

GENOTOXIC DAMAGE IN WORKERS OF THE LEATHER SHOE INDUSTRY, EXPOSED TO NOISE

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Background and Objectives: In functional studies has shown that mice carrying the Ah1 gene are more sensitive to noise which makes them more sensitive to noise. Other authors have shown an increased cell migration (comet) in subjects exposed to noise levels above 90 dB.

The purpose of this study was to evaluate hearing loss and genotoxic damage in workers chronically exposed to noise in the leather-footwear industry.

Methods: Through an epidemiological design we evaluated 225 workers and identified 44 workers exposed to chronic noise. Hearing loss was assessed using pure tone audiometry. Genotoxic damage caused by noise was determined by measuring DNA migration (comet assay technique.) The results were controlled for age of workers, the use of tobacco and alcohol, working hours, exposure time, intake of NSAIDs and other drugs.

Results: Of a total of 225 audiological examinations, found that 44 patients showed abnormalities of varying degrees. Hearing curves were below the surface profiles of profound hearing loss, indicating that there are probably following systemic damage: 1) surface to severe losses, 2) moderate loss and moderate to severe. This compared with parameters <20 dB. Blood samples were taken at 44 subjects to determine the existence of comet cells. This study showed that 50% of the worker had DNA migration, which correlated significantly with noise level and exposure time $R = 0.503$, $p < 0.05$

Conclusions: This study showed that there genotoxic damage and hearing damage. The comet assay is an excellent biomarker to assess the level of damage in subjects exposed to chronic environmental factors.

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