

Respiratory Distress Syndrome (RDS) - Newborn

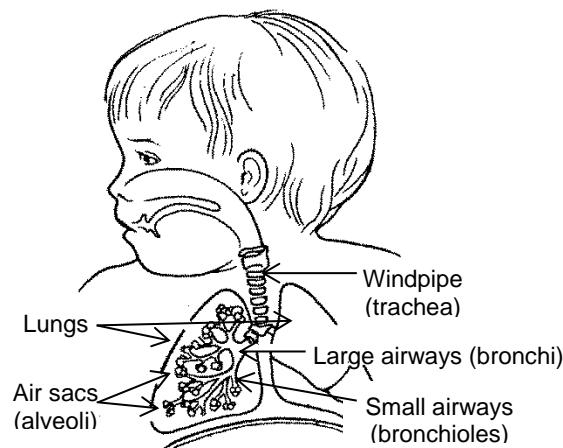
RDS stands for "respiratory distress syndrome." It occurs in premature babies whose lungs are not fully developed. The earlier the infant is born, the more likely it is for the baby to have RDS and to need extra oxygen and help breathing.

RDS is caused by the baby not having enough surfactant in the lungs. Surfactant is a liquid made in the lungs at about 26 weeks of pregnancy. As the fetus grows, the lungs make more surfactant.

Surfactant coats the tiny air sacs in the lungs and helps to keep them from collapsing (Picture 1). The air sacs must be open to allow oxygen to enter the blood from the lungs and carbon dioxide to be released from the blood into the lungs.

While RDS is most common in babies who are born early, other newborns can get RDS. Those at greater risk are:

- White babies
- Male babies
- Sibling with RDS infection
- Twin or multiple births
- Perinatal asphyxia (not enough oxygen before, during, or after birth)
- Cold, stress or hypothermia. Baby cannot keep body temperature warm at birth.
- Baby is born with a heart defect called patent ductus arteriosus
- C-section delivery
- Mother has diabetes
- Infection



Picture 1. Inside the lung, surfactant keeps the tiny air sacs open.

Signs and symptoms

Babies who have RDS may show these signs:

- Fast breathing very soon after birth
- Blue colored lips, fingers and toes
- Chest retractions: Skin over the breastbone and ribs pulls in during breathing
- Grunting: "Ugh" sound with each breath
- Flaring (widening) of the nostrils with each breath

Diagnosis

The diagnosis is made after examining the baby and seeing the results of chest X-rays and blood tests. Sometimes an echocardiogram using soundwaves is done to learn if there are heart defects. See Helping Hand, HH-III-114, *Echocardiogram* for more information.

Treatment

Oxygen: Babies with RDS need extra oxygen to stay pink. It may be given in several ways:

- Nasal cannula. A small tube with prongs is placed in the nostrils.
- CPAP (Continuous Positive Airway Pressure). This is a machine that gently pushes air or oxygen into the lungs to keep the air sacs open.
- Ventilator for severe RDS. This is a machine that helps the infant breathe when he or she cannot breathe well enough without help. A breathing tube is put down the infant's windpipe. This is called *intubation* (in too BAY shun). The infant is then placed on the ventilator to help him to breathe.

Surfactant: Surfactant can be given into the baby's lungs to replace what he does not have. This is given directly down the breathing tube that was placed in the windpipe.

IV (intravenous) catheter treatments: A very small tube called a *catheter* is placed into one or two of the blood vessels in the umbilical cord. This is how the infant gets IV fluids, nutrition and medicines. It is also used to take blood samples.

Medicines: Sometimes antibiotics are given if an infection is suspected. Calming medicines may be given to help ease pain during treatment.

What to expect

The road to recovery is different for each infant. Often RDS gets worse before it gets better. Some babies need more oxygen than others. Some may require a treatment of surfactant. As the baby is able to breathe better, he may need less oxygen and other help to breathe.

How to know if your infant is getting better

Here are some signs that your baby is getting better:

- Your baby will breathe easier and more slowly. He will look more comfortable breathing.
- The infant will need less oxygen.
- If your infant is on CPAP or a ventilator, the settings on the machine are being decreased. After a while, help from the machines will no longer be needed.



