

Electrocardiography

- An electrocardiogram (ECG) is a test that helps to determine the heart's rhythm and rate.
- Your veterinarian may need to combine ECG results with results of blood work, x-rays, and possibly cardiac ultrasound to get a clear idea of how your pet's heart is functioning.
- An ECG is safe and noninvasive and takes only a few minutes to perform.

What Is Electrocardiography?

The body sends electrical impulses through the heart that stimulate heartbeats to occur at a consistent rhythm and rate. An electrocardiograph machine can detect and record electrical changes associated with the beating of the heart. Your veterinarian can interpret this information to determine your pet's heart rhythm and rate. The process of using the electrocardiograph machine to assess heart rate and rhythm is called *electrocardiography*, and the result is an electrocardiogram (ECG).

The ECG can tell your veterinarian if your pet's heart is beating too slowly or too quickly. It can also tell if the rhythm is abnormal (a condition called an *arrhythmia*) or if there is any type of delay in conduction (transmission) of the electrical impulses through the heart. A delay can be associated with problems such as thickened heart chambers or heart enlargement. However, the ECG is not generally used to evaluate the function of heart valves or to check the heart muscle for normal contractility (ability to contract). In many cases, your veterinarian will combine ECG results with results of blood work, x-rays, and possibly cardiac ultrasound to get a clear idea of how your pet's heart is functioning. All of these tests can be performed as part of a cardiac examination.

How Is Electrocardiography Performed?

Electrocardiography generally takes only a few minutes and is not painful for your pet. Sedation is not required. Pets are generally encouraged to lie on their side during the procedure, but it can also be done if the pet is standing.

The heart's electrical impulses are recorded by attaching small electrodes to your pet's limbs and chest. The ECG machine records these impulses as wavy lines onto a strip of ECG paper, which your veterinarian examines to determine the test results.

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The electrical impulses associated with a normal heartbeat create a specific pattern on the ECG paper, and a normal heart rhythm creates a specific amount of space between each pattern. The pattern of an abnormal heartbeat or irregular heart rate looks different. Your veterinarian will interpret all of this information to determine if the ECG results are normal.

What Are the Benefits of Performing Electrocardiography?

An ECG is safe and noninvasive and takes only a few minutes to perform. An ECG shows the heart's electrical activity and identifies arrhythmias or alterations in heart rate. An ECG is useful for determining if an animal has heart disease. The information provided by an ECG helps your veterinarian make appropriate treatment recommendations for your pet.