NEWS

Automated cage helps diagnose social behavior

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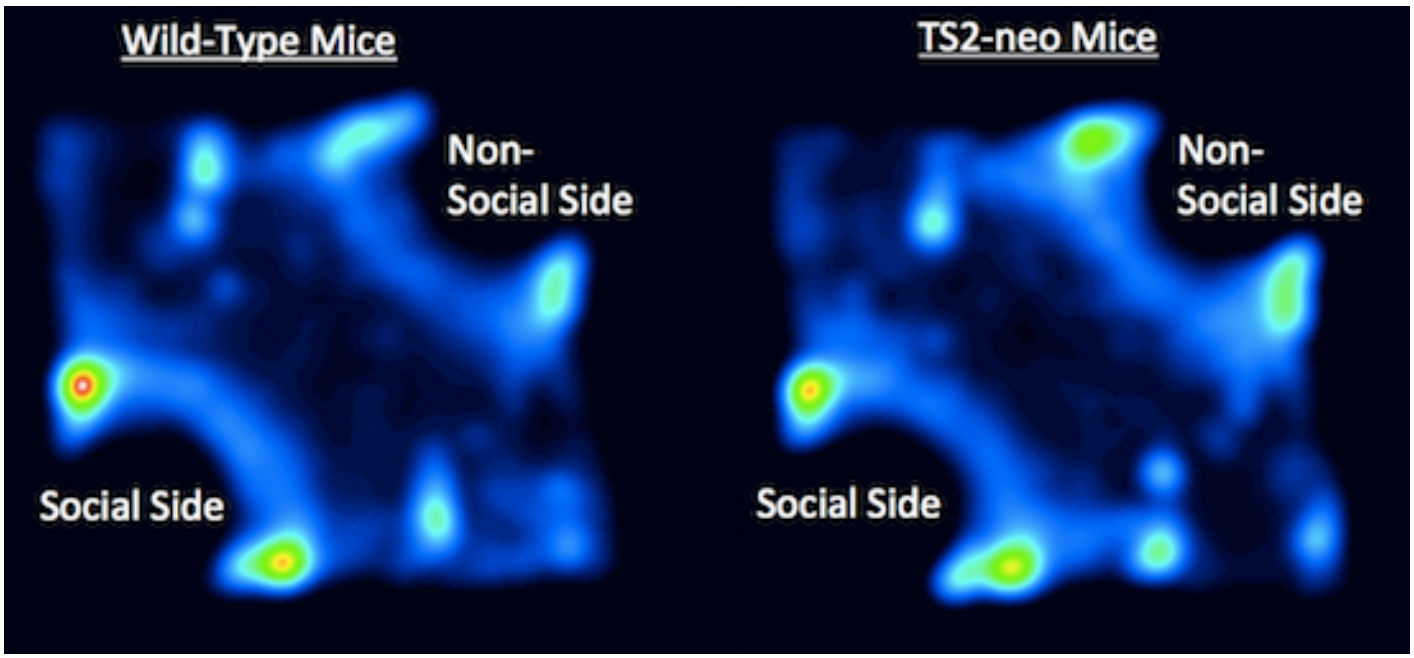

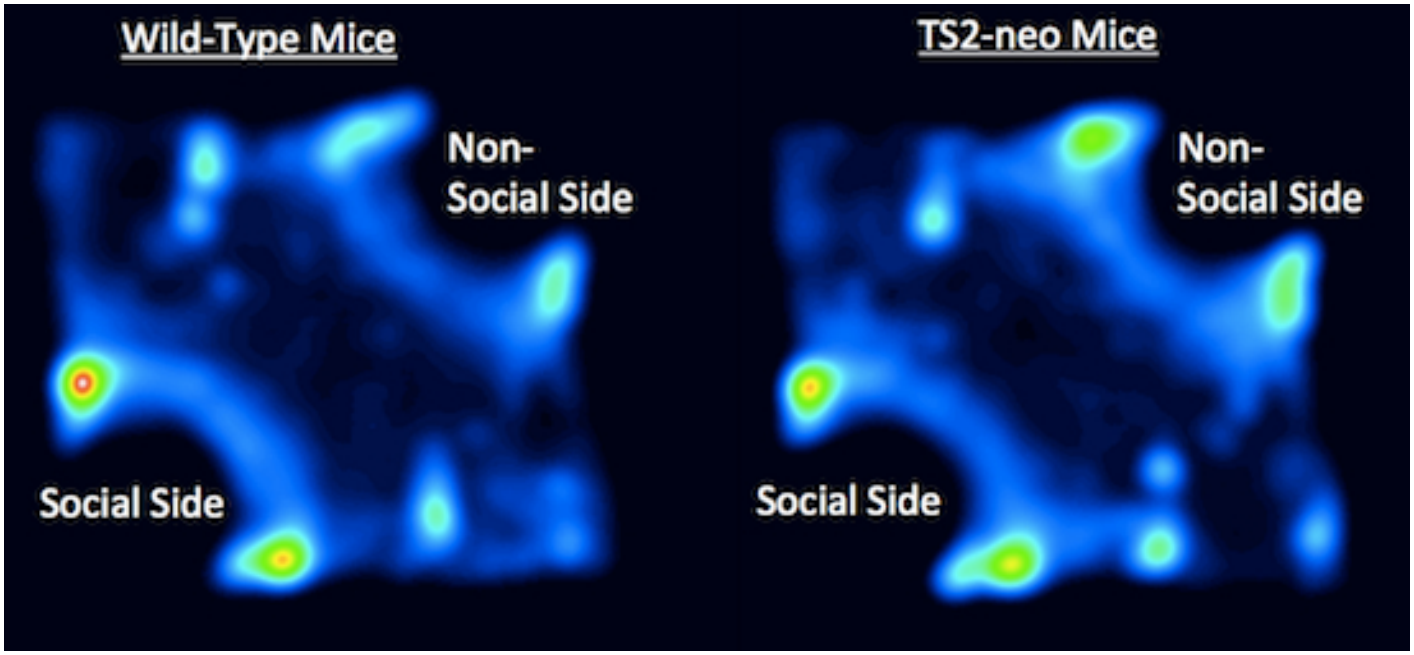

Hot and