

# The Latest on Infection Control For Nebulizers

In May of 2001, the Cystic Fibrosis Foundation assembled a multi-disciplinary team to develop evidence-based recommendations for infection control practices for patients with cystic fibrosis. The result is an updated Infection Control document for CF Centers to use as a reference and guide in their clinical practice. In the document, particular attention is paid to the equipment used in respiratory therapy. Certain devices are a potential source of contamination by harmful pathogens. The nebulizer, which is used to administer inhaled medications, is no exception.

In order to administer aerosolized medications safely, it is important to clean and disinfect the nebulizer parts. The Infection Control document recommends the following steps to be taken with the nebulizer between uses:

1. Clean
2. Disinfect
3. Rinse
4. Air-dry

**1** **The first step is to clean.** The nebulizer can not be properly disinfected until it is properly cleaned. What is meant by "clean" is a good, old-fashioned wash with hot, soapy water. *Vigorously* wipe away the debris, inside and out of the nebulizer parts, using a clean paper towel. Then, throw the paper towel away. After washing, rinse the soap off well.

As an option, it is OK to use an automatic dishwasher for the cleaning process.

**2** **The second step is to disinfect.** There are several options listed.

The nebulizer parts can be soaked in the following disinfectant agents:

- Household bleach for 3 minutes (1:50 solution)

- Rubbing alcohol for 5 minutes (70% solution)
- Hydrogen peroxide for 30 minutes

**Note: Vinegar is NOT an option. Vinegar is not an adequate disinfectant.**

The nebulizer can also be heat-disinfected in the following ways:

- Boil for 5 minutes
- Microwave for 5 minutes
- Dishwasher if the water is greater than 158 degrees Fahrenheit for 30 minutes

Any of these options will render the nebulizer "disinfected," which is why they are recommended. However, the document does qualify their recommendations with the warning "if the manufacturer permits." Therefore, it is important that the option you choose to disinfect the nebulizer also follows the manufacturer's recommendations.

**3** **The third step is to rinse.** If you are choosing one of the cold-disinfectants, then you need to rinse off that disinfectant well. **This final rinse must be with sterile water only.** Do not use bottled, distilled, filtered, or tap water. These sources have contaminates. You can render tap water "sterile" by boiling it for 5 minutes. How long it stays sterile is not certain. It is, therefore, prudent to use this sterilized water only once.

**4** **The final step is to air-dry.** After the final rinse, the nebulizer parts must be drained and then thoroughly air-dried before being put away. This step is important because anything that remains wet can breed bacteria.

Yes, these steps are tedious, but the important goal is to administer medications safely. To make this a little easier, a simple

suggestion is to use a durable, non-disposable nebulizer, one that the manufacturer permits boiling. With this type of product, the disinfecting and rinsing is done in one easy step.

One final comment...It is important to use aseptic technique. In other words, always wash your hands thoroughly prior to handling the medications and the equipment. In addition, make sure the environment where you are preparing the delivery of the medication, and where you are cleaning and disinfecting the nebulizer, is clean.