

SWALLOW ASSESSMENT AND MANAGEMENT IN PALLIATIVE CARE

2016 / Hong Kong, China / Jennifer Hanners Gutierrez, Ph.D. CCC-SLP

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AGENDA / TOPIC “BLUEPRINT”

- *Special considerations for patient goal setting*
- *Palliative care: what is the relationship to speech therapy?*
- *The clinical palliative swallow examination*
- *Specialty equipment*
- *Food and diet selections*
- *Behavioral and compensatory strategies*
- *Where does the instrumental examination fit in?*
- *Special considerations for advanced dysphagia care*
- *Special populations*
- *Case studies*

ESTABLISHMENT OF THERAPY GOALS

Special Considerations: patient and
family characteristics

- Demographics [age, gender, race]
- Culture [ethnicity, language, cuisine]
- Personal values, beliefs, practices and strengths
- Developmental state, literacy, educational level
- Disabilities

[Ferrell, et al., 2007]

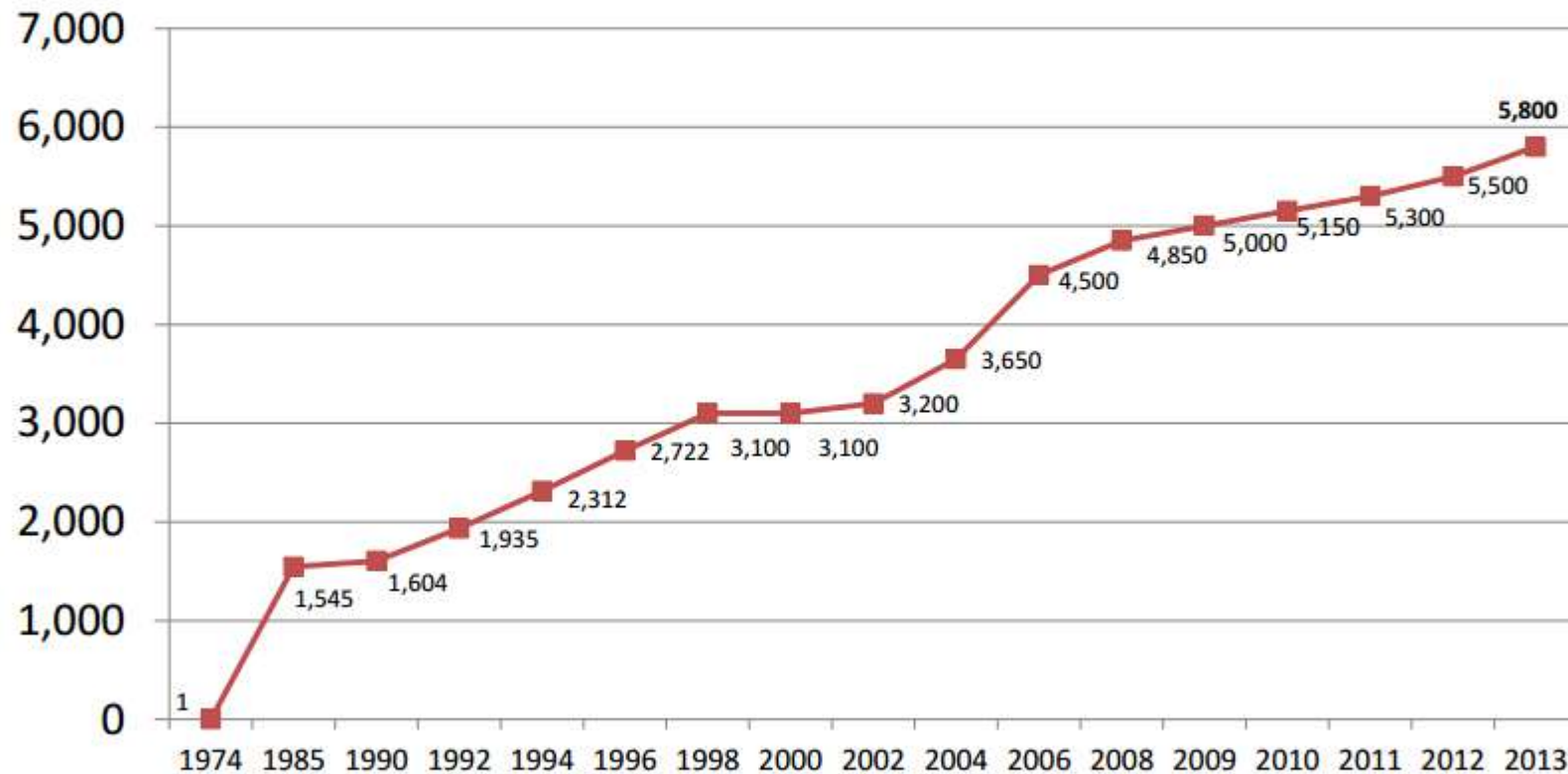
PALLIATIVE CARE DISTINCT FROM CURATIVE CARE

The World Health Organization definition: Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual.”



