

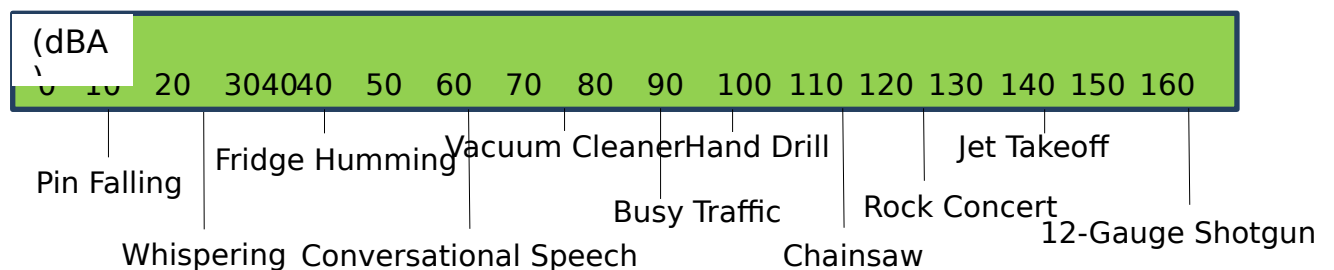
## Noise-Induced Hearing Loss

Noise-Induced hearing loss (NIHL) is caused by continuous or a single exposure to loud sounds. Some hearing loss may be transient and recover, whilst others may be permanent, occurring immediately or gradually worsening without patients knowing.

### Hidden danger of loud sounds

Sound level is measured in decibels (dB). An unsafe level of sound 85dB or higher can cause permanent damage to your hearing. Whilst a sound at 80dB causes hearing loss in 8 hours, one at 110dB causes hearing loss in 15 minutes! This is because an increase of 10 dB though only twice as loud, is 10 times more powerful in intensity, and thus much more damaging to the very fine sound-sensing cells of our inner ear. For eg, a jet engine at 120 dB has a sound that is one trillion times more intense than a sound at 0dB.

Very loud MP3 listening devices may reach 110dB if the listener puts it to very high volume, in attempts to drown out environmental noise, or to feel fully immersed in their music world. Someone with hearing loss and not wearing hearing aids will turn volumes of TV and music much higher, not realizing this will further harm the hearing. The further away you are from the sound source, the safer it is for your hearing. So a person standing next to a loud booming speaker at a concert will be at higher risk of hearing loss than one much further away.



### Who is at risk

Noise-induced hearing loss can develop in children, teenagers, adults and the elderly. In Singapore, 1 in 6 youths are at risk. Once permanently damaged, the sound sensing hair cells in the inner ear cannot heal or regrow. The hair cells responsible for high frequency sounds are the ones most often damaged at the start in noise-induced hearing loss. These high frequency hearing loss may not be noticeable to the patient till advanced stages, and will need a formal hearing test with headphones in a sound room to detect. Screening tests at mass community screenings and over the computer on the phones fail are not set up to detect high frequency hearing loss common in noise-induced hearing loss or age-related hearing loss.

### Warning signs

When a sound is loud enough to cause possible damage to hearing, you may experience a temporary hearing loss. Even after your hearing appears to improve, the damage to the inner hair cells may be permanent. You may not notice the signs of NIHL until it is severe.

Warning signs may include:

1. Needing to put the TV or music at a louder volume
2. Sounds heard as muffled or distorted
3. Difficulty understanding speech especially in background noise
4. Ringing (tinnitus) or pain in ears

### **Prevention**

1. Know what kind of sounds are dangerous
2. Move away from the sound source
3. Turn down the volume
4. Use ear plugs or even your fingers
5. Get a proper hearing test if you have been exposed, or suspect you may have hearing loss

### **Resources on websites:**

Dangerous Decibels - <http://dangerousdecibels.org>

It's a Noisy Planet. Protect Their Hearing - <https://www.noisyplanet.nidcd.nih.gov>

American Speech-Language-Hearing Association -

<http://www.asha.org/public/hearing/Noise/>

Listen to Your Buds - <http://www.asha.org/buds/>

Myths about NIHL - <https://www.widex.com/en-us/blog/hearing-uncovered/5-myths-about-noise-induced-hearing-loss>