

# Hearing loss: Hearing test results.

NID Training Disability Diary

- Compiled by Dr Jean Mitchell

## Introduction

When a hearing test is done, a patient wears earphones connected to an audiograph that records the results of the test. An audiogram shows the results of the test on a graph that displays the softest sounds that can be heard at different pitches or frequencies. The vertical axis of an audiogram represents the intensity or volume of the sounds. The horizontal axis depicts the frequency or pitch of the sound and is measured in Hertz (Hz) (Mroz, 2020).

## Discussion

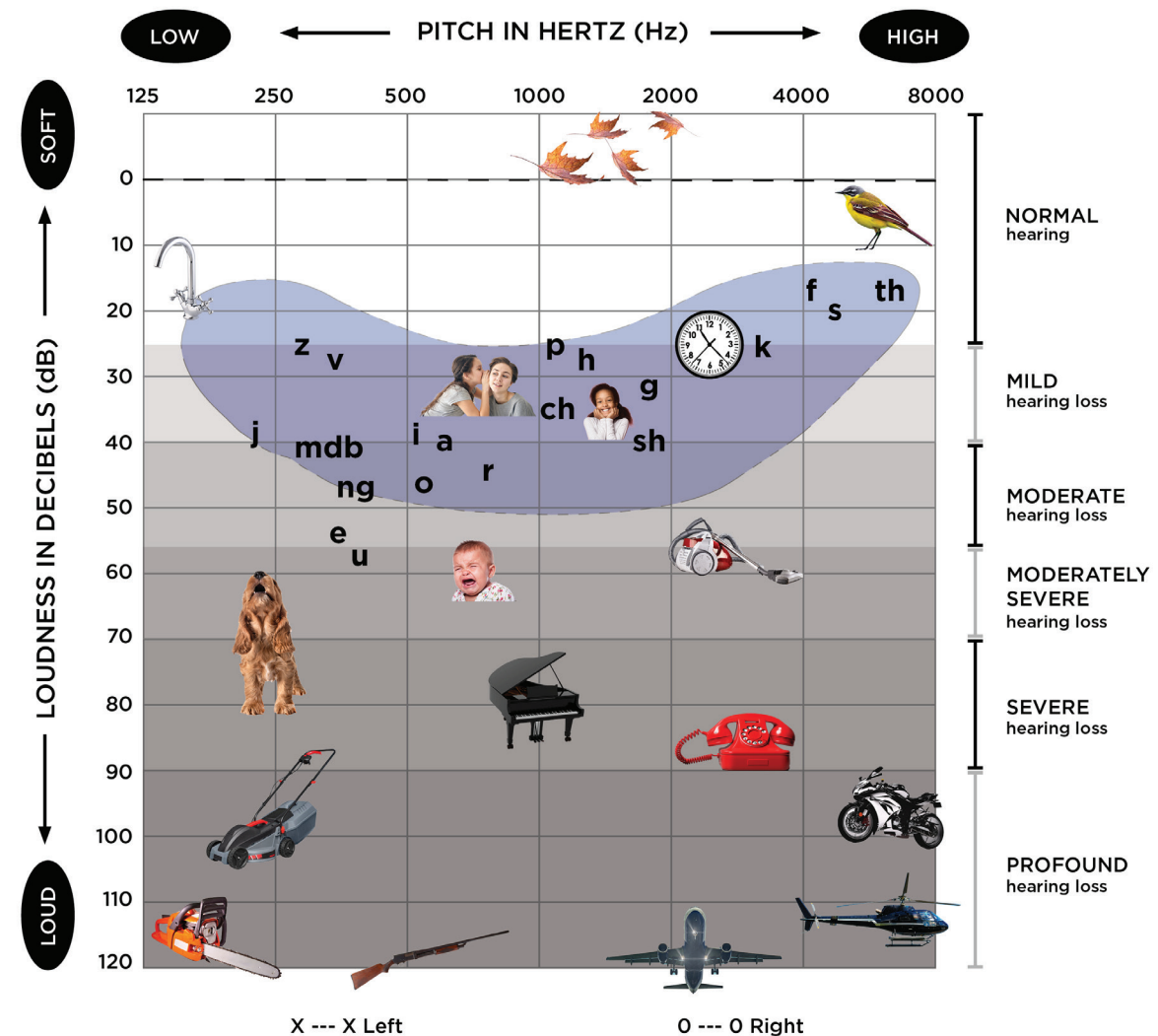
Hearing test results are plotted in decibels of hearing threshold levels (dB HL) and are based on the perception of sound pressure levels. For each tone heard during the test a mark is made on the audiogram at the appropriate decibel level. Each tone is plotted separately and is represented by two different lines.

