

# FACTSHEET



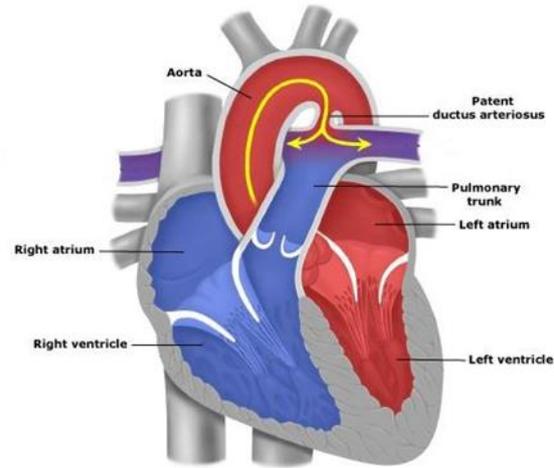
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## Patent ductus arteriosus in the premature infant

### What is ductus arteriosus?

The ductus arteriosus (DA) is an opening between two of the major blood vessels of the heart. When your baby is still inside the womb, the placenta does the work of exchanging oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) through the mother's circulation. The baby's lungs are not used for breathing.

The ductus arteriosus is a blood vessel that joins two of the major arteries (the aorta and the pulmonary artery) that are connected to the heart in the unborn fetus. It allows most of the blood from the heart to bypass the lungs, as a foetus does not need its lungs for breathing.



### What is patent ductus arteriosus (PDA)?

Once your baby is born and the lungs fill with air, the ductus arteriosus normally closes within a few days. In some babies, however, the ductus arteriosus remains open (patent) which can lead to problems of fluid overload in the heart and lungs.

Sometimes the DA does not close, especially in very preterm babies. The PDA is called "persistent ductus arteriosus" if it remains open after the time of its expected closure which normally occurs 1-3 days after birth in a term baby.

### How common is PDA?

PDA is a common problem in premature infants. Up to 60% of infants born at less than 28 weeks' gestation, have a PDA.

### What are the signs and symptoms of PDA?

Some babies with a PDA develop signs of overfilling of the lungs ("wet lungs") due to shunting across the PDA and recycling of the blood through the lungs. These signs may include: fast breathing, working hard to breathe, or the need for increased breathing support. A heart murmur may be the only sign that a baby has PDA. A heart murmur is an extra or unusual sound heard during the heartbeat. Sometimes babies will develop low blood pressure (hypotension).

### How is PDA diagnosed?

PDA is diagnosed by Doppler echocardiography (echo). An echo is a painless test that uses sound waves to create a moving picture of your baby's heart. This is very similar

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to the ultrasound scans done on the mother during pregnancy.

### What is the treatment of PDA?

The goal of treatment is to help close the PDA and to support your baby with treatments that counteract the effects of the PDA (careful fluid management, CPAP, diuretics) until closure occurs. The decision to treat the PDA depends on the size of the duct and the clinical condition of your baby. Small ducts may not need treatment and usually close without specific medical treatment.

#### Specific treatment for PDA:

In premature babies, an anti-inflammatory drug called ibuprofen may be used. Ibuprofen has been shown to be effective in closing the PDA. Sometimes a few courses of the medication may be needed if the PDA fails to close or re-opens again.

If a PDA does not respond to medication, or is due to causes other than prematurity, surgery may be needed. This surgery is called ligation and involves placing a suture or clip around the ductus to close it.

### Prognosis and Long Term Outcome

Most babies tolerate the PDA and its treatments well. The long term outcome is more dependent on the age and birth weight of your baby. The need for surgery does have impact on the long term neuro-developmental outcome of preterm babies. There is no significant inheritance pattern for PDA.

#### For further information:

**National Heart Lung and Blood Institute:**

[www.nhlbi.nih.gov/health/dci/Diseases/pda/pda\\_what.html](http://www.nhlbi.nih.gov/health/dci/Diseases/pda/pda_what.html)

**Medscape**

[www.emedicine.medscape.com/article/759542-overview](http://www.emedicine.medscape.com/article/759542-overview)