A problem of hearing 2

Types of hearing impairment

Age-related hearing loss (prebyacusis)

This is a natural deterioration with age. The high frequencies are normally affected more than the low frequencies. The higher the frequency the louder it may have it be before it is heard.

Noise-induced hearing loss

This occurs when exposure to loud noises has damaged the cochlea. This usually happens around 4KHz and sounds at this frequency, or near to this value, have to be louder before they can be heard.

Symmetrical hearing loss

This means the hearing is similar in both ears even if not exactly the same. Sounds within 10dB of each other would be considered similar. Any decline in hearing with frequency would occur at about the same rate.

Asymmetrical hearing loss

In this case the hearing is different in each ear. One or both may show a level of hearing loss.

Middle ear problems

When the audiogram shows a difference between the sound levels for bone conduction (shown as small triangles on the audiogram) and the air conduction levels detected using headphones or other devices within the ear, then the problem may be in the middle ear. There are several causes but in children this is often due to fluid in the middle ear and is referred to a 'glue ear'.

Sensorineural hearing loss

This is the most common type of hearing loss in adults and is indicated by an audiogram which shown little difference between the results for bone conduction and air conduction. The problem is in the cochlea.

Mixed hearing loss

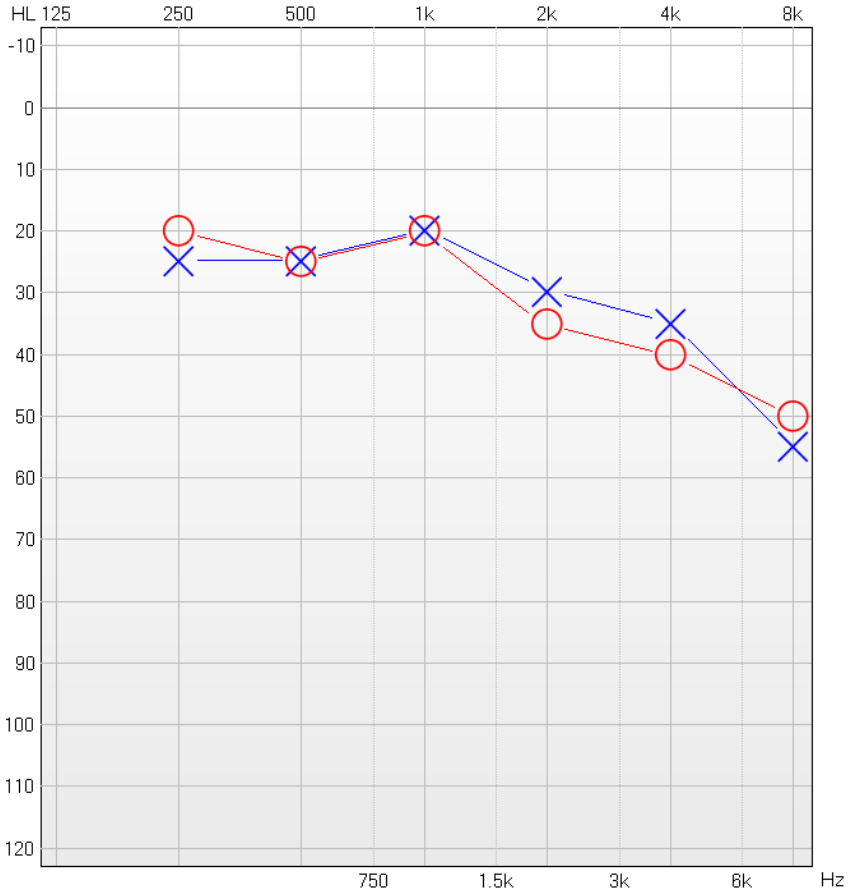
This is indicated when both bone conduction and air conduction methods indicate a hearing loss but there is a gap between the two showing air conductive hearing is worse than bone conductive. This suggests a problem in both the middle ear and the cochlea.

