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## Electromyographic activity of pelvic floor muscles during 60-second application of whole-body vibrations and stochastic resonance-A pilot study

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**Aim:** The aim of the study was to compare the effect of different intensity synchronous whole-body vibration and stochastic resonance whole-body vibration on reflex activity of pelvic floor muscles.

**Materials & Methods:** This was a randomized, controlled, parallel-group study among 18 nulliparous women who were not professional athletes. FV participants (n=9) were exposed to whole-body vibration on vibration platform Fitvibe 600 (Gymna Uniphy N.V) while ST participants (n=9) were exposed to stochastic resonance whole-body vibration (SRT Zeptor® Medical-plus noise). Stages I and II of the study were the same for both group. Stage I consisted of the measurement of the maximal voluntary contraction (MVC) of the pelvic floor muscles in the testing position, stage II-60s sEMG recording – vibration switched off. In FV group, stage III consisted of 60s sEMG recordings during synchronous whole-body vibration of 2 different intensities (random order): 40 Hz/ 4 mm and 60Hz/4mm. In ST group, stage III consisted of 60s sEMG recordings during stochastic resonance whole-body vibration of 4 different vibration intensities (basic frequency/noise level) (random order): 6 Hz/ noise 3; 6 Hz/ noise 5; 10 Hz/ noise 3; and 10 Hz/ noise 5.

**Results:** Significant differences in median frequency were revealed between vertical vibrations produced by Fitvibe 600 platform (40 Hz and 60 Hz) and stochastic resonance whole-body vibration 10 Hz/ noise 3. The mean amplitude (%MVC) and peak amplitude (%MVC) did not differ significantly between the groups and vibration intensities (Friedman ANOVA by ranks, post-hoc test).

**Conclusion:** the median frequency of synchronous whole-body vibrations was significantly higher than that of stochastic resonance whole-body vibration.

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