

Welcome to Your Audiogram

An audiogram is a graphic picture of your hearing. It allows a **H**earing **P**rofessional (**HP**) to note areas of loss and to begin to create a therapeutic plan to assist you. After you complete an initial interview describing your hearing problems, the HP may check your ears to see if you have a wax buildup or some other obstruction. Then, s/he may ask to test you. (Please understand that this is different from a screening that you may have had at a health fair or other venue. This is much more detailed.) Many HP's will do this initial test free. However, they are unlikely to give you a copy unless you purchase hearing aid/s or pay for the test.

You will enter a sound proof booth, put on a head set and listen to a set of tones. The tester may have you press a button or signal with your hand when you hear the sound. During the test, you will hear the tones at different frequency levels and volume levels. The idea is to determine what you hear at various levels.

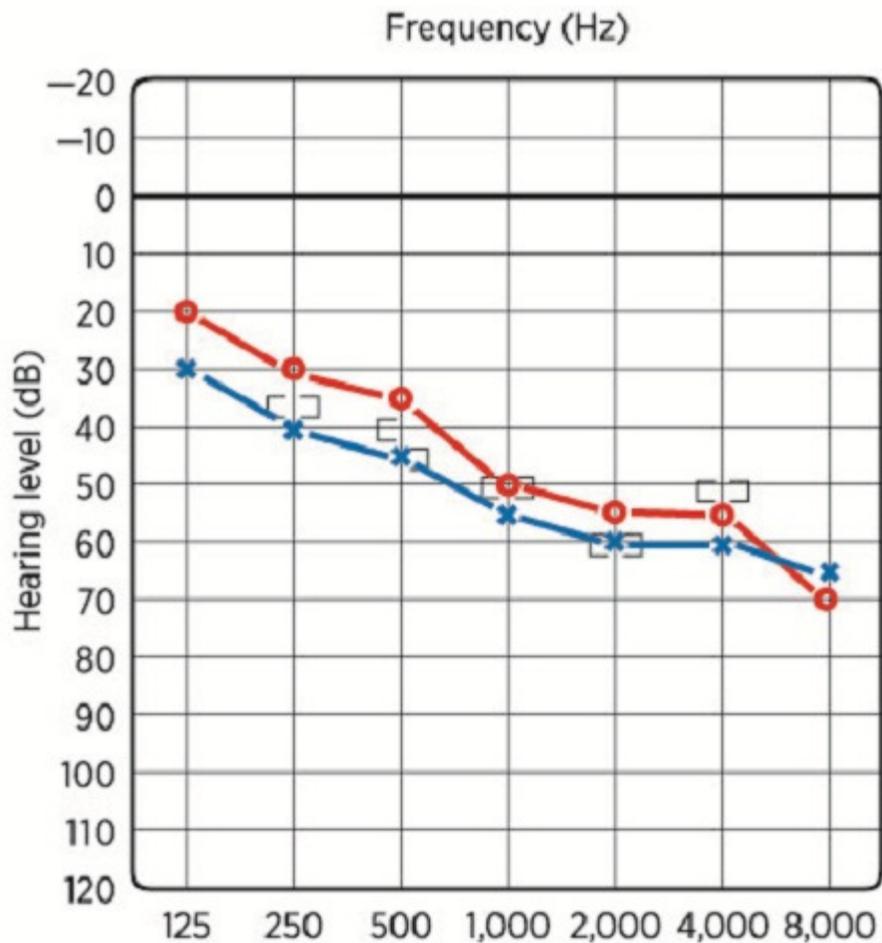
- Look at the Audiogram below (Fig. 1.) Across the top are the sound frequencies at which you are being tested. Low frequencies are at the left and high frequencies are at the right, similar to a piano keyboard. Down the left side of the graph are the decibel levels (volume) with the sound of a feather at the top and a rock band and jet plane at the bottom. The pictures on the graph below and the descriptions on the right side are almost never depicted on an audiogram. These are used here to help you understand what is being described. Down the right side on our example below are the levels of hearing: Normal, Mild, Moderate, Severe, and Profound.

