

**LIMBIC-CENC Clinical Care Monographs:**  
**Persistent Symptoms after mild TBI: Pain and Neuroimaging**

**Key Finding:** LIMBIC-CENC researchers found that using MRI data, chronic pain is associated with decreased functional connectivity in certain brain networks.<sup>12</sup>

**Perspective:** Pain may disturb brain functioning through a spill-over effect.

**Clinical Pearl:** Modulation of brain networks through biofeedback or other means to reduce pain and improve brain function seems an appealing treatment approach, however more research is needed to formulate clinical recommendations.

**References:**

1. *Functional brain connectivity and cortical thickness in relation to chronic pain in post-911 veterans and service members with mTBI.* Newsome MR, Wilde EA, Bigler ED, Liu Q, Mayer AR, Taylor BA, Steinberg JL, Tate DF, Abildskov TJ, Scheibel RS, Walker WC, Levin HS. *Brain Inj.* 2018;32(10):1236-1244. doi: 10.1080/02699052.2018.1494853. Epub 2018 Jul 26. PMID: 30047797

*n.b.: The 'Perspectives' and 'Clinical Pearls' expressed are based on interpretation of findings from the described Long-term Impact of Military-related Brain Injury Consortium/Chronic Effects of Neurotrauma Consortium (LIMBIC-CENC) research studies and their assimilation with the extant literature. These views are endorsed by LIMBIC-CENC leadership but may vary across individual researchers. All findings involve Service Members (SMs), Veterans (Vs) or both.*

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