

Guidance for Recreational Firearm Users

Susan Cooper, PhD



Risk of Hearing Loss

With acoustic impulses in the range of 145 to 175 dB peak Sound Pressure Level, even a single gun shot can result in damage to the delicate nerve structures of the inner ear. Shooting ranges in both indoor and outdoor settings provide additional risks where bench-rest shooting, platforms, covers, or other solid surfaces can reflect and amplify the sound energy. Unfortunately, many shooting enthusiasts report they seldom wear hearing protection when exposed to gunfire, especially when hunting. Even when shooters themselves understand the potential danger to their own ears, many don't realize that bystanders are also at risk. Recent efforts have been focused on protecting children who often begin hunting and target shooting at a very young age.

Strategies to Reduce Risk

Over the years, legislation has been introduced to loosen restrictions on the use of gun suppressors. Supporters say reducing noise from guns would protect hearing of the general public; opponents fear misuse of the technology. To provide more guidance on the matter of hearing loss prevention related to gunfire, the National Hearing Conservation Association (NHCA) has published a guideline on firearm noise. Strategies that can reduce the risk include wearing appropriate and properly fitted hearing protection, choosing smaller caliber firearms, using specialized ammunition, shooting in a non-reverberant environment, and avoiding shooting in groups. Although using firearms equipped with noise suppressors can help reduce the level of the sounds, NHCA warns that suppressors do not eliminate risk.

Tips for shooters to reduce risks of hearing loss
Keep hearing protection devices on hand and use them correctly.
Use earplugs and earmuffs together (double protection) when using large-caliber guns or when many shots will be fired.
Consider smaller calibers or gauges during target practice.
Choose a single-shot or bolt-action over a semi-automatic weapon to help reduce the numbers of shots and increase the quiet time between shots.
Avoid shooting in large groups, especially at indoor or enclosed firing ranges, and if you do be especially aware of those who may be shooting near you so you can have your ears protected when their guns discharge.
Select a firing range with noise control treatments on the walls and ceilings.
Choose firearms with longer barrels and no ports or muzzle brakes.
Consider using low-recoil (low-noise) ammunition.
Consider the use of a firearm suppressor for use in combination with hearing protection devices, where suppressor use is legally permitted.
When hunting in a blind, make sure the muzzle is outside the blind before pulling the trigger.

Use well-fitted, nonlinear or electronic ear protection designed for hunting/shooting.

Excerpt from: National Hearing Conservation Association Position Statement on Recreational Firearm Noise, 2017

Specialty Hearing Protection

Let's be clear, traditional hearing protectors can effectively block out loud noise - whether in an occupational setting or during recreational activities. Gun sports, however, present a unique challenge because the offending impulse sounds may be extreme, but they are only milliseconds in duration and often only occasional. Most hunters want to have the best possible hearing when listening for game in the brush, but then be protected when taking a shot. Thankfully, in recent years, new technologies have emerged that are effective in protecting against impulse noise such as gunfire and at the same time are user-friendly for typical hunting/shooting activities.

Impulse Filters

Traditional hearing protection can be very effective against loud noise. However, most hearing protectors are not selective in the amount of protection they provide (that is, they block both loud and quiet sounds by the same amount). This means that although the user is protected, he or she may miss out on important cues such as speech and environmental sounds. For these situations, specialty "impulse filters" are available that let most low level sounds pass through the filter with minimal muffling. However, when a loud impulse such as a gunshot is present, the filter effectively reduces the "bang" to a safe level.



Electronic Hearing Protectors

Electronic hearing protectors can be even more sophisticated in their ability to sample and manage incoming sounds at the ear. Electronic protectors use battery-powered electronic circuitry to sample ambient sounds in real time. Quiet sounds are allowed to pass through the earpiece, and very quiet sounds can even be amplified to provide a "hearing boost" for the user. But when an incoming sound is too loud, then the electronic circuitry automatically shuts down effectively reducing that sound to a safe level. This way, users can hear game sounds and conversations normally, or even with an enhanced volume boost. But when sounds become dangerously loud, the technology will keep hearing protected.

A Word of Caution

We are aware that many products on the open market claim to offer selective protection against impulse


noise. However, in our experience, fewer actually deliver on that promise. As always, be an informed consumer and do your research before purchasing. Only purchase products from a reliable manufacturer with appropriate warranties and fit guarantees (for custom products).

Learn More

For more information on gunfire noise and how to effectively protect your hearing, check out these helpful resources:

- [Hit the Mark: Firearms training without damaging your hearing.](#) NIOSH Science Blog, March 3, 2017
- [NHCA Position Statement: Recreational Firearm Noise](#), 2017
- Meinke, D. K., Finan, D. S., Flamme, G. A., Murphy, W. J., Stewart, M., Lankford, J. E., & Tasko, S. (2017). Prevention of Noise-Induced Hearing Loss from Recreational Firearms. *Seminars in hearing*, 38(4), 267-281. <https://doi.org/10.1055/s-0037-1606323>

To learn more about CavCom's complete line of electronic and passive hearing protectors for shooters, check out [WildEar.com](https://www.wildear.com).

Now we have you protected outside of work with  WildEar
Hearing Protection & Boosters for Shooting, Hunting, Hobbies, Yard Work & More
[Visit us at WildEar.com](https://www.wildear.com)
