

## My child has a hearing loss

A guide for parents

Donna S. Wayner, Ph.D., author of *Hearing and Learning: A Guide for Helping Children*, prepared the material in this booklet.

Copies of her various books about hearing and hearing loss can be obtained at:  
[www.hearagainpublishing.com](http://www.hearagainpublishing.com)



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## You are not alone

The discovery that your child has a hearing loss can be a tremendous blow. It might have you feeling confused, bewildered and sad. You aren't alone in this reaction. Many parents before you have shared these same feelings. Being able to accept that the hearing impairment is real and then learning as much as possible about what you can do are big steps towards making the best decisions for your child.

Such efforts as early as possible in the formative years will make a difference in your child's future, laying the groundwork for success. Since the learning process is challenged by the fact that information received by a child with a hearing impairment is either limited or altered, it is important to learn what is available to help.

Fortunately, your child is living in an age when technology and support offer many excellent options. There is every reason to be optimistic about what can be done to help your child reach his/her highest potential. Using the advanced technology and many resources available to the fullest will help make this happen.

To assure success as your child grows, you will want to create a careful learning environment and apply effective communication techniques to maximize learning and socialization to the benefit of your child's overall development. If you can move ahead taking positive steps, one at a time, your child will benefit and you will be able to look forward to a satisfying future.

We sincerely hope this collection of information will help to enhance the learning experience for your child.

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## Hearing impairment

Since your child was diagnosed with a hearing loss, you probably have had many questions. The first one might well be, what is a hearing impairment? A hearing loss may be described in either words or numbers. When discussing hearing loss or hearing impairment, the term "hard of hearing" is used if a person's degree of loss is in the mild to severe range and "deaf" if they are in the profound range and have little usable residual hearing. People who

are born with a severe to profound hearing loss may have difficulty learning to speak clearly because they simply cannot hear other people's voices that well and therefore cannot imitate them as is necessary in the process of developing speech. They are also unable to hear their own voices well when they try to speak. The tables on pages 7 and 9 provide more information about the types and degrees of hearing loss.

