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# The Challenges Ahead in Paediatric Audiology

There are a number of challenges facing paediatric audiology in the next few years. Some revolve around changes in the way audiologists are being trained, and others around reimbursement for services. When the decision was made to move to the AuD as the basic degree for audiologists in the USA, many looked forward to what another year of training would provide in increased skills for audiologists. However, the move away from graduate programs which offered degrees in both audiology and speech-language pathology significantly changed the philosophy of many audiology training programs. In many graduate programs, audiologists are getting extensive training in the technical aspects of the profession and less in the habilitation / rehabilitation aspects. As a result, many audiologists are having problems meeting the needs of providing services to infants and children with hearing loss.

## Working with babies

Most audiologists are comfortable using auditory brainstem response (ABR) and auditory steady state response (ASSR) testing to diagnose hearing loss in infants but are not comfortable obtaining behavioural testing for infants. While electrophysiologic testing is useful, it is not a direct measure of hearing. If a hearing loss is identified using ABR, and the need for hearing aids is determined, the audiologist sets hearing aids using real ear measures.

While the information provided with real ear measures tells us how much sound is being presented to the ear, it does not tell us what the child is actually hearing. The audiologist has used a protocol that is not a direct measure of hearing (ABR) and an indirect measure of how much sound a hearing aid is providing (real ear measurements) to provide critical information about whether we are providing sufficient auditory access for a child to use audition to develop speech and language.

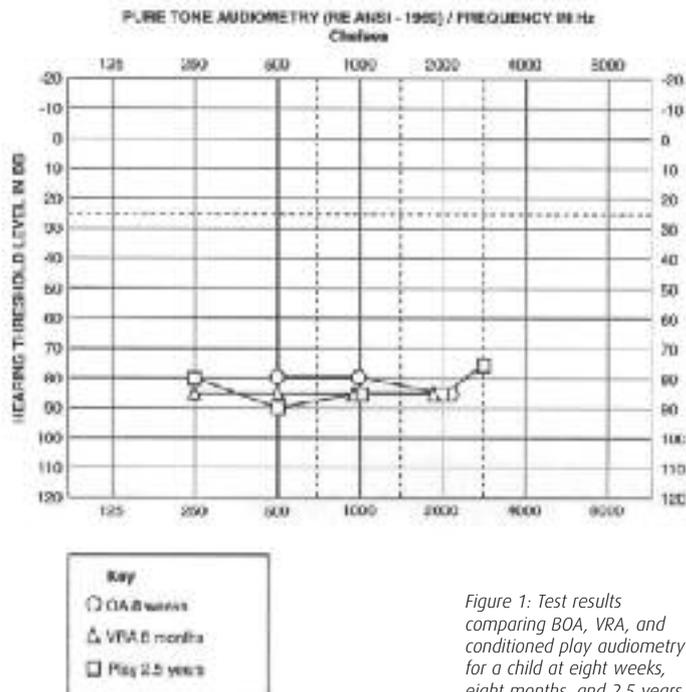


Figure 1: Test results comparing BOA, VRA, and conditioned play audiometry for a child at eight weeks, eight months, and 2.5 years.

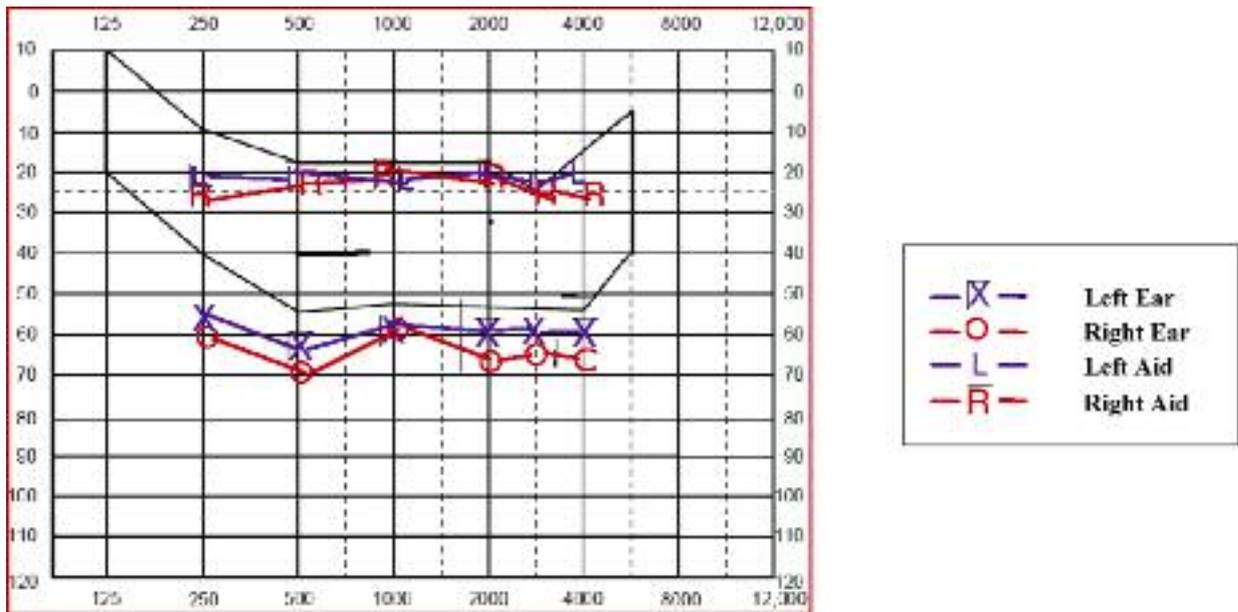


Figure 2: BOA evaluation of an eight week old infant identifying a moderate hearing loss and aided thresholds for each ear.

