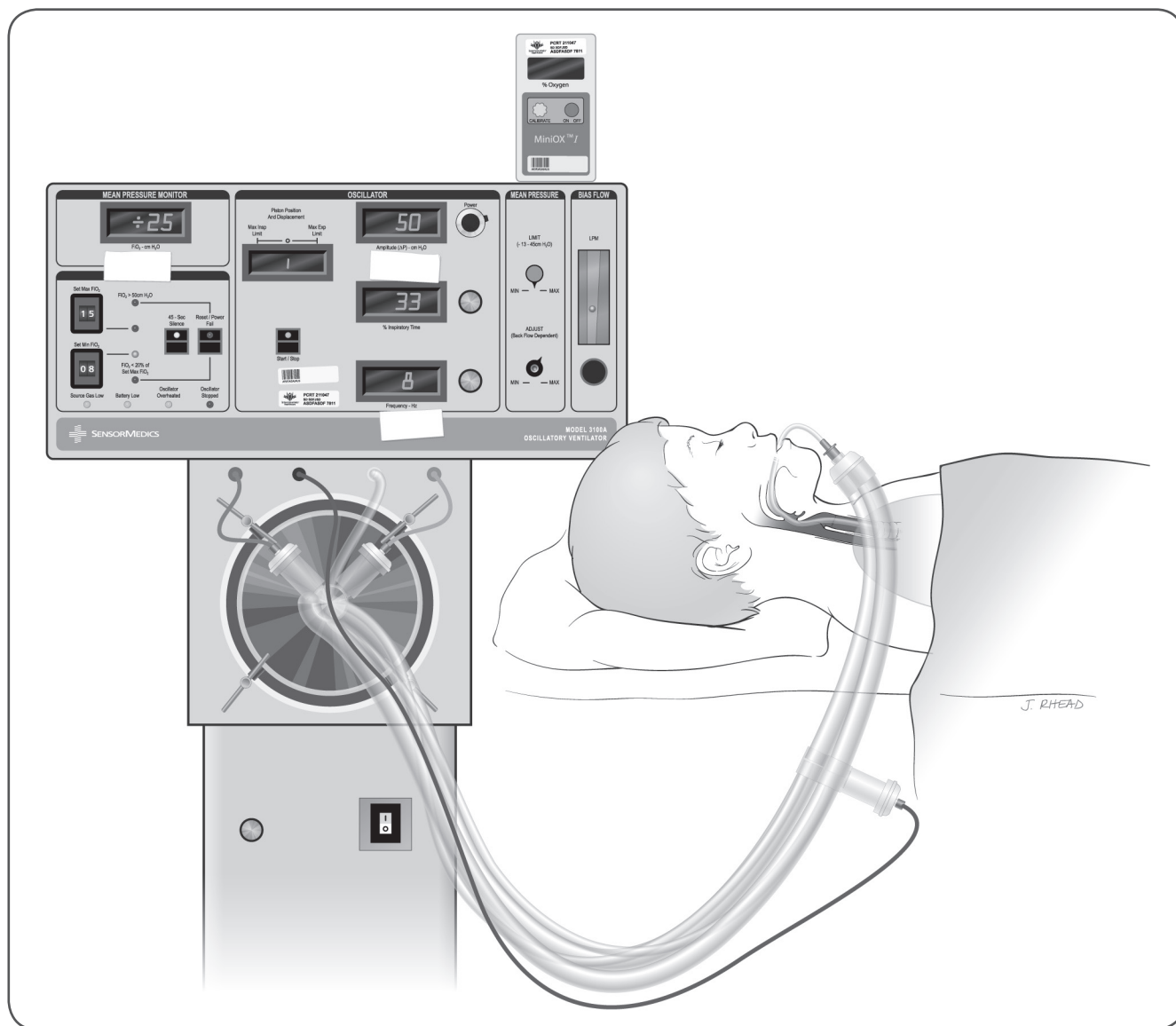


Let's Talk About...

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 with infants and children who have severe lung disease. Ordinary breathing machines (or ventilators) breathe for a person much like we breathe: in and out. HFOV works differently than conventional ventilators by giving very fast tiny breaths. It makes the chest look like it's vibrating. The machine gives the breaths to the child through an endotracheal tube, a special tube inserted from the mouth to the lungs.

The purpose of breathing is to get air in and out of the lungs. Oxygen gas enters the body through the lungs and carbon dioxide gas is cleared out. This is called "gas exchange." The vibrations move air around in the lungs so this "gas exchange" can happen efficiently. It also creates a constant pressure that keeps the lungs open. This helps oxygen enter the body.

Who receives HFOV?

Patients with severe lung disease who need a lot of support from a regular ventilator may benefit from HFOV. Your child's doctor may choose HFOV if your child is receiving high pressure to push the air into your child's lungs with a conventional ventilator. Premature newborn patients may receive HFOV to reduce the likelihood of lung damage. Other patients who may receive HFOV have acute respiratory distress syndrome (ARDS), air leak syndrome (from holes in the lung), severe pneumonia, or other severe infections.

Why is HFOV used?

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

Patient care while on HFOV:

While on HFOV, your child will have pain and sedation medications to keep comfortable. Activities such as bathing, turning and holding may be limited due to patient tolerance. Ask your healthcare provider how you can participate in your child's care. Often nutrition is provided from a feeding tube. Oral intake will not be possible until the breathing tube is taken out.

When will my child change back to a conventional ventilator?

The doctors, nurses, and respiratory therapists will watch the pressure that your child needs to breathe. When the ventilator pressure is low enough and the oxygen levels are steady, the healthcare team will consider changing to the conventional ventilator. It could be that your child doesn't need a ventilator anymore. In that case, the healthcare team would reduce the level of lung support.

Terms to know:

- **Mean Airway Pressure (MAP):** The pressure used to keep the lungs open. This helps bring oxygen to the lungs.
- **Amplitude:** How big the breaths are. This helps take carbon dioxide away from the lungs.
- **Hertz:** How fast the vibrations are. It is measured in vibrations per second. For example, 10 hertz is the same as 10 vibrations in a second or 600 vibrations in a minute.
- **FiO₂:** This is the percentage of oxygen given to your child. Normal oxygen in the air is 21%.