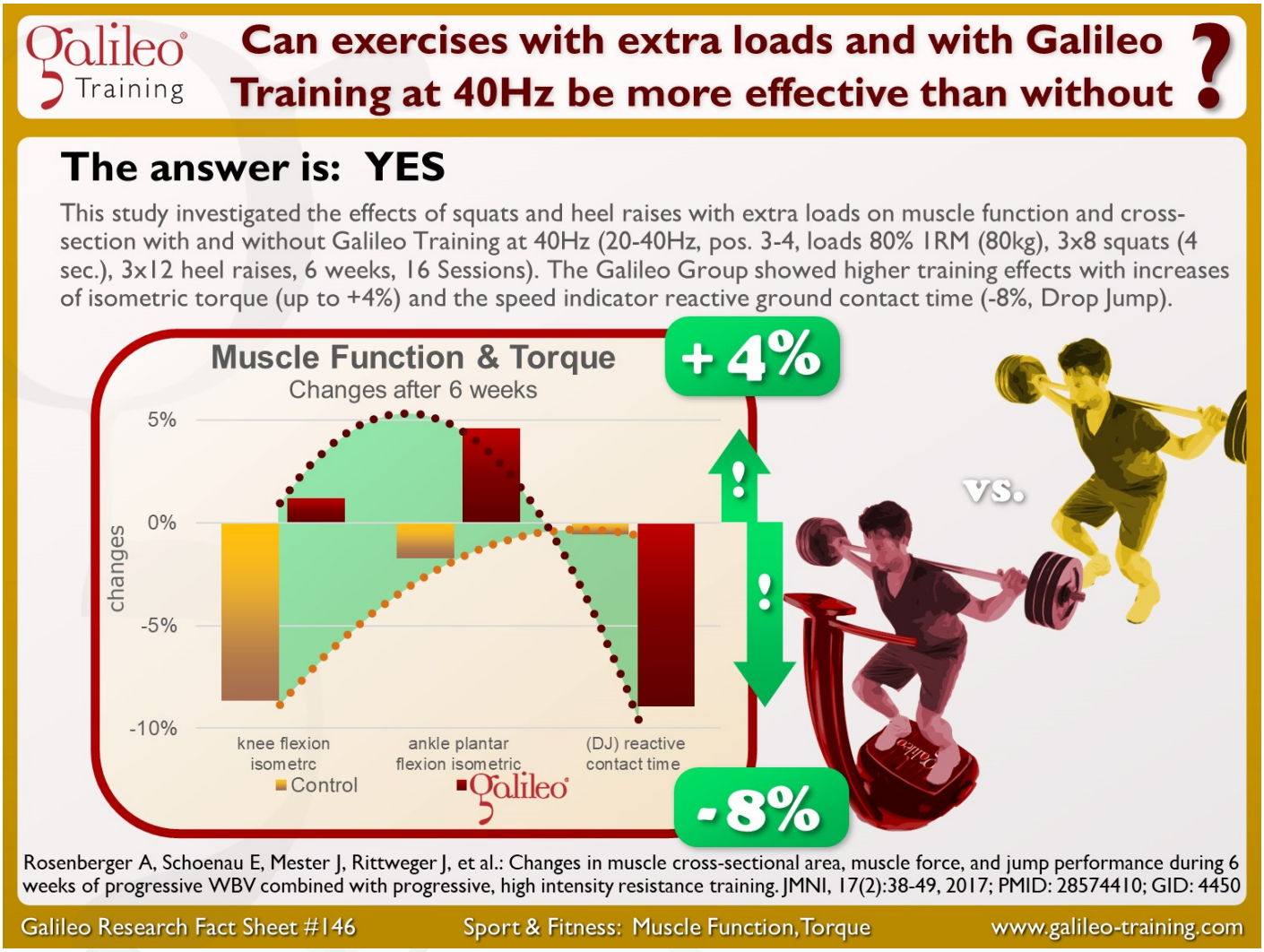

This study examined the effects of Galileo training at very high frequencies (up to 40Hz) in combination with squats and heel raises and extra loads (80% One Repetition Maximum (1RM), in the study an average of 80kg).

We compared identical exercises with and without vibration (3 sets of 8 squats each (4 seconds per repetition) and 12 heel raises.)

The last repetition of the squats was performed to maximum fatigue and the result was the additional load for the next one Session set: less than 8 repetitions could be achieved, the additional load was reduced by 5% with more than 8 the additional load for the next session was increased by 5% (max 10kg)

Furthermore the frequency of the Galileo group was increased during the first 3 4 weeks slowly increased from 20 to 40Hz (position 3-4) (# GIS1)

In addition to the already reported positive effects on the muscle cross section (# GRFS135), the Galileo group showed an increase in the isometric torque at knee and in particular compared to the control group Ankle (up to + 4%) and a significant reduction in the ground contact time in reactive jumps (drop-jump), one of the typical measures too r assessment of speed.

This study also shows once again that the combination of classical exercises with Galileo training can make them even more effective.

J Musculoskelet Neuronal Interact. 2017 Jun 1;17(2):38-49.

Changes in muscle cross-sectional area, muscle force, and jump performance during 6 weeks of progressive whole-body vibration combined with progressive, high intensity resistance training.

Rosenberger A[1], Beijer Å, Johannes B, Schoenau E, Mester J, Rittweger J, Zange J.

OBJECTIVES:
We hypothesized that progressive whole-body vibration (WBV) superimposed to progressive high intensity resistance training has greater effects on muscle cross-sectional area (CSA), muscle force of leg muscles, and jump performance than progressive high intensity resistance training alone.

METHODS:
Two groups of healthy male subjects performed either 6 weeks of Resistive Vibration Exercise (RVE, squats and heel raises with WBV, n=13) or Resistive Exercise (RE, squats and heel raises without WBV, n=13).

Squats under RVE required indispensable weight loading on the forefoot to damp harmful vibrations to the head. Time, intervention, and interaction effects were analyzed.

RESULTS:
After 6 weeks of training, knee extensor CSA, isometric knee extension force, and counter movement jump height increased equally in both groups (time effect, $P\langle 0.001$, $P\leq 0.02$, and $P\leq 0.03$, respectively), whereas only in RVE ankle plantar flexor CSA and isometric ankle plantar flexion force reached significance or a tendency, respectively, (time effect, $P=0.015$ and $P=0.069$, respectively; intervention effect also for the latter, $P=0.006$).

Drop jump contact time did significantly more improve in RVE (interaction effect, $P=0.042$).

CONCLUSIONS:
RVE showed better training effects than RE only in plantar flexor muscles. RVE seems to be suitable in professional sports with a special focus on calf muscles.

PMID: 28574410 PMCID: PMC5492318