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## Effect of exposure to a mixture of solvents and noise on hearing and balance in aircraft maintenance workers.

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### Abstract

Aircraft maintenance workers are exposed to a mixture of solvents in the presence of intermittent noise. For this study these workers exposed to solvent mix and noise, were compared with mill workers exposed to noise alone, printed circuit board operatives exposed to solvents alone and those exposed to none who acted as controls. Tympanometry, acoustic reflex thresholds, transient and distortion product otoacoustic emissions, auditory brainstem potentials, nystagmography and posturography were examined. There was a significant effect on pure tone thresholds for both noise and solvents+noise. The distortion product otoacoustic emissions declined with frequency and exhibited lower DP amplitude with noise compared to solvents and noise group. The transient emissions showed a similar effect. Over 32% of subjects with solvent and noise exposure had abnormalities of the auditory brainstem responses in terms of interwave interval prolongation. The mean acoustic reflex thresholds showed a pattern of differences which differentiate noise from solvent and noise groups. The contralateral pathway appears to be differentially affected by solvent exposure. 32% of subjects in the solvents and noise group had an abnormal posturographic finding. In the solvents and noise group 74% had abnormalities of saccades, 56% of pursuit and 45% of optokinetic nystagmus.

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