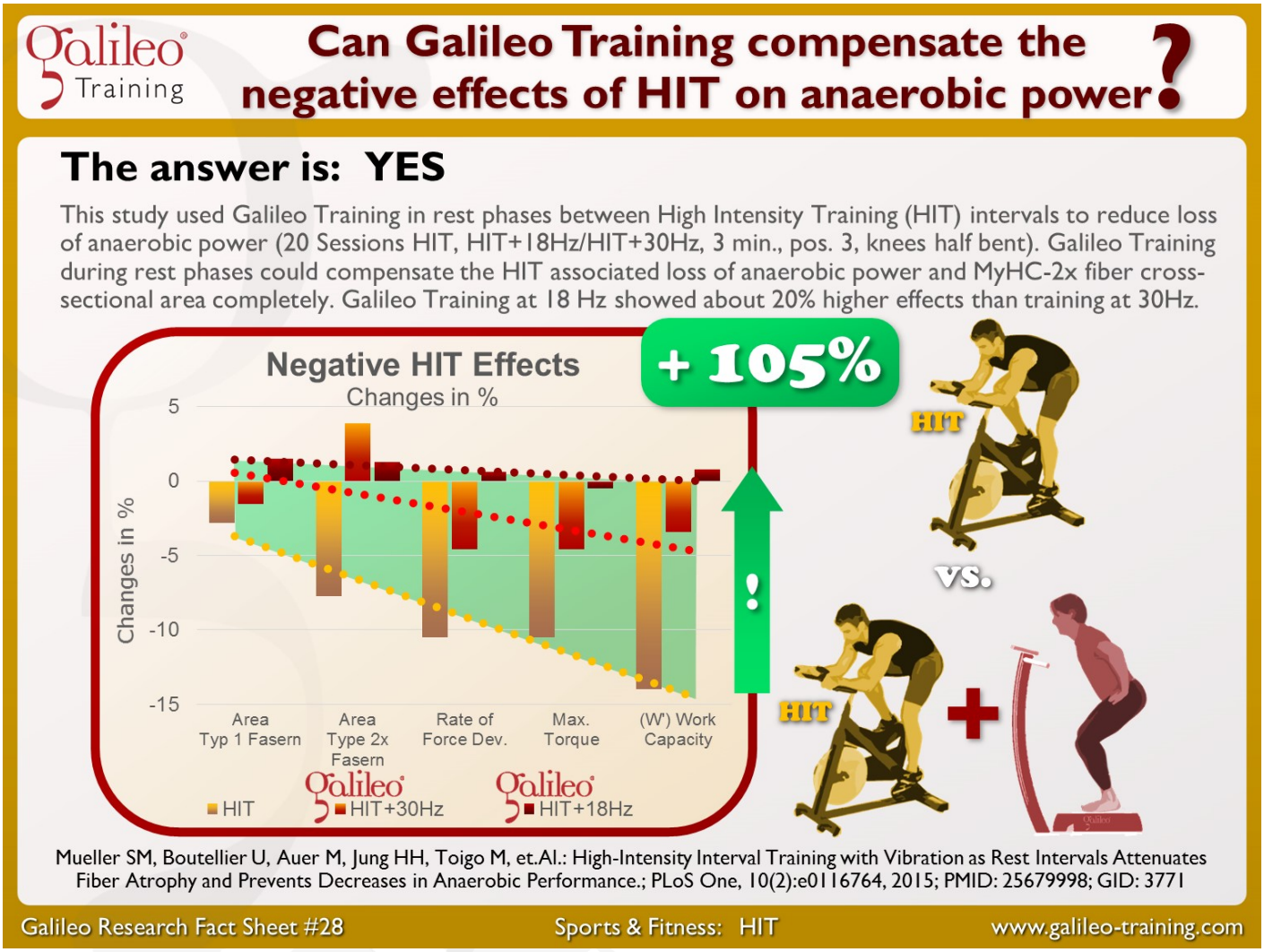

And they did it again… the group around Marco Toigo of the ETH in Zürich turned the classic training methods upside down again:
High Intensity Training (HIT) is an extremely exhausting type of training which has a tremendous effect on endurance (aerobe muscles). A typical example is cycling ergometer training at very high loads over just a few minutes (a few thousand Watts (way beyond an ordinary cycling ergometers). The goal is to exhaust the muscles completely just in a few minutes (in this case just 4 minutes). Typically HIT has a significant negative effect on the fast twitch fibers (anaerobe muscles) which results in a significant decrease of anaerobe power and fiber cross sectional area. Well – up to now. Toigo's group added in between sets just 3 minutes of Galileo Training at 18Hz (and 30Hz in an additional group) simply standing with bent knees on the Galileo.

The astonishing result: The negative effects of HIT on anaerobe muscles and power are completely compensated by the additional Galileo Training at 18 Hz while the positive Effects of HIT are not affected. The study also shows that for this special purpose the Galileo Training at 18 Hz is about 20% more effective than at 30Hz. Another side-effect was, that the pause time could be reduced significantly (to the 3 Minutes).

So whoever uses HIT should consider to add Galileo Training at 18 Hz for the rest phases in-between sets. But there is an even higher potential: keep in mind that Galileo Training can decrease muscle soreness after intense training by 50% (#GRFS1) and Creatinekinase by 40% (#GRFS5). In addition, stretching in between sets or after sets can increase the training effect of standard muscle exercises.
So: Add Galileo to your training!

StimDesigns LLC 32683 Coast Ridge Rd. Carmel, CA 93923 (831) 222-0330

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High-intensity interval training with vibration as rest intervals attenuates fiber atrophy and prevents decreases in anaerobic performance.

Mueller SM[1], Aguayo D[1], Zuercher M[1], Fleischmann O[1], Boutellier U[1], Auer M[2], Jung HH[2], Toigo M[1].

Abstract

Aerobic high-intensity interval training (HIT) improves cardiovascular capacity but may reduce the finite work capacity above critical power (W') and lead to atrophy of myosin heavy chain (MyHC)-2 fibers.

Since whole-body vibration may enhance indices of anaerobic performance, we examined whether side-alternating whole-body vibration as a replacement for the active rest intervals during a 4 x 4 min HIT prevents decreases in anaerobic performance and capacity without compromising gains in aerobic function.

Thirty-three young recreationally active men were randomly assigned to conduct either conventional 4 x 4 min HIT, HIT with 3 min of WBV at 18 Hz (HIT+VIB18) or 30 Hz (HIT+VIB30) in lieu of conventional rest intervals, or WBV at 30 Hz (VIB30). Pre and post training, critical power (CP), W', cellular muscle characteristics, as well as cardiovascular and neuromuscular variables were determined. W' (-14.3%, P = 0.013), maximal voluntary torque (-8.6%, P = 0.001), rate of force development (-10.5%, P = 0.018), maximal jumping power (-6.3%, P = 0.007) and cross-sectional areas of MyHC-2A fibers (-6.4%, P = 0.044) were reduced only after conventional HIT. CP, V̇O2peak, peak cardiac output, and overall capillary-to-fiber ratio were increased after HIT, HIT+VIB18, and HIT+VIB30 without differences between groups.

HIT-specific reductions in anaerobic performance and capacity were prevented by replacing active rest intervals with side-alternating whole-body vibration, notably without compromising aerobic adaptations.

Therefore, competitive cyclists (and potentially other endurance-oriented athletes) may benefit from replacing the active rest intervals during aerobic HIT with side-alternating whole-body vibration.

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