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Oct 18, 2013 04:28 PM EDT

'Law Of Urination' Shows Most Mammals Take 21 Seconds To Pee (VIDEO)

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Elephants take about the same amount of time to urinate as dogs.

Scientists used the "law of urination" to find that most mammals take 21 seconds to urinate, regardless of bladder size.

Researchers have been using high-speed videos to see "how fluids and animals interact," [New Scientist](#) reported. Previously, they watched how dogs shake off water.

When watching the footage they took at a zoo, the researchers noticed that animals of different sizes took about the same amount of time to finish urinating.

The team gathered footage of "rats, dogs, goats, cows and elephants," urinating. They used this footage and their knowledge of anatomy to create a mathematical model of how the urinary system works.

"Most of the research is on humans or animals smaller than humans," Patricia Yang and colleagues at the Georgia Institute of Technology in Atlanta, who participated in the study, told *New Scientist*. In these species, the effect of gravity can be ignored. That's not true of elephants, whose urethral dimensions are comparable to a household pipe: a diameter of around 10 [centimeters] and a

length of about 1 [meter].

Larger animals, like the elephant, have time to accelerate their urine, meaning they take about the same time to empty their bladder as a smaller animal. Very small animals like bats are less affected by gravity, and are more susceptible to "viscosity and surface tension," causing their urine to come out in one-second droplets instead of a continuous stream.

"The urinary system evolved to eject fluids from the body quickly and efficiently. Despite a long history of successful urology treatments in humans and animals, the physics of urination has received comparatively little attention. In this combined experimental and theoretical investigation, we elucidate the hydrodynamics of urination across five orders of magnitude in animal mass, from mice to elephants," the researchers said in a study published in the [Cornell University Library](#).

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