

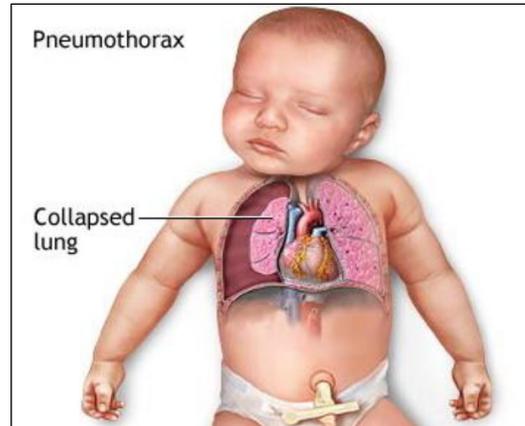


Pneumothorax

Parent/Caregiver/Whānau Information – Neonatal Services

The lungs are two cone – shaped organs, protected by a smooth covering called the pleura. Between the lung and the rib cage is a small space, called the pleural space.

A pneumothorax is when air is trapped in the pleural space, which adds an extra pressure on the lung(s), causing them to partially or fully collapse. This affects breathing as the lung is not able to expand. A pneumothorax usually occurs within the first 24-36 hours of life.



<http://www.nlm.nih.gov/medlineplus>

What causes a pneumothorax?

The most common cause of pneumothorax is respiratory distress syndrome (RDS). This is a condition that often occurs in pēpi/babies who are born too early (premature). The condition makes it hard for pēpi/babies to breathe due to:

- The pēpi/baby's lungs lack the slippery substance (surfactant) that helps them stay open. Therefore, the tiny air sacs are not able to expand as easily.
- If the pēpi/baby is put on a breathing machine (mechanical ventilator), there is extra pressure on the pēpi/baby's lungs, which can sometimes burst the air sacs. This is not so common now due to improved forms of mechanical ventilators.
- Meconium aspiration syndrome (MAS) is another cause of pneumothorax in newborn pēpi/babies. At the time of birth, the pēpi/baby may breathe a mixture of meconium (first stool) and amniotic fluid into the lungs. The meconium, which is very 'sticky' can trap air in the lung sacs causing them to become overdistended. This can cause breathing problems and sometimes mechanical ventilation support is required.
- Other causes include pneumonia (infection of the lung) or underdeveloped lung tissue.

Less commonly, an otherwise healthy infant can develop an air leak when he or she takes the first few breaths after birth. This occurs because of the pressure needed to expand the lungs for the first time. There may be genetic factors which lead to this problem.

Signs and symptoms can include:

- Fast breathing rate (over 60 breaths a minute)
- Noisy sounds (grunting) when pēpi/baby breathes out (exhales)
- Widening of nostrils with breathing (flaring)
- Skin pulling in between the ribs with each breath (retractions)
- Stopping of breathing briefly (apnoea)
- Slowing of heart rate (bradycardia)
- In some cases, pēpi/babies may have a bluish-purple looking skin (cyanosis)
- There may be a sudden increase in oxygen requirement

Some pēpi/babies have no symptoms.

To confirm a pneumothorax

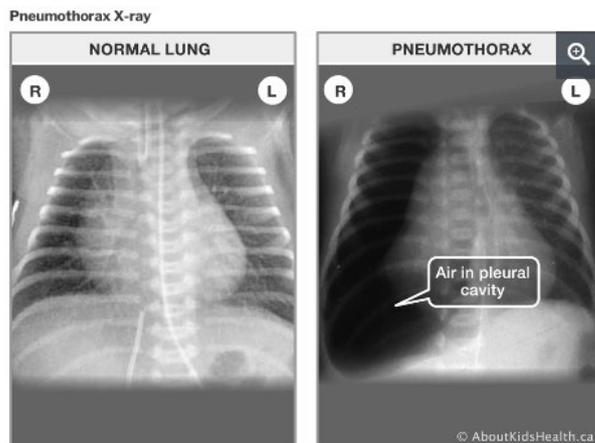
Transillumination

Sometimes, the room lights are dimmed, and a special light is placed on the pēpi/baby's chest. If a pneumothorax is present the chest 'lights up' on the affected side especially in premature, small pēpi/babies.



Chest radiographs (CXR)

See pictures below of CXR confirming a pneumothorax:



In the pneumothorax X-ray, there is increased blackness at the bottom of the right lung, and below the lung. The black appearance is due to the presence of free air within the cavity that surrounds the lung, known as the pleural cavity.

Treatment

Some pēpi/babies need no treatment and the air is absorbed in a few days.

In an emergency, if your pēpi/baby is having difficulty with breathing, the level of oxygen in the blood falls, circulation of blood is affected, the air must be removed quickly from the chest by using a needle and syringe, which is done at the bedside.

In some pēpi/babies, Doctors or Advance Neonatal Nurse Practitioners may need to place a plastic tube through the chest wall into the space between the lungs and the outside of the chest to drain off air from the lung. The tube will be held in place with small strips of tape and a clear dressing. The tube will be connected to a chamber and may have suction applied to help air/fluid to drain. The tube can often be removed in a few days.



In most cases, once an air leak is treated, there are no lasting problems.

For more information about:

hospital and specialist services, go to www.cdhb.health.nz | your health and medication, go to www.healthinfo.org.nz