

The human auditory system and its hidden enemy – the noise

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Presented by:

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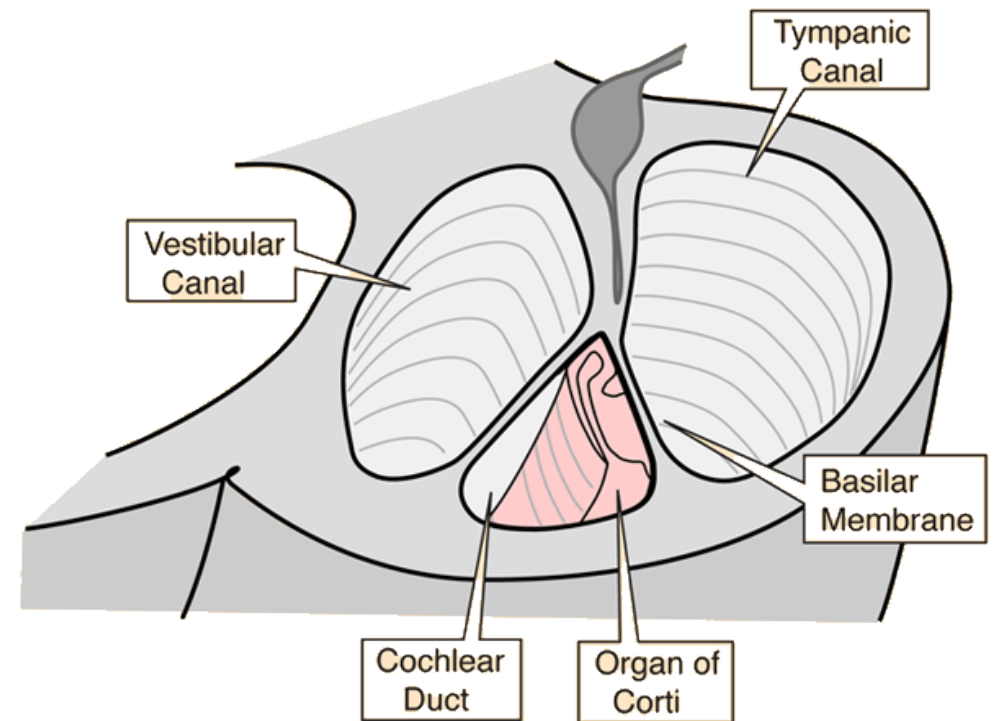
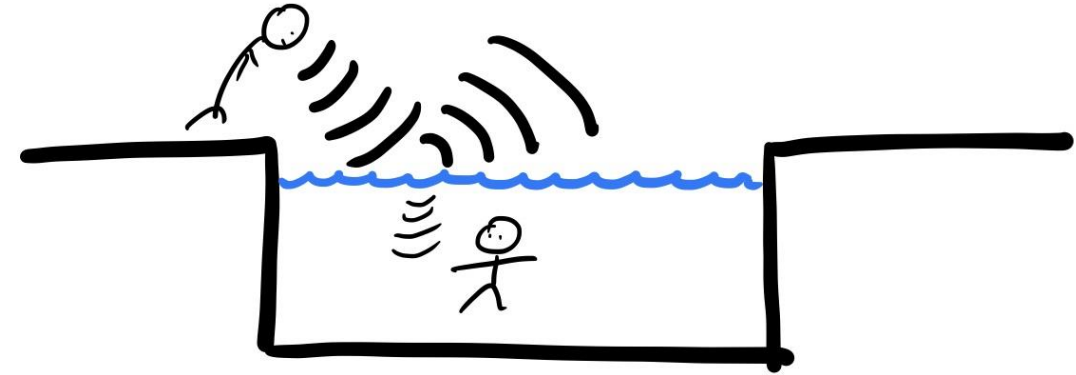
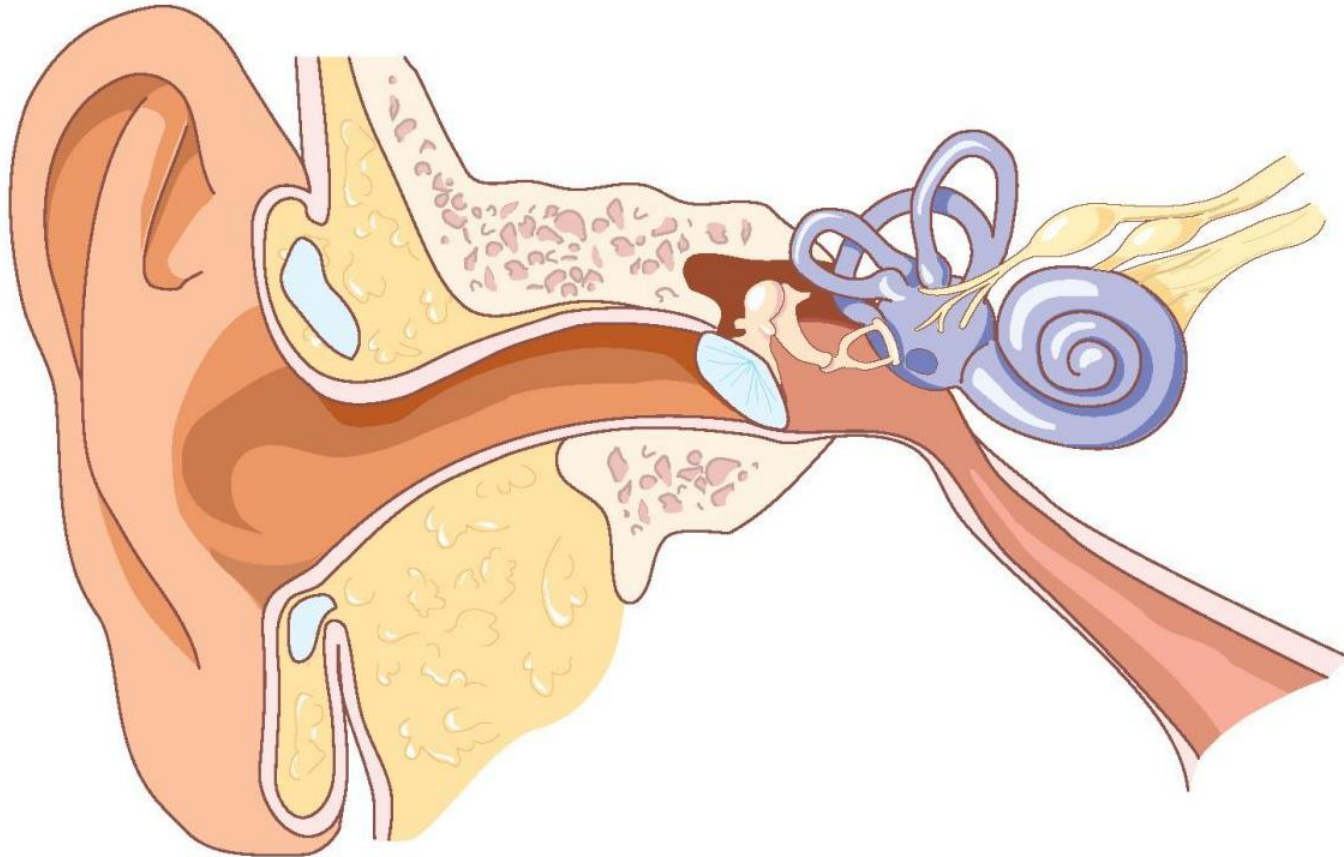
National Acoustic Laboratories, Sydney, Australia

