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Subclinical neck pain impairs cognitive ability which can be improved by chiropractic treatment: A four week longitudinal study with a healthy control group comparison

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The research objective was to determine if the cognitive effects of neck pain could be reduce significantly with the chiropractic treatment. The research methods included the recruitment of 42 right handed subjects between ages of 18 and 45 years. 28 of these subjects had neck pain, and 14 subjects were without neck pain and were used as healthy controls. The neck pain group was split into two groups which were the "treatment" and "control" groups. Each subject completed 3 different cognitive tests which were the intra/extra dimensional test (IED), rapid visual processing (RVP) test and the spatial span (SSP) test using Cambridge Cognition software. Subjects were tested before and after 4 weeks. During those 4 weeks the neck pain treatment group received chiropractic treatment. The research outcomes were a significant difference between the healthy subject's baseline and the neck pain control group and the neck pain treatment groups) during the RVP test. There was a significant difference between the neck pain control group and the neck pain treatment group in the RVP and IED findings. For the SSP findings, there was a significant difference between the healthy subject's baseline. The interpretation is at baseline that the subclinical neck pain individuals performed worse than the healthy controls on the RVP, IED and the SSP tests of cognitive function. The working population can have reduced cognitive processing due to low grade neck pain which can increase workplace errors, affecting the safety and productivity.

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## Multimodal therapy to manage elder patients with persistent pain

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**Introduction & Aim:** Chronic pain in geriatric patients represents a very common complaint in our daily clinical routine. The geriatric day hospital at the Nuremberg Medical Center developed a novel therapeutic concept particularly designed for the treatment of the elderly multimorbid patient (average 75 years) with chronic pain. In the multimodal targeted therapy program principally non-pharmacological measures are used to treat chronic pain i.e. a newly conceived pain education. Evaluation of initial results will be examined to find out how geriatric patients suffering from chronic pain can exert a positive influence on their well-being and activity by helping themselves.

**Methods:** Checks at the beginning and end of the procedure will be undertaken and evaluated in a geriatric assessment i.e. psychological (hospital anxiety depression scale (HADS)) and physical parameters (short physical performance battery (SPPB) and Tinetti-test).

**Results:** The program helped for the first time to visibly increase the wellbeing of the 166 patients with chronic pain and also their daily activities by teaching those methods to help them. At the beginning the higher values of anxiety, depression, inactivity and tendency to fall were at the end clearly improved.

**Discussion:** This investigation should stimulate the discussion on which medical parameters for persistent pain in geriatric patients can be applied for assessment, diagnosis, follow-up, and treatment.

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