

## Noise-Induced Hearing Loss (NIHL)

- Of the roughly 28 million Americans suffering from hearing loss, 10 million can be attributed to Noise-Induced Hearing Loss (NIHL). NIHL can be caused by a one-time exposure to loud sound as well as by repeated exposure to sounds at various loudness levels over an extended period of time.
- Damage happens to the microscopic hair cells found inside the cochlea. These cells respond to the mechanical sound vibrations by sending an electrical signal to the auditory nerve. Different groups of hair cells are responsible for different frequencies (rate of vibrations). The healthy human ear can hear frequencies ranging from 20 Hz to 20,000 Hz.
- With noise exposure over time, the hair cells' hair-like stereocilia may get damaged or broken. If enough of them are damaged, hearing loss results. The high frequency area of the cochlea is often damaged by loud sound. Many people with noise-induced hearing loss have trouble distinguishing high-frequency sounds, because the hair cells responsible for high-frequency sounds are located at the base of the cochlea. Vibrations here tend to be more forceful, resulting in more damage to cells.
- Cases of noise-induced hearing loss and/or tinnitus are on the rise. Niskar says that 6.2 million US children (6-19 years of age) have hearing loss, **5.2 million due to noise-induced hearing loss (1998 & 2001).**