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It takes 21 seconds to go: Scientists discover that all mammals urinate for roughly the same length of time

- A team from the Georgia Institute of Technology came up with 'law of urination'
- They studied videos of various animals of different sizes going to the toilet

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Scientists have discovered that all mammals urinate for roughly the same amount of time, regardless of their size.

A study carried out by researchers at the Georgia Institute of Technology in Atlanta found that animals of various sizes - from an elephant to a rat - take around 21 seconds to relieve themselves.

The team, who collated their findings using videos of animals going to toilet and combining them with data on mass, bladder pressure and urethra size, were able to come up with what they are calling the 'law of urination'.

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Toilet training: All mammals take around 21 seconds to urinate regardless of their size according to new research

They were able to create a mathematical model of animals urinary systems and developed a theory as to why mammals take roughly the same amount of time to wee.

Earlier studies failed to take into account urethra length and only considered the effects of bladder pressure.



Consistent: Smaller animals like dogs take a similar amount of time to larger animals to empty their bladder

The scientists compared the length of time it takes larger animals like elephants to urinate and compared it to smaller animals such as dogs and goats.

Although elephants have larger bladders, they also have longer and wider urethrae meaning the urine can pick up higher speeds than that of smaller animals and its flow rate rises due to the effect of gravity.

And while smaller animals have shorter urethrae and therefore a slower flow rate, they also have smaller bladders and therefore less urine to get rid of.

According to [New Scientist](#), the result is that smaller and larger animals take roughly the same amount of time to empty their bladders.

The researchers concluded that the time it takes a mammal to urinate is proportional to the animal's mass raised to the power of six.

That means that variations in the time it takes to go to the toilet are only very minor in different animals.

It is hoped that the findings might help diagnose urinary problems in animals.

[The physics of urine from mice to elephants](#)



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