Hearing loss with children

Many people associate hearing impairment with ageing. However, children from newborn to teenagers can have a hearing impairment. In Germany alone, one or two out of a thousand newborns are affected by a hearing loss. There are multiple causes of children’s hearing loss, though the consequences, if untreated, are almost always the same. Namely there can be delays learning speech and language and psychosocial effects. Therefore early detection of hearing impairment is important. The earlier hearing impaired children are fit with hearing aids and other appropriate therapies are initiated, the better their outcomes.

Hearing loss with children – types and causes

There are three types of hearing loss, conductive, sensorineural or mixed. A conductive hearing loss means there is a blockage in the outer or middle ear, so sound entering the inner ear will be quieter. A conductive hearing loss can be due to a number of factors, such as wax or fluid in the middle ear. Although many conductive hearing losses in children are temporary, some are permanent. During a child’s critical period for speech and language development, hearing loss related to middle ear dysfunction can delay this process. A sensorineural hearing loss involves an impairment to the sensory organ of hearing, called the cochlea and/or the auditory nerve. This type of hearing loss is usually permanent and can range for mild to profound. A mixed hearing loss is both conductive and sensorineural in nature. Causes leading to a hearing loss in children are diverse and can occur at any age. About half of the prenatal cases have genetic origins. This does not mean that one or both of the parents have a hearing loss – often they are merely carriers of recessive genes. Further, infections during pregnancy (i.e. rubella), as well as intake of harmful substances (i.e. medication, alcohol, nicotine) during the pregnancy, can lead to prenatal causes. Complications during birth, such as lack of oxygen or a cerebral haemorrhage can also damage hearing. Hearing loss can also occur later in childhood, triggered most often by head injuries, illnesses such as measles, mumps or ongoing, untreated middle ear problems. Last but not least, loud noise (i.e. toy pistols, MP3 players) can irreversibly damage the hearing of people of all ages, including children.

Hearing loss in children – Speech/language development and educational performance

The foundations of speech and language acquisition and communication capabilities are set during the first few months of life. “Only, full access to all sounds from birth guarantees normal development of speech and language”, comments audiologist Daniela-Simone Feit. Moreover, hearing and speaking abilities are crucial for the social, emotional and educational opportunities of a child. It is therefore recommended to take advantage of hearing screenings for babies. Parents are further advised to carefully monitor how their babies react to acoustical stimuli and, in case of a conspicuous behavior, immediately consult a pediatrician or an audiologist, specializing in children’s hearing impairments. The earliest possible fitting of a hearing aid together with appropriate speech/language therapy helps to ensure age-appropriate development.

Children with hearing impairment have a difficult time in normal classrooms. At an average noise level of 60 decibels in a classroom, even normal hearing pupils can have difficulty understanding the teacher (about 65 decibels). It is obviously even more difficult for children with reduced hearing abilities to hear and understand at school. They often participate only passively, and since they must expend much more energy concentrating on the lessons, they are often fatigued. These challenges often affect school performance: according to a study by the Hearing Loss Association of America, 37 percent of children with hearing impairments must repeat a year. Besides poor grades, other consequences include psychosocial and behavioral issues, headaches and limited motivation. Often a child’s hearing loss remains undiscovered, school difficulties are mistaken for attention deficit or behavioral disorders. Regular hearing tests are recommended to ensure that children with a hearing impairment are appropriately managed.
Hearing loss in children – options and solutions

Child-friendly hearing aids such as Phonak Naida S are suitable for children of all age groups (http://www.phonak.com/com/b2c/en/products/hearing_instruments/naida-s/overview.html). They can amplify speech and simultaneously suppress background noise. FM technology is also beneficial and recommended for most educational settings. FM systems transmit the signal (speech) directly from the transmitting microphone worn by the teacher or parent to the hearing aids worn by the child. This way the child can understand the speaker despite longer distances and surrounding noise.

In addition to the solutions already mentioned, an FM system which amplifies the teacher’s voice throughout the classroom can also be beneficial. “Dynamic SoundField” by Phonak amplifies the teacher’s voice in a way that even normal hearing children will benefit. Additionally Dynamic SoundField preserves the teacher’s voice.

For profound hearing losses, a Cochlea implant, as offered by Advanced Bionics, may be required http://www.advancedbionics.com/com/en/home.html. A Cochlea implant converts sounds into electrical impulses which are transmitted directly to the hearing nerve.

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How do I notice if my child has a hearing loss? What can I do?

Audiologist and Phonak expert Daniela-Simone Feit answers the most important questions.

1. What causes newborns to be affected by a hearing loss and how do I notice if my baby does not hear normally?
   Usually, a hearing loss from birth has a genetic cause. Parents should definitely have their babies hearing screened right after birth. Many hospitals perform newborn hearing screening before the baby ever leaves the hospital. The screening is quick and painless.

2. What about children and adolescents?
   Middle ear infections or childhood illnesses such as mumps or measles are often the reason for hearing, especially in younger children. Also, noise should not be underestimated as a danger for young ears. Toy guns, firecrackers and loud music from MP3 players can lead to a hearing impairment. Infants with a slower than normal speech development lack of reaction to sounds may have a hearing loss. When school-age children and adolescents show signs of reduced concentration, when the performance at school changes, homework is forgotten and the child feels isolated in class, a hearing impairment could be one of the causes.

3. What can I do if I suspect my child might have a hearing loss?
   You should simply take your child to an audiology clinic for assessment by a professional with experience working with children. If hearing loss is diagnosed, treatment with hearing aids, when indicated can also be initiated, along with referral to other appropriate professionals. Generally speaking, a hearing loss does not necessarily mean that a child does not have the chance to develop speech normally. With early detection of a hearing loss and proper intervention, age-appropriate social and linguistic development is possible. At school in particular, good hearing is a key factor for children’s success. A hearing aid, ideally in conjunction with an FM system, can ensure this.

4. Where can I get further information or exchange thoughts with other parents?
   Parents have numerous questions and challenges once a child is diagnosed with a hearing loss. Therefore we have compiled the most relevant information for parents and adolescents who want to exchange their views with others at: http://www.hear-the-world.com/en/recognize-hearing-loss/hearing-loss-in-children.html
For further information, please visit [www.phonak.com](http://www.phonak.com) or contact:

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