SRAP Vice-president



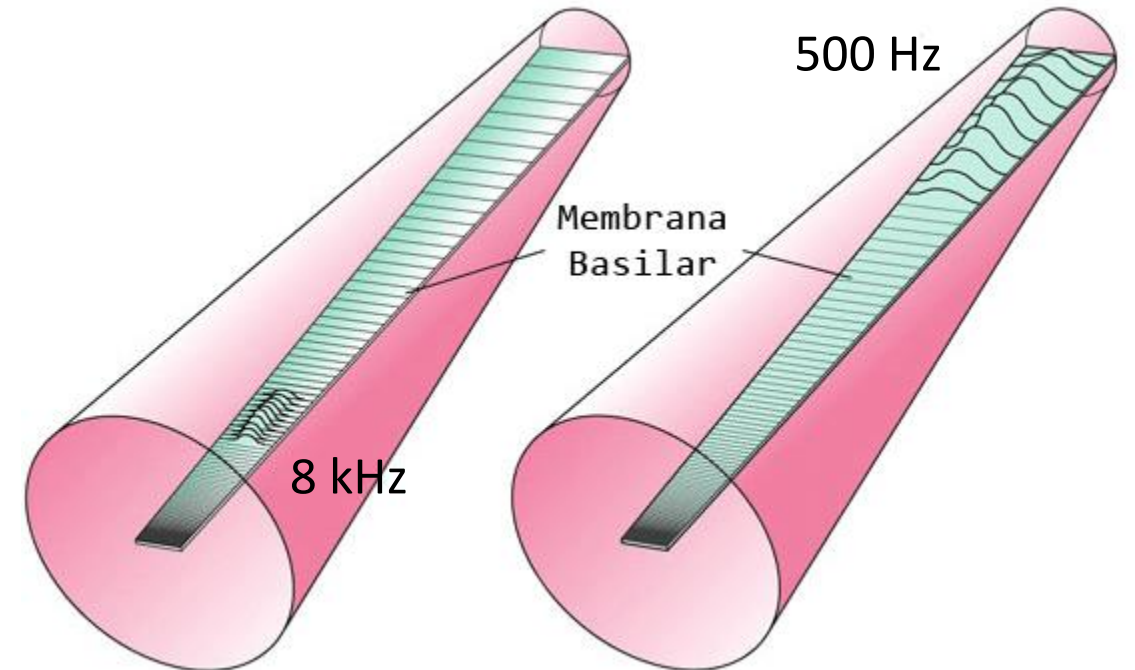
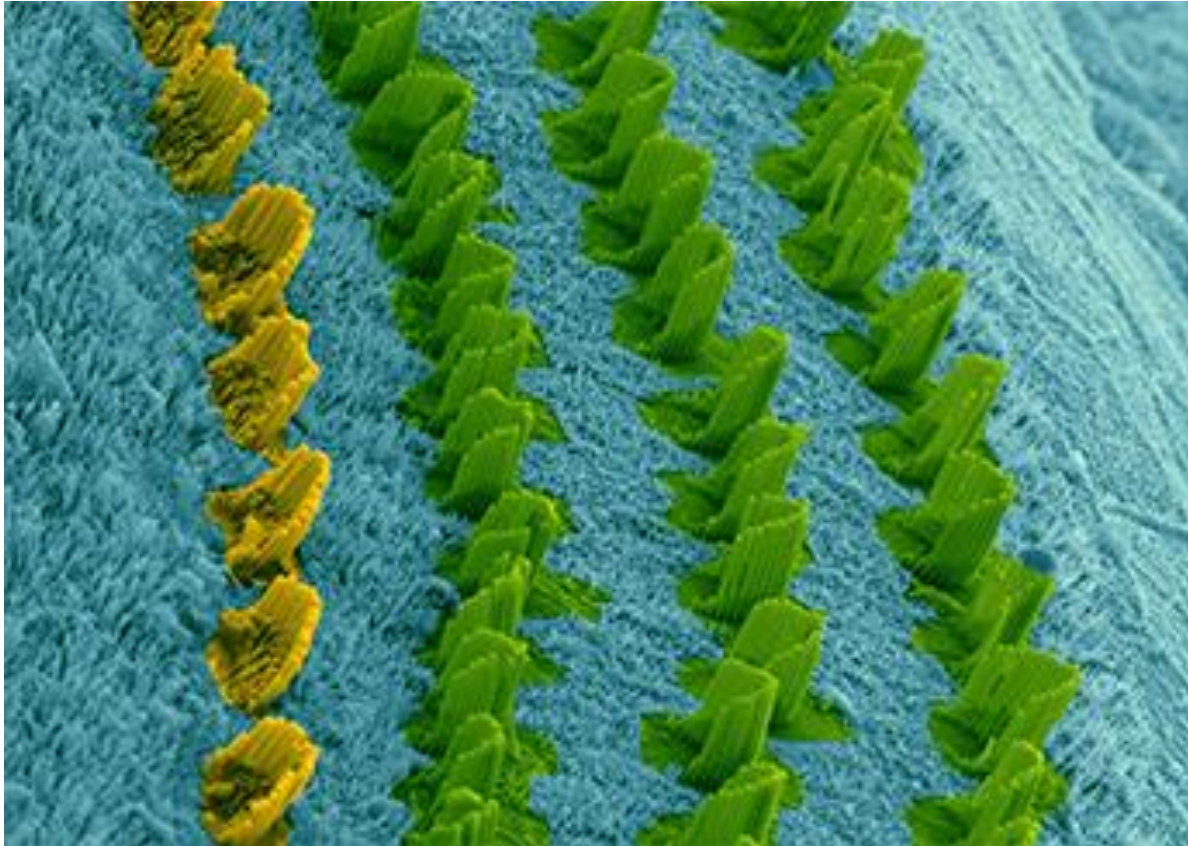
“Blindness cuts us off from things, but deafness cuts us off from people”, Helen Keller

