

# HEARING PROTECTION

## Damage to the Inner Ear

Your ear receives sound waves and sends them through a delicately balanced system to the brain. Part of this remarkable system, the cochlea, is a chamber in the inner ear filled with fluid and lined with thousands of tiny hair cells. The hair cells signal the auditory nerve to send electrical impulses to the brain. The brain interprets these impulses as sound. When you are exposed to loud or prolonged noise, the hair cells are damaged and the transmission of sound is permanently altered.

## Noise Levels

Both the amount of noise and the length of time you are exposed to the noise determine its ability to damage your hearing. Noise levels are measured in decibels (dB). The higher the decibel level, the louder the noise. Sounds louder than 80 decibels are considered potentially hazardous. The noise chart to the right gives an idea of average decibel levels for everyday sounds around you.

### *Painful*

150 dB = rock music peak

140 dB = firearms, air raid siren, jet engine

130 dB = jackhammer

120 dB = jet plane take-off, amplified rock music at 4-6 ft., car stereo, band practice

### *Extremely Loud*

110 dB = rock music, model airplane

100 dB = snowmobile, chain saw, pneumatic drill

90 dB = lawnmower, shop tools, truck traffic, subway

### *Very Loud*

70 dB = busy traffic, vacuum cleaner

60 dB = dishwasher

### *Moderate*

50 dB = moderate rainfall

### *Faint*

30 dB = whisper, quiet library

## Warning Signs of

## Hazardous Noise

You must raise your voice to be heard.

You can't hear someone two feet away from you.

Speech around you sounds muffled or dull after leaving a noise area.

You have pain or ringing in your ears (tinnitus) after exposure to noise.

## Noise Causes Physical Problems

Noise not only affects hearing. It affects other parts of the body and body systems. It is now known that noise:

Increases blood pressure

Has negative cardiovascular effects such as changing the way the heart beats

Increases breathing rate

Disturbs digestion

Can cause an upset stomach or ulcer

Makes it difficult to sleep, even after the noise stops

Intensifies the effects of factors like drugs, alcohol, aging and carbon monoxide.

## Protect Yourself from Noise

*Wear hearing protectors* when exposed to any loud or potentially damaging noise at work, in the community (heavy traffic, rock concerts, hunting, etc.) or at home (mowing the lawn, snow blowing the driveway, etc.). Cotton in your ears won't work. Hearing protectors include ear muffs and ear plugs (not swimmer's plugs), some that are custom-made and individually molded. This protection can be purchased at drug stores, sporting goods stores or can be custom-made. Check with your audiologist to find out what best suits you.

*Limit periods of exposure to noise.* Don't sit next to the speakers at concerts, dance clubs, or auditoriums. If you are at a rock concert, walk out for awhile to give your ears a break. If you are a musician, wear ear protection--it is a necessity! Take personal responsibility for your hearing.

*Pump down the volume!* When using headsets or listening to amplified music in a confined place like a car, turn down the volume. Remember: if a friend can hear the music from your headset when standing three feet away, the volume is definitely too high. Don't be afraid to ask others to turn down the volume.

*Educate yourself* about the damaging effects of noise and what you can do to prevent your exposure to noise.

*Educate others* and take action! Educate your children through discussion and by example. Wear your ear protection and encourage your children to follow your example.

*Be a responsible consumer.* Look for a noise rating when buying recreational equipment, children's toys, household appliances, and power tools. Choose quieter models, especially for equipment that you use often or close to your ears like a hair dryer.

*Inspect your child's toys* for noise danger just as you do for small parts that can cause choking. Remember, too, that children tend to hold toys close to their ear which can pose additional threat for hearing damage.

*Have your hearing tested* by an audiologist especially if you are concerned about possible hearing loss.

*Be an advocate!* Remember there are no regulations governing how loud sound can be in public places such as dance clubs, movie theaters, and exercise centers. Work with owners, managers, and community leaders to create a healthier, less noxious listening environment.

Information adapted from the American Speech-Language Hearing Association at [www.asha.org](http://www.asha.org).