### Patient Consideration
- Radioaerosol tracers adhere to smoke particles in the lung.
- The patient should be instructed not to smoke 24 hours prior to the test.
- Explain the entire procedure to the patient prior to the test to ensure patient cooperation.
- Instruct the patient not to remove the mouthpiece or nose clip during the procedure.
- Instruct the patient to “signal” by raising their hand if they are experiencing any difficulty during the test.

### Overall Guidelines
- Read the operational manual prior to performing the test.
- Perform the test in accordance to the operational manual.
- Explain the entire procedure to the patient prior to the test.
- Take care that the patient does not contaminate you or themselves during the test.
- Use only the correct shielded canister identified for the radioaerosol system.
- Ensure that the radioaerosol tracer is of high purity.

### PROBLEM / ISSUE TROUBLESHOOTING

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<tr>
<th>PROBLEM / ISSUE</th>
<th>TROUBLESHOOTING</th>
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<td>Insufficient Air Flow</td>
<td>- If using a tank, replace the tank if remaining pressure drops to 25% of the air / O₂ in the tank.</td>
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<td>- If using wall oxygen, have maintenance check the regulator at the wall inlet to ensure 50 to 55 psi.</td>
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<td>- If using a flow meter, ensure the flow is between 10 - 13 liters per minute.</td>
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<td>- Ensure the radioaerosol kit is properly seated in the shielded canister.</td>
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<td>- Ensure the oxygen inlet tube is not blocked or damaged.</td>
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<p>| Oxygen inlet tube blow off      | - Back pressure in oxygen (or air) supply is building too rapidly, turn oxygen (or air) supply to 10 liters/per minute and increase gradually. Ensure the regulator output is between 50 to 55 psi.                                      |
|                                  | - In rare cases, the small orifice of the nebulizer may become partially clogged creating higher than normal back pressure. Use another radioaerosol kit.                                                          |</p>
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</tr>
</thead>
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| Radioaerosol is not functioning                     | - Perform functionality testing with sterile water / saline solution to confirm nebulizer functionality. You should see a 3 to 4 inch plume of mist from the mouthpiece.  
  If there is no mist production, check the following:  
  - Check for leaks in the oxygen tubing.  
  - Ensure the radioaerosol kit is properly seated in the shielded canister.  
  - Use another radioaerosol kit.                                                                                                                                                          |
| Injected dose is not present in the nebulizer bowl  | - Inject the dose through the center of the injection port (septa) with a 22 gauge or larger gauge needle using care not to pierce the back of the injection port elbow.  
  - Ensure the proper dose concentration is inside the nebulizer.                                                                                                                       |
| Hot spots on the ventilation image                  | - Instruct the patient not to smoke 24 hours prior to the test.  
  - High velocity in the patient’s lungs / patient breathing irregular or too fast, particles adhering to mucus plugs.  
  - Instruct the patient to take slow deep breaths.                                                                                                                                 |
| No counts or slow build up of count rate in patient  | - Check the concentration of the dose. It may be too low.  
  - Oxygen flow rate may be incorrect or nebulizer is malfunctioning. Perform functionality testing with sterile water / saline solution to confirm nebulizer functionality. You should see a 3 to 4 inch plume of mist.  
  - Check the regulator on the oxygen supply and calibrate if necessary, or it may read incorrectly if the regulator is at an angle.  
  - Check the O₂ hose for leakage.                                                                                                                                                      |