

Why Do Dogs Have Tails?

A cat's tail helps with agility and movement, but because a dog's tail is relatively small compared to body size, it's unknown if dogs rely on their tails for the same reasons. Now, a team of researchers has set out to discover the real reason dogs have tails.

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Feb 27, 2023 • 4 min read

STORY AT-A-GLANCE

- Researchers set out to determine how important — or unimportant — tails are in dogs' movements
- Tail movements had "little to no effect" on complex maneuvers such as jumping
- Dogs may use their tails more for communication and "pest control" than they do for agility
- A wagging tail is a social cue for friendliness
- It's also possible that dogs use their tails for marking behaviors, similar to African wild dogs

Dogs may use their tails more for communication and "pest control" than they do for locomotion and agility, according to a team of researchers with the Max Planck Institute for Intelligent Systems.¹

Dogs have relatively small tails compared to their body sizes, leading to the hypothesis they're used to support certain agility maneuvers, such as jumping and turning. Dogs are also known to use certain tail postures during different movements, such as holding their tail upright while walking and aligned with the spinal column while galloping.²

However, it remained unknown whether dogs truly rely on their tails to move through their environments the way some other animals, like cats, do. A study of 25 different Canidae species set out to reveal the answer.

'Tail Wags the Dog Is Unsupported'

Certain creatures, like lizards, use their long tails to influence their body orientation. Squirrels do too, even though their tails make up a much smaller portion of their body mass compared to lizards. In fact, the tail may increase inertia in mammals by 35%, which is particularly important in allowing animals to make agile turns.³

Cheetahs, in particular, depend on tail movements for agility during high-speed chases. "Tail movement is critical in agile movements of the cheetahs during rapid movements, such as hunting where their high inertia tail allows rapid turning of nearly 190 [degrees] during prey chases," the researchers explained.⁴

"It is unknown if larger carnivorans, such as canids, can still use their tails to this effect or whether other appendages, such as head movement, must be used," they continued. "One such example is in human gymnasts who use the movement of their arms to produce twists."⁵

Using a complex biomechanics model to test the inertial capabilities of dogs' tails, the researchers set out to determine how important — or unimportant — tails are in dogs' movements. It turned out that tail movements had “little to no effect” on complex maneuvers such as jumping.

While certain dogs, such as greyhounds, have been compared to cheetahs, even greyhounds do not run nearly as fast as cheetahs, which may give some clue as to why their tails aren't necessary for agility. Even wolves only run about one-third the speed of a cheetah. As such, the researchers noted:⁶

“The precision of the model in reference to the movement of the dog displays that the tail of the dog has minimal impact on the center of mass movement during the jump, which indicates, in fact, that Canidae tails are not primarily used for biomechanics ...

The utilizing of the tail during jumping mechanisms achieves very low amounts of center of mass movement across all species with the largest being under a single degree.”

Dogs Use Their Tails to Communicate

The study revealed another fact that you may already suspect — dogs rely on their tails for communication. A wagging tail is a social cue for friendliness, the study found, further noting:⁷

“There are many online platforms that indicate that dogs utilize their tails for complex maneuvers such as turning and jumping, but given the incredibly low angular movement, the tail is imposing on the center of mass in a range of canid species we believe at this point, that the dog tail is primarily adapted for communication.”

Other options also exist, such as using their tails as a means of pest control to ward off flies or other animals. It's also possible that dogs use their tails for marking behaviors, similar to African wild dogs.

It's been suggested that dogs communicate with one another via tail movements — and tend to wag their tails to the left when they're feeling stressed.⁸ This may be driven by the brain, as activation of the left-brain causes the tail to wag to the right, while activation of the right-brain produces wagging to the left.

Dogs seem to respond to these cues; those that saw another dog wagging to the left experienced anxiety and elevated heart rates, whereas dogs that saw another dog wagging to the right remained relaxed.⁹ People, too, can use tail wags to uncover clues about how their dog is feeling or what they're trying to tell you. For instance, wags that indicate a dog is probably friendly include:

- Wags to the right
- Full body wag
- Fast wags that move in a big arc
- Relaxed tail while wagging
- The circle wag aka propeller wag aka helicopter tail

Wags that indicate a dog may not be feeling friendly:

- Wags to the left

- Just the tail is wagging, and especially, just the tip of the tail
- Slow wags that don't move the tail much
- A stiff, rigid wag

Paying close attention to your dog's tail position and movement can give you even more insights, including:

- A tail held high is a sign of alertness and sometimes dominance. The dog will release more of her scent from her anal glands this way, thus making her presence known.
- A tail held high and wagging (with a soft face) is often a sign of happiness, but also alertness (if the face is taugth).
- A tail held horizontal to the ground means your dog is exploring.
- A dog that tucks her tail between her legs or wags it low to the ground and quickly may be showing you that she's nervous, anxious, insecure or feeling shy (the tucked-in position also prevents her scent from being released).

Sources and References

^{1, 2, 3, 4, 5, 6, 7} [BioRxiv December 30, 2022](#)

^{8, 9} [Current Biology, Volume 23, Issue 22, 2279-2282, November 18, 2013](#)
