TerranearPMC Safety Share

Week of July 24, 2017 – Rock n' Roll and Hearing Loss

I love rock n' roll
So put another dime in the jukebox, baby
I love rock n' roll
So come an' take your time an' dance with me!

Joan Jett and the Blackhearts…….ah, the words and music of one of Rocks' most notable songs. Simple, crass and unashamedly LOUD! It's a fact that rock is loud and as many would quickly defend this genre, the extreme decibel level is one of things that makes rock n' roll what it is. Yet, I suppose, there isn't person under the age of 75 (OK maybe 80!) that has not been to a rock concert and after the event, walked away with their ears ringing, and possibly even wondered, and yes, maybe even got a little worried, if that ringing would be gone by the next morning.

From an occupational point-of-view, the term, "elevated noise exposure," is considered to start at 85 decibels (dB). As this level (and definitely at 90 decibels) exposure for an eight-hour period, occurring on a daily basis, can potentially cause hearing loss or damage.

The band, The Who, in 1976 earned a place in The Guinness Book of World Records for achieving a measured 126 dB roughly 100 feet from stage. Not to be outdone, Led Zeppelin had a performance of "Heartbreaker" which measured 130 dB! And during a 2009 concert in Ottawa, the group, KISS, was reportedly clocked at 136 dB at the local sports arena and were forced to turn down the volume after police responded to complaints from neighbors in the area.

Some musicians, like Paul Stanley of Kiss and the Beach Boys'Brian Wilson, have struggled with hearing problems their entire lives. Stanley was born with Grade III microtia in his right ear, a congenital disease in which the external ear is underdeveloped, causing deafness. Wilson has also been unable to use his right ear since childhood, and it's undetermined if he was born with a degenerative condition or if it was the result of his father's physical abuse.

But what about hearing loss caused by a lifetime of exposure to sound at high volumes? Understand that music-induced hearing loss is caused by damage to the hair cells in the cochlea or inner ear. Hearing loss can occur gradually over time or, if it's loud enough, it can occur after just a single exposure. You can have a temporary threshold shift, where the hearing can return after approximately 16 or so hours after initial exposure. But after multiple exposures — like playing concerts night-after-night — and not letting your ears rest, it can lead to a permanent threshold shift.

The National Institute for Occupational Safety and Health (NIOSH) considers a safe noise dose to be 85 decibels (dB) for an eight hour day. Yet for bands that regularly pack bigger venues like arenas and stadiums, significantly louder noise levels can cause hearing damage at much shorter time frames. For instance, at 105 dB, damage can occur after only about 15 minutes of exposure. And damage to the inner ear can occur instantaneous at 120 dBs.

Pete Townshend of the Who has suffered from tinnitus since at least the mid-'70s. There's a scene in the 1979 documentary *The Kids Are Alright* where Townshend tells Keith Moon that, after getting his ears checked, the doctor had advised him to "learn to lip read." On the band's 1989 reunion tour, Townshend

dealt with his hearing problems by playing acoustic guitar behind a glass partition for the majority of the set. In 2012, he was forced to leave the stage because the onstage volume was too loud.

"My left ear is only there for aesthetic purposes," Ted Nugent revealed in *USA Today*. "It just balances my head so I don't fall over. I've played over 5,000 concerts and have subjected myself via my cravings to massive sonic punishment. My left ear is beat to hell. … I've worn a plug in my right ear since 1965, and I am a living scientific experiment, because I can hear fine out of my right ear even though I play outrageously loud sonic configurations by creating feedback. I have to stand directly in front of the speaker, so I live in the eye of the storm."

Ironically, a device intended to help musicians hear better onstage – floor wedge monitors - is one of the unwitting causes of hearing loss. That's because each musician needs to turn their monitor up as there is a continuous fight onstage for each musician to hear their own monitor over their bandmates'.

But hey, let's slow down and stop picking on rock n'rollers! What about classical musicians? So many of us are quick to pigeon-hole classical music as dainty and delicate. But has anyone listened to a Beethoven Symphony? The truth is, live performances can be particularly stunning – and loud! Ironically, Ludwig Von also suffered from severe hearing impairment. But in his case, it was a hereditary susceptibility to the metal lead, which was used to sweeten wine back in the days before Europeans discovered pure cane sugar from Hawaii.

But yes, even classical artists have suffered from an exposure to elevated noise levels. In certain sections of an orchestra, musicians are exposed to an average 90 dBs and peak exposures of 130 dB! In 2006, the United Kingdom's Health & Safety Laboratory performed a study on the noise exposures classical musicians experienced during both rehearsals and performances. In measuring average and peak ambient noise levels, it was determined that the musicians were exposed to over 87 dB – the EU Exposure Limit Value, or the maximum allowable noise level in the ear while hearing protection is worn. Strings averaged 90 dB during a performance. The brass section averaged 95 dB in the center, and 131 dB in peak exposures. In the percussion section, musicians averaged exposures over 90 dB, with upwards of 130 dB. This study concluded that the orchestra layout should be rearranged to protect players from the loudest sounds – and that brass musicians should wear hearing protection!

Is there any solution that can protect the hearing of both musicians and fans? In 1995, Alex Van Halen, who has lost 60 percent hearing in his left ear and 30 percent in his right, asked the group's soundman, Jerry Harvey, to come up with a solution to the dilemma caused by wedge monitors. Harvey created a custom-fitted earpiece that connected wirelessly to the monitor soundboard that allowed Van Halen to not only hear his mix more clearly, but at a lower volume too. "I absolutely wish these things had been around in the beginning, because you don't get dizzy or noise drunk."

A quick search on the internet shows an array of ear plugs (not ear muffs!) that are designed for rock concerts. Reviews run hot and cold. Finding a brand that allows you to hear the music the way you like is the way to go. Everyone will have their own preference. The bottom line is that ear plugs are a definite "MUST" when attending a rock show (and this goes double for musicians). Losing your hearing at an early age can be more than just inconvenient; it can be debilitating.

There are more love songs than anything else. If songs could make you do something we'd all love one another - Frank Zappa