In the upper center you will see a shaded area known as the “speech banana.” This is the area that contains the sounds of the English Language (other languages will have different shapes). Basically, the vowels, consonants and consonant blends require the frequency and the volume level for us to hear and understand them. Follow the lines vertically and horizontally to see the frequency and decibel levels for each sound. Note that the vowels are slightly lower and to the left while the consonant blends are to the right and slightly higher. Vowels require slightly higher decibels and lower frequency than the blends. (Understand this is not a perfect picture. Rather it is merely an example to help explain what an audiologist might be seeing.)

Let's move on to our next picture (Fig. 2.)

Fig.3. shows a hearing loss that you might see. The red line indicates the right ear and the blue shows the left ear.

(Fig. 3)



You might see the words or your audiologist might talk about it :

- **Threshold**--“Technically, a person's *hearing threshold* is defined as ‘the softest sounds a person hears at each frequency approximately 50% of the time.’
(<http://www.firstyears.org/lib/howtoread.htm>)
- **Air conduction** testing which uses earphones or loudspeakers (in a sound-proof room/soundfield). These send sounds to the ear canal and through the middle ear to reach the inner ear. Hence air conduction evaluates the whole ear system -- outer, middle, and inner ear.
- In **bone conduction** testing, a bone vibrator is placed behind the ear to deliver the sound vibrations to the cochlea (the hearing organ of the inner ear). This allows the examiner to bypass the entire outside and middle ear areas and test the sensitivity of the inner ear directly. (<http://www.firstyears.org/lib/howtoread.htm>)

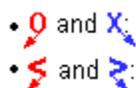
Hopefully, your HP will take the time to discuss your audiogram and explain it carefully. Always ask for a copy. You may or may not receive it, but ask. It is good to have your own file that marks your base of hearing and further decline if any. Understand, over time you may have multiple HPs. Having your own record to share will always be helpful. My doctor said that there was not a “significant change” in my hearing. However, when I produced audiograms over several years, we saw significant changes.

**The terms and symbols below may be used on the audiogram
to describe information about hearing.**



[Cheat Sheet for Reading an Audiogram](#). A handy reference, designed to be given to parents/caregivers, to make audiogram information less complicated to understand.

- Hertz (Hz): The measurement standard for the *frequency* or frequency of sound. On an audiogram, these typically range from 250 Hz to 8000 Hz.
- decibels (dB HL): The measurement standard for the *amplitude* or loudness/intensity of sound. On an audiogram, these typically range from 0 to 110 dB HL.
- **red** and **blue**: When both ears are tested, thresholds for the left ear typically appear in **blue** and for the right ear, in **red**. **Right** is **Red**.
- **O** and **X**: In **air conduction** testing, the symbol **O** stands for the right ear and is usually recorded in **red**. The symbol **X**, typically marked in **blue**, represents the left ear.
- **<** and **>**: When a **bone-conduction** vibrator is used to test for thresholds, a **>** symbol is used for the left ear and a **<** symbol is used for the right ear. (Sometimes there will be no color or shapes. So, remember: check the key/code.) An easy way to remember which symbols are right vs. left is to imagine the child is facing you. **<O>** *Their* right ear will be on your left, so you use the symbol **<** and vice versa.



These symbols indicate there was no response to the given stimulus.

air conduction

• **△** and **□**:
bone conduction

• **[** and **]**:

Masking symbols: The term *masking* refers to noise presented to the non-test ear to keep it “busy,” preventing it from hearing the sound presented to the test ear. The sound is a noise, which sounds like static, but has tonality. By properly presenting masking noise to the non-test ear, you can ensure that you are testing the ear to which the pure tone is presented.

This testing process includes tones, words and often sentences in order to discern what you hear and what you comprehend. Your hearing will be tested with a headset on the ears, and even behind the ears. You are likely to be tested with and without noise. Some or all of this might be recorded on a form using the audiogram above and the symbols in the cheat sheet. Please make an effort to discuss all of this with your HP. Understand, your HP has had years of training in order to conduct this test, record it, interpret and diagnose from the results depicted. At the same time, a complete explanation is important for you to be a good consumer.

The role of this paper is merely to assist you in your role of being a knowledgeable consumer.

I have taken material from:

<http://www.firstyears.org/lib/howtoread.htm>

http://www.hearingloss.org/sites/default/files/docs/Ross_Audiogram_MJ04.pdf

<http://www.earinfo.com/how-to-read-a-hearing-aid-test/>

Do your own research to further your knowledge as a consumer.