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### Bulldogs, Heart Murmurs, and Pulmonic Stenosis

There are many reasons why a Bulldog puppy can have a heart murmur. Pulmonic stenosis is one of the most common causes of a heart murmur in dogs. Pulmonic stenosis is when one of the valves that lets blood exit the heart is too small. When this occurs the heart must work harder to pump blood to the lungs. Some birth defects of the heart are known to have a genetic cause, which can be passed from the dam and sire to the offspring. Pulmonic stenosis is common in Bulldogs and does appear to be inherited.

Previously, the Bulldog Club of America supported a free echocardiogram (heart ultrasound) clinic and provided funds to conduct the first phase of a genetic study to determine what causes pulmonic stenosis in Bulldogs. That phase was a huge success and we were able to collect and analyze DNA from over a 100 bulldogs with and without pulmonic stenosis. We were able to narrow down our search to small region of DNA that contains genes related to heart development.

Our research group has received funds from the American Kennel Club Canine Health Foundation to complete phase two of this project. We are working to figure out the exact DNA mutation that causes pulmonic stenosis. Additionally, we will determine if one parent or both parents need to have the mutation for the offspring to be at risk for the disease. Our goal is to develop a genetic screening test for pulmonic stenosis in Bulldogs that will allow breeders to test for this condition and understand how to minimize the risk of producing Bulldogs with heart disease.

In order to complete phase two we need to collect additional pedigrees on dogs diagnosed with pulmonic stenosis. Additionally, both parents of an affected Bulldog need to receive an evaluation (including echocardiogram) from a cardiologist. An echocardiogram is necessary to identify Bulldogs with mild forms of pulmonic stenosis, which may go undetected when listening to the heart.

How you and your Bulldogs can help:

- If you currently own/have owned a Bulldog with pulmonic stenosis
- If you currently own/have owned a relative of a Bulldog with pulmonic stenosis.

Please contact [sterngenetics@ucdavis.edu](mailto:sterngenetics@ucdavis.edu) or 530-752-4892 for more information about how you can participate in this funded study.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joshua Stern'.

Joshua Stern, DVM, PhD, Diplomate ACVIM (Cardiology)

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