

# Speckle tracking echocardiography as a new screening tool for dilated cardiomyopathy in Doberman Pinschers

## Purpose

To test whether speckle tracking echocardiography will be able to detect changes in the hearts of Dobermans who have abnormal 24-hour Holter monitoring but normal standard echocardiograms

## Background

Dilated cardiomyopathy (DCM) is an inherited, slowly progressive heart disease that affects up to 45% of Doberman Pinschers in the U.S. The disease has two phases. In the first phase, dogs do not have clinical signs of DCM, but changes to the heart may be seen by echocardiogram or by measuring electrical abnormalities in the heart. Over time, the disease usually progresses to the second phase, when clinical signs of congestive heart failure such as breathing problems and fainting can appear. DCM can eventually lead to death.

Early identification of DCM is essential, since treatment can delay onset and prolong the dog's life. Screening for DCM is crucial not only to identify dogs that are affected by this disease, but to support healthy breeding programs.

Current screening for DCM is costly and time consuming. A significant proportion of affected dogs have heart abnormalities that are not detectable using standard echocardiographic exams. Hence, 24-hour Holter monitor evaluation is used.

Echocardiography-derived speckle tracking (STE) is a newer technique that is rapidly gaining attention for diagnosis of DCM in humans. STE has the unique capability of non-invasively monitoring the heart with minimal additional time or cost compared to current methods. In this study, we're testing whether STE will be able to detect changes in the hearts of Dobermans who have abnormal 24-hour Holter monitoring but normal standard echocardiograms.

## Eligibility

- Two groups of Dobermans will be enrolled:
  1. Healthy Dobermans
  2. Dobermans who have previous Holter monitor evidence of heart abnormalities that may indicate the early stages of DCM
- All enrolled dogs must be 5 years of age or older

## Exclusion Criteria

- Dogs with heart murmur greater than 2/6
- Echocardiographic findings of moderate or severe DCM, or other acquired or congenital heart diseases
- Systemic disease that can affect cardiac function
- Dogs who are taking medications that can affect cardiac function
- Dogs that cannot tolerate gentle restraint

## Study Design

For this study, we will be enrolling healthy Dobermans as well as Dobermans who have previous Holter monitor evidence of heart abnormalities that may indicate the early stages of DCM.

Each dog will have one visit to the Veterinary Teaching Hospital. During the visit, dogs will undergo a physical exam, conventional echocardiography, and 24-hour Holter monitoring. A small patch of fur may be shaved for these procedures. Owners will be given instructions for the use of the Holter monitor. Using special software, speckle tracking echocardiography (STE) will also be performed. STE is a non-invasive procedure that takes measurements using an ultrasound probe. Dogs that cannot tolerate gentle restraint for the procedures will not be enrolled in the study. Dogs will be returned to the owner at the end of the visit.

After 24 hours, the Holter monitor will be removed by the owner according to instructions provided and returned to the VTH by either shipping with provided pre-paid label, or in person, whichever option is more convenient for you.

## Compensation

There are no costs to you for your cat to participate in the study. The study covers the costs of all study-related procedures, and all clinically-relevant results will be shared with you.

## Contact

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