

LIST OF ARTICLES ON THE ADVERSE HEALTH IMPACTS OF NOISE

GENERAL LITERATURE

1. **Article Name** - **Environmental Noise Pollution in the United States: Developing an Effective Public Health Response**, Environmental Health Perspectives, American Public Health Association; Volume 122 | No 2 | Feb 2014

Article Authors – Monica S. Hammer, Tracy K. Swinburn, Richard L. Neitzel

Date Published – February 2014

Article Summary

This article stresses the seriousness of noise pollution and summarizes medical and scientific evidence that concludes that noise pollution causes serious health problems. It explains why US noise regulations have been politically compromised by special interest groups. It also provides recommended action steps to help reduce the public health consequences of environmental noise pollution.

2. **Article Name** - **Cardiovascular Effects of Noise**, Noise and Health

Article Author – Wolfgang Babisch

Date Published – 2011 | Volume 13 | Issue 52

Article Summary

This paper emphasizes the correlation between noise and health. It provides evidence that Noise adversely affects cardiovascular health: high blood pressure, stress, etc. Subjects who had lived several years in noisy environments still respond to acute noise stimuli. Repeated arousal from sleep is associated with a sustained increase in daytime blood pressure. The long-term effects of chronic noise exposure at high noise levels studied in animals, show permanent vascular changes and alterations in the heart muscle, which indicate increased risk of cardiovascular mortality. Although the effects tend to be diluted in the occupational studies due to the 'healthy worker effect'¹, epidemiological studies carried out in the occupational field indicate that employees in high noise environments have a higher risk for high blood pressure and myocardial infarction.

3. **Article Name** - **What is a Safe Noise Level for the Public**, American Journal of Public Health,

Article Author - Daniel Fink, MD, MBA

Date Published - January 2017, Vol 107, No. 1

Article Summary

This US article argues that 85 decibels is an unsafe noise exposure level for the public. This standard assumes workers have quiet when not at work, a situation unavailable to most Americans. Consumer and industrial products should be labeled with noise ratings. The successful marketing of quieter dishwashers displaying decibel ratings demonstrates these appliances can be built and sold. Effective noise control technologies exist including noise reduction via design and material specifications and sound insulating, isolating, reflecting, or absorbing techniques. If the United States could become largely smoke-free, it can also become

¹ Workers usually exhibit lower overall death rates than the general population because the severely ill and chronically disabled are ordinarily excluded from employment

quieter.

4. [Article Name](#) - **Burden of disease from environmental noise, Quantification of healthy life years lost in Europe** (cited in Update on the Health Effects of Noise by the Medical Office of Health, Dr. David MacKeown - August 28, 2015)

[Article Author](#) – WHO, European Commission

[Date Published](#) – 2011

[Article Summary](#)

The high level of annoyance caused by environmental noise should be considered an environmental health burden. There is sufficient evidence from large-scale epidemiological studies linking exposure to environmental noise with adverse health effects. Environmental noise should be considered not only as a cause of nuisance but also a concern for public health and environmental health.

The reduction in cognitive ability in school age children from noise exposure will persist for some time after the noise exposure ceases. WHO defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

LITERATURE FOCUSING ON NOISE IMPACTS ON CHILDREN'S HEALTH

5. [Article Name](#) – **CHILDREN AND NOISE - Children's Health and the Environment** WHO Training Package for the Health sector

[Article Author](#) – World Health Organization

[Date Published](#) – Dec. 2009 – Latest update

[Article Summary](#)

This slide show presentation outlines children's vulnerability to noise, the ensuing adverse health effects and required action. Unsafe noise is increasing in neighbourhoods, schools, hospitals, care centres, etc. from increasing population environmental noise sources and levels. It classifies these vulnerable child subgroups: fetuses and babies, preterm, low birth weight, children with dyslexia and hyperactivity and children on ototoxic medication. Children are more vulnerable to noise because of their differing perceptions of noise dangers; lack of ability to control the noise environment; interference with communicating danger and more exposure due to behavior. Children may also be more vulnerable due to increased immaturity, critical periods in relation to learning, undeveloped coping mechanisms and settings where noise is prevalent.

The implications of noise on children are: lifetime impairment of learning and education, short-term deficit etc. Fetal noise exposure can lead to prematurity and growth retardation, impaired reading ability, cognitive development, psychological damage, hypertension, etc. It recommends that noise be controlled at the source and that noise intervention occur at neonatal intensive care units, amplified sound venues, schools, day care centres, etc.

6. [Article Name](#) – **Noise pollution: non-auditory effects on health**

[Article Author](#) – Stephen A Stansfeld; Mark P Matheson British Medical Bulletin | Oxford Academic

[Date Published](#) – 01 December 2003

[Article Summary](#)

This article discusses noise and non-auditory health effects of noise in children. Presents that children are particularly vulnerable to non-auditory health effects of noise. They have less cognitive capacity to understand and anticipate stressors and lack well-developed coping strategies. Since children are

developing physically and cognitively, there is risk that exposure to noise may have irreversible negative consequences.

Studies of children exposed to environmental noise have consistently found effects on cognitive performance. The most informative studies of the effects of noise on cognition have been field studies focusing on primary school children.

The research evidence suggests that chronic exposure to noise affects cognitive functions involving central processing and language comprehension. Deficits have been found in sustained attention and visual attention. Relatedly, according to teachers' reports, noise-exposed children have difficulties concentrating compared to children from quieter schools. Children exposed to chronic environmental noise have been found to have poorer auditory discrimination and speech perception as well as poorer memory requiring high processing demands. Finally, chronically exposed children tend to have poorer reading ability and school performance on national standardized tests.