

MBT ROLE IN RECOVERY POSTURAL CONTROL

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Summary

In our contemporary society, marked by the development of human civilization, we face more and more diseases and pain, caused by the daily lifestyle for each of us. The influence of these features of civilization are felt in the health of our legs, forced to bear the throbbing rhythm within an artificial urban context. Should not surprise us the gradual atrophy and the overuse of the joints and hence the list may continue.

Introduction

For 10 years, Karl Müller and his team of specialists (doctors, physiotherapists, etc...), built a sole with multiple layers based on core „Masai Sensor” for the purpose of recreating natural conditions of walking on soft and uneven soils. Keeping the natural rolling movement, MBT creates an instability underfoot that has to be offset by increased muscle activity, this way the body is allowed to walk naturally and benefit from the stimulatory effects on locomotor system and the whole body.

The use of this type of therapeutic footwear has a beneficial effect on the whole body by activation of the muscles, improve posture, reducing the load on the hip and knee joints.

The important part of rehabilitation of static functions, is represented by training the balance function (ROBERTS, T.D.M., 1979). For training the stability there are used physical therapeutic exercises, static platforms and sensory stimulation processes. However, these methods do not always correspond to the requirements of modern recovery because of the limited control of performing tasks by the patient.

Material and method

By using MBT physiotherapy device and also by checking the through plantograms which registers the pressure exerted by the person sitting on platform (wearing the MBT devices) it can be observed the degree and extent of pressure performed at the time given by the review.

Prof. Dr. ATTILA SZÉPLAKI M.D., said that: MBT physiotherapy device (Masai Barefoot Technology) is combining a specially constructed shoe with a program of motion specially designed, built on the principle of simple and natural postural orthostatic and going further, natural walking.

The goal

The basic aim of the method of re-education of postural control by using the baropodometric platform is represented by establishing misconduct stability and vertical position asymmetry through plantogrames, and by using MBT devices, to educate postural control.

Reaching the achieve purpose is performed by teaching the patient to move the center of gravity (to hence the pressure) to the affected area which will induce an increased stability. (Karl M. 2004).

Reeducation mechanism of postural control (balance - vertical position) underlies the principle of using physiotherapy devices MBT that gives the possibility of correction of vertical body position of the patient, which must maintain its equilibrium in critical positions. (Benno Nigg, Sabrina Hintzen, Reed Ferber, 2006).

The basic component of the rehabilitation process is the registration center projection pressure parameters that reflect delayed stability. Recording is performed using the pressure boropodometric platform, which is placed on the patient. Centre pressure parameters are recorded, reflecting on your monitor screen and print plantogram print form. After performing the exercise program, the results are presented to the patient, then the program should be adjusted dynamic actions to be performed in each case. The program is made according to standard functional capabilities of a healthy individual. Usually the patient can not reach at once successively performing standard program. Therefore it is very important to induce the need to perform recuperative activities, motivation. In this case amid diminishing psycho-emotional state, it has great significance training and motivating the patient to a specialist.

In the present study I proposed to me to evaluate the efficiency of devices of Physiotherapy MBT in recovering the body

stability, associated with the patient's individual recovery program after stroke, to improve the postural control. Effectiveness of the method was studied based on the assessment of postural control development disorders and other basic clinical signs.

20 subjects aged 45-60 years, diagnosed with post stroke hemiparesis, balance is the stage of recovery were randomly divided into two equal groups: control group (with MBT) and an experimental group (without MBT). In the control group patients were selected by age, seniority and type of stroke, clinical and functional parameters did not differ from those in the experimental group.

The control group was followed for 45 minutes daily for a period of five weeks of physical therapy sessions in which MBT sites have been used for various exercises positions.

The experimental group followed the same program of physical therapy (rehabilitation), traditional exercises being conducted (using tablet balance, air mattresses, etc.), soft-unstable surfaces without MBT.

All patients were evaluated before treatment and at the end of the treatment.

The active treatment group had to wear MBT over a period of 5 weeks during daily activities as much as possible. Meanwhile, the control group had to perform daily home training program established by physiotherapists. The two groups were examined biomechanical and functional and have been requested parameter: a) before the start of recovery, b) after the end of three weeks of recovery, c) after 5 weeks. Uniipodal parameters were measured or bipod support through baropodometric and degree of spasticity.

Analysis uniipodal or bipod support enables:

- visualization and monitoring of the maximum pressure exerted on the plant in static state; every point of the fingerprint corresponds to a certain percentage of the maximum pressure thus can be spotted and quantified areas hypo or hyper support;
- identifying centers of gravity in static state;

Results:

Following the evaluation made through electronic baropodometric (baropodometric platform) were obtained footprint static data (static state evaluation). The relationship between the plantar surface and the supporting surface.

