

HEART DISEASE

Heart, or *cardiac*, disease is characterized by a decrease in blood flow (*cardiac output*). The result is an inadequate blood supply and lack of oxygenation of tissues. Thus, normal metabolic demands cannot be met. In general, there are three main causes of heart failure: 1) the heart muscle's ability to move may be physically limited (restrictive); 2) there may be a defect within the heart itself resulting in inefficient pumping (dilated); 3) or there may be an increased resistance in the circulatory system requiring the heart to beat harder (hypertrophic). When the heart is unable to compensate for these conditions, congestive heart failure (CHF) results.

SYMPTOMS

The clinical signs for heart disease vary, depending upon the cause and the severity of the disease. Lethargy, loss of appetite, exercise intolerance, and weight loss are some of the first signs that an owner may recognize. As the disease progresses, the animal may have difficulty breathing, fainting episodes (*syncope*), coughing, and paralysis.

DIAGNOSIS

A minimum database of information should be collected on any ill or senior animal. Included in this information is a physical examination, a complete blood count (CBC), serum chemistry tests, urinalysis, and a fecal exam. More advanced tests are required to determine if a patient has heart disease. Radiographs (x-rays) of the chest often reveal enlargement of the heart and fluid within the lungs as a result of inadequate pumping. A more sensitive test is an ultrasound of the heart, also called an *echocardiogram*. This test allows the measurement of the heart wall thickness, as well as an evaluation of the valvular function. Additionally, an ultrasound can use Doppler techniques to measure the actual blood flow. Other tests available to determine the severity of heart disease include pulse oximetry (measurement of tissue oxygen levels), electrocardiography (ECG), and blood pressure measurement.

TREATMENT

Treatments for heart disease depend upon the cause and the severity. Critical animals must first be stabilized by supplementing oxygen, removing life-threatening fluid buildup in the lungs, maintaining a stress-free environment, and lowering the blood pressure. Heart function abnormalities may be addressed when the animal is stabilized. A diagnosis of heart disease carries with it a commitment to lifelong treatment. Medications are directed at minimizing fluid accumulation in the lungs, lowering the blood pressure, thinning the blood to decrease the risk of clots, and dilating the blood vessels. Additionally, a specialized diet restricted in sodium (salt) is indicated for these patients. There are several prescription diets available - consult with your veterinarian to help you decide which diet is best for your pet. Exercise restrictions should also be enforced in patients with heart disease.

MONITORING

Frequency and methods of re-evaluation of the heart patient will be based upon the severity of the disease. Radiographs can measure the efficacy of medications in reducing fluid within the lungs and monitor changes in the size of the heart. They should be taken at regular intervals. Biannual to annual bloodwork and repeat ECGs are also required to determine the course of the disease, as well as any complicating factors such as kidney or liver abnormalities. Certain heart medications also need to be monitored via blood testing to ensure that doses are therapeutic.

COSTS

The initial workup for heart disease patients will typically cost around \$250 - \$300. Radiographs of the heart/chest cost about \$175 and an ultrasound of the heart is approximately \$350. Maintaining a patient on heart medications can cost from \$30 to \$70 per month. Follow-up blood testing and radiographs will cost about \$350 annually. Please speak with your veterinarian if you have any questions regarding heart disease in your pet.