

Policy: Passy Muir Valve Use

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Applicable To: SLPs, RTs, Nursing

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PURPOSE:

To establish a standardized method for the evaluation and safe weaning of tracheostomy tube support, and to restore oral communication and normal swallowing for patients who are tracheostomized and/or ventilation dependent.

PROCEDURE:

1. The Passy-Muir Valve (PMV) will be available on the nursing unit. A physician's order is required prior to initiating PMV trials or capping. The order must be in the chart prior to any trials.

2. Clinical Indications:
 - a Minimum 48 hours post tracheostomy placement
 - b Patient is demonstrating expressive communication attempts
 - c Patient is alert and responsive
 - d Patient has stable vital signs (HR,RR,BP, SaO2)
 - e Patient can tolerate cuff deflation
 - f Patient has a good "air leak"

3. Contraindications:
 - a Patient has a foam-cuffed tracheostomy tube
 - b Patient is unable to tolerate cuff deflation
 - c Severe upper airway obstruction
 - d Non-compliant lungs
 - e Copious, thick, unmanageable secretions
 - f CPAP/PEEP > 5cm H2O
 - g Bilateral vocal cord paralysis in the adducted position
 - h Tracheal stenosis
 - i Total Laryngectomy
 - j Patient who is comatose

4. Safety:
 - a The cuff must be completely deflated when PMV is in use
 - b Do not use PMV while patient is sleeping

5. The Speech Language Pathologist will evaluate the appropriateness of the utilization of the PMV as needed and may schedule a joint treatment session with the Respiratory Therapist for the initial placement of the valve.

6. The Speech Language Pathologist will describe the mechanics and utilization of the PMV to the patient, staff and/or family members present.

7. The Respiratory Therapist or Nurse will suction the trach/oral cavity as needed before, during and after the PMV trials. They will also deflate the cuff (if present) prior to initiation of the PMV and will re-inflate the cuff upon completion of PMV trial.

8. For non-ventilator dependent patients:
 - a Have Respiratory Therapist or Nurse deflate the cuff (if present), and suction the trach/oral cavity as needed.
 - b The Speech Language Pathologist will test the patency of the upper airway and glottis functioning by occluding the trach with a gloved finger and asking the patient to vocalize on exhale
 - c PMV can then be placed. Place the PMV on the hub of the trach and gently twist $\frac{1}{4}$ turn to fit to trach tube.
 - d PMV will be trialed during the speech session (for as long as tolerated by patient)
 - e The Respiratory Therapist, Speech Language Pathologist, and/or Nurse will monitor the patient's tolerance of the PMV throughout the trial and evaluate the patient's respiratory status by looking for signs of fatigue, hemodynamic changes and SPO2 changes.
 - f Once session is completed, the PMV can be removed and the respiratory therapist can re-inflate the cuff (if present) using appropriate pressure measures (ie: manometer, etc) according to the parameters set forth by the manufacturer of the particular trach (ie: Bivona, Shiley, etc). Cuff is to be re-inflated after the speech trials unless the physician has written an order for the cuff to remain deflated during waking hours or unless the PMV wear has been expanded and no longer limited to just speech sessions.
 - g Speech will continue PMV trials until the patient is tolerating the PMV for the entire 30 min session twice a day for several days in a row. At that time the Speech Language Pathologist may ask for the physician to order PMV use to expand throughout the day by nursing and/or Respiratory Therapy as tolerated. Expanded PMV use will be carried out and monitored by nursing or Respiratory Therapy and the attending physician

