



FELINE ACTIVITY STUDY - A CLOSER LOOK

Evelyn Maniaki, Zoetis Feline Scholar, research MSc student and Editor of Feline Update Online

Feline degenerative joint disease (DJD) is a type of non-inflammatory joint disease where there is gradual destruction of joint components. This disease affects synovial and cartilaginous joints and, although the terms DJD and osteoarthritis (OA) have been used interchangeably, DJD is an umbrella term whilst OA refers to the degenerative process affecting synovial joints only. DJD has an insidious onset and can lead to impaired mobility and pain. Prevalence estimates range from 60% in cats of all ages, reaching 91% in geriatric cats.

Neither the risk factors predisposing cats to DJD nor the impact DJD has on the cats' quality of life have been fully elucidated. In addition, diagnosis of DJD is far from straightforward given the ability of cats to hide signs of pain and disease and the fact that owners may mistake DJD-related signs as part of the normal aging process.

To complicate matters further, veterinarians have difficulty interpreting orthopaedic examination and radiographic findings. As a result, many cats remain undiagnosed and have a poor quality of life.

Activity monitors, such as accelerometers, are non-invasive devices that measure changes in acceleration, which are then converted into counts that reflect activity levels. These devices can be attached to a cat's collar and have been used in feline DJD-related research to objectively measure activity levels. Their potential as a diagnostic tool in the clinical setting to detect early signs of DJD would have use to veterinarians worldwide.

In addition, identifying possible risk factors predisposing cats to DJD and detecting changes early in its development will allow veterinarians

and owners to adopt a preventative multimodal approach and possibly delay or even reverse disease progression.

Feline Activity Study

Recruitment criteria for the [Feline Activity Study](#) include cats being over 6 years of age and not on any pain medication. The cats must also be kept indoors or have outdoors access within a closed run and/or a lead only to prevent the possibility of the activity monitor being lost. Some of the recruited cats are also participants of the [Bristol Cats Study](#), a pioneering large-scale longitudinal study of owned pet cats.

Owners of cats that are eligible to be recruited into the feline activity study complete two study questionnaires, one relating to their cat's mobility and the other to their cat's quality of life. For cats not wearing a collar, a breakaway (safety) collar and instructions are provided, allowing the cats to be habituated to wearing a collar in a stress-free manner.



Figure 1: Misty relaxing in his new collar

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Evelyn Maniaki then visits eligible cats in their own home and performs a thorough orthopaedic examination. The orthopaedic exam is currently considered the gold standard measure for DJD diagnosis. Following this, an activity monitor (accelerometer) is placed on the cat's collar for a period of 2 weeks, tracking their activity levels at all times. The activity data is downloaded from each individual device, ready for analysis.

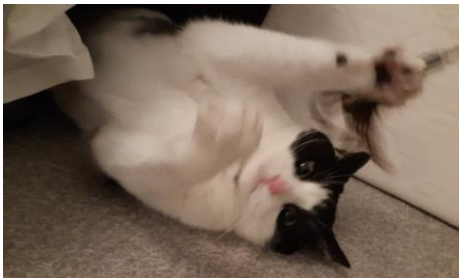


Figure 2. Oscar playing whilst wearing his collar-mounted accelerometer

Recruitment for the [Feline Activity Study](#) will be finishing in October 2019, with a total of 49 cats recruited up to now. Four cats were visited but not recruited in the study as they were not amenable to the handling necessary to perform an orthopaedic examination. Full accelerometer data was not collected from 3 cats due to device issues. The next step will be analysing the data obtained from the visits and the accelerometers, as well as the [Bristol Cats Study](#). In the next Feline Update, Evelyn will describe the preliminary data analysis and results; so, watch this space!

Evelyn will be speaking at **London Vet Show** on Thursday 14th November from 11.25 - 11.50am. Her talk is titled 'Osteoarthritis in cats – Can you spot the signs?'



Come and find her on the **Zoetis Learning Academy Stand** in the main hall.

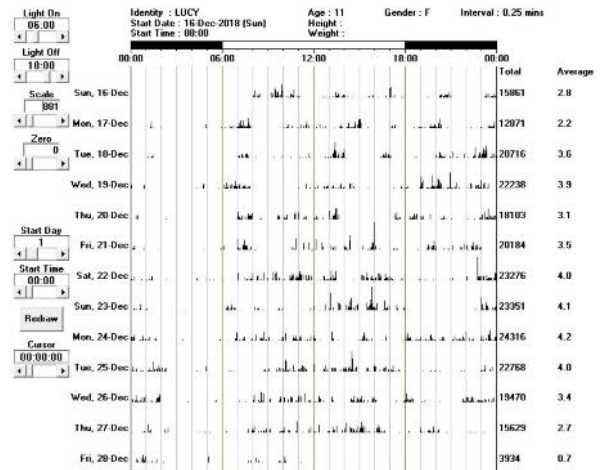


Figure 3. Lucy's activity data from a 12-day period of wearing the collar-mounted accelerometer

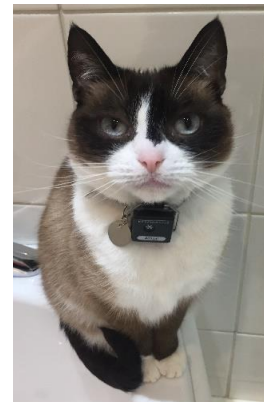


Figure 4. Luna posing in her collar-mounted accelerometer

*A technical bulletin on **feline osteoarthritis** has been produced collaboratively between **University of Bristol and Zoetis**. You can view and download the bulletin [here](#).*



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