

# Patent Ductus Arteriosus (PDA)

## WHAT IS IT AND HOW DOES IT AFFECT THE HEART?

The ductus arteriosus is a normal fetal artery connecting the main body artery (aorta) and the main lung artery (pulmonary artery).

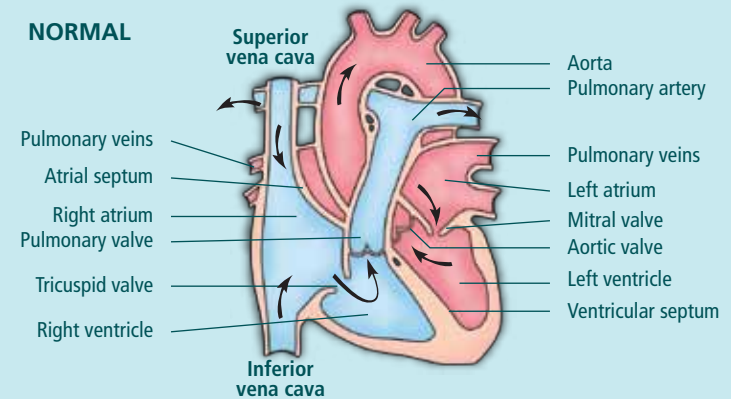
Every baby is born with a ductus arteriosus. It usually narrows and closes within the first few days after birth.

Sometimes, the ductus doesn't close after birth. Failure of the ductus to close is common in premature infants but uncommon in full-term babies. Some children can have other heart defects associated with the PDA.

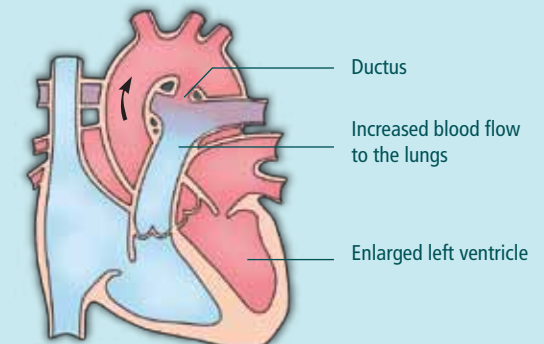
In PDA, extra blood is pumped from the body artery (aorta) into the lung (pulmonary) arteries.

If the PDA is large, the extra blood is being pumped into the lung arteries makes the heart and lungs work harder and the left heart gets enlarged and the lungs can become congested.

### NORMAL



### PERSISTENT DUCTUS ARTERIOSUS



## HOW WOULD PDA AFFECT MY CHILD?

If the PDA is small, it won't cause symptoms because the heart and lungs don't have to work extra hard. The only abnormal finding may be an audible cardiac murmur.

If the PDA is large, symptoms may occur several weeks after birth. The common symptoms are breathing difficulty, trouble feeding and poor weight gain. The symptoms are due to excessive blood is being pumped to the lungs.

## WHAT WILL HAPPEN TO MY CHILD IF UNTREATED?

If the PDA is small, the child will have no symptoms as the heart and lungs don't work harder. However there is a small risk of infection at the PDA if it is associated with an audible heart murmur.

If the PDA is large, the affected child will have persistent heart failure and high lung pressure due to excessive blood flow to the lungs. Overtime this causes permanent damage to the lung blood vessels.

## HOW CAN IT BE TREATED?

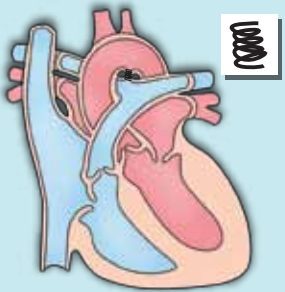
If the PDA (ductus) is small, no intervention is needed during infancy PDA usually closes on its own during first few months of life. However any audible PDA persists beyond infancy should be closed to prevent infection at the ductus.

PDA may be closed by device or coil occlusion or surgical ligation.

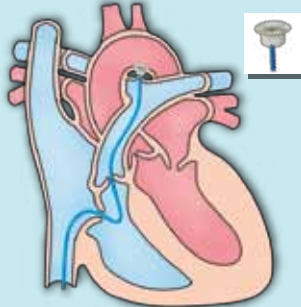
### Transcatheter PDA occlusion

Most PDA could be occluded using this method except in a small infant or long tubular shape duct. A catheter is inserted from a vein at the groin to reach the heart and the PDA, and a coil or device is delivered via the catheter to occlude the PDA like a plug.

### COIL OCCLUSION



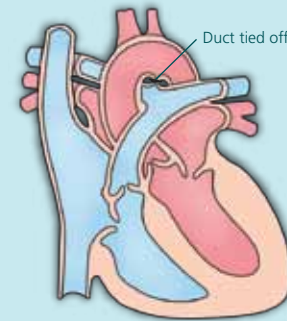
### DEVICE OCCLUSION



### PDA DEVICE



## Surgical ligation of PDA



CLOSURE BY TYING OFF

It is recommended in small infants or ductus which is not suitable for device occlusion. The operation involves a left thoracotomy (chest wall). The ductus is ligated by tying it with suture (thread-like material) or by placing a small metal clip around the ductus.

In premature newborn babies, medicine called indomethacine can often help the ductus to close. However medicine won't work after the first few weeks of life and surgery may be required.

## WHAT WILL HAPPEN TO MY CHILD AFTER SURGERY OR COIL / DEVICE OCCLUSION?

The outcome is usually excellent. The child usually dose not need any follow up 2 years after surgery / procedure.

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WHAT HAPPENS  
AFTER SURGERY?