

## What Is Childhood Apraxia of Speech?

The child with Childhood Apraxia of Speech (CAS) displays a persistent severe speech disorder that affects the ability to develop and produce intelligible speech. This speech disorder is a neurologically-based difficulty with motor programming and planning. CAS results in difficulty voluntarily producing and sequencing the movements needed for speech. Typically, speech articulation, coordination, timing, rate, and rhythm all are affected. Structural abnormalities and muscle problems such as weakness, dysfunction, or disorder are not the cause of this speech disorder.

It is estimated that one to two in each thousand children are affected with CAS, and more boys than girls are diagnosed with it. Children with CAS may have associated problems in the areas of language and academics.

It is possible for CAS to be accompanied by dysarthria, a weakness or dysfunction of the muscles. Dysarthria is a dysfunction in the neuromotor control of the muscles used for speech and eating. This neurologically-based disorder results in difficulty with control and coordination of the complex movements needed for these activities. There may be disturbances in the strength, speed, coordination, precision, tone, and range of movement of the muscles for both non-speech and speech activities. Respiration/phonation usually is impaired in children with dysarthria. Voice may also be impaired with dysarthria.

The primary difference between CAS and dysarthria is that CAS involves difficulty in the planning and programming of speech movements while dysarthria involves difficulty in motor execution. The end result of both disorders is faulty speech but from different causes that require different, although sometimes overlapping, types of treatment.

### The Controversy About CAS

CAS can be a controversial diagnosis because of a variety of disagreements in the professional literature and research. These include:

- **disagreement over the name**

Current terms used are Childhood Apraxia of Speech (CAS), Apraxia of Speech (AOS), Developmental Verbal Apraxia (DVA), and Developmental Verbal Dyspraxia (DVD).

Currently, the most commonly used terms are CAS and AOS. The difference in terms has more to do with different ideas about the causes of speech apraxia and the specific characteristics that are present rather than differences in thoughts about etiology.

- **disagreement about the characteristics**

Researchers are unable to agree on the exact defining characteristics of CAS, which then makes it difficult to agree on a diagnosis for individual children.



➤ **Overlap targets for maximum practice and review.**

You can practice several speech skills from different levels during the same therapy session. The therapy program is designed so practice on an established speech skill and introduction of a new skill overlaps. In this way, the child maintains established skills through review and drill and builds new skills onto established skills as more complex skills are introduced. For example a child may be practicing production of bilabials /p/, /b/, and /m/ in CVCV syllable sequences and the /d/ sound in CV syllables while stabilizing the /t/ sound in isolation. Some skills may be targeted during review at the beginning or end of the session with production of the new sound being the primary emphasis during the therapy session. The tracking sheet on page 115 in Appendix 5A will help as you plan therapy.

➤ **Provide enough repetitive drill and practice to establish new speech skills.**

CAS is a disorder of motor planning and programming that requires more practice than other types of speech disorders. The child with CAS requires repetitive practice and appropriate feedback to develop the motor memory for articulator placements, speech movements, and sound sequences that are necessary for developing intelligible speech. Children with CAS require individual, frequent, short sessions up to 3-5 times per week. This can include direct therapy and home or school follow-up practice sessions. These children also require therapy services for longer periods of time, often well into their elementary years and beyond. The length of the therapy session will depend on the age of the child and his ability to attend and to remain on task. Speech targets also need to be reviewed frequently to maintain the level of production and to develop consistency and automaticity of production.

- Repetitive drill and frequent review are required to stabilize and habituate new speech skills.
- Incorporate maximum drill in a variety of situations so the child will develop the motor memory and planning skills to habituate and use new speech skills in a volitional and automatic way.
- Provide immediate feedback during drill to help the child develop the ability to discriminate correct articulator placements and movements and the accuracy of his sound productions.
- Incorporate short periods of drill throughout the child's daily schedule to help him develop and generalize communicative use of new skills.

➤ **Practice new skills (e.g., isolated sounds, syllables, words) in therapy activities.**

