

# Research team finds effect of odor on helpfulness in rats

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The researchers investigated what affects the helpfulness of rats. Credit: Michael Taborsky

Despite their reputation, rats are surprisingly sociable and actually regularly help each other out with tasks. Researchers at the Universities of Göttingen, Bern and St Andrews have now shown that a rat only has to smell the scent of another rat that is engaged in helpful behavior to increase his or her own helpfulness. This is the first study to show that just the smell of a cooperating individual rat is enough to trigger an altruistic and helpful response in another. The research was published in the *Proceedings of the Royal Society B*.

It is well known that [rats](#) will help each other out. What the researchers wanted to know was whether the rat's odor during this behavior had any effect on another rat's helpfulness. They therefore carried out a series of tests to study the importance of the scent of a rat while making cooperative decisions. The rats being studied could choose to help another rat by pulling a platform containing a reward toward the other rat's cage. This provided food for the other rat, but did not have any immediate benefit for them personally. The researchers then provided the test rats either with the smell of a rat that was being helpful to another rat in a different room or with the smell of a rat that was not engaged in helpful behavior. The researchers were surprised to find that the scent of a rat engaged in helpful behavior was enough to illicit helpful behavior in the other.

Dr. Nina Gerber from the Wildlife Sciences at the University of Göttingen, who led the research, says: "Test rats increased their own helping behavior when they were presented with the smell of a helpful rat. Remarkably, this holds true even though they did not experience this helpful behavior themselves." She goes on to say, "Furthermore, such a 'smell of cooperation' depends on the actual activity of helping and is not connected to an individual rat. There isn't a 'special smell' for certain nice rats: The same individual can release the scent of being helpful or not, depending solely on their behavior."



Norway rats (*Rattus norvegicus*), like most species of rat, are very sociable and cooperate to help each other out. Credit: Manon Schweinfurth

The researchers concluded that physical cues—such as smell—might be even more important for rats to encourage cooperation than actual experiences. Gerber adds, "Even though people do not seem to rely on communication through scent in the way rats do, some studies indicate that [scent](#) is key for finding partners, or that smelling certain chemicals can increase trust in others. Whether there is such a '[smell](#) of cooperation' in humans, however, would be an interesting question for future studies."

**More information:** Nina Gerber et al. The smell of cooperation: rats

increase helpful behavior when receiving odor cues of a conspecific performing a cooperative task, *Proceedings of the Royal Society B: Biological Sciences* (2020). [DOI: 10.1098/rspb.2020.2327](https://doi.org/10.1098/rspb.2020.2327)

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