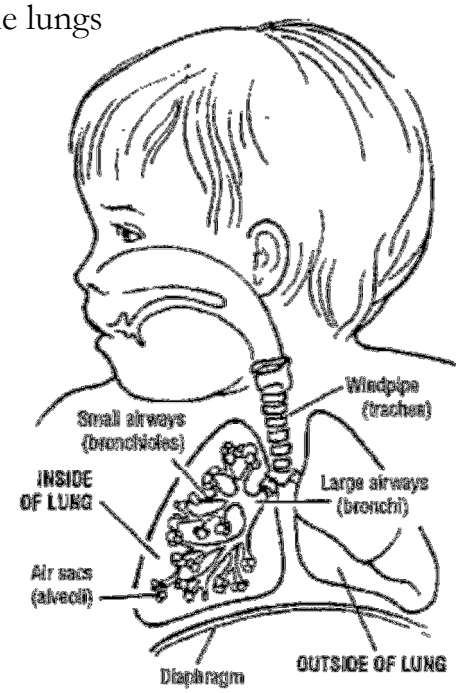
Respiratory Distress Syndrome (RDS) - Newborn

RDS stands for "respiratory distress syndrome." It is the most common lung disease in premature infants and it occurs because the baby's lungs are not fully developed. The more premature the infant, the more likely it is for the baby to have RDS.

RDS is caused by not having enough surfactant in the lungs. Surfactant is normally produced by healthy lungs. It spreads like a thin film over the tiny air sacs in the lungs and helps to keep the air sacs open (Picture 1). The air sacs must be open for proper breathing to allow oxygen to enter the blood from the lungs and carbon dioxide to be released from the blood into the lungs.



Picture 1. Surfactant keeps the tiny air sacs open.

Signs and Symptoms

Babies who have RDS may show these signs:

- Fast breathing
- Retractions (The skin pulls in between the ribs or under the rib cage during fast and hard breathing)
- Grunting (an "Ugh" sound with each breath)
- Flaring (widening) of the nostrils with each breath
- Baby needs extra oxygen to keep the skin pink.

Diagnosis

The doctor will order chest X-rays to be done. The diagnosis of RDS is made after studying the X-rays and examining the baby.

Treatment

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

- By nasal cannula (A small tube that carries oxygen is placed in the nose.)
- By placing a plastic hood over the baby's head and chest.
- By CPAP (*Continuous Positive Airway Pressure*). This is oxygen that is given with a small amount of pressure through tubes placed in the nose.

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Treatment, continued

- A breathing tube may be inserted into the infant's windpipe. This is called *intubation* (in too BAY shun). It may be needed if the infant is not breathing well enough on her own. Once the breathing tube is in, the infant is placed on a breathing machine (ventilator) to help him to breathe.

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

Tubing into a blood vessel - A very small tube called a *catheter* is placed into one or two of the blood vessels in the umbilical cord. The tube may be a UAC (*umbilical arterial catheter*) or a UVC (*umbilical venous catheter*). This is done to give the infant IV fluids, nutrition and medicines. It is also be used to take blood samples from the infant to see how well the lungs are working.

What to Expect

The road to recovery is different for each infant. Some babies need more oxygen than others. Some require several doses of surfactant. It's important to remember RDS sometimes gets worse before it gets better.

Recovery may be slower if the infant:

- Is very tiny (weighed less than 2 1/2 pounds at birth).
- Has an infection.
- Has severe disease to start with (needed a lot of oxygen and a ventilator).
- Has other problems, lung problems.

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 or she will look more comfortable breathing.
- The infant will need less oxygen. The goal is to get to the oxygen content of room air, or 21%.
- If your infant is on CPAP or a ventilator, the settings on the machine are being decreased. After a while, it will no longer be necessary.

Possible Long-Term Effects

Children who have had RDS as infants may:

- Have more severe colds or other respiratory infections, especially for the first two years of life.
- Be more sensitive to lung irritants like smoke and air pollution.
- Have injury and scarring of the lungs called BPD (bronchopulmonary dysplasia), if the RDS was severe.

We know this is a difficult time for you and your family. If you have any questions about your baby's care and treatment, please be sure to ask your doctor or nurse.