

POST-OTITIS AUDITORY DYSFUNCTION

John O. Willis, Ed.D. River College, 2/16/98

Post-Otitis Auditory Dysfunction (POAD) is a serious and underestimated cause of multiple learning problems in school children. Despite Boucher's (1986) dramatic findings, the problems of POAD often go unrecognized and untreated.

Middle Ear Dysfunction

Episodes of middle ear fluid build-up (serous otitis media) are a common plague of early childhood. Because young children often are not aware of the blockage and because the episodes are not life threatening, many such episodes go untreated or are treated too little and too late. Fluid accumulations may remain, blocking hearing, after any painful and visible symptoms have disappeared. A new episode may begin soon after the previous one and not be noticed. One consequence of these events is that a child may be deprived intermittently and unpredictably of usable hearing during critical stages of language acquisition.

That intermittent and unpredictable hearing loss can, at its worst, interfere with acquisition of basic oral language skills, both vocabulary and grammar. More subtle effects can include deficiencies in auditory perception and development of phonemic awareness or the ability to recognize the separate sounds that make up a word, skills that are essential for the development of reading and spelling skills (e.g., Brody, 1994; Stanovich, 1994). Other essential auditory processes may be impaired, such as the ability to hear against background noise and the capacity to sustain listening attention, even when highly motivated.

The central nervous system tends to abandon sensory systems that prove ineffective during critical developmental periods. For example, a strabismus (deviation of an eye off-center), causes overlapping, conflicting visual projections in the visual cortex of the brain, which eventually copes by shutting down the input from the lazy eye, resulting in amblyopia, a dimness of vision which cannot be corrected by prescription lenses. This self-destructive reaction is sometimes prevented by patching the straight eye so that the off-target eye is forced to work alone, sending a single, unambiguous projection to the brain.

Similarly, intermittent hearing loss can sometimes severely impair development of listening skills. The young child, without knowing why, sometimes is able to hear and understand and sometimes is not. The child begins to learn that hearing is, at best, an unreliable process, and the development of listening skills, auditory attention, and auditory perception is impaired. Attention span and organizational skills may also develop poorly, mimicking Attention Deficit Hyperactivity Disorder (ADHD).

Effects of POAD on Academic Achievement

The impairment of communication skills has many consequences. Not only do auditory, language, pre-reading, and pre-writing skills suffer delays, but the child also suffers confusion and embarrassment from frequent social misunderstandings. The child is likely to spend considerable time not really understanding what is going on and therefore often saying and doing the wrong thing. Public ridicule is often the lot of the child with middle ear dysfunction, sometimes resulting in extreme shyness.

If episodes of fluid build-up continue into the child's school years, the consequences can be especially severe. Confusion, misunderstanding, and embarrassment are exacerbated by difficulties with beginning academic skills. Even if the child no longer suffers from episodes of hearing loss, the problems with auditory perception, phonemic awareness, vocabulary, grammar, listening skills, hearing against background noise, and attention and organization persist, putting the child at risk for school failure and further embarrassment and confusion. Compounding the problem is the evidence that the child can hear, at least some of the time, even if the fluid build-up continues into grade school.

Even very sympathetic teachers find it difficult to believe ñ certainly to remember ñ that the child has serious auditory problems, since the child does hear adequately, under ideal listening conditions, between episodes of fluid build-up and after the episodes have finally ceased.

Boucher (1983) used pure-tone and impedance audiometry records to study all of the readiness and primary students with middle ear dysfunction in ten New Hampshire towns. The students whose impedance testing showed evidence of previous otitis, even though they had regained normal hearing, showed double the normal rates of readiness placements, disability identifications, and repeated grades.

Ways of Teaching the Student with POAD More Effectively

The most prudent and helpful approach for teachers is to assume that the student has listening difficulties at all times. Even after the episodes of fluid build-up have long since ended, the continuing problems with auditory perception, phonemic awareness, vocabulary, grammar, listening skills, hearing against background noise, and attention and organization make it wise to work with the student as if the student actually were hard of hearing and as if the student had Attention Deficit Hyperactivity Disorder.