The mascil project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 320 693

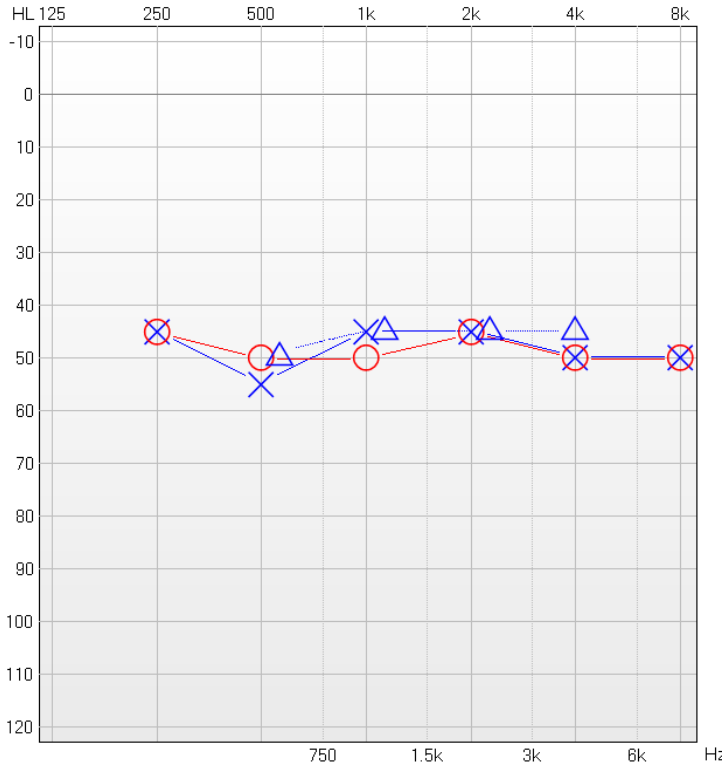
Diagnosis

Discuss the following audiograms and identify any hearing impairments indicated. Note down a description of the type of hearing impairment and discuss the social implications in each case. Decide how you would explain the diagnosis to the patient.