9. For ventilator dependent patients:

- a Obtain baseline vital signs, SPO₂, HR, RR, breath sounds and work of breathing.
- b Position patient comfortably making sure the ventilator circuit and trach collar tubing is not pulling on the trach tube.
- c Have Respiratory Therapist or Nurse deflate the cuff (if present) and suction the trach/oral cavity as needed.
- d Place PMV in line with vent circuit or directly onto the trach tube hub and gently twist ¼ turn to fit to trach tube.
- e Respiratory Therapist to adjust vent settings and adjust alarms as needed
 - Adjust set VT to compensate for volume lost. Measure the PIP before deflating the cuff. Increase the set VT until the PIP with the cuff deflated is similar to the PIP with the cuff inflated. This step is not necessary with Pressure Control or Pressure Support ventilation.
 - Turn the PEEP off. This will reduce or eliminate the excessive flow and auto-cycling created by the vent trying to maintain the PEEP level with the cuff leak. If the patient is on ≥ 12 cm PEEP, they may not be able to use the PMV since the loss of Positive pressure may increase the work of breathing due to airway collapse.
 - Patients on pressure support may need to have the pressure setting decreased to allow the vent to cycle into exhalation. At higher PS levels, flow may not decrease because of the leak, giving the patient a long inspiration. Another option is to change to AC mode during PMV use.
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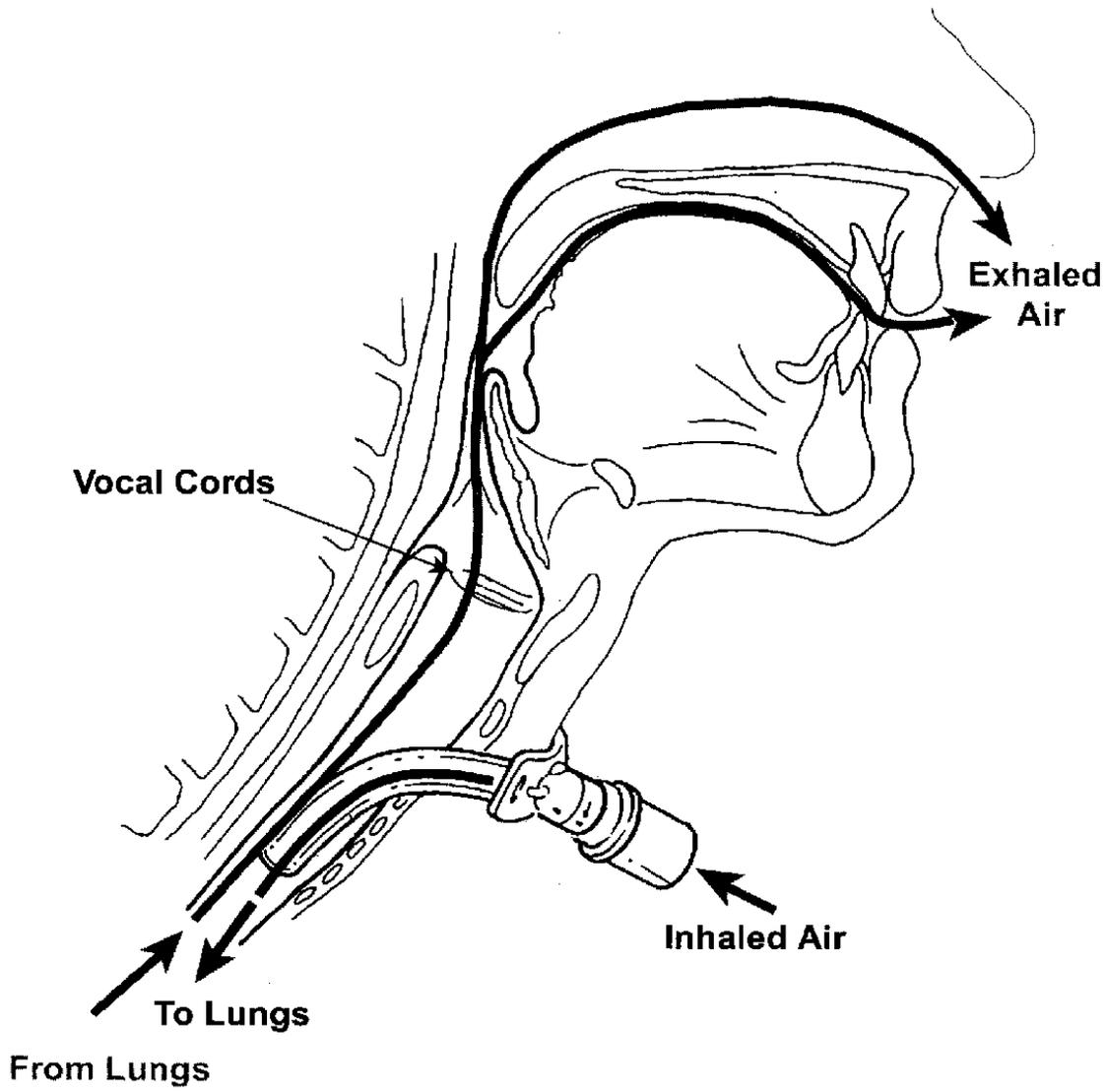
10. Potential Benefits:

- a Improves swallow due to subglottic pressure restoration in trachea/pharynx
- b Improves secretion management due to restoring of airflow through upper airway (which increases sensation and allows the patient to know when to swallow)
- c Improves smell and taste
- d Impacts infection control, need not cover trach with finger to talk, acts as a filter
- e Assists with weaning by getting used to air through upper airway, therefore, facilitate more normal breathing, muscle training
- f Demonstrated to expedite weaning from the ventilator and tracheostomy tube
- g Reduces the occurrence of laryngeal penetration and aspiration

11. Maintenance and Cleaning:

- a Clean in warm soapy water (never hot water)
- b Rinse thoroughly under warm running water
- c Air dry the speaking valve (never put back into the purple container with the lid closed until completely dry)
- d When completely dry place PMV back into appropriate storage container
- e Never clean with hot water, peroxide, bleach, vinegar, alcohol, brushes or cotton swabs

Airflow with Passy-Muir Valve in Place



Passy Muir Valve inline with vent



VALVE PLACEMENT FOR USE WITH VENTILATOR DEPENDENT PATIENTS

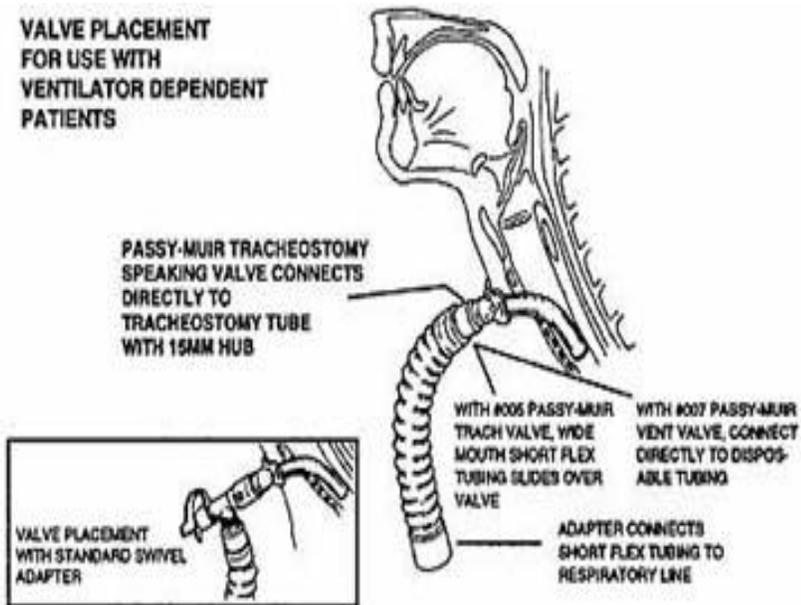


Diagram courtesy of Passy-Muir, Inc.