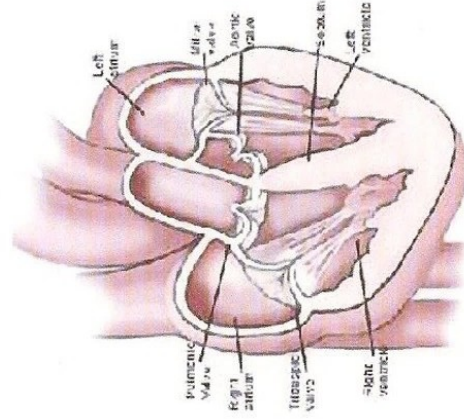


## Heart disease in the English Bull Terrier

According to literature English Bull Terriers (EBT) are frequently diagnosed with murmurs and are predisposed to mitral valve abnormalities (valves between the left atrium and left ventricle) and a narrow aorta (left ventricular outflow tract obstruction (LVOTO)). These cardiac disorders could lead to congestive heart failure, syncope and sudden death. In May 2017 we (Mark Dirven and myself as vets and Frank van Steenbeek as geneticist) started a research project on 'Heart disease in the English Bull Terrier'. This project was made possible by AniCura as they gave us a research fund. It took us 3 years and in this time we have obtained a lot of information. I want to thank everybody again who helped us with our project! We couldn't have done it without you!! We are still processing most of the information. This is going to take some time. But I do have information about the research we did in English Bull Terrier puppies.



### Aim of the study

We are looking for answers to the following questions:

- Is heart disease a problem in the Bull Terrier Breed (narrow aorta, abnormal mitral valves)?
- If so, how often does this occur?
- Is this heart disease heritable and what is the mode of inheritance?
- Which dog can be used for breeding and how and when do we test this?
- Can we use a bloodtest on biomarker NTproBNP as a screeningtest for heart disease? NTproBNP increases in case of cardiac stress.
- In addition we would like to devise breed specific echocardiographic reference ranges for the EBT breed
- If possible we want to develop a genetic test on narrow aorta's.

### What did we do?

- 177 different adult dogs underwent a clinical examination and, after that, echocardiography with concomitant electrocardiography was performed. Blood was taken from all these dogs to determine the genetic profile and to measure the cardiac biomarker NTproBNP
- A cell culture was made from aortic cells of a dog with a normal aorta and a dog with elevated aortic blood velocity (an elevated aortic blood velocity occurs in a narrow aorta).