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Appendix I:C. Effects of Excessive Exposure

The effects of noise can be simplified into three general categories:

- [Primary Effects](#)
- [Effects on Communication and Performance](#)
- [Other Effects](#)

In some cases, the effects of hearing loss may be [classified by cause](#).

Primary Effects TOP

The primary effects of excessive noise exposure may include:

- **Acoustic trauma** refers to a temporary or permanent hearing loss due to a sudden, intense acoustic or noise event, such as an explosion.
- **Tinnitus** describes the condition of "ringing in the ears."
 - Individuals often describe the sound as a hum, buzz, roar, ring, or whistle.
 - The inner ear or neural system produces the actual sound.
 - The predominant cause of tinnitus is long-term exposure to high sound levels, though it can also be caused by short-term exposure to very high sound levels, such as gunshots. Non-acoustic events, such as a blow to the head, dietary issues, stress, jaw joint disorders, debris on the eardrum, or prolonged use of aspirin may also cause tinnitus.
 - Many people experience tinnitus during their lives. Most of the time the sensation is only temporary, however, it can be permanent and debilitating.
 - Diagnosis and treatment of tinnitus can be difficult because it is a subjective measurement.
- A **noise-induced temporary threshold shift (NITTS)** is a temporary loss in hearing sensitivity. NITTS may be the result of:
 - The acoustic reflex of the stapedial muscle.
 - Short-term exposure to noise.
 - Fatigue of the inner ear.

With NITTS, hearing sensitivity will return to the pre-exposed level in a matter of hours or days, assuming that there is not continued exposure to excessive noise.
- A **noise-induced permanent threshold shift (NIPTS)** is a permanent loss in hearing sensitivity due to the destruction of sensory cells in the inner ear. This damage can be caused by:
 - Long-term exposure to noise.
 - Acoustic trauma.

Additional References

- [American Tinnitus Association - Tinnitus Information for Professionals](#)

Effects on Communication and Performance TOP

The effects of excessive noise exposure on communication and performance may include:

- Difficulty understanding speech.
- Annoyance.
- Difficulty concentrating.
- Reduced efficiency.
- Low morale.
- Adverse social behavior.

Other Effects

[TOP](#)

Other effects of excessive noise exposure may include:

- Quickened pulse rate; increased blood pressure; and narrowing of the body's blood vessels as a result of noise may, over a long period of time, place an added burden on the heart.
- Abnormal secretion of hormones.
- Muscle tension.
- Ulcers.
- Loss of sleep.
- Fatigue.
- Stress reactions.

Classified By Cause

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Hearing loss may also be categorized in terms of possible cause:

- Presbycusis: Loss caused by the aging process.
- Noise-induced hearing loss.
 - Industrial hearing loss: Loss caused by work-related noise exposure.
 - Sociacusis: Loss attributed to the noises of everyday life.
- Nosoacusis: Loss attributable to health deficiencies and diseases, including:
 - Hereditary progressive deafness.
 - Mumps.
 - Rubella.
 - Meniere's disease.
 - Ototoxic drugs and chemicals.
 - Barotrauma.
 - Trauma from blows to the head.

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