

Licking Speeds Healing, Should Your Dog Lick Her Wounds?

Wild dogs lick their wounds and so do other critters. Saliva has antibacterial, tissue and nerve growth-promoting properties that speed healing. It's a natural instinct, too, for a dog to lick a wound to keep it clean and to self-soothe. Is it okay to allow your dog to do it?

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Jan 10, 2023 • 6 min read

STORY AT-A-GLANCE

- Dogs and many other animals lick their wounds to self-soothe, and because saliva has antibacterial, tissue, and nerve growth-promoting properties that speed healing
- However, since wound licking can also cause problems, e.g., damaging the skin or transferring bacteria to an open sore, animal companions' wounds are treated and healed by other methods, and licking is discouraged
- In the realm of cutting-edge wound treatments for animals, cold plasma therapy is now being performed at Tufts University Cummings School of Veterinary Medicine to treat skin infections and chronic wounds in animals
- Cold plasma therapy has antibacterial, antiviral and antifungal properties, requires no sedation of animal patients, has no adverse side effects, and is easy to learn to use
- Another new and exciting treatment for skin wounds in animals is fish skin, which is being used to help animals burned in California's wildfires heal

Since about the last thing an adult human would do after finding a cut or a scrape on their body is begin licking it, the fact that dogs lick their wounds is a source of curiosity to many pet parents. And for the record, dogs aren't the only critters who lather up their scrapes and scratches with saliva — mice also do it,¹ and believe it or not, so do ants!² The question is, why?

Licking Can Be Soothing and Healing

The answer is two-fold: 1) licking is a self-soothing action in animals who do it, and 2) saliva has healing properties. As Dr. Benjamin Hart, a retired veterinarian and professor emeritus at the University of California, Davis explained to Live Science, wound licking is an instinctual behavior that probably lessens irritation and pain and might even speed healing.³

And as Dr. Kristi Flynn, a veterinarian and animal behavior expert at the University of Minnesota points out, licking can remove dirt and bits of loose skin from a wound, alleviating soreness. Since animals don't come equipped with hands, or access to a clean damp cloth, or topical medications, licking is sort of like a human rubbing a sore elbow or applying soothing lotion to an itchy spot.

"When [animals] feel pain, it's a natural inclination to try to soothe an area," Flynn told Live Science.

Hart agreed and added, "Licking wounds is an instinct in dogs that goes way back to the wolf ancestor. They've got a wound; they've got an instinct to lick it: keep it clean and wash off the dirt and the grime."⁴

Beyond the soothing benefit of licking, research shows that some animals' saliva, including that of humans, possesses not only antibacterial properties, but also tissue and nerve growth-promoting properties that speed healing.^{5,6}

A 1990 study co-written by Hart found that dog saliva kills a form of strep that primarily infects animals (*Streptococcus canis*), as well as *E. coli* bacteria.⁷ And a 2018 study that compared canine and human saliva found multiple immune and cell growth proteins specific to dog saliva.⁸

Why Wound Licking Is Often Discouraged

The problem, as many of you dog parents out there are aware, is that the instinct to lick can easily turn problematic, especially when there are better wound treatments available. The fact that dogs and other animals have an instinct to lick their wounds doesn't mean the practice is perfect.

"Things that evolve aren't 100% correct," Hart said. "They have to be useful 75% of the time or 50% of the time, and they'll still be maintained by natural selection because it's better than nothing."

If a dog has just had surgery or treatment for an open wound, licking the site can pull out sutures or cause other damage, and turn a "a very small lesion into a big, big mess," per Flynn. This is why dogs often come home after a veterinary procedure wearing the dreaded cone of shame.

Many dogs will engage in excessive licking given the chance, which can prevent wounds from healing and ultimately make a bad situation worse.

In addition, licking can put mouth bacteria in contact with the wound, which can increase the risk of infection, despite the antibacterial properties of saliva. For example, the 1990 study mentioned above showed that canine saliva doesn't kill *Staphylococcus*, a type of bacteria that is commonly found in wounds and can cause staph infections.

Bottom line: wound licking is good primarily for wild animals with no other options. These days, there are much better alternatives for furry family members.

