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NOISE-INDUCED HEARING LOSS: IT DOESN'T HAVE TO HAPPEN

Farmers are at high risk for permanent hearing damage.

Despite the fact that farmers work in daily situations that pose significant risk for hearing loss, Marjorie McCullagh, PhD, RN, and Director of Sally L. Lusk's Occupational Health Nursing Program at the University of Michigan School of Nursing, says farmers have far fewer hearing protection resources than workers in other industries.

"Farmers are overexposed to the risk of hearing loss because their daily tasks often involve a variety of high decibel noise levels," McCullagh says. "In a 2008 NIOSH (National Institute of Occupational Safety and Health) study, researchers learned that farmers are exposed to more noise on the farm than workers in any other industry, including the construction industry."

For most farmers, noise-induced hearing loss occurs gradually over many years and may go unnoticed until it's a serious problem. This type of hearing loss is referred to as sensorineural hearing loss (SNHL), which occurs in the inner ear. It is the most common type of permanent hearing loss. Once this kind of damage is done, it can cause even loud sounds to be muffled or unclear. SNHL cannot be reversed, but the damage can be prevented with some very simple behavior changes.

"Amplification with a hearing aid is the only way to deal with this kind of permanent hearing damage," McCullagh says. "Hearing aids are good in many ways, but they don't correct hearing loss in the same way that glasses correct vision. That's one of the reasons it's so important to protect our hearing and avoid this kind of damage to our ears."

McCullagh has conducted farm health and safety research for more than 35 years. One highly informative study funded by the National Institute of Health (NIH), involved mailing hearing protection devices to farmers who had volunteered to participate in the research. The

devices they received ranged from simple ear plugs to earmuffs. No instructions accompanied the devices. They were simply presented to study participants.

“As part of that study, we wanted to learn whether the farmers benefited most from online educational resources, printed educational materials or the availability of the hearing devices themselves,” McCullagh says. “The study revealed that having the devices available, being able to test different types of hearing protection, resulted in the greatest use of the information and the devices provided in the study.”

In summarizing that study’s statistics, McCullagh believes Prochaska’s Stages of Change model was at play. That model theorizes that 1) people are unaware that a behavior is problematic, resulting in their underestimation of the benefits of changing a behavior; 2) Upon learning about the benefit of changing a behavior, people consider the pros and cons of changing, but may still hesitate to change the behavior; 3) In this stage, people are ready to take action soon and make small steps toward implementing change, believing they will benefit from doing so; 4) During this stage, people have changed behavior and intend to keep moving forward with the change; 5) In this final stage, people have sustained the changed behavior for more than 6 months and work to prevent relapsing in the prior behavior.

McCullagh believes the study also revealed that a majority of farmers are more likely to use and continue using hearing protection devices when those items are close at hand in a convenient location. In her study, the farmers received about 30 different pieces of hearing protection devices. Their feedback indicated that they placed different devices in locations where the appropriate protection was easy to access.

“In our study, farmers were able to try different devices so they could decide what best fit different tasks. It’s not uncommon for someone to select hearing protection that they perceive as providing the greatest degree of hearing protection, only to find that the device blocks out too much sound,” McCullagh says. “You don’t want to block out 100% of the sound around you. Just lowering the decibel level of loud noise will help protect your ears.”

Another significant hurdle for farmers who may desire to protect their hearing is knowing the decibel level of certain activities and recognizing the degree of hearing protection that’s necessary.

“Farmers don’t carry decibel meters with them,” McCullagh says. “In other industries, workers are usually in a specific area doing the same task and with the same noise level every day. Farmers move from task to task throughout the day and some noisy jobs, like harvest, are short term.”

In selecting hearing protection, McCullagh advises looking at the NRR rating on the device, a method used to express the level of noise reduction the hearing protector provides. Values range from 0 to approximately 30. Higher values mean greater noise reduction.

McCullagh notes that farmers will benefit from maintaining and using a variety of hearing protection devices, depending on the noise level they’re working with. She also explains that a device that works well for one farmer may not be suitable for others.

“Hearing protection is a very personal choice,” McCullagh says. “It’s a good idea to try some different devices and see what’s most appropriate for you. Hearing protection devices are relatively inexpensive, so cost is unlikely to be an issue, even on a small farm.”

Just as adults working in an agricultural setting are vulnerable to noise-induced damaged, youth who accompany parents or farm workers may also be exposed to high-decibel noise,

which puts them at risk for hearing loss, too. Without a clear understanding of how damaging loud noise can be and how to avoid hearing damage, parents and other farm workers may not provide adequate protection for youth in these situations.

“It’s healthy for youth to accompany and work with their family on the farm,” McCullagh says. “However, it’s critical to be aware of the dangers different tasks present for adults and youth.”

McCullagh greatly appreciates the time farmer volunteers have invested in the studies she’s conducted.

“It’s been my experience that farmers are eager to work with me on hearing protection research,” she says. “My hope is that we can use the information we gather to help make life on the farm even better.”

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