

## BREATHING TREATMENTS

Breathing treatments use:

- an electric or battery powered compressor,
- a nebulizer cup,
- tubing, and
- a mask or mouthpiece.

Compressors come in different sizes and shapes. Some are small and fit in the palm of your hand. Others are the size of a telephone book. Some of the newer devices on the market don't require a compressor. They are small, electronic nebulizers that force the liquid drug through a vibrating mesh, creating a dense aerosol that you inhale.

A compressor takes air from the room. It compresses that air and forces it through the tubing to the nebulizer's cup where the medicine is placed. The air from the compressor pulls the medication inside the nebulizer, to spatter and create a fine mist. A mouthpiece or a mask is attached to the nebulizer. The medication reaches your lungs when you breathe in through the mask or mouthpiece.

**Not all compressors or nebulizers are the same.** Some compressors are stronger, some are weaker. Some nebulizer cups—such as those used in the hospital—are made to be thrown away after a couple uses.

Other nebulizer cups are made to last six to twelve months. These are called *durable* nebulizers. Some of these can be boiled or

put in the dishwasher, which makes cleaning and disinfecting easy. If you use your nebulizers frequently, or have multiple medications to put into the nebulizers, consider using nebulizers that are durable.

### BUYING A COMPRESSOR

When your doctor writes you a prescription for a compressor/nebulizer, **make sure your doctor specifies which one to buy.** When inhaled drugs are being tested, they are tested with *specific* compressors and nebulizers. This is especially true for the vibrating mesh nebulizers. In particular, the eFlow SCF may deliver a higher dose than a 'regular' nebulizer (eg, a Pari or Pulmoaide) due to greater efficiency in drug particle delivery to the lungs. The drug manufacturer sometimes recommends which compressors and nebulizers are best to use with its medicine. Be sure the company you buy it from doesn't switch to give you another make or model. **Do not accept a substitute, and report it to your doctor immediately if a change is suggested.**

### CLEANING RESPIRATORY EQUIPMENT

**It is very important to keep your respiratory equipment clean,** especially the parts that come in contact with your mouth or nose. By keeping them clean, you can avoid getting infections.

#### Compressor Cleaning

Follow the manufacturer's recommendation when cleaning the outside of the

compressor. Make sure it is kept clean and in good working order.

Almost all compressors have a **filter** that cleans the air before it goes into the nebulizer and mixes with the medication. **Always follow the manufacturer's recommendations.** How long the compressor will last can depend on how often you change the filter, especially when it becomes dirty.

Check the filter more often if you:

- live in a house where smoking is allowed,
- live near a freeway, train tracks or a refinery, or
- rely on open windows in your home for ventilation.

A dirty filter makes the machine work harder: this can make treatments take longer, and also eventually can burnout the motor in the compressor.

Nebulizers also need to be cleaned and disinfected.

#### Nebulizer Cup Cleaning

**It is important to clean and air dry the nebulizer after each use. Always follow the manufacturer's instructions.**

Follow these steps:

1. Wash your hands first.
2. Clean the nebulizer before disinfecting it. Take the nebulizer apart, being careful not to loose or damage any parts. Clean the nebulizer inside and out with liquid dish soap and hot water, then rinse. **Do not**

**wash the nebulizer tubing.** If moisture gets into the tubing, attach the tubing to the compressor *without* the nebulizer attached, and turn the compressor on for a few minutes. This should blow any moisture out of the tubing.

### **Nebulizer Cup Disinfecting**

**Important:** The U.S. Centers for Disease Control and Prevention (CDC) and the Healthcare Infection Control Practices Advisory Committee (HICPAC) have modified the way we clean nebulizers.

**1. Always check the manufacturer's instructions.** Some *durable* nebulizers may be disinfected in boiling water, a microwave, or in a dishwasher.

Disinfection options are:

- Boiling in tap water for five minutes.
- Using dishwasher for 30 minutes, if the water is hotter than 158 degrees.
- Soaking in a solution of one part household bleach and 50 parts water for three minutes.
- Soaking in 70–90% ethyl or isopropyl alcohol (rubbing alcohol) for five minutes.
- Soaking in 3% hydrogen peroxide for 30 minutes.

After using bleach, alcohol or hydrogen peroxide, rinse the nebulizer well with sterile water. You can make sterile water by boiling your tap water for five minutes. Use this water once, and then throw it away. If you disinfect by boiling,

or use a dishwasher, you do not need to rinse.

2. Allow the nebulizer to air-dry completely on a clean, dry paper towel.
3. After fully dry, you can store the nebulizer in a ziplocked bag.
4. Replace the nebulizer when:
  - a. visible dirt, mold or flaking won't come off with cleaning, or
  - b. it leaks, cracks or gets discolored.



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*Prepared for the CTS Pediatric Committee  
by Tom Newton, RCP, RRT*

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### **Buying Equipment and**



### **Properly Cleaning It**

