



# COMMUNICATION CONSIDERATIONS A-Z™

## *The Audiogram*

### **1) What is an audiogram?**

An audiogram is the graphic representation of the results obtained during a standard hearing test. During the hearing test, various tones are presented to each ear of the patient and a mark placed on the audiogram at the point where the sound is just barely perceived (the threshold). A separate set of symbols is used for the left and right ear results. The vertical lines represent various frequencies from very low pitches (250 cycles per second or Hz) on the left to high pitches on the right (8,000 Hz). The horizontal lines represent various degrees of loudness in decibels (dB) from very soft sounds at or near 0 dB, to very loud sounds at or near 110 dB.

### **2) What issues are at the forefront of the audiogram?**

The audiogram displays a patient's hearing thresholds from normal hearing to all degrees of hearing loss. Some of the threshold measurements are made by air-conduction with earphones; other measures are made by bone-conduction through an oscillator placed on the skull behind the ear. Comparison of the air and bone-conduction thresholds in each ear provides diagnostic information about the type and severity of the hearing loss important to the medical and non-medical management of the patient. These measurements are based on the patient's cooperative responses. The audiogram may be difficult to accurately establish in very young children without repeated test sessions.

### 3) What should every parent or professional know about the audiogram?

The accuracy of the audiogram depends on several factors including the experience and skills of the audiologist and the cooperativeness of the patient. Listening to these very soft tones in the environment of a sound-treated booth may be a difficult task for some young children. When it is not possible for the audiologist to obtain accurate and reliable measures for the audiogram, other advanced hearing test techniques may be employed to determine the hearing thresholds at various frequencies in each ear. For normal understanding of everyday speech, the hearing thresholds at 500, 1000, 2000 and 3000 Hz are most important.

### 4) Where else can I find information about the audiogram?

“Hearing and Hearing Loss in Children” (Chapter 1) in *Hearing in Children* (5th Edition) written by J. Northern and M. Downs, published in 2002 by Lippincott Williams & Wilkins, Baltimore.

“All About Hearing Loss – What is an audiogram?” from Boys Town National Research Hospital:  
<http://www.babyhearing.org/HearingAmplification/HearingLoss/audiogram.asp>.

“Understanding Your Audiogram” from the American Academy of Audiology:

<http://www.audiology.org/aboutaudiology/consumered/guides/audiogram.htm>

## Author

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*Communication Considerations A to Z™ is a series from Hands & Voices that's designed to help families and the professionals working with them access information and further resources to assist them in raising and educating children who are deaf or hard of hearing. We've recruited some of the best in the business to share their insights on the many diverse considerations that play into communication modes & methods, and so many other variables that are part of informed decision making. We hope you find the time to read them all!*