

You can see the state of your hearing



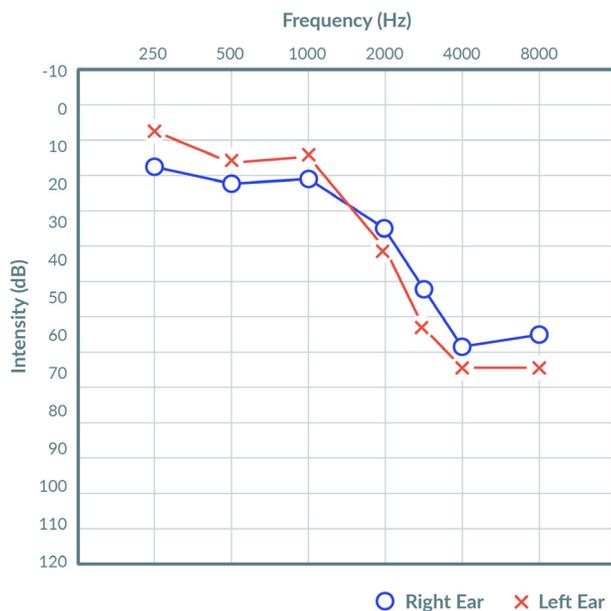
Common questions about audiograms and hearing tests.

An audiogram is a visual representation of your hearing. It is created from the results of a hearing test and shows how well each of your ears can hear certain sounds.

Audiograms may look confusing at first, but they provide a simple explanation of how you experience sounds.

It shows how loud sound needs to be, at varying frequencies, for you to hear them. If you can hear better with one ear over another or hear low pitches better than high pitches – an audiogram will show it.

For audiologists, an audiogram is one way to translate the results of a hearing test and quantitatively understand what is happening in the ears and brain.



In this sample audiogram, both ears have similar hearing capability but struggle with higher frequency sounds.

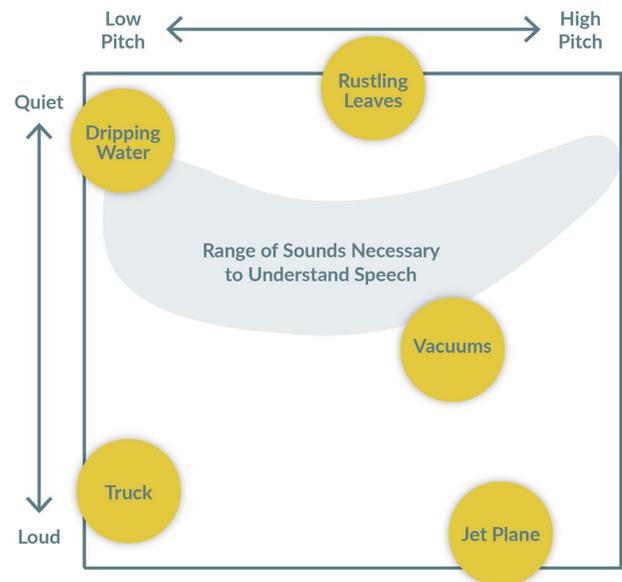
What is an audiogram?

An audiogram displays the results of a hearing test on a chart for easier interpretation.

They show the frequency (high-pitched or low-pitched sounds) along with the hearing level (how well you can hear those sounds).

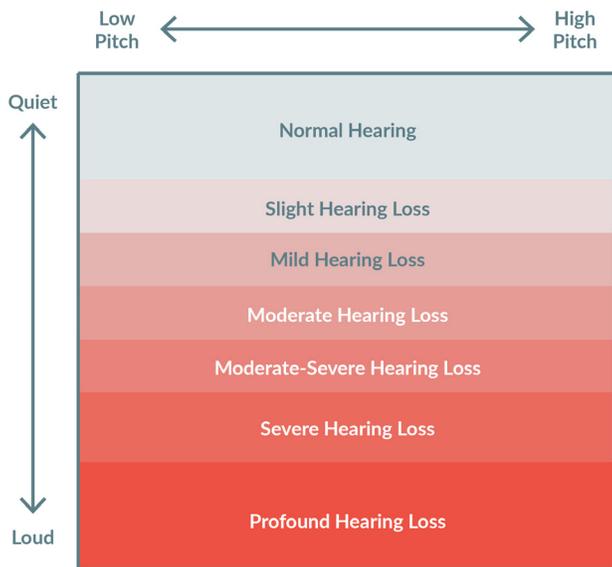
The higher up on the graph the marks are, the quieter the sounds you can hear. As the marks move lower down the graph, a higher volume is needed to hear sound at that frequency.

