

CHRONIC PAIN IS ASSOCIATED WITH DECREASED PREFRONTAL AND THALAMIC GRAY MATTER DENSITY

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FROM ABSTRACT:

We compared brain morphology of 26 chronic back pain (CBP) patients to matched control subjects, using magnetic resonance imaging brain scan data and automated analysis techniques.

CBP patients were divided into neuropathic, exhibiting pain because of sciatic nerve damage, and non-neuropathic groups.

Neocortical gray matter volume was compared after skull normalization. Patients with CBP showed 5-11% less neocortical gray matter volume than control subjects.

KEY POINTS:

- 1) 10% of adults suffer from severe chronic pain.
- 2) In 85% of those with back pain, “no definitive diagnosis can be made.”
- 3) Chronic back pain of more than 6 months duration causes abnormal brain chemistry implying neurological loss or dysfunction, reducing cognitive function and causing abnormal brain wave patterns.
- 4) Chronic back pain shrinks the gray matter of the brain by 5-11%. This brain shrinkage is equivalent to 10-20 years of normal aging.
- 5) The longer a person has chronic back pain, the more their brain shrinks. The brain shrinks 1.3 cm³ for every year of chronic back pain.
- 6) Chronic pain also greatly diminishes quality of life and increases anxiety and depression.
- 7) Some of the gray matter shrinkage noted in this study may be reversible with proper treatment, but some of the atrophy may not be reversible because it is attributable to neurodegeneration. The greater atrophy of the brain, the “more irreversible and less responsive to therapy” the patient becomes.

COMMENTS:

Recall the study by Giles (Spine, July 15, 2003) comparing chiropractic spinal adjusting to needle acupuncture and to the drugs Celebrex and Vioxx for the treatment of chronic spinal pain. Chiropractic spinal adjusting was 5 times more effective than the drugs, and nearly three times more effective than needle acupuncture in that study. Importantly, Mullen (JMPT, January 2005) published a one-year follow-up to the Giles study that showed the reduction in pain from Chiropractic adjustments remained stable, while the few who benefited from drugs and acupuncture had quickly regained their pain after cessation of treatment.

This argues that chiropractic spinal adjusting is the best treatment for chronic spine pain and for preventing related brain shrinkage and atrophy.