

As chimpanzees grow, so does yawn contagion

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The ability to empathize may influence chimpanzees' susceptibility to contagious yawning. Credit: Elaine Madsen

As sanctuary-kept chimpanzees grow from infant to juvenile, they develop increased susceptibility to human yawn contagion, possibility due to their increasing ability to empathize, says a study published October 16, 2013, in the open-access journal *PLOS ONE* by Elaine

Madsen and colleagues from Lund University.

Scientists examined the extent to which two factors affected chimpanzees' [susceptibility](#) to [yawn contagion](#): their age, and their emotional closeness to the person [yawning](#). Thirty-three orphaned chimpanzees, 12 infants 1 to 4 years old, and 21 juveniles 5 to 8 years old, were included in the trials. A trial sequence consisted of 7 five-minute sessions: a baseline session, followed by three experimental sessions, where the human repeatedly either yawned, gaped or nose-wiped, and three post-experimental sessions, where social interactions continued without the inclusion of the key behaviors. Each chimpanzee separately observed an unfamiliar human and a familiar human performing the sequence.

Researchers found that yawning, but not nose-wiping, was contagious for juvenile chimpanzees, while infants found neither yawning nor nose-wiping contagious. Specifically, human yawning elicited 24 yawns from the juvenile [chimpanzees](#) and zero yawns from the [infants](#). Chimpanzees appear to develop susceptibility to interspecies contagious yawning as they grow from infant to juvenile, possibly due to their developing ability to empathize with the person yawning. Emotional closeness with the yawning human did not affect contagion. Madsen added, "The results of the study reflect a general developmental pattern, shared by humans and other animals. Given that contagious yawning may be an empathetic response, the results can also be taken to mean that empathy develops slowly over the first years of a chimpanzee's life."



Researchers found that yawning, but not nose-wiping, was contagious for juvenile chimpanzees, while infants found neither yawning nor nose-wiping contagious. Credit: *PLoS ONE* 8(10): e76266. doi:10.1371/journal.pone.0076266

Aside from humans, cross-species yawn contagion and a gradual development yawn contagion, has previously only been demonstrated in dogs.

More information: Madsen EA, Persson T, Sayehli S, Lenninger S, Sonesson G (2013) Chimpanzees Show a Developmental Increase in Susceptibility to Contagious Yawning: A Test of the Effect of Ontogeny and Emotional Closeness on Yawn Contagion. *PLOS ONE* 8(10):

e76266. [DOI: 10.1371/journal.pone.0076266](https://doi.org/10.1371/journal.pone.0076266)

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