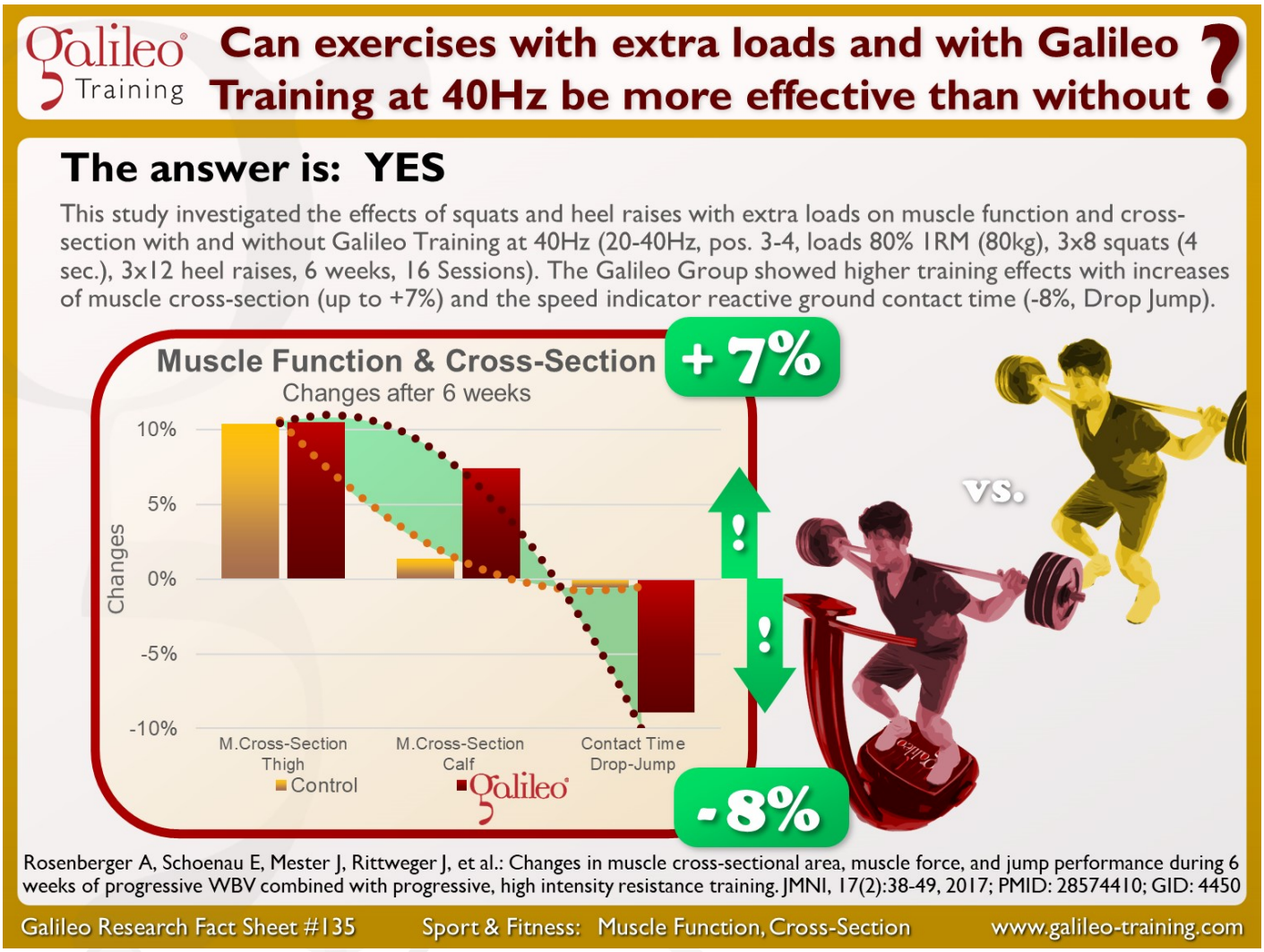

This study investigated the effects of Galileo Training at very high frequencies (up to 40Hz) in combination with squats and heel raises and extra loads (80% one repetition maximum (1RM), in this case 80kg in average).

The study compared identical exercises with and without Galileo Training at frequencies of up to 40Hz (GIS1): 3 sets each of 8 x squats (4 seconds per repetition) and 12 x heel-raises.

The last repetition of the squats was carried out to exhaustion and used to adapt extra loads for the next session: if less than 8 repetitions were achieved load was reduced by 5% for more than 8 repetitions load was increased by 5% (max. 10kg).

In the Galileo group the Frequency was increased gradually from 20 Hz to 40 Hz within the first 3 to 4 weeks (Position 3-4) (#GIS1).

While the effects on jumping height and muscle gain at the thigh were comparable to effects in the control group the Galileo group showed a higher increase of muscle gain at the calf (up to +7% cross-section) and a significant reduction in ground contact time in reactive jumps (drop-jump) usually used as an indicator for speed.

This study shows once more how the combination of Galileo Training with traditional exercises can increase their effectiveness significantly.

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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.

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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.

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