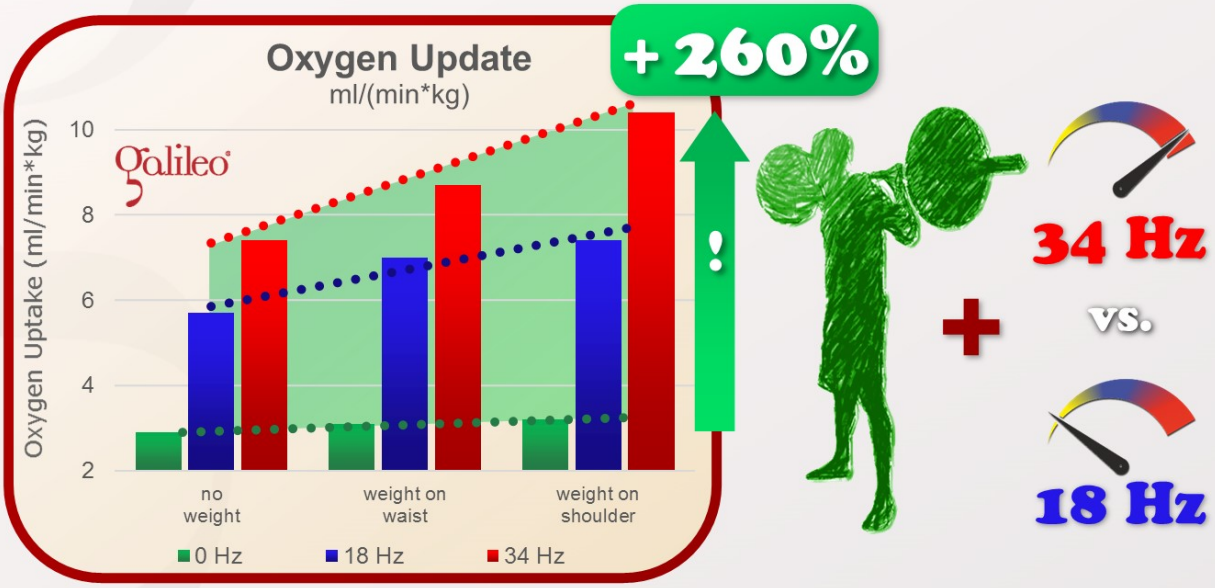
Does oxygen uptake during Galileo Training increase with frequency and extra loading ?

The answer is: YES

This study tested the influence of frequency and extra loading during Galileo Training on the oxygen uptake (1 min., 18Hz and 34Hz, position 2.5, active standing at 170°, extra loading 40% of lean body mass). The results show that with increasing frequency and increasing extra loading Galileo Training can increase oxygen uptake by up to 260%.



Rittweger J, Ehrig J, Just K, Mutschelknauss M, Kirsch KA, Felsenberg D: Oxygen uptake in whole-body vibration exercise: influence of vibration frequency, amplitude, and external load; Int J Sports Med., 23(6):428-32, 2002; PMID: 12215962, GID: 264

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Int J Sports Med. 2002 Aug;23(6):428-32.

Oxygen uptake in whole-body vibration exercise: influence of vibration frequency, amplitude, and external load.

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Abstract

PURPOSE:
Vibration exercise (VbX) is a new type of physical training to increase muscle power. The present study was designed to assess the influence of whole-body VbX on metabolic power.

METHODS:
Specific oxygen uptake (sVO(2)) was assessed, testing the hypotheses that sVO(2) increases with the frequency of vibration (tested in 10 males) and with the amplitude (tested in 8 males), and that the VbX-related increase in sVO(2) is enhanced by increased muscle force (tested in 8 males).

RESULTS:
With a vibration amplitude of 5 mm, a linear increase in sVO(2) was found from frequencies 18 to 34 Hz ($p < 0.01$). Each vibration cycle evoked an oxygen consumption of approximately 2.5 micro l x kg(-1). At a vibration frequency of 26 Hz, sVO(2) increased more than proportionally with amplitudes from 2.5 to 7.5 mm. With an additional load of 40 % of the lean body mass attached to the waist, sVO(2) likewise increased significantly. A further increase was observed when the load was applied to the shoulders. The present findings indicate that metabolic power in whole-body VbX can be parametrically controlled by frequency and amplitude, and by application of additional loads.

CONCLUSION:
These results further substantiate the view that VbX enhances muscular metabolic power, and thus muscle activity.

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