The human auditory system



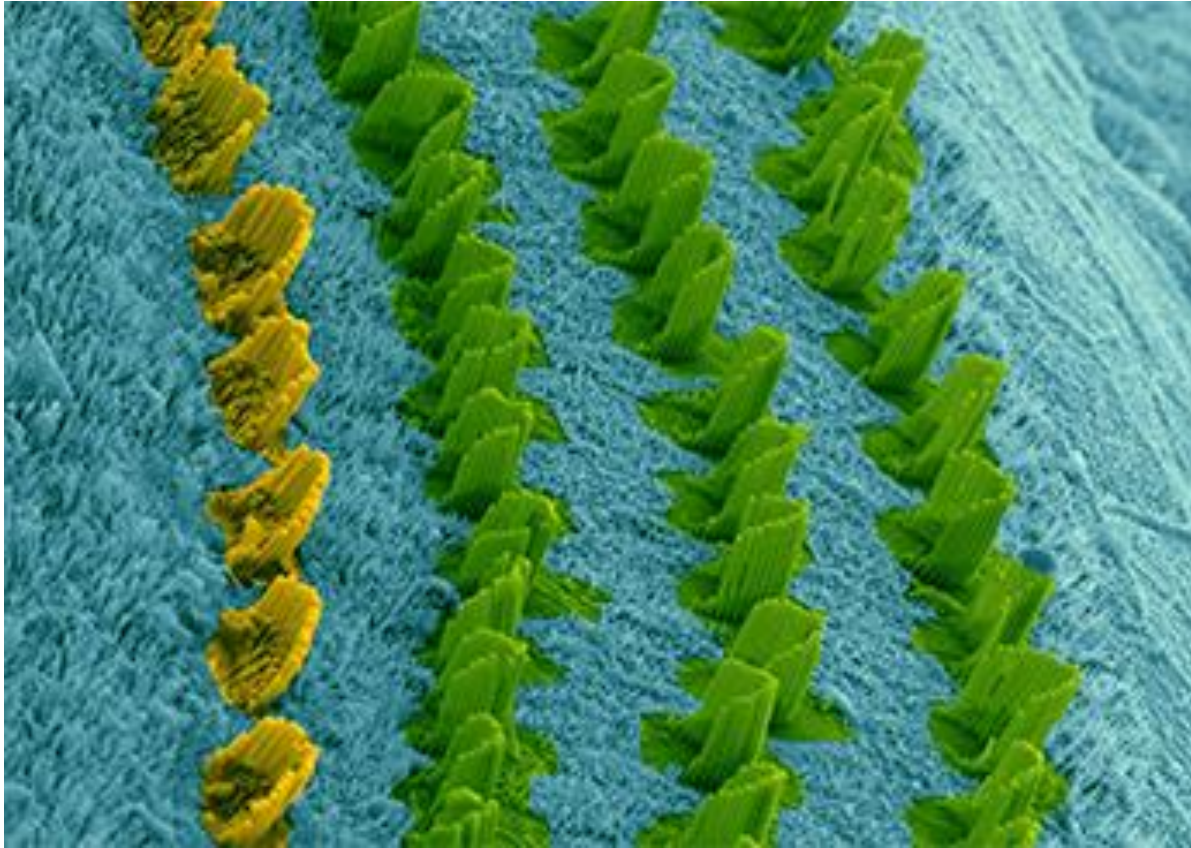
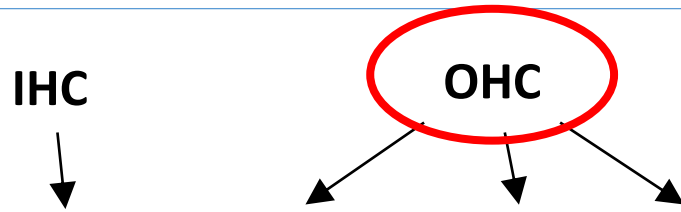
The inner and outer hair cells

