

► **DID YOU KNOW?**

Thirteen Facts on the Impact of Hearing Loss on Education

By Karen L. Anderson, MEd

Thirteen pertinent facts about hearing loss and its impact on the lives of children:

1. Our present hearing screening procedures identify less than 50% of the children with significant hearing problems.^{1,2,3}

2. Medically, a child is not considered to have abnormal hearing until his/her hearing is worse than 25 dB. A 25 dB hearing loss is slightly worse than plugging your ears with your fingers. We screen in school at 20-25 dB.⁴

3. The typical ear infection causes a "plugged ear" hearing loss. Two-thirds of preschoolers have at least one episode of ear problems and 16% of preschoolers have six or more episodes. One-half of all episodes of ear problems go undetected by parents or teachers. Even with good medical follow up, 10% of preschoolers continue to have chronic ear problems during critical language development years.^{4,5}

4. The difference between reading comprehension and grade equivalencies for normal hearing children and those with 25 dB hearing losses⁶:

	Grade 1	Grade 4
Normal hearing	2.3	6.3
25 dB loss	2.0	4.5

5. The difference between expected and actual performance on language tests^{6,7}:

Degree of Loss	Language Delay in Years
15-26 dB	1.2
27-40 dB	2.0
41-55 dB	2.9
56-70 dB	3.5+

6. Of the learning disabled population, 20-25% have histories of, or ongoing ear problems related to, hearing loss. As many as 38% have been found to have abnormal

hearing thresholds. Sufficient data is available to suggest that children with early, recurrent ear problems are at risk for developing delays in auditory, language and academic skills.⁸

7. Eighty-nine percent of hyperactive children have three or more episodes of ear problems and 74% have had 10 or more. Of those receiving medication for hyperactivity, 94% have had three or more episodes of ear problems and 68% have had 10 or more.⁹

8. For the Down's Syndrome population, the incidence of hearing loss ranges from 23-90%, and 40-50% have hearing losses greater than 25 dB in both ears.¹⁰

9. When the Special Education Population was considered in two studies, one found that 75% and the other found 84% of these students had abnormal hearing levels.^{11,12}

10. Of children whose parents identified them as having gifted characteristics via a short checklist, 66% were found to be in the gifted range on the Stanford Binet. Seventy-five percent of those who fit the characteristics, but tested below the gifted range, had experienced chronic ear infections in infancy.¹³

11. Children with hearing loss only in one ear (30 dB or greater) have 10 times the risk for failing a grade in school. Almost 50% of unilaterally hearing-impaired students have failed one or more grades in school or are receiving support services in school.¹⁴

12. Noise-induced hearing loss is a serious concern. Only 3% of children in grades 1-3 were found to have high pitch loss, presumably due to noise exposure. The incidence in high school leaps to 22% of the student population.¹⁵

13. The effectiveness of hearing instruments can become reduced for students in the regular educational setting. In the presence of typical levels of classroom noise, a student's ability to

understand may drop to 60% or even as low as 27% if there is no carpeting.^{16,17}

References

- Kokko E: Chronic secretory Otitis Media in children. *Acta Otolaryng* [Suppl] 1974; 7-44.
- Downs M & Blager F: The Otitis prone child. *Dev and Behav Ped* 1982; June, (3:2): 106-113.
- Bluestone C, Beery G & Paradise J: Audiometry and tympanometry in relation to middle ear effusions in children. *Laryngoscope* 1973; 83: 594-604.
- Downs M: Contribution of mild hearing loss to auditory language problems. In R Roesser and M Downs' (eds.) *Auditory Disorders in School Children*. New York: Thieme-Stratton, 1981.
- Northern JL: Otitis Media: Screening Young Children for Communication Disorders. Presentation in North Mankato, MN, Jan. 29, 1986.
- Davis J: Hard of Hearing Children in the Schools. Presentation in St. Cloud, MN, May 17, 1985.
- Maikin, N: Changing Characteristics and the Implications to Clinical and Educational Services in the Hearing Impaired Child. Presentation in Minneapolis, MN, April 16, 1988.
- Reichman J & Healey WC: Learning disabilities and conductive hearing loss involving otitis media. *J of Learning Disabilities* 1983; 16: 272-278.
- Hagerman R & Falkenstein A: Ear infections and hyperactivity? *Clin Pediatrics* 1987 (May); as reported in *Parent's Pediatric Report* 1987; Nov.: 70.
- Stray-Gundersen K: *Babies with Down's Syndrome*. Kensington, MD: Woodbine House, 1986.
- Osborn J, vanderEmbse D & Graves L: Development of a model program using sound field amplification for prevention of auditory-based learning disabilities. Unpublished study from Putnam County Office of Education, Ottawa, OH, 1989.
- Sarff LS & Ray HR: Why not amplification in every classroom? *Hear J* 1981; 10: 43-52.
- Silverman LK, Chitwood DG & Waters JL: Young gifted children: Can parents identify giftedness? *Topics in Early Childhood Special Education* 1986; 6: 23-37.
- Bess F & Tharpe A: Unilateral hearing impairment in children. *Pediatrics* 1984; 74 (2): 206.
- Bagwell C: A report on noise-induced hearing loss in high school students. An unpublished study from Wabash & Ohio Valley Special Education District, Norris, IL, 1983.
- Finitzo-Heiber T & Tillman T: Room acoustics effects on monosyllabic word discrimination ability for normal and hearing impaired children. *J Speech Hear Res* 1978; 21: 440-458.
- Ross M & Giolas T: Effect of three classroom listening conditions on speech intelligibility. *Am Annals of Deaf* 1971; 116: 6.

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