

Childhood Apraxia of Speech

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. (Definition of CAS per the American Speech Language Hearing Association's Ad Hoc Committee on Childhood Apraxia of Speech.)

Apraxia of speech is usually treatable with the appropriate techniques. The Kaufman Speech to Language Protocol for childhood apraxia of speech is a highly effective program with young children. Children must be seen one-on-one, at least in the early stages of treatment, even as early as age 2. *The Kaufman Speech Praxis Test for Children*, the *Kaufman Speech to Language Treatment Kits*, the *Kaufman Speech to Language Workout Book*, and the *K&K Sign to Talk* noun and verb kits are helpful tools in the evaluation of apraxia, determining treatment goals, and providing effective therapy. The Kaufman Speech to Language Protocol has been so successful that it is currently being used all over the United States, in Canada, Great Britain, Ireland, Australia, and China. This approach is also now being accepted and implemented into applied behavior analysis (ABA) and applied verbal behavior (AVB) programs for children on the autism spectrum.



EARLY SIGNS & SYMPTOMS OF CHILDHOOD APRAXIA OF SPEECH (CAS):

- Limited repertoire of vowels; less differentiation between vowel productions; and vowel errors, especially distortions.
- Variability of errors.
- Unusual, idiosyncratic error patterns (sometimes defying transcription).
- Errors increase with length or complexity of utterances, such as in multi-syllabic or phonetically challenging words.
- Depending on level of severity, a child may be able to produce accurately the target utterance in one context but is unable to produce the same target accurately in a different context.
- More difficulty with volitional, self-initiated utterances as compared to over-learned, automatic, or modeled utterances.
- Impaired rate/accuracy on diadochokinetic tasks (alternating movement accuracy or maximum repetition rate of same sequences such as /pa/, /pa/, /pa/ and multiple phoneme sequences such as /pa/ /ta/ /ka/)
- Disturbances of prosody including overall slow rate; timing deficit in duration of sounds and pauses between and within syllables contributing to the perception of excess and/or equal stress, “choppy” and monotone speech.
- At some point in time, groping or observable physical struggle for articulatory position may be observed (possibly not present on evaluation, but observable at some point in treatment).
- May also demonstrate impaired volitional nonspeech movements (oral apraxia).
- Verbal perseveration: getting “stuck” on a previously uttered word or bringing oral motor elements from a previous word into the next word uttered (Nancy Kaufman’s observation).

Other characteristics that may describe children with CAS, but are less likely to contribute to a differential diagnosis include:

- Poor speech intelligibility
- Delayed onset of speech
- Limited babbling as an infant
- Restricted sound inventory
- Loss of apparently previously spoken words

Please Note: A speech and language pathologist must be involved to rule out other possibilities as primary reasons for the above-mentioned signs and symptoms. Simple “late talkers” can have similar characteristics.