It is helpful to insist that the student sit where the teacher can be seen and heard most easily (not always front-row-center, depending on the teacher's habitual movement in the room). Without further embarrassing the student, you can

inconspicuously make frequent eye contact and call on the student when you are certain the student is ready and able to respond.

Visual teaching methods and materials can be extremely helpful. Charts, maps, graphs, diagrams, models, time lines, dioramas, illustrations, demonstrations, hands-on activities, and role-playing may be effective means of teaching the student and allowing the student to demonstrate mastery of the material.

It is essential to evaluate the student's oral and written work for indications that the student is missing some essential skill or piece of information and to remedy those deficiencies. Students with POAD almost always miss out on key facts and skills, deficits which haunt them as they try to progress through the higher grades. If the gaps are too large or too pervasive to handle with brief instruction, the student may need specific tutoring from you or from the special education department.

If the student struggles with reading, or in the higher grades, reads slowly or inefficiently, the most probable causes are, in order of probability, deficient phonemic awareness, deficient phonetic word attack skills, limited reading vocabulary, and difficulty comprehending complex written language. You may be able to identify the problem by working individually with the student or you may wish to refer the student for a comprehensive reading assessment. The student may require remedial reading services.

Examine the student's tests and quizzes to see if the student may require additional time or a quieter environment for taking tests. That should not be an automatic response for all students, but may be helpful for some.

Despite your best efforts in class, the student is very likely to miss essential details about assignments, long-term projects, upcoming events, and missing assignments. For the student to derive the full benefit of your instruction, it is essential to check in with the student (or have the student's case manager do so) frequently to be certain the student is aware of what needs to be done. It is highly likely that student will be too shy or embarrassed to initiate the checking. It is a valuable long-term goal, especially in the higher grades, for students to become independent in monitoring their own assignments and progress. However, that will not happen overnight, and it will not happen without direct assistance from teachers by gradual steps. Simply telling the student to be more responsible or giving failing grades will not overcome the life-long effects of POAD.

Students with POAD often need additional explanations of material that has been presented in class. It is safe to assume that if any of your students with other learning disabilities or ADHD are having difficulty with some of the material, your students with POAD will also be confused, even if they are too shy to ask, are too confused to know what to ask, or are too discouraged to try without encouragement.

It is important to be gentle with students who have POAD. They have spent a lifetime being criticized and yelled at. They need support and encouragement, and most respond very well once they come to believe and trust what may be to them a very unusual and unexpected approach.

Students with POAD present teachers with special challenges and require hard work, but it can also be very rewarding to help a struggling student achieve his or her potential in your class.

Special Education Identification

If the student's POAD seriously impairs academic performance and is the primary cause of that impairment, if the student is no longer suffering a current hearing loss, and if the student requires a uniquely designed program of special education, the student is eligible for identification as having a specific learning disability (NH Standards, 1996, pp. 10-11, 26-27; Willis, 1990). If the other considerations apply, but the student needs classroom modifications without a uniquely designed program of special education, it might be more appropriate to provide the student with a plan under Section 504 of the Rehabilitation Act of 1973 (PL 93-112).

References

Boucher, J. P. (1986). An investigation of the relationship between middle ear dysfunction and school difficulty in young children. *Dissertation Abstracts International*, 47, 6, 2115A.

Brody, S. (Ed.) (1994). *Teaching reading: Language, letters, and thought*. Milford, NH: LARC Publishing. [PO Box 801, Milford, NH 03055; 603 880-7691].

New Hampshire standards for the education of students with disabilities (10/21/96). Concord, NH: NH Department of Education.

Stanovich, K. E. (1994). Romance and reality. *Reading Teacher*, 47, 4, 280-291.

Willis, J. O. (1990). *Guide to identification of learning disabilities*. Concord, NH: NH Department of Education. [419 Sand Hill Road, Peterborough, NH 03458-1616; 603 924-0993]

Willis, J. O. & Dumont, R. P. (1998). *Guide to identification of learning disabilities, 1998 New York Ed.* Acton, MA: Copley. [available from sr. author: 419 Sand Hill Road, Peterborough, NH 03458-1616; 603 924-0993]