



## Patent Ductus Arteriosus in Cats

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### What is the ductus arteriosus?

The ductus arteriosus is an arterial shunt between the aorta and the pulmonary artery, the two main blood vessels leading from the heart. It is normally present during fetal development.

### What is its purpose?

Before birth, the developing fetus receives all of its oxygen needs through the placenta, and the developing lungs are deflated. As part of the fetal circulation, the ductus arteriosus allows the majority of circulating blood to bypass the lungs. Therefore, while the fetus is in the uterus, the ductus arteriosus is normally open, or "patent".

When the newborn kitten takes its first breath, the ductus is stimulated to close down.

What is Patent Ductus Arteriosus? (common in female than Male Patent Ductus Arteriosus (PDA) is a heart defect that occurs when the ductus arteriosus fails to close down at birth.

### What happens if the ductus arteriosus does not close at birth?

If the ductus arteriosus fails to close properly after birth, the difference in pressure between the pulmonary artery and the aorta means that the blood will 'take the path of least resistance' and flow from the aorta through the Patent Ductus Arteriosus into the pulmonary artery.

Clinical signs in early stage a cat that has a small PDA defect may not show any obvious symptoms at all difficulty breathing, a loud heart murmur, abnormal pulses, and exercise intolerance. A kitten with a PDA may sleep more than usual, may be stunted in growth, or may be thinner than average and acidosis MORE COMMON in female than male.

**Diagnosis:** Difficult to identify without Doppler ultrasonography.

**Treatment:** Surgical treatment and medical treatment.

The goal is to stop the blood flowing through the shunt, Provided that the condition is treated before heart failure develops, the success rate associated with surgical closure is very high and the prognosis for a normal life after surgery is excellent.

If irreversible heart damage was already present before surgery, the cat may require heart medication in the future.

### What is the success rate for medical management of a reverse PDA?

If symptoms are able to be controlled with medications, the cat may live comfortably for several years.

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