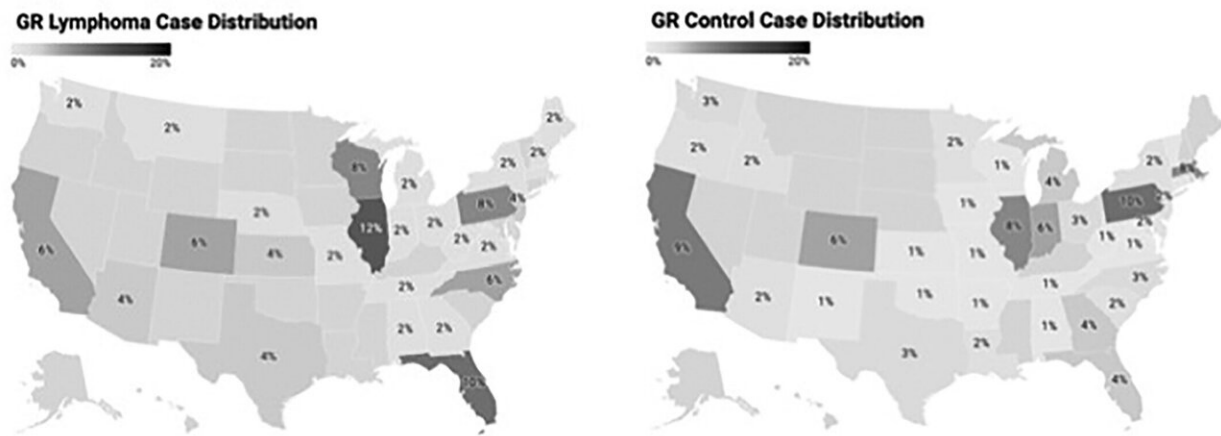


New study finds limited correlation between canine lymphoma and proximity to environmental toxins

March 8 2024, by Annie Mehl



Chloropleth maps showing geographic distribution of golden retrievers (GRs) with lymphoma (A) and matched unaffected controls (B) recruited through the longitudinal Golden Retriever Lifetime Study. Credit: *Journal of Veterinary Internal Medicine* (2024). DOI: 10.1111/jvim.17021

As awareness of the health risks associated with radon and fracking exposure in connection to cancer continues to rise in human medicine, a recent study explored these ties with multicentric lymphoma, a prevalent canine cancer. Surprisingly, the study did not identify significant correlations between living near sources of environmental toxins, such as fracking by-products and radon, and dogs diagnosed with lymphoma.

The results of this study were [published](#) in the *Journal of Veterinary Internal Medicine* using data from Morris Animal Foundation's [Golden Retriever Lifetime Study](#), which enrolled dogs with multicentric lymphoma and matched unaffected dogs. Using special geospatial software, the researchers mapped the dogs' home addresses to U.S. Environmental Protection Agency radon zones and active [fracking](#) wells.

Ashleigh Tindle, a researcher involved in the project and a Ph.D. student at the University of Wisconsin-Madison, expressed surprise at the lack of correlation, given similar connections found in children with leukemia living near fracking sites. Acknowledging the study's limitations due to the [small sample size](#) and the lack of fracking wastewater data for some states, Tindle emphasized the study's role as an initial step in exploring the available information.

The study focused on county-level information over a decade but did not have data on individual home radon levels, which is a significant limitation. Additionally, the enrolled dog population was biased toward those who can afford veterinary care and seek a [definitive diagnosis](#), while fracking wells tend to be near lower-income areas.

The research team recommends follow-up studies, including direct measurements of radon emissions and [volatile organic compounds](#), which are pollutants generated by vehicle exhaust and industrial activities, and fracking in the homes of dogs with lymphoma. The team's next project involves analyzing urine and [blood samples](#) from the Study to understand how VOCs and herbicide exposures could alter a dog's DNA, potentially creating a biomarker of later lymphoma development.

"The next steps are to connect the dots between [dogs](#) that are exposed to environmental chemicals and whether there is evidence of DNA damage or other early hallmarks of cancer risk that could lead to lymphoma," Tindle said.

More information: Ashleigh N. Tindle et al, Environmental radon, fracking wells, and lymphoma in dogs, *Journal of Veterinary Internal Medicine* (2024). [DOI: 10.1111/jvim.17021](https://doi.org/10.1111/jvim.17021)

Provided by Morris Animal Foundation

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