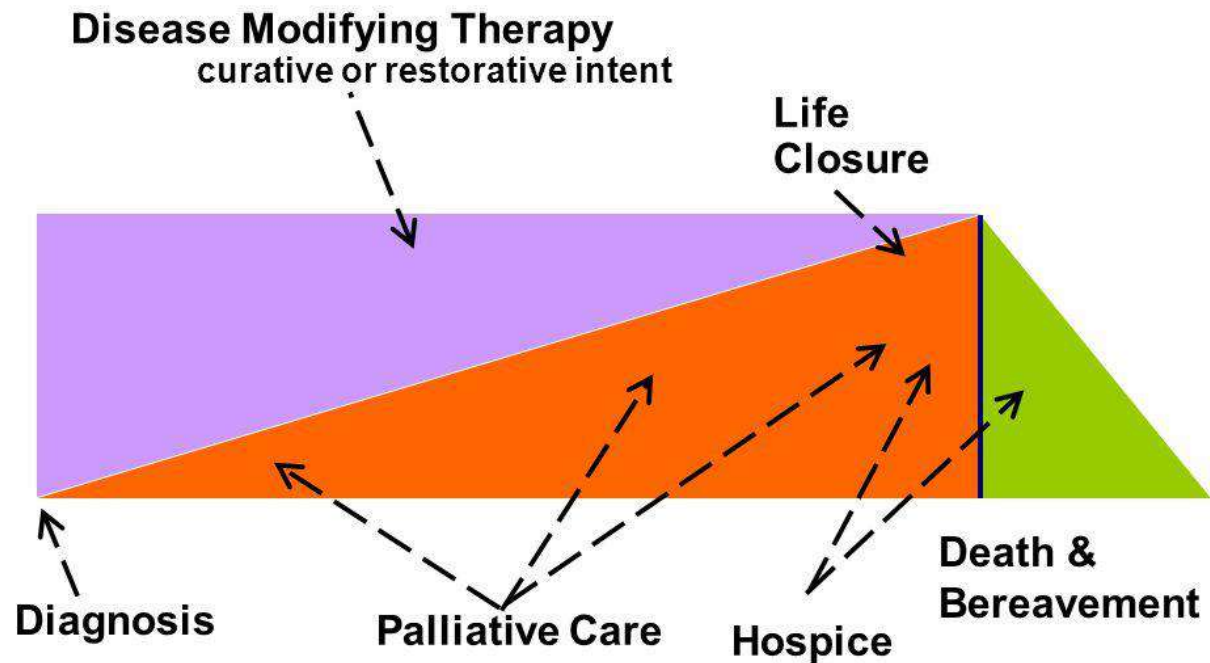
Growth in US Hospice Programs: 1974 to 2013

Hospice Providers (including satellite offices)



PALLIATIVE CARE DISTINCT FROM CURATIVE CARE

A New Vision of Care



The curative approach focuses primarily on restoration of pre-morbid status or close proximity to pre-morbid status; however, there are times when the curative and palliative models exist simultaneously as the disease process progresses. [Vissers, 2013]

THE CLINICAL PALLIATIVE SWALLOW EVALUATION

Important considerations and
components

- What is the patient, family, and your goal(s) for this examination?
- Oral mechanism examination
- Respiratory examination
- Examine the underlying diagnoses that may contribute to the diagnosis of dysphagia
- Attempt specialty equipment
- Attempt careful hand feeding and instruct caregiver(s)
- Attempt trial therapeutic techniques and “boosters”
- Establish interventions
- Review primary and secondary recommendations, as needed

[Coyle, 2015]

ORAL MECHANISM EXAMINATION

POTENTIAL FINDINGS:

