

# Phonak Resource

## How to read an audiogram

2019 – This resource was created by the first Phonak Teen Advisory Board.

Have you had a hearing test recently and want to understand how to read it? Great news, you will find out right here.

### What is happening during a hearing test?

When you had the test you would have heard a lot of different sounds; some low pitch sounds like a deep voice all the way to high pitch sounds like a child squealing. During the test the audiologist was measuring the softest level that you could hear in each ear for each of those different pitch sounds. These softest levels, called 'thresholds' are then recorded on an **audiogram**. There are a few things you need to know so that you can read the audiogram and understand your hearing test results.

### How do I read the audiogram?

First, going across the audiogram is the pitch or frequency of the sound. The left hand side is the lowest pitch sounds and the right hand side are the highest pitch sounds. Going down the audiogram is loudness or intensity. Along the Z axis, the top is really soft and the bottom is really loud. The **X**'s are the softest sound you can hear for each pitch in your left ear and the **O**'s are for your right ear when you were wearing the headphones or had the little foam piece in your ear.

But there is another symbol on the audiogram here. It looks like a **>** for the left ear and would be a **<** for the right ear. These symbols will be on your audiogram when the audiologist also used a little vibrator, called a bone conductor, behind your ear to test your hearing. Audiologists use this to tell if your hearing loss is caused by a damaged nerve or because of the sound not getting through the middle ear as well as it should.

If there isn't much of a gap between the **O** or **X** and the **< >**, then the hearing loss is due to the hair cells in the cochlea being damaged. We call it a sensorineural loss. If there is a gap, then it is due to the middle ear not working as well as it should. We call that a conductive loss. Sometimes it could be both sensorineural and conductive.

There is one more thing that can be on the audiogram which is important. That is the speech banana. It shows lots of the speech sounds which we use to understand speech. This speech banana assumes that the person who is speaking is standing 1 m (3ft, 3 in) away from you and is speaking in a normal voice level. Different sounds of speech – like the sound a S makes /s/ - have higher frequencies. That's why they're on the right side of the audiogram. But other sounds of speech – like the

sound a M makes /m/ - has a lower frequency and is on the left side of the audiogram. Depending on the shape of your audiogram, some speech sounds may be easier than others for you to hear.

### So what does all this mean?

Remember the **X**'s and **O**'s are the softest sounds you can heard; none of the speech sounds above the line can be heard but everything below the line can be heard. In the example audiogram, we can see that it would be very difficult for this person to hear enough speech to be able to understand it without their hearing aids on as most of the speech sounds are softer than what they can hear. The good news is a lot of this speech would be heard when you are wearing your hearing aids or cochlear implant.

And what about the labels like Mild, Moderate, Severe and Profound? Well, we use those to define how much of a hearing loss there is. For this audiogram, we would call it a mild-moderate sensorineural hearing loss in the left ear and a moderate-severe sensorineural hearing loss in the right ear.

### Want more information?

So that is a really quick overview of an audiogram. Your audiogram will probably look different from this one as each person has their own. If you want to find out more about hearing loss and audiograms go to <https://www.phonak.com/com/en/hearing-loss/being-a-teenager-with-hearing-loss.html>.

