

Veterinary Bioscience: Cardiovascular System



WEEK 2 – THE HEART AS A PUMP

LECTURER: DR JOANNA AITKEN

After graduating from The University of Sydney in 2013, Joanna started her veterinary journey in mixed practice in rural NSW. She has since worked in both private practice and university settings across Australia and the United Kingdom. In 2017 she completed a Small Animal Rotating Junior Clinical Training Scholarship (internship) at the Royal (Dick) School of Veterinary Studies, Edinburgh, which led her to a private practice residency in Small Animal Cardiology. Her interest and training in cardiology, emergency and critical care and teaching led to a position as a Teaching Fellow at the University of Surrey, followed by recognition as a Fellow of the Higher Education Academy. During this time, she was also a permanent member of the Vets Now Emergency team in Southern England. In 2020 Joanna moved back to Australian soil and started her residency under the American College of Veterinary Emergency and Critical Care at the University of Melbourne (U-Vet), transitioning into a Lecturer role in the pre-clinical department in 2021. Her research interest is cardiac ultrasound use in the intensive care environment and cognitive task analysis for this technique for veterinary students. Outside of the University she is a co-founder of 'Vets: Stay, Go, Diversify (Down Under)' an organisation that celebrates the multiple career options available to those that hold a veterinary degree.

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INTENDED LEARNING OUTCOMES

At the end of this lecture you should be able to:

- List the different methods available for imaging the heart
- Understand the basis of the images that they produce (two- or three-dimensional; composite or slices)
- Recall the radiographic anatomy of the canine and feline heart
- Understand how radiology and sonology may be used for the assessment of the cardiovascular system

KEYWORDS

Clinical investigation; diagnostic imaging; radiography; echocardiography; heart disease; heart failure

LECTURE: IMAGING OF THE HEART: WHAT CAN IT TELL US?

This lecture will provide an introduction to diagnostic imaging of the heart, and explain how the different modalities can be used to assess and understand cardiac function. Each method provides different information and levels of detail which can be useful when trying to diagnose or assess a particular disease.

Before any abnormalities can be determined the normal appearance of the cardiovascular structures on imaging must be understood. The changes seen with some common diseases will be discussed.