IHC OHC



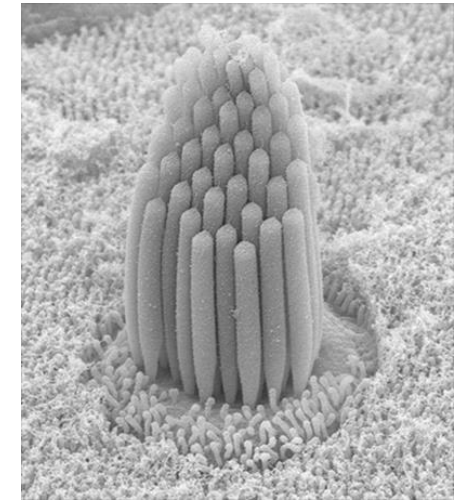
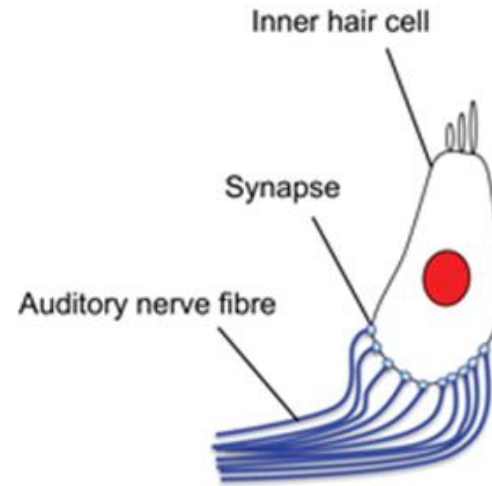
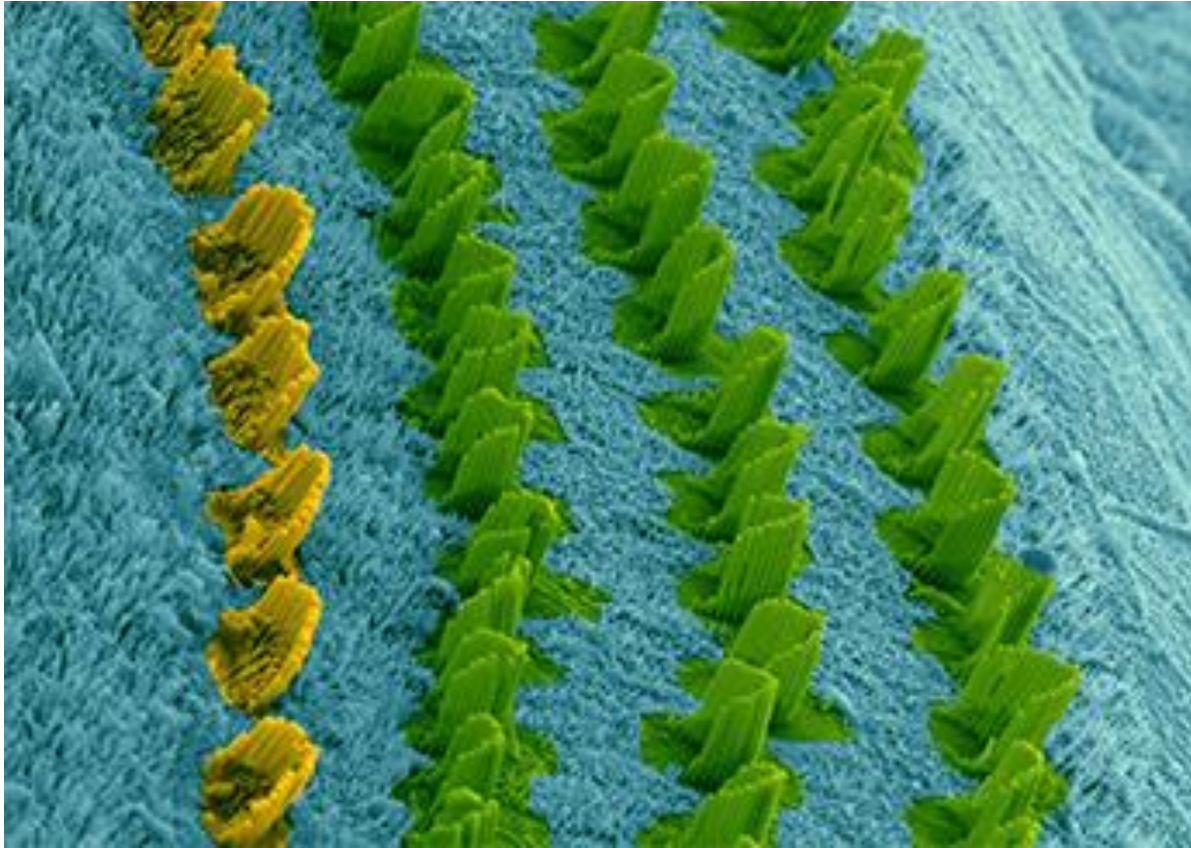
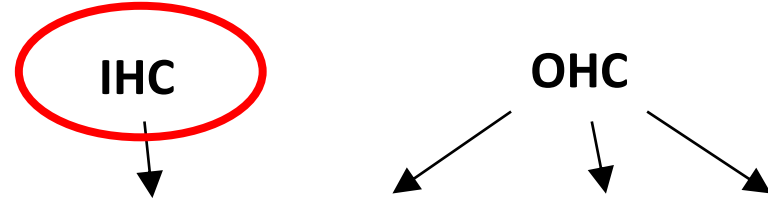
Different portions of the cochlea are sensitive to **different frequencies**