The average values of parameters baropodometric registered before and after treatment

SUBJECT	THE CONTROL GROUP- without MBT		THE EXPERIMENTAL GROUP-with MBT	
	INITIAL	FINAL	INITIAL	FINAL
IM healthy	62,2 %	58,7 %	62,8 %	54,1 %
IM affected	37,8 %	41,3 %	37,2 %	45,9 %

Table nr. 1 Static pressure in the lower limbs

SUBJECT	THE CONTROL GROUP- without MBT		THE EXPERIMENTAL GROUP-with MBT	
	INITIAL	FINAL	INITIAL	FINAL
IM healthy	33,2 %	29,5 %	33,6 %	28,6 %
IM affected	20,7 %	23,5 %	20,9 %	22,7 %

Table nr. 2 In static pressure - distal part of the sole (peak)

SUBJECT	THE CONTROL GROUP- without MBT		THE EXPERIMENTAL GROUP-with MBT	
	INITIAL	FINAL	INITIAL	FINAL
IM healthy	29 %	29,2 %	29,2 %	25,4 %
IM affected	17,1 %	17,8 %	16,3 %	23,3 %

Table nr. 3 The pressure while stationary - on the calcaneus

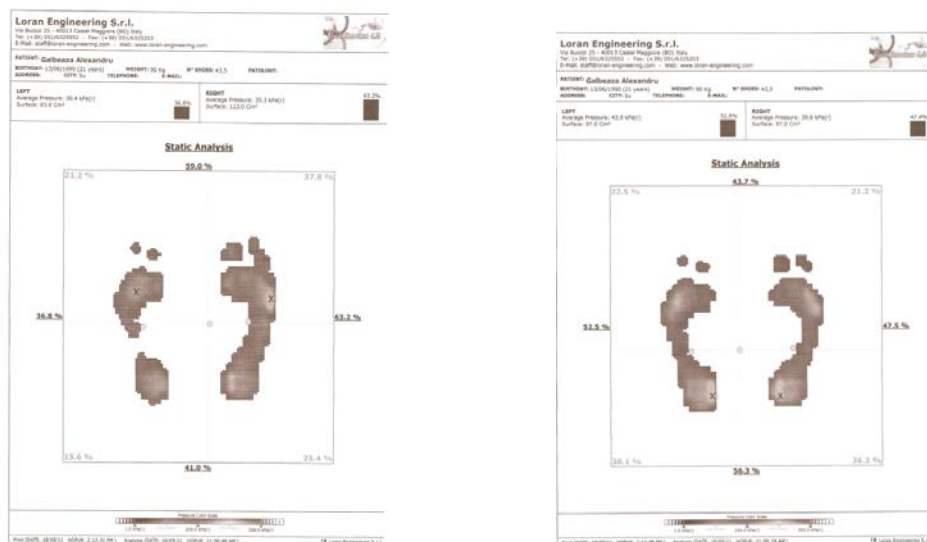
After processing the data recorded by electronic baropodometric show that subjects who carried out post stroke recovery treatments of physiotherapy devices using MBT, the average percentage of pressure exerted by the legs dipped final testing from baseline. Subjects who undergo rehabilitation treatment without MBT devices had an average percentage of lower pressure (4-5%) than the experimental group subjects. Which means the balance reflex reaction to correct balance is greater in subjects who were treated using MBT devices.

Evolution of the spasticity

THE EXPERIMENTAL GROUP		THE CONTROL GROUP	
Initial testing	Final testing	Initial testing	Final testing
2,16	1,43	2,14	1,86

Following assessment of spasticity can see the drop of spasticity in both cases, but with a higher percentage for the experimental group.

To illustrate referred below baropodometric analysis of a patient in the experimental group recorded before and after the course of treatment were applied kinesiology programs experimental physiotherapy devices using MBT.



Conclusions and suggestions

Based on the results obtained it can be seen that the inclusion in postural recovery sessions of physiotherapy devices MBT patients post-stroke contribute to the superior results in reducing spasticity rehabilitation and postural control in paralyzed lower limb.

As particularly important in the treatment (recovery) after stroke, balance can be restored. Treatment (recovery) is a classic solution and new technology gives us such an opportunity. Finding new methods and equipment helpful in recovering balance, statics post stroke must be a constant concern of specialists. Baropodometric platform and physiotherapy MBT device is a device that can evaluate, but also an opportunity to train him (retrain).

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MBT ȘI ROLUL LOR ÎN RECUPERAREA CONTROLULUI POSTURAL

Cuvinte cheie: accident vascular, recuperare, echilibru postural

Rezumat: În societatea contemporană, marcată de evoluția civilizației umane, ne confruntăm tot mai mult cu afecțiuni și dureri provocate de ritmul cotidian și stilul de viață al fiecăruia dintre noi. Influența acestor caracteristici ale civilizației moderne se resimt în sănătatea picioarelor noastre, forțate să suporte zilnic un ritm trepidant într-un context artificial urban. Nu trebuie să ne surprindă astfel atrofierea treptată a musculaturii și suprasolicitarea articulațiilor și de aici lista poate continua.