

# **Flotation Restricted Environmental Stimulation Technique for Treatment of Back Pain - a Prospective Randomized Controlled Trial**

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Flotation restricted environmental stimulation technique (flotation REST) is increasingly used in medical rehabilitation. Several studies are showing therapeutic effects in psychological and psychosomatic diseases. Data about clinical use in orthopaedics is rare but promising. Guidelines for treatment of back pain are mentioning physiotherapy and physical therapy including manual and heat therapy as preferential treatment, although no reliable evidence can be found. Thus the present prospective randomized controlled study analyzes the outcome of flotation REST compared to manual and heat therapy for treatment of non-specific acute back pain. Criteria of interest were pain by means of visual analog scale, paravertebral muscle tone assessed using an own drawn classification, and limitations in working life and private life evaluated by standardized clinical questionnaires.

Between 09/2011 and 08/2012 40 patients being diagnosed with back pain following clinical examination and standardized clinical questionnaires have been randomized. Patients with neurological failures, acute trauma, and chronic pain syndrome were excluded. 20 patients obtained three sessions of flotation REST or manual and heat therapy. Therapy was performed within 72 h after consultation and every third day. Follow-up assessment 72 h after final therapy unit includes clinical examination and standardized clinical

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questionnaires equal to initial assessment. For statistical analysis Student's t-test, Wilcoxon signed rank test, Chi-square test, and Levene test were determined with significance assigned to P values of  $\leq 0.05$ .

40 patients were available (follow-up rate 100%) with mean age of 32.7 (23-56) years in the verum and 36.0 (23-71) years in the sham group. After therapy all criteria of interest showed significant improvement both in verum and sham group. Pain rating by visual analogue scale decreased from 6.6 to 2.9 (verum) and from 6.1 to 3.2 (sham). Paravertebral muscle tone was graded with 2 or 3 before therapy in 82% (verum) respectively 94% (sham) and after therapy with grade 2 in 38% and grade 0-1 in 62% (verum) respectively 48% grade 2 and 52% grade 0-1 (sham). Limitations in working life were mentioned by 90% (verum) and 94% (sham) as moderate or severe before therapy. At final assessment 76% (verum) and 50% (sham) showed no limitations in working life. Limitations in private life were mentioned by 80% (verum) and 86% (sham) as moderate or severe before therapy. At final assessment 54% (verum) and 84% (sham) showed no limitations in working life. The present study demonstrates, for the first time, significant improvement regarding pain and clinical findings after treatment of back pain with flotation REST. Compared to accepted strategy with manual and heat therapy the outcome is comparable. These findings suggest that Flotation REST can be successful used for therapy of back pain without neurological failures.

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