NMES for Dysphagia:

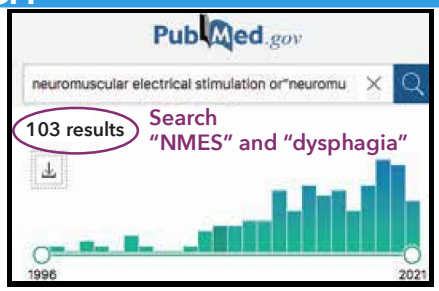
MYTH Busters

MYTH #1 "THERE IS NO RESEARCH"

THE FACTS

NMES FOR DYSPHAGIA IS EVIDENCE BASED

- Over 100 published and indexed.
- Most studies published were in the last 10 years.
- Research is ongoing.
- >95 percent of studies disclose no conflicts of interest (i.e., no funding from industry, authors independent).
- 6 meta-analysis to date.



pubmed.ncbi.nlm.nih.gov 7/17/21; search term "nmes or "neuromuscular electrical stimulation" and dysphagia"

MYTH #2 "NMES FOR DYSPHAGIA IS UNSAFE"

THE FACTS

NMES FOR DYSPHAGIA IS SAFE!*

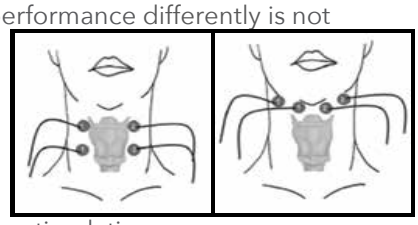
- No adverse events reported in the literature or to FDA in over 18 years of worldwide clinical use and well over 3 million treatments.
- Electrodes placement combinations that include electrodes below the hyoid bone DO NOT increase risk.
- Best practice: deliver electrical stimulation by trained clinician in conjunction active exercise therapy. **Safety" refers ONLY to those dysphagia therapists who have been trained in the safe use of NMES for dysphagia.*

MYTH #3 "ELECTRODES BELOW THE HYOID ARE COUNTER-PRODUCTIVE"

THE FACTS

ELECTRODES ABOVE AND BELOW HYOID ARE SAFE!*

- Early concern that infrahyoid muscles may negatively impact swallowing performance differently is not supported by research findings and absence of adverse events.
- Possible explanation: pertubation training, i.e., motor response of infra- and/or suprahyoid muscles interferes with psysiological swallow effort causing central nervous system to increase gain ("try harder").
- Sensory stimulation is likely to be a significant contributor to reported positive outcomes - electrodes below the hyoid expand the field of sensory stimulation.



MYTH #4 "THIS TREATMENT IS NOT TRUE NMES"

THE FACTS

VITALSTIM IS NMES

- NMES definition: electrical stimulation to modify or change muscle function.
- Traditionally achieved by stimulating the motor neurons of the target muscle group.
- General term like NMES is preferable to names based on specific machines (e.g., Ampcare, Guardian VitalStim, etc).
- Different protocols elicit different responses; not all protocols elicit visible muscle contraction.
- More research is needed to determine which protocol yields best results in different diagnosis.

MYTH #5 "ALL DEVICES ARE THE SAME"

THE FACTS

NOT ALL DEVICES ARE THE SAME

- Do your research!
- Is your device cleared?
- Is it cleared for dysphagia?
- Is it cleared for anterior portion of the neck or submental only?

