

# Understanding Back Pain

## Mechanisms of Chronic Pain

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The term plasticity refers to structural changes in the connections between nerves. This term is generally applied to changes which take place in the spinal cord or brain. Plasticity can alter pain perception and musculoskeletal function of the spine. The tissues of the spine are innervated by a variety of specialized nerve endings (sensory receptors) and pain fibers. Many of these nerve receptors are not active when normal movements are performed, but they are activated when a stimulant such as trauma, or inflammation is present.

Once specialized nerve receptors become activated, nerve impulses travel towards the spinal cord and brain. This results in the release of various specialized chemicals within the central nervous system such as substance P. A chronic pattern of abnormal nerve and/or sensory receptor activation leads to structural and functional changes in the connections between nerves in the spinal cord and brain. This can perpetuate or intensify pain duration, intensity and pain distribution.