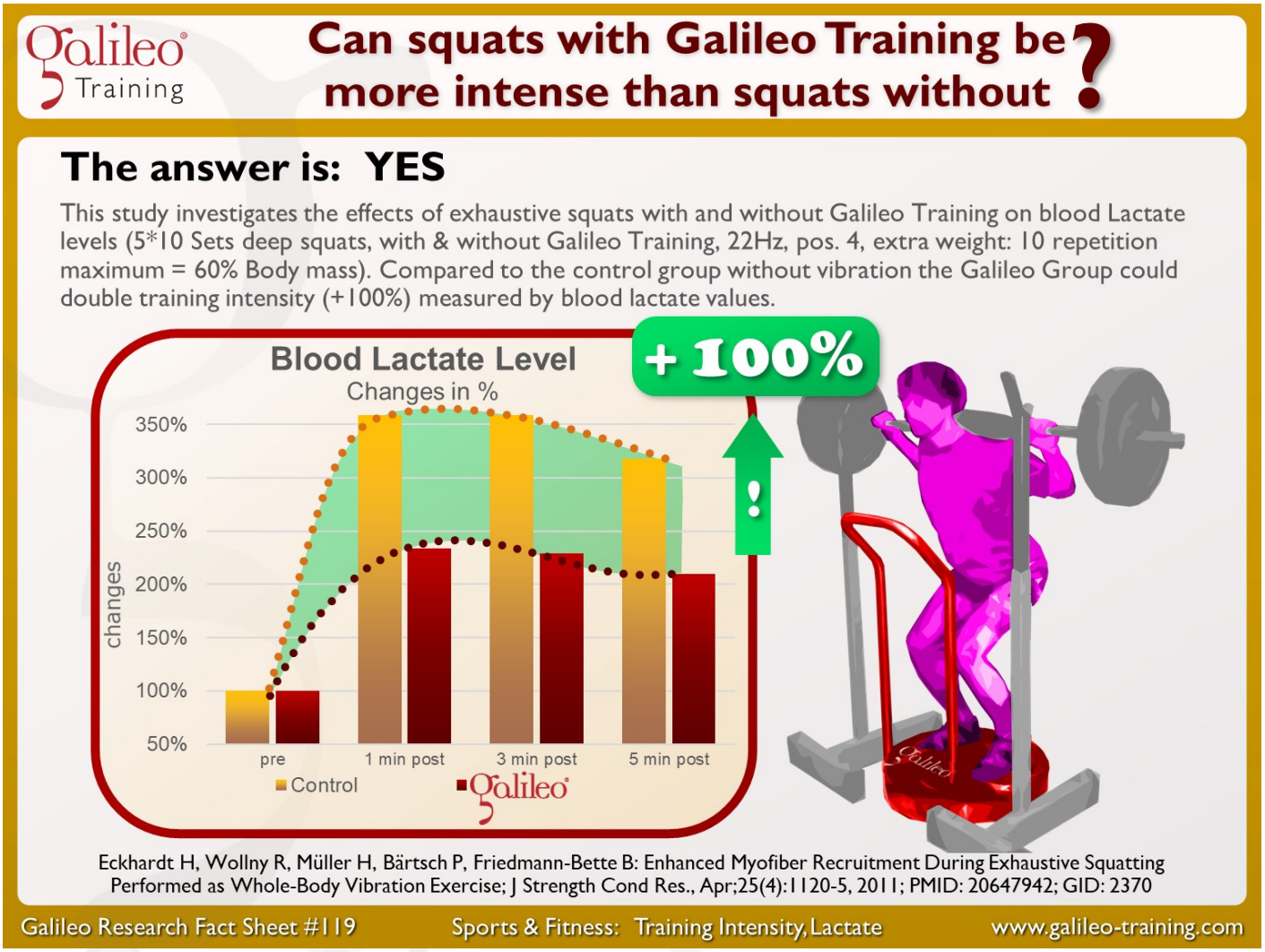

This study investigated the effects of exhaustive squats with and without Galileo Training on blood lactate levels. In sport science lactate levels are considered as an objective measure of training intensity and individual exhaustion.

Both groups received 5 sets of 10 repetitions with additional loads of the 10 repetition maximum (10RM) – which resulted in an average additional load of 60% of the individual body mass.

In addition to muscle activation (EMG, see also #GRFS100) blood lactate values were measured after warm-up and 1, 3 and 5 minutes after the end of the 5 sets.

The results show that the combination with Galileo Training resulted in double the increase (+100%) of the lactate levels compared to the identical exercise without Galileo.

A result which is in line with every-day observations: in combination with Galileo Training comparable results of exercises can usually be achieved with much less additional loads and therefore with reduced joint-loads.

The resulting high lactate levels are probably also one of the explanations why Galileo Training can have so high effects on endurance ((#GRFS#86, #GRFS56, #GRFS12, #GRFS11) –

interestingly despite these high effects on lactate levels (which are usually associated with increased delayed muscle pain) Galileo Training can very effectively decrease delayed muscle pain as wells as Creatine-Kinase levels (#GRFS90, #GRFS5, #GRFS1).

Another proof of how versatile Galileo Training can be used in sports!

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Enhanced myofiber recruitment during exhaustive squatting performed as whole-body vibration exercise.

Eckhardt H[1], Wollny R, Müller H, Bärtsch P, Friedmann-Bette B.

The purpose of the study was to test the hypothesis that myofiber recruitment is enhanced when whole-body vibration (WBV) is added to squat training.

In a randomized crossover design, 14 recreationally active men were subjected to 2 sessions consisting of 5 sets of 10 squats with external load, performed either on a vibration platform (whole-body vibration squatting [WBVS]) or conventionally without WBV (CON).

Electromyographic (EMG) activity of the right vastus lateralis muscle was continuously recorded during WBVS and CON.

The integrated EMG values were normalized to the EMG activity recorded during measurement of the maximal voluntary contraction force (MVC) on an isometric leg press at the beginning of each training session.

Capillary lactate concentration was determined before and repeatedly after the squatting exercise. Overall mean normalized and integrated EMG (nIEMG) activity during WBVS (62 ± 4% MVC) was significantly ($p < 0.001$) higher compared with CON (47 ± 2% MVC).

There was a tendency for nIEMG to increase during the 5 sets of 10 squats performed as WBVS ($p = 0.089$), whereas there was a significant ($p < 0.001$) decrease in nIEMG during CON.

Whole-body vibration squatting induced a significantly ($p < 0.001$) larger increase in capillary lactate than CON (3.03 ± 0.32 vs. 1.60 ± 0.30 mmol · L(-1), $p < 0.001$).

The increased myoelectric activity and the enhanced exercise-induced increase in capillary lactate concentration during WBVS provide evidence for augmented recruitment of muscle tissue when WBV is added to exhaustive squatting exercise.

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