January 2015
Thematic Issue 47

Noise impacts on health

Subscribe to free weekly News Alert

Source: van Kamp, I. and Davies, H. (2013). Noise and health in vulnerable groups: A review. *Noise and Health*. 15(64): 153-159. DOI: 10.4103/1463-1741.112361
Available from: http://www.noiseandhealth.org/text.asp?2013/15/64/153/112361

Contact:
irene.van.kamp@rivm.nl

Read more about:
Environment and health, Noise

European Commission

Science for Environment Policy

Health of vulnerable people exposed to noise is under-researched

Vulnerable groups of people, including those with long-term illnesses, those sensitive to noise or tinnitus (ringing of the ears), people with mental health problems and unborn and newly born babies, are often more susceptible to physical and emotional stresses. As a result, vulnerable groups of people may be more at risk from exposure to environmental noise than healthy adults. However, there is comparatively little research focusing on the adverse health effects of noise on vulnerable people, say scientists reviewing these health impacts.

This study reviewed 62 papers, published from April 2006 to April 2011, which included the impact of environmental noise on the health of vulnerable people, including primary school children, young adolescents, preschool children, the elderly, and children with autism, asthma and attention deficit hyperactivity disorder.

One study linked hospital admissions for respiratory diseases and pneumonia for young children (less than 10 years old) with exposure to road traffic noise, and another found that girls with asthma were prone to asthma attacks if they had been annoyed by night-time noise.

The most common effects of noise on the vulnerable identified by the studies included:

1) **Annoyance**. Several studies have found that schoolchildren (aged between eight and 14) are less annoyed by aircraft and road traffic noise then adults. One paper, reviewing multiple studies, found that both the youngest people and people over 60 are the least likely to be highly annoyed by air and road traffic noise, irrespective of the level of noise or how sensitive to noise they were.

2) **Sleep disturbance**. Results from several studies have indicated that children are less likely than adults to be woken by noise, but they tend to experience more physical reactions, including raised blood pressure. Studies have not found evidence of the long-term health effects of sleep disturbance for vulnerable groups, including people sensitive to noise.

3) **Heart and circulation problems**. Research on the impact of aircraft and road traffic noise on the cardiovascular health of schoolchildren have shown that its main effect appears to be short-term raised blood pressure, although the strength of the association between noise exposure and cardiovascular effects is inconsistent between studies because of differences in the methods used.

4) **Quality of life**. Several studies have linked noise exposure at school to children having more headaches, being more tired and having raised stress hormone levels. One study associated deterioration in physical and mental quality of life in people over 60 with exposure to road traffic noise.

5) **Cognitive processes**. Several studies have suggested that schoolchildren exposed to noise from aircraft and road traffic experience learning and comprehension difficulties. One study found that noise at work affected the job performance of teenage boys.

6) **Hearing**. Little is known about the impact of noise on the hearing of children, although it is likely that any effects will be cumulative over the long term. Research has been done on the impact of loud noise from concerts, discotheques and listening to music from headphones on teenagers, with the most common effects being short-term tinnitus and hearing loss.

The study's authors advise that more research is needed, especially on little-studied groups of vulnerable people, including those with mental illness, shift workers and those with tinnitus.