Let's Talk About...

High-frequency oscillatory ventilation (HFOV)

High-frequency oscillatory ventilation (HFOV) is a special way of breathing for a patient who needs a breathing machine. This method is used for infants and children who have severe lung disease.

How does HFOV work?

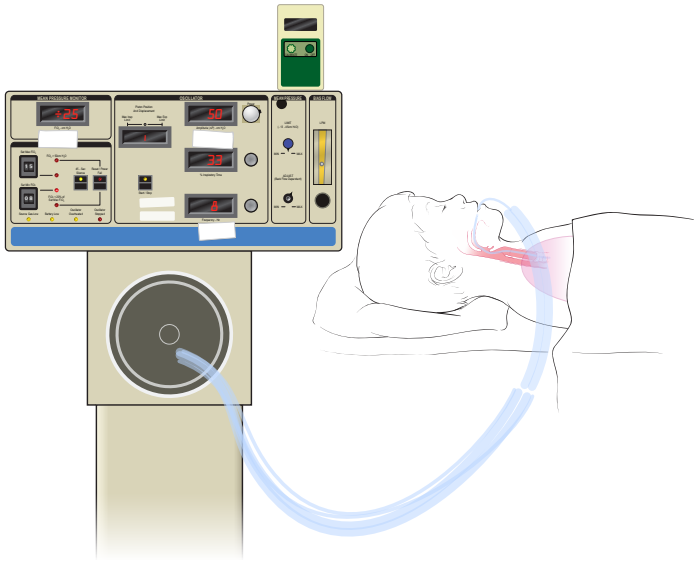
HFOV works differently than ordinary breathing machines (ventilators), which breathe in and out for a person. An HFOV machine gives your child very fast, tiny breaths through an endotracheal tube. This tube is inserted from the mouth to the lungs. When your child receives HFOV, their chest looks like it is vibrating.

Breathing allows air to move in and out of the lungs. Oxygen gas enters the body through the lungs, and carbon dioxide gas leaves the body. This is called gas exchange. During HFOV, vibrations move air around in the lungs so this gas exchange can happen. It also creates a constant pressure that keeps the lungs open. This helps oxygen enter the body.

Why does my child need HFOV?

Your child's healthcare provider may recommend HFOV if your child has/is:

- Severe lung disease and needs a lot of support from a regular ventilator
- Receiving high pressure to push the air into their lungs with a conventional ventilator



- Born prematurely and HFOV can reduce the risk of lung damage
- Acute respiratory distress syndrome (ARDS)
- Air leak syndrome (holes in the lung)
- Severe pneumonia or other severe infections

Why is HFOV used?

If your child has used a conventional ventilator for a long time, high pressure and larger breaths can injure the lungs. HFOV uses a constant pressure to keep the lungs open and prevent them from collapsing. It gives your child small, fast breaths so there is less lung injury.

Terms to know when my child receives HFOV	Definition
Mean airway pressure (MAP)	The pressure used to keep the lungs open. It helps bring oxygen to the lungs.
Amplitude	This is a measurement of how big the breaths are. This helps take carbon dioxide away from the lungs.
Hertz	This is how fast the vibrations are, measured in vibrations per second. For example, 10 hertz is the same as 10 vibrations per second (or 600 vibrations per minute).
FiO2	The Percentage of oxygen given to your child. Normal oxygen in the air is 21%.

How do I care for my child while they have HFOV?

Your child will have pain and sedation medicines to keep comfortable while they receive HFOV. They may not be able to bathe, turn, or hold objects well during this time. Your child often receives nutrition from a feeding tube as well. Eating normally will not be possible until the breathing tube is removed. Ask your child's healthcare provider how you can help care for your child.

When will my child use a conventional ventilator again?

Your child's healthcare providers will watch the pressure your child needs to breathe. When the ventilator pressure is low enough and the oxygen levels are steady, your child may be able to use a conventional ventilator. You may also learn that your child no longer needs a ventilator. In that case, the healthcare team would reduce the level of lung support.

Notes

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