DEVICES ON THE MARKET

Unit Name	VitalStim Plus	Swallow Stim Classic	Aspire 2 Guardian	Guardian Unity	Columbia 6000®	AmpCare
Manufacturer	DJO Global	Spectramed	Spectramed	Spectramed	TheraSigma	AmpCare
FDA Clearance #	K153224	K120922	K023036	K020637	K120922	K131222
Cleared for Anterior Portion of Neck	Yes	Yes	No	No	Yes	No
sEMG and Triggered Stim	Yes	No	Yes	No	No	No

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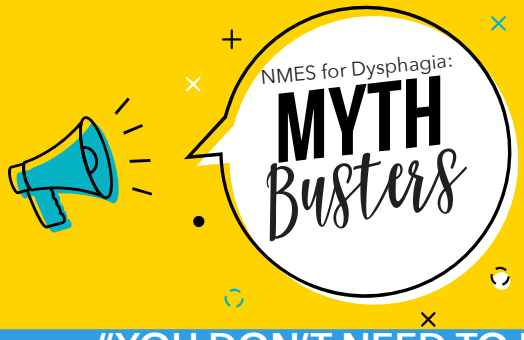

MYTH #6 "YOU DON'T NEED TO BE TRAINED"

THE FACTS
TRAINING IS REQUIRED FOR SLPs & OTs

- ASHA **DOES NOT** require any certification to use a modality.
- ASHA **DOES NOT** endorse any specific device or protocolendorse any specific device or protocol.
- ASHA & CMS **DO** require that an SLP be trained prior to using a modality.
  - Instructor must be an expert in the field (modalities and dysphagia).
    - Material must be original work or the instructor must have consent of the author to use.
  - Training must have measurable objectives to determine successful training.
  - Training must be documented.

MYTH #7 "NMES CAN'T BE USED WITH IMPLANTED DEVICES"

THE FACTS
IMPLANTED DEVICES AREN'T CONTRAINDICATED

- Implanted cardiac devices such as pacemakers, internal cardiac defibrillators (ICDs), left ventricular assist devices (LVADs), and Life Vests are not contraindications to the use of NMES to treat dysphagia.
- Other implanted devices such as deep brain stimulators (DBS), vagal nerve stimulators, and cochlear implants are not contraindications to the use of NMES to treat dysphagia.
- While separate or distinct physician clearance is not necessary for these implanted devices, clinicians are encouraged to have a discussion with the referring physician or the physician managing the implanted device if there are any questions or concerns.

MYTH #8 "NMES CAN'T BE USED ON PTS WITH HEAD & NECK CANCER"

THE FACTS
CIRCUMSTANCES ALLOW FOR NMES

- NMES to treat dysphagia using an anterior neck or facial placement is only contraindicate in the presence of active neoplasm or disease.
- A past history of head and neck cancer is not a contraindication.
- The criteria for an individual being considered "cancer-free" may vary depending on the institution.
- Active cancer remote to the head and neck is not a contraindication (e.g., brain, esophageal, lung, breast, liver, etc.).

MYTH #9 "NMES CAN'T BE USED WITH BELLS PALSY OR OTHER FACIAL PARALYSIS"

THE FACTS
BENEFICIAL IN SOME CIRCUMSTANCES

- The key to considering use of NMES to treat dysphagia symptoms in an individual who has been diagnosed with Bells Palsy is the factor of time (acute vs. chronic).
- NMES may be considered for someone who has had a diagnosis of Bells Palsy who is experiencing weakness as a chronic symptom of the disease process.
- The key to determining whether NMES is indicated is whether or not the peripheral nerve (CN VII, facial) is intact.
- NMES can be used diagnostically in order to determine whether NMES is appropriate/indicated.

MYTH #10 "NMES CAN'T BE USED ON PTs WITH NEURODEGENERATIVE DISEASES"

THE FACTS
BENEFICIAL IN SOME CIRCUMSTANCES

- Exercise-based treatments (with NMES) for individuals with neurodegenerative diseases such as ALS, MS, PD, etc. is not contraindicated.
- Treatment cannot be curative, but can improve function.
- Patients with neurodegenerative diseases who have decreased functional capacity (and are prone to fatigue) will need their exercise program modified so that the individual is exercising at a low aerobic level.
- The value of adding NMES to the dysphagia plan of care is limited in disease states with significant lower motor neuron involvement (the factor of timing).

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