



### Further Exploring Article References

Two articles in this issue of *Today's Veterinary Practice* mention new studies recently published in the scientific literature, and this column provides the perfect forum to further explore the research referenced.

#### From Feline Protozoa: Recommendations from the Companion Animal Parasite Council (page 74)

##### A New Species of *Tritrichomonas* (Sarcomastigophora: Trichomonida) from the Domestic Cat (*Felis catus*)

Walden HS, Dykstra C, Dillon A, et al. *Parasitol Res* 2013; 112(6):2227-2235.

Trichomoniasis, caused by infection with trichomonads, is described in cattle and cats. In cats, the disease manifests intestinally, resulting in chronic, large bowel diarrhea; while infected cattle may show signs of pyometra and, ultimately, mid- to late-term abortions. The causative agent of this infection identified in both hosts had been *Tritrichomonas foetus*; however, cumulative research has since shown that 2 different organisms are responsible; infection in cats can now be attributed to *Tritrichomonas blagburni*.

Studies have shown that while these 2 organisms are morphologically similar, genetic and pathogenicity differences suggest 2 different parasite species. Experimental cross infection studies were conducted between feline and bovine trichomonad isolates and their respective hosts: Cattle inoculated with the feline trichomonad isolate were able to maintain the parasite; however, they did not develop the same level of disease associated with bovine trichomonad isolate infections. Similar results were found in cats—bovine trichomonad isolates did not cause the large bowel disease associated with feline trichomoniasis, and establishment of infection with the bovine isolate was more difficult in the cat compared with the feline trichomonad isolate.

Differentiation between these 2 parasite species may help practitioners and researchers streamline diagnostics, as well as therapeutics, for this disease in cats and cattle.

—Heather Stockdale Walden, PhD, University of Florida

##### Additional References

Experimental infection of cats (*Felis catus*) with *Tritrichomonas foetus* isolated from cattle. Stockdale HD, Dillon AR, Newton JC, et al. *Vet Parasitol* 2008; 154:156-161.

Experimental infection of cattle with a feline isolate of *Tritrichomonas foetus*. Stockdale HD, Rodning S, Givens M, et al. *J Parasitol* 2007; 93(6):1429-1434.

##### CRITICAL POINTS

- The causative agent of feline intestinal trichomoniasis, previously thought to be *T foetus*, has been identified as a separate organism, *T blagburni*.
- *T foetus* is now strictly associated with bovine trichomoniasis, a sexually transmitted disease in cattle.
- Recognition of *T blagburni* does not impact treatment recommendations for cats with trichomoniasis.
- This species was named in honor of Dr. Byron L. Blagburn in recognition of his contributions to veterinary parasitology and the impact of his work on feline health.

#### From Pediatric Wellness Care: Behavior, Nutrition, Oral Care, & Reproduction (page 68)

##### Neutering Dogs: Effects on Joint Disorders and Cancers in Golden Retrievers

Torres de la Riva G, Hart BL, Farver TB, et al. *PLoS ONE* 2013; 8(2):e55937.

This retrospective study examined the effects of early and late neutering on the incidence of several diseases in golden retrievers. The participating dogs were 1 to 8 years of age, including 395 males (145 intact) and 364 females (122 intact). Neutering was classified as *early* if performed before 1 year of age and *late* if performed 1 year of age or older.

*Early neutering* was associated with increased incidence of hip dysplasia (HD) and lymphosarcoma (LSA) in males, and increased incidence of cranial cruciate ligament rupture (CCLR) in males and females. Incidence of LSA was suspiciously higher in early neutered versus intact females (13/169 vs 0/122) but the difference was not statistically significant. *Late neutering* was associated with increased incidence of mast cell tumors and hemangiosarcoma in females. Due to the influence of body weight on joint disorders, body condition score was compared between the intact and neutered groups, but was not found to be statistically different.

The authors hypothesized that, with *early neutering*, lack of gonadal hormones may delay closure of growth plates and increase the chance of joint disorders; with *late neutering*, future neoplastic cells may be sensitized to estrogen over several estrus cycles and, in intact females, estrogen may be protective, but its removal allows neoplasms to develop.

—Lesley G. King, MVB, Diplomate ACVECC & ACVIM (Small Animal Internal Medicine), University of Pennsylvania

##### CRITICAL POINTS

- These findings apply only to golden retrievers and need to be studied in other breeds.
- In male golden retrievers, it may be beneficial to delay neutering beyond 1 year of age due to possible decrease in risk for HD, CCLR, and LSA.
- With regard to late neutering, findings should be interpreted cautiously because information was not provided about specific timing of neutering in this group relative to onset of disease.
- Data were not collected for dogs older than 9 years of age—the age group often expected to be affected by neoplasia.