

One of the most well known centers in the world, which successfully uses Galileo therapy in children, especially with cerebral palsy (CP), is certainly the University of Cologne with its project "On its feet".

The group around Prof. Schönau is a world leader in Galileo therapy in children with neurological diseases. But also abroad, there are many facilities that use Galileo therapy very successfully - as the group around Prof.

Munns in Sydney, Australia has here together with the working group of Hofman from Auckland, New Zealand together published an interesting CP study.

Especially in older CP patients, it is usually difficult to achieve a significant improvement in function. However, Munns was able to show that intensive Galileo therapy at 20 Hz for 20 weeks showed a significant improvement in the walking distance, in particular in the patients with poorer muscle function (GRFCS) Level III) by an average of 35%.

The muscle and bone mass could be significantly improved. The study shows what Galileo therapy at the level of muscle function can achieve in a relatively short time.

It is precisely this improvement in muscle mass and muscle performance (so to speak, in addition to classical therapy, the additional muscle building similar to the training of athletes) is a key reason why additional Galileo therapy can make the classic therapy much more efficient.



Sci Rep. 2016 Mar 3;6:22518. doi: 10.1038/srep22518.

## Effects of whole-body vibration training on physical function, bone and muscle mass in adolescents and young adults with cerebral palsy.

Gusso S<sup>1</sup>, Munns CF<sup>2</sup>, Colle P<sup>1</sup>, Derraik JG<sup>1</sup>, Biggs JB<sup>1</sup>, Cutfield WS<sup>1</sup>, Hofman PL<sup>1</sup>.

We performed a clinical trial on the effects of whole-body vibration training (WBVT) on muscle function and bone health of adolescents and young adults with cerebral palsy.

Forty participants (11.3-20.8 years) with mild to moderate cerebral palsy (GMFCS II-III) underwent 20-week WBVT on a vibration plate for 9 minutes/day 4 times/week at 20 Hz (without controls).

Assessments included 6-minute walk test, whole-body DXA, lower leg pQCT scans, and muscle function (force plate). Twenty weeks of WBVT were associated with increased lean mass in the total body (+770 g; p = 0.0003), trunk (+410 g; p = 0.004), and lower limbs (+240 g; p = 0.012).

Bone mineral content increased in total body (+48 g; p = 0.0001), lumbar spine (+2.7 g; p = 0.0003), and lower limbs (+13 g; p < 0.0001).

Similarly, bone mineral density increased in total body (+0.008 g/cm(2); p = 0.013), lumbar spine (+0.014 g/cm(2); p = 0.003), and lower limbs (+0.023 g/cm(2); p < 0.0001).

Participants reduced the time taken to perform the chair test, and improved the distance walked in the 6-minute walk test by 11% and 35% for those with GMFCS II and III, respectively.

WBVT was associated with increases in muscle mass and bone mass and density, and improved mobility of adolescents and young adults with cerebral palsy.

PMID: 26936535 PMCID: PMC4776132 DOI: 10.1038/srep22518