



**Ventricular septal defect (VSD) is one of the more common congenital heart defects in cats. It is sometimes referred to as a 'hole in the heart'. The condition is often discovered in apparently healthy cats by a vet during a routine examination (such as before vaccination).**

**If your vet identifies a heart murmur in your kitten it is essential to have further investigation to establish the cause of the murmur so that appropriate treatment can be given early.**

### **What is a ventricular septal defect?**

Ventricular septal defect (VSD) is a congenital heart defect, ie it is caused by abnormal development of the kitten before birth. The cat's heart, like that of humans, is a muscular pump with four separate chambers. The right side of the heart sends blood to the lungs where it picks up oxygen. The left side of the heart pumps the blood around the body. The heart is divided into left and right halves by a muscular wall (the septum). The ventricular septum separates the right and left ventricle. In a VSD the septum doesn't develop properly resulting in a small 'hole' in the septum allowing some blood to divert from the left side of the heart to the right side.

The effects of this on the cat depend on the size and location of the defect. Most cats have small defects that are well tolerated. In some cases, very small VSD holes may close spontaneously. Larger defects can lead to congestive heart failure.

### **How would I know if my cat has a ventricular septal defect?**

Although the condition is present from birth, signs of a ventricular septal defect (VSD) are usually not noticed until later in life. Many cats with VSD have no outward signs of illness. The murmur caused by a VSD is often detected by a vet (often during a routine health check). When you bring home a new kitten it is always advisable to ask your vet to check for any heart murmurs.

If the defect is large, clinical signs may be seen when the cat is less than two years of age. Severely affected animals may have stunted growth, although this can be difficult to recognise without direct comparison to their littermates. If the condition goes unrecognised and heart failure develops the affected animal may be reluctant to exercise, cough, or have difficulty breathing.

### **How will my vet know what is wrong with my cat?**

If your vet hears a murmur when listening to your cat's heart they will want to do some other tests. Heart murmurs are caused by the sound of abnormal and high-speed blood flow and are very common findings in cats with VSD. Very quiet heart murmurs can be present in an otherwise healthy pet so a diagnosis of VSD or other congenital heart disease is not necessarily inevitable.

Ultrasound is the method of choice for finding the cause of a heart murmur. If a heart murmur is heard, an ultrasound examination is recommended. Ultrasound examination of the heart requires considerable knowledge and experience and should be performed by someone with experience in examining young cats.

X-rays are important in the diagnosis and monitoring of heart disease. In cats with severe VSD, evidence of heart enlargement on the left side is often evident. X-rays are also used to see if signs of heart failure are present, if there any signs of further heart failure treatment is usually started immediately.

### **Will my cat get better?**

If the VSD is very small, then your cat may lead a normal life with no treatment being necessary. However, if the defect is large, the outlook is worse and your cat may have a significantly reduced life expectancy. Your vet will discuss the outlook and long term management of your cat with you.

### **Can a ventricular septal defect be treated?**

If the ventricular septal defect is small, then no treatment is needed and the hole may spontaneously

## Congenital heart disease - ventricular septal defect (VSD)



close. Large VSDs may need medical management to treat heart failure if it develops. Some surgical options are available to help reduce the flow of blood across the hole but definitive repair to actually close the hole is typically not possible.

### **How long will my cat live?**

Many animals with ventricular septal defect live a normal life with no signs of heart disease but this depends on the size and location of the defect. Affected cats and their parents (who could be genetic carriers of the condition) should be not be allowed to have kittens.

Cats with more severe defects are likely to develop heart failure at a relatively early age and the long term outlook is poor. Life-expectancy may be reduced and long term medication will be required.

**If you want any other information on health issues concerning your cat please contact your local Veterinary Surgeon.**