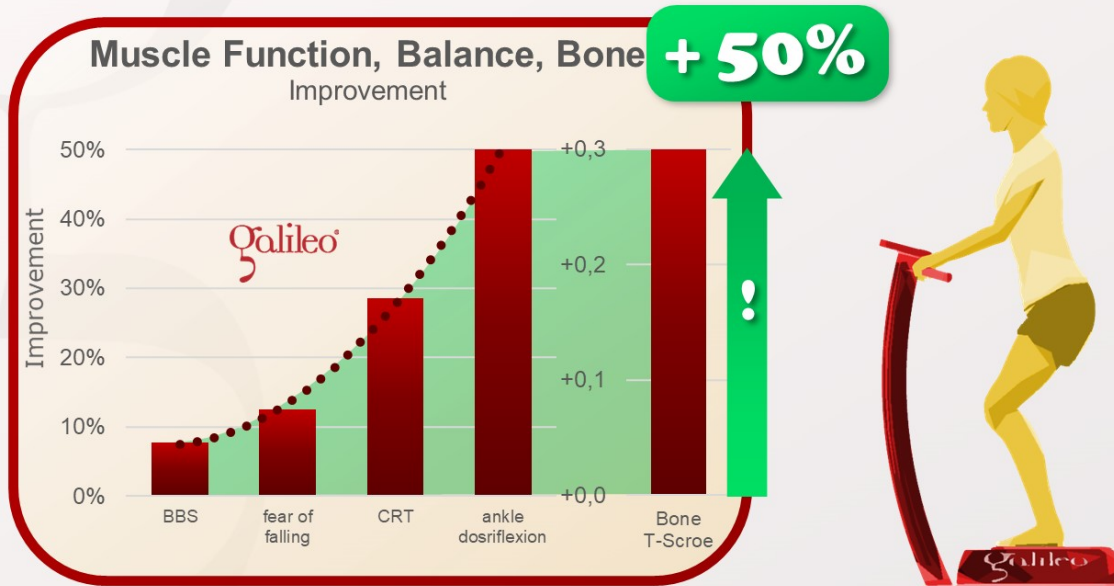


Can Galileo Training reduce fall-risk and fracture-risk in elderly ?

The answer is: YES

This study investigated the effects of 8 weeks of Galileo Training on mobility, muscle power, fall- and fracture-risk and bone parameters (age 60-80, 20Hz, pos. 3, 20° squat, 5*1 min, 3/week, 8 weeks). Galileo Training improved balance (Berg Balance Scale, BBS) by 8%, muscle power (CRT) by 28%, increased flexibility (range of motion) by up to 50% and increased the Calcaneus T-Score by 0.3 SD.



Yang F, King GA, Dillon L, Su X: Controlled whole-body vibration training reduces risk of falls among community-dwelling older adults.; J Biomech, 48(12):3206-12, 2015; PMID: 26189095; GID: 3963

The real birth of Galileo Training: Healthy aging for muscle, neurologic system and bone – once more this study shows what even a low dose of Galileo Training can achieve in just 8 weeks.

In this case 60 to 80 year old were trained at 20Hz with a 20° squat 5 times 1 minute, 3 times per week of 8 weeks.

The results show a significant improvement in balance, mobility, fear of falling and muscle function/muscle power - but also an increase in bone density (+0.3 SD T-Score at the calcaneus – however these bone parameters need to be interpreted carefully, because the used measurement technique was ultrasound at the heel...)

Nevertheless the results are remarkable when considering that this study was designed as a safety study which used low intensity Galileo Training

– using higher intensity (e.g. deep squat at higher frequencies >25Hz) would have caused even higher effects.



[J Biomech.](#) 2015 Sep 18;48(12):3206-12. doi: 10.1016/j.jbiomech.2015.06.029. Epub 2015 Jul 6.

Controlled whole-body vibration training reduces risk of falls among community-dwelling older adults.

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Abstract

The primary purpose of this study was to systematically examine the effects of an 8-week controlled whole-body vibration training on reducing the risk of falls among community-dwelling adults. Eighteen healthy elderly received vibration training which was delivered on a side alternating vibration platform in an intermittent way: five repetitions of 1 min vibration followed by a 1 min rest. The vibration frequency and amplitude were 20 Hz and 3.0mm respectively.

The same training was repeated 3 times a week, and the entire training lasted for 8 weeks for a total of 24 training sessions. Immediately prior to (or pre-training) and following (or post-training) the 8-week training course, all participants' risk of falls were evaluated in terms of body balance, functional mobility, muscle strength and power, bone density, range of motion at lower limb joints, foot cutaneous sensation level, and fear of falling.

Our results revealed that the training was able to improve all fall risk factors examined with moderate to large effect sizes ranging between 0.55 and 1.26.

The important findings of this study were that an 8-week vibration training could significantly increase the range of motion of ankle joints on the sagittal plane (6.4° at pre-training evaluation vs. 9.6° at post-training evaluation for dorsiflexion and 45.8° vs. 51.9° for plantar-flexion, $p < 0.05$ for both); reduce the sensation threshold of the foot plantar surface ($p < 0.05$); and lower the fear of falling (12.2 vs. 10.8, $p < 0.05$).

These findings could provide guidance to design optimal whole-body vibration training paradigm for fall prevention among older adults.

PMID:26189095