

Why cats have more lives than dogs when it comes to snakebite

May 19 2020



Several behavioral differences between cats and dogs are also highly likely to increase the chances of dogs dying from venomous snake bite. Credit: The University of Queensland

Cats are twice as likely to survive a venomous snakebite than dogs, and

the reasons behind this strange phenomenon have been revealed by University of Queensland research.

The research team, led by Ph.D. student Christina Zdenek and Associate Professor Bryan Fry, compared the effects of snake venoms on the [blood](#) clotting agents in [dogs](#) and cats, hoping to help save the lives of our furry friends.

"Snakebite is a common occurrence for [pet cats](#) and dogs across the globe and can be fatal," Dr. Fry said.

"This is primarily due to a condition called '[venom](#)-induced consumptive coagulopathy' - where an animal loses its ability to clot blood and sadly bleeds to death.

"In Australia, the eastern brown snake (*Pseudonaja textilis*) alone is responsible for an estimated 76 per cent of reported domestic pet snakebites each year.

"And while only 31 per cent of dogs survive being bitten by an eastern brown snake without antivenom, cats are twice as likely to survive—at 66 per cent."

Cats also have a significantly higher survival rate if given antivenom treatment and, until now, the reasons behind this disparity were unknown.

Dr. Fry and his team used a coagulation analyser to test the effects of eastern brown snake venom—as well as 10 additional venoms found around the world—on dog and cat plasma in the lab.

"All venoms acted faster on dog plasma than cat or human," Mrs Zdenek said.

"This indicates that dogs would likely enter a state where blood clotting fails sooner and are therefore more vulnerable to these snake venoms.



In Australia, the eastern brown snake (*Pseudonaja textilis*) alone is responsible for an estimated 76 per cent of reported domestic pet snakebites each year.
Credit: Stewart Macdonald

"The spontaneous clotting time of the blood—even without venom—was dramatically faster in dogs than in cats.

"This suggests that the naturally faster clotting blood of dogs makes them more vulnerable to these types of snake venoms.

"And this is consistent with clinical records showing more rapid onset of symptoms and lethal effects in dogs than cats."

Several behavioural differences between cats and dogs are also highly likely to increase the chances of dogs dying from venomous snake bite.

"Dogs typically investigate with their nose and mouth, which are highly vascularised areas, whereas cats often swat with their paws," Dr. Fry said.

"And dogs are usually more active than [cats](#), which is not great after a bite has taken place because the best practice is to remain as still as possible to slow the spread of venom through the body."

The researchers hope their insights can lead to a better awareness of the critically short period of time to get treatment for dogs envenomed by snakes.

"As dog lovers ourselves, this study strikes close to home but it also has global implications," Dr. Fry said.

"I've had two friends lose big dogs to snakebites, dying in less than ten minutes even though the eastern brown snakes responsible were not particularly large specimens.

"This underscores how devastatingly fast and fatal [snake](#) venom can be to dogs."

The research has been published in *Comparative Biochemistry and Physiology*.

More information: Christina N. Zdenek et al, Pets in peril: The relative susceptibility of cats and dogs to procoagulant snake venoms,

Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology (2020). [DOI: 10.1016/j.cbpc.2020.108769](https://doi.org/10.1016/j.cbpc.2020.108769)

Provided by University of Queensland

Citation: Why cats have more lives than dogs when it comes to snakebite (2020, May 19)
retrieved 7 May 2024 from <https://phys.org/news/2020-05-cats-dogs-snakebite.html>

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