- Yeast / candida
- Ulcers
- Poor dentition / plaque
- Asymmetrical movement
- Fasciculations
- Weakness
- Sensory loss

ORAL PAIN CONTROL:

- Triple-mix mouthwash:
diphenhydramine, Maalox,
Lidocaine]
- Doxepin
- “Fred’s Brew”: diphenhydramine,
dexamethasone, nystatin, NaCL

RESPIRATORY EXAMINATION

Analysis of breathing pattern and any respiratory support mechanisms

- SIMV [synchronized intermittent mechanical ventilation], patient has little to no control and has poor coordination of swallow with breathing
- BiPap [bi-level positive airway pressure], while inspiratory and expiratory pressure support work with the patient's respiratory cycle, the patient often has difficulty coordinating swallowing and breathing and may have difficulty maintaining O₂ saturations
- CPAP [continuous positive airway pressure], patient is generally able to coordinate swallow with pressure support, patient regulates his/her breathing; however, breathing pattern and vital capacity is suboptimal and must be monitored for contribution to aspiration of food/liquid
- Tracheostomy tube [cuffed?, un-cuffed?, fenestrated?, inner cannula?, diameter?]

ORAL, PHARYNGEAL, ESOPHAGEAL

Subjective assessment

- Anterior to posterior oral transit time
- Bolus manipulation
- Attention to task
- Response to cues to manipulate bolus
- Hyolaryngeal excursion
- Breathing pattern during and following the swallow
- Tolerance of small, medium, and large-sized boluses
- Signs of aspiration risk before, during, and after swallow
- Reported upper esophageal or chest discomfort following the swallow?

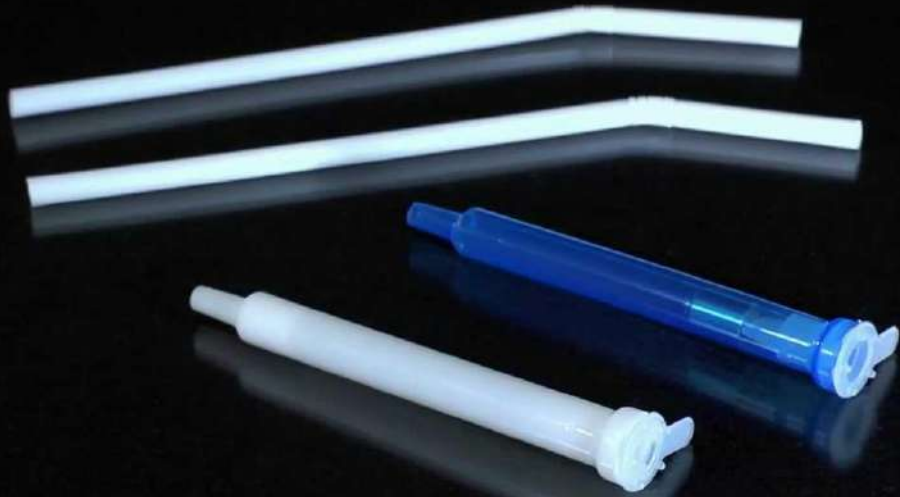
SPECIALTY FEEDING EQUIPMENT/TOOLS



Glossectomy spoon, *various distributors*

SPECIALTY FEEDING EQUIPMENT/TOOLS

SafeStraw by Bionix Medical Corporation

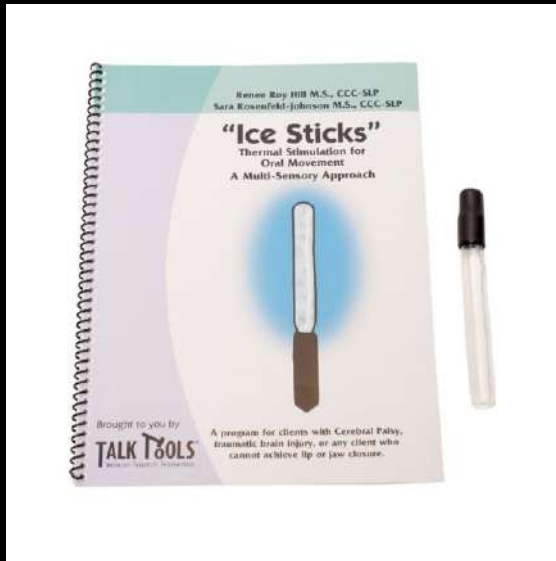


SPECIALTY FEEDING EQUIPMENT/TOOLS



People Feeder by Ali-Med Corporation

SPECIALTY FEEDING EQUIPMENT/TOOLS



Ice Finger / Ice Stick, *various distributors*

SPECIALTY FEEDING EQUIPMENT/TOOLS



Weighted cup, *various distributors*

FOOD AND DIET SELECTIONS

(INTERNATIONAL DYSPHAGIA DIET STANDARDIZATION INITIATIVE)

What is comfort...really?

