



AMERICAN  
SPEECH-LANGUAGE-  
HEARING  
ASSOCIATION

## (Central) Auditory Processing Disorders—The Role of the Audiologist

*Working Group on Auditory Processing Disorders*

*This position statement is an official policy of the American Speech-Language-Hearing Association (ASHA). It was approved by the Audiology/Hearing Science Assembly of the ASHA Legislative Council in April, 2005. The ASHA Scope of Practice states that the practice of audiology includes providing services for (central) auditory processing disorders [(C)APD]. The Preferred Practice Patterns are statements that define universally applicable characteristics of practice. It is required that individuals who practice independently in this area hold the Certificate of Clinical Competence in Audiology and abide by the ASHA Code of Ethics, including Principle of Ethics II, Rule B, which states "Individuals shall engage in only those aspects of the profession that are within their competence, considering their level of education, training, and experience." This position statement was developed by the ASHA Working Group on (Central) Auditory Processing Disorders. Members of the Working Group (2002–2004) were Teri James Bellis (chair), Gail D. Chermak, Jeanane M. Ferre, Frank E. Musiek, Gail G. Rosenberg, and Evelyn J. Williams (ex officio). Members of the Working Group (2002–2003) included Jillian A. Armour, Jodell Newman Ryan, and Michael K. Wynne. Susan J Brannen, member 2004 and vice president for professional practices in audiology (2001–2003), and Roberta B. Aungst, vice president for professional practices in audiology (2004–2006) served as monitoring vice presidents.*

### Dedication

In loving memory of our dear friend and colleague Michael K. Wynne (1954–2003), whose vitality, intellect, and diligence helped make this work possible.

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### Position Statement

It is the position of the American Speech-Language-Hearing Association (ASHA) that the quality and quantity of scientific evidence is sufficient to support the existence of (central) auditory processing disorder [(C)APD] as a diagnostic entity, to guide diagnosis and assessment of the disorder, and to inform the development of more customized, deficit-focused treatment and management plans. (C)APD is an auditory deficit; therefore, it continues to be the position of ASHA that the audiologist is the professional who diagnoses (C)APD. Consistent with the ASHA Scope of Practice in Speech-Language Pathology, speech-language pathologists (and other professionals) collaborate with the audiologist in the overall screening and assessment process, differential diagnosis, and development and implementation of intervention plans where there is evidence of speech-language and/or cognitive-communicative disorders. Specifically, speech-language pathologists are uniquely qualified to delineate the cognitive-communicative and/or language factors that may be associated with (C)APD. Full understanding of the ramifications of (C)APD for the individual requires a multidisciplinary assessment to determine the functional impact of the disorder and to guide treatment and management of the condition and associated deficits. Finally, it is the position of ASHA that the knowledge base required for understanding, diagnosing, and treating/managing individuals with (C)APD is extensive and may require additional training and education beyond that obtained in a typical professional preparation program.

### Definition and Nature of APD

*(Central) auditory processing disorder [(C)APD] refers to difficulties in the processing of auditory information in the central nervous system (CNS) as demonstrated by poor performance in one or more of the following skills: sound localization and lateralization; auditory discrimination; auditory pattern recognition; temporal aspects of audition, including*

temporal integration, temporal discrimination (e.g., temporal gap detection), temporal ordering, and temporal masking; auditory performance in competing acoustic signals (including dichotic listening); and auditory performance with degraded acoustic signals.

Non-modality-specific cognitive processing and language problems may manifest themselves in auditory tasks (i.e., as listening problems); however, diagnosis of (C)APD requires demonstration of a deficit in the neural processing of auditory stimuli that is *not due to* higher order language, cognitive, or related factors. This working group concluded after a comprehensive review of the literature that any definition of (C)APD that would require complete modality-specificity as a diagnostic criterion is neurophysiologically untenable; however, one should expect the sensory processing perceptual deficit in (C)APD to be more pronounced, in at least some individuals, when processing acoustic information. (C)APD is best viewed as a deficit in neural processing of auditory stimuli that may coexist with, but is not the result of, dysfunction in other modalities. (C)APD can also lead to or be associated with difficulties in learning (e.g., spelling, reading), speech, language, attention, social, and related functions. Because of the complexity and heterogeneity of (C)APD, combined with the heterogeneity of learning and related disorders, it is to be expected that a simple, one-to-one correspondence between deficits in fundamental, discrete auditory processes and language, learning, and related sequelae may be difficult to demonstrate across large groups of diverse subjects. This underscores the need for comprehensive assessment and diagnostic procedures that fully explore the nature of the presenting difficulties of each individual suspected of having (C)APD.

## Intervention

Intervention for (C)APD typically requires an interdisciplinary approach involving the audiologist,

speech-language pathologist, and other professionals, and should be implemented as a collaborative effort by the audiologist and speech-language pathologist (and possibly others) as soon as possible following the diagnosis to exploit the plasticity of the CNS, maximize successful therapeutic outcomes, and minimize residual functional deficits. Treatment and management goals are deficit driven and are determined on the basis of diagnostic test findings, the individual's case history, and related speech-language and psychoeducational assessment data. Treatment and management of (C)APD should incorporate both *bottom-up* (e.g., acoustic signal enhancement, auditory training) and *top-down* (i.e., cognitive, metacognitive, and language strategies) approaches delivered consistent with neuroscience principles (e.g., training should be intensive, exploiting plasticity and cortical reorganization; training should be extensive, maximizing generalization and reducing functional deficits; training should provide salient reinforcement to induce learning). Bottom-up approaches are designed to enhance the acoustic signal and to train specific auditory skills. Top-down approaches provide compensatory strategies designed to minimize the impact of (C)APD through the strengthening of higher order central resources (i.e., language, memory, attention) that individuals with (C)APD may draw upon to buttress deficient auditory processing skills not fully remediated through auditory training. Comprehensive intervention management typically is accomplished through three component approaches that are employed concurrently: direct skills remediation, compensatory strategies, and environmental modifications. In addition, it is important that training principles be extended across all settings, including the clinic, the classroom, the workplace, and the home, to maximize mastery and ensure generalization of learned skills.