where the periaqueductal grey matter is important.

The response to visceral pain is tonic muscular spasm whereas somatic pain causes withdrawal of the affected part of the body.