## HME Contraindications

<table>
<thead>
<tr>
<th>CONTRAINDICATION</th>
<th>REASON FOR CONTRAINDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretions; thick, copious, tenacious&lt;sup&gt;1&lt;/sup&gt;</td>
<td><strong>INSUFFICIENT HUMIDIFICATION</strong>&lt;br&gt;Normal HME operation results in a net loss of moisture from the respiratory tract. Increases risk of mucus plugging and airway occlusion due to insufficient humidification</td>
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<tr>
<td>Long-term ventilation&lt;sup&gt;5&lt;/sup&gt;</td>
<td><img src="image1.png" alt="Image" /></td>
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<tr>
<td>Bronchopleuralcutaneous fistula&lt;sup&gt;2 8 12 14 15&lt;/sup&gt;</td>
<td><img src="image2.png" alt="Image" /></td>
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<tr>
<td>Incompetent or absent ET tube cuff&lt;sup&gt;1 2 8 14&lt;/sup&gt;</td>
<td><img src="image3.png" alt="Image" /></td>
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<tr>
<td>Expired ( V_f ) less than 70% of the delivered ( V_t )</td>
<td><img src="image4.png" alt="Image" /></td>
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<tr>
<td>Airway burns&lt;sup&gt;12 16&lt;/sup&gt;</td>
<td><img src="image5.png" alt="Image" /></td>
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<tr>
<td>Dehydration&lt;sup&gt;6 17&lt;/sup&gt;</td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td>Hypothermia&lt;sup&gt;1 5 11 12 15 17 18&lt;/sup&gt;</td>
<td><img src="image7.png" alt="Image" /></td>
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<tr>
<td>Acute Respiratory Distress Syndrome (ARDS)&lt;sup&gt;12 19&lt;/sup&gt;</td>
<td><img src="image8.png" alt="Image" /></td>
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<tr>
<td>Asthma&lt;sup&gt;8 16 19&lt;/sup&gt;</td>
<td><img src="image9.png" alt="Image" /></td>
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<tr>
<td>Atelectasis&lt;sup&gt;12&lt;/sup&gt;</td>
<td><img src="image10.png" alt="Image" /></td>
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<tr>
<td>Chronic Obstructive Pulmonary Disease (COPD)&lt;sup&gt;12&lt;/sup&gt;</td>
<td><img src="image11.png" alt="Image" /></td>
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<tr>
<td>Severe hypercapnia&lt;sup&gt;20&lt;/sup&gt;</td>
<td><img src="image12.png" alt="Image" /></td>
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<tr>
<td>Ventilation strategy; lung protective, low ( V_t )&lt;sup&gt;2 8 17&lt;/sup&gt;</td>
<td><img src="image13.png" alt="Image" /></td>
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<tr>
<td>Ventilation strategy; high MV&lt;sup&gt;1 12&lt;/sup&gt;</td>
<td><img src="image14.png" alt="Image" /></td>
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<tr>
<td>Weaning; difficult to wean&lt;sup&gt;2 10 12&lt;/sup&gt;</td>
<td><img src="image15.png" alt="Image" /></td>
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<tr>
<td>Airway hemorrhage/trauma&lt;sup&gt;6 8 12 16&lt;/sup&gt;</td>
<td><img src="image16.png" alt="Image" /></td>
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<tr>
<td>Nebulized medications; during delivery of aerosol treatments&lt;sup&gt;1 4 7 9&lt;/sup&gt;</td>
<td><img src="image17.png" alt="Image" /></td>
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<tr>
<td>Pulmonary edema&lt;sup&gt;3 6 7&lt;/sup&gt;</td>
<td><img src="image18.png" alt="Image" /></td>
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<tr>
<td>Secretions; bloody&lt;sup&gt;1 4 10 12 14 15 18&lt;/sup&gt;</td>
<td><img src="image19.png" alt="Image" /></td>
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<tr>
<td>Immunocompromised&lt;sup&gt;12&lt;/sup&gt;</td>
<td><img src="image20.png" alt="Image" /></td>
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<td>MV: minute volume; ( V_t ): tidal volume; ET: endotracheal</td>
<td><img src="image21.png" alt="Image" /></td>
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</tbody>
</table>

**Infection**<br>Routine HME change increases risk of infection
REFERENCES


7. Lawes E. Hidden hazards and dangers associated with the use of HME/filters in breathing circuits. Their effect on toxic metabolite production, pulse oximetry and airway resistance. British Journal of Anaesthesia 2003; 91(2):249-64.


