

Hounds and wolves share parasites

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Wolf (*Canis lupus*). Credit: Heiko Anders

Grey wolves are hosts to a variety of parasites. The presence of grey wolves in German forests has little influence on the parasite burden of hunting dogs. This reassuring conclusion is the result of a new study at

the Berlin-based Leibniz Institute for Zoo and Wildlife Research (IZW). The study examined the faeces of 78 hunting dogs over several months in an area without wolves and in one that had been recolonised. The results have been published in the *International Journal for Parasitology: Parasites and Wildlife*.

Since the early 1990s, grey wolves have been expanding their range in central Europe. This recolonisation gives rise to many questions about this apex predator and its influence on the environment and the life cycles of its parasites, prey and potential competitors. Scientists at the Leibniz-IZW now report that the presence of wolves has little impact on the parasite burden of domestic [dogs](#) used for [hunting](#) prey of wolves. The scientists compared [hunting dogs](#) based in Eastern Germany, where wolves have re-established themselves since early 2000, with hunting dogs in the north of Germany, where, at the time of the study, there were no resident wolf packs.

"Hunting dogs, unlike companion dogs, are especially well suited for this comparison as they, just like the wolf, rummage through forests and have access to game meat," says Ines Lesniak, a scientist at Leibniz-IZW. "The study focused on the parasites of the internal organs, so-called endoparasites, which can be identified in the faeces of the host."

In a previous study, the spectrum of endoparasites present in German grey wolves was described. As previously, the researchers used genetic techniques to determine the presence of parasitic worms and protozoan intestinal parasites belonging to the *Sarcocystis* genus in hunting dogs. Both the rate of infection and the species richness of worms and *Sarcocystis* species found in the dogs did not differ between the study areas with and without wolves.

The parasite spectrum of hunting dogs and wolves overlapped considerably, indicating that dogs might have replaced the wolf during

its absence as an alternate host in the [life cycles](#) of some parasites. A single Sarcocystis species (Sarcocystis grueneri), previously identified as a "wolf specialist," was discovered more frequently in hunting dogs in wolf areas than in hunting dogs in areas without wolves. Like many tapeworms, these protozoans have a life cycle in which carnivores, like dogs or wolves, function as definite host and their prey, such as roe deer and red deer, act as intermediate hosts.

"Unlike wild animals, hunting dogs are regularly dewormed, including the individual hunting dogs which participated in our study," Lesniak emphasises. "However, these medical treatments do not affect [protozoan parasites](#) such as Sarcocystis."

The scientists suspect that the high infection probability of hunting dogs – over 60 percent in both study areas – is caused by the routine feeding of game meat or offal. "It's in the owner's hands," Lesniak says. "Many study participants already act very responsibly by deworming their dogs on a regular basis; in the best cases several times a year."

The official recommendation of the European Scientific Council for Companion Animal Parasites (ESCCAP) is that there should be a monthly treatment of risk groups such as hunting dogs. Such a regular treatment prevents parasitic worms from reproduction in the host and subsequent egg development, which thereby improves the health and wellbeing of the hunting dog.

"Dog owners can also reduce the parasite burden of their dogs by the careful feeding of meat leftovers. Cooking the meat is a simple precautionary measure that inactivates all parasites – from protozoans to tapeworm cysts – as well as other pathogens that might be present in the meat." The Leibniz-IZW considers wolves to play a minor role regarding the excretion and distribution of parasites. "The number of wolves in Germany is extremely low compared to other carnivores such as red

foxes or racoon dogs, which can also serve as hosts for these [parasites](#), and it is also low in comparison to the number of hunting dogs," says senior author Dr. Oliver Krone.

None of the parasite species found in hunting dogs are an unreasonable health risk to humans, irrespective of whether the dogs live in an area where wolves are present or not present. The regular treatment with anthelmintics and feeding of cooked leftovers are simple but effective measures to maintain the health of hunting dogs. The Leibniz-IZW study illustrates that concerns regarding pathogens related to the return of [wolves](#) are currently unjustified.

More information: Ines Lesniak et al. Surrogate hosts: Hunting dogs and recolonizing grey wolves share their endoparasites, *International Journal for Parasitology: Parasites and Wildlife* (2017). [DOI: 10.1016/j.ijppaw.2017.09.001](#)

Ines Lesniak et al. Population expansion and individual age affect endoparasite richness and diversity in a recolonising large carnivore population, *Scientific Reports* (2017). [DOI: 10.1038/srep41730](#)

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