

**Supplemental Material S1.** Overview of a speech motor learning (SML) program for an individual.

Stages	Syllable Structure	Variation Levels	Consonants	Vowels	Steps
1	CVCV	1 - 5	1 2 3	1 2 3	Apply repeatedly
2	CVCV	1 - 5	1 2 3 4 5	1 2 3	Apply repeatedly
3	CVCV	1 - 5	1 2 3 4 5 6 7	1 2 3	Apply repeatedly
4	CVCV	1 - 5	1 2 3 4 5 6 7	1 2 3 4 5	Apply repeatedly
5	CVCV	1 - 5	1 2 3 4 5 6 7	1 2 3 4 5 6 7	Apply repeatedly
6	CVC	1 - 3	1 2 3 4 5 6 7	1 2 3 4 5 6 7	Apply repeatedly
7	CVCVC	1 - 5	1 2 3 4 5 6 7	1 2 3 4 5 6 7	Apply repeatedly
8	CVCV	1 - 5	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7	Apply repeatedly
9	CCVCV	1 - 5	1 2 3 4	1 2 3 4 5 6 7	Apply repeatedly
10	CCVCV	1 - 5	1 2 3 4 5 6 7	1 2 3 4 5 6 7	Apply repeatedly

*Note.* C = consonant; V = vowel.

The stages portrayed in the overview are guidelines for progress of treatment across time. The number of Cs and Vs in the initial set (Stage 1) and number of sounds added per stage will depend on the severity of childhood apraxia of speech (CAS) of each particular individual. Addition of one to three additional sounds would denote a next stage.

First expand the C set (Stages 2 and 3 in this program), then the V set (Stages 4 and 5 in this program), then also rehearse the target set in CVC syllable structures (Stage 6 in this program) and then in longer syllable structures (Stage 7 in this program). At a later stage (Stage 8 in this program), introduce more difficult sounds (rated 3 to 4 on the stimulability and accuracy of production scale) and then consonant clusters, using previously targeted sounds (Stages 9 and 10 in this program).

The criterion for progress to a next stage is 80% correct production of nonwords (i.e., no distortions, omissions, substitutions, or additions and good coarticulation between sounds in a nonword) on the five variation levels (three in the case of CVC syllable structures) for the particular set of sounds.

The software to generate the series of nonwords for each sound set on all variation levels can be downloaded at no cost from <http://www.apraxia-anitavandermerwe.co.za>