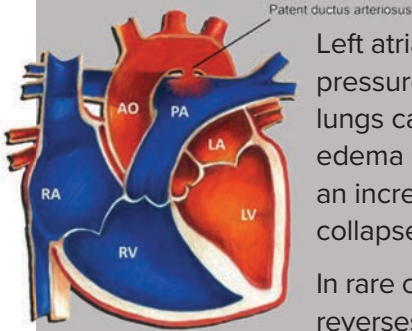


# What is a Patent Ductus Arteriosus?

Your pet has been diagnosed with a patent ductus arteriosus (PDA). The Ductus Arteriosus (DA) is a normal blood vessel present in utero that allows blood to bypass the developing lungs. Following birth, this vessel should close. When this does not occur, it is called a Patent Ductus Arteriosus.

In a normal heart, blood travels from the aorta out to the body to deliver oxygenated blood. A *left to right shunting* PDA causes a portion of the blood from the aorta to shunt back to the pulmonary artery through the lungs and the left side of the heart. This causes over-circulation. This over-circulation causes the left ventricle (pumping chamber) and left atrium (collecting chamber) to enlarge.



Left atrial enlargement is indicative of abnormally high pressure in the left atrium. As the pressure in this chamber increases, it is transmitted back to along to the blood vessels in the lungs causing fluid to exude into the alveoli (air sacs) in the lungs. This is called pulmonary edema or **congestive heart failure**. Signs of congestive heart failure include cough and/or an increased respiratory rate while sleeping/resting, increased respiratory effort, lethargy, or collapse with exercise (syncope).

In rare cases, the pressure increase becomes so severe that blood flow through the PDA reverses. This results in blood bypassing the lungs (without becoming oxygenated) and traveling from the pulmonary artery directly to the aorta and body. This is called a *right to left shunting* PDA. This handout will only cover testing and treatment for *left to right shunting* PDA.

## Tests

### PHYSICAL EXAMINATION

Dogs with a PDA have a characteristic loud and continuous heart murmur on the left side of their chest.

### ECHOCARDIOGRAPHY (HEART ULTRASOUND)

Echocardiography is the best way to image and measure the PDA. Echocardiography is a non-invasive ultrasound examination that allows the cardiologist to closely evaluate the heart chambers and valves.

## Treatment

PDA is repairable with an interventional or surgical procedure. Most pets are candidates for a catheterbased interventional occlusion of the defect, which can be performed without thoracotomy (opening the chest). A small incision is made in the skin to allow a catheter to be placed in the femoral artery. A specialized form of x-ray, called fluoroscopy is used to guide the catheter into the PDA and deploy a device called an ACDO in the defect. The device occludes the PDA, and has a very high success rate and low complication rate. Your pet will be monitored overnight following the procedure and will go home the next day. Pets with a successfully occluded PDA will live a normal life expectancy!



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