The cochlea

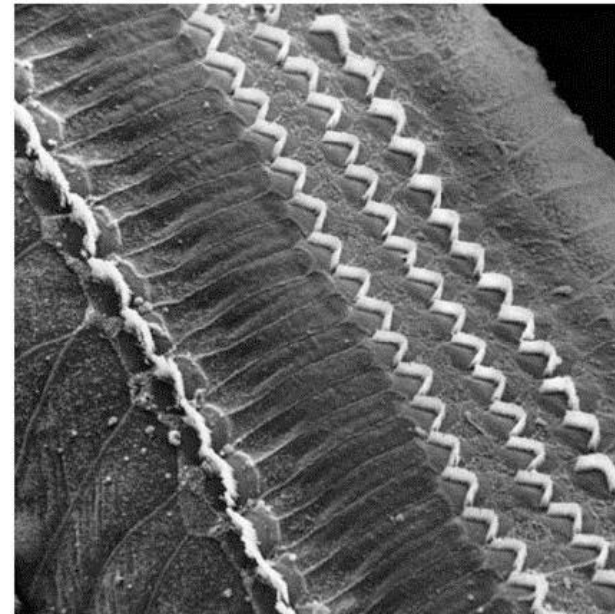


OHCs MOVE! They provide amplification and tuning

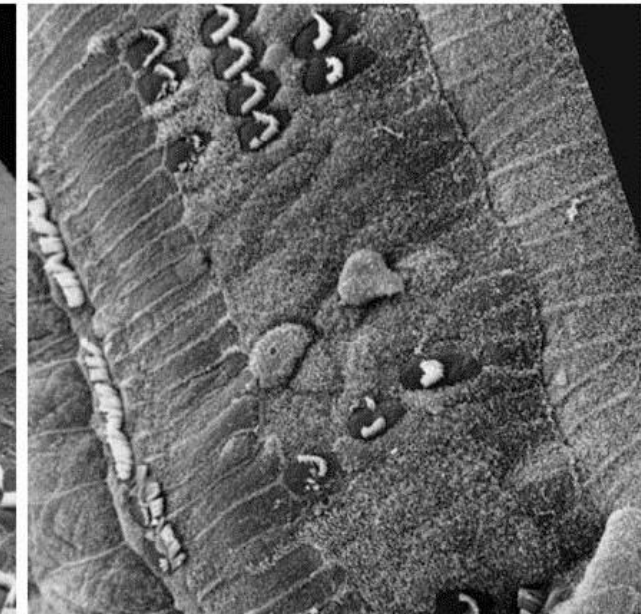
The inner and outer hair cells



IHCs send signals to the brain



Intact cochlea



Damaged cochlea

The cochlear implant



CI Simulation



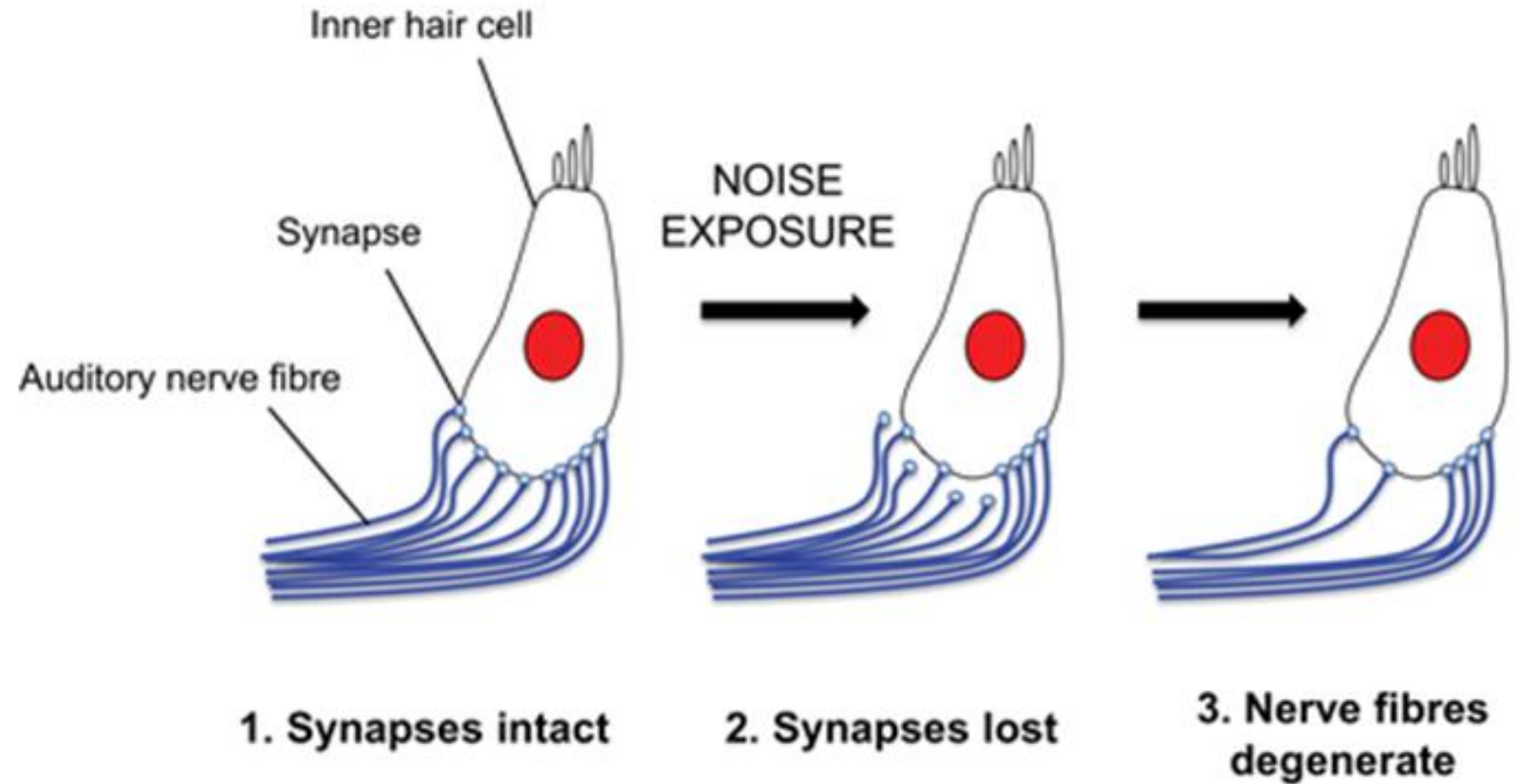
Original sentence



Over-exposure to noise



2 hours @ 100 dB



Noise exposure can lead to **hidden hearing loss**.

I have to try harder to hear.
I can't always hear what they're speaking to me about. It takes a lot of concentration.



Other people must be able to filter that background noise and put it down to a lower level so that they can focus on conversation, so I must have a problem because **I can't do that.**



I wished I had not lost my hearing as much as I did!
It started when I was a kid and that increased because I have been using loud tools close to my ears, not knowing that they were damaging my hearing the whole time.



**THANK YOU
FOR
YOUR
ATTENTION!
ANY QUESTIONS?**