

Excerpt from 2021 APHA Policy Statement:

Noise as a Public Health Hazard¹

Decades of scientific evidence show that noise causes or contributes to hearing loss (noise-induced hearing loss [NIHL]), annoyance, sleep disruption, cardiovascular disease, metabolic disturbances, and exacerbation of anxiety and depression.[1,2–4,5] It also has adverse impacts on communication, activities, learning, productivity, and quality of life.[1,3,6] The health of more than 100 million Americans is estimated to be at risk.[7]

Hearing loss is the third most common chronic physical condition in the United States, with a prevalence twice that of diabetes or cancer.[8] Approximately 5.2 million children (6–19 years of age) and 26 million adults (20–69 years of age) have hearing damage from excessive noise exposure (i.e., NIHL).[9] In addition to the physical and mental health effects, the costs of hearing loss are considerable. Untreated hearing loss has been shown to increase health care costs by 46%, the incidence of inpatient stays by 47%, and the likelihood of 30-day hospital readmission by 44% over a 10-year period.[10] These findings may be related to consequences that include higher risks of falls,[11] depression, cognitive decline, and dementia.[10] Work productivity losses due to hearing loss are estimated in the hundreds of billions of dollars per year.[12]

Approximately 145 million Americans are at risk of noise-related hypertension, thus increasing the risk of noise-related ischemic heart disease, stroke, and related mortality. Noise-related effects on non-auditory health add considerably to the health and economic burden of noise.[1,13] In Europe, the loss of disability-adjusted life-years attributable to environmental noise is 61,000 from ischemic heart disease, 45,000 from children’s cognitive impairment, 903,000 from sleep disturbance, 22,000 from tinnitus, and 587,000 from annoyance.[1]

A full accounting of noise-related health costs in the United States does not exist, but studies suggest that those costs are considerable. Medical costs for treatment of hearing loss are estimated at \$3.3 billion to \$12.8 billion annually.[14] Cost estimates of lost productivity due to hearing loss vary widely, from \$1.8 billion to \$194 billion annually. An analysis by Neitzel and colleagues suggests that those costs may be higher; the authors found that preventing NIHL in just 20% of those potentially affected would save \$123 billion in productivity losses.[12] When noise-related hypertension is considered, lowering environmental noise just 5 dB is estimated to reduce the prevalence of hypertension by 1.4% and the prevalence of coronary heart disease by 1.8%, resulting in medical cost savings of \$3.9 billion annually.[13] The inclusion of other noise-related health effects, such as ischemic heart disease and mental health disturbances, would increase those cost estimates considerably.

¹<https://apha.org/Policies-and-Advocacy/Public-Health-Policy-Statements/Policy-Database/2022/01/07/Noise-as-a-Public-Health-Hazard>

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