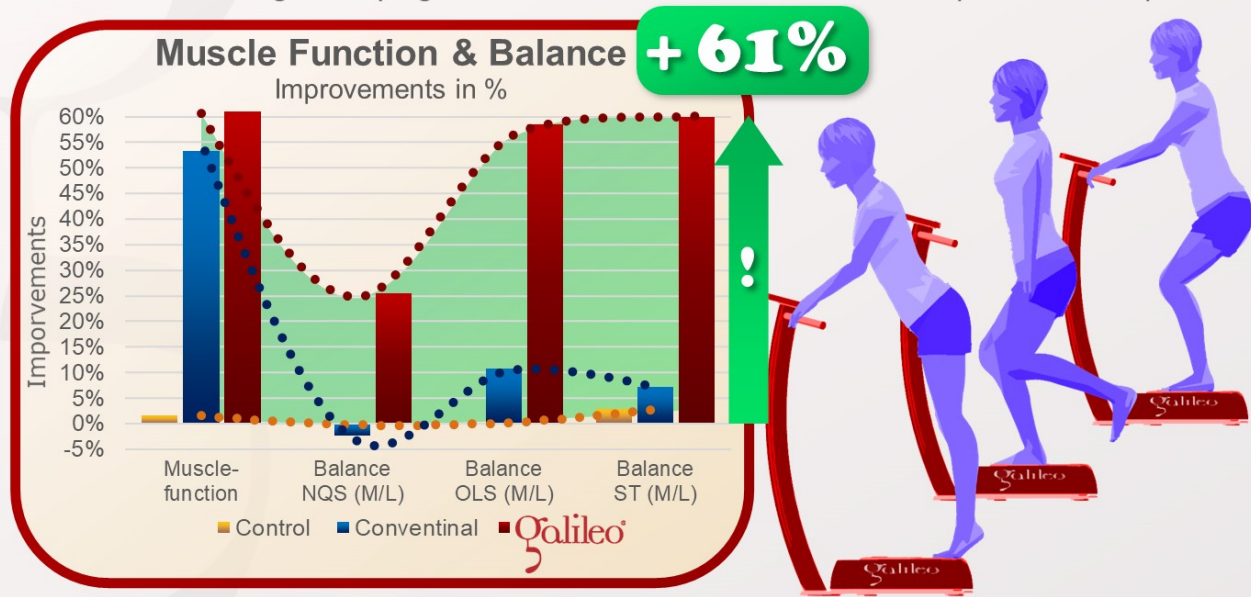


# Can Galileo Training increase muscle function and balance at the same time?

## The answer is: YES

This study investigated the effects of Galileo Training on muscle function and balance in women age 52 to 60 (15-25Hz, 6 exercises, extra loads up to 30% body weight, pos.1-3, 35 min., 3/week, 12 weeks). The conventional group received identical exercises without vibration. The Galileo group showed identical results on muscle function but significantly higher results on all tested balance test with improvements up to 61%.



Spiliopoulou SI, Amiridis IG, Tsigganos G, Economides D, Kellis E: Vibration effects on static balance and strength; Int J Sports Med., 31(9):610-6, 2010; PMID: 20589590; GID: 2319

This study examined the effects of Galileo training on muscle function and balance in older women (ages 53-60).

Two groups conducted a rather intensive training program three times a week for 12 weeks - once with and once without Galileo. A third group did not do any additional training.

Before and after the actual training each 10 minutes warm-up and cool-down stretching exercises were performed.

The actual training consisted of 6 different exercises with about 35 minutes duration (half squat, deep squat, hack squat, wide-legged squat, one-legged half squat, lunge).

The Conventional group performed the exercises without, the Galileo group in combination with Galileo (Gradient difficulty: 15-25Hz, Pos 1-3, up to 30% of the body weight as additional load).

The Galileo group showed comparable effects on muscle function (measured by torque at isokinetics), but significantly greater effects in all tested balance-test with an improvement of up to 61%.



One reason for the small difference in muscle function is likely to be the extensive training load - probably would have been synonymous with significantly lower training load in combination with Galileo similar effects possible and thus the Galileo training was much more efficient.

Much more pronounced, however, are results on balance, which show a clear advantage of Galileo Training (as in other studies such as # GRFS99, # GRFS97, # GRFS54, GRFS43, # GRFS38).



## **Vibration effects on static balance and strength.**

[Spiliopoulou SI](#)<sup>1</sup>, [Amiridis IG](#), [Tsigganos G](#), [Economides D](#), [Kellis E](#).

The purpose of this study was to investigate the effects of a vibration training protocol and a conventional strength-training program consisting of similar exercises on knee extensors and flexors strength and postural sway in middle-aged women.

38 women were randomly assigned into a Vibration Group (n=12, static and dynamic exercises on a vibration plate, frequency: 15-25 Hz, amplitude: 2-12.8 cm), a Strength Group (n=16, same exercises without vibration) and a Control Group (n=10).

Both experimental groups trained for 12 weeks (3 sessions/w). Static balance was assessed in 3 tasks of increasing difficulty:

Normal Quiet Stance, Sharpened Tandem, and One-Legged Stance. Postural sway was evaluated using the Centre of Pressure variations in the Anterior/Posterior and Medio/Lateral direction.

Eccentric and concentric strength of knee extensors and flexors was recorded using a Cybex dynamometer.

After vibration training, postural sway significantly decreased in both directions for the vibration group in all tasks ( $p < 0.05$ ), whereas no significant differences were observed for the other groups.

Isokinetic strength significantly ( $p < 0.05$ ) increased for both experimental groups at selected angular velocities.

It was concluded that side-alternating vibration could have beneficial effects on static balance control for middle-aged women. Gains in isokinetic strength were quite similar for both experimental groups.

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