Hearing loss is measured in decibels (dB) in the following categories:

- Normal hearing (0 to 25 dB HL)
- Mild hearing loss (26 to 40 dB HL)
- Moderate hearing loss (41 to 70 dB HL)
- Severe hearing loss (71 to 90 dB HL)
- Profound hearing loss (greater than 91 dB HL)

It is very common to have more hearing loss at some frequencies than for others, so the percentage of hearing loss would be different at each test frequency. In a clinical setting, hearing loss is not described in percentages, but for specific legal situations, decibels of hearing loss may be converted to percentages.

EXAMPLE OF AN AUDIOGRAM OF AUDIOGRAM OF FAMILIAR SOUNDS:



HEARING LEVELS (DB HL)	CLASSIFICATION (LEVEL / DEGREE)	COMMUNICATION EFFECT ON PERSON WITH HEARING LOSS
10 to 10	None	None
11 to 25	Minimal	Difficulty hearing quiet speech in a noisy environment.
25 to 40	Mild	<ul style="list-style-type: none"> <li>• Might not be able to understand speech, especially in noisy situations.</li> <li>• Might need to wear hearing aids and might not be able to hear soft sounds such as whispers.</li> <li>• Probably understands most speech close by but could miss high and soft frequency sounds like f, th, or s (in the case of English).</li> <li>• Might need to ask people to repeat what has been said, or to speak louder.</li> </ul>
40 to 55	Moderate	<ul style="list-style-type: none"> <li>• The person will most likely wear hearing aids.</li> <li>• Understanding speech, even in normal conditions will probably be difficult if no hearing aid is worn.</li> <li>• The amount of speech missed without amplification can be as much as 50 percent to 70 percent with a 40 dB loss.</li> <li>• When there is a loss of 50 dB, 80 percent to 90 percent of speech can be missed.</li> <li>• Certain vowel sounds can become difficult to hear.</li> <li>• Hearing is possible without hearing aids but understanding might be diminished.</li> </ul>
55 to 70	Moderately severe	<ul style="list-style-type: none"> <li>• Loud conversational speech is audible.</li> <li>• Conversation at two metres or more is not usually understood if there are no hearing aids or visual clues.</li> </ul>
70 to 90	Severe	<ul style="list-style-type: none"> <li>• Conversational speech is not heard without hearing aids or cochlear implant(s).</li> <li>• Without amplification, loud voices can be heard less than half a metre away, but speech may not be understood.</li> <li>• Understanding speech is difficult, even with amplification.</li> <li>• Lip-reading, facial expressions and other gestures are observed in order to follow communication.</li> </ul>
>90	Profound	<ul style="list-style-type: none"> <li>• Loud noises such as airplane engines, traffic, or fire alarms might be audible.</li> <li>• Hearing aids are regarded as being of very little or no benefit, lip-reading, facial expressions and other gestures are used to follow communication.</li> </ul>

Janse van Rensburg- Welling, 2020.

## Conclusion

If a patient has been diagnosed with mild to moderate hearing loss, an audiologist may prescribe hearing aids.

Modern hearing aids are increasingly smaller and more advanced than they used to be and are often able to connect directly with smartphones and other devices. Hearing, like vision, can change over time, and patients should be re-tested periodically.

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## References

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