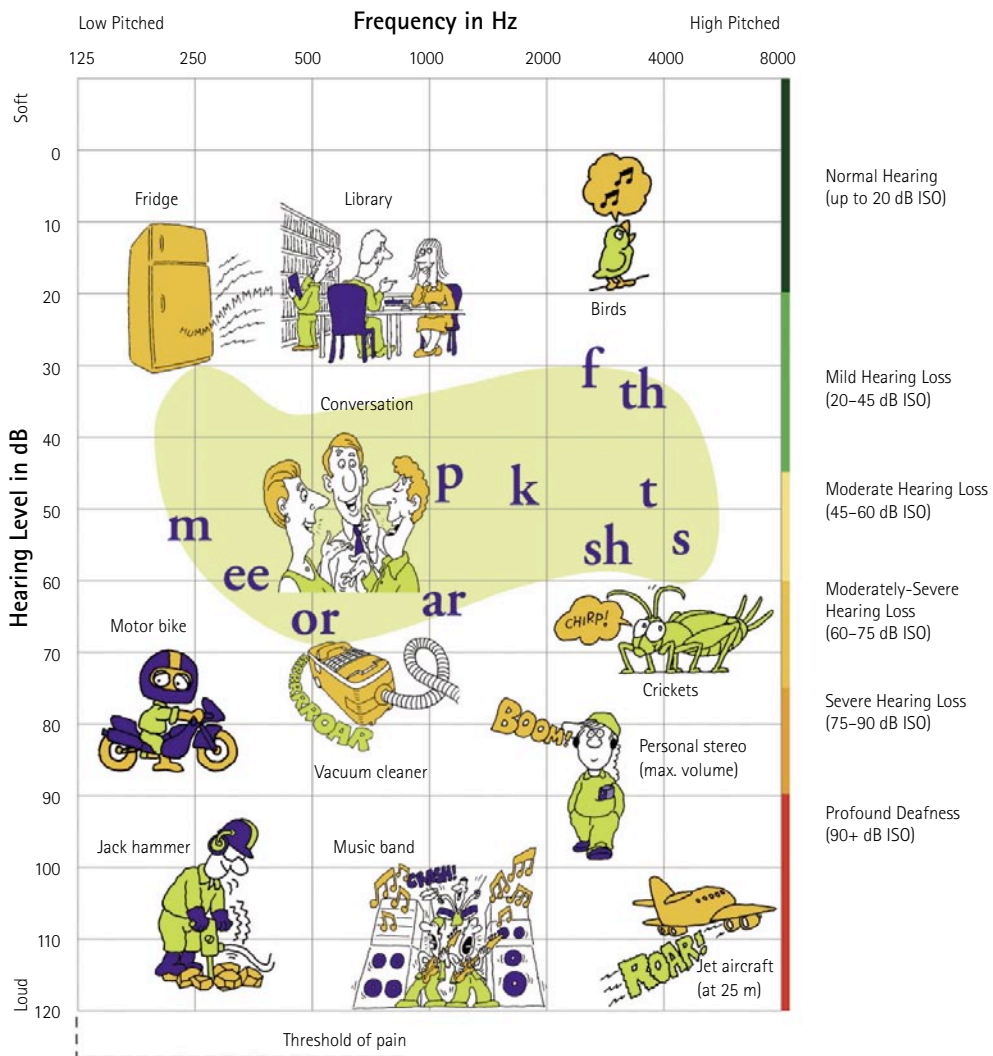


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## Hearing tests

Fortunately, a person of any age can be given a hearing test, even a newborn infant. The hearing ability of all children including newborn infants and young toddlers can be evaluated by objective measurement techniques called brainstem auditory evoked response (ABR, BAER or BSER) or otoacoustic emissions (OAE). These tests can be performed, as the child sleeps or rests, often shortly after birth in the nursery before leaving the hospital. They are brief, painless and accurate. Additional observational testing called behavioral testing and conditioned play audiometry can provide very useful information about a child's ability to hear well before they are capable of cooperating in a regular hearing test. Because of this, appropriate treatments can be provided sooner than ever before.

The scientific method for measuring hearing loss (and sound in general) is in decibels (the unit to measure sound which is abbreviated dB). The results of hearing tests are charted on an audiogram. An audiogram is a form filled out during a hearing test recording the level of hearing at different frequencies (e.g. low and high pitch sounds). This enables the physician/ audiologist to understand the level and type of a hearing loss and so advise on the appropriate treatment options. Regular testing also allows the hearing levels to be monitored over time.



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## Degree of hearing loss

The degrees of hearing loss are classified as mild, moderate, severe and profound. An approximate relationship exists between the decibel hearing loss and the degree of functional difficulty. The table opposite offers a guide to the different degrees of hearing loss, the decibel level and an example to demonstrate the loudness of these levels. Each level brings different challenges and the need for different treatment and technology options. These examples offer an approximate guide only. The outcomes depend on the needs and abilities of each individual child. Your doctor or hearing care professional can offer more detailed information specific to your own child.





Degree of hearing loss	dB level (dB)	Loudness example	Possible challenges and needs
Normal hearing	Up to 20 dB	Rustling leaves, clock ticking	Very few hearing related problems
Minimal/mild hearing loss	20 – 45 dB	Quiet/whispered speech, clicking fingers	May have difficulty hearing quiet voices. Depending on where your child falls in this range, he or she may benefit from amplification or may require extra support in school.
Moderate	45 – 60 dB	Quiet/normal conversational speech	Should understand conversational speech when facing the speaker and up close. Will need to use hearing instruments. May require extra support in school (e.g. FM/favorable seating). FM may also be helpful at home.
Moderately-severe hearing loss	60 –75 dB	Normal/loud speech, doorbell	Conversation must be loud. With correctly programmed hearing instruments, will hear normal conversational voices. Will benefit from extra help in school (e.g. FM/favorable seating). FM may also be helpful at home.
Severe hearing loss	75 – 90 dB	Telephone ringing, thunder, baby crying	May hear loud voices up close. Will need to use hearing instruments in order to hear conversational speech. Will benefit from extra help in school (e.g. FM/favorable seating). FM will also be helpful at home.
Profound hearing loss	90 dB or more	Truck, chainsaw	Will need to wear appropriate amplification technology (e.g. hearing instruments, cochlear implant) in order to hear conversational speech. Will benefit from extra help in school and at home (e.g. FM).



