

**T**here isn't a month that goes by without at least one patient commenting to me about the loudness of car stereos today. It isn't a secret that loud noise causes hearing loss. I've spoken to many elementary school-aged children and they all know this fact. What they are not aware of is that research has proven that babies, children, and teenagers are not immune to the damaging effects of noise. The most recent American Medical

Association journal cites a startling statistic from a study out of the United States. This study says that one in five, or 20%, of all teenagers has some degree of hearing loss. This is an increase of 30% since the last decade. For those of us in the industry this leaves a fundamental question. Why is there a greater percentage of hearing loss in our children and teenagers when we know that at most, only 10% of babies are born with hearing loss? According to a British study released a few years ago and an Australian study released in 2010, the increase in hearing loss can be linked to the high use of music headsets. We are living in the digital music player generation and we may be paying for it with our hearing.

**G**enetics, presbycusis (aging), and noise exposure are the three most common causes for hearing loss today. Since we can't change our parents and we haven't found the fountain of youth, we must consider the noise that we are exposed to. Hearing loss due to aging does not begin until the average age of 72 years so anything prior to this point can likely be attributed to noise exposure. The more noise exposure, the greater the risk of hearing loss. Risk analysis is vital as hearing loss progresses so gradually that there will already be significant damage done before it is recognized to be a problem and is diagnosed. Unlike vision where if someone or something looks blurry it is obviously the person's vision that is damaged, hearing loss results in voices sounding muffled or not clear. Often those with hearing loss believe that the person speaking is mumbling so they are commonly blaming it on others rather than recognizing the signs within themselves. In our teenage children these signs may not be as obvious. One such sign could be where a parent or teacher has to constantly repeat directions or instructions to the teenager. In the past we have chalked this teenage disregard to simple disobedience when the actual reason could be hearing loss. We have to be careful with these signs because childhood hearing loss can affect not just social life, but more importantly, education.

**S**o what are the signs of hearing loss? Well, have you ever had a muffling sensation or ringing in your ears following a concert? Just like pain is a symptom of touching a hot element that damage is being done to your skin, muffling or ringing is a symptom that damage has been done to your hair cells. Your ears don't give out pain signals from noise damage, they ring and muffle from noise damage. This is because the tiny hair cells in the inner ear responsible for sending electrical impulses up the nerve have bent over temporarily from too much impact. I said temporary, because it can start this way with Temporary Threshold Shifts (TTS) however if done again and again, this TTS can become a Permanent Threshold Shift (PTS). The bad news is that hearing loss is irreversible. The good news is that it is preventable. At my clinic, Eastside Audiology, we have the equipment to detect when this TTS & PTS has occurred even

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before it affects hearing levels. One of the tests is so sensitive that I've been able to see the effect of unprotected hearing from a concert the night before or from several gunshot blasts from the day before.

In regards to minimizing hearing loss in teenagers, we need to set limits of no more than ½ volume on their music headsets. This can be achieved through a special headset or through parental locks on phones or MP3 players. We need to avoid working out while using headsets as this can exacerbate the damage. Use hearing protection. There is hearing protection specifically designed for musicians or music lovers, hunters and industrial workers. We have headphones built to fit infants and children (take a look at Super Bowl champion Drew Brees holding his son at the big game). As always, when in doubt, check with your audiologist for any concerns regarding your hearing health.