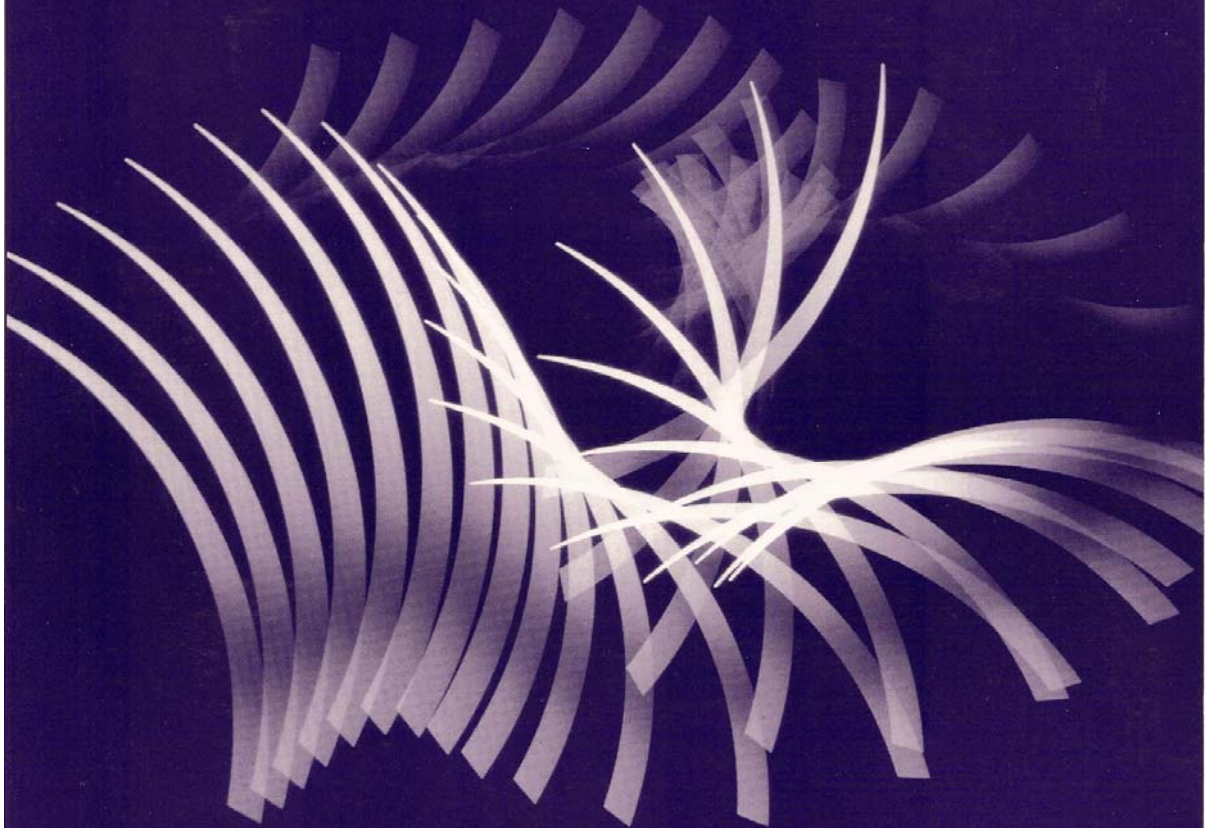


VOL. 15, NO. 1

2007

ISSN 0959-3020
IESCEE 15(1) 1-68

Isokinetics and Exercise Science



IOS Press

Official Journal of the European Interdisciplinary Society for Clinical and
Sports Application

Whole body vibration in the treatment of fibromyalgia: influence on muscle performances

D Maquet, L Helene, C Demoulin, JM Crielaard, JL Croisier

Departement of Motricity Sciences, University of Liege, University Hospital Center, Belgium

Introduction

Whole-body vibration (WBV) is a neuromuscular training method that has rapidly gained in popularity in health and fitness centres. However, limited data are available about the benefits of WBV on muscular performances. The aim of the study was to investigate the opportunity to implement the treatment of fibromyalgia patients with WBV. In that purpose, we have assessed tolerance of WBV sessions and consequences on muscle performances in such patients.

Material and methods

Twenty-three women suffering from fibromyalgia participated in the study. Patients were included into 2 groups: WBV group (n = 13, 46 ± 4 years old, 71 ± 5 kg) and control group (n = 10, 47 ± 3 years old, 65 ± 4 kg).

During a 10-week experimental period, all subjects were involved in an aerobic rehabilitation program. Patients allocated to the WBV group additionally performed static exercises on a vibration platform (30-35 Hz, 1.5-3 mm, Gymna Fitvibe Medical[®]), two times per week.

Outcome measures were recorded by means of the chair rising test, isokinetic measurements (strength and fatigue protocols), a static endurance test, an ergometer test and the sit and reach test. Pain was evaluated by means of a Visual Analogue Scale (VAS) and a dolorimeter. Other endpoints were the Fibromyalgia Impact Questionnaire score (FIQ), the Fatigue Severity Scale score (FSS), the Hospital Anxiety and Depression score, the Health Status score and the Satisfactory score.

Results

Benefits of aerobic rehabilitation in fibromyalgia patients have been documented previously [1]. In our study, muscle performances improved in both groups of patients at the end of the training programs. The chair rising test and the fatigue isokinetic assessment (with regard to relative cumulative work of knee flexors) indicated greater training-induced changes in the WBV group than in the control group (respectively $p = 0.0001$ and $p = 0.02$). No significant difference between groups occurred with regard to pain, FIQ and FSS scores. Ten patients (77 %) of the WBV group completed the program and the results of the satisfaction questionnaire indicated that the patients were favourable to benefit from additional WBV sessions.

Conclusion

This study confirms that fibromyalgia patients can perform WBV exercises in safe conditions. The benefits of the additional WBV exercises on muscle function remain to be further explored.

References

- [1] Maquet D, Croisier JL, Demoulin C, Faymonville M, Crielaard JM. Value of aerobic rehabilitation in the management of fibromyalgia. *Rev Med Liege*, 61(2):109-16, 2006.