## The incidence of hearing loss

Hearing loss may be the most common physical disability. It is estimated that roughly 30 children per 1000 have some hearing loss. Studies show the number is far greater if children with fluctuating hearing loss (resulting from ear infections), high frequency hearing loss and unilateral hearing loss are included. That could amount to about ONE in TEN children or more. The number of hearing impaired children far exceeds the number who are deaf. This is also true of adults with hearing loss.

## Types and causes of hearing loss

There are two main types of hearing loss: conductive hearing loss and sensorineural hearing loss. Conductive hearing loss results in a loss of loudness. Basically sounds are just not loud enough to be heard well. This can be permanent or temporary depending on what is causing the loss.

If there is fluid in the middle ear, the loss is temporary if given prompt medical attention. Other causes can be remedied by medical or surgical techniques or by amplifying sound with hearing instruments.

Conductive hearing loss results from an abnormality of the outer or middle ear. It is usually temporary and treatable with medication or surgery.

Some causes of conductive hearing loss include:

- Otitis media – an infection in the middle ear
- Perforated ear drum – a hole in the ear drum
- Cholesteotoma – a cyst in the middle ear
- Otitis externa – an infection in the ear canal
- Otosclerosis – disease resulting in calcification of stapes (stirrup) in middle ear
- Excessive or impacted ear wax which causes a blockage in the ear canal
- Collapsed ear canal

Sensorineural hearing loss leads not only to a loss of loudness but clarity as well. Sometimes incorrectly referred to as "nerve deafness", there is generally no medical or surgical help available to correct for sensorineural hearing loss, however, today's digital hearing instruments and cochlear implants can provide significant assistance.

Correcting the lack of clarity that may be associated with a sensorineural hearing loss is not completely possible by amplifying sounds. It is important to be aware of this difference between a conductive and sensorineural loss. This helps you to understand why some people with hearing loss seem to manage so much better than others.

Most parents wonder what caused their child's hearing loss. This is a question best answered by your child's physician. Why not make a note to discuss this at your child's next appointment?

It is not always possible to find the precise cause of some types of hearing loss. In many cases, there

is no history of hearing loss in the family. There are conditions which may occur before or at birth, during infancy or in childhood that may affect a child's ability to hear normally.

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### Where can I find help for my child

If your child has a hearing loss, there are professionals who are able to offer you support and guidance. Below is a list of some of the professionals you may encounter.

#### **Audiologist**

A healthcare professional who holds a degree in audiology and is a specialist in testing hearing and/or hearing loss and providing rehabilitative services to people with hearing impairment.

#### **ENT Physician**

A physician who specializes in medical problems of the ear, nose and throat. Otolologist, otolaryngologist and neuro-otologist are alternative names. This could vary depending on where you live. Your family doctor will be able to advise you.

#### **Hearing Aid Dispenser/Acoustician**

A healthcare professional who is trained to dispense and fit hearing instruments.

#### **Speech Language Therapist/Pathologist**

A healthcare professional who is trained to provide services related to the prevention, evaluation and rehabilitation of speech-language disorders.

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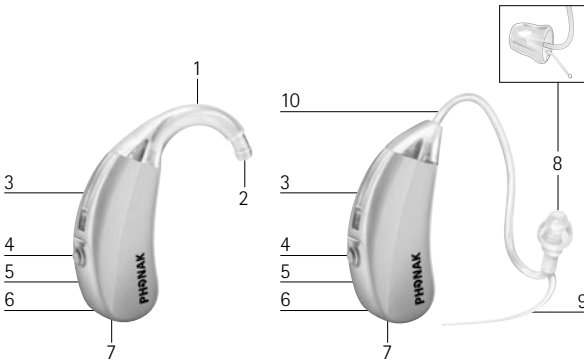
### Choosing the most suitable technology

Today, there is virtually no hearing loss which cannot benefit from the use of appropriate technology. Once a hearing loss is diagnosed, hearing instruments are usually tried first. It is wise to have your child fit with hearing instruments as soon as possible to ensure optimum benefit. The choice you make about which type of hearing instruments will depend on a number of factors: the level of your child's hearing, your child's needs and the needs of your family all play a role. Remember that you do not have to make these choices on your own. A hearingcare professional can and will advise you.