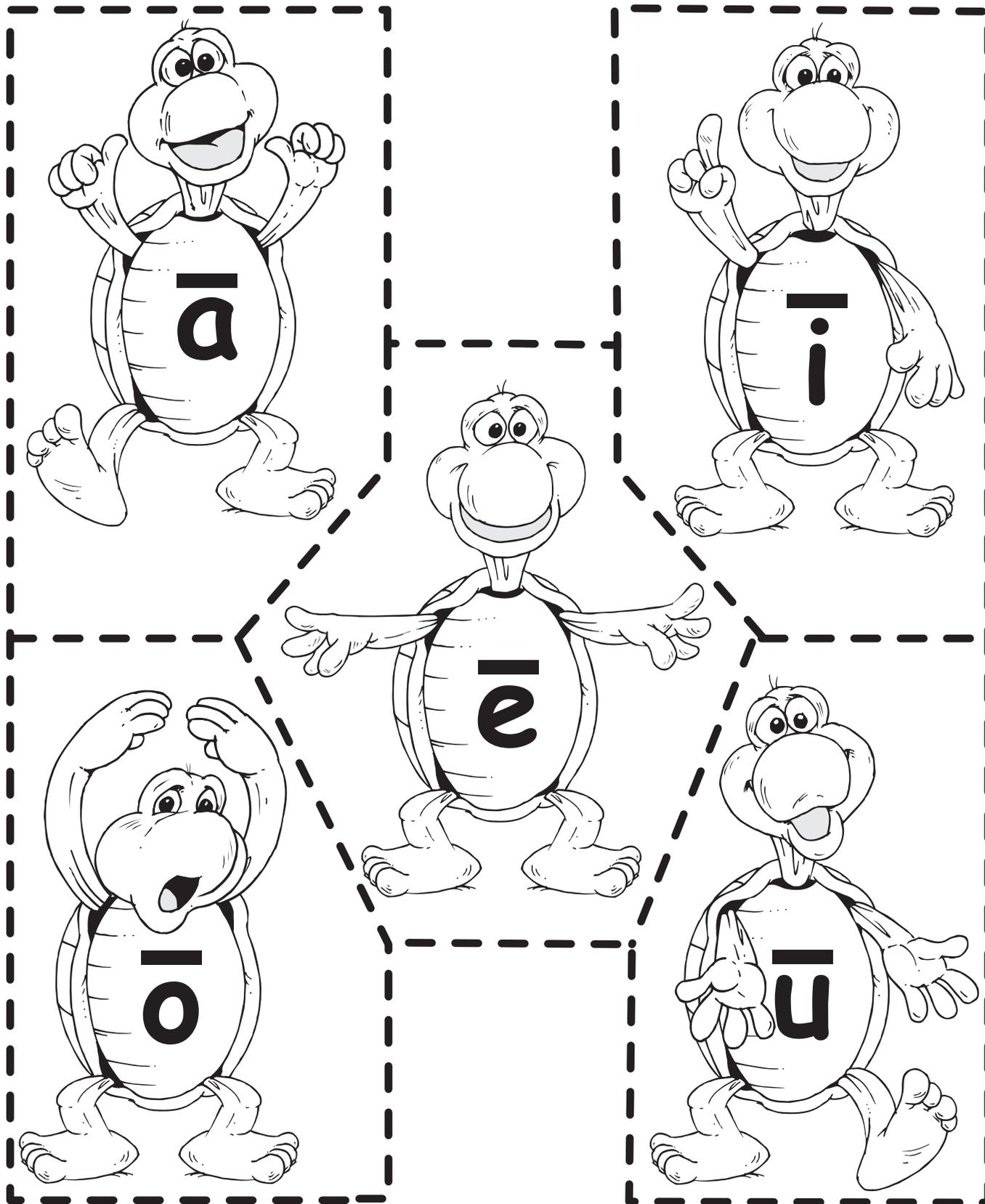
Following drill, incorporate speech targets in functional therapy activities. For example, if the child is practicing /b/ in initial CVC words, incorporate those words into a fun activity such as playing with toys such as a ball and a bat.

➤ **When a speech skill is established, incorporate and practice immediately during daily activities.**

This promotes habituation of the newly stabilized speech skill and increases the child's functional communication skills. For example, practice the child's /m/ sound during snack time. Put a small amount of milk in the child's cup and one cracker or animal cracker on



# Vowel Turtles—Long Vowels





## Treatment Plan for Integrating Communication Goals

Date & Activities	Vocabulary and Associated Words	Targeted Action Words	Concepts	Pragmatics	Grammar	Speech
<p>Date <u>6-10</u></p> <ol style="list-style-type: none"> <li>play with toy barn and animals</li> <li>eat animal crackers</li> <li>use Play-Doh and animal cookie cutters</li> </ol>	<p>farm barn cow sheep pig chicken horse animal sounds: moo baa oink bawk neigh</p>	<p>open close put in take out put on take off walk/run eat roll press/pat make cut out</p>	<p>big/little one more all colors counting next to in front in back inside outside</p>	<p>request an animal or action  comment on an animal or action  reject an animal or action</p>	<p>two-word phrases</p>	<p>practice saying words with lip sounds: /p, b, m/: pig, pat, push, put big, barn, bawk, baa moo, more, make</p>