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Vertebral scale system to measure heart size in radiographs.

[Buchanan JW.](#)

Source

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Abstract

This article describes a method for measuring heart size relative to vertebral length in radiographs. The lengths of the long and short axes of the heart are scaled against the length of vertebrae dorsal to the heart beginning with the fourth thoracic vertebra (v). The sum of the long and short axes of the heart is the vertebral heart size (VHS). In 100 normal dogs, VHS was $9.7 v \pm 0.5$ SD. The differences between wide- and deep-chested dogs, males and females, and right or left lateral recumbency were not significant. In 100 normal cats, the average VHS was $7.5 v \pm 0.3$. The short-axis dimension of the heart in ventrodorsal radiographs of cats was $3.4 v \pm 0.25$.

[Am Vet Med Assoc.](#) 1995 Jan 15;206(2):194-9.

Vertebral scale system to measure canine heart size in radiographs.

[Buchanan JW](#), [Bücheler J](#).

Source

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Abstract

A method for measuring canine heart size in radiographs was developed on the basis that there is a good correlation between heart size and body length regardless of the conformation of the thorax. The lengths of the long and short axes of the heart of 100 clinically normal dogs were determined with calipers, and the dimensions were scaled against the length of vertebrae dorsal to the heart beginning with T4. The sum of the long and short axes of the heart expressed as vertebral heart size was 9.7 ± 0.5 vertebrae. The differences between dogs with a wide or deep thorax, males and females, and right or left lateral recumbency were not significant. The caudal vena cava was 0.75 vertebrae ± 0.13 in comparison to the length of the vertebra over the tracheal bifurcation.

Vertebral scale system to measure heart size in growing puppies.

[Sleeper MM](#), [Buchanan JW](#).

Source

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Abstract

OBJECTIVE:

To determine relative heart size in clinically normal puppies and assess whether relative heart size changes with growth.

DESIGN:

Prospective radiographic study.

ANIMALS:

11 puppies without evidence of disease.

PROCEDURE:

Standardized measurements of the long and short axes of the heart, midthoracic vertebrae, and other structures were made at 3, 6, 12, and 36 months of age. Measurements were recorded in millimeters and number of thoracic vertebral lengths spanned by each dimension, measured caudally from T4 on lateral radiographic views. The long and short axis measurements of the heart, expressed in vertebral lengths, were added to yield vertebral heart size.

RESULTS:

Mean \pm SD vertebral heart sizes on lateral radiographic views at 3, 6, 12, and 36 months of age were 10.0 \pm 0.5, 9.8 \pm 0.4, 9.9 \pm 0.6, and 10.3 \pm 0.6 vertebrae, respectively. Significant differences were not detected.

CONCLUSIONS AND CLINICAL RELEVANCE:

Vertebral heart size measurements in puppies are within the reference range for adult dogs (9.7 \pm 0.5 vertebrae) and do not change significantly with growth to 3 years of age. Standards for determining cardiac enlargement are similar in puppies and adult dogs.

