Whole Body Vibration Exposure In Heavy Earth Moving Machinery Operators Of Metalliferrous Mines

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Abstract

As mining operations get mechanized, the rate of profit generation increases and so do the rate of occupational hazards. This study deals with one such hazard – occupational vibration. The present study was carried out to determine the whole body vibration (WBV) exposure of the heavy earth moving machinery (HEMM) operators in two types of metalliferous mines in India, when they were engaged in the mining activity. Cross-comparison was done of the vibration dose value (VDV) for HEMM operators as well as each type of mine. The VDV for the shovel operator in bauxite mine was observed to be 13.53± 5.63 m/s7/4 with 25% of the readings higher than the prescribed limit whereas in iron ore mine VDV for dumper operator was 10.81±3.44 m/s7/4 with 14.62% readings on the higher side. Cross-comparison of the VDV values for bauxite and iron ore mines revealed that it was 9.57±4.93 and 8.21±5.12 m/s7/4 with 21.28 and 14.95% of the readings on the higher side respectively. The Student's t test level was found to be insignificant for both type of mines, indicating that the WBV exposure is not dependent on the type of mine but is dependent on the working condition and type of HEMM in operation.