

Someone coined an expression that has been heavily quoted over the years – it goes something like this: “ Most everything I like is illegal, immoral, or fattening!” The humorous point, of course, is to draw attention to the fact that many of the things we love and do frequently may not be without some form of risk or penalty. In shooting sports, these risks often take the form of injuries – not dissimilar to those of tennis and golf in that there are specific injuries which are usually connected to sports requiring constant practice and/or involve repetitive movement or motion.

THE DARKER SIDE OF SHOOTING

BY STEVE FISCHER

For those who spend most of their recreational time, effort and a serious amount of their discretionary funds on clay shooting sports, there are several risk factors that go beyond the obvious dangers involved such as safety issues. Like tennis or golf, injury to the various joints, muscles and tendons are not uncommon and can vary in intensity from mild to acute – or even debilitating. Beyond these, and specific to the shooting sports, one of the most common injuries is damage or loss of hearing due to the lack of, or inadequate hearing protection.

Not that many years ago – and unfortunately continuing to this day – the wearing of hearing protection in the hunting fields was either viewed as ‘unmanly’, or the hunter would complain that he couldn’t hear the birds flushing with ear plugs or muffs. Unfortunately, this practice is often carried to the rifle and pistol ranges, as well as skeet, trap and sporting fields – and whether intentional or from a lack of knowledge regarding the dangers, inadequate or no hearing protection brings us to one of the several injuries found on the darker side of shooting.

DANGERS TO THE EAR

Generally speaking, the first part of the body to receive any of the negative effects from shooting sports are the ears. Without proper protection, bad things do happen. The effects are accumulative and gradual – and here’s what can happen. The human ear has three main parts – the outer, middle and inner ear. The outer ear, on which we hang our shooting glasses, leads to a passageway called the ear canal. This canal directs sound to the ear drum which separates the ear canal from the middle ear. Small bones in the middle ear help

time exposed without protection is dangerous.

WHEN DAMAGE HAS STARTED

How do you tell if you have hearing loss or damage? For some of us, the problem is very evident. We have a constant ringing sound in our ears called 'Tinnitus'. This, at the very least, is annoying – and when severe can interfere with conversation, use of the telephone and even sleep. A trip to a professional is always the first avenue to determine what, if any, damage has occurred to your hearing.



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transfer sounds deeper into the inner ear which contains the auditory (hearing) nerve. Sound vibrations become nerve impulses after passing through the mechanisms of the middle and inner ear, and go directly to the brain, which interprets these impulses as sound (music, conversation, etc.).

When the sound is too loud, it begins to kill the nerve endings of the inner ear. As the exposure to that level of noise is extended over time, more and more nerve endings are destroyed. Unfortunately, there is no known way to restore the dead nerve endings – and so this damage will be permanent.

Damage caused by excessive sound can take several forms and can be measured scientifically. There are two ways that sound is measure – decibels (dbs – the intensity or loudness) and pitch, which is the frequency of sound vibrations in cycles per second, or Hertz (Hz). For example, a low pitch sound might be like the deep tones from a tuba, while a high pitch sound would be like a flute. When damage occurs, it is often the higher pitched frequency

sounds that are lost first, which is why people with hearing loss have difficulty in hearing the higher pitched frequencies such as the voices of women and children.

WHEN SOUND BECOMES DANGEROUS

Surprisingly, it takes quite a bit less noise to damage your hearing than one would think. In this hustle-bustle world we live in today, we often just accept and ignore the background noises that permeate our daily lives. Before we even get to the range, we have to deal with traffic noise, horns, construction, heavy equipment operating nearby and even the radio when we crank it up to hear our favorite song!

