

Let's Talk About...

Breathing treatment: Nebulizers

What is a nebulizer?

A nebulizer is a machine that uses forced air to turn medicine into a fine mist. Your child then breathes the mist into their lungs.

A nebulizer has four parts:

- Compressed air machine
- Cup to hold the medicine
- Thin plastic tube from the compressed air machine to the medicine's cup
- Mouthpiece or face mask with exhalation port to help breathe in the mist

Why does my child need a nebulizer?

Nebulizers allow your child to receive as much of the medicine as possible. Sometimes a nebulizer is the best way to receive inhaled medicine.

What types of medicines may be nebulized?

Different types of medicine can be nebulized, including medicine that:

- Opens the airways
- Thins and liquefy the mucus
- Decreases or kills certain bacteria in the lungs
- Decreases airway irritation

What is the right order for inhaled medicines?

Your child should use their inhaled medicines in this order:

- **Bronchodilators.** These medicines relax and open the airway muscles of the airways and help air flow better. They may also help your child clear mucus from their lungs.

- **Hypertonic saline.** Inhaling hypertonic saline will draw water onto the airway surface. Hydrating the airways helps the lungs move the mucus. Since hypertonic saline can cause a bronchospasm (tightening of the airways), your child should take a bronchodilator first.
- **dNase (pulmozyme).** Pulmozyme acts like scissors within the mucus, cutting up the DNA that makes the mucus thick and sticky. When the mucus is less thick and sticky, it is easier to loosen and cough out.
 - Perform the airway clearance technique (ACT).
- **Inhaled antibiotics.** After your child has cleared their lungs of loosened mucus, the inhaled antibiotic helps kill the remaining bacteria.
- **Inhaled steroids.** This medicine will help reduce swelling in the airways and should be taken last. Your child will need to rinse and spit or wipe their face with a damp cloth (if using a mask) after taking the inhaled steroid.



How do I use a nebulizer?

Your healthcare provider will give you specific instructions for your nebulizer. Here are some general instructions:

- Clean your hands.
- Fill the medicine cup with the amount of medicine prescribed.
- Connect the machine tubing.
- Have your child sit upright so they can take deep breaths.
- While you hold the medicine cup up, put the mouthpiece in your child's mouth. If your child is too young for the mouthpiece, place the mask on your child's face to create a seal.
- Turn the machine on.
- Have your child breathe deeply and slowly through their mouth.
- Once the medicine begins to sputter, continue for about 1 minute. After 1 minute, the treatment is over.
- Clean and disinfect the nebulizer.

How can I help my child adjust to a nebulizer with a mask?

Let your child play with the mask by putting it over their face, on your face, or on a doll's. If your child is old enough, ask them to hold the mask during the treatment.

If your child does not hold still while using the mask, give them a treat or distract them with a story, toy, or music. You may need to gently hold your child during their treatment.

How do I clean and disinfect my child's nebulizer?

You need to clean the nebulizer parts and mask (if you use it) right after use. You don't need to clean the thin plastic tube from the compressed air machine to the nebulizer cup.

Take the nebulizer apart. Wash the inside and outside of the nebulizer parts with liquid dish soap and hot water. Then rinse the parts with water.

To disinfect the nebulizer parts (and mask, if you use it), use one of these options:

- Boil the parts for 5 minutes.
- Put the parts in the dishwasher if the water is hotter than 158 degrees F for 30 minutes.
- Use an electric steam sterilizer.

Air-dry the nebulizer parts on a clean surface covered with new paper towels. Replace wet paper towels with dry ones as needed until all parts are fully air-dry.

How often do I replace my nebulizers, compressor filter, and tubing?

Most nebulizers and compressor filters need to be replaced every 6 months. Check with your child's healthcare provider to see how often to replace your nebulizers, filter, and tubing.

What else do I need to know about inhaled medicines?

- Do not mix medicines in the same nebulizer unless they are compatible.
- Use separate nebulizers for each prescribed medicine.
- Store the medicines as your child's healthcare provider tells you.
- Ask your child's healthcare provider about possible side effects. These include:
 - Bronchospasm
 - Hoarseness or voice changes
 - Increased cough or secretions
 - Sore throat
 - Loss of taste or hearing

