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One in five Europeans is regularly exposed to sound levels at night that could significantly damage health

WHO introduces guidelines to protect people's health from night noise pollution

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Today, the WHO Regional Office for Europe launches its Night noise guidelines for Europe. (1) The book provides ground-breaking evidence on how exposure to night noise can damage people's health, and recommends guideline levels to protect health.

The new limit is an annual average night exposure not exceeding 40 decibels (dB), corresponding to the sound from a quiet street in a residential area. Sleepers that are exposed to higher levels over the year can suffer mild health effects, such as sleep disturbance and insomnia. Long-term average exposure to levels above 55 dB, similar to the noise from a busy street, can trigger elevated blood pressure and heart attacks. One in five Europeans is regularly exposed to such noise levels.

"Noise has emerged as the leading environmental nuisance in Europe, and excessive noise is an increasingly common public complaint. The new guidelines will help countries to recognize and address the issues surrounding noise and health," says Dr Srdan Matic, Unit Head, Noncommunicable Diseases and Environment at the WHO Regional Office for Europe. "Based on a six-year expert evaluation of scientific evidence in Europe, now governments have stronger justifications for regulating exposure to night noise, and clear guidance on what these limits should be." Thirty-five scientists from medical and acoustical disciplines, and key partners such as the European Commission, were involved in developing the guidelines.

Effects on health

Recent research clearly links exposure to night noise with harm to health. Noise can aggravate serious health problems, beyond damage to hearing, particularly through its effects on sleep and the relations between sleep and health. When people are asleep, their ears, brains and bodies continue to react to sounds. Sleep disturbance and annoyance are the first effects of night noise and can lead to mental disorders.

The effects of noise can even trigger premature illness and death. Night noise from aircraft can increase blood pressure, even if it does not wake people. Noise is likely to be more harmful when people are trying to fall asleep and awaken. Recent studies show that aircraft noise in the early morning is the most harmful in increasing the heart rate.

More vulnerable groups

Some groups are more vulnerable to noise. As children spend more time in bed than adults, they are more exposed to night noise. Chronically ill and elderly people are more sensitive to disturbance.

Shift workers are at increased risk because their sleep structure is under stress. In addition, the less affluent, who cannot afford to live in quiet residential areas or have adequately insulated homes, are likely to suffer disproportionately. Nuisance at night can lead to an increase in medical visits and spending on sleeping pills, which affects families' budgets and countries' health expenditure. The gap between rich and poor is likely to increase if governments fail to address noise pollution.

Noise limits and action by countries

The new WHO book provides both evidence and recommendations that countries can easily use in introducing targeted noise limits. The guidelines complement the recent European Union environmental noise directive; (2) it requires countries to map noise hotspots and reduce human exposure, but stops short of setting limits.

Interventions combining reductions in both noise events and sound levels are most effective in reducing exposure to excessive noise. Zoning can assist planning authorities in keeping noise away from sensitive areas through, for example, routing traffic away from hospitals and schools and erecting noise barriers. Exposed areas could be good sites for offices, where no people would be present at night. Placing bedrooms on the quiet side of a dwelling is a simple measure. Sound insulation of bedroom windows is another option, but care must be taken to avoid reducing indoor air quality.

“Just like air pollution and toxic chemicals, noise is an environmental hazard to health. While almost everyone is exposed to too much noise, it has traditionally been dismissed as an inevitable fact of urban life and has not been targeted and controlled as much as other risks,” concludes Dr Rokho Kim of the WHO Regional Office for Europe, who managed the project to draw up the guidelines. “We hope that the new guidelines will create a culture of noise awareness, and prompt governments and local authorities to invest effort and money in protecting health from this growing hazard, particularly in cities.”

The Regional Office web site offers further information on noise and health.

For more information, contact:

TECHNICAL INFORMATION:

Dr Rokho Kim
Scientist, Noise and Housing Burden of Disease
WHO Regional Office for Europe
Hermann-Ehlers-Straße 10 D-53113 Bonn, Germany
Tel.: +49 228 815 0400. Fax +49 228 815 0414
E-mail: rki@ecehbonn.euro.who.int

PRESS INFORMATION:

Ms Cristiana Salvi
Technical Officer, Partnership and Communications
WHO Regional Office for Europe
Via Francesco Crispi 10, I-00187 Rome, Italy
Tel.: +39 06 4877543; mobile: +39 348 0192305
Fax: +39 06 4877599; E-mail: csa@ecr.euro.who.int

References

(1) Night noise guidelines for Europe (Copenhagen, WHO Regional Office for Europe, 2009)

(http://www.euro.who.int/InformationSources/Publications/Catalogue/20090904_12) updates the Guidelines for community noise (Geneva, World Health Organization, 1999 (<http://www.who.int/docstore/peh/noise/guidelines2.html>)).

(2) Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise (<http://ec.europa.eu/environment/noise/directive.htm>).

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