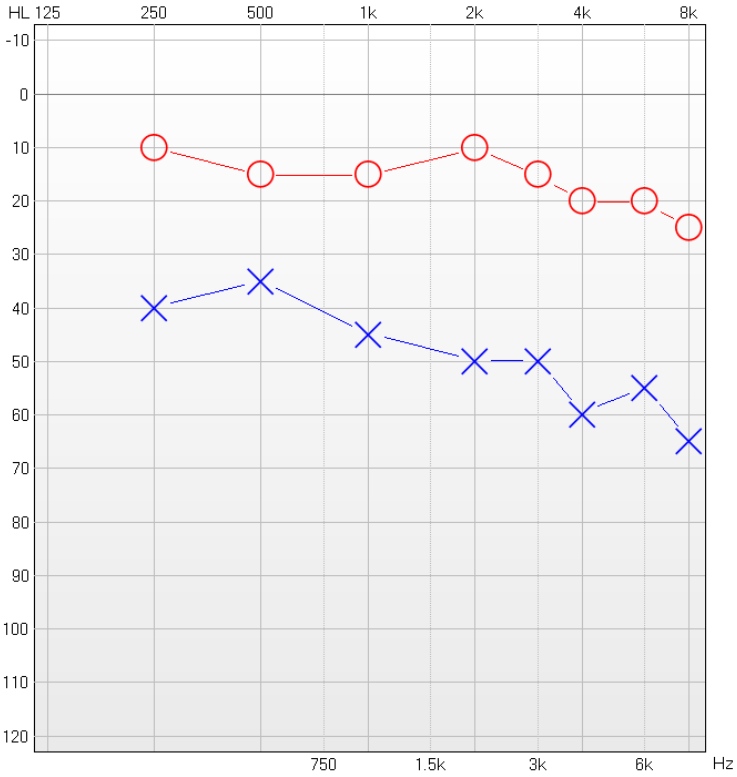
AUDIOGRAM 1



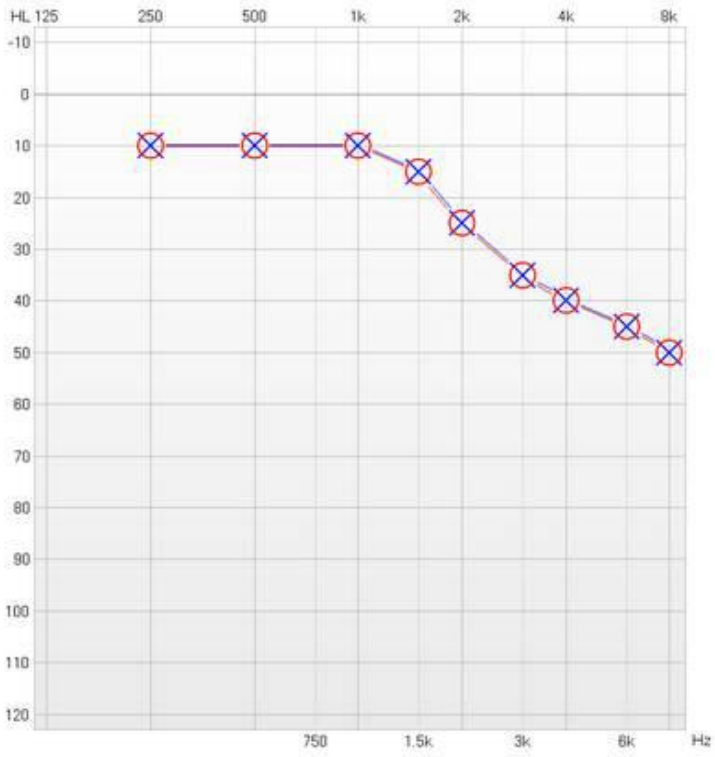
AUDIOGRAM 2



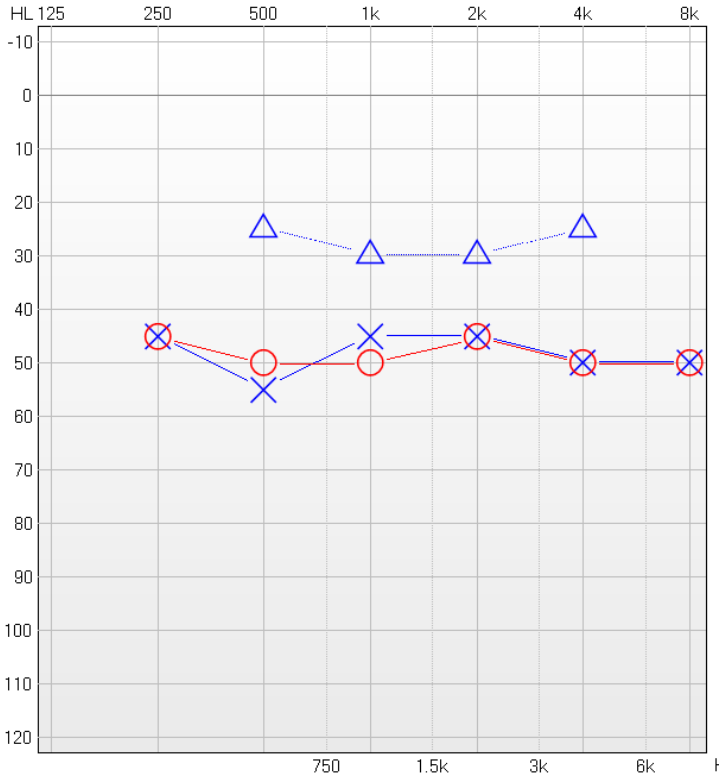
AUDIOGRAM 3



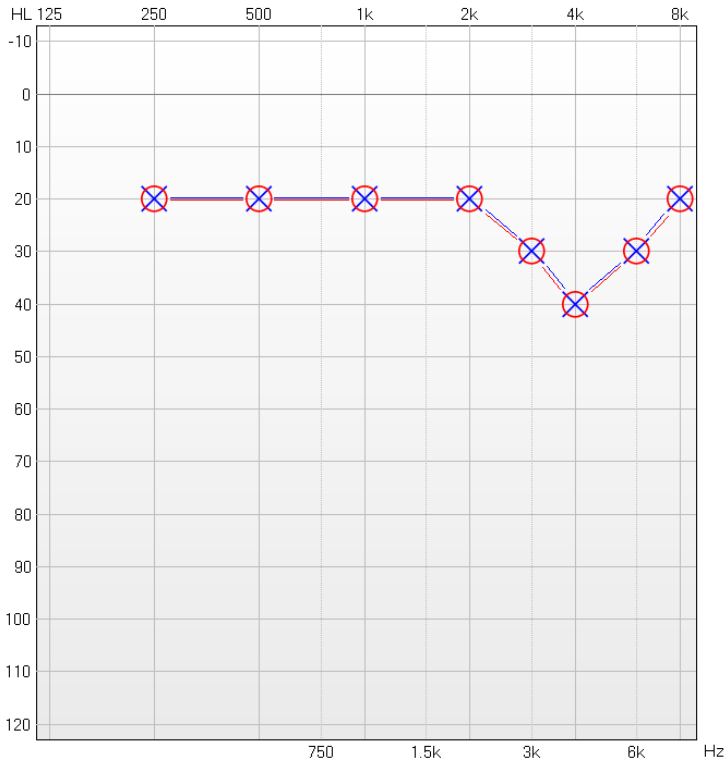
AUDIOGRAM 4



AUDIOGRAM 5



AUDIOGRAM 6



AUDIOGRAM 7