



**Veterinary Emergency
+ Referral Center**
of Hawaii

**Ettinger: Textbook of Veterinary
Internal Medicine, 7th Edition
Echocardiography
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What is echocardiography?

Echocardiography (Echo) is the use of sound waves (ultrasound) to examine the heart. Sound waves are emitted from a hand held probe (transducer) and penetrate the patient's chest wall. This is a non-painful, non-invasive procedure that patients tolerate well. A real-time image, meaning occurring as you see it, is then produced on a black and white or color screen that demonstrates the cardiac anatomy in a complete, two-dimensional (2-D) form. As a result, the heart is seen in motion including the movement of blood, valves, vessels and surrounding tissue. Echocardiography requires time, patience and skill and is very operator dependent. The quality of the echo study and the information derived from it are influenced by who performs the examination.

What information is derived from echocardiography?

Echocardiography provides a great deal of information regarding cardiac anatomy and cardiac function which can ultimately influence the clinical management of a patient. Heart chamber size, cardiac function, valvular motion and function, direction of blood flow and hemodynamic information (Doppler), identification of neoplasia (cancer), and evaluation of abnormal fluid accumulation are but some of the medical conditions observed with echocardiography. In addition, congenital defects (anatomical abnormalities present at birth) can be distinguished from acquired cardiac diseases (valvular diseases, cardiomyopathies).

Echocardiography is a useful adjunct and not a substitute for a complete history, physical exam and often the radiographic findings (x-ray). For example, the syndrome of heart failure cannot be diagnosed with echocardiography. Radiography is therefore necessary in many cardiac patients to complement the echo findings. In addition, important information regarding the great vessels, pulmonary vasculature and lung tissue can only be evaluated with radiography. These additional radiographic findings can significantly affect the prognosis and treatment of a patient.

What preparation is needed for echocardiography?

Little preparation is necessary for echocardiography. Sedation is rarely required. A small patch of hair is shaved on both sides of the chest because the heart must be examined from several specific views to be seen completely. Image quality improves when the hair is removed and ultrasound gel is applied to the skin. Occasionally a short-haired animal will not require shaving, but in some patients echocardiography is impossible without shaving. The standard views are obtained with the patient lying on their side. Those that resist this position or have difficulty breathing while on their side can usually be imaged in a standing position as an alternative.