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Take Control of Your Health

The Damaging Impact of Noise on Your Health

Analysis by Dr. Joseph Mercola | June 14, 2024

STORY AT-A-GLANCE

- Noise is defined as any unwanted or disturbing sound, whereas noise pollution is the conjugation of excessive or harmful levels of sound in the environment, which can interfere with human or animal life
- Despite its prevalence, many people remain unaware of the serious health risks associated with exposure to noise pollution
- Noise-induced hearing loss is a common consequence of prolonged exposure to loud noises. Studies have also linked noise pollution to cardiovascular risks, endocrine dysfunction, cognitive issues and other health problems
- WHO recommends a daily safe volume level of 80 decibels (dB) for up to 40 hours per week, yet many people are exposed to sounds exceeding this level. Practical tips are included to help you combat noise pollution and safeguard your overall health

Noise is typically defined as any unwanted or disturbing sound.[1] It may come from natural sources like thunderstorms or animals, or from artificial sources like construction work, transportation, household appliances and musical instruments.

Noise pollution, on the other hand, is the conjugation of excessive or harmful levels of sound in the environment, which can interfere with human or animal life.[2] According to the World Health Organization (WHO),[3] noise pollution has emerged as a "leading environmental nuisance," affecting millions of people worldwide.

It's particularly pervasive in urban areas where noise sources are high and opportunities for peace and quiet are limited. Yet, despite its prevalence, many people remain unaware of the serious health risks associated with exposure to noise pollution.

Hearing Loss: A Prevalent Consequence of Noise Exposure

One of the most common problems caused by noise pollution is noise-induced hearing loss (NIHL). Data from the National Institute on Deafness and Other Communication Disorders (NIDCD) reveal that at least 10 million American adults are affected by this condition.[4] A paper by the WHO further explains how NIHL occurs:[5]

> *"Exposure to loud sounds for any length of time causes fatigue of the ear's sensory cells. The result is temporary hearing loss or tinnitus (a ringing sensation in the ear) … When the exposure is particularly loud, regular or prolonged, it can cause permanent damage of the sensory cells and other structures, resulting in irreversible hearing loss …*
>
> *Continued exposure leads to progression of hearing loss, ultimately affecting speech comprehension and having a negative impact on the individual's quality of life."*

The intensity of sound is measured in decibels (dB), while A-weighted decibel or dBA[6] refers to not just the intensity, but how it's perceived by our ears. Sounds at or below 70 dBA are considered relatively safe even with prolonged exposure, while those above 85 dBA can cause hearing loss over time.[7] Unsafe listening practices, such as using personal listening devices like earbuds at high volumes or attending loud entertainment venues, also increase your risks for NIHL.[8]

A study[9] published in BMJ Global Health found that over 1 billion young people could be at risk of potential hearing loss from listening to music at volumes reaching as high as 105 dB through their earphones, underscoring the necessity for policies promoting safe listening practices.

> *"Hearing is a precious faculty, and hearing damage due to excessive noise cannot be reversed. For people who are affected, hearing loss impacts on their overall quality of life, while health care costs for society increase. Noise-induced hearing loss is preventable, and more must be done to ensure that this loss is avoided,"* the WHO asserts.[10]

Cardiovascular Risks Rise With Noise Pollution

Beyond hearing loss, research has demonstrated the link between noise and cardiovascular disease. One compelling study[11] presented at the American College of Cardiology Annual Scientific Session in 2022 revealed that noise pollution could be responsible for 1 in 20 heart attacks.

Researchers analyzed data from nearly 16,000 New Jersey patients hospitalized for heart attacks in 2018. Using their home addresses, the researchers estimated the patients' daily noise exposure and categorized them into high-noise areas (65 dB or more) and low-noise areas (50 dB or less).

Their results showed that heart attack rates were 3.3% in high-noise areas, compared to 1.9% in quieter regions. This indicates that approximately 5% of all heart attacks in noisy urban environments could be attributed to high noise levels.

Similarly, a study[12] published in the journal Environmental Health Perspectives found that exposure to both nighttime and daytime transportation noise increased the risk of cardiovascular disease by 4% for every 4 dB increase in noise among a cohort of women in the U.S.

The researchers also noted that these effects are not mitigated by sleep, meaning that even if you manage to sleep through loud sounds, your body will still react to them, triggering a cascade of stress responses that contribute to cardiovascular risk. These findings are echoed in another study published in the journal Circulation Research:[13]

> *"Traffic noise at night causes fragmentation and shortening of sleep, elevation of stress hormone levels, and increased oxidative stress in the vasculature and*

the brain. These factors can promote vascular (endothelial) dysfunction, inflammation, and arterial hypertension, thus elevating cardiovascular risk."

Noise Can Interfere With Your Endocrine System

As highlighted in the study[14] from Circulation Research, your cognitive response to noise pollution can influence your endocrine balance by triggering the overproduction of stress hormones. "The noise-induced activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system triggers the release of stress hormones such as cortisol and catecholamines," the researchers explained.

In my **previous interview** with Georgi Dinkov, who is an expert on the work of the late Ray Peat, Ph.D.,[15] an author and pioneer in nutrition, bioenergetic medicine, environmental factors and regenerative processes, we delved into the harmful effects of having elevated cortisol levels for a prolonged period of time, as its catabolic nature can cause further inflammation.

Correspondingly, researchers of the featured study[16] noted that by triggering neuroendocrine pathways, noise "induces inflammation, leading to increased levels of IL (interleukin)-6, IL-1β, and proinflammatory monocytes, along with oxidative stress."

Noise Pollution Impacts Cognitive Health

Experts believe noise pollution influences cognitive function, although this area is less researched than its effects on cardiovascular health. In a review[17] published in the International Journal of Hygiene and Environmental Health, researchers analyzed studies on the long-term effects of air pollution and ambient noise in adults aged 18 and above.

Their findings show that exposure to both air pollution and noise are "associated with one or several indicators of neurocognitive function, mood disorders and neurodegenerative disease in several studies." Research[18] also shows that children who

are exposed to environmental noise are particularly more prone to negative effects on cognitive performance.

Once hearing problems occur, it can increase the risk of social isolation, depression and dementia.[19] Unfortunately, less than 30% of people over the age of 70 who have a hearing loss will wear hearing aids,[20] despite compelling evidence[21] from the University of Exeter and King's College London showing that wearing a hearing aid can help lower the risk of developing dementia.

Other Ways Noise Can Harm Your Health

Nighttime noise disrupts sleep, leading to a cascade of health problems linked to sleep deprivation.[22] Studies also indicate that noise pollution can negatively affect reproductive health and pregnancy. Research[23] on pregnant women revealed that exposure to noise and air pollution can result in lower birth weight. Additionally, a study[24] on male rodents showed significant reductions in testosterone levels with chronic noise exposure of around 100 dB.

Moreover, a meta-analysis[25] published in the journal GeoHealth found that exposure to noise pollution is associated with an increased risk of:

- Acoustic neuroma
- Asthma and bronchitis, especially in children
- Gastrointestinal dysfunction, such as decreased motility and increased acid secretion

Practical Tips to Safeguard Your Health From Noise Pollution

As per WHO guidelines, the daily safe volume level is 80 dB for up to 40 hours per week.[26] Signs that noise is too loud include the need to raise your voice to be heard, difficulty understanding someone nearby, and experiencing pain or ringing in your ears.[27]

Taking proactive measures to combat noise pollution is crucial for safeguarding your hearing and overall well-being. Even minor reductions in volume can provide substantial protection. Here are some practical strategies I recommend you implement:

Practice safe listening habits by lowering the volume of your personal audio devices.

Download a decibel meter app on your smartphone to receive warnings if the volume reaches hazardous levels.

Wear earplugs in noisy environments, and always wear ear protection if you work around loud noises.

Use carefully fitted noise-canceling earphones/headphones, which allow you to listen comfortably to sounds at a lower volume. Choose wired options, as wireless earbuds can expose you to electromagnetic fields (EMF).

Limit the amount of time you spend engaging in noisy activities.

Take regular listening breaks from using personal audio devices to give your ears a rest.

Restrict daily usage of personal audio devices to under one hour to minimize prolonged exposure.

Consider moving if you live in a noisy area. If that's not feasible, consider noise-proofing your home by adding acoustical tile to your ceiling and walls. Installing double-paneled windows, insulation, heavy curtains and rugs can also help reduce noise volume.

Use sound-blocking headphones to eliminate occasional sound disturbances like those from traffic or lawnmowers. Wear ear protection when using your lawnmower or leaf blower.

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