

Heart Disease in Cats

What types of heart disease do cats get?

Heart disease is a serious medical condition in dogs, cats and humans. Cats do not normally develop arteriosclerosis or coronary artery disease, which are both common diseases in humans.

In general terms, heart disease can be divided into two categories, *congenital* and *adult onset* forms.

"In congenital disease, the heart defect is present at birth."

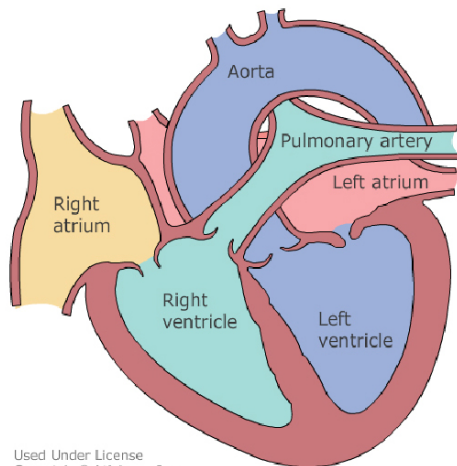
In congenital disease, the heart defect is present at birth. Although signs of congenital disease are often seen at a young age, in some cases congenital heart disease can go undetected for many years.

Congenital heart disease may be caused by a developmental problem that causes malformation of the heart as the embryo develops. This type of congenital heart disease may only affect a single kitten in the litter. Congenital heart disease may also involve a genetic or hereditary disorder, in which case the problem may develop in more than one kitten in the litter.

Adult onset heart disease can occur as the result of damage to the heart structure at some time during the cat's life, resulting in abnormal function. Some cases of apparent adult onset heart disease can be due to a hereditary condition that progresses as the cat ages, eventually causing problems. The most common type of adult onset disease in the cat is *cardiomyopathy*, a disease affecting the heart muscle. The exact cause of most types of adult onset heart disease is unknown, although genetics and lifestyle (weight, physical activity and diet) may play an important role. In some cases, adult onset heart disease develops as a secondary problem, with the primary problem being in some other area of the body such as the thyroid gland.



What is the structure of the heart and how is it affected by heart disease?



The heart can be divided into 4 functional components:

1. the heart *muscle* which pumps the blood around the body
2. the heart *valves* which act to prevent the blood going in the wrong direction
3. the *pericardium* which is a tough membrane surrounding and protecting the heart
4. the *electrical conducting system* which acts to initiate and transfer electrical impulses around the heart allowing it to contract or "beat" in a systematic and coordinated fashion

Any or all of these parts can be affected by heart disease.

How common is heart disease in cats?

Heart disease is less common in cats than in dogs. The most common type of heart disease in cats is adult onset cardiomyopathy (see handout on cardiomyopathy).

What are the signs of heart disease in cats?

Most cats do not display any clinical signs until the disease is advanced. Unlike humans and dogs with heart disease, cats rarely cough if they have heart disease. Exercise intolerance does occur but can be difficult to recognize since cats rarely go for walks or engage in sustained physical activity with their owners. With advancing disease and declining exercise tolerance, cats tend to become more withdrawn, hide under furniture and sleep more.

The most common signs of heart disease in cats are:

- poor appetite
- weight loss
- lethargy
- increased respiratory rate and effort
- sudden collapse
- sudden hind leg paralysis accompanied by pain
- stunted growth (kittens)

What type of congenital heart disease occurs in cats?

The two most common types of congenital heart disease are malformations of a valve or a defect in the wall that divides the right and left sides of the heart (a "hole in the heart"). In both circumstances, blood flows abnormally through the defect, causing turbulence.

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This causes a *heart murmur* that is often detected during a routine physical examination of the kitten. The loudness of the murmur reflects the amount of turbulence but is not indicative of the severity of the disease. Not all heart murmurs are associated with heart disease. Some may reflect another disease process such as anemia. In severely anemic kittens, the heart murmur occurs because the blood is more "thin" or "watery" and its flow characteristics are altered. Normal cats can have intermittent heart murmurs, often when their heart rate is increased due to stress, and these *physiologic murmurs* have no impact on their health.



