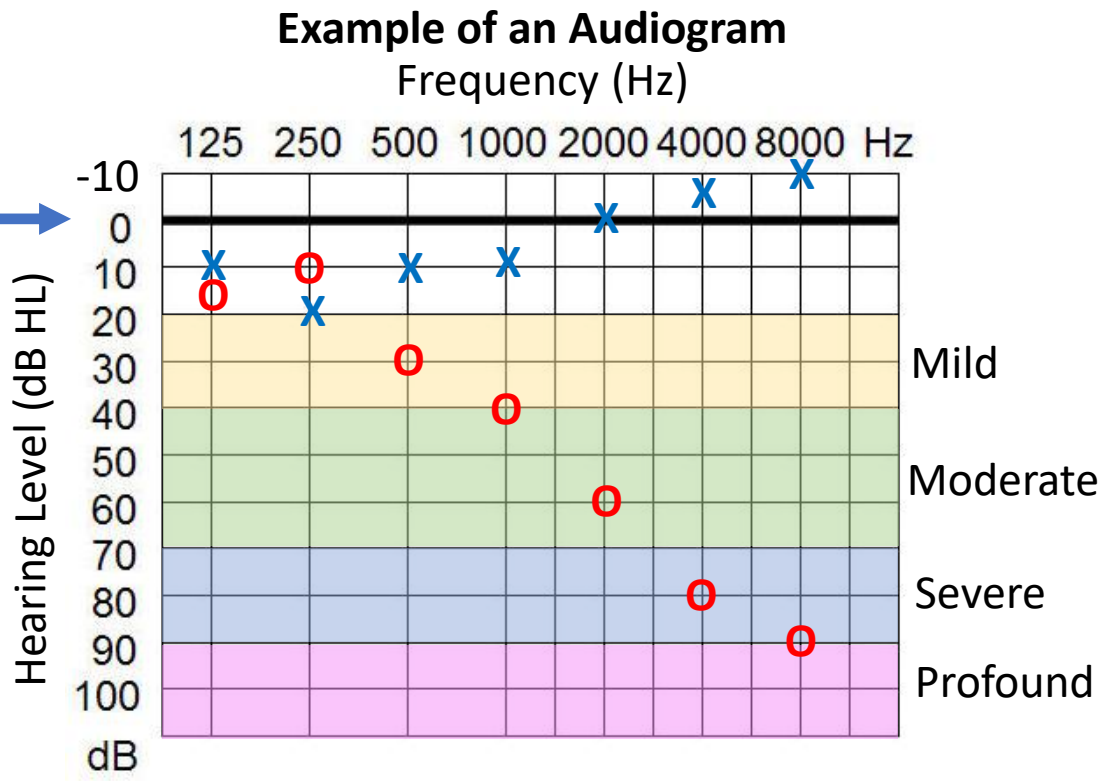
1. Introduction

What is an audiogram?

- An audiogram is a visual representation (graph) of a person's hearing. It plots the minimum sound intensity (i.e. the level of the quietest sound) that can be heard by that person. This is referred to as a hearing threshold (i.e. it's the threshold at which a sound becomes audible)
- Some people may have hearing loss in only one ear, or at some frequencies but not others. Knowing this can often provide important information about the likely cause of hearing loss. Because of this, the audiogram plots thresholds separately for different frequencies in each ear: **Left = X**, **Right = O**.

How do you interpret an audiogram?

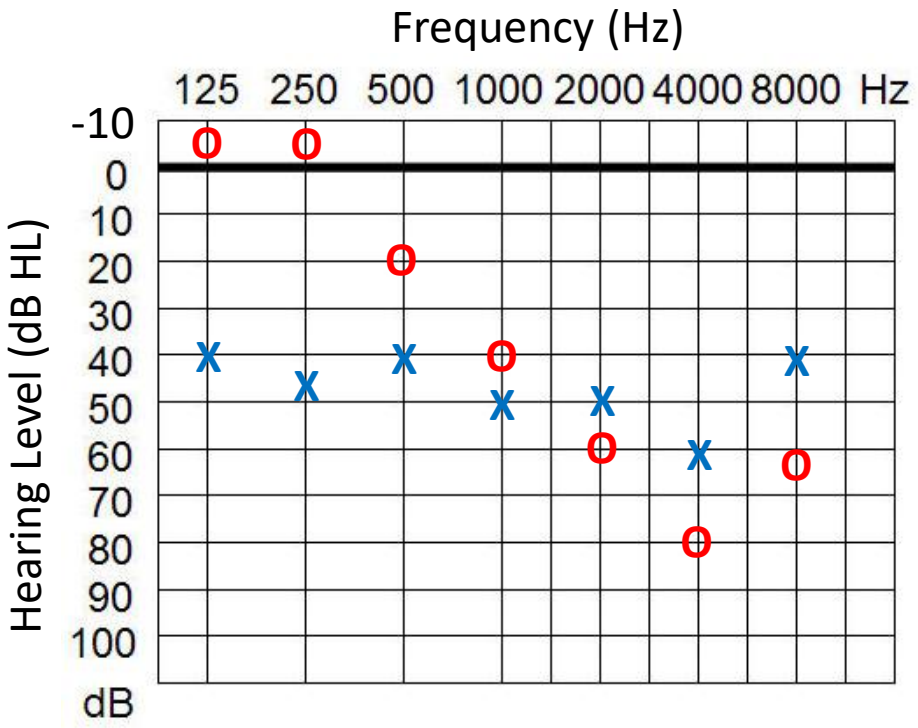
- The average hearing threshold for people with normal hearing is defined as 0 dB HL (decibels Hearing Level) and is shown by a black line.
- If someone has better than average hearing, their thresholds will be negative (above the black line because negative values are by convention plotted at the top).
- If someone has worse than average hearing, their thresholds will be positive (below the black line). If someone's threshold is > 20 dB worse than the average, then the person is said to have hearing loss. In such cases, the magnitude of the threshold indicates the severity of hearing loss (mild, moderate, severe, or profound).



2. Making sense of an audiogram

Using the audiogram pictured (only air-conduction thresholds are shown), answer the following questions:

1. Which ear has better hearing overall? Does that ear have better hearing at every frequency?
2. Is this person's right ear most sensitive to sound at low frequencies or high frequencies?
3. For one of their ears, this person has better-than-average hearing at some frequencies. Which frequencies are these?
4. How would you categorize the hearing loss exhibited by this person? Is it mild, moderate, severe or profound? How does it depend on frequency?
5. How do you think this hearing loss would affect everyday hearing abilities? E.g. Would they be able to hear or locate a barking dog?



6. High frequency hearing loss is very common in older people in both ears. Ear infections can produce equal hearing loss at all frequencies. And loud sounds (e.g. gunshots, music, machinery) can produce hearing loss at specific individual frequencies in one or both ears (depending on where the noise was located). Which of these things (or which combinations) might explain the pattern of hearing loss exhibited by this person?
7. Explain why it would be helpful to get bone-conduction thresholds for this person.