



Brain, Nerves and Chronic Pain

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Basics Session

Neurophysiology of Chronic Pain: Learning from the past and looking to the future

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SUMMARY

The idea that pain is processed by the brain has been accepted since the 1600's. In the past, it was thought that pain signals went straight from the body to the brain. But research has shown that as a pain signal travels, there are complex interactions between nerves in your spine and nerves in your brain. These interactions can either decrease or increase the strength of the pain signal. The strength of the signal may be changed by mood, sleep, stress and even by someone's genetic make-up. This can explain why people experience pain in different ways.

Chronic pain is usually defined as pain lasting more than 6 months. In patients with chronic pain the type and strength of pain signals may be altered. In a normal system Pain signals are sent when something is wrong. In chronic pain your body can start sending signals to the brain when nothing is wrong. At the same time, your brain has difficulty controlling those signals. This results in something called central sensitization. You can think of your spinal cord as a volume control. When your system is sensitized, your volume is turned all the way up.

With so many factors determining your individual pain response, it is no wonder that there is no easy solution to chronic pain. Your pain should be treated on an individual basis, and this treatment should look beyond surgery and medication. Physical therapy, occupational therapy, counseling or stress reduction, alternative medicine, family support and other procedures should all be considered.