

Noise-induced hearing loss in humans – 5 year update

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During 2003-2008, over 500 investigations on noise-induced hearing loss (NIHL) in humans have been published. Several papers address the hazardous effects of noise on hearing and the risk assessment of NIHL for several occupations (e.g. construction workers, farmers, firefighters, railway workers, pilots, policemen, space station workers, dentists and orthopedics, theater employees). An increasing number of data is pointing out to the additive adverse effect of exposure to industrial chemicals on NIHL. New policy for the protection of workers who are co-exposed to noise and organic solvents has been proposed. Much attention has been given to environmental noise exposure and to the prevalence of NIHL in general populations, particularly in children and adolescents. Few alarming studies have indicated the increasing number of noise-induced-like type of audiogram in teenagers. Few studies have also indicated that environmental noise may add to the risk for occupational NIHL.

Vulnerability factors for NIHL such as age, smoking, and hypertension have been further explored. Large national and international studies on candidate genes for increased susceptibility to NIHL have been conducted, indicating that some K⁺ ions recycling genes and oxidative stress genes may play a role.

Clinical issues involved: further exploration of the utility of otoacoustic emissions for monitoring of NIHL, tinnitus assessment, and vestibular myogenic evoked potentials changes due to noise exposure.

The value of several hearing protector techniques and approaches has been evaluated and the medico-legal aspects of NIHL have been discussed. New hearing preservation and training programs have been developed in several centers.