Electrocardiogram machine

How is congenital heart disease diagnosed?

Depending on the murmur and the degree of clinical signs, further testing may be advised to determine the cause. This generally involves x-rays, electrical recording of the heart (ECG) and ultrasound examination (echocardiography). In some cases, if your veterinarian suspects that the heart murmur is secondary to another disease, more extensive tests may be recommended.

How is congenital heart disease treated?

The specific treatment will depend on the cause of the heart disease. At this time, few congenital heart abnormalities in the cat other than *patent ductus arteriosus* (see below) can be surgically corrected. When a young kitten is diagnosed with heart disease, diagnostic testing will help determine what the prognosis is and whether medical treatment is necessary. In many situations, if a heart murmur has been detected on a routine examination but the cat is not showing signs of problems, careful monitoring is the best option.

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What inherited heart diseases do cats get?

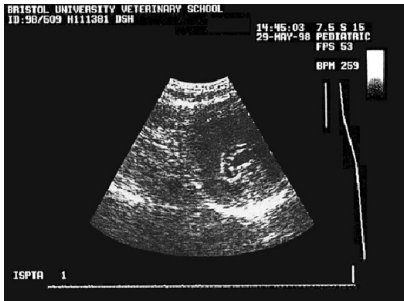
Maine Coon – a severe form of heart muscle disease (hypertrophic cardiomyopathy) is seen in some Maine Coon cats. Affected cats may begin to develop problems as early as three months of age, while less affected cats show signs of heart failure by two to four years of age. A recent study showed that 33% of Maine Coon cats had a genetic abnormality related to hypertrophic cardiomyopathy.

American and British shorthair – a less serious form of hypertrophic cardiomyopathy is seen in these breeds.

Persians (domestic long hair) – this breed also has a high incidence of hypertrophic cardiomyopathy.

Siamese cats are more commonly affected by patent ductus arteriosus (PDA). The ductus arteriosus shunts blood away from the lungs during prenatal life, and normally closes at birth. If the ductus arteriosus fails to close, or is "patent", blood flow to the chest, abdomen and hind limbs is affected. Siamese have also been diagnosed with another form of cardiomyopathy, *dilated cardiomyopathy*.

What heart diseases do cats get in adulthood?



Ultrasound picture

The most common heart disease that adult cats develop is *cardiomyopathy*. A separate handout is available that deals specifically with this topic.

"The most common heart disease that adult cats develop is *cardiomyopathy*."

Diseases that primarily affect the heart valves and pericardium are rare in adult cats.

A number of conditions can affect the heart rhythm in cats. Many cats with rhythm disturbances show relatively few signs of disease. In some cases, the cat will require drugs to restore a normal heart rate and rhythm.

Will my cat have any dietary restrictions?

As long as they are able to maintain a normal body weight, cats with heart disease have no specific dietary requirements, as long as the diet contains adequate levels of the amino acid *taurine*. It is important that your cat's body weight be maintained in an optimal range, neither overweight nor underweight. It may be necessary to adjust the calorie content of the cat's diet in order to do this.

"...cats with heart disease have no specific dietary requirements."

However, all cats with heart disease must be fed a diet that contains sufficient levels of the amino acid *taurine*. Low salt diets are unlikely to be helpful unless the heart disease is associated with high blood pressure (*hypertension*). Dietary supplementation with vitamin E, Coenzyme Q10, or other medications or dietary additives may be helpful. Your veterinarian will make specific recommendations to you based on your cat's needs.

If my cat is put on heart medication, are there any special concerns?

It is essential that the instructions for your cat's heart medication are followed closely. For drugs given more than once daily, doses should be spread out over the day as evenly as possible. Some heart medications can have serious adverse effects if stopped suddenly, so it is important that your cat receive the medication regularly and that prescription refills are requested ahead of time.

This client information sheet is based on material written by: Ernest Ward, DVM

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