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HEARING
ASSOCIATION

Childhood Apraxia of Speech

Ad Hoc Committee on Childhood Apraxia of Speech

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About This Document

This position statement is an official policy of the American Speech-Language-Hearing Association (ASHA). In 2002, ASHA's Legislative Council passed a resolution to form an Ad Hoc Committee on Childhood Apraxia of Speech. The charge to the Committee was to examine this area of practice and develop appropriate practice policy documents. The Committee completed a technical report and this position statement, deferring a knowledge and skills statement and practice guidelines until such time as research findings could be marshaled to support specific recommendations and guidelines. Members of the Ad Hoc Committee on Childhood Apraxia of Speech were Lawrence Shriberg (chair), Christina Gildersleeve-Neumann, David Hammer, Rebecca McCauley, Shelley Velleman, and Roseanne Clausen (ex officio). Celia Hooper, vice president for professional practices in speech-language pathology (2003–2005), and Brian Shulman, vice president for professional practices in speech-language pathology (2006–2008), served as the monitoring officers. The Committee thanks Sharon Gretz, Heather Lohmeier, Rob Mullen, and Alison Scheer-Cohen, as well as the many select and widespread peer reviewers who provided insightful comments on drafts of this report. This document was approved by ASHA's Legislative Council as official policy of the Association on March 24, 2007.

Nomenclature

It is the position of ASHA that apraxia of speech exists as a distinct diagnostic type of childhood (pediatric) speech sound disorder that warrants research and clinical services. A literature review indicates that apraxia of speech occurs in children in three clinical contexts. First, apraxia of speech has been associated causally with known *neurological etiologies* (e.g., intrauterine stroke, infections, trauma). Second, apraxia of speech occurs as a primary or secondary sign in children with *complex neurobehavioral disorders* (e.g., genetic, metabolic). Third, apraxia of speech not associated with any known neurological or complex neurobehavioral disorder occurs as an *idiopathic neurogenic speech sound disorder*. Use of the term *apraxia of speech* implies a shared core of speech and prosody features, regardless of time of onset, whether congenital or acquired, or specific etiology. Therefore, *childhood apraxia of speech (CAS)* is proposed as a unifying cover term for the study, assessment, and treatment of all presentations of apraxia of speech in childhood. *CAS* is preferred over alternative terms for this disorder, including *developmental apraxia of speech* and *developmental verbal dyspraxia*, which have typically been used to refer only to the idiopathic presentation.

Definition

The Committee recommends the following definition of *CAS*:

Childhood apraxia of speech (CAS) is a neurological childhood (pediatric) speech sound disorder in which the precision and consistency of movements underlying speech are impaired in the absence of neuromuscular deficits (e.g., abnormal reflexes, abnormal tone). *CAS* may occur as a result of known neurological impairment, in association with complex neurobehavioral disorders of known or unknown origin, or as an idiopathic neurogenic speech sound disorder. The core impairment in planning and/or programming spatiotemporal parameters of movement sequences results in errors in speech sound production and prosody.

Roles and Responsibilities

Review of the research literature indicates that, at present, there is no validated list of diagnostic features of CAS that differentiates this symptom complex from other types of childhood speech sound disorders, including those primarily due to phonological-level delay or neuromuscular disorder (dysarthria). Three segmental and suprasegmental features that are consistent with a deficit in the planning and programming of movements for speech have gained some consensus among investigators in apraxia of speech in children: (a) inconsistent errors on consonants and vowels in repeated productions of syllables or words, (b) lengthened and disrupted coarticulatory transitions between sounds and syllables, and (c) inappropriate prosody, especially in the realization of lexical or phrasal stress. Importantly, these three features are not proposed to be the necessary and sufficient signs of CAS. These and other reported signs change in their relative frequencies of occurrence with task complexity, severity of involvement, and age. The complex of behavioral features reportedly associated with CAS places a child at increased risk for early and persistent problems in speech, expressive language, and the phonological foundations for literacy, and the possible need for augmentative and alternative communication and assistive technology.

The *ASHA Scope of Practice in Speech-Language Pathology* states that the practice of speech-language pathology includes the provision of services for children with speech disorders and the *Preferred Practice Patterns for the Profession of Speech-Language Pathology* describes universally applicable characteristics of practice. It is required that individuals who practice independently in childhood speech disorders hold the Certificate of Clinical Competence in speech-language pathology 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 the scope of their competence, considering their level of education, training, and experience.”

It is the policy of ASHA that the diagnosis and treatment of CAS are the proper purview of certified speech-language pathologists with specialized knowledge in motor learning theory, skills in differential diagnosis of childhood motor speech disorders, and experience with a variety of intervention techniques that may include augmentative and alternative communication and assistive technology. It is the certified speech-language pathologist who is responsible for making the primary diagnosis of CAS, for designing and implementing the individualized and intensive speech-language treatment programs needed to make optimum improvement, and for closely monitoring progress. Children with developmental disabilities and disorders with high rates of comorbid conditions present a significant challenge for differential diagnosis of CAS, particularly in children under 3 years of age. Care is needed to document coexisting conditions and to describe children's developmental skills and communication profiles. When research of the type called for below yields the appropriate level of evidence-based support for specific clinical recommendations and guidelines, including information on the youngest age at which CAS can be diagnosed, this information will be made available in ASHA's policy documents (i.e., knowledge and skills statement and practice guidelines). Until such resources are available, differential diagnosis of CAS in very young children and in the context of neurological and

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complex neurobehavioral disorders may require provisional diagnostic classifications, such as *CAS cannot be ruled out, signs are consistent with CAS, or suspected to have CAS*.

There is a critical need for programmatic research and clinician training in CAS. Research that will lead to a deeper understanding of the neural substrates and behavioral correlates of CAS will require studies using contemporary methods in molecular genetics, neuroimaging, physiology, neurolinguistics, and acoustics. Two applied research goals are to develop reliable and efficient assessment protocols for age-appropriate differential diagnosis and to validate effective treatment approaches. Such studies will require well-controlled designs to test the diagnostic accuracy and treatment efficacy of protocols and treatment programs for children with different types and severities of expression of CAS, including studies assessing augmentative and alternative communication systems. All research in CAS needs to include children who vary widely in age and in geographic, linguistic, cultural, and socioeconomic backgrounds, children with other types of apraxia (e.g., limb, orofacial), and children with neuropathologies and neurobehavioral disorders within which apraxia is a secondary characteristic. Large-scale, multidisciplinary international research collaborations are likely to be needed to arrive at the broad-based understanding of the core and concomitant features of CAS that require attention in the development of best practices in assessment and treatment.

The Committee underscores the responsibility of ASHA and its membership to enhance the resources and opportunities available to children with CAS. Professional training programs must ensure that speech-language pathologists are adequately trained for their roles and responsibilities with children who have CAS, their caregivers, and other professionals. Members must be sure that allied health care professionals understand the current perspectives on CAS so that appropriate referrals are made and appropriate intervention services are supported. New forms of partnerships must emerge between clinicians and across therapeutic settings to create and document intervention programs that maximize resources and address the complex of deficits that may be present in this clinical population. Finally, collaborations are needed among members, families, local and state boards of education, consumer organizations, and the support networks that represent the interests of children with this challenging disorder.