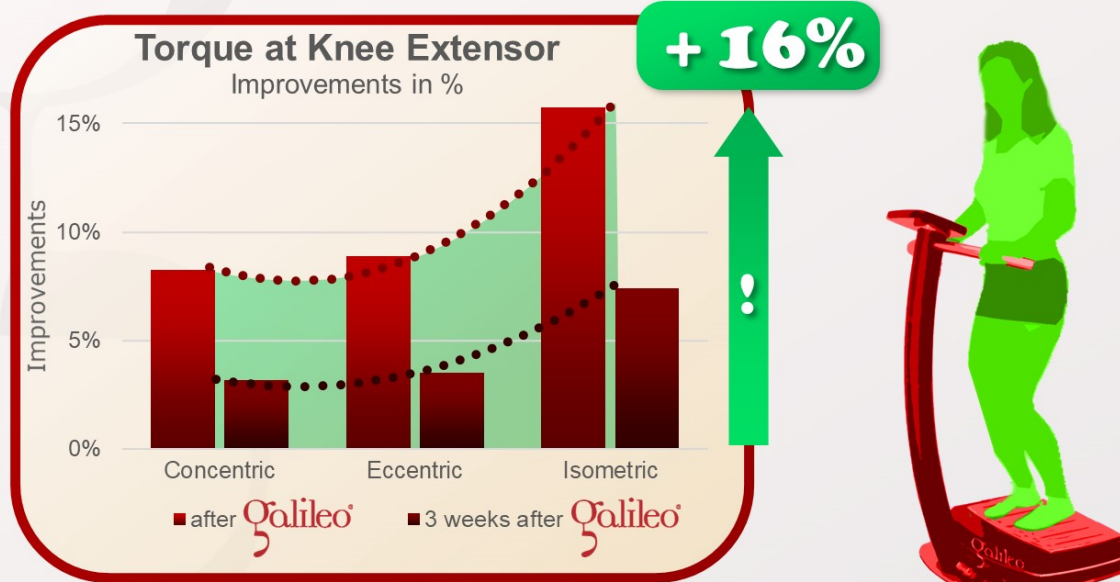


Can Galileo Training cause a sustainable improvement of torque at the knee ?

The answer is: Yes

This study documented the effects of Galileo Training and concentric, eccentric and isometric knee torque in physical active young women (25Hz, pos.3, 2*5 min., 10° flexed legs, 5/week, 3 weeks). The control group continued their usual weekly training. The Galileo group received Galileo Training only. The Galileo group showed an improvement of knee torque by up to 16%. This effects was sustained even after 3 weeks (+7%).



Karatrantou K, Gerodimos V, Dipla K, Zafeiridis A: Whole-body vibration training improves flexibility, strength profile of knee flexors, and hamstrings-to-quadriceps strength ratio in females.; J Sci Med Sport, 16:477-481, 2013; PMID: 23253266; GID: 3074

This study documented the effects of 3 weeks of Galileo Training in physical active young women on knee torque of the extensors (concentric, eccentric, isometric).

The control group continued their weekly exercises (2 to 3 times per week) while the Galileo group only received the Galileo Training (plus 10 minutes warm-up per session) (25Hz, position 3, slightly flexed legs (10°), 2*5 minutes, 5 times per week over 3 weeks).

While the control group showed no significant changes the Galileo group could show significant improvements showed an improved flexibility (Sit & Reach Test, #GRFS115) as well as the torque of the knee extensor by up to 16%.

Almost 50% of this effect was sustained 3 weeks after the end of the training (+7%).

Considering the used exercise (almost straight position, 10° knee flexion) this is an interesting result.

Since the used exercise is not ideal for training of the tested muscle it can be expected that exercises at a deeper squat position (larger knee angle, but still with an upright upper body) and at even higher frequencies (30-33Hz) would have been even more effective (#GRFS4, #GRFS3).



J Sci Med Sport. 2013 Sep;16(5):477-81. doi: 10.1016/j.jsams.2012.11.888. Epub 2012 Dec 17.

Whole-body vibration training improves flexibility, strength profile of knee flexors, and hamstrings-to-quadriceps strength ratio in females.

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OBJECTIVES:

Short-term whole-body vibration training (WBVT) has emerged as an exercise method for improving neuromuscular performance and has been proposed for injury prevention and rehabilitation.

This study investigated the effects of a short-term (≤ 2 months) WBVT program using a side-to-side vibration on: (i) strength profile of knee extensors (KE) and flexors (KF), (ii) "functional" hamstrings-to-quadriceps ratio (ECCKF/CONKE), (iii) flexibility and (iv) vertical jumping performance (VJ). Furthermore, we explored the retention of performance gains 21 days following WBVT.

DESIGN:

Randomized-controlled trial.

METHODS:

Twenty-six moderately active females (20.40 ± 0.27 years) were assigned to a vibration (VG) or a control group (CG). The short-term WBVT program consisted of sixteen-sessions on a side-to-side vibration platform (frequency: 25Hz, amplitude: 6mm, 2 sets \times 5min). Isokinetic and isometric peak torque of KE and KF, ECCKF/CONKE, flexibility, and VJ were measured pre, 2 days post, and 21 days following the cessation of WBVT.

RESULTS:

Post-training values of flexibility, isokinetic and isometric peak torques of KF and ECCKF/CONKE ratio were higher than pre-training values in VG ($p < 0.05$); however, they remained unchanged in CG. Post-training values were greater in VG vs. CG ($p < 0.05$).

Twenty-one days following WBVT, post-training values were no longer significantly different than pre-training values. The short-term WBVT program had no effect on strength profile of KE and on VJ.

CONCLUSIONS:

A short-term side-to-side WBVT program improved flexibility, the strength profile of knee flexors, and the "functional" hamstrings-to-quadriceps ratio in moderately active females. Coaches and clinical practitioners should consider this type of training as an effective exercise mode for improving the strength asymmetry of reciprocal muscles at the knee joint.