

When warning decibels start ringing

Firing a shotgun produces 120 decibels at the shoulder and since hearing damage is both cumulative and permanent, here's a selection of products to limit it

WRITTEN BY SARAH PRATLEY

Pass a workman drilling in the street, stand for a moment by a blaring speaker or fire a shotgun once and it is likely to feel unpleasant rather than harmful. But such instances come at a cost to your hearing and a lifetime spent doing any of the above will cause irreversible damage.

Much of the body responds to abuse; muscle tissue in particular will strengthen if it is worked. This is not the case for the specialised tissues of the nervous system, including brain functions and hearing. Loud sounds cause the fine hairs in the inner ear to become detached and when they are gone, they are gone. Hearing loss can happen instantaneously or manifest over time and there is the risk of tinnitus. It is also known that vibrations in the jawbone cause damage to the opposite ear to the gun first.

"The initial effect of hearing damage is to lose acuity in the high-frequency range," explains Christian Schofield, talent pathway coordinator and development coach at British Shooting. "This is why shooters can be prone to having difficulty with conversations in an environment with background noise, 'cocktail party deafness'. We are warned that hearing damage is both permanent and cumulative."

PROVIDING PROTECTION

The Control of Noise at Work Regulations 2005 rules that hearing protection must be provided to workers exposed to a daily or weekly average of 85 decibels. Decibels (dB) are measured on a logarithmic scale: 0dB represents the quietest sound audible to the healthy human ear; from there, an increase of 3dB means a doubling of sound intensity.

Working environments measure the level of sound employees are exposed to but this is impossible to gauge definitively in the →

Loud sounds, such as cartridges firing, detach the fine hairs in the inner ear





BULL'S EYE 1 EAR DEFENDERS PELTOR

These passive ear defenders compact to pocket size and are easy to carry around and clean. The bevelled bottom, low weight and slim-line profile are ideal for shooting. The headband is adjustable and padded. Available in one size.

- ◆ Price £30
- ◆ Tel 01483 486500
- ◆ www.williamevans.com
- ◆ SNR 27

PROTAC SHOOTER EAR DEFENDERS PELTOR

These ear defenders attenuate loud signals and boost quiet sounds, allowing you to converse and remain protected. They are weatherproof, have five levels of volume adjustment and can be connected to a mobile phone or radio; 2 x AA batteries will last 100 hours, with an automatic shut off mode after inactivity.

- ◆ Price £130
- ◆ Tel 01620 671480
- ◆ www.ardmoor.co.uk
- ◆ SNR 32

MSA SUPREME PRO IV EAR DEFENDERS WILLIAM & SON

With a close-fitting, slim design and foldable headband, both cups are chamfered at the bottom to suit left- and right-handed guns. Electronic functions are incorporated in a three-button keypad. The defenders are powered by 2 x AA batteries in a waterproof compartment for 600 hours and can be connected to a radio or mobile phone.

- ◆ Price £195
- ◆ Tel 020 7493 8385
- ◆ www.williamandson.com
- ◆ SNR 25

shooting field. "When shooting, the measured loudness depends on the specific firearms being used as well as the environment in which they are used. An open, outdoor environment allows the sound to disperse more easily than in a reflective environment like a shooting range," explains Fiona Butterworth, audiologist at Harley Street Hearing.

Despite this, we do have some sense of what we are dealing with. "A shotgun at the shoulder is around 120dB, though it depends on the ammunition," advises John Martin, chairman of the Clay Pigeon Shooting Association. "At the muzzle it is 150dB."

A shotgun is much louder than the level that demands regulation in the workplace but the sound of a shotgun firing lasts mere seconds, whereas machinery will operate for hours. "It is necessary to consider both the loudness of the sound and the duration of exposure," says Butterworth. The brevity of shotgun fire mitigates the dangerous level of sound it reaches, but on a shoot day it is impossible to gauge the length of time you will be exposed to harm. In the workplace, the level of sound and length of exposure can be measured and controlled. A shoot day consists of sporadic bursts of damaging noise.

