Treatment Considerations for Children with CAS

There are several important considerations to make when planning and implementing treatment for a child with CAS.  The following list highlights a few of these considerations and are applicable to both monolingual and bilingual children with CAS:

* Lots of practice (high intensity within a session) with high levels of accuracy (90% or greater).  As soon as the child can produce the target somewhat accurately, increase the complexity of the utterance ("cookie", "big cookie", "I like cookies", "I wanna sugar cookie") (Edeal & Gildersleeve-Neumann, 2011).
* When errors in the motor planning do occur, you want to reduce to a shorter utterance length, reestablish success, and then build back up (Strand, 2005).
* Because research shows that children with CAS benefit from high levels of intensity (ie – lots of successful practice within each session, 100+ productions), choosing activities and words that are motivating and functional for them may help children stay focused and find more success within therapy sessions (Edeal & Gildersleeve-Neumann, 2011).
* It is important to actively engage children with CAS in speech therapy so that they experience early success and are motivated to continue addressing treatment goals (apraxia-kids.org).
* Every child is unique and has different interests and motivators.  By incorporating their interests into therapy, children may be more willing to participate, and more intense practice can be achieved within each session.
* Mass versus Distributed Practice: Both practice schedules result in the same amount of therapy time, but spread out in different ways. [ASHA](http://www.asha.org/policy/TR2007-00278/%20) (2007) states that distributed practice, or shorter more frequent sessions throughout the week, leads to better speech motor performance and motor learning for children with CAS.  For example, four 30-minute sessions per week is more efficacious than two 60-minute sessions.
* Do not teach the child to exaggerate oral movements during speech, rather you can model and encourage them to slow down during practice to help them have more time to plan the motor movements, encourage them to watch you as you say the words, and talk about what your tongue and lips are doing as you say them (Strand & Skinder, 1999). Practicing exaggerated movements changes the motor plan for the words, and therefore can make the practice less effective.
* Strand & Skinder (1999) recommend the use of backward chaining when working with a child with CAS.  Because CAS represents a disorder of motor planning and sequencing, this method can be useful as it has the child always produce the new phoneme first when practicing a new word.
	+ For example, if the target word was feet (/fit/), the child would begin by practicing the /t/ sound in isolation, then practicing /it/, and finally /fit/. As Strand & Skinder (1999) explain, backward chaining drill “emphasizes gaining control and transferring the movements into unconscious automatic gestures readily available for quick and precise use in the utterances of speech” (116).
* Self-monitoring is an important skill for children with CAS to develop and for you, the SLP, to address during treatment sessions.  This way, the child will increase their own awareness of their speech accuracy, which is an important step leading to generalization into their day-to-day life.
	+ Self-monitoring activities can include using a bull’s-eye target and having a child mark whether their production was right on (they included all the sounds in the word and got their lips, tongue, or other articulators to move to the right spot for all sounds in the utterance), if there were 1 or 2 minor errors, or if it was more challenging for them.
	+ Additional auditory feedback can initially be provided via video recording so that they can hear and see what they said/did.
* Delaying feedback can be an additional way to encourage children to begin self-monitoring. If too much external feedback is provided, the child may become dependent on it (Strand & Skinder, 1999).
	+ As the child begins to establish success, withholding feedback or asking questions about how the production felt or sounded to them can help the child learn to reflect on their own productions and further develop these important self-monitoring skills.
* Mass, Butalla, & Farinella (2012) found that some children with CAS may benefit from reduced frequency of feedback.  Providing your client less feedback allows them more opportunities to practice their self-monitoring skills.
* Home practice is also often incorporated into treatment for children with CAS in order to ensure the child is getting several opportunities to work on their speech goals throughout the week.  Home practice activities should be designed by the SLP to target the child's treatment goals, but can be carried out by parents, siblings, or other family members in the child's home language