We cannot ask infants to report what they hear so it is essential that audiologists have an accurate way of determining what the child is actually hearing. We cannot use ABR to monitor performance with hearing aids. If we are going to effectively fit infants with advanced technology, we need to be able to measure how well they are hearing with it. Without behavioural testing, it is not possible to determine if the infant is receiving sufficient benefit from the hearing aids. Appropriately fit technology may be the most important thing we can do for the children we work with – ‘*what we hear is what we say*’. For children over six months of age many audiologists are comfortable using visual reinforcement audiometry to monitor both hearing levels and gain obtained from amplification. But if we are to meet our goals of fitting hearing aids appropriately before six months of age, it will be necessary for audiologists to gain competence testing infants using behavioural observation audiometry (BOA). As cochlear implants (CI) are being fitted at younger ages, with many infants being implanted at six to eight months, we absolutely must know that the child has received a sufficient hearing aid trial to be able to comfortably report that hearing aids are not providing sufficient benefit and that the child is a candidate for a CI. With BOA we can determine if a child is receiving sufficient gain and hearing at sufficiently soft levels. BOA can be accurately obtained by observing changes in sucking.<sup>1,3</sup> Figure 1 demonstrates test results obtained for a child using BOA at

eight weeks, visual reinforcement audiometry (VRA) at eight months, and conditioned play audiometry at 2.5 years. The results demonstrate that BOA is a reliable test protocol.

Figure 2 demonstrates test results for an eight week old who had hearing loss identified by ABR, confirmed using BOA, and benefitted from hearing aids measured using BOA. By using this protocol, the audiologist and the family can feel comfortable that the child is hearing at sufficiently soft levels to enable him / her to develop speech and language skills. Developing the ability to accurately monitor hearing in infants using behavioural techniques can significantly improve the services available to infants.

### Auditory habilitation / rehabilitation

As audiology focuses more on the technical aspects of the profession, fewer audiologists are interested and involved in auditory habilitation / rehabilitation. Auditory habilitation is frequently allocated only a portion of a course in graduate school. Much of audiology training takes place in hospitals where medical audiology is the primary service. Exposure to selection and dispensing of hearing aids and cochlear implants is frequently limited. When audiologists are involved in hearing aid dispensing, patients are frequently fitted and sent off to adjust to the hearing aids or cochlear implants on their own. Children may be referred for speech-language therapy but in many cases, the speech-

language pathologists are not trained in auditory habilitation. It is assumed that wearing the hearing aids or cochlear implants will be enough to provide auditory access. No matter how good the technology is, children (and adults) with hearing loss are listening through a damaged auditory system. We should not expect that they will develop maximum auditory skills without specific training. They need to be specifically taught to learn to listen and to use auditory information to make fine distinctions between similar sounding phonemes (for example *s / sh, f / th*). Children who are taught to use audition have been shown to have significantly better speech and language skills than children taught using other methods.<sup>4,6</sup> Audiologists need to know more about development of auditory skills so they can monitor the progress of their young patients and either provide appropriate therapy or know when to refer them on to good auditory therapists. For this to happen, auditory habilitation / rehabilitation will need to become a more significant part of the graduate school curriculum and internships in this area will need to be expanded.

### Staffing in paediatric audiology

Staffing in paediatric centres is becoming a concern. There are not a sufficient number of clinicians available to work in the area of paediatric audiology and reimbursement for paediatric audiology services does not necessarily cover expenses of running paediatric centres.

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Many people graduating with AuD degrees in the USA report that they have spent a significant amount of money getting educated and want to work in a situation in which they can feel comfortable about their earning capacity. This is not likely to happen in a paediatric audiology program and so they are choosing to work in ENT offices or in private practices dispensing hearing aids. Paediatric centres have a difficult time bringing in sufficient money to meet their expenses so salaries are often less than they are in some other practices. This problem is a difficult one to resolve. Audiology services for children take more time and require more staff. Reimbursement for an audiological evalua-

tion is the same for a short test for an adult and a long test requiring two clinicians for a child. It is possible that in some practices where both adults and children are seen this works out, but it does not work out in paediatric centres where all patients require additional time and additional staff. For children identified with hearing loss and their families, having services provided in a specialty centre is often the best option. It is essential that audiologists be reasonably reimbursed for the time and effort involved in providing audiology services to children. Currently, these centres count on fundraising to cover the expenses not covered by insurance reimbursement. In difficult financial times, fundraising may

not be adequate. If the problem of providing adequate reimbursement is not resolved, we risk having even fewer centres able to provide quality services for children. The negative impact of this for children with hearing loss is obvious.

Paediatric audiology continues to be a most exciting clinical area. We must continue to help it grow. ■

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