



## CHILDHOOD HEARING LOSS ACT NOW, HERE'S HOW!

**60**% of childhood hearing loss is preventable; when unavoidable, appropriate interventions help to ensure that children with hearing loss reach their full potential.

Act now, here's how!



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## CHILDHOOD HEARING LOSS

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The way humans perceive their world is mediated through sensory experiences. Of all the senses, it is hearing which fundamentally facilitates communication and fosters social interaction, allowing people to forge relationships, participate in daily activities, be alerted to danger, and experience life events.

Around 360 million people – 5% of the world's population – live with hearing loss which is considered disabling; of these, nearly 32 million are children. The vast majority live in the world's low-income and middle-income countries.

For children hearing is key to learning spoken language, performing academically, and engaging socially. Hearing loss poses a barrier to education and social integration. As such children with hearing loss can benefit greatly from being identified early in life and offered appropriate interventions.

The World Health Organization (WHO) estimates that around 60% of childhood hearing loss could be avoided through prevention measures. When unavoidable, interventions are needed to ensure that children reach their full potential through rehabilitation, education and empowerment. Action is needed on both fronts.



## What is the impact of hearing loss if not addressed?

While the most obvious impact of childhood hearing loss is on language acquisition, the condition also has consequences for overall literacy, the development of social skills and attitudes, including self-esteem. Untreated hearing loss is often associated with academic underachievement which can lead to lower performance and fewer employment job opportunities later in life. For a child, difficulties in communication may result in feelings of anger, stress, loneliness and emotional or psychological consequences which may have a profound effect on the family as a whole. In low-resource settings in which a child would already be at higher risk of injury, hearing loss can place a child in unsafe situations due to decreased alertness. In a broader



#### Slight/mild

A child with this level of hearing loss will have trouble hearing and understanding soft speech, speech from a distance or speech against a background of noise.

context, untreated hearing loss affects the social and economic development of communities and countries.



A child with this level of hearing loss will have difficulty hearing regular speech, even at close distances.

Hearing



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\*In the case of moderate hearing loss, the range for children is from 31–60 dB.

A number of factors determine what the impact of hearing loss is on an individual. These include:

- Age of onset: The initial years of life are the optimal period for speech and language development. The impact of hearing loss is greatest in those who are born with or develop hearing loss soon after birth.
- Degree of hearing loss: This may range from mild to profound. The higher the severity, the greater the impact.
- Age of identification and intervention: The sooner a child is identified with hearing loss, and the earlier he/she receives support services, the greater the opportunity for learning spoken language. The Joint Committee on Infant Hearing recommends that all children with hearing loss should receive intervention by six months of age. Early identification and intervention are also credited with significantly reducing the increased education costs associated with hearing loss, and improving earning capacity, in later life.
- Environment: The overall living environment, including access to services, significantly influences the development of a child with hearing loss. Children with hearing loss who have access to hearing technology such as hearing aids and cochlear implants, sign language and special education are often able to participate on an equal basis with their peers who hear normally. Parent and family support groups facilitate social inclusion of children with hearing loss.

#### CASE STUDY

## Cambodia

Piseth (name changed) is an eight-year old girl living in rural Cambodia. She suffers with ear infections resulting in discharge from her ear. The problem is so common in Cambodian children that villagers often consider it normal. This disease, however, causes hearing loss that may have devastating long-term effects on communication, language development and educational progress. If left untreated it can lead to serious medical complications and even death. Piseth's problems were discovered by an outreach medical team. Her condition was so advanced that not only had she lost most of her hearing on one side, the disease had also eaten away at the bone in her skull. She underwent immediate surgery to remove the infected tissue and bone. Following her operation, Piseth's ear improved and she went back to her village and school. Her progress is being carefully monitored by the medical team.

