

Noise and chemicals: Workers are losing their hearing

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Noise and chemicals cause workers to lose their hearing. Credit: SINC

A study carried out by Spanish researchers has shown that the presence of chemical contaminants can interact with noise and modify, for good or for bad, the way in which work-related "deafness" - which is increasingly common among young people - manifests itself. Noise-related hearing loss is the most common occupational disease in Europe.

"Workers exposed to noise in the presence of metalworking fluids exhibit a delay in hearing alteration in comparison with those exposed only to noise at the same intensity. However, those exposed to noise in the presence of welding fumes experience increased hearing alteration", Juan Carlos Conte, lead author of the study and a researcher at the University of Zaragoza, tells SINC.

In the study, published in *Anales del Sistema Sanitario de Navarra*, the team analysed the way in which various physical and chemical contaminants interact, and the impact this had on hearing alteration in 558 metal workers

"A problem we detected with respect to welding fumes in the presence of noise was that the protection used is effective for reducing the intensity of noise, but not for reducing the effects of the chemical contaminant", Conte explains.

[Cellulose](#) masks or others made of similar compounds have little effect in this case, since their capacity to filter particles (such as charcoal) has no effect on toxic [gas molecules](#) (such as [carbon monoxide](#)).

However, in noisy atmospheres with metalworking fluids, people have the advantage of being able to use masks as respiratory protection, although the ear protection must be used in the same way to ensure that a person is comprehensively protected from noise.

The researchers point to other factors in work-related hearing loss. For example, tobacco contributes to the acquisition of initial acoustic trauma, while exposure to noise outside the work environment also impacts on advanced acoustic injury.

Too much noise at work

The European Agency for Safety and Health at Work (EU-OSHA, 2006) recognises that noise-related hearing loss is the most common professional disease seen in Europe, and suggests greater focus should be placed on combined risk factors in workers exposed to high [noise](#) levels and chemical compounds.

Recent studies carried out in the United States (Agrawall et al. 2009) and

New Zealand (Thorne et al. 2008) show that noise-related [hearing loss](#) is one of the most widely spread professional illnesses in those countries. They concluded that the classic methods used to control this problem have not had the expected results, and detected ever-increasing prevalence, particularly in young people.

More information: J.C. Conte, A. I. Domínguez, A. I. García Felipe, E. Rubio, A. Pérez Prados. "Cox regression model of hearing loss in workers exposed to noise and metalworking fluids or welding fumes". An. Sist. Sanit. Navar, Vol. 33, 1, Apr 2010.

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