

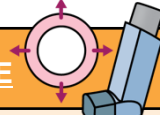





## AIRWAY CLEARANCE

Steps for mobilizing lung secretions to improve gas exchange and reduce the risk of infection

## COMMON INDICATIONS

- Cystic fibrosis (CF)
- Non-CF bronchiectasis
- Primary ciliary dyskinesia
- Bronchopulmonary dysplasia
- Neuromuscular disease (NMD)

	<u>D</u> ILATE 	<u>L</u> UBRICATE 	<u>V</u> IBRATE 	<u>E</u> XPECTORATE 
<b>Description</b>	Widen the airways with a bronchodilator	Thin the secretions with a mucolytic	Loosen the secretions from the airway walls	Expel the secretions from the lungs
<b>Examples</b>	<ul style="list-style-type: none"> <li>• Short-acting beta-agonist (e.g., salbutamol)</li> <li>• Short-acting muscarinic antagonist (e.g., ipratropium)</li> </ul>	<ul style="list-style-type: none"> <li>• Normal (0.9%) saline</li> <li>• Hypertonic (3%, 7%) saline</li> <li>• Dornase alfa</li> <li>• N-acetylcysteine (NAC)</li> </ul>	<ul style="list-style-type: none"> <li>• Percussion and postural drainage</li> <li>• Oscillating positive expiratory pressure (PEP) device</li> <li>• High-frequency chest wall oscillation (HFCWO) vest</li> </ul>	<ul style="list-style-type: none"> <li>• Huff cough</li> <li>• Mechanical insufflation-exsufflation (MI-E) device</li> </ul>
<b>Notes</b>	Bronchodilators can provide physiologic or therapeutic bronchodilation and prevent bronchoconstriction from subsequent mucolytics	Different mucolytics target different mucus components. For example, dornase alfa cleaves extracellular DNA from neutrophils and other dead cells, while NAC breaks disulfide bonds in mucus glycoproteins	Many devices require active participation, but manual percussion and postural drainage can be performed in children of all ages from infancy through adolescence	A huff cough is a controlled expiratory maneuver that moves secretions from smaller to larger airways while minimizing airway collapse

Steps should be performed in the listed order: **DELVE**

Airway clearance regimens are tailored to the child's medical needs and physical capabilities as well as their family's social needs and lifestyle. While some children will require one or more components from each step, others may skip a step or two!

## EXAMPLE AIRWAY CLEARANCE REGIMENS FOR A CHILD WITH:

<b>CF</b>	Salbutamol ( <b>DE</b> ) followed by dornase alfa ( <b>L</b> ) with an oscillating PEP device ( <b>V</b> ) and huff coughing ( <b>E</b> )
<b>NMD</b>	Normal saline ( <b>L</b> ) with a HFCWO vest ( <b>V</b> ) followed by the MI-E device ( <b>E</b> ) and suctioning

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Dr. Jan Fune (Pediatric Hospitalist, Icahn School of Medicine at Mount Sinai) and Dr. Megan N Januska (Pediatric Pulmonologist, Icahn School of Medicine at Mount Sinai) for [www.pedscases.com](http://www.pedscases.com).  
Illustrations by Jill Gregory (Icahn School of Medicine at Mount Sinai)