#### **RELATED LINKS:**

http://www.allearscambodia.org/ index.html

[Source: Glyn Vaughan, All Ears Cambodia]





#### **CASE STUDY**

### Thailand

Congenital rubella syndrome (CRS) can cause hearing loss, eye and heart defects and other lifelong disabilities, including autism, diabetes mellitus and thyroid dysfunction. CRS has had a significant impact on the lives of a Thai family from Bangkok. When Chi was pregnant with her daughter Im, her husband was ill, and had a skin rash. She also fell ill with the same symptoms a few days later- the classic presentation of rubella. Chi went to the doctor and was told she would be fine. However, she was unaware that she was one month pregnant. After Im was born, her parents realized that she had problems with her vision. It soon became clear that she also couldn't hear. "Im is deaf," Chi explains "she can neither hear, nor speak." Chi hopes that with good rehabilitation, her daughter will be able to lead a healthy and happy life. The highest risk of CRS is in countries where women of childbearing age do not have immunity to the disease (either through vaccination or from having had rubella). Large-scale rubella vaccination during the past decade has practically eliminated rubella and CRS in many developed and in some developing countries. In April 2015, the WHO Region of the Americas became the first in the world to be declared free of endemic transmission of rubella. (WHO factsheet http://www.who.int/mediacentre/ factsheets/fs367/en/)

#### **RELATED LINKS:**

http://www.measlesrubellainitiative.org

[Source: Measles and Rubella Initiative]



## What causes hearing loss in children?

Hearing loss in children has many causes, including congenital causes, meaning those which are present at birth or soon thereafter, and acquired causes, those which occur as a child ages. Hearing loss may be the result of several of these factors combined. However, it is not always possible to determine the exact cause.

Causes of hearing loss in children may include:

Genetic factors: Such factors cause nearly 40% of childhood hearing loss. It has been shown that hearing loss is much more frequent in children born of consanguineous marriages or those unions between two individuals who are closely related. Congenital malformations of the ear and the hearing nerve, which may be the result of genetic factors or environmental influences, can be associated with hearing loss.



- Conditions at the time of birth: These may include prematurity, low birth weight, lack of oxygen known as birth asphyxia<sup>1</sup> and neonatal jaundice.
- Infections: During pregnancy the mother may acquire certain infections such as rubella and cytomegalovirus which lead to hearing loss in the child. In addition meningitis, mumps and measles in childhood can also result in hearing loss. Infections of the ear are quite common in children in low-resource settings. These often present with discharging ears (chronic suppurative otitis media). Beyond hearing loss, ear infections can lead to life-threatening complications.
- **Diseases of the ear:** Common ear problems may cause hearing loss in children. These include too much ear wax (impacted cerumen) and glue ear (non-suppurative otitis media) which is caused by accumulation of fluid inside the ear.

- Noise: Loud sounds, including those from personal audio devices such as smartphones and MP3 players which are used at loud volume for prolonged periods, may cause hearing loss. Even short high intensity sounds such as those from fireworks may cause permanent hearing loss. The noisy machinery in a neonatal intensive care unit can also contribute to hearing loss.
- Medicines: Medicines, such as those used in the treatment of neonatal infections, malaria, drug-resistant tuberculosis and cancers, can lead to permanent hearing loss. These medicines are ototoxic. In many parts of the world, especially where their use is unregulated, children commonly receive ototoxic antibiotics for treatment of common infections.

<sup>1</sup> Birth asphyxia is the medical condition resulting from deprivation of oxygen to a newborn infant at the time of birth.

# How much of childhood hearing loss could be prevented?

WHO estimates that about 60% of hearing loss in children under 15 years of age is preventable. This figure is higher in low-income and middle-income countries (75%) as compared to high-income countries of the world (49%). The difference could be due to the overall higher occurrence of hearing loss which results from infections in low-resource settings as well as stronger maternal and child health services in high-income countries.

Over 30% of childhood hearing loss is caused by diseases such as measles, mumps, rubella meningitis and ear infections. These can be prevented through immunization and good hygiene practices. Another 17% of childhood hearing loss results from complications at birth, including prematurity, low birth weight, birth asphyxia and neonatal jaundice. Improved maternal and child health practices would help to prevent these complications. The use of ototoxic medicines in expectant mothers and newborns, which is responsible for 4% of childhood hearing loss, could potentially be avoided.

## Estimates of causes of preventable hearing loss



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