



## Sound advice for public health



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Although the deleterious health effects of air pollution have received welcome attention over the past few years, noise pollution has been neglected by comparison. Part of the problem has been lack of knowledge. However, understanding of the molecular mechanisms behind the loss of auditory sensory cells and of the non-auditory public health effects of noise has been increasing. In a Review in today's *Lancet*, Mathias Basner and colleagues describe what is known.

Many people adapt to noise, which can occur in the workplace (eg, industrial settings), in social situations (eg, bars), or in the wider environment (eg, road, rail, and air transport). But the extent that people habituate to noise pollution differs and is rarely complete. Chronic and high-level exposure can lead to negative health outcomes.

Noise-induced hearing loss can be caused by a one-time exposure (eg, gunfire) or by long-term exposure to sound pressure levels higher than 75–85 dB(A) (A-weighting accounts for the relative loudness perceived by the human ear). WHO estimates that 10% of the world's population are exposed to sound pressure levels than could potentially

cause noise-induced hearing loss. Such loss is the most common occupational disability in the USA. Implementation of occupational hearing safety legislation is varied worldwide and better adherence will help prevent hearing loss as well as other auditory problems such as tinnitus.

The non-auditory health effects of noise include annoyance and sleep disturbance. Several studies have also shown that noise pollution can increase the prevalence of cardiovascular disease and mortality in highly noise-exposed groups. Environmental noise exposure can also negatively affect children's learning outcomes and cognitive performance. WHO estimates that this type of noise pollution causes the loss of 45 000 disability-adjusted life-years every year for children aged 7–19 years in high-income western European countries.

Although drugs to protect against noise-induced hearing loss are being pursued, they are at least a decade away from becoming a reality. Prevention is therefore the option. Hearing protection and noise control are important areas of public health that deserve far greater recognition. ■ [The Lancet](#)

For more on [tinnitus](#) see [Seminar Lancet 2013; 382: 1600–07](#)