



Can Galileo Therapy improve muscle function and gait parameters in Spina Bifida patients ?

The answer is: YES

This study shows the effect of Galileo Therapy (Cologne Concept: 3x3 minutes, 10 session/week, 26 weeks) with Spina Bifida patients (5-13 years). Galileo Therapy not only decreased contractures in Hip and knee extension but also increased abilities in walking (+20%, GMFM-E) and standing (+36%, GMFM-D) as well as gait velocity by +50%.



Stark C, Hoyer-Kuhn HK, Semler O, Duran I, Schoenau E, et al.: Neuromuscular training based on whole body vibration in children with spina bifida: a retrospective analysis of a new physiotherapy treatment program.; Childs Nerv Syst, 31(2):301-9, 2015; PMID: 25370032; GID: 3658

Galileo Research Fact Sheet #148

Kinds-Therapy: Spina Bifida, Muscle Function

www.galileo-therapy.com

In this study from the group around Prof. Schönau from Cologne (Cologne concept: On the legs), the effects of Galileo therapy on contractures, muscle function and gait parameters in spina bifida (open spine at birth) patients were examined.

(Cologne concept: 3x3 minutes, 10 units per week, individual exercises) Before Galileo therapy, after 6 months Galileo therapy (pre) and after another 6 months without Galileo therapy (followup), the extent of contracture, and muscle function Measure gait parameters.

In addition to the very positive effects on contractures (# GRFS15) there was also a significant improvement of standing (GMFM dimension E) by + 20%, walking (GMFM dimension D) by 36%, and above all in the resulting walking speed of 50% %.

These very positive results could be partly maintained in the 6 consecutive months without Galileo but with individual standard therapy, in some cases they worsened again.

This suggests that using Galileo over a period longer than 6 months may be useful to stabilize or increase the positive results.

It should not be forgotten that a Galileo therapy, especially through the integration into a therapeutic overall concept, could exploit its full potential - because the functions developed by Galileo Therapy must be integrated into everyday movements in a second step.



[Childs Nerv Syst.](#) 2015 Feb;31(2):301-9. doi: 10.1007/s00381-014-2577-2. Epub 2014 Nov 5.

Neuromuscular training based on whole body vibration in children with spina bifida: a retrospective analysis of a new physiotherapy treatment program.

[Stark C¹](#), [Hoyer-Kuhn HK](#), [Semler O](#), [Hoebing L](#), [Duran I](#), [Cremer R](#), [Schoenau E](#).

INTRODUCTION:

Spina bifida is the most common congenital cause of spinal cord lesions resulting in paralysis and secondary conditions like osteoporosis due to immobilization.

Physiotherapy is performed for optimizing muscle function and prevention of secondary conditions. Therefore, training of the musculoskeletal system is one of the major aims in the rehabilitation of children with spinal cord lesions.

INTERVENTION AND METHODS:

The neuromuscular physiotherapy treatment program Auf die Beine combines 6 months of home-based whole body vibration (WBV) with interval blocks at the rehabilitation center: 13 days of intensive therapy at the beginning and 6 days after 3 months.

Measurements are taken at the beginning (M0), after 6 months of training (M6), and after a 6-month follow-up period (M12). Gait parameters are assessed by ground reaction force and motor function by the Gross Motor Function Measurement (GMFM-66).

Sixty children (mean age 8.71 ± 4.7 years) who participated in the program until February 2014 were retrospectively analyzed.

RESULTS:

Walking velocity improved significantly by 0.11 m/s ($p = 0.0026$) and mobility (GMFM-66) by 2.54 points ($p = 0.001$) after the training.

All changes at follow-up were not significant, but significant changes were observed after the training period. Decreased contractures were observed with increased muscle function.

CONCLUSION:

Significant improvements in motor function were observed after the active training period of the new neuromuscular training concept.

This first analysis of the new neuromuscular rehabilitation concept Auf die Beine showed encouraging results for a safe and efficient physiotherapy treatment program which increases motor function in children with spina bifida.

PMID: 25370032 DOI: 10.1007/s00381-014-2577-2