Welcome to Passy-Muir's Event Webinar: Communication and Swallowing Management for ALS Patients with Tracheostomy

- If you have not registered for this event, go to the Education Portal to complete your registration: ep.passy-muir.com
- This is an "Audio Broadcast" meeting, which means that the audio signal will be sent out through your computer. A toll telephone number will also be available. Use the “Audio” section of the file menu for audio options.
  - Call-in toll number (US) +1 415 655 0001
  - Access code: 661 651 773
- The audio for this meeting is one-way, so the presenter will not be able to hear the attendees, nor will the attendees be able to hear each other.
- If you have a question for the presenter, please use the Q and A (not the chat box), to the lower right of meeting window.
- After the webinar ends, you will have an opportunity to fill in your evaluation on the Passy-Muir Education Portal.
- If you have a technical issue, please call Passy-Muir at 949-833-8255, or email Daniel at dcarrillo@passy-muir.com

COMMUNICATION AND SWALLOWING MANAGEMENT
FOR ALS PATIENTS WITH TRACHEOSTOMY

Disclosure Statement

- Passy-Muir, Inc. has developed and patented a licensed technology trademarked as the Passy-Muir® Tracheostomy and Ventilator Swallowing and Speaking Valve. This presentation will focus primarily on the bias-closed position Passy-Muir Valve and will include little to no information on other speaking valves.

Presenter

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Nonfinancial — No relevant nonfinancial relationship exists.

Course Outline

1. What is ALS?
2. Respiratory and Muscle Impairments
3. Swallowing impairments and alternative means of nutrition
4. Speech Impairments and options
5. Case Study

What is ALS

- Degenerative motor neuron disease
- Flaccid/spastic
- Bulbar spinal
**Impaired Ventilation**
- Restrictive pattern of hypoventilation
  - Gas trapping can occur
- Decreased lung compliance
- Reduced lung capacities
- Stiff chest wall

**Difficulty Clearing Secretions**
- Weak coughing
- Difficulty taking a deep breath
- Fatigue quickly
- Increased risk of infection

**Pulmonary Tests**
- Forced Vital Capacity (FVC)
  - Significant predictor of survival
  - Ninety percent of episodes of respiratory failure occur during chest infections when FVC is less than 1.5 L and peak cough flow (PCF) is less than 160 L per minute

**Pulmonary Tests**
- Nocturnal Oximetry
  - Detects nocturnal hypoventilation

**Pulmonary Tests**
- Peak cough expiratory flow
  - Greater than 1650 L/min are needed to clear secretions

**Mechanical Ventilation and ALS**
- Noninvasive ventilation may enhance quality of life (QOL)
- Prolongs survival
- Tracheostomy may be considered to preserve QOL who want long-term ventilatory support

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Nicole Riley, MS CCC-SLP  
Director of Clinical Education Passy-Muir Inc.
Cough Techniques
- Mechanical in-exsufflation
- Manual Breath stacking
- Manual Assisted Cough

Mechanical In-Exsufflation (MIE)
- MIE via tracheostomy tube and an inflated cuff was more effective in eliminating airway secretions than ordinary suctioning.
- Blood oxygen saturation, peak inspiratory pressure, mean airway pressure, and work of breathing all improved

Manual Breath Stacking

Manual Assisted Cough

Respiratory Muscle Training
- Diaphragmatic and pursed lip breathing:
  - EMST 150
  - Threshold PEP
- Therapy to assist in lung expansion, coughing and airway clearance
  - Acapella
  - EZPap
  - The Breather

Swallowing Evaluation
- History
- Classification of type
- Assessment of speech/swallow function
- Respiratory status

Nicole Riley, MS CCC-SLP
Director of Clinical Education Passy-Muir Inc.
ALS Severity Scale Swallowing

<table>
<thead>
<tr>
<th>Swallowing Ability</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal eating habits</td>
<td>10</td>
</tr>
<tr>
<td>Poor swallow ability, able to eat</td>
<td>9</td>
</tr>
<tr>
<td>Delayed problems</td>
<td>8</td>
</tr>
<tr>
<td>Minor swallowing problems, intake problem</td>
<td>7</td>
</tr>
<tr>
<td>Dietary consistency changes</td>
<td></td>
</tr>
<tr>
<td>Soft diet</td>
<td>6</td>
</tr>
<tr>
<td>Liquid diet</td>
<td>5</td>
</tr>
<tr>
<td>Supplementary tube feeding</td>
<td>4</td>
</tr>
<tr>
<td>Tube feeding with occasional oral intubation</td>
<td>3</td>
</tr>
<tr>
<td>No oral feeding</td>
<td>2</td>
</tr>
<tr>
<td>Aspiration of secretions</td>
<td>1</td>
</tr>
</tbody>
</table>

Common Swallow Issues in Bulbar onset

- Delayed bolus transport
- Bolus stasis at pyriform sinus
- UES well maintained
- Bolus holding, constriction of pharynx, and laryngeal elevation became worse over time
- Fatigue


