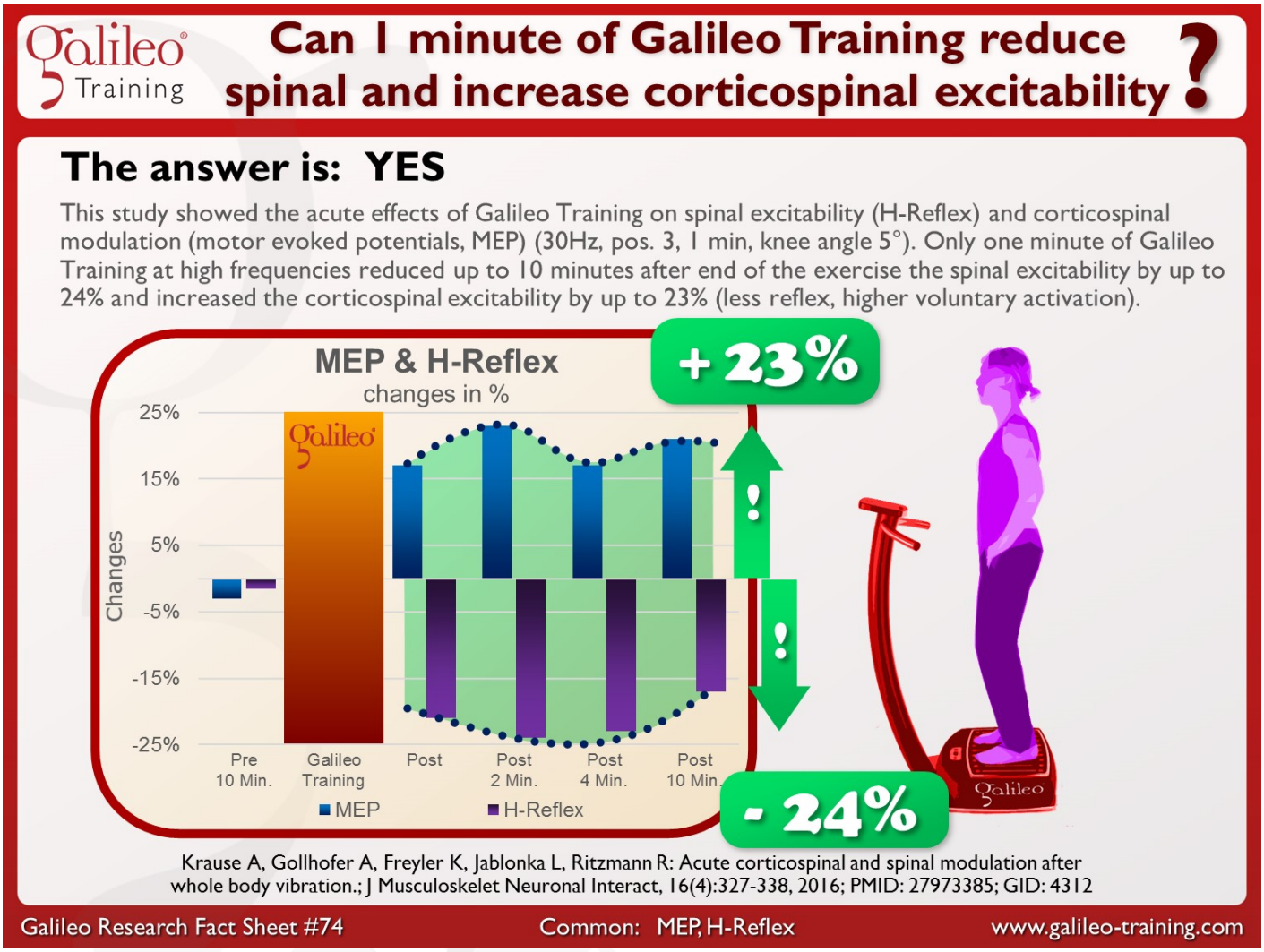

This study investigated the effects of only one minute of Galileo Training on spinal excitability (H-Reflex) and the corticospinal excitability (MEP, motor evoked potentials).

The spinal excitability is a measure of how sensitive the stretch-reflex reacts on a given external stimulation. This sensitivity is usually increases in and active spasticity – therefor a reduction of this value explains a decrease of spasticity. T

he corticospinal excitability on the other hand is a measure of how much central (voluntary) control (stem brain) acts on the muscle activation. T

he study shows that 1 minute of Galileo Training at high frequencies (30Hz, pos. 3) in standing up to 10 minutes after the end of the training reduces the spinal excitability (reflex) by almost 25% (#GRFS39) and at the same time increases the corticospinal excitability (voluntary access) by almost 25%.

This effect cannot only be utilized for optimized training in sports but also explains why Galileo Training can reduce spasticity (#GRFS64, #GRFS40) and at the same time can be used as an very effective neurological therapy

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Acute corticospinal and spinal modulation after whole body vibration.

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Abstract

OBJECTIVES:

The objective of this study was to investigate neural effects of acute whole body vibration (WBV) on lower limb muscles regarding corticospinal and spinal excitability.

METHODS:

In 44 healthy subjects (16 f/ 28 m), motor evoked potentials (MEP) and H-reflexes in m. soleus (SOL) and gastrocnemius medialis (GM) were elicited before (t_1), immediately after (t_2), 2 (t_3), 4 (t_4) and 10 min after (t_5) WBV.

RESULTS:

After WBV, MEP amplitudes were significantly increased in SOL (t_2+15±30%, t_3+22±32%, t_4+15±35%, t_5+20±30%, $P<0.05$), but not in GM (t_2+32±62%, t_3+9±35%, t_4+8±36%, t_5+22±47%; $P=0.07$). Contrarily, H-reflexes were significantly reduced in SOL (t_2-19±28%, t_3-21±22%, t_4-20±21%, t_5-14±28%, $P<0.05$) and GM (t_2-14±37%, t_3-16±25%, t_4-18±29%, t_5-16±28%, $P<0.05$).

CONCLUSIONS:

A temporary sustained enhancement of corticospinal excitability concomitant with spinal inhibition after WBV points towards persisting neural modulation in the central nervous system. This could indicate greater neural modulation over M1 and descending pathways, while the contribution of spinal pathways is reduced.

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