Cutting-Edge Therapy for Wounds, Growths, and Infections

A veterinary dermatologist at Tufts University Cummings School of Veterinary Medicine has begun using cold plasma therapy to treat chronic wounds and superficial skin infections in animal patients.⁹

Plasma, matter that makes up nearly 99% of the universe, is an ionized gas in which electrons "have been torn away from their atoms." Plasma is usually hot, but there's a way to create cold (nonthermal) plasma, which has a variety of applications in the practice of medicine. (Cold plasma isn't actually cold — it's just colder than normal plasma.)

According to Cummings assistant professor and veterinary dermatologist Ramón Almela, cold plasma treatments can be used on a wide range of animals, including cats, dogs, horses, birds, exotics, and farm animals. The therapy can be used to manage superficial skin infections, benign skin growths, non-healing chronic wounds, and more.

The cold plasma is delivered through a pen-like device that allows practitioners to target the affected area. The plasma is released in a bluish-colored stream from the tip of the pen, similar to a laser.

Per Almela, cold plasma kills pathogens (viral, bacterial, and fungal) without affecting normal cells. The treatment is "practically painless" — the only thing the animal feels is a little air blowing on the skin. The number of treatments required depends on how severe the wound is, ranging from just one or two sessions to weeks of treatments. Therapy is typically performed once or twice weekly and lasts under a minute per square inch of affected area.

There appear to be few if any downsides to cold plasma therapy. Neither sedation nor anesthesia is necessary, and there are no negative side effects providing the practitioner is competent. In addition, the learning curve to use the pen is "really fast" according to Almela.

Another Outside-the-Box Wound Treatment: Fish Skin

Veterinarian Dr. Jamie Peyton, Chief of the Integrative Medicine Service at the University of California Davis, is now using the skin of tilapia fish to treat pets burned in California's wildfires. The technique has been used successfully in human medicine, and Peyton also used it in 2017 to heal the badly burned paws of two bears and a mountain lion, and more recently, a bear cub.

"We're trying to change burn care for animals," Peyton said in a news release. "Tilapia skins act as a dermal substitute that provides pain relief and protection and helps these wounds heal better."¹⁰

The fish skin can be sutured to the burned area or used as padding inside a bandage. It transfers collagen, a healing protein, to burned skin and reduces the frequency of bandage changes, which are very painful for burn patients.

The owners of pets who've received the treatment report a positive change in their animals' comfort level and behavior shortly after the fish skin is applied. In the case of one dog, the pet parent noticed a dramatic change in behavior shortly after application, and new skin began to grow on the severely burnt area within five days — a process that normally takes weeks.

An added bonus is that if an animal decides to taste-test the new skin, there's no toxicity risk, which the mountain lion proved when he ate his fish skin bandage a few days after it was applied!

Tilapias have rapid growth rates and are easy to farm, so they can potentially provide a readily available resource if the demand for fish skin to treat burns increases. According to Vet Voice, a publication of the Australian Veterinary Association:

"The skin is not designed to be a sole treatment for burns in animals but is a new development that could drastically change the way we manage and treat burns in animals."¹¹

Sources and References

¹ [Hutson, J.M. et al. Nature, Volume 279, pages 793–795 \(1979\).](#)

² [Live Science, February 14, 2018](#)

^{3, 4} [Live Science, April 10, 2022](#)

⁵ [Wang, K. et al. Archives of Oral Biology, Volume 99, March 2019, Pages 31-42](#)

⁶ [Schreck, K. et al. Int. J. Mol. Sci. 2017, 18\(2\), 386](#)

⁷ [Hart, B.L. and Powell, K. L. Physiology & Behavior Volume 48, Issue 3, September 1990, Pages 383-386](#)

⁸ [Sanguansermsri, P. et al. Comparative proteomic study of dog and human saliva, PLOS One, December 4, 2018](#)

⁹ [Tufts Now, January 17, 2020](#)

¹⁰ [UC Davis Veterinary Medicine News Release, January 3, 2019](#)

¹¹ [Vet Voice, March 27, 2019](#)
