#### How does managing NMD-related respiratory issues differ from COPD or asthma?

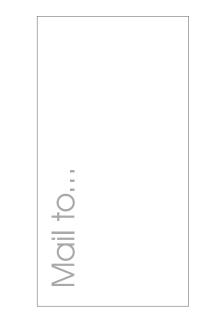
Chronic Obstructive Pulmonary Disease (COPD) and Asthma The challenge is getting air past obstructions in the lungs and airway. Additional pressure (with a ventilator) may be required. When lung tissue is damaged and the maximum ventilation (deepest breath) is insufficient to supply adequate oxygen to the blood, supplemental oxygen (O<sub>2</sub>) is usually prescribed.

Restrictive Lung Disease When a patient is having respiratory problems due to neuromuscular disease (NMD), postpolio syndrome (PPS), or high-level spinal cord injury (SCI), the issue is muscle strength or control. The lungs are rarely directly damaged or obstructed by these conditions; rather, poor muscle strength or control causes hypopnea (shallow breathing) which inevitably leads to hypercapnia (CO<sub>2</sub> retention) which may result in poor sleep, morning headaches, loss of appetite, and weakness. Left untreated, hypercapnia can lead to coma and death.

# **WARNING** Supplemental O<sub>2</sub> is not a replacement for proper ventilation!

For NMD, PPS, and SCI patients, <u>continuously</u> monitor EtCO<sub>2</sub> levels with capnograph when administering O<sub>2</sub> for sustained periods. (Blood gas CO<sub>2</sub> is not as informative as EtCO<sub>2</sub>.) EtCO<sub>2</sub> > 43 mmHg indicates hypercapnia. Failure to treat hypercapnia with proper ventilatory support can lead to coma and DEATH.







Millennium Respiratory Services 20 Troy Rd, #11, Whippany, NJ 07981 973-463-1880 Fax: 973-463-1886 www.Millennium-Respiratory.com info@Millennium-Respiratory.com

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# **Respiratory Management**

for patients with Neuro-Muscular Diseases Post-Polio Syndrome Spinal Cord Injury

Utilizing non-invasive ventilation (NIV) to manage hypopnea and hypercapnea caused by Restrictive Lung Disease.



# A ventilator is just another tool.

Respiratory issues should not be viewed as "end stage" and do not need to be "life threatening."

Clear planning, education, and understanding can relieve anxiety and prepare both the patient and caregiver for this life-sustaining transition.

# Why choose NIV?

Compared to a tracheostomy, noninvasive ventilation has been shown to... Increase quality of life Increase length of life Decrease hospitalizations

- Enhance speaking
- Decrease secretions
- Ease management (no suctioning)

NIV can be used for nighttime-only or 24/7 ventilation requirements. Nighttime, occasional daytime, and infant care with nasal or face mask. Full-time ventilation with a "microphone mouthpiece".

Congestion is quickly removed with the CoughAssist device.



# **Suggested Equipment for NIV**

<u>Portable oxymeter</u> to monitor blood oxygen level.

Two <u>portable IPPV</u>\* units (one for bedside and one for wheelchair). <u>CoughAssist</u> for clearing secretions and aspirated food or liquids when

oxymeter reading <95%, and for retaining lung elasticity.

<u>Ambubag</u> for air stacking and emergency backup if 24-hour vent dependent.

Nasal mask and/or <u>"microphone mouthpiece"</u>.

Emergency oxygen  $(O_2)$  canister for use when

\* IPPV: Intermittent Positive Pressure Vent (volume vent). For some patients, *high-span* Bi-PAP (E.g.: 18/2) may be used in place of IPPV with a loss of portability.

"The Vest" is a good device for loosening congestion.





### Why choose Millennium?

We know there are other care providers, but we believe you'll find few with the services, support, and experience available with Millennium Respiratory Services.

10 years experience NIV specialists \*SMA \*DMD \*PPS \*ALS \*SCI Clients include the MDA Clinic, Newark, NJ

- Dr. John R. Bach, Co-Director

### What does Millennium offer?

Education and training. Equipment sales and rentals. In-hospital and in-home evaluation, support, and service.

Both NIV and tracheostomy support. We bill insurance and medicare.

### **Informational Websites**

www.Millennium-Respiratory.com www.DoctorBach.com www.CoughAssist.com www.TheVest.com