



A program of the National Institutes of Health
<http://www.noisyplanet.nidcd.nih.gov>



Noise: Keeping It Down on the Farm

A Tip Sheet for Parents of Children Who Live or Work on Farms

Some people may think a farm is a quiet place, but if you live or work on one, you know that isn't always the case. Combines, tractors, and even farm animals can create a noisy environment that puts your hearing at risk. The following tips can help parents teach children who live or work on a farm how to prevent hearing loss from too much noise, called noise-induced hearing loss (NIHL). Children ages 8 to 12 are at a great age to start learning healthy hearing habits that can protect their hearing for life.

Be aware of hearing safety.

Too much noise gradually damages tiny sensory cells in your inner ear, causing NIHL. The damage may not be noticeable at first, but once it occurs, the hearing loss is permanent. The louder the sound, the more likely that damage will occur. The distance between you and the sound and the amount of time your ears are exposed to the sound also matter.

Sound is measured in units called decibels, just as height is measured in feet or inches. Because people can't hear all frequencies, or pitches of sound, A-weighted decibels (dBA) can be used to describe sound based on what human ears can actually hear. For comparison, a whisper measures 30 dBA, and a normal conversation measures 60-70 dBA. While sounds at or under 70 dBA are generally considered safe, prolonged exposure to noises that are at or above 85 dBA can damage tiny sensory hair cells in our ears, causing NIHL.

Be alert to potentially damaging sounds on the farm.

- A tractor with a closed cab, on average, can expose the operator to noise levels of about 85 dBA. Prolonged exposure to any noise at or above 85 dBA can cause gradual hearing loss.
- A tractor without a cab, a woodshop, or pig squeals can reach 100 dBA or higher—roughly the same noise level as a snowmobile. Try to limit your exposure to noises at or above 100 dBA to less than 14 minutes.

Why protect your hearing?

Noise-induced hearing loss:

- Can build over time.
- Is permanent.
- Is preventable.

How to protect your hearing:

- Lower the volume.
- Move away from the noise.
- Wear hearing protectors, such as earplugs or earmuffs.

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- Grain dryers and chain saws can reach 110 dBA or higher, about the same noise level as a rock concert. Regular unprotected exposure of more than 2 minutes to sounds that are 110 dBA or higher risks permanent hearing damage.

Take steps to reduce noise from machinery.

- Keep machinery running smoothly by replacing worn parts. Be sure engines are well lubricated and properly tuned to reduce noise from friction or vibrations.
- Put barriers between you and the noise, such as an acoustically designed cab on ride-on equipment or an insulated engine cover or barrier on stationary equipment.
- Install noise-reducing mufflers on engines.

Work smart.

- Plan your work area and routine to limit your time near noise.
- Turn machinery off when it is not needed.
- Use idle or lower speeds whenever possible.
- Position machinery away from other work spaces.

Help protect your family from excessive farm noise.

- **Be aware of noise levels that put hearing at risk.** If you are running a piece of farm equipment and you have to shout to be heard over the noise, then you should likely be wearing hearing protectors. Any noise that leaves you or your child feeling nervous or fatigued, or that leaves a ringing or buzzing sound in your ears, is too loud for any length of time without hearing protectors.
- **Get comfortable hearing protectors and get comfortable using them.** Hearing protectors reduce harmful levels of sound. Although carrying on a conversation may be more difficult in some situations, you will still be able to hear warning signals, which is very important for safety. Try out earmuffs before you buy them to ensure that the fit is right. Wear earplugs or earmuffs in and around the house so you become comfortable and familiar with how things sound when you are wearing them.



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- **Point out situations where family members should practice hearing safety.** Remind your child to do chores or other activities away from noisy equipment, or to wear hearing protectors when the chore involves noisy equipment.
- **Post signs in potentially noisy areas.** Use signs to identify work areas or equipment for which hearing protectors are essential.
- **Keep hearing protectors on hand in potentially noisy areas.** Ask family members to wear them whenever they are in these areas. Equipment may start up without notice or emit a sudden blast of noise. Very loud noises, even if they last for only a short time, can cause immediate hearing damage.

Hearing safety is an important part of farm safety.

The North American Guidelines for Children's Agricultural Tasks were developed by the National Children's Center for Rural and Agricultural Health and Safety to help parents determine when children ages 7 to 16 can safely handle different farm chores. They advise the use of hearing protectors for certain chores that may put children's hearing at risk. Find out the chores for which hearing protection is recommended at <http://www.nagcat.org>.

By taking some basic safety precautions and being a positive role model, you can teach your child how to have healthy hearing for life. At the same time, you also will be protecting your own hearing from NIHL.

You can visit the Noisy Planet website to obtain other materials on how to protect your hearing down on the farm, including bookmarks, fact sheets, and posters in English and Spanish. Visit <http://www.noisyplanet.nidcd.nih.gov>.

You can also find additional information on how to protect your child's hearing, as well as quizzes, quick tips, and more, at the Noisy Planet Facebook page. Visit <http://www.facebook.com/NoisyPlanet>.

Decibel values for farm noises were obtained from the National Institute for Occupational Safety and Health website, the National Agricultural Safety Database, and various state Cooperative Extension Service publications. Note that decibel values can vary widely according to many factors, including age, make, and model of the machinery; the operation being performed; and amount of maintenance received. Furthermore, a person just inches away from the source is experiencing much greater decibel levels than someone standing 100 feet away.

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140-165 decibels

Shotgun firing,
firecracker

110 Grain dryer,
chain saw

Regular exposure of more than 1 minute at or above 110 decibels risks permanent hearing loss.

105 Personal stereo
at maximum level

100 Tractor without a
cab, woodshop,
pig squeals

No more than 14 minutes of unprotected exposure at or above 100 dBA is recommended.

95 Grain auger

85 Tractor with closed
cab

Prolonged exposure to any noise at or above 85 dBA can cause gradual hearing loss.

70 Chicken housing

60 Normal
conversation

50 Quiet barn

30 Whisper

0 Smallest sound a
person with
normal hearing
can detect



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The National Institute on Deafness and Other Communication Disorders (the NIDCD) sponsors *It's a Noisy Planet. Protect Their Hearing*. This national public education campaign is designed to increase awareness among parents of children ages 8 to 12 about the causes and prevention of noise-induced hearing loss (NIHL). With this information, parents and other adults can encourage children to adopt healthy hearing habits before and during the time that they develop listening, leisure, and working habits. To find out more about how to protect your hearing and that of your family, visit the Noisy Planet website at <http://www.noisyplanet.nidcd.nih.gov>.

For more information about your hearing, hearing loss, and NIDCD's other research areas and materials, visit <http://www.nidcd.nih.gov> or contact:



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