Study shows short snout predisposes dogs to sleep apnea

June 13 2023

Dogs can have sleep apnoea too. Credit: Aapo Niinikoski

University of Helsinki researchers tested a new method of diagnosing sleep-disordered breathing in dogs using a neckband developed for human sleep apnea diagnostics. The study revealed that sleep-disordered breathing is more prevalent among short-snouted dogs than those with longer snouts.

French bulldogs, pugs and other brachycephalic dog breeds are popular pets. Brachycephalic dogs are shorter-nosed and flat-faced as a result of breeding, making them more susceptible to heat, overexertion and respiratory problems.

In addition, brachycephalic dogs have been found to suffer from recurring episodes of sleep-disordered breathing, resembling human obstructive sleep apnea caused by upper airway obstruction. During such episodes, normal breathing is interrupted by obstructed airways as the muscles of the upper airways relax, resulting in sleep interruptions and daytime fatigue. Sleep apnea can have a dramatic impact on both human and canine well-being.

"Sleep apnea places people at considerable risk of conditions such as hypertension and cardiovascular disease. Sleep affects the body's immune system, hormone secretion and metabolism. Sufficient, sound sleep is vital for quality of life. For these reasons and others, we are interested in canine sleep too," explains Doctoral Researcher Iida Niinikoski of the University of Helsinki's Faculty of Veterinary Medicine.

"Previous methods for investigating sleep apnea have required dogs to sleep either while connected to all sorts of equipment or within a certain type of box in a lab. This has made research challenging and limited our knowledge of dog sleep apnea."

The University of Helsinki Lung Insight research group investigated breathing during sleep in dogs using a neckband system developed originally for diagnosing human sleep apnea.

The group measured breathing during sleep using the screening device in the dogs' home environment. Brachycephalic dogs recorded a much higher number of sleep-disordered breathing events than dogs with longer snouts. The short-nosed dogs also snored more than their long-nosed counterparts.

The neckband system was found to be an easy-to-use method for measuring sleep-disordered breathing. Although its use is currently

limited to patients involved in research, in the future it may provide novel opportunities for dog sleep apnea diagnostics in other contexts too.

Next, the research group will explore factors predisposing dogs to sleep apnea.

As Niinikoski believes, "Good sleep is vital for the health of both humans and our animal friends."

The study is published in the *Journal of Veterinary Internal Medicine*.

More information: Iida Niinikoski et al, Description of a novel method for detection of sleep-disordered breathing in brachycephalic dogs, *Journal of Veterinary Internal Medicine* (2023). DOI: 10.1111/jvim.16783

Provided by University of Helsinki