



## Bellwether Magazine

---

Volume 1  
Number 22 *Winter 1987*

Article 11

---

1-1-1987

# Bulldog Sleep Studies

---

This paper is posted at ScholarlyCommons. <http://repository.upenn.edu/bellwether/vol1/iss22/11>  
For more information, please contact [libraryrepository@pobox.upenn.edu](mailto:libraryrepository@pobox.upenn.edu).



# Bulldog Sleep Studies

**A** bulldog has special appeal. Its short, broad head, wrinkles, heavy neck, stocky body, and rolling gait all connote a sturdy, quiet, deliberate compulsion. But these characteristics also create health problems for the bulldog, as its physical stature pre disposes it to breathing troubles.

Dr. Joan C. Hendricks, assistant professor of medicine at the University of Pennsylvania School of Veterinary Medicine, is studying the respiration of bulldogs during sleep. "Bulldogs snore and they usually sleep a lot during the day," she said. "In people, these signs can indicate sleep apnea, a disorder where the person periodically ceases to breathe during sleep. We have examined quite a number of bulldogs and found that they, too, have apnea episodes." Dr. Hendricks explained that bulldogs do not necessarily have a narrow trachea but, frequently, they have excess tissue in the soft palate area. These physical symptoms are shared by people with sleep apnea. "When apnea sufferers sleep, the muscles in the back of the throat relax and the tissues there can collapse and obstruct breathing. This creates a tremendous load on the diaphragm which must work against these restrictions."

Sleep apnea is most common in men. Often, they are overweight. Their necks tend to be short and thick, and in many cases the upper airways are narrowed. Snoring is common and breathing may stop several times during sleep. Blood oxygen drops to dangerously low levels and is restored to normal only when breathing resumes. Apnea sufferers are usually tired when they wake up in the morning. Dr. Hendricks has measured the oxygen content of the blood of bulldogs during apnea intervals and found that the blood oxygen saturation drops to 70 to 80 percent, with over 90 percent being the normal value.

It is known that people with sleep apnea frequently



A bulldog ready for the sleep study.

have cardiovascular problems, and many suffer from hypertension and abnormal heart rhythm. Dr. Hendricks is trying to determine whether these signs also occur in bulldogs. In the study, the airflow is measured during inhaling and exhaling. The abdominal involvement in breathing is also measured and the heart rhythm is monitored. The measuring devices are contained in stretchbelts which are put around the dog. The dogs sleep in a cage and are filmed with a video camera. "Bulldogs go to sleep in ten minutes whereas other dogs need days to get used to the laboratory setting," she said.

For many years, veterinary surgeons have tried to alleviate breathing problems in dogs by clipping the soft palate. It is not known whether this helps to reduce the apnea episodes in dogs. In people such surgery, and surgery to reduce other obstructive tissues in the nose and larynx, is of help to about 50 percent of the patients.

"We don't know whether the extensive soft palate and the other excess tissue in the nose and throat are there

to begin with or whether they develop as a response to obstructions in the airways, such as a narrowed trachea," said Dr. Hendricks. "To find out, we will study litters of bulldog puppies to determine when apnea conditions first develop."

Sleep apnea is a serious medical problem. It is believed that about 5 to 20 percent of men suffer from this condition. It is thought that the disorder may cause a number of medical problems, particularly in the cardiovascular system. Dr. Hendricks feels that it may be related to the bulldog's relatively short lifespan, and she hopes that her study of the breed may shed some light on this. "The bulldog breeders have been very supportive and have brought their dogs here so we could study them," she said. "Now I am hoping to study several young litters to determine when the problem first surfaces."

Dr. Hendricks research is being supported by a grant from the American Lung Association.

## Where are the Phi Zeta members?

Phi Zeta, an honorary society promoting academic excellence in research in veterinary medicine, is looking for its members. "Each year about 35 students are inducted into the Beta Chapter of Phi Zeta here at the School," said Dr. Joan Hendricks (V'79), current president of the group. "Yet our records show only about 60 dues-paying members at this time. Technically, once inducted, a person is a lifetime member. Modest dues of \$5 annually are requested to help defray expenses for the activities of the chapter. Obviously, a lot of people have been dropped because of non-payment of dues. We would like to reach them and encourage them to become active in Phi Zeta again."

Each fall, the Beta Chapter sponsors a wine and cheese reception for freshmen to acquaint them with the honorary society and programs such as Aquavet and the V.M.D.-Ph.D. programs at the School. The group also encourages students to engage in research and each year calls for papers based on research done by students. A faculty committee selects papers suitable for presentation, and students give a 15-minute presentation in March during Phi Zeta Day. The committee also selects first- and second-prize winners, and cash prizes and plaques are awarded. There are two categories in the competition, one for students in the V.M.D. program and one for those in the combined program.

In addition to these activities, biannual meetings are held. The group sponsors a dinner for the inductees each year. Junior students in the top 10 percent of their

class are eligible for membership, and senior students in the top 25 percent of the class qualify.

"We would like our members to support Phi Zeta so we can continue to offer the Chapter's activities," said Dr. Hendricks. "We have declared an amnesty, and all that is needed to reactivate a membership is to pay the dues for last year and the current year. Our treasurer is Dr. David Knight and the secretary is Dr. Sheldon Steinberg. Dues and comments can be sent to either one here at the School. I hope they will be deluged with mail!"

## Feline Symposium

The Eleventh Annual Feline Symposium will be held on April 16 at the Veterinary Hospital of the University of Pennsylvania in Philadelphia. The day-long event begins at 9:15 a.m. Dr. Douglass K. Macintyre, assistant professor of medicine, will discuss *Diabetes in Cats. Use of Radiation Therapy in the Management of Feline Neoplasia* will be the topic of Dr. Sydney M. Evans, assistant professor radiology. The first speaker of the afternoon session, Dr. Vicki N. Meyers-Wallen, assistant professor of reproduction, will speak about *Feline Reproductive Problems*. Mordecai Siegal, author and columnist, will end the program with *Paws For Thought—An Excursion Into Cat Writing*.

The cost of the program is \$35, which includes

parking and lunch. Reservations are required and can be made by contacting Dr. M. Josephine Deubler, VHUP, 3850 Spruce Street, Philadelphia, PA 19104-6010.

In addition to the Feline Symposium, the weekend of April 16 and 17 will feature one other cat-oriented event, a four-ring cat show to be held at the Class of 1924 Ice Rink, a few blocks from the Veterinary School. This show will take place on April 17. For further information please call (215) 898-1475.

The Feline Symposium is supported by The Iams Company, Cat Mews, Chesapeake Cat Club, Inc., the Greater Lancaster Feline Fanciers, and the Student Chapter of the American Association of Feline Practitioners.

