
Case Study

The Petpace Smart Collar in Action - Monitoring Sleep Quality

Introduction

Jessie is an 11-year-old, Spayed female 20-lb Boston Terrier. She has hyperadrenocorticism (Cushing Disease), but her owner was also concerned about her sleep quality, owing to excessive snoring and labored breathing.

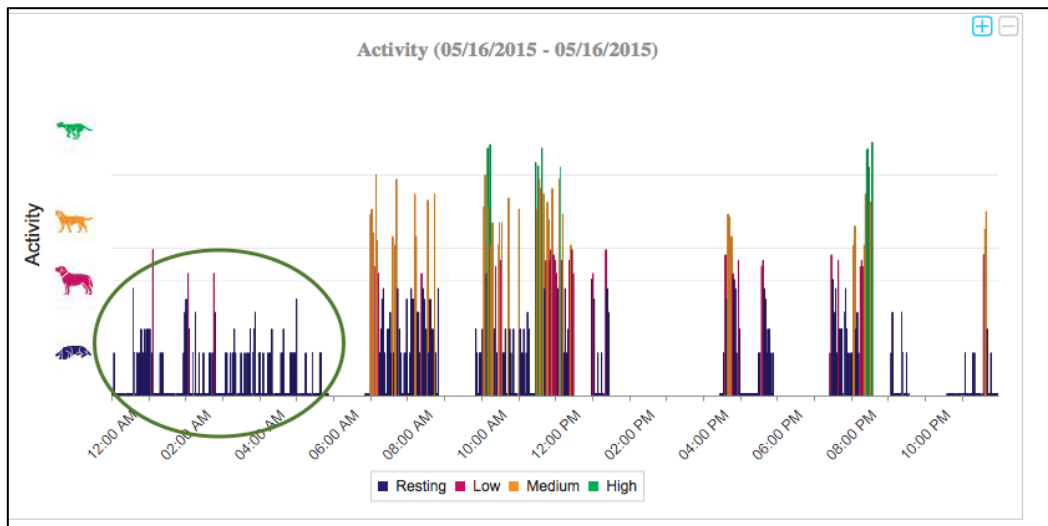
Dog breeds with short snouts (brachycephalic breeds) like Boston Terriers often suffer from Brachycephalic Airway Syndrome (BAC). This syndrome involves a set of particular upper airway abnormalities, like narrow nostrils and long soft palate, which interfere with movement of air into the lungs. Affected dogs work harder to breath, especially during exercise or in hot weather, they often breathe with their mouths open and snore excessively. In addition, some dogs suffer from sleep apnea, which causes them to wake up many times during the night.

To evaluate the severity of Jessie's BAC, and specifically her quality of sleep, a PetPace Smart collar was placed on her neck.

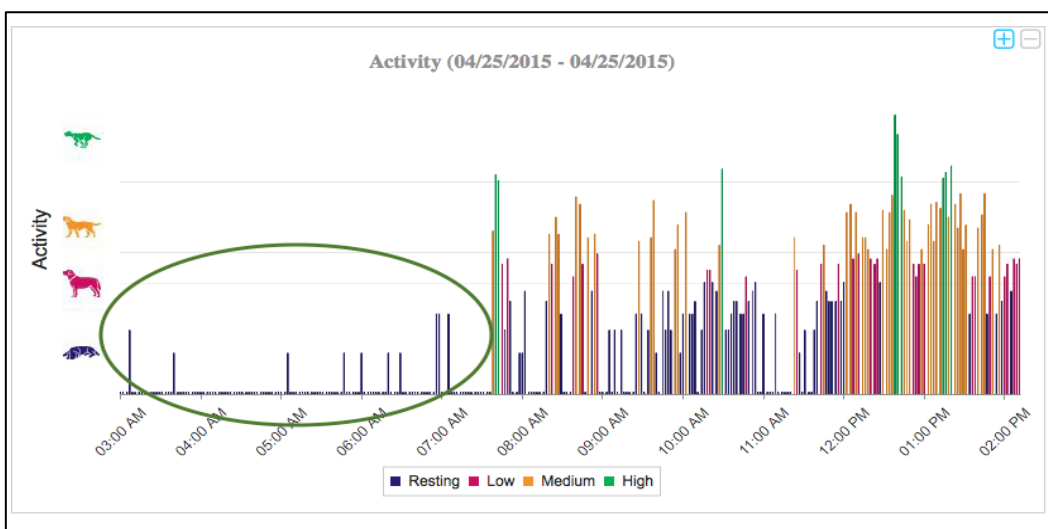
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Activity

Based on the activity chart generated by the PetPace collar, it was immediately evident to Jessie's caregivers that Jessie constantly tosses and turns during the night, and hardly gets any steady deep sleep.



