



## Traffic noise causes loss of over one million healthy life years

A new World Health Organisation (WHO) study has estimated that the health impact of environmental noise in western Europe could be up to 1.6 million healthy life years lost annually through ill health, disability or early death.

The impact of environmental noise on health has been gaining policy attention, especially as exposure to noise appears to be increasing, alongside evidence of the negative health effects of environmental noise. In order to inform policy and develop management strategies, risk assessments are needed to evaluate the potential health effects of exposure.

The study brought together evidence on the relationship between environmental noise and health effects and provided estimates of the health impacts based on existing knowledge of the relationships between exposure and health. This was achieved using DALYs (disability-adjusted life years), which combine potential years lost from premature death with healthy years lost through disease and illness. It focused on the impacts of cardiovascular disease, cognitive impairment, sleep disturbance, tinnitus and annoyance. Annoyance was included because the WHO defines health as being a 'state of complete physical, mental and social well-being'. For some impacts, estimates could only be provided for certain parts of Europe and/or age groups owing to available data.

The results revealed that for cardiovascular diseases, which include hypertension and ischaemic heart disease (caused by reduced blood supply to the heart muscle), environmental noise is responsible for the loss of approximately 61,000 DALYs in high-income countries. By extrapolating data from Sweden to other western European countries, the study estimated that noise exposure accounted for the loss of 45,000 DALYs for children aged between 7 and 19 years, through cognitive impairment. Sleep disturbance caused an estimated loss of 903,000 DALYs, whilst annoyance accounted for a loss of 654,000 DALYs for the EU population living in towns of over 50,000 inhabitants. Noise-induced tinnitus produced an estimated loss of 22,000 DALYs in the adult population.

In total, this means that the health impact of environmental noise is between 1.0 and 1.6 million DALYs. The range takes into account the differing populations for which the estimations were made. The research highlights there may be other uncertainties, such as sub-clinical effects, complex influences, such as age, gender and occupation, and the health impacts of combined exposure to noise and other stressors, such as air pollutants and chemicals.

Nevertheless the practices of risk assessment reviewed in the study can be applied to national and local implementation of noise maps and action plans under the EU Environmental Noise Directive. For regions, such as south-eastern Europe, where required data are not as readily available, the study provides several options for calculating estimations.

**Source:** World Health Organisation Regional Office for Europe and JRC European Commission. (2011) Burden of disease from environmental noise. Quantification of healthy life years lost in Europe. *WHO European Centre for Environment Health, Bonn Office*. Downloadable from <http://www.euro.who.int/en/what-we-publish/abstracts/burden-of-disease-from-environmental-noise.-quantification-of-healthy-life-years-lost-in-europe>

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