

**Critical Review:** What are the objective and subjective outcomes of fitting a conventional hearing aid to children with unilateral hearing impairment?

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This critical review examines the objective and subjective outcomes of fitting a conventional hearing aid to children with unilateral hearing loss. Study designs included two single group survey research studies, and one case-series pre-post test. Overall, the evidence failed to show conclusively that children with unilateral hearing loss benefit from wearing a conventional hearing aid, but suggest that their provision should be on an individual basis. Future research with more subjects, more reliable and valid objective measures, and a wider array of hearing losses is needed to develop a treatment protocol.

### *Introduction*

Until recently, it was not believed that a unilateral hearing loss greatly impacted the development of a child. This is because children with unilateral hearing loss can appear to develop normal speech and language and not display any consequences until they begin school. A noisy classroom can pose listening problems for normal hearing children, but for those with unilateral hearing loss these problems are exacerbated

selection criteria: two single group survey research, and one case-series pre-post test.

***Results/ Discussion***

McKay (2002) conducted survey research with

questions concerning development and how family activities were affected by the hearing loss. Questions within the survey were developed from previous quality of life questionnaires developed at the Medical Research Council (MRC) Institute of Hearing Research and were used with moderate to profoundly impaired populations.

Surveys were sent out to 150 families of children with mild or unilateral (worse ear >40 dB HL thresholds and a minimum 15 dB HL asymmetry) hearing loss Hearing Assessment Center in Nottingham, UK. A specific age range was not reported for the study, but the average age of the children that participated was 13. Both conductive and sensorineural hearing losses were included as were children with additional disabilities. The number of surveys returned was 63 and 27 were from families with a unilaterally hearing impaired child.

The authors did not specify the type of statistical test performed with the data, but it was found that wearing a hearing aid made a significant difference ( $p < .01$ ) to the ease of listening in quiet and noisy situations. It was also found that 40% of parents with a unilaterally impaired child reported that their child had more problems than they thought was usual pronouncing certain speech sounds and 22% reported often found it hard to understand their child. Despite the potential benefits of amplification, only 26% of unilaterally impaired



the late identification of hearing loss and thus description of their developmental progress (Yoshinaga-Itano et al., 2008). While the challenge of recruiting this population for research is diminishing now that children are being identified sooner, the need for a treatment protocol is growing.

The direction that future research studies should take includes determining the associated effects on development caused by varying degrees of unilateral hearing loss and appropriate intervention programs depending on the degree of hearing loss. Also, future research should address the wider impact that unilateral hearing loss can have on the family life in order for audiologists to be able to counsel families regarding expectations and how to overcome potentially challenging situations. Additional research with objective results showing how well children with unilateral hearing loss perform with and without a hearing aid would greatly assist audiologists in the decision to fit a child with a hearing aid or not.

### *Clinical Implications*

The articles examined in this review have given some insight into the possible benefits a conventional hearing aid may provide children with unilateral hearing loss, but fall very short of being able to state with certainty that each child with this hearing profile should be prescribed a hearing aid. Ultimately, a clinical protocol like the Best Evidence Statement from the Cincinnati Child