

How Surfactant Helps Your Baby's Lungs

To learn how surfactant helps your baby, you will need to know what these words mean:

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| Alveoli | Alveoli are tiny air sacs in the lungs. Alveoli fill up or expand when air goes into the lungs. When air leaves the lungs, the alveoli become smaller, but do not collapse. In these tiny air sacs the baby's blood gets oxygen. |
| Blood gas | Blood gas is the name of a blood test that shows how well your baby's lungs are working. |
| Ductus Arteriosus | <p>The ductus arteriosus is a connection between 2 large blood vessels near the heart. After birth, the ductus should close.</p> <p>When the ductus is open, 2 things can happen:</p> <ul style="list-style-type: none"> • too much blood may be pumped to the lungs, making it hard to breathe • the body may not have enough oxygen |
| Endotracheal tube or ETT | The endotracheal tube is a small plastic tube which is passed through the baby's nose or mouth into the trachea or windpipe. Air, oxygen and some medications can be put into the baby's lungs through this tube. |
| Surfactant | Surfactant is a fatty substance that coats the inside or lining of the alveoli in the lungs. Surfactant can be put into the ETT tube so it can be moved down into the baby's lungs. |
| Premature | Babies born earlier than 37 weeks gestation are called premature. |
| Ventilator | The ventilator is a machine that helps babies breathe. The ventilator blows oxygen into the lungs while giving breaths. Between breaths, the ventilator keeps the alveoli in the lungs slightly open, so that they do not collapse. |

What does surfactant do?

Surfactant is a coating on the inside, or lining of the alveoli. This coating makes it easier for the alveoli to expand during breathing. It also keeps the alveoli from collapsing and sticking together when air leaves the lungs.

Surfactant is naturally made in the lungs between 24 and 35 weeks gestation. This is between the 6th and 8th months of pregnancy. By 35 weeks, most babies have enough surfactant to breathe well.

What happens if my baby is born prematurely?

If your baby is premature or born early, he or she may not have enough surfactant in the lungs to breathe well. The surfactant coating may be uneven or patchy. When your baby breathes out, the alveoli may collapse and stick together. With each breath the baby must work very hard to open the alveoli. This makes it harder for your baby to breathe.

Giving your baby extra surfactant will even out the coating in the alveoli. This will keep the alveoli from collapsing, making breathing easier.

How is surfactant given?

Surfactant is a man-made powder that is mixed with sterile water to make a liquid. A doctor uses a syringe to put this liquid into your baby's ETT. The ventilator moves this liquid down into the baby's lungs. While the surfactant is given, your baby is turned from side to side. This makes sure that the surfactant gets to all areas of the lungs.

What are the signs that surfactant has helped my baby?

Signs that surfactant is helping are:

- your baby breathes easier
- your baby needs less oxygen
- the ventilator does less work for your baby
- x-rays show the alveoli are even in size and shape
- blood gases show your baby's breathing is more effective

Does surfactant have any side effects?

Surfactant replacement can increase the chance that the ductus arteriosus remains open. This problem can be treated in the NICU.