



Effects of Noise in Hearing

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Abstracts

Our ears are very sensitive organ of our body which helps us to communications and to be alerts with different dangerous situation like Road Traffic accidents. Imagine your life without hearing sense or hard of hearing, then your life will be blank for certain periods. There are several reasons behind hearing loss but one of the main reason behind hearing loss is Noise induce hearing loss (NIHL).

Introduction

Our ear generally divided into three parts a) External ear, b) middle ear and c) Inner ear⁽¹⁾. Each and every parts of the ear have there own role in hearing. External ear use to collect acoustic energies and send them to ear drum where the sounds strikes to ear drum and cause it vibration, in this process the acoustic energy converts to mechanical energy, The vibration of ear drum caused the entire three bones known as malleus, incus and stapes set in vibration and the stapes hit to oval window of inner ear. When the stapes hit to oval window the liquids of inner ear set in motion and start moving due to which the outer hair cells and inner cells start moving and converts the energy to electrochemical energy and then its goes to auditory cortex through auditory nerve.⁽²⁾

According to some researcher hearing loss can be congenital or may be acquired but both of them can cause many more losses in life starting from education, communication to depression.

Maximum type of acquired hearing loss is due to exposure of loud noise or due to old age. The geriatric hearing loss is regression in hearing loss

due to death of neurons because of old age, where asnoise induce hearing loss is due to exposure of sudden or loud noise for long periods of times, which is also known as acoustic trauma., Along with hearing loss some individual may feel ringing sensation (Tinnitus) in the ear and some may have spinning (Vertigo)⁽⁴⁾

There are two types of noise one is impulse noise which is very sudden and loud in nature, and another noise is known as impact noise is impact between two objects (hammering of metals) and many more⁽³⁾. The noise level of impulse noise is more than 140dB and its like bomb blast, crackers blasts etc, and impact noise are less then 140dB but both types of noise are dangerous for hearing sense. Those noise which is more then 80-85dB they can cause hearing loss to us, which can be reversible or non reversible and its may cause permanent hearing loss due to which our daily life can be effected in emotional, educational, psychologically and many more. For keeping your ear perfect we have to care our ears.

Reasons of Noise induce hearing loss

1. Unnecessary blowing horn in public place can cause hearing loss and that noise cross more than 100dB.
2. Using earphones for long times with high volume (Specially metallic songs)
3. Working in highly noise exposing area like factory or mills or in Service of military.

There may be many question how it can cause hearing loss, when a sudden noise pass to ear drum there are two muscles in middle ear known as tensor tympanic and stapedius muscle which help ossicles to contracts and stop noise to insert inside the inner ear but when the noise is impulse noise the muscle cannot contracts due to sudden exposure of noise due to which ear drum may be rupture and outer hair cells of inner ear may be effected due to which our hearing can be reduced.

Assessment of hearing loss: There are many test which is done by Audiologist, Audiologist is medical health professionals who test our hearing sensitivity in different frequencies and intensities to found out in which level the hearing loss is there. This test also can assess the side of lesions. Through the test the Audiologist will recommend what necessary steps you have to take for your hearing conservation.

Management of hearing loss: If hearing loss is there and its impacting individual life then the individual have to use hearing aids, hearing aids will be prescribed by ENT specialist and it will be fitted by audiologist according to degree and severity of hearing loss⁽⁵⁾.

Prevention of hearing loss: Prevention is always better then cure so caring yours ears very important to conserve hearing sensitivity.

Few points for prevention of hearing loss:

1. Don't blow horn every times, first observe the situation and blow.
2. Don't use any headphones or earphones with high volume,
3. Don't use earphones while being in noisy area,it may cause severe hearing loss and trauma.
4. Don't smokes cigarettes,

5. Don't put any ointment or home remedies without doctor prescription,
6. In case any doubt consult ENT specialist as soon as possible,
7. If you are working in noisy environment then consult Audiologist for hearing assessment and prevention,
8. Asked yours Audiologist for Ear protection devices (EPD's) or Hearing protection devices.

Conclusion

Conservation of hearing sensitivity is really important for communication as well as mental physical and psychologically, if hearing loss started then may have family stress to depression along with social behavioral and other problems. As possible protect your hearing sense with ear protection devices and stop using earphones, Most importantly the Bio-engineering should help to reduces the noise of vehicles specially horn, Nowadays every vehicles horn already cross more than 140dB noise and those types of noise can cause sudden and severe hearing loss and its better to protect the ear from suitable ear protection devices.

References

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