

New study points to unexpected benefits of rabies vaccination in dogs

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The rabies vaccine is extremely effective at preventing this fatal disease in dogs, but new research shows the vaccine may have a positive impact on overall canine health as well, and is associated with a decrease in death from all causes.

The unexpected finding could have implications for future design of rabies control programs as well as provide a model to study this same effect in humans. Dr. Darryn Knobel, Associate Professor of Epidemiology and Population Health at Ross University School of Veterinary Medicine, recently published his research results in the journal *Vaccine*.

The study showed that [rabies vaccination](#) reduced the risk of death from any cause by 56 percent in dogs 0 to 3 months of age. While all dogs had decreased mortality, the percentage decrease was highest in young dogs, with the effect diminishing over time. Dr. Knobel's study area incorporated an impoverished region of South Africa, where infectious diseases, including rabies, are an ever-present threat to both humans and dogs. The research team concluded that the decrease in mortality couldn't be explained by a reduction in deaths due to rabies alone.

"This led us to propose that rabies vaccine may have a non-specific protective effect in dogs, perhaps through boosting the immune system to provide enhanced defense against other, unrelated diseases," said Dr. Knobel. "A similar phenomenon has been observed in children, although it remains to be substantiated through more definitive trials."

Rabies remains a global health threat with tens of thousands of human deaths every year, mostly in Asia and Africa. Dogs are the main source of human rabies deaths, so rabies control programs are essential to both canine and human health.

Understanding the mechanisms responsible for the enhanced immunity could have broad implications not only for [veterinary medicine](#) but also for human medicine. Dr. Knobel hopes to continue his studies in collaboration with veterinary immunologists and infectious disease specialists, to study this effect further in dogs.

"Morris Animal Foundation is proud to support the work of Dr. Knobel in this critically important area of animal and human [health](#)," said John Reddington, DVM, PhD, President and CEO of Morris Animal Foundation. "This is a fatal disease shared by [dogs](#) and people, and the work we and Dr. Knobel have undertaken has the potential to save both human and canine lives by further exploring the findings of this study."

While great strides have been made in rabies prevention and treatment since 1983, the World Health Organization continues to include rabies on its neglected tropical disease roadmap. As a zoonotic disease (meaning it spreads from animals to people), rabies requires close cross-sectional coordination at the national regional and global levels. Raising awareness about rabies through World Rabies Day, Sept. 28, and other efforts is critical to successful [disease](#) management programs.

More information: Darryn L. Knobel et al, Rabies vaccine is associated with decreased all-cause mortality in dogs, *Vaccine* (2017). [DOI: 10.1016/j.vaccine.2017.05.095](https://doi.org/10.1016/j.vaccine.2017.05.095)

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