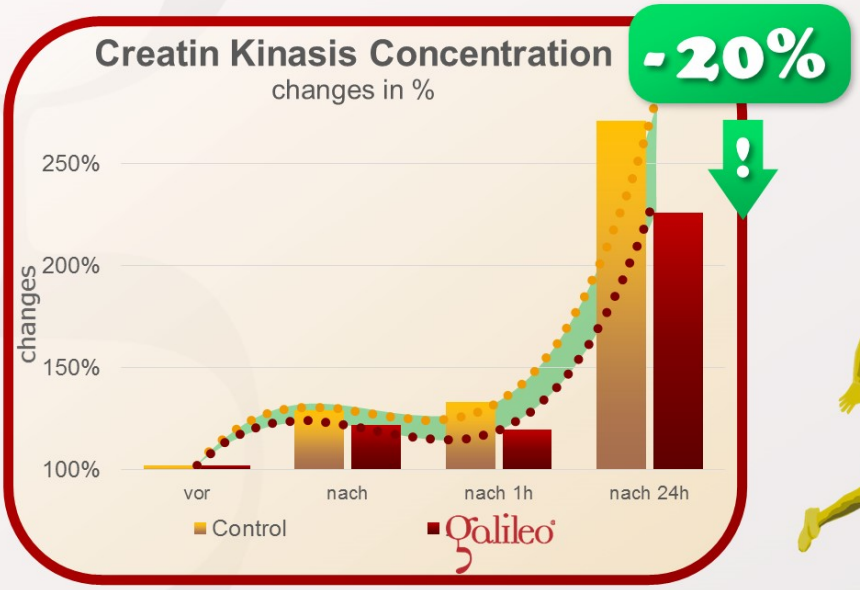
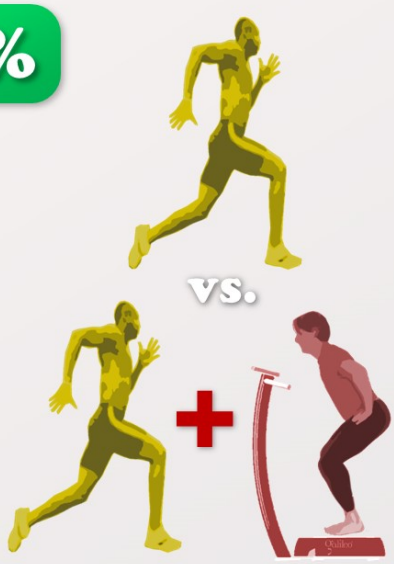
Can Galileo Training reduce Creatine Kinase after extensive endurance training?

The answer is: YES

This study tested the effect of Galileo Training on Creatine Kinase (CK) concentration after exhaustive endurance training. Both groups trained treadmill + 4x400 (HIIT) + 3km Time-Trial. The Galileo Group trained at 12Hz (5x60 sec. slight squats, 5x30 sec. sitting with feet on Galileo). 24 h after the intensive endurance training Creatine Kinase levels where reduced by 20% in the Galileo group compared to control.





Edge J, Mündel T, Weir K, Cochrane DJ: The effects of acute whole body vibration as a recovery modality following high-intensity interval training in well-trained, middle-aged runners; Eur J Appl Physiol., 105(3):421-8, 2009; PMID: 19011891; GID: 1709

Galileo Research Fact Sheet #46 Sorts & Fitness: Creatine Kinase www.galileo-training.com

Galileo Training can be used very effectively after an exhaustive training (strength training or running like in this study) to reduce negative effects like muscle pain or Creatine Kinase (CK) production just like it was shown by #GRFS1 and #GRFS5.

Creatine Kinase is produced whenever defects on the muscle-fiber level appear – in principle this happens with any exercise. However, the highest Creatine Kinase levels appear 48 hours after the exercise – therefore most of the damage on the muscle fiber level is obviously not done during the training itself but afterwards.

One reason is that exhaustive training results in a stiff muscle – and this stiff muscle is not able to cope with movements of everyday living which might therefore cause additional damages.

This is where Galileo Training at mid frequencies (12 to 18Hz) can be used very effectively to loosen the tight muscle and to make them flexible again. This obviously decreases the number of defects created after the exercise and therefore the Creatine Kinase levels 24 and 48 hours after the exercise. In addition, another effect of this frequency range can be used in Stretching. When any training is effective in building up muscle it also causes the muscle to shorten – therefore it is very effective to do stretching exercises after the training to prevent this shortening…

Take-home message: Use Galileo Training before and after your standard exercises!

Eur J Appl Physiol. 2009 Feb;105(3):421-8. doi: 10.1007/s00421-008-0919-z. Epub 2008 Nov 15.

The effects of acute whole body vibration as a recovery modality following high-intensity interval training in well-trained, middle-aged runners.

Edge J[1], Mündel T, Weir K, Cochrane DJ.

Abstract

The main purpose of the present study was to examine the effects of acute whole body vibration (WBV) on recovery following a 3 km time trial (3 km TT) and high-intensity interval training (HIIT) (8 x 400 m Post-HIIT measures included 3 km time-trial performance, exercise metabolism and markers of muscle damage (creatine kinase, CK) and inflammation (c-reactive protein, CRP).

A second purpose was to determine the effects of a 3 km TT and HIIT on performance and metabolism the following day. Nine well-trained, middle-aged, male runners [(mean +/- SD) age 45 +/- 6 years, body mass 75 +/- 7 kg, VO2peak 58 +/- 5 ml kg(-1)min(-1)] performed a constant pace run at 60 and 80% velocity at VO2peak (v VO2peak) followed by a 3-km TT and a 8 x 400-m HIIT session on two occasions. Following one occasion, the athletes performed 2 x 15 min of low frequency (12 Hz) WBV, whilst the other occasion was a non-WBV control.

Twenty-four hours after each HIIT session (day 2) participants performed the constant pace run (60 and 80% v VO2peak) and 3 km TT again. There was a significant decrease in 3 km TT performance (~10 s) 24 h after the HIIT session ($P < 0.05$); however, there were no differences between conditions (control vs. vibration, $P > 0.05$). Creatine kinase was significantly elevated on day 2, though there were no differences between conditions ($P > 0.05$). VO2peak and blood lactate were lower on day 2 ($P < 0.05$), again with no differences between conditions ($P > 0.05$).

These results show no benefit of WBV on running performance recovery following a HIIT session. However, we have shown that there may be acute alterations in metabolism 24 h following such a running session in well-trained, middle-aged runners.