Everyday sounds can be mapped on an audiogram chart. This audiogram below shows the frequency and decibels of common sounds, including the range that is necessary to understand speech.

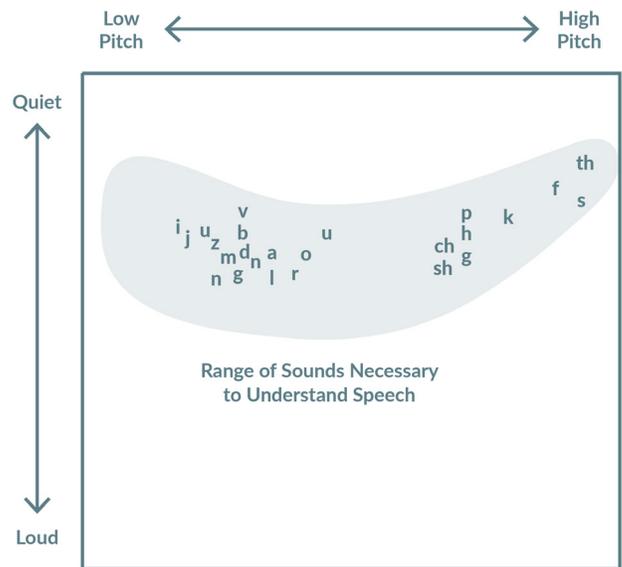


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The sounds necessary to understand speech can be mapped onto the audiogram. The shaded region is often called the “speech banana.”

A brief history of an audiogram

The audiogram has played a fundamental role in showing the nature and extent of hearing loss for nearly 100 years. Since the early days of the audiogram’s inception, frequency was based on the musical scale and measured horizontally.

The representation of hearing level was widely-debated. Experts made several modifications to the scale before settling on the one we use today, in which hearing level is measured in decibels and is marked from top to bottom on the chart.

In other words, the audiogram is upside-down. The top of the graph represents the lowest value and those on the bottom represent the highest.

How is an audiogram made?

Audiograms are created through pure-tone audiometry tests. There are two kinds of pure-tone tests: air-conduction audiometry and bone-conduction audiometry.

Air-conduction testing

During an air-conduction test, a series of tones are played through a headphone to see if you can hear the sound. This is the hearing test that most people are familiar with.

The goal is to assess how sound travels from the outer ear, through the middle ear and into the inner ear – much like sound does in real-world scenarios.

Bone-conduction testing

A bone-conduction test focuses on how the inner ear receives the sounds. A conductor is placed on the head behind the ear, and it sends small vibrations through the bone directly to the inner ear to see if you can hear the sounds.

Comparing the results

The results from pure-tone tests give a picture of how much sound you can hear and the range of tones you are capable of hearing.

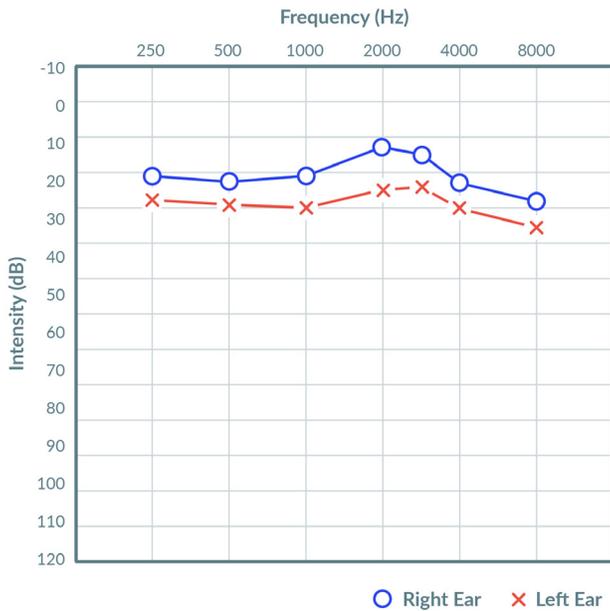
Since air-conduction and bone-conduction tests focus on different parts of the ear system, comparing the audiograms from both tests can help identify the type of hearing loss (conductive, sensorineural or both). Air-conduction testing provides insight into the health of the outer ear, while bone-conduction testing assesses the inner ear. This is another clue for audiologists to determine the cause of any hearing challenges.

