

## Types of Hearing Loss

- Sensorineural hearing loss (or nerve-related deafness) involves damage to the inner ear caused by aging, pre-natal and birth-related problems, viral and bacterial infections, heredity, trauma, and exposure to loud noise, fluid backup, or a benign tumor in the inner ear. Almost all sensorineural hearing loss can be effectively treated with hearing aids.
- Conductive hearing loss involves the outer and middle ear that may be caused by blockage of wax, punctured eardrum, birth defects, ear infection, or heredity, and often can be effectively treated medically or surgically.
- Mixed hearing loss refers to a combination of conductive and sensorineural loss and means that a problem occurs in both the outer or middle and the inner ear.
- Central hearing loss results from damage or impairment to the nerves or nuclei of the central nervous system, either in the pathways to the brain or in the brain itself.



## Facts on Hearing Impairment and Hearing Aids in Children

- Approximately 3 in 1,000 babies are born with permanent hearing loss, making hearing loss one of the most common birth defects in America. Ross, D., Holstrum, W.J., Gaffney, M., Green, D., Oyler, R., and Gravel, J. (2008).
- 96% of children with permanent hearing loss are born to two hearing parents. Mitchell, R.E. & Karchmer, M.A. (2004).
- Despite extraordinary advances in early identification, early access to sound through technology and early intervention, there is widespread agreement among researchers, clinicians, program administrators and policy makers that many children ages 0-5 with permanent hearing loss are not receiving the benefits.
- White, K.R. (2007).
- Left undetected, mild or unilateral hearing loss can result in delayed speech and language acquisition, social-emotional or behavioral problems, and lags in academic achievement. Yoshinaga-Itano C., Sedey A.L., Coulter B.A., & Mehl A.L. (1998).
- With appropriate early intervention and technology, children with hearing loss can be mainstreamed in regular elementary and secondary education classrooms. Recent research has concluded that children born with a hearing loss who are identified and given appropriate intervention before 6 months of age demonstrated significantly better speech and reading comprehension than children identified after 6 months of age. Yoshinaga-Itano, C. & Apuzzo, M.L. (1998).
- When children are not identified and do not receive early intervention, special education for a child with hearing loss costs schools an additional \$420,000, and has a lifetime cost of approximately \$1 million per individual. Johnson, J.L., Mauk, G.W., Takekawa, K.M., Simon, P.R., Sia, C.C.J., & Blackwell, P.M. (1993).
- The Center for Disease Control and Prevention has estimated that the lifetime economic cost to the public for a child with hearing loss is over \$400,000, mostly for special education services. Honeycutt, A., Dunlap, L., Chen, H., al Homsji, G., Grosse, S., & Schendel, D. (2004).
- Based on incidence data, it is estimated that there will be slightly over 15,000 new cases each year: Societal losses will amount to \$4.6 billion over the lifetime. If early identification and intervention shifted *10% of the children into mainstreamed settings*, the return on investments would be *more than double!* Mohr, P.E, Feldman, J.J., Dunbar, J.L., McConkey-Robbins, A., Niparko, J.K., Rittenhouse, R.K., & Skinner, M.W. (2000).
- 16 other states-- Arkansas, Rhode Island, Connecticut, Maryland, Colorado, New Mexico, Minnesota, Kentucky, Oklahoma, Louisiana, Missouri, New Jersey, Maine, Delaware, Oregon, Wisconsin--have passed legislation requiring insurance coverage for hearing aids for children (range 5 to 39 cents per member per health plan). Rhode Island covers all age ranges and Wisconsin also includes cochlear implants.