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RAYNAUD'S PHENOMENON IN DIFFERENT GROUPS OF WORKERS USING HAND-HELD VIBRATING TOOLS

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SUMMARY

The dose-effect relationship showed in the Annex A of the ISO standard 5349-1986 can be used for preventing vibration-induced white fingers (VWF) because it allows to calculate the latent period for the lowest risk of VWF. The aim of this study was to assess the risk of VWF in three different occupational groups of workers whose members operated the same vibrating power tools and the same industrial processes throughout the workday. Each occupational group was employed in two foundries and they were considered to be very stable with a low turnover rate. The mean frequency-weighted accceleration magnitudes measured from pneumatic rammers (25.3 ± 3.3 ms^{-2}) were three times higher than from chipping hammers (8.4 ± 3.8 ms^{-2}) and six times higher than from grinders (3.8 ± 1.1 ms^{-2}).

Medical examinations were carried out in 102 men consisting of 22 chippers, 42 rammers and 38 grinders. The results of this study showed that the relationship between lifetime exposure to hand-arm vibration and the vascular disorders can be predicted quite well using the Annex A of ISO standard only in one occupational group, that is, in chippers. Thirty-six percent of chippers reported blanching symptoms, but only five percent of the rammers and three percent of the grinders had these vascular disturbances. Our results may be explained by the fact that vibration received by an operator depends on the manner in which the tool is used.

In a foundry three following work processes are performed: preparing forms in ramming mix, cleaning and grinding of castings during which different forces are used by operators. It seems very likely that the energy absorbtion in the hands and arms of chippers must be stronger than in other studied groups.

Key words: hand-arm vibration, finger blanching, grinders, chippers, rammers

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