

Predicting health risks of exposure to whole body vibration in the urban taxi drivers

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Abstract

Introduction: Limited studies have been done to evaluate the whole-body vibration (WBV) exposure experienced by Taxi drivers. Therefore, the aim of this study was to evaluate the exposure to whole body vibration and repeated shocks in urban taxi drivers and also to compare different methods of evaluation in this job environment.

Material and Method: Measurement and evaluation process were conducted in accordance with procedure of the ISO 2631-1 and ISO 2631-5 standards. The measurements were done by SVAN 958 Sound and Vibration Analyzer and using tri-axial accelerometer centered on the contact surface between the seat and the driver in 9 taxis.

Result: The measurements done according to ISO 2631-1 method showed greater risk compared to Daily Equivalent Static Compression Dose, Sed, presented in ISO 2631-5. Calculated daily exposure durations for exposure action level in root-mean square, vibration dose value, and daily equivalent static compressive stress methods were 4.55, 3.54 and 31.70 hours, respectively.

Conclusion: The large differences in estimated exposure durations of action limits and permissible limits resulted by different methods reflect the inconsistency of the selected evaluation methods. Therefore, future research is necessary to amend the limits presented in the standard.

Key words: Health Risk, Occupational Exposure, Taxi Drivers, Vibration, Whole Body

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