Real-life hearing depends on more than just hearing sounds, so another common test is a speech intelligibility assessment. This dives into how well you can hear the tones that are important for listening and speech recognition.

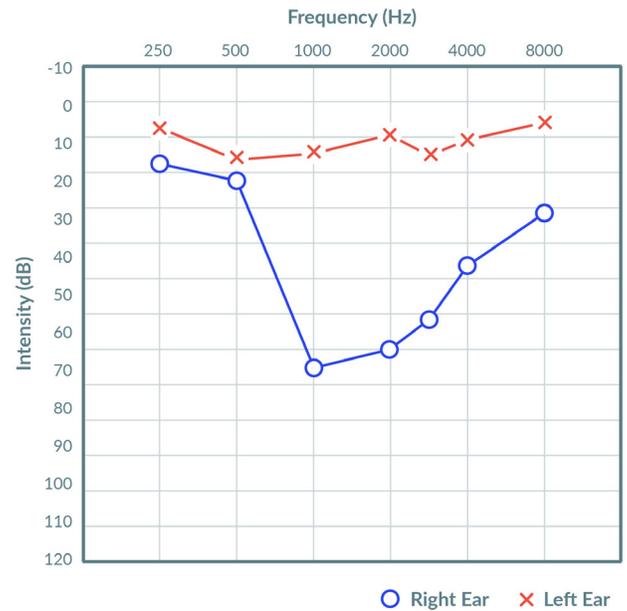
Audiograms for children

Creating an audiogram for infants and toddlers can be more challenging and requires a visual reinforcement audiometry test. With this test, animated videos or flashy toys are placed to the left and right of the child and used to train the child to look in the direction of the sound.





This audiogram indicates normal hearing.



This audiogram indicates normal hearing in the left ear but moderate hearing loss in the right ear.

Can I get an audiogram at home?

A basic screening test is possible outside of professional testing. These tests usually involve wearing headphones and seeing how well you hear various tones.

Screening is useful to get quick feedback on the overall state of your hearing. Just like a quick temperature check when you have the flu, screening tests are often the precursor to a full hearing exam. They are a useful indication but not a substitute for a full hearing test.

An audiologist completes a wider range of tests and considers your lifestyle, health and other human factors. This information can help identify the cause of hearing issues and the most suitable treatments or technology for you.

For example, comparing the results of a bone-conduction test with the results of an air-conduction test can indicate the location of any problems within the ear. Every test provides another clue to the potential causes and treatments.

What does it mean to my health?

An audiogram tells you how well you are receiving sounds. It provides a comparison between your hearing level and “normal” hearing.

This serves as a confirmation of challenges you have been experiencing or clarifies how well you receive and process sounds. It shows you the state of your hearing.

An audiogram shows the complexity of hearing loss. Some people may struggle with higher pitched sounds while other find lower pitches more difficult to hear.

Audiograms also show why understanding certain words or sounds of speech may be difficult while other words are not an issue.

Hearing loss is more than a simple spectrum between: *you can hear and you can't hear*. An audiogram displays the unique profile of your hearing system.

An audiologist will use your audiogram as a starting point for your hearing care to determine the root of your hearing difficulty and the best course of treatment for you.

Your audiogram is unique to you, so your hearing treatment and technology should also be unique.

Find an audiologist in Alberta to receive a hearing test. They will discuss your audiogram and what it means to your health.

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