



## From MBSimp assessment to treatment:

**What are we looking for, what cranial nerve/ muscles are involved, & how do we treat?**  
**(Please take the MBSImP Course to learn the proper scoring protocol!)**

MBSimp physiological component	What are we looking for?	Involved musculature	CNs	Exercises
1. Lip closure	Any labial escape?	Orbicularis oris	CN VII	Straw sucking against resistance
2. Tongue control during bolus hold	Cohesive bolus or escape?	Intrinsic tongue, tensor veli palatini, palatoglossus	CN V, X, XII	tongue exercise against resistance (IOPI or tongue depressor)
3. Bolus prep/mastication	Able to chew/mash bolus?	muscles of mastication, intrinsic tongue muscles, buccinator	CN V, VII, XII	Jaw grading (bite and hold) - increase the opening of the jaw while biting
4. Bolus transport/lingual motion	speech/coordination of tongue	Intrinsic tongue muscles	CN XII	Tongue exercises against resistance (Any direction EXCEPT out!)
5. Oral residue	Able to clear it?	Intrinsic tongue muscles, buccinator	CN VII, XII	N/A
6. Initiation of pharyngeal swallow	Where is the bolus head when the swallow is triggered?	Sensory only	CN IX, X	Increasing bolus volume or viscosity
7. Soft palate elevation	Any bolus escape?	Levator veli palatini	CN X	No evidence of any effective treatment
8. Laryngeal elevation	Hyoid movement? Approx. of the arytenoids?	Longitudinal pharyngeal muscles, thyrohyoid	CN IX, X	Effortful Swallow, Mendelsohn Maneuver
9. Anterior hyoid excursion	Present or absent ?	geniohyoid	Spinal nerve C1	Effortful Swallow, Mendelsohn Maneuver
10. Epiglottic movement	Yes or no?	suprahyoids	C1 and CN V	Tongue Pullback, Mendelsohn Maneuver, Effortful Swallow, Shaker/Chin Tuck Against Resistance
11. Laryngeal vestibule closure	Complete or incomplete?	intrinsic laryngeal and base of tongue muscles	CN X, XII	Effortful Swallow, Mendelsohn Maneuver, EMST (Expiratory Muscle Strength Trainer)
12. Pharyngeal stripping wave	Yay or nay?	pharyngeal constrictors	CN X	Effortful Swallow
13. Pharyngeal Contraction (A/P view)	unilateral or bilateral bulging?	pharyngeal constrictors, longitudinal pharyngeal muscles	CN IX, X	Effortful Swallow
14. Pharyngoesophageal segment opening	Any distention?	cricopharyngeus	CN X	Effortful Swallow, Mendelsohn Method, Chin tuck against resistance/ Shaker
15. Tongue base retraction	Contrast between tongue base and pharyngeal wall?	extrinsic tongue muscles	CN X, XII	Effortful Swallow, Tongue Pull-backs, (NOT the Masako!)
16. Pharyngeal residue	How much?	cricopharyngeus, pharyngeal constrictors, base of tongue muscles	CN X, XII	N/A
17. Esophageal clearance	Any retention?	longitudinal muscles of the esophagus	CN X	Effortful Swallow, Mendelsohn Method, Chin tuck against resistance/ Shaker