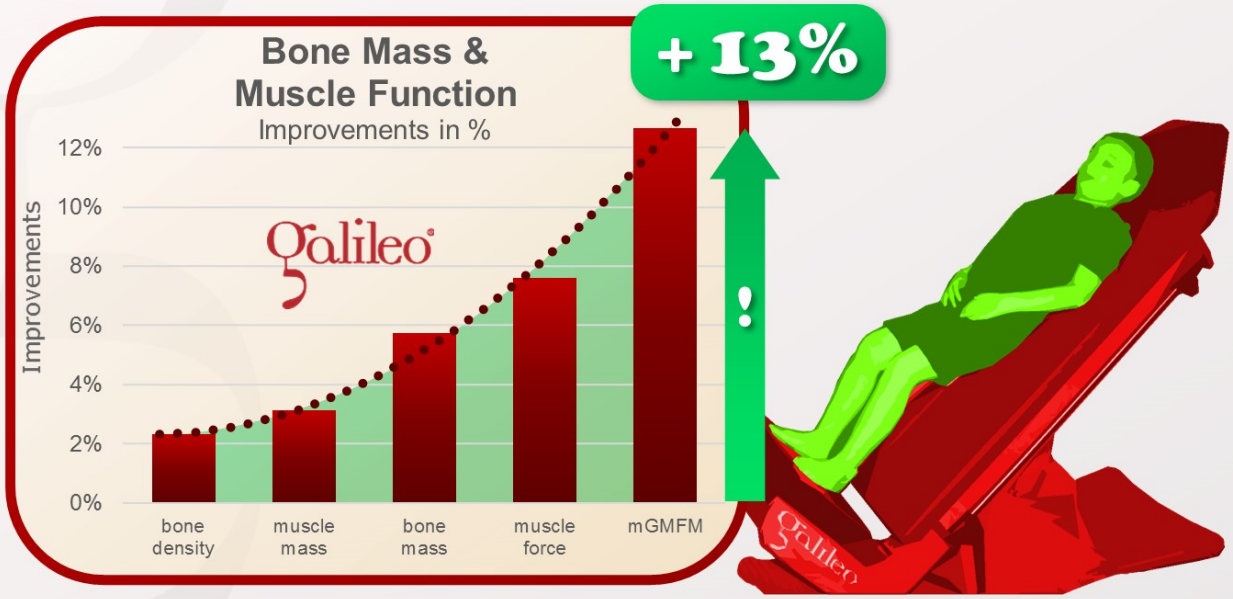
Can Galileo Training improve bone mass and muscle function in Cerebral Palsy (CP)?

The answer is: YES

This study documented the Effects of 6 month of home based Galileo Training (Cologne Concept) on bone parameters and muscle function in Children with Cerebral Palsy (CP, GMFM I-V, 2/day, 3*3 min., 6 months, individualize exercises). Galileo Training showed highly significant improvements in muscle mass (+3%), bone mass (+5.9%), muscle force /+7.8%) and muscle function & mobility (+12.8% mGFMF).



Stark C, Stabrey A, Semler O, Schoenau E, et.al.: Effect of a new physiotherapy concept on bone mineral density, muscle force and gross motor function in children with bilateral cerebral palsy; J Musculoskelet Neuronal Interact., 10(2):151-8, 2010; PMID: 20516632; GID: 2292

Galileo Research Fact Sheet #72 Kinder: CP (Cerebralparese) www.galileo-training.com

This was one of the first bigger publications about the very promising effects of the Cologne Concept of the group around Prof. Schoenau. The essential component of the Cologne Concept is 6 Months of home based Galileo Therapy.

To be able to provide this the parents are trained to conduct the therapy with their children. For each child an individual exercise plan is created in an initial 2 week stay at the hospital.

Then over a period of 6 months typically 10 session (3x3 minutes) per week are performed. As in their other publications the group could show positive effects of Galileo Training not only in Cerebral Palsy (CP, #GRFS14) but also in kids with Osteogenesis Imperfecta (OI, #GRFS52), Spinal Muscle Atrophy (SMA, #GRFS58), Duchenne (#GRFS57) or Spina Bifida (#GRFS15).

Typically significant improvements in muscle function, mobility, gait quality and as shown here bone density and bone mass could be shown.

Therefore Galileo Training is an ideal therapy type in children with neuromuscular diseases.

J Musculoskelet Neuronal Interact. 2010 Jun;10(2):151-8.

Effect of a new physiotherapy concept on bone mineral density, muscle force and gross motor function in children with bilateral cerebral palsy.

Stark C[1], Nikopoulou-Smyrni P, Stabrey A, Semler O, Schoenau E.

Abstract

OBJECTIVE:

The purpose of this study was to determine the effect of a new physiotherapy concept on bone density, muscle force and motor function in bilateral spastic cerebral palsy children.

METHODS:

In a retrospective data analysis 78 children were analysed. The concept included whole body vibration, physiotherapy, resistance training and treadmill training. The concept is structured in two in-patient stays and two periods of three months home-based vibration training. Outcome measures were dual-energy x-ray absorption (DXA), Leonardo Tilt Table and a modified Gross Motor Function Measure before and after six months of training.

RESULTS:

Percent changes were highly significant for bone mineral density, -content, muscle mass and significant for angle of verticalisation, muscle force and modified Gross Motor Function Measure after six months training.

CONCLUSIONS:

The new physiotherapy concept had a significant effect on bone mineral density, muscle force and gross motor function in bilateral spastic cerebral palsy children. This implicates an amelioration in all International Classification of Functioning, Disability and Health levels. The study serves as a basis for future research on evidence based pediatric physiotherapy taking into account developmental implications.

PMID:20516632