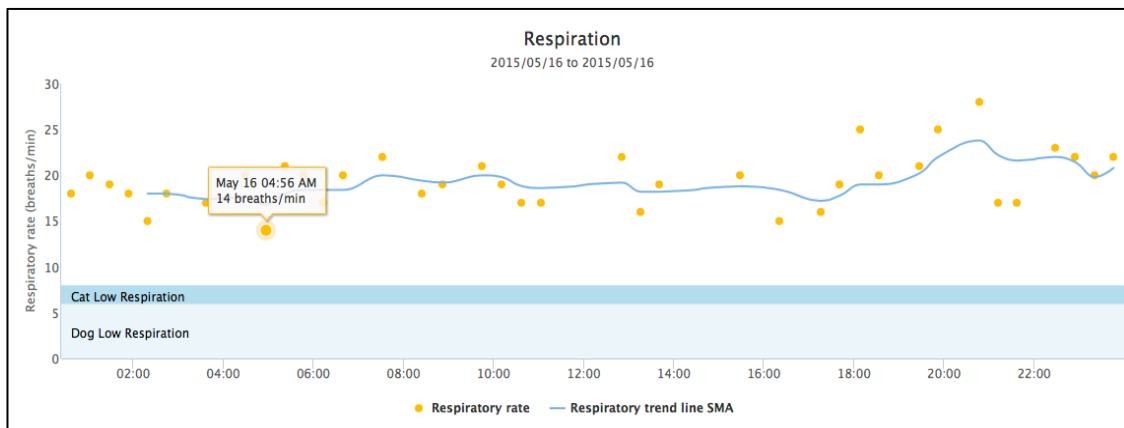
By way of comparison, the activity log below shows the nighttime activity of healthy 7-year-old Golden Retriever. The longer stretches of immobility and short, infrequent movements during the nighttime are clearly visible.



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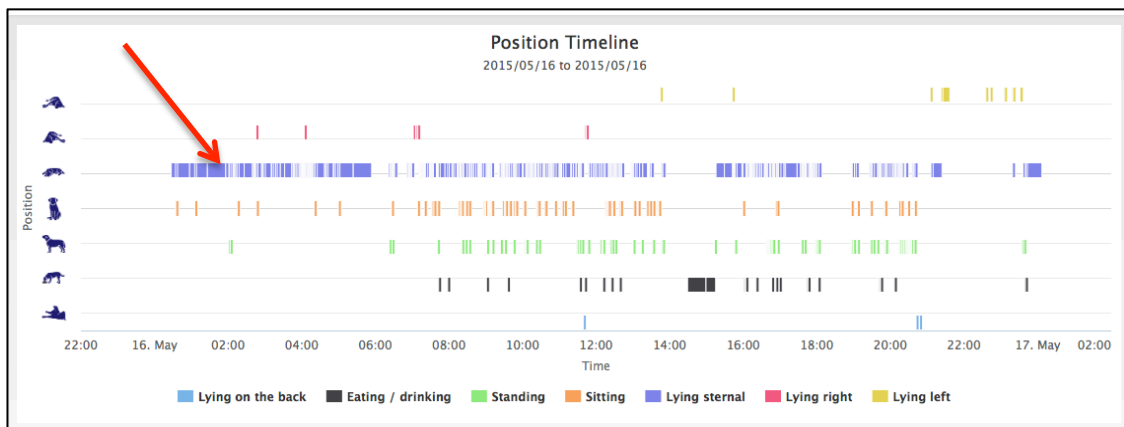
Respiration

The PetPace collar also showed that Jessie's nighttime respiratory rate was elevated compared to healthy dogs. During deep sleep, dogs' respiratory rate usually goes down to around 10 breaths per minute, but Jessie's lowest recorded respiratory rate was 14.



Positions

The PetPace collar also records the body postures of the dog. The chart below revealed that Jessie sleeps almost entirely on her belly, and rarely lays on her sides or back. This is typical for dogs with labored breathing. In addition, Jessie sits and stands several times during the night, another indication of low quality sleep.



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Discussion

The PetPace collar was instrumental in evaluating the severity of Jessie's Brachycephalic Airway Syndrome symptoms and sleep apnea. This condition, and its implications, is difficult to fully assess during a standard exam at a veterinary hospital – especially given that sleep apnea occurs at home during the night, and is not readily visible to the clinician. Having quantifiable, objective data helps Jessie's caregivers diagnose her condition, assess its severity, decide on a strategy for intervention, and monitor her response to treatment.

"The type of information supplied by the PetPace collar is valuable and unprecedented," said Dr. Dick Hay, a specialist in canine and feline medicine and surgery from Davidson, NC, who is Jessie's veterinarian. "Using the data PetPace collected, we got a clearer picture of Jessie's condition, and decided surgical intervention is likely warranted," he continued. Jennifer Ferguson, Jessie's owner, added "Interesting info! I knew there was a good reason why she was falling asleep standing up all day".

Summary

Jessie's case is an excellent example of the potential value of the PetPace collar in monitoring patients for conditions that mostly occur at home, such as sleep apnea secondary to BAC. The level of information now available to veterinarians thanks to the PetPace collar enables vastly-improved clinical decision making and markedly better patient care.