## Infographic: How old is your dog in 'human years'? Genetics prompt scientists to

 revise 'outdated' 1-to-7 formulaIf there's one myth that has persisted through the years without much evidence, it's this: multiply your dog's age by seven to calculate how old they are in "human years." In other words, the old adage says, a four-year-old dog is similar in physiological age to a 28 -year-old person.

But a new study by researchers at University of California San Diego School of Medicine throws that out the window... The formula is based on the changing patterns of methyl groups in dog and human genomes - how many of these chemical tags and where they're located - as they age. Since the two species don't age at the same rate over their lifespans, it turns out it's not a perfectly linear comparison, as the 1:7 years rule-of-thumb would suggest.

What emerged from the study is a graph that can be used to match up the age of your dog with the comparable human age (see chart above). The comparison is not a $1: 7$ ratio over time. Especially when dogs are young, they age rapidly compared to humans. A one-year-old dog is similar to a 30 -year-old human. A four-year-old dog is similar to a 52 -year-old human. Then by seven years old, dog aging slows.
"This makes sense when you think about it - after all, a nine-month-old dog can have puppies, so we already knew that the $1: 7$ ratio wasn't an accurate measure of age," [researcher Trey] Ideker said.


To calculate your dog's age in "human years" based on epigenetics, find the dog's age along the botton axis and trace your finger straight up until you reach the red curve. Then trace your finger straight over the left to find the corresponding human age. Credit: Cell Press

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