March 2003 News

Researchers at the Atlantic Veterinary College in Prince Edward Island, Canada analyzed a commercially available test kit to evaluate its ability to distinguish between ovariectomized (spayed) and intact (nonspayed) dogs. The test measures the amount of luteinizing hormone (LH) in the blood. LH is secreted by the pituitary gland and, in female dogs, influences the estrus cycle and ovulation. It continues to be secreted in dogs even after they are spayed. In fact, spayed dogs almost always have high levels of LH in their blood; intact animals usually have low levels.

In this study, the blood test was performed on samples from 199 spayed dogs and 101 intact dogs. The test was found to have excellent sensitivity (98%), meaning it correctly identified spayed dogs. It appears that serum LH concentrations remain high long after the ovaries are removed, possibly for the entire life of the dog. LH levels were found to be high in dogs within 5 days of ovarian removal.

Although almost all (98%) spayed dogs had high levels of LH, a fair proportion of intact dogs (22%) did too. That is, 22% of the sexually intact dogs tested had high levels of LH and were incorrectly classified as being spayed. This can be explained by the fact that intact dogs have brief episodic surges in serum LH concentrations at intervals of 1 to 8 hours throughout their estrous cycle. These surges are generally 20-60 minutes in duration. Therefore, if a high LH result is obtained, it is recommended that the veterinarian repeat the test, taking samples about 2 hours apart. A single low LH test result confirms the dog is intact.

- Löfstedt, LM; VanLeeuwen, JA. Evaluation of a commercially available luteinizing hormone test for its ability to distinguish between ovariectomized and sexually intact bitches. Journal of the American Veterinary Medical Association 2002;220:1331–1335.

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Comments from our Veterinary Staff:

This test will be very useful for humane shelters as well as veterinarians who are asked by owners to spay adopted or rescued dogs, for whom there is no medical history. Sometimes it is possible to identify a scar on spayed dogs, but this is a very unreliable means to determine if a dog is spayed.