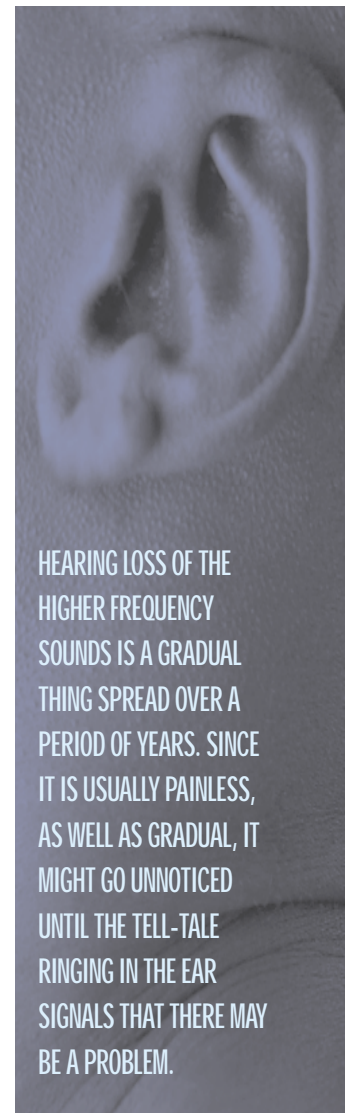
These sounds can all be measured in intensity ('decibels', or dbs). They range from the faintest sound at zero decibels, to the very loudest such as a rocket launching pad rated at about 180 decibels. For example, a quiet library would rate at about 30 decibels of sound. Light traffic at a distance, or the kitchen refrigerator could raise the decibel level to about 50 dbs. The amount of time exposed to the various

sounds and noises also affects the amount of possible damage to our hearing.

The threshold, or the point at which the sound levels can begin to cause damage, starts at about 70 decibels. This level is represented by busy traffic or a noisy restaurant! Moving up to 80 decibels would include noise levels such as found in a subway, heavy city traffic, factory noises and even an alarm clock ringing out at about two feet away.

An additional part of the problem is that decibel levels do not escalate in linear mathematics, but logarithmically where 20 dbs are 10 times the intensity of 10 dbs, and 30 dbs are 100 times as intense as 10 dbs. Exposure time is also a factor as to when damage can occur. Chain saws and pneumatic drills raise the level to about 100 dbs, and damage to hearing, without proper protection, can occur with exposure of less than two hours.

Where does gunfire fall into this list you might ask? Well, along with jet engine noise, rock bands and heavy sandblasting, the gunshot blast comes in at about 140 decibels – where any length of



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Hearing loss of the higher frequency sounds is a gradual thing spread over a period of years. Since it is usually painless, as well as gradual, it might go unnoticed until the tell-tale ringing in the ear signals that there may be a problem.

High frequency loss can cause distortion of sound in the speech range. Words that start with S, F, SH, Ch, H or a soft C may sound garbled or distorted to the point of being undistinguishable. Rhyming words like 'hill,' 'sill' and 'fill' may sound exactly the same to the damaged ear – and need repeating or even spelling out to understand.

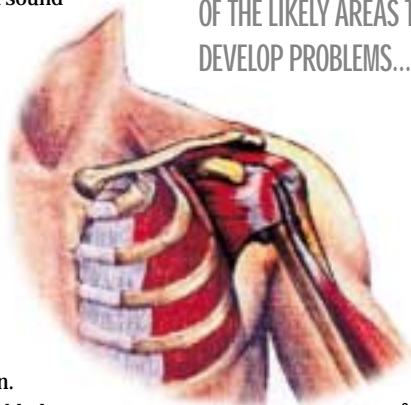
The best case scenario is to wear adequate hearing protection to avoid any of the possible damage that can occur from constant gunshot sound as found on the range. A simple ball of cotton is not going to give much protection and better choices such as the foam plugs and ear muffs provide greater protection. Custom-made molded plugs fitted to each ear canal are excellent protection – and even better when used in combination with the muff-style protectors. Remember, once nerve endings in the ear are destroyed they do not regenerate – and damage is permanent! Other common sense protection for the ears would be to keep well away from the side areas of another shooter on the stand.

