

FACTSHEET

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Chronic neonatal lung disease

What is chronic neonatal lung disease?

Chronic neonatal lung disease (CNLD) is a general term for persisting respiratory problems in premature babies. It can mean the baby has a need for prolonged oxygen therapy and has changes on a chest x-ray. It is sometimes called bronchopulmonary dysplasia (BPD).

What causes chronic neonatal lung disease?

Most babies with CNLD are born prematurely. The lungs of premature babies are underdeveloped, fragile and are easily damaged. CNLD results from injury to the developing lungs of premature babies. With injury, the airways inside the lungs become inflamed and can become damaged. This damage can cause difficulty breathing, more rapid breathing and the baby to need more oxygen. Some of the causes of lung injury include:

- Prematurity - the lungs, especially the air sacs, are not fully developed
- Oxygen use - large amounts of oxygen can damage the cells of the lungs
- Mechanical ventilation - the air pressure from breathing machines
- Infection - in the lungs (pneumonia) or a general infection
- Chest wall or muscle weakness
- Inhaling secretions, saliva or feeds which can damage the airways ["aspiration"]

Who is affected by chronic neonatal lung disease?

Risk factors for developing CNLD include:

- Preterm delivery, the earlier in pregnancy the greater the risk
- Birth weight less than 1500 grams
- Maternal womb infection (Chorioamnionitis)
- Patent ductus arteriosus (PDA) - a connection between the blood vessels of the heart and lungs that does not close as it should after birth
- Infants with small lungs ["Pulmonary hypoplasia"]
- Male babies.

What are the symptoms of chronic neonatal lung disease?

The following are the most common symptoms of CNLD. Your baby may have some or all of the symptoms -

- Respiratory distress (quick shallow breathing, flaring of the nostrils, chest wall retractions)
- Continued need for respiratory support (mechanical ventilation or CPAP) or oxygen after a premature baby reaches the equivalent of 36 weeks gestation [a month before the due date].

How is chronic neonatal lung disease diagnosed?

CNLD is diagnosed when a premature baby with breathing problems continues to need respiratory support [eg Continuous positive airways pressure “CPAP”] and/or additional oxygen after reaching 36 weeks gestation. The x-rays of babies with severe CNLD often have a bubbly appearance with over expanded lungs.

Treatment of neonatal chronic lung disease:

Treatment for CNLD is determined by your baby's doctor based on:

- Your baby's gestational age, overall health, and other medical issues
- Severity of the disease
- Your baby's response to certain medications, procedures, or therapies
- Presence of complications such as reflux and aspiration, pulmonary hypertension or sleep disordered breathing
- How much oxygen your baby needs and how long he/she has needed it

Treatment of CNLD may include:

- Extra oxygen (to make up for the decreased breathing ability of the damaged lungs)
- Breathing support (CPAP) with gradual weaning as the baby's lungs grow
- Medications, such as puffers, which may help to open the airways (bronchodilators) or reduce inflammation (steroids)
- Limiting amounts of fluids and giving a medication (diuretic) to help the baby pass any excess fluid which can worsen breathing
- Increased nutrition (to help the baby and the lungs grow)
- Immunisation against lung infection by respiratory syncytial virus (RSV).

CNLD can be a long-term condition. Some babies with CNLD require extra oxygen support for several months. Some babies will continue to require oxygen when they go home from the hospital. Most babies who go home on oxygen won't need it anymore by the end of their first year of life. Babies with CNLD may have a higher risk of respiratory infection and may have to be re-hospitalised- the most likely reason being for a viral chest infection called bronchiolitis.