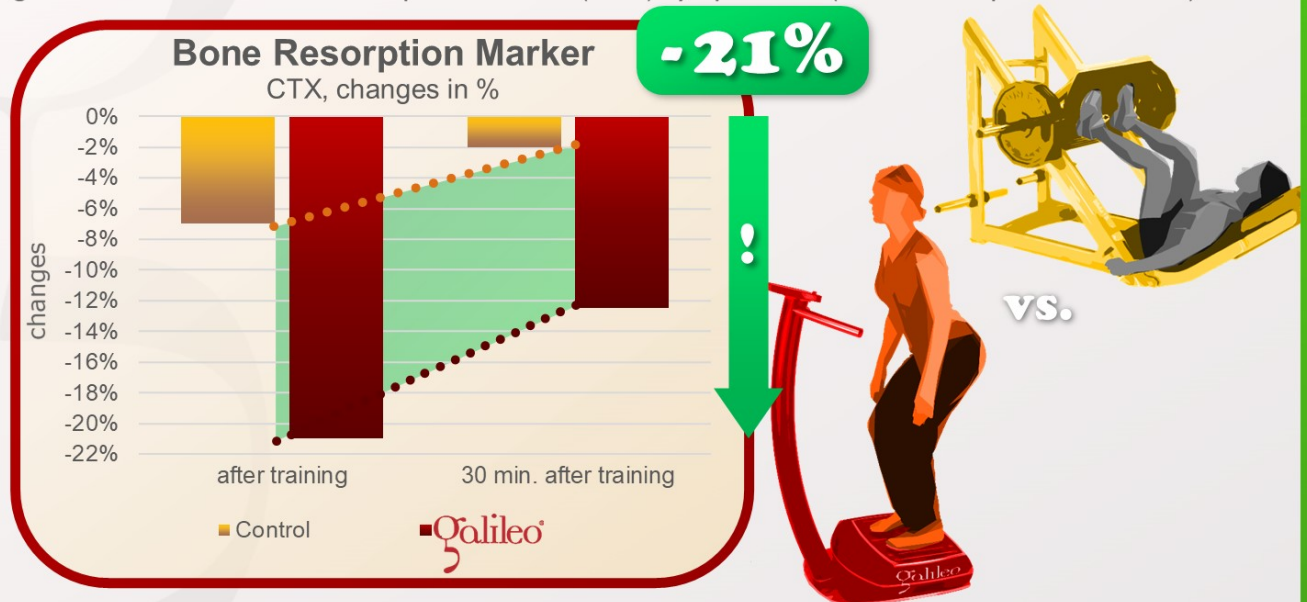


# Can Galileo Training be more effective to prevent bone-loss than strength training ?

## The answer is: YES

This study investigated the short-term effects of Galileo Training vs. strength training on bone resorption markers (CTX). The control group received intensive strength training (6 exercises, 2\*10 repetitions, 80% 1RM) the Galileo group received Galileo only (20Hz, 5 \* 1 min., pos. 2, 30° squats). The Galileo group showed a significant reduction in bone resorption markers (CTX) by up to 21% (factor 3 compared to control).



Sherk VD, Chrisman C, Smith J, Young KC, Singh H, Bembem MG, Bembem DA: Acute Bone Marker Responses to Whole-Body Vibration and Resistance Exercise in Young Women.; J Clin Densitom, 16(1):104-109, 2013; PMID: 22902255; GID: 3048

This study examined the short-term effects of Galileo Training compared to intensive strength training on bone degradation markers (CTX).

The blood-detectable CTX bone reduction marker is one of the standard indicators of bone resorption in bone research.

The control group performed intensive strength training consisting of 6 exercises (Led Press, Hip Extension, Hip Abduction, Hip Adduction, Rowing, Shoulder Press).

In each case 3 \* 10 repetitions were performed at 80% 1RM (one repetition maximum) (training duration approx. 30 minutes).

The Galileo Group performed Galileo training at 20Hz only 5 times a minute (position 2, 30° squat without extra load, training duration 9 minutes) (higher frequencies of 25-30Hz would have been more effective # GRFS3, # GRFS21, # GRFS22).

Although the exercise duration was only one-third of that of the control group and trained without additional weights, the Galileo group achieved significantly greater effects on bone degradation parameters both



directly after and (-21%) 30 minutes after training (-12%), a factor of 3 and means more compared to the strength training group.

Galileo training proved to be more effective and efficient than strength training to counteract the bone loss. The results are consistent with other Galileo bone preservation studies (# GRFS127, # GRFS79, # GRFS68).



## **Acute bone marker responses to whole-body vibration and resistance exercise in young women.**

[Sherk VD](#)<sup>1</sup>, [Chrisman C](#), [Smith J](#), [Young KC](#), [Singh H](#), [Bemben MG](#), [Bemben DA](#).

Whole-body vibration (WBV) augments the musculoskeletal effects of resistance exercise (RE). However, its acute effects on bone turnover markers (BTM) have not been determined.

This study examined BTM responses to acute high-intensity RE and high-intensity RE with WBV (WBV+RE) in young women (n=10) taking oral contraceptives in a randomized, crossover repeated measures design.

WBV+RE exposed subjects to 5 one-minute bouts of vibration (20 Hz, 3.38 peak-peak displacement, separated by 1 min of rest) before RE.

Fasting blood samples were obtained before (Pre), immediately after WBV (PostVib), immediately after RE (IP), and 30-min after RE (P30).

Bone alkaline phosphatase did not change at any time point. Tartrate-resistant acid phosphatase 5b significantly increased ( $p < 0.05$ ) from the Pre to PostVib, then decreased from IP to P30 for both conditions.

C-terminal telopeptide of type I collagen (CTX) significantly decreased ( $p < 0.05$ ) from Pre to PostVib and from Pre to P30 only for WBV+RE. WBV+RE showed a greater decrease in CTX than RE ( $-12.6\% \pm 4.7\%$  vs  $-1.13\% \pm 3.5\%$ ).

In conclusion, WBV was associated with acute decreases in CTX levels not elicited with RE alone in young women.

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