Auditory Processing Disorder

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### Footnote Information
Auditory Processing Disorder

Rhea Paul

My child has a diagnosis of autism and auditory processing disorder (APD) but I can’t find out much information about APD—is it the same as autism?

‘Auditory processing disorder’ is defined as a difficulty in “the efficiency and effectiveness by which the central nervous system (CNS) utilizes auditory information” (For more information, see: ASHA 2005). It is identified by means of specialized hearing tests that measure the ability to locate sounds, discriminate between similar sounds, detect small differences in the timing of sounds, the order of sounds and sound patterns, the ability to attend to sounds in one ear with competing sounds in the other, and to respond to sounds that are degraded, by having some of their auditory information removed or masked. It’s important to know that APD cannot be diagnosed unless these kinds of tests, which require specialized equipment, are administered and interpreted by a certified audiologist. However, the ability to ‘pass’ these tests depends a lot on paying close attention to the sounds, and the motivation to accomplish the fairly difficult tasks (like picking a sound out of background noise or listening to a sound in one ear while ignoring a sound in the other) they involve. For these reasons, many children do poorly or perform very inconsistently on the tests, and it is hard to tell whether their low performance is caused by difficulty in transmitting sound from the ear to the brain, difficulty in interpreting the sounds once they get to the brain, simply not paying attention to the sounds, not being motivated to try hard enough to make the required distinctions, or some combination of these. Typically developing children show a very wide range of variability in response to these tests. In fact the American Speech-Language Association (ASHA) reports that most of these hearing tests are not reliable diagnostic indicators for children under seven, and many are unreliable for children under ten. This is especially true of children with ASD, because attention and motivational are so strongly affected in this syndrome. For this reason, the most recent ASHA report on APD specifically rules out APD as a diagnosis for children with autism spectrum disorders (unless the child can be reliably tested and shown to perform more than two standard deviations below the mean on at least two of the standard APD diagnostic measures), because so many of the core symptoms of ASD mimic the effects of auditory processing deficits.

Children with ASD very frequently have problems making sense of and responding in typical ways to sound and speech. In this sense, many of these children could reasonably be described as having auditory processing problems. But in their case, the problem is part of, and probably a result of, their more pervasive difficulties in attending and regulating responses to a range of stimuli, in motivation to engage in social interactions, and other neurological atypicalities.

Even so, would the intervention practices aimed to improve auditory processing in APD be appropriate for children with ASD, since the two disorders share some features? The activities usually prescribed to address APD include intensive listening exercises to synthesized sound stimuli that are intended to teach children to detect smaller and smaller differences in duration, pitch, and order of sounds, to locate sounds, recognize sounds in background noise, and combine sounds from the two ears. These involve having the child spend a lot of time listening.
through earphones to sounds, usually in a computer game format, without much social interaction. There is little evidence to show that these exercises lead to changes in functional listening behavior (although children do get better at doing the exercises) even in children without ASD. For children with pervasive developmental disorders, it would seem to make more sense to spend intervention time on more functional activities that teach children to pay attention to speech, learn to comprehend words and sentences, and respond appropriately to language they hear.

Rhea Paul
Associate Editor, Journal of Autism and Developmental Disorders

Reference