

## BIOLOGY IN ENGLISH

### Protect your ears from loud noises

**E**specially when we are children, the middle ear is subject to infections (called generically *otitis*) that can lead to hearing impairment if not treated promptly by a physician, in many cases using an antibodies treatment. With age, the mobility of the ossicles decreases, and in the condition called *otosclerosis*, new filamentous bone grows over the stirrup, impeding its movement and causing hearing loss. Surgical treatment is the only remedy for this type of deafness, which is called *conduction deafness*. Another type of hearing loss, called *age-associated nerve deafness*, results from stereocilia damage due to exposure to loud noises. This type of deafness is preventable, if care is taken (figure 1B).

In today's society, exposure to excessive noise is common. Noise is measured in *decibels*, and any noise above a level of 80 decibels could result in damage to the hair cells of the organ of Corti. Eventually, the stereocilia and then the hair cells disappear completely (figure 1B).

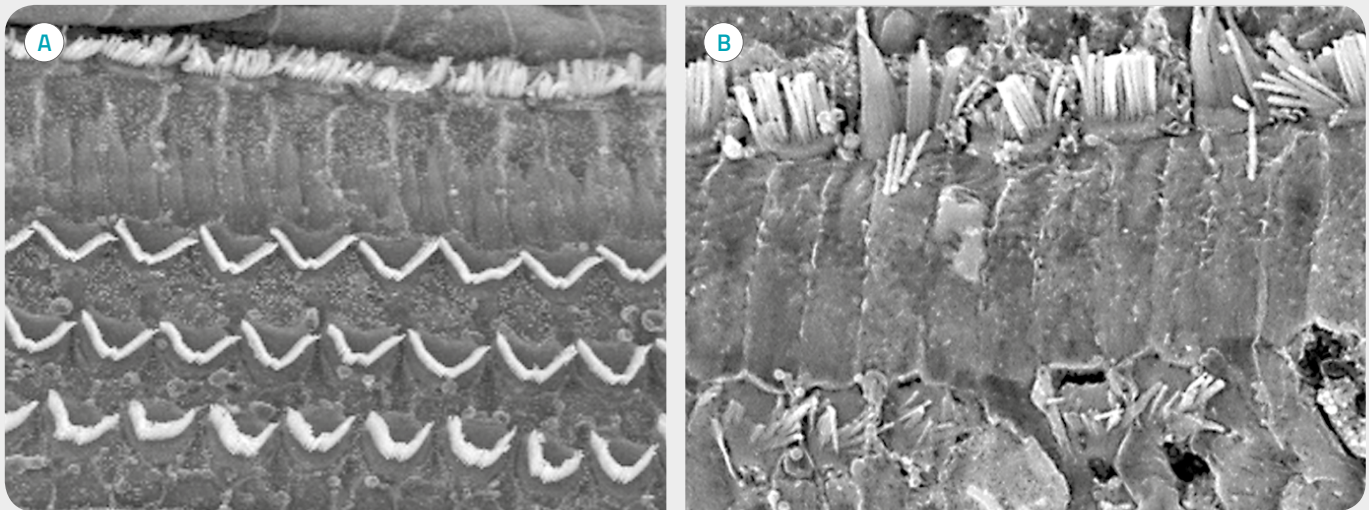
Listening to city traffic for extended periods can damage hearing, and therefore it stands to reason that frequently attending rock concerts, constantly playing music loudly or using earphones at high volume also damage hearing. The first hint of danger could be temporary hearing loss, a «full» feeling in the ears, muffled hearing, or tinnitus (e.g., ringing in the ears). If you have any of these symptoms, modify your listening habits immediately to prevent further damage. If exposure to noise is unavoidable, specially designed noise reduction earmuffs are available, and it is also possible to purchase earplugs made from a compressible, spongelike material at the drugstore or a sporting-goods store.

These earplugs are not the same as those worn for swimming, and they should not be used interchangeably.

Finally, people need to be aware that some medicines are *ototoxic*. Anticancer drugs, most notably cisplatin, and certain antibiotics (e.g., streptomycin, kanamycin, gentamicin) make the ears especially susceptible to hearing loss. Anyone taking such medications needs to be careful to protect his or her ears from any loud noises.

#### ANSWER

What are the most common causes for hearing loss?



**Figure 1** (A) Normal hair cells in the organ of Corti. (B) Damaged hair cells in the organ of Corti.