Objective testing

- Use for symptoms that cannot be explained by the physical exam
- Useful to by 6 months following bulbar symptom onset
  - Repeat VF at 1 year

Dysphagia Management

<table>
<thead>
<tr>
<th>ALS Swallow Scale Rating</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0: Normal</td>
<td>Carry out swallow assessment</td>
</tr>
<tr>
<td>9: Dyest et al.</td>
<td>Discuss anatomy and physiology of swallow and explain reason for minor difficulties</td>
</tr>
<tr>
<td>5: Liquefied diet</td>
<td>Liaise with pharmacist regarding tablet crushing</td>
</tr>
</tbody>
</table>

ALS Swallow Scale Rating

<table>
<thead>
<tr>
<th>Rating</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>6- Minor difficulty</td>
<td>• Swallow to dietary • Small meals with extra snacks • Prolonged airway if normal larynx breathing</td>
</tr>
<tr>
<td>7- Prolonged meal time</td>
<td>• Smaller bites • Thin liquid meals • Posture advice • Glottal swelling management • Consider video swallow study</td>
</tr>
</tbody>
</table>

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Director of Clinical Education Passy-Muir Inc.
Controlling Saliva

- Drooling
  - Medications
  - Suction Machines
  - Botulinum toxin injection
- Thick secretions
  - Dehydration

Possible Swallow Techniques

- Compensatory
- Reflux management
- Dietary changes
- Swallow exercises?

PEG tubes and ALS

- Stabilize body weight for individuals with dysphagia
- No consensus for indications and timing
  - Before body mass index is less than 18.5
  - Before body weight loss reaches 10%
- Possibly prolongs survival

ALS Severity Scale Speech

<table>
<thead>
<tr>
<th>Speech</th>
<th>Ability</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal speech properties</td>
<td>Normal</td>
<td>10</td>
</tr>
<tr>
<td>Detectable speech disturbances</td>
<td>Perceived speech changes</td>
<td>8</td>
</tr>
<tr>
<td>Obvious speech abnormalities</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Intelligible with repeating</td>
<td>Report speech on occasion</td>
<td>6</td>
</tr>
<tr>
<td>Frequent correcting required</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Speech combined with connected communications</td>
<td>Speech plus nonverbal communication</td>
<td>4</td>
</tr>
<tr>
<td>Loss of visual speech</td>
<td>Visual cue or emotional expression</td>
<td>3</td>
</tr>
<tr>
<td>Nonverbal</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Passy-Muir Valve Candidates
- Early and mid-stage of the disease process
- Assess speech and swallow function
  - ALS Severity Rating of 3-10
  - ALS Severity Rating of 2/3-10

Common Speech Pattern
- Mixed Dysarthria - usually Flaccid and Spastic
  - Phonation
  - Respiration
  - Resonance
  - Articulation
  - Prosody

Speech Therapy
- Regular assessment (i.e. every three to six months)
- Generally compensatory strategies

Andersen, P.M., et. al. (2007). Amyotrophic Lateral Sclerosis, 8(4), 195-213

Speech Techniques
- No detectable speech disorder (9-10)
  - Provide education about communication deficits
- Mild but obvious speech disorder (6-8)
  - Provide speaker and listener strategies
  - Voice amplifier
- Moderate (4-5)
  - Strategies to increase or maintain intelligibility
  - AAC in place
- Severe (1-3)
  - AAC as primary means

End Stage ALS and PMV
- May not be candidates for the PMV, particularly bulbar ALS
  - ALS Severity Scale
  - Swallowing of 1
- Poor oral motor strength/ROM
  - ALS Severity Scale
  - Speech of 1-2

Photo courtesy of Tobii
Augmentative and Alternative Communication (AAC)

- Voice banking
- Low and high tech communication
- Eye-gaze devices

Eye-Gaze Communication

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Case Study

**Upon Admission**

- 45 year old male
- Spinal ALS
- Trach x 2 weeks
- Continuous Positive Airway Pressure
- Nil by mouth with gastrostomy tube since trach inserted

**Upon Discharge Home:**

- Valve tolerated all waking hours
- Weaned to trach collar
- Speech Severity Scale: 5
- Swallow Severity Scale: 6

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Additional Educational Opportunities

- Self-study webinars available on demand
  - Getting Started
  - Ventilator Application
  - Swallowing
  - Pediatric
  - Special Populations
- Live group webinars
- www.passy-muir.com
- Passy-Muir Inc. is an approved provider of continuing education through ASHA, AARC, and California Board of Nursing Credit

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Receiving CEU’s for this Course

- You will have 5 days from the time this course ends to complete the evaluation, which is required to receive credit.
  - Look in your email for a reminder link, or type this into your Internet browser’s address bar:
    - ep.passy-muir.com
  - If you are a late registrant, the meeting code is: passy755
    - If you are already registered, you do not need to use this code.

Videos

- http://passy-muir.com/als