- Clear liquid diet
 - Full liquid diet
 - Puree diet (level 4)
 - Minced and Moist Diet (level 5)
 - Soft and Bite Sized (level 6)
 - Regular diet easy-to-chew (level 7)
 - Regular diet (level 7)
-
- Thin liquid (level 0)
 - Mildly thick liquid (level 2)
 - Moderately thick liquid (level 3)
-
- Pleasure/comfort feedings
 - Frazier Water Protocol

REDUCTION OF HYPOPHARYNGEAL STASIS AND EXPEDITED BOLUS TRANSIT

- ❖ Sour bolus implementation
- ❖ Lemon ice
- ❖ Thermal stimulation
 - Ice chips
 - Ice Finger
 - Lemon ice
 - Tart, thick juice mixture



BEHAVIORAL OR COMPENSATORY STRATEGIES

- Liquid wash / alternation of bites and sips
- Small bolus size
- Weighted bolus/larger bolus size
- Posture
- Verbal cues / prompting
- Effortful swallow
- Chin tuck
- Head turn
- **Supra-glottic swallow** *[swallow with breath held and cough following the swallow prior to inhaling]*
- **Super supra-glottic swallow** *[bear down effortfully, then swallow with breath held and cough following the swallow prior to inhaling]*

WHEN TO DECIDE ON USE OF A MODIFIED BARIUM SWALLOW OR FIBEROPTIC ENDOSCOPIC EVALUATION OF SWALLOW IN PALLIATIVE CARE

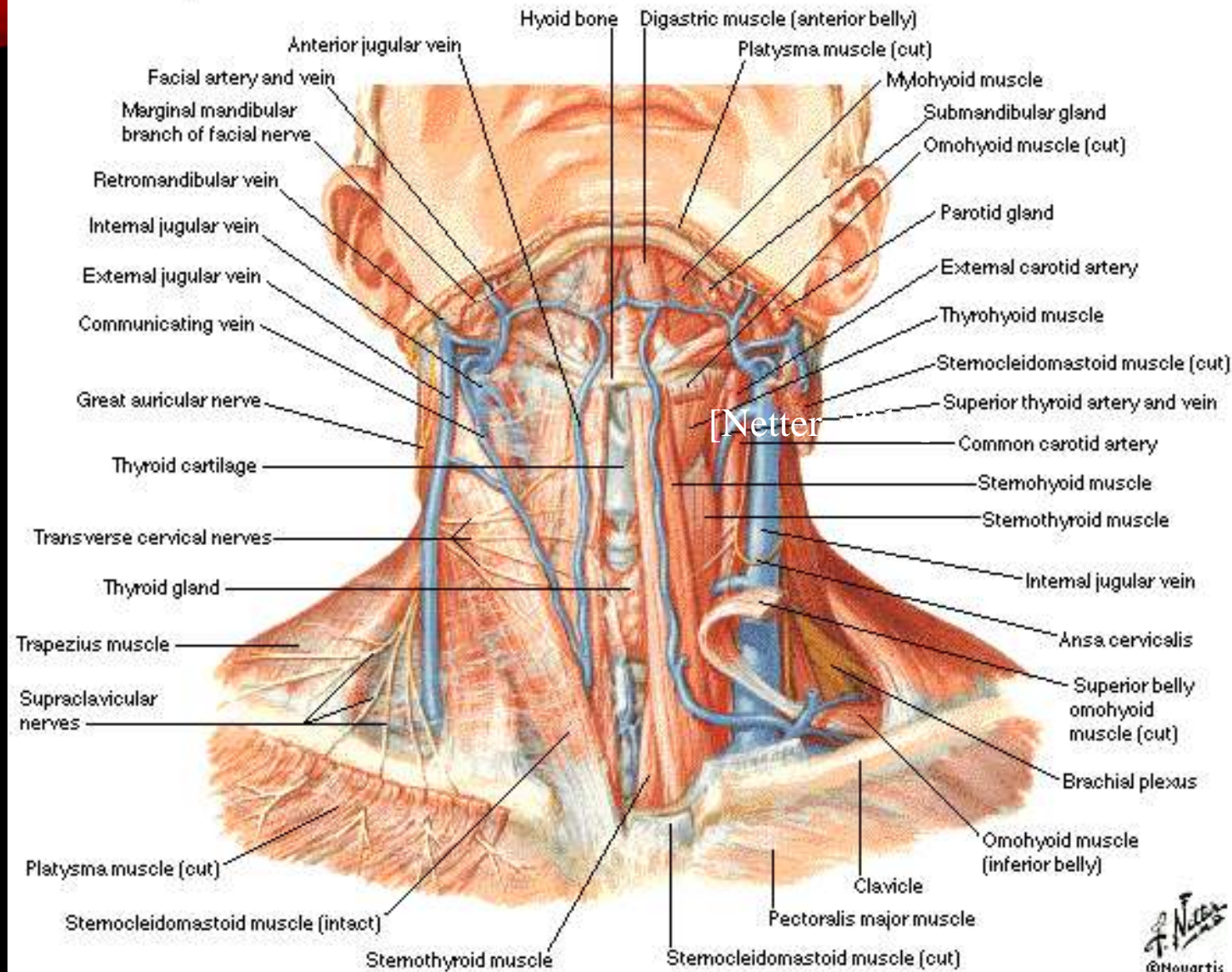
- ** to objectively view structures and function and determine the viability of select compensatory techniques
- ** to offer visualization of deficits to patient and/or family
- ** to offer visualization of deficits to medical personnel
- ** to identify volume of food/liquid aspirated