DAMAGE TO THE BODY

Here's where things can get a little dicey – body damage. There are several areas of the body that may begin to show signs of abuse from

recoil, or from the repetitive movements involved in mounting a gun. Such problems can inhibit or even stop you from participating in your favorite activities like shooting, tennis or golf. The shoulder area, where the majority of the recoil energy is directed, is one of the likely areas to develop problems – especially on those shooters who compete heavily and shoot several thousand rounds of ammo each year. Generally speaking, such injuries may take some time before showing up. However, the constant pounding from recoil, or the repetitive lifting

THE SHOULDER AREA, WHERE THE MAJORITY OF THE RECOIL ENERGY IS DIRECTED, IS ONE OF THE LIKELY AREAS TO DEVELOP PROBLEMS...



and lowering of the gun, can result in serious problems such as damage to the rotator cuff, or tendonitis (inflammation) in the shoulder, neck, elbow and wrist. Such problems start out as nothing much more than a mild annoyance – but then escalate, often quickly, to a painful disability that could result in surgery to correct the injury. The risk factor goes up as we get older, and when over 40, become much more likely to develop.

DIAGNOSING THE PROBLEM

As with any suspected injury, a trip

to a doctor would be well advised. Those practitioners who specialize in sports-related medicine can be very helpful in the diagnosis and treatment of these types of injuries. Any persistent pain while shooting, or one that continues afterwards, needs your attention.

A torn rotator cuff for example, could result from shooting. The following symptoms are typical – pain associated with arm movement or pain in the shoulder at night, especially when lying on the effected shoulder. Weakness may be evident when raising the arm above the head, or pain associated with overhead activities such as brushing hair or reaching for objects on shelves. X-rays can show a bone spur, while MRI (magnetic resonance imaging) can show inflammation or a tear in the rotator cuff.

Another possible problem associated with repetitive motion is elbow pain, often referred to as 'tennis elbow', or 'golfer's elbow'. Tennis elbow differs somewhat from golfers elbow in that the pain is associated with the outside (lateral side) of the elbow. This location gives tennis elbow its technical name 'Lateral Epicondylitis'. Whether or not you can pronounce the technical name, trust me that by any name, it is painful! Pain may radiate down your arm and gripping, lifting or extending your wrist will intensify the pain. Golfer's elbow is different in that it affects the other side of the elbow at the knobby bump on the inside or medial side therefore known as 'Medial Epicondylitis.' Both injuries result from similar repetitive arm movement, and again, both can be quite painful and debilitating.

Over-using the muscles in your arm can cause tiny tears in the tendons that attach to the muscles – and if you continue to do the activity without allowing time for

the tears to heal the tendons can become inflamed. Continuing the activity will only make matters worse and lengthen the healing process. Conservative treatment usually works. Applying ice helps reduce swelling, and anti-inflammatory medication such as aspirin or ibuprofen can also help. If the symptoms don't subside in two or three weeks, be sure to see a doctor. Healing and full return to activity is the general rule with proper treatment and sufficient rest to the affected joint.

OTHER POSSIBLE PROBLEMS

As if such problems weren't enough, there are a few more problems lurking out there! Pinched nerves and stiffness in the neck, back pain, and of course the old favorite, arthritis, which seems to affect just about everyone sooner or later. Opting for less recoil will certainly help to avoid or diminish the effects of some of these problems. Maybe its time to stop using those 'thunder-boomer' shells whose muzzle blast removes bark from the trees. Or, having one of the many recoil dampening devices installed on your favorite blaster will make for much more comfortable shooting with considerably less felt recoil.

Staying physically fit will certainly help reduce or keep these problems to a minimum, but any signs in the form of pain should not be ignored. If that elbow, shoulder or neck begins to talk to you while shooting, I would suggest you take a break before you do more damage. If it persists, even while you are laying off of your game for a few days, the next obvious step would be to consult your doctor – because, as another famous and well used quote states, "an ounce of prevention is worth a pound of cure!" ■