## Can posture variation during Galileo Training Training decrease vibration transmission to the head

## The answer is: YES

This study documented the influence of posture during Galileo Training on the transmission of vibration to the head (25Hz, Pos. 3). The transmission of vibrations to the head was measured at 5 different postures (#1: upright, #2: 20° flexed legs,... #5: 20° flexed legs + special shoulder and neck position). The results show that posture and especially flexed legs can decrease vibration transmission by up to 65%.



This Study investigated the influence of different postures during Galileo Training on the transmission of vibration to the upper body and the head.

The transmission of vibration to the forehead was measured as a percentage of the vibration of the Galileo platform (in the case of the study between 3.3% and 9% transmission coefficient).

As training parameters quite intensive 35Hz and foot position 3 were used. The result show that the variation of posture can decreased vibration transmission by up to 65%.

This study therefore documents one of the most basic effects during Galileo Training which anybody can test easily:

The more straight the legs the more vibration is transmitted to the core and the head – or to put it more practical: If there is to much vibration at the head simply flex the legs a little bit more!

This study also shows that even very basic and easy to feel effects of Galileo Training have been documented by research.



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## The influence of posture on transmission and absorption of vibration energy in whole body vibration exercise.

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Muscle exercise using whole body vibration platforms is well known as an alternative physical exercise in therapy as well as in high performance sports.

Various studies could show effectiveness in particular to improve maximal strength and springiness.

Using these platforms there is no consideration to posture although the damage potential of vibration stress i. e. on intervertebral discs is well known.

Therefore the effect of posture on the transmission and absorption of vibration loads in bipedal standing was examined in a study with 20 sport students.

They were exposed to a whole body vibration load in bipedal standing at a vibration frequency of 25 Hz. The transmission of energy was measured at the head in different postural positions.

An average transmission of 9 % was measured in spontaneous bipedal standing. It significantly decreased with gradual changes of posture. After 6 weeks posture conditioning exercise this effect was significantly improved.

In conclusion different posture in bipedal standing implies not only different energy absorption but also different effects on muscle performance, which can explain the partly inconsistent results after vibration exercise.

In addition whole body vibration exercise in a prone or sitting position may increase the risk of overload and should be avoided because of reduced energy absorption capacity.

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