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Superficial Veins and Cutaneous Nerves of Neck



[Netter, 2014]

MUSCLES OF THE ANTERIOR NECK

Functional Group	Muscle	Innervation	Site of Motor Neurons	Function in Deglutition
Suprahyoid	Mylohyoid	Mylohyoid n. (CN V3)	Trigeminal nucleus (V), pons	Raise/stabilize hyoid; stabilize tongue, mouth floor
	Geniohyoid	Hypoglossal n. (CN XII)	C1	Raise/protract/stabilize hyoid bone
	Stylohyoid	Mandibular branch, facial nerve (CN VII)	Facial nucleus (VII), pons	Raise/retract/stabilize hyoid; elongate mouth floor
	Anterior belly of digastric	Mylohyoid n. (CN V3)	Trigeminal nucleus (V), pons	Raise/stabilize hyoid; lower mandible
	Posterior belly of digastric	Auricular branch, facial n. (CN VII)	Facial nucleus (VII), pons	Raise/retract/stabilize hyoid; lower mandible
Infrahyoid	Omoxyoid	Ansa Cervicalis	C1-C2	Lower/stabilize hyoid
	Sternohyoid	Ansa Cervicalis	C1-C2	Lower/stabilize hyoid
	Thyrohyoid	Ansa Cervicalis; hypoglossal nerve	C1-C2	Lower/stabilize hyoid; raise larynx to hyoid
	Sternohyoid	Ansa Cervicalis	C1-C2	Lower/stabilize larynx

Flint, P. W., Haughey, B. H., Robbins, K. T., Thomas, J. R., Niparko, J. K., Lund, V. J., & Lesperance, M. M. (2014). *Cummings otolaryngology-head and neck surgery*. Elsevier Health Sciences.

EVENTS OF SWALLOWING

After the tongue and buccinator squeeze food back toward the pharynx:

- Suprahyoid muscles pull the hyoid bone upward and forward toward the mandible resulting in the widening of the pharynx and closing the respiratory passageways.
- The hyoid bone is attached by the thyrohyoid membrane to the larynx; the larynx is also pulled upward and forward which widens the pharynx and closes the respiratory passageway.
- The tensor and levator palatini muscles close the nasal passageways to prevent food entrance.
- The pharyngeal constrictor muscles propel food through the pharynx into the esophagus.
- The infrahyoid muscles return the hyoid bone and larynx back to their normal inferior position.

