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PRESS RELEASE

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CAN YOU HEAR ME NOW?
It's so important to prevent noise-induced hearing loss.

By the time they're 30, some 30% of people who grew up in an agricultural environment have some type of hearing handicap.

University of Nebraska Medical Center's(UNMC) Ellen Duysen, Community Outreach Specialist with UNMC's Central States Center for Agricultural Health at the College of Public Health, says research shows that activities such as riding in a tractor cab, exposure to grain dryer noise and participating in shooting sports without hearing protection are among the most common causes of noise-induced hearing loss (NIHL).

"And that hearing loss is irreversible," Duysen says. "Other leading causes include using ear buds with high volume. The damaging level of noise is piped right into the youngster's ear. When a shotgun goes off next to you, the sound effect is the same as being next to a jet airplane. Damage to the ear is immediate."

Additional activities that pose a risk for hearing damage includes snowmobile riding, playing in a band, or attending loud concerts. Lawn mowers, leaf blowers, and woodworking tools can also pose a risk for hearing loss.

Noise-induced hearing loss occurs when sounds are too loud for a brief time or are long-lasting. In either case, the loud noise can damage sensitive structures in the inner ear, resulting in NIHL. The damage may be immediately detected or may take time before it's noticeable. Damage can affect either one or both ears and is generally irreversible.

When sound waves enter the outer ear, they move through a narrow passageway, the ear canal. This leads to the eardrum. Incoming sound waves cause the eardrum to vibrate and send vibrations to three tiny bones in the middle ear. The bones are called the malleus, incus and stapes.

From these bones, the sound waves travel to fluid in the inner ear which is contained in the cochlea. As the fluid inside the cochlea ripples, hair cells move up and down with the vibrations. When noise is too loud, these hair cells can be damaged and eventually die. In humans, they don't grow back. If hearing loss is severe enough, hearing aids may be required to hear ordinary noises.

Sound is measured in units called decibels (dBA). Normal conversation occurs at decibel levels of 60-70 and exposure to these sounds are not likely to result in hearing loss. When sounds are at or above 85 dBA, long or repeated exposure to this sound can cause loss of hearing ability.

Some common sound decibel levels include:

1. Movie theater – 74-104
2. Motorcycles and dirt bikes – 80-110
3. Music at maximum headphone volume, sporting events and concerts – 94-110
4. Sirens – 110-129
5. Fireworks show – 140-160

Distance from the sound and the length of exposure are important factors in hearing protection. A general rule to help protect hearing is to avoid activities that include high decibel noise or at least consistently wear hearing protection during the activity.

"We can all relate to someone we know in the ag community that we have nearly yell at when we talk so they can hear us," Duysen says. "Some hearing loss can be caused by antibiotics or aging, but many times this damage can be avoided through the use of hearing protection."

Tractors that don't have a cab, the squealing sound of hogs in barn and other common noise sources around the farm often damage hearing or put people at risk for damaged hearing without their knowledge of the danger.

"Avoid exposure to loud noise whenever you can. If you feel a noise is too loud, walk away from it whenever possible," Duysen says. "On the farm, hearing protection that's fitted properly and located where it's convenient to get to is a wise choice."

Duysen encourages all farmers and ranchers to consider what sounds youth from infants through their teens frequently encounter. Earmuffs for the youngest children can offer valuable protection.

"You don't have to completely block the sounds around you," Duysen says. "In fact, that may be dangerous. But hearing protection can reduce decibel levels in a range of 15 to 34. When you purchase protection, make sure it's the right size and you fit it correctly when you use it." Children and women may require smaller versions of ear protection in order for them to be effective. Expanding ear plugs are popular, but it's not uncommon for a person to use an earplug that's actually too large for their ear, making it ineffective.

"Many people use ear plugs that are rolled and placed in the ear," Duysen says. "Very few people roll it down to a size that is actually effective. You also want to be mindful of the risk

from rolling the plug with dirty fingers and then placing it in the ear. Ear muffs may offer more effective protecti

One disadvantage of earmuffs is using them during warm, humid weather. New electronic earmuff versions are designed to allow users – i.e. hunters – to hear sounds around them without exposing themselves to hearing damage from the use of or nearness to a gun.

"Those electronic muffs amplify sounds through the use of a microphone, so when you're hunting you will probably hear surrounding noise better than if you're not wearing them," she says. "If surrounding noise exceeds 82 decibels, the muffs shut it out."

To encourage youth to use hearing protection, it may be helpful to explain that doing so can help them avoid the hearing issues they observe in elderly relatives or friends. It's also effective for children to see parents and other workers on the farm using hearing protection themselves.

"When you shop for hearing protection for your kids, take them along," Duysen says. "Allow them to have a say in choosing the hearing protection equipment. Online merchants may have a wider range of choices to help find something a young person will use."

Regardless of where hearing protection is purchased, look for merchandise that is certified by the American National Standards Institute (ANSI) to ensure that it provides the expected protection. Store the equipment where it's handy, but also protect it from elements such as dust and/or moisture.

Tracking the decibel level of sounds can be accomplished through the National Institute of Occupational Safety and Health (NIOSH) Sound Level Meter app for phones or smart watches. It can be downloaded at no cost and provides an instantaneous decibel level measurement. Users have the option to record sounds and generate a PDF report showing decibel elements of the sounds.

"If you're at a basketball game and you're concerned about the noise level and risk to your hearing, this app can help," Duysen says. "It will let you know if you need to wear hearing protection. Anytime your ears are ringing from the noise around you, the sounds are too loud, and you may already have hearing damage."

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