

VIBRATION EXPOSURE DOSE DEPENDENCY OF CLINICAL STAGE, EXAMINATION RESULTS AND SYMPTOMS IN VIBRATION SYNDROME

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SUMMARY

The vibration exposure dose dependency of clinical stage, examination results and symptoms are valuable for evaluation of exposure effect in vibration syndrome. The 1973 national survey of 461 chain saw operators in private forests was reexamined with respect to vibration exposure dose (VD) and clinical stage (Stockholm Workshop scales: CIRP-0 to 3 and SN-0 to 3 stages). VD was calculated by the formula " $a_{hw}(eq, 4h) \times D$ (days) $\times Y$ (years)". Vibration exposure dose index (VDI) was calculated according to the VD level. Subjects were divided into five VDI, four CIRP stage and four SN stage groups, respectively. Ratio of four CIRP and four SN in VDI, examination results and prevalences of symptoms were compared between VDI-1 and the other VDI groups.

Vibration dose dependency was observed in Stockholm Workshop scales (CIRP and SN stage) and examination results (prevalence of CIRP, vibrotactile perception threshold, prevalence of numbness in hands, and fingertip pinch strength). Higher VDI (VDI-5) was associated with higher prevalence of hypersensitivity to cold, muscle weakness and deterioration of finger function.

Which formula is more useful to evaluate cumulative vibration effects is still controversial.

Key words: vibration exposure dose, dose dependency, clinical stage, examination results, vibration syndrome

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