

Die Rumpfmuskel-Kontrolle bei Patienten mit chronisch-unspezifischem Rückenschmerz

Trunk postural control in patients with low-back pain

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In this presentation, I will give an overview of the results of a project on stabilization of trunk posture. The aim of this project was to develop methods to assess trunk control in patients with low-back pain. We studied the importance of proprioceptive, visual, vestibular and tactile feedback for control of trunk posture in relation to the mechanical environment and showed the dominance of proprioceptive feedback in maintenance of upright trunk postures in conditions that would be typical for many daily-life situations. We developed a systems identification method to quantify proprioceptive feedback and used this to assess trunk stabilization in healthy subjects and patients with low-back pain. Results indicate higher resistance to perturbations of upright trunk posture in low-back patients than in healthy controls, mainly caused by higher reflex gains. Patients show less modulation of reflex gains between tests performed with the instructions to maximally resist perturbation or to allow movement to occur. These changes in trunk control are correlated to pain-related beliefs and may hence be mediated by fear of pain. Low-back pain patients appear to maximize control over trunk posture, at the cost increased control effort and spinal loading.