Motor Speech Framework - Boulder: Instructions for Use

A. Patient Interview:

1. *Have you experienced any changes to your speech?*
   - *When did this start?*
   - *Has your speech gotten better or worse?*
   - *Have you noticed anything that improves your speech or makes it worse?*
   - *How is your speech different from normal?*
   - *Have these speech changes affected your daily life (ex. your ability to communicate with friends, family, co-workers, or customers)? Has it prevented you from doing anything you might wish to do?*
2. *Have you noted any other changes to your communication? (For example: Difficulty finding words? Difficulty understanding others? Changes to the sound of your voice, such as hoarseness)?*

B. Administer the MSF. The assessment looks at several domains: rate of speech, disfluencies, voice loudness, voice quality and respiration, word and phrasal stress, articulation, and oral mechanism examination.

1. Assess each of the domains. Suggested tasks and patient instructions are provided.
2. Circle the characteristics which you feel best describe the patient's speech and oral mechanism function.

C. Dysarthria has been associated with lesions at the following sites: lower motor neuron (flaccid dysarthria), unilateral upper motor neuron (UUMN), bilateral upper motor neuron (spastic dysarthria), basal ganglia (hypokinetic and hyperkinetic dysarthria), cerebellum (ataxic dysarthria) and left hemisphere (apraxia of speech).
Optional: Complete the score form to associate the patient's speech characteristics with a site of lesion.

1. For each characteristic you have circled, highlight the associated site(s) of lesion.
   - "X" ~ commonly associated with a lesion in that location
   - "XX" ~ strongly associated with a lesion in that location
   - Blank box ~ uncommonly associated with a lesion in that location.
   - " – " ~ rarely or not associated with a lesion in that location
   - Example 1: Under the domain of "Resonance": if "hypernasality" is identified, highlight the boxes where "X" or "XX" is marked: lower motor neuron (flaccid), upper motor neuron (spastic), basal ganglia (hypokinetic AND hyperkinetic). This signifies that "hypernasality" has been commonly associated with flaccid dysarthria, spastic dysarthria, hypokinetic dysarthria, and hyperkinetic dysarthria (intermittently). It is uncommonly associated with other subtypes.

			Lower Motor Neuron	Upper Motor Neuron		Basal Ganglia		Cerebellum	Left Hemisphere
	Characteristics		**Flaccid**	**Unilateral UMN**	**Spastic**	**Hypokinetic**	**Hyperkinetic**	**Ataxic**	**Apraxia of Speech**
Resonance	Audible Nasal Emission or nasal snorting		XX		-	-	-	-	-
	Hyponasality								
	Hypernasality		X (CNX)		X	X	X (intermittent)		

- Example 2: Under the domain of "Resonance": if "audible nasal emission" is identified, highlight the boxes where "X" or "XX" is marked. Only "lower motor neuron (flaccid)" is marked with "XX". The "unilateral upper motor neuron" box is blank. All other boxes are marked "-". Highlight the "lower motor neuron (flaccid)" box.
  This signifies that "audible nasal emission" is strongly associated with lower motor neuron damage (flaccid dysarthria), uncommonly associated with unilateral upper motor neuron damage, and rarely associated with any other lesion location.

			Lower Motor Neuron	Upper Motor Neuron		Basal Ganglia		Cerebellum	Left Hemisphere
	Characteristics		**Flaccid**	**Unilateral UMN**	**Spastic**	**Hypokinetic**	**Hyperkinetic**	**Ataxic**	**Apraxia of Speech**
Resonance	Audible Nasal Emission or nasal snorting		XX		-	-	-	-	-
	Hyponasality								
	Hypernasality		X (CNX)		X	X	X (intermittent)		

2. When you have highlighted for all identified characteristics, look at the completed scoring form. Note the following:
   - What characteristics MOST disrupted the intelligibility, efficiency, and/or naturalness of the patient's speech?

- Do the patient's speech characteristics match their known medical diagnoses? Remember: Patients do not always match the "textbook" presentation, in which all their speech characteristics align with their known neurological diagnosis. It is common for patients with one diagnosis (ex. left side cerebrovascular accident resulting in apraxia of speech) to present with characteristics of other diagnoses (ex. characteristics which can also be associated with cerebellar damage).
- If the patient presents with characteristics suggestive of unexpected lesion sites, consider referral for further neurological work-up. May particular attention to strongly diagnostic ("XX") features.