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Functional brain activity during motor control and pain processing in chronic jaw pain

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Abstract

Changes in brain function in chronic pain have been studied using paradigms that deliver acute pain-eliciting stimuli or assess the brain at rest. Although motor disability accompanies many chronic pain conditions, few studies have directly assessed brain activity during motor function in individuals with chronic pain. Using chronic jaw pain as a model, we assessed brain activity during a precisely controlled grip force task and during a precisely controlled pain-eliciting stimulus on the forearm. We used multivariate analyses to identify regions across the brain whose activity

together best separated the groups. We report 2 novel findings. First, although the parameters of grip force production were similar between the groups, the functional activity in regions including the prefrontal cortex, insula, and thalamus best separated the groups. Second, although stimulus intensity and pain perception were similar between the groups, functional activity in brain regions including the dorsal lateral prefrontal cortex, rostral ventral premotor cortex, and inferior parietal lobule best separated the groups. Our observations suggest that chronic jaw pain is associated with changes in how the brain processes motor and pain-related information even when the effector producing the force or experiencing the pain-eliciting stimulus is distant from the jaw. We also demonstrate that motor tasks and multivariate analyses offer alternative approaches for studying brain function in chronic jaw pain.

Pain: A Randomized Clinical Trial
JAMA Neurology 2018; 75(7): 808–817.

PAIN PROCESSING ALTERATIONS IN FEMALES WITH CHRONIC PATELLOFEMORAL PAIN: OPL50
journal of Orthopaedic & Sports Physical 2017; 47(1): A23.