

Mice show innate ability to vocalize: Deaf or not, courting male mice make same sounds

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Scientists have long thought that mice might serve as a model for how humans learn to vocalize. But new research led by scientists at Washington State University-Vancouver has found that, unlike humans and songbirds, mice do not learn how to vocalize.

But the results, published in the current *Journal of Neuroscience*, point the way to a more finely focused, [genetic tool](#) for teasing out the mysteries of speech and its disorders.

To see if mice learn to vocalize, WSU neurophysiologist Christine Portfors took more than a dozen male mice and destroyed their ears' [hair cells](#). The cells convert [sound waves](#) into the [electrical signals](#) processed by the brain, making hearing possible.

The deaf mice were then raised with hearing mice in a normal social environment.

Portfors and her fellow researchers, including WSU graduate student Elena Mahrt, used males because they are particularly exuberant vocalizers in the presence of females.

"We can elicit vocalization behavior in males really easily by just putting them with a female," Portfors said, "and they vocalize like crazy."

And it turned out that it didn't matter if the mouse was deaf or not. The researchers catalogued essentially the same suite of ultrasonic sounds from both the deaf and hearing mice.

"It means that they don't need to hear to be able to produce their sounds, their vocalizations," Portfors said. "...Basically, they don't need to hear themselves. They don't need auditory feedback. They don't need to learn."

The finding means mice are out as a model to study vocal learning. However, scientists can now focus on the mouse to learn the [genetic mechanism](#) behind communications disorders.

"If you don't have learning as a variable, you can look at the [genetic control](#) of these things," Portfors said. "You can look at the genetic control of the output of the signal. It's not messed up by an animal that's been in a particular learning situation."

Provided by Washington State University

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