Neuroplasticity, Motor control, Cutting-Edge Technology & Rehabilitation

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INTRODUCTION: The use of EMG biofeedback in workplace ergonomic intervention is well established. Its systematic application in tailored neck pain rehabilitation is, however, less developed.

AIM: To introduce a tailored and gradually progressive biofeedback training program for trapezius myalgia and to assess the feasibility and the subjective experience of the program.

METHODS: The study sample was a subgroup in an ongoing randomized controlled trial (RCT) to evaluate 11-weeks of individualized neck pain rehabilitation in women with at least six weeks of work related nonspecific neck pain (target number of participants 105, ISRCTN49348025). The intervention period included 27 treatment sessions. The treatment decision model for the individualization of the RCT included five main treatment components of which biofeedback training was one. Each subject was assigned two treatment components at minimum. Criterion for being assigned biofeedback training was a diagnosis of trapezius myalgia and a cut off level of pain pressure threshold, defined by previous cross sectional data. The biofeedback treatment program consisted of eight standardized exercises with gradual progression of difficulty level followed by functional training in specific tasks individualized for each subject. The latter were disentangled with the Problem Elicitation Technique (Bakker et al. 1995) and indicated the activities that were most important to the individual and most difficult to do because of the neck pain. In the functional training, principles of motor learning were applied in order to enhance retention of the training tasks and transfer to new tasks and environments. The ability to perform three standardized biofeedback exercises and the clinical applicability of the individualized program was evaluated by subjects and therapists (n=4).

RESULTS: Preliminary result from the therapist evaluation shows a positive opinion about the biofeedback program. To date, 60% of the 105 subjects planned for the RCT have been recruited. Based on the number of subjects fulfilling the criterion so far for biofeedback training, we expect the final sample to be around 18 subjects. Results will be ready in June 2012.

CONCLUSION: This study will provide valuable information on the feasibility and applicability of gradually progressive biofeedback training as part of an intervention program addressing work related non-specific neck pain.

REFERENCE: