

Noise



Noise is difficult to define!

One person's music is another person's noise. Sounds that are soothing for some are annoying to others.

Noise is one of the most common pollutants. Yet it is often more easily ignored than a pollutant that has an offensive odor, taste, or appearance. Noise can have negative effects on human well-being.

Is music noise? Is highway traffic noise? Maybe early morning construction falls within your definition of noise. Or do you find lawn mowers and leaf blowers to be noise?

Whatever you define as noise, it can affect your hearing. Listening to loud noise for long periods of time can cause a permanent hearing loss by damaging the delicate hearing system in the structure of the ear.

This is called noise-induced hearing loss (NIHL). NIHL happens in the following way:

- The loud sound is collected by the ear as sound waves. The sound travels down the ear canal to the eardrum.
- The loud sound passes through the middle ear into the inner ear, also known as the cochlea. The tiny hair cells lining the fluid-filled cochlea can be damaged by loud sound.
- Only healthy hair cells can send complete electric signals to the brain for interpretation and understanding. If the hair cells are damaged by loud noise, the signals cannot be correctly understood by the brain.
- Once hair cells are damaged, there is no current treatment to repair them. The resulting hearing loss is permanent.

How can I tell if I am listening to dangerous noise levels?

- You must raise your voice to be heard.
- You can't hear someone 3 feet away from you.
- Speech sounds muffled or dull after you leave the noisy area.

- You have pain or ringing in your ears (tinnitus) after listening to loud noise.

Noise has other negative effects on the human body.

Noise can affect our quality of life. It can make us more tired and angry, and lower our ability to do daily tasks. Noisy classrooms can make it harder for all children to learn. Just trying to hold a conversation in a noisy restaurant requires more concentration and energy.

Noise can cause non-hearing changes in the body. It can:

- Increase blood pressure
- Change the way the heart beats
- Cause poor digestion
- Cause poor sleep

What can I do to protect myself?

Wearing earplugs or earmuffs to protect your hearing when you know you will be around loud noise can help. It is best to limit your listening time in noisy areas.

The same applies when listening to loud music (live or through earphones). Keep personal audio devices set to no more than half volume. For personal listening devices, the World Health Organization recommends volume levels no higher than 80 dBA for adults and 75 dBA for children.

Become a model of good listening behavior for your children. Have your hearing tested regularly by a certified audiologist if you think you may have lost some hearing.

Cell phone apps allow you to measure many different types of noise. You can find out how loud some everyday sounds are—like the noise made by your car, dog, television, or stereo.

All of the following noise levels are measured in decibels. The decibel is a commonly used measurement of sound pressure level. Sounds that measure 70 dBA or higher are considered dangerous to hearing after 8 hours of listening time.

Noise



Noise level examples:

Painful

- 150 dBA = fireworks at 3 feet
- 140 dBA = firearms, jet engine
- 130 dBA = jackhammer
- 120 dBA = jet plane takeoff, sirens

Extremely loud

- 110 dBA = maximum loudness of some personal audio players
- 106 dBA = gas lawn mower, snowblower
- 100 dBA = hand drill, pneumatic drill
- 90 dBA = subway, passing motorcycle

Very loud

- 80–90 dBA = blow-dryer, kitchen blender, food processor
- 70 dBA = busy traffic, vacuum cleaner, alarm clock

Moderate

- 60 dBA = typical conversation, dishwasher, clothes dryer
- 50 dBA = moderate rainfall
- 40 dBA = a quiet room

Faint

- 30 dBA = whisper, quiet library

Notes:

For more information and to view the entire Audiology Information Series library, visit www.asha.org/aud/pei/.

For more information about hearing loss, hearing aids, or referral to an ASHA-certified audiologist, contact:



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