Single Number Rating (SNR) is recommended for determining what hearing protection is suitable for certain environments. "Single Number Rating is used within the European Union and details how much the overall noise level is reduced by," explains Butterworth. The higher the SNR, the better the level of protection. Government agency the Health & Safety Executive recommends that a noise level of 100dB to 105dB requires a protector with an SNR of 30 or more. "SNR is the best form of noise reduction measurement to use. It is very simple," says Martin. "The complicated part is working out what dB you are being exposed to." There is a solution to this problem. "The CPSA advises using the highest rating you can get."

The range of hearing protection for shooting on the market is enormous and the choice can be largely guided by personal preference. "As long as the hearing protection

MARK BEEDIE



PROFLEX DX5 CENS DIGITAL

Used by George Digweed MBE, the DX5 features five digitally optimised modes: Game, Clay, Range, Wireless Comms and Hunter, as well as a dedicated mute function. The Volume and Mode Auto-Save allows you to pick up where you left off. They have an extended two-year warranty, Water-Shield hydrophobic protection and are tested and certified CE EN 352.

- ◆ Price £699
- ◆ Tel 01634 733883
- ◆ www.censdigital.com
- ◆ SNR 25



PROTECTHEAR PLUGZZ

This filtered earpiece is custom made from an exact impression of the user's ears. Each pair uses specially formulated medical grade silicone to provide comfort and effective protection. Connector cords and lapel clips can be fitted. Also available unfiltered with a SNR of 31.

- ◆ Price £90
- ◆ Tel 01642 77725
- ◆ www.plugzz.co.uk
- ◆ SNR 29



SQUIDGY ULTIMATE HEARING PROTECTION SYSTEMS

Made with the softest medical grade silicone, these custom earplugs are extremely comfortable for long periods. They are hypoallergenic and easy to clean, with a smooth surface that dirt cannot penetrate and a two-year limited warranty. Available in a variety of colours.

- ◆ Price £65
- ◆ Tel 01689 876885
- ◆ www.ultimateear.com
- ◆ SNR 30

is providing the appropriate level of protection and it is being worn correctly, the other options really depend on the individual and the environment the hearing protection will be used in," says Butterworth.

"There are other factors to consider, such as comfort and cost," agrees Martin.

Cost is hugely variable. Simple foam plugs are available for as little as £1 whereas custom plugs and electronic systems can set you back a few hundred pounds. Spending more does not always guarantee greater protection. "Foam earplugs should not be dismissed because they are very good," advises Martin. "Lots of people put the foam ones in wrong, they scrunch them up. You need to open the ear canal, insert them and allow them to expand." Foam plugs also work well with over-ear defenders and this is recommended for both children and shooting instructors. "Instructors and coaches, we recommend they wear earplugs and 'cans' because they are stood next to students and getting a constant 'noise dose,'" explains Martin.

"I use double protection as spending so much time on the range I am exposed to a great deal of noise," agrees Schofield.

The choice between in-earplugs and over-ear defenders depends on the individual

and a key consideration should be what other equipment is in use. "Someone who is already using protective goggles, or glasses, might prefer an in-ear style of hearing protection," suggests Butterworth.

"If you are wearing glasses, they will break the seal and you will not get the protection advertised on the box," warns Martin of over-ear defenders. But they do have advantages for cold days in the field. "I'd prefer to wear cans in winter, as they keep my ears warm," admits Martin.

CUSTOM-MADE EARPLUGS

Custom-made, in-ear plugs can be an expensive option but the protection they offer is excellent. "Provided the in-ear hearing protection is correctly fitted and sealing the ear appropriately, these can provide a higher level of protection than the over-ear hearing protection," advises Butterworth. However, custom-made earplugs are not for life. "Our ears never stop growing and changing shape, which means that a custom-made product will reach a point where the seal of the hearing protection is no longer sufficient to provide the appropriate level of hearing protection. Generally, it is recommended that the moulds are remade every four years but it is important to monitor this

yourself and if you feel concerned about the fit, get in touch with an audiologist who will be able to take new impressions."

