

Major Neuromuscular Disorders and Behavioral Symptoms Which may be Manifested at Each Phase of the Swallow (from Logemann, 1983)

	BEHAVIORAL SYMPTOMS AT BEDSIDE EXAM	NEUROMUSCULAR DISORDERS
ORAL	<ul style="list-style-type: none"> drooling food residue in mouth pocketing of food in mouth reduced bolus formation reduced bolus transfer poor mastication reduced lingual/velar closure premature posterior spillage into pharynx reduced tongue coordination, difficulty initiating oral stage progressively increasing residue on palate with thicker foods 	<ul style="list-style-type: none"> reduced sensation, lip closure, reduced lingual control, reduced frequency of swallow reduced sensation; lingual paresis, weakness, discoordination reduced sensation; facial paresis, weakness reduced ROM, coordination of tongue reduced vertical ROM of tongue, reduced lingual coordination, strength reduced lateral ROM; coordination of tongue; reduced sensation reduced ROM of back of tongue; palatal paresis, discoordination of tongue reduced oral sensation; reduced tongue/palate contact apraxia of swallow often associated with oral apraxia; reduced tongue coordination in presence of normal ROM reduced lingual strength
PHARYNGEAL	<ul style="list-style-type: none"> cough before swallow (aspiration?) cough during swallow (aspiration?) cough after swallow (aspiration?) silent aspiration (no cough) nasal regurgitation residue in pyriform sinus residue in valleculae residue on one side of pharynx residue on both pharyngeal walls (may be also in pyriform sinuses) feeling of something in the throat after the swallow reduced movement of epiglottis gurgly voice choking reduced pressure on bolus solids easier than liquids 	<ul style="list-style-type: none"> delayed pharyngeal triggering (reflex), any aspect of reduced tongue control reduced laryngeal closure reduced laryngeal elevation; reduced pharyngeal wall contraction (unilateral or bilateral), reduced tongue base retraction, reduced cricopharyngeal opening any of the disorders listed above reduced velopharyngeal closure or reduced pharyngeal clearance reduced cricopharyngeal opening reduced tongue base retraction unilateral pharyngeal dysfunction reduced pharyngeal wall contraction bilaterally any of the listed above reduced laryngeal elevation; tongue base retraction food/liquid in the airway entrance any aspiration of a larger amount, silent or not reduced tongue to pharyngeal wall contact and movement delayed pharyngeal swallow
ORAL/PHARYNGEAL	combinations of both oral and pharyngeal symptoms	
ESOPHAGEAL	<ul style="list-style-type: none"> complaints of food stuck in lower throat or chest regurgitation after lying down burning in mouth or throat liquids easier to swallow than solids (this may also be a symptom of a pharyngeal disorder) gagging toward the end of or after meal awakening at night with gagging and/or coughing 	<ul style="list-style-type: none"> esophageal disorder gastro-esophageal reflux; esophageal backflow gastro-esophageal reflux reduced esophageal function including reduced pharyngeal pressure or cricopharyngeal dysfunction) gastro-esophageal reflux gastro-esophageal reflux