STYLOPHARYNGEUS

Origin

Med aspect of styloid process

Insertion

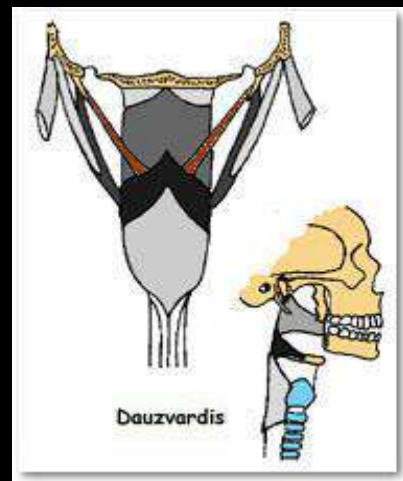
Posterolateral border of thyroid cartilage

Action

Elevates larynx and pharynx . Aids swallowing

Nerve

Muscular branch of glossopharyngeal N (IX)



PALATOPHARYNGEUS

ORIGIN

Palatine aponeurosis and posterior margin of hard palate

INSERTION

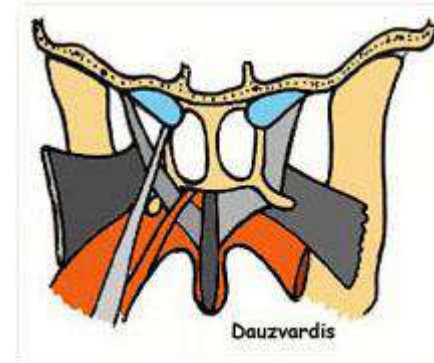
Upper border of thyroid cartilage and blends with constrictor fibers. Upper fibers interdigitate with opposite side

ACTION

Elevates pharynx and larynx . Closes nasopharyngeal isthmus in swallowing

NERVE

Pharyngeal branch of vagus nerve (X) with its motor fibers from cranial accessory nerve (XI)



THERAPEUTIC
MANEUVERS TO BE
MODIFIED FOR
PALLIATIVE CARE
INTERVENTION

Shaker exercise
part(s) one and
two or Modified
Shaker

Masako
Maneuver

Effortful Swallow

Pitch glides /
Vocal
Manipulation

Tongue
protrusion,
Retraction,
Effortful Swallow

Cranial Nerves		Fibre type		(Brainstem) Attachment	Cranial exit	Function	Method of testing
I	Olfactory	Oh,	Sensory	Some	Telencephalon	Cribriform plate	Special sensory: smell Test each nostril separately (oranges, coffee)
II	Optic	Oh,	Sensory	Say	Diencephalon	Optic canal	Special sensory: sight Visual Acuity: Ask patient to read something (Snellen chart to quantify loss) Visual fields: Covering an eye, bring finger towards midline from above, below and the sides Fundoscopy: ophthalmoscope...
III	Oculomotor	Oh,	Motor	Money	Interpeduncular fossa	Superior Orbital Fissure	Somatic motor: Superior, Medial, Inferior Rectus, Inferior Oblique Visceral motor: Sphincter Pupillae Pupil response to light: both pupils should constrict on shining light in eye (either) Pupil response to accommodation: bring finger towards eyes, pupils should constrict
IV	Trochlea	They	Motor	Matters	Inferior to inferior colliculus (dorsal)	Superior Orbital Fissure	Somatic motor: Superior Oblique Ask patient to look medially, check upper lid fully retracted on upward gaze
V	Trigeminal	Travelled	Both	But	Over ventrolateral pons	V1: Superior Orbital Fissure V2: Foramen Rotundum V3: Foramen Ovale	Somatic sensory: Face Ask patient to close eyes; touch each of the areas supplied by each division (forehead, cheek & chin) bilaterally with cotton wool, do they feel it? Corneal reflex: touch cornea from side with wisp of cotton wool, patient should blink
						Somatic motor: Mastication, Tensor Tympani, Tensor Palati Ask patient to clench their teeth tightly together, feel muscle contract bilaterally Jaw Jerk: Ask patient to loosen their jaw, tap finger lightly with a tendon hammer => masseter should contract & chin 'jerks'	
VI	Abducens	And	Motor	My	Junction of pons & pyramid of medulla	Superior Orbital Fissure	Somatic motor: Lateral Rectus Ask patient to look laterally
VII	Facial	Found	Both	Brother	Cerebellopontine angle	Internal Auditory Canal	Somatic sensory: Posterior External Ear Canal Special sensory: Taste (Anterior 2/3 Tongue) Blindfold patient & ask to identify tastes
							Somatic motor: Muscles Of Facial Expression Visceral motor: Salivary Glands, Lacrimal Glands Ask patient to smile, raise their eyebrows, squeeze eyes tight whilst observing for symmetry