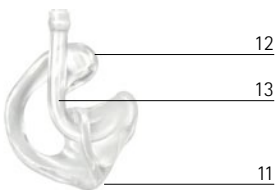
## Hearing Instruments

Hearing instruments have progressed a great deal in recent years and offer a whole range of technologies designed to meet each child's specific hearing needs. Young children will normally be fit with hearing instruments worn behind-the-ear (BTE) that come in compact sizes, a variety of bright, cheerful colors and can help a wide range of hearing losses.

### BTE hearing instrument



### Earmold for BTE hearing instrument



- 1 Transparent hook
- 2 Sound outlet
- 3 Miniature microphone with protector
- 4 Program/volume push button
- 5 Access to programming socket
- 6 Serial number
- 7 Battery compartment with ON/OFF switch
- 8 Dome or SlimTip (small image)
- 9 Retention
- 10 SlimTube/micro tube
- 11 Earmold
- 12 Helix Tip
- 13 Earmold tubing

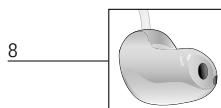
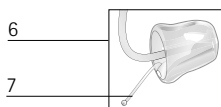
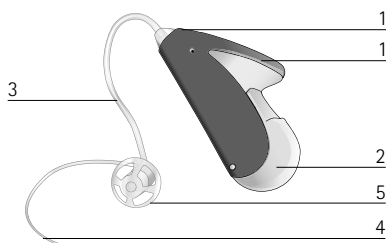
Older children may be candidates for in-the-ear (ITE) hearing instruments, which are custom made and fit inside the ear. These can help with mild to moderate hearing losses.

Another option for older children's are external receiver style hearing instruments. The microphone remains in the BTE casing but the receiver is externally placed in the ear canal. This allows the hearing instrument to be smaller and more cosmetically appealing.

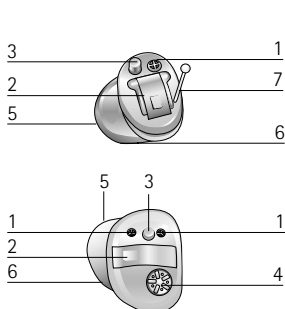
The decision whether your child should be fit with one or two hearing instruments depends mainly on the configuration of the hearing loss. However, if there is a hearing loss in both ears, wearing two hearing aids helps with localizing sounds and better hearing, even in noisy environments.

If you would like to find out more about the technology that may suit your child's hearing needs, visit our website [www.phonak.com](http://www.phonak.com)

## External receiver BTE



## ITE/ITC hearing instrument



- 1 Protected microphone inlet (two on models with directional technology)
- 2 Battery compartment with ON/OFF switch
- 3 Program switch (optional)
- 4 Volume control (optional)
- 5 Receiver (sound outlet) and wax protection system
- 6 Custom made shell
- 7 Removal handle (CIC/MC)

- 1 Microphone inputs with Microphone Protector
- 2 Battery compartment with ON/OFF switch
- 3 xReceiver unit
- 4 Retention (optional)
- 5 Dome
- 6 SlimTip
- 7 Removal handle
- 8 xReceiver shell

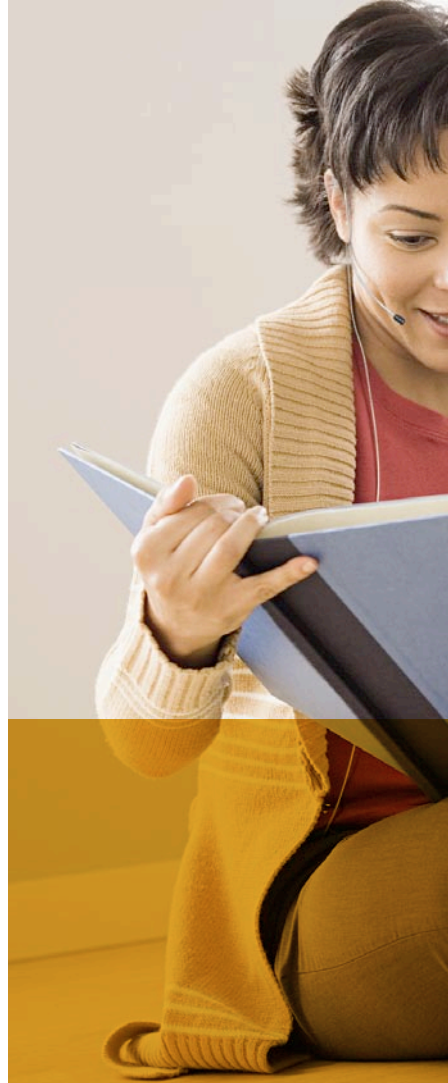
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## FM systems