It is recommended that hearing aids are not worn while shooting. "Modern hearing aids generally have a feature that limits amplification of loud sounds, adjustable by your audiologist. However, as this level can be variable it is still advisable to remove hearing aids and wear hearing protection," says Butterworth.

So as not to miss the sound of approaching quarry or the end of the drive and other imperative safety communications, electronic hearing systems, which filter sound to block dangerous noise and amplify ambient, can help. "The active filters can be a solution for those with milder hearing losses to help with communication while wearing earplugs," suggests Butterworth.

The fact remains that shooting, whether once or for a lifetime, will risk your hearing. "Everyone who shoots will be affected in the long term," admits Martin. But it is possible to limit damage with suitable hearing protection, provided it is fitted correctly and worn properly. Comfort, cost and ease of use are all important but safety must trump all else. Once your hearing is damaged, there is no cure. →

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**PASSIVE HEADSET
PURDEY**

With a comfortable, padded headband, the Purdey Passive Headset is designed to fit snugly over the ears. The defenders come in a box for easy transportation and storage.

- ◆ Price £25
- ◆ Tel 020 7499 1801
- ◆ www.purdey.com
- ◆ SNR 22

**COMFY PLUGS
NAPIER**

These are made from closed cell foam, which is more hygienic and efficient than conventional material. Supplied in a handy key-chain tube, these earplugs have an impressive SNR at an incredibly affordable price.

- ◆ Price £1
- ◆ Tel 01235 812993
- ◆ www.napieruk.com
- ◆ SNR 37



**REVOLUTION 6
VARIO HEARABLES**

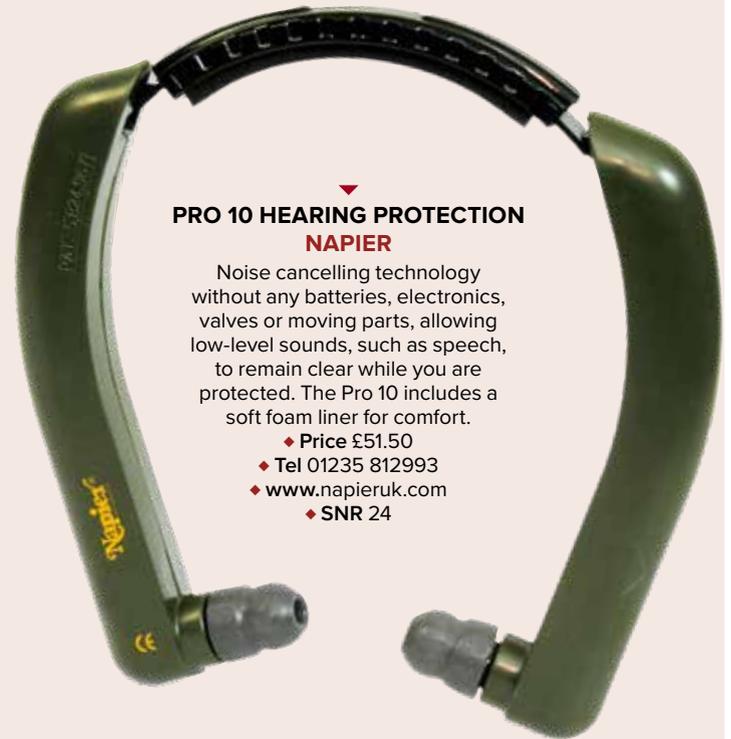
Worn by many of Britain's top guns, the set has six default programmes: Whisper, Quiet, Social, Clay, Game and Gamekeeper. The modules, which come with a 90-day money-back guarantee and two-year warranty, can be tailored, including customisation for hearing loss, and have autosave and wind and background noise reduction.

- ◆ Price £649
- ◆ Tel 01737 452200
- ◆ www.variohearables.com
- ◆ SNR 25

**PRO 10 HEARING PROTECTION
NAPIER**

Noise cancelling technology without any batteries, electronics, valves or moving parts, allowing low-level sounds, such as speech, to remain clear while you are protected. The Pro 10 includes a soft foam liner for comfort.

- ◆ Price £51.50
- ◆ Tel 01235 812993
- ◆ www.napieruk.com
- ◆ SNR 24



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