

A nebulizer is a medication delivery system consisting of a nebulizer (small plastic bowl with a screw-top lid which holds the medication), a mouthpiece to inhale the medication and tubing to connect these to a compressed air machine. The air flow from the compressor to the nebulizer changes the medication solution placed in the cup to a mist. When inhaled correctly, the medication has a better chance to reach the small airways increasing the medication's effectiveness in relieving asthma symptoms. Infants and children under 5, patients who have problems using a metered dose inhaler and patients with severe asthma will often use nebulizers. There are many types and sizes of compressors. Some are portable allowing a patient to back-pack them to school, work or on vacations. Some rely on electrical power and others can be operated by battery. Ask your healthcare provider the type they recommend for you since some don't generate enough power to do their job properly.

A table-top nebulizer system



An example of a portable nebulizer



**HOW TO USE A NEBULIZER:** There are some basic precautions to follow before using that are common to most systems: 1) be certain the compressor is placed on a sturdy, solid surface (never rest it on a bed or soft surface while using it) before plugging it in and 2) don't use a nebulizer if drowsy or while sleeping. In general:

- ✓ attach one end of the plastic tubing to the outlet on the compressor BEFORE it is turned on and beginning the nebulizer assembly process
- ✓ ALWAYS wash hands well before handling either the medication or the nebulizer
- ✓ measure the prescribed amount of medication into the nebulizer cup
- ✓ attach the mouthpiece to the nebulizer medicine cup and the tubing to the nebulizer air intake valve
- ✓ if using a mask, attach the mask to the mouthpiece. If the patient is over 2 yrs old, try to use the mouthpiece rather than a mask: the mouthpiece delivers more medicine to the airways
- ✓ put the mouthpiece in your mouth and seal your lips tightly around it OR place the mask on your face. Hold the mask so that it covers both the nose and mouth. An elastic band can be used to hold the mask in place
- ✓ turn on the air compressor to start the medicine mist
- ✓ take slow, deep breaths in through the mouth. Hold each breath 1 to 2 seconds before breathing out
- ✓ continue deep breathing until the medicine is gone from the nebulizer cup, approximately 10 minutes or when the mist starts sputtering. Turn off the machine, disassemble and clean as directed

Using a nebulizer system



Using a nebulizer with a mask



**HOW TO CLEAN A NEBULIZER:** After each use, wash the nebulizer and mouthpiece in warm, soapy water and rinse well. Shake off excess water, air dry on a clean cloth or paper towel. Put the machine back together and re-connect to the compressor and run the machine for 10-20 seconds to dry the inside more quickly. Disconnect the tubing, store it in a sealable plastic bag and cover the compressor. **Most tubing should not be washed**, but follow your manufacturer's instructions. NEVER use or store the nebulizer if it's wet. After each use, wipe down the compressor with a soft clean cloth before storing for the next use.

If the nebulizer is used daily or several times a week, about once a week, the nebulizer should be cleaned more thoroughly in a vinegar and water solution. After using the system, first wash with a soapy water solution as normal, then rinse. Next, soak the nebulizer and mouthpiece for 30 minutes in a solution of 1 part distilled white vinegar and 2 parts distilled water. Throw this mixture away after each use. Rinse the parts well under warm running water for 1 minute. Shake off the excess water and dry on a clean cloth or paper towel. Reassemble the machine and run it for 10-20 seconds to dry the insides. Wipe down the compressor but never put it in water. Put the tubing into a sealable plastic bag, store the nebulizer when dried in another sealable plastic bag and cover the compressor during storage. Check the manufacturer's directions for care of the compressor itself.