



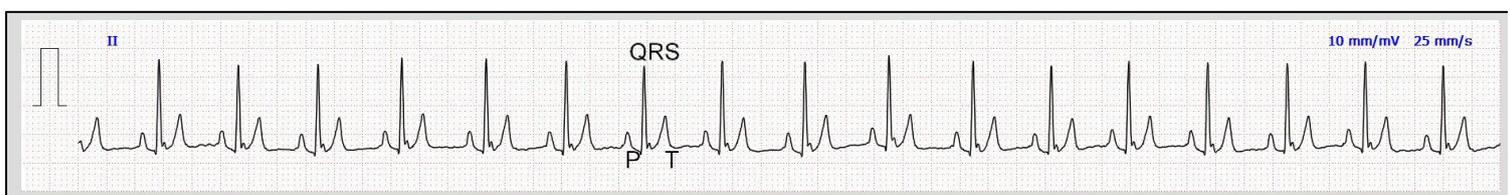
## Great Dane Dilated Cardiomyopathy has not gone away! - and we want to help!

### What we know:

- Kennel Club 2014 Pedigree Dog breed Survey: the leading cause of death in Great Danes was Dilated cardiomyopathy (DCM), accounting for nearly one quarter of all deaths (23.4%).
- We have been studying DCM in Great Danes since 2008, from the LUPA project onwards. We found from health screening Great Danes of 4 years of age or older, **35.6% of all dogs screened had DCM**. We also found that there was a risk of sudden death in Great Danes, even before any other signs.
- You told us, in a large questionnaire including information about 710 Great Danes (Summer 2015), **7.6% of all dogs** had a **sudden death** – in most of these, they were under 6 years old. We believe that these sudden deaths are “electrical deaths” because of abnormalities of heart rhythm. From our work over the last decade with Great Danes, we have found that Danes with abnormal heart rhythms are more likely to have a sudden death. Abnormal heart rhythm called ventricular tachycardia form a collapsed Great Dane is shown at the top of this flier – only one ECG complex (\*) is normal. After treatment, her ECG showed her heart rhythm was returned to normal (bottom ECG).
- We know that early treatment of dogs with evidence of DCM on echocardiography will delay their progression and so screening dogs will help with both length and quality of life, even though we cannot stop the disease. It is also likely that specific anti-arrhythmic medication may reduce the frequency of abnormal heart rhythm.

### What we do not know:

- Can a simple blood test for cardiac biomarker tests be sensitive enough to identify Great Danes at risk of developing DCM or sudden death?
- To investigate this, we need to take blood samples for the cardiac biomarkers from Great Danes with Echo and Holter studies.
- In the future, cardiac biomarkers might be useful to focus the gold standard screening with echo / Holter.
- We need to know more about the risk of sudden death in Great Danes and association with DCM.
- We have funding from the Kennel Club Charitable Trust and Great Dane Breed Council to investigate this further, but we need your continued support.





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### Seeking Great Danes!

Don't give up now! – We have worked together for over a decade and we can continue to find out more to benefit the health, quality of life and welfare of Great Danes.

We invite any of the following Great Danes and owners:

- **Great Danes of 12 months of age and older** can be screened either by your primary vet or at the University of Liverpool. Tests include a blood sample for cardiac biomarkers and the Holter monitor. If you attend your own vet, the Holter unit will be shipped to the vet from the University of Liverpool, with full instructions for fitting the Holter and for handling and lab details for the blood sample. *The total cost for these tests if paid for privately would be about £390.*
- **Great Danes of 4 years of age and older** are mainly screened at the University of Liverpool, so owners will need to attend the Small Animal Teaching Hospital. Tests include blood tests for general healthy profile, thyroid testing and cardiac biomarkers, echocardiography (heart ultrasound) and Holter testing. *The total cost for these tests if paid for privately would be about £826.*
- The Kennel Club Charitable Trust and Great Dane Breed Council funding cover MOST of these costs, but a condition of the award from the Kennel Club Charitable Trust was that each owner should make a small contribution towards these tests (**ONLY £50 for the FIRST TIME the dog is tested as a REGISTRATION FEE**) to show your personal commitment to advancing the health and welfare of the breed. Any subsequent tests (we usually see Great Danes every 1-2 years of their lives) would be FREE OF CHARGE. We hope you agree that this is good value, especially after 10 years of work already into heart health in Great Danes.

If you would like more information, or to arrange a booking for full screening or Holter screening, please contact **Mrs Joan Toohey** (receptionist at the Small Animal Teaching Hospital, University of Liverpool), or Professor **Jo Dukes-McEwan**, Professor of Veterinary Cardiology, University of Liverpool.

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*Thank you for reading this!*

*Jo Dukes-McEwan & Hannah Stephenson*