

# UNDERSTANDING Hypoxic Respiratory Failure

# HRF



## Why is my baby having trouble breathing?

Babies breathe to fill their lungs with air. The lungs move oxygen from the air into the blood through tiny sacs called **alveoli**. The body needs oxygen to stay alive.

Some babies are born with lungs that don't work well. One problem is called **hypoxic respiratory failure**, or **HRF**. It means that the baby isn't getting enough oxygen into the blood.

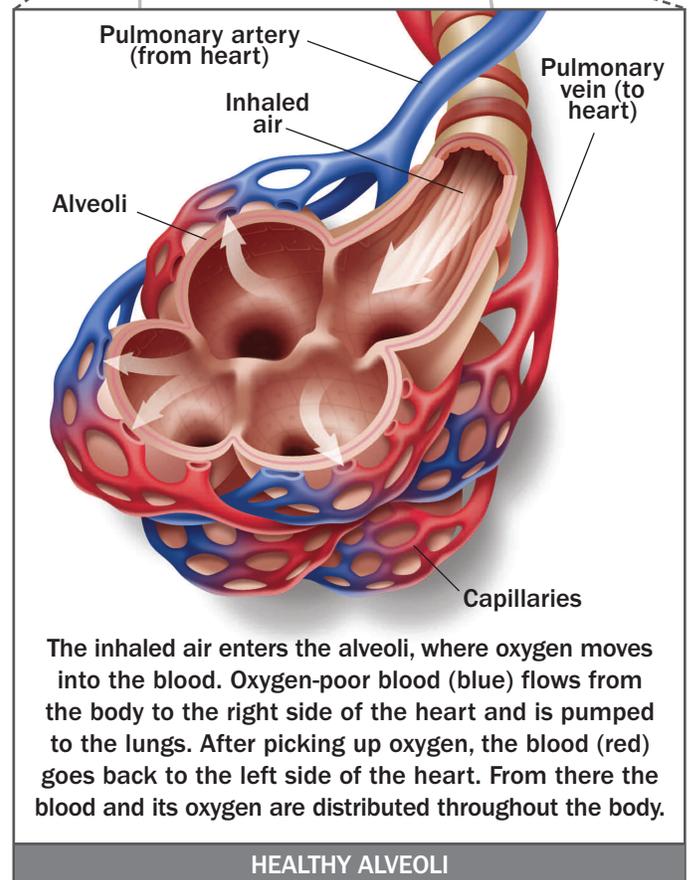
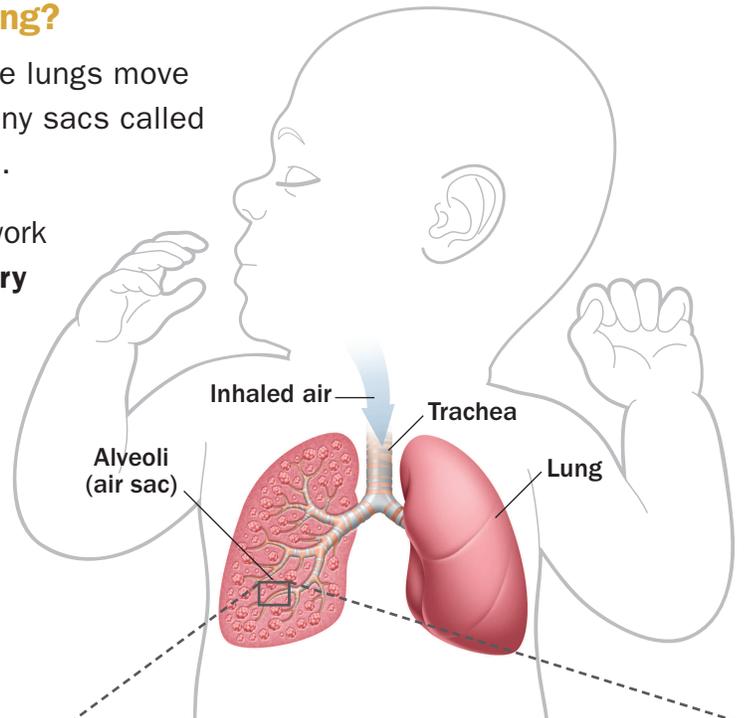
## What causes HRF?

HRF can be caused by many things. Examples are:

- **Meconium aspiration** – infant breathes in a mixture of stool (meconium) and amniotic fluid around the time of delivery
- **Pneumonia** – lung infection
- **Sepsis** – infection throughout the body
- **Respiratory distress syndrome** – baby's lungs don't make enough surfactant. This liquid helps keep the alveoli open so that oxygen can be used
- **Hernia in the diaphragm** – hole in the diaphragm, which is a muscle that helps the lungs do their job
- **PPHN (persistent pulmonary hypertension of the newborn)** – high blood pressure in the lungs

## How common is HRF?

HRF affects about 18 in 1000 babies born in the United States.\* It is more common in babies who are born prematurely.



\*As measured by overall rate of mechanical ventilation

# Treating Hypoxic Respiratory Failure

## What treatment will my baby receive?

Treatment will vary based on the cause of HRF and how your baby is doing. Possible treatments include:

- **Extra oxygen** – usually given through a nose tube or a mask
- **CPAP (continuous positive airway pressure)** – a treatment that uses mild pressurized air to keep the lungs open
- **Mechanical ventilation** – a machine that helps your baby breathe using a tube. The tube goes through the baby's nose or mouth and into their throat
- **Surfactant** – a liquid that helps keep the alveoli open. It is used for babies with respiratory distress syndrome, one cause of HRF
- Inhaled, intravenous (IV), and oral treatments to improve how the lungs work
- **Antibiotics** – medicines that fight infections

## How will I know how my baby is doing?

Your health care team will keep you up-to-date on your baby. They have several ways to measure breathing and lung health, including:

- **Vital signs** – heart rate, breathing rate, blood pressure, and oxygenation saturation
- **Settings on the mechanical ventilator** – level of breathing support
- **Oxygenation index** – a formula that the health care team uses to measure how well the baby's lungs are working

## What will happen next?

Many babies respond well to treatment for HRF. Each baby is different. Talk to the health care team. They can answer any questions you have about your baby.

## Glossary

**Alveoli** – tiny sacs in the lungs that move oxygen from the air into the blood

**ECMO (extracorporeal membrane oxygenation)** – machine that temporarily does the work of the baby's lungs so they can heal. ECMO requires surgery and can only be done at some hospitals

**HRF (hypoxic respiratory failure)** – baby is not getting enough oxygen

**Mechanical ventilator** – a machine that helps your baby breathe by pushing air in and out of the lungs

**Oxygenation index** – formula the health care team uses to measure how well the baby's lungs are working

**PPHN (persistent pulmonary hypertension of the newborn)** – high blood pressure in the lungs

**Surfactant** – liquid that helps keep the alveoli open so that oxygen can be used

**Ask the health care team when you have questions—they are there to help.**

## NOTES:

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