



# Hearing loss

## What is acute inner ear hearing loss?

Acute inner ear hearing loss, also known as acute sensorineural hearing loss, is a hearing impairment that has occurred within the last couple days and can have a number of causes. These include exposure to either a loud noise or an ototoxic medication. Often however, the cause is unknown (idiopathic). It can present itself as a loss of sound perception alone or be accompanied by other symptoms such as increased sensitivity to sounds (hyperacusis) or ringing in the ears (tinnitus).

## Acute inner ear hearing loss can be permanent

Acute inner ear hearing loss is caused by damage to the sensitive structures within the inner ear; namely the inner and outer hair cells and the neurons of the auditory nerve, which are critical for the hearing process. Due to the body's own repair mechanisms, the damage to these cells may be transient and hearing can recover. However, the inner ear cells may be irreversibly damaged and die. As the body cannot replace these cells with new ones, when a hair cell or neuron dies it is gone for good. In such cases, the hearing loss can become permanent. Even a temporary hearing loss can be additive and accelerate the development of other conditions such as age-related hearing loss and tinnitus.

## The number of people suffering from hearing loss is increasing

Acute hearing loss affects people of all ages. It is estimated that between 5-20 per 100,000 people suffer from sudden sensorineural hearing loss every year in the USA (1). Moreover, it is predicted that within ageing populations, the prevalence of hearing disorders will escalate, thereby increasing both the economic and social burden on society. To date, there are no approved therapies for the treatment of acute sensorineural hearing loss. AudioCure is determined to address this high unmet clinical need.

<sup>1</sup> Sudden Sensorineural Hearing Loss: A Review of Diagnosis, Treatment, and Prognosis. (2011) Kuhn, M et al., Trends in Amplification, 15(3) 91-105

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