



articles were discovered through article referencing.

#### *Selection Criteria*

Research studies selected for inclusion in this critical review paper were required to examine the use of directional microphone technology within the pediatric population. The original focus was strictly 0-5 years of age, but due to the lack of research, studies involving any children were included. No limits were set regarding the methodological design or outcome measures.

#### *Data Collection*

Research of the literature yielded the following types of articles congruent with the selection criteria: group comparison in an experimental design using a three-way mixed, statistical analysis of variance (2).

### **Results**

Kuk, Kollofski, Brown, Melim, and Rosenthal, examined the efficacy of hearing aids with a directional microphone in children aged 7 to 14. This was achieved by objectively measuring speech recognition using the CID W-22 word lists at different SNRs in a background noise. Levels of 72, e

would help explain why the older children  
required less SNR to achieve 50 percent

- Beck, D. (March 21, 2005). Interview with Patricia Stelmachowicz Ph.D., Director of Audiology, Boys Town, Omaha, Nebraska. Retrieved October 17, 2006, from [http://www.audiologyonline.com/interview/pf\\_interview\\_detail.asp?interview\\_id=30](http://www.audiologyonline.com/interview/pf_interview_detail.asp?interview_id=30).
- Bentler, R. (2005). Effectiveness of Directional Microphones and Noise Reduction Schemes in Hearing Aids: A Systematic Review of the Evidence. *Journal of American Academy of Audiology*, 16:473-484.
- Gravel, J., Fausel, N., Liskow, C., Chobot, J. (1999). Children's speech recognition in noise using omnidirectional and dual-microphone hearing aid technology. *Ear and Hearing*, 20(1), 1-11.
- Jones, C. (January 13, 2005). Fitting Young Children with Directional Technology. Retrieved October 17, 2006, from [http://www.audiologyonline.com/askexpert/display\\_question\\_id=150](http://www.audiologyonline.com/askexpert/display_question_id=150).
- Kuk, F., Kollofski, C., Brown, S., Melim, A., Rosenthal, A. (1999). Use of a digital hearing aid with directional microphones in school-aged children. *Journal of the American Academy of Audiology*, 10(10): 535-548.
- Lewis, D. (1999). Selecting and Pre-setting Amplification for Children: Where Do We Begin? *Trends in Amplification*, 4(2), 72-89.
- Nozza, R., Rossman, R., Bond, L., Miller, S. (January, 1990). Infant speech-sound discrimination in noise. *Journal of Acoustical Society of America*, 87(1), 339-349.