



Comfort

Pain Mechanisms

Overview

The neural mechanisms by which pain is perceived are part of a process that involves four major steps: 1) transduction; 2) transmission; 3) perception; and 4) modulation. The transduction and transmission steps relate to the neurochemical signals of actual or impending tissue damage (nociceptive stimuli). Not all nociceptive stimuli are perceived as pain. If there is sufficient modulation of signals and the perception of nociceptive events is prevented, there is no pain. Perception is critical to sensing pain. Modulation, either enhancing or inhibiting nociception, is also crucial to pain perception. A person's emotions are an important source for pain modulation. Most pain management techniques probably mimic endogenous pain inhibition processes. Conversely, pain that is difficult to relieve probably results from enhanced nociceptive signals, sometimes fueled by the person's emotional state. Additional details about these four steps provide a foundation for nursing practice in the management of pain in all people, including those facing the end-of-life transition.