Cranial nerves III, IV & VI are usually tested together:
Ask patient to follow 'H' drawn by finger (not to close - induces double vision, or too far - induces nystagmus)

VIII	Vestibulocochlear	Voldemort	Sensory	Says	Cerebellopontine angle	Internal Auditory Canal	Special sensory: Auditory/Balance	<p>Weber's test: vibrate tuning fork, place on patient's forehead, which side can they hear? Tests bone conduction</p> <p>Rinne's test: vibrate tuning fork, hold it near patient's ear, then place it on mastoid process, ask which they hear louder</p> <p>[Vestibular part not usually tested in routine clinical examination]</p>
IX	Glossopharyngeal	Guarding	Both	Big	Posterolateral to olive	Jugular Foramen	<p>Somatic sensory: Posterior 1/3 Tongue, Middle Ear</p> <p>Visceral sensory: Carotid Body/Sinus</p> <p>Special sensory: Taste (Posterior 1/3 Tongue)</p> <p>Somatic motor: Stylopharyngeus</p> <p>Visceral motor: Parotid Gland</p>	<p>Cranial nerves IX & X usually tested together:</p> <p>Ask patient to say 'Ah'</p> <p>Soft palate should be raised equally</p> <p>Observe uvula (if there's a lesion uvula moves to intact side)</p>
X	Vagus	Very	Both	Brains	Posterolateral to olive	Jugular Foramen	<p>Somatic Sensory: External Ear</p> <p>Visceral Sensory: Aortic Arch/Body</p> <p>Special sensory: Taste Over Epiglottis</p> <p>Somatic Motor: Soft Palate, Pharynx, Larynx (Vocalisation and Swallowing)</p> <p>Visceral Motor: Bronchoconstriction, Peristalsis, Bradycardia, Vomiting</p>	
XI	Accessory	Ancient	Motor	Matter	Posterolateral to olive	Jugular Foramen	Somatic Motor: Trapezius, Sternocleidomastoid	Ask patient to shrug shoulders against resistance
XII	Hypoglossal	Hallows	Motor	Most	Immediately lateral to medullary pyramid	Hypoglossal Canal	Somatic Motor: Tongue	<p>Inspect tongue -> normal size? Fasciculate?</p> <p>On protruding tongue...it would move to side of lesion</p>



SPECIAL POPULATIONS

- Head and Neck Cancer
- COPD
- Dementia
- Neurodegenerative Disease
- NICU

CASE STUDY-"POINTS TO PONDER"


- 53 year old female with history of seizures and recent fall
- Left frontal brain hemorrhage post fall with craniectomy
- Near coma state for one week
- Upon awakening, generalized weakness noted, as well as +s/s of severe aspiration risk
- Interdisciplinary team discusses: * is enteral feeding warranted?; * will patient improve?; * what is patient's cognitive status; * what should palliative PO goal be...where do we begin?

Discussion/lecture over situation management and outcome.

CASE STUDY-"POINTS TO PONDER"

- 77 year old male with base of tongue cancer
- History of COPD and now presents with generalized weakness and 12 pound weight loss due to inability to maintain nutrition with PO feeding post chemo-radiation therapy with subsequent oral mucositis
- Patient has periods of oral ulceration healing and improvement, yielding hunger and a desire for favorite foods
- Patient presents with subjective tissue fibrosis radiation sequelae such as subjective deficient hyolaryngeal movement/elevation
- Patient states, "All I want is a coke?" Consulting physicians recommend PEG for nutritional support. Oncologist gives overall guarded to poor prognosis.

Discussion/lecture over situation management and outcome.



Ensuring that patients are helped to die with dignity begs for reflection, time, and space to create connections that are remembered by survivors long after a patient's death. It calls for humanism from all clinicians in the ICU to promote peace during the final hours or days of a patient's life and to support the bereaved family members. Ensuring death with dignity in the ICU epitomizes the art of medicine and reflects the heart of medicine. It demands the best of us.” [Cook, 2014]

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Strengths:

- Palliative Medicine
- Neonatal and Pediatric feeding intervention
- Dysphagia
- Cleft Palate and Craniofacial Anomaly



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