The path to better hearing begins with the choice of the correct hearing instruments. However, even hearing instruments properly adjusted to your child's personal needs cannot always guarantee good hearing in all listening situations. At times, noise or room acoustics may severely affect hearing. In a classroom, where many children are often speaking at the same time, it might be impossible for the listener with a hearing loss to filter out the background noise. Distance also dramatically reduces intelligibility, as does reverberation or echo.

The best way to overcome such problems is to use a wireless communication system, called an FM system. FM systems have been designed specifically to pick up speech signals directly at the source and transmit them, clearly and without distortion, directly to the user's ear. They create a basis for optimum speech intelligibility, independent of the acoustic surroundings. At a young age, delivering a very clear speech signal to the child supports the development of language, speech and learning.

FM systems consists of one or more transmitters with a microphone, worn by the talkers, who could be the parents at home, or a teacher at school; and tiny receivers, which can be attached to or integrated into the hearing instruments. In most countries these systems are reimbursed.







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## Cochlear implants

One technological development helping individuals with severe to profound sensorineural hearing loss is the cochlear implant. The cochlear implant is a medical device, surgically implanted to bypass damaged parts of the inner ear. It is suitable for children (as young as 1 year of age) who are diagnosed with a severe-profound or profound hearing loss in both ears and who receive little or no benefit from hearing instruments. Cochlear implants can also be used together with FM systems.

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## Hearing instrument accessories

A wide range of hearing instrument accessories are available to help children communicate better over the phone, listening to music or TV, with Bluetooth devices or even just check the status or adjust features.

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## Communication methods

Additional questions commonly asked by many parents of a child with a hearing impairment include: "Will my child ever be able talk to me?" and "How will I talk to my child?" Speech ability depends on the level of your child's hearing as well as the use of technological aids. Many children with hearing loss develop good speech and language when given the appropriate support and training. The sooner your child is exposed to speech and language, the better. There are many ways that communication can happen: orally, with gestures or with sign language. Current communication methods may use one, some or all of these.

## Practical communication tips

The following list of suggestions can help in communicating with your child.

1. Help your child to make it a habit to watch the speaker even if listening is not difficult. It is good to get in the habit of paying attention.
2. Teach your child not to interrupt the speaker before he/she finishes a sentence. Your child may not understand the beginning, but may catch the end.
3. Instruct your child to let the speaker know when he/she is aware something that was said was missed, and to ask for it to be repeated if he/she did not understand.
4. Help your child to learn to summarize what he/she did hear so that the communication partner knows what to fill in.
5. If your child does not appear to understand what is being said, rephrase the statement rather than simply repeating the misunderstood words. Present the topic of conversation. (For example, "We are talking about \_\_\_\_\_.")
6. Help your child with hearing loss know that they may feel more fatigue after classes since they must work so much harder to keep up with the information presented.
7. Encourage your child to keep his/her sense of humor.
8. Speak clearly and slowly at a distance of between 3 and 6 feet, or use an FM system.
9. Stand in clear light facing your child for greater visibility of lip movements, facial expressions and gestures. Do not speak to your child unless you are visible to him or her. Remember the rule, "If he/she can't see me, then he/she can't hear me."
10. Reduce or move away from background noise. Help to manipulate the environment to allow communication in as noise-free an atmosphere as possible. If your child wears hearing instruments with directional microphones, try to position background noise to be behind your child. He or she should face whatever or whomever they are listening to.
11. Do not over-articulate. Exaggerating your mouth movement distorts the sounds of speech and the speaker's face, making the use of visual clues more difficult.
12. Captioning can help when watching television or a film.





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## Life is on

We are sensitive to the needs of everyone who depends on our knowledge, ideas and care. And by creatively challenging the limits of technology, we develop innovations that help people hear, understand and experience more of life's rich soundscapes.

**Interact freely. Communicate with confidence.  
Live without limit. Life is on.**

