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## PEDIATRIC HEARING LOSS

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Three million children under the age of 18 have some kind of hearing loss. At birth, one in 1,000 children have significant permanent hearing loss. When mild hearing loss is included, six in 1,000 children are affected. By age 18, 17 in 1,000 people have some degree of permanent hearing loss (this does not include the type of hearing loss caused by fluid in the ears or ear infections).

### WHAT ARE THE SYMPTOMS OF PEDIATRIC HEARING LOSS?

Some symptoms of pediatric hearing loss include:

- Speech and language delay
- Not babbling, or babbling has stopped
- By 12 months, does not understand simple phrases such as “wave bye-bye” or “clap hands”
- By two-years-old, should have 50 words and put two words together
- Not turning head in direction of sound
- Difficulties in school

### WHAT CAUSES PEDIATRIC HEARING LOSS?

Nerve hearing loss, also called sensorineural hearing loss (SNHL), is permanent. This is caused by genetic factors in half of cases. The other half of cases may be due to infection (such as meningitis or congenital cytomegalovirus, CMV), head trauma, noise trauma, anatomic abnormalities, or certain medications. Sometimes, a cause can't be identified (idiopathic).

Conductive hearing loss is usually temporary and caused by fluid in the middle ear, or an abnormality of the eardrum or hearing bones. The middle ear is the part behind the eardrum where three tiny bones connect sound from the eardrum to the cochlea, the nerve part of the hearing. The middle ear is the area where ear infections occur. Ear infections can leave fluid in the

middle ear after the infection is gone. On the other hand, some children can get fluid in the middle ear when the tube from the nose to the ear (the eustachian tube) does not work well.

Avoiding loud noises and head trauma will prevent hearing loss, and may prevent hearing loss from getting worse.

### WHAT ARE THE TREATMENT OPTIONS?

The earlier that hearing loss is diagnosed, the sooner appropriate treatment can be discussed and implemented to help your child hear and speak as well as possible. To make a diagnosis of hearing loss, different types of tests can be done depending on the age of the child. These include OAE (otoacoustic emission) test, ABR (auditory brainstem response) test, audiogram (standard hearing test), and tympanometry (checks eardrum function).

For temporary hearing loss, sometimes a simple visit to your doctor to remove earwax, perform an outpatient ear tube placement, or other medical treatment can correct the hearing loss.

For permanent hearing loss, hearing aids, bone anchored hearing aids, FM systems, and/or cochlear implants may be recommended depending on the type and severity of hearing loss. In addition to an ENT (ear, nose, and throat) specialist, or otolaryngologist, children with permanent hearing loss should be seen by other specialists, including an eye doctor (ophthalmologist) and in some cases, a heart doctor (cardiologist) and a genetics doctor. It is important to also consider speech therapy as soon as a diagnosis is made.

### WHAT QUESTIONS SHOULD I ASK MY DOCTOR?

1. What can I do to make sure my child will have the best possible speech?

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2. Is my child's hearing loss (or impairment) permanent or temporary?
3. How can I prevent my child's hearing from getting worse?
4. How should I monitor my child's hearing and speech?
5. How important is it to read to my child?
6. Do you recommend taking my child to see other specialists or therapists?

### References

Grindle CR. Pediatric hearing loss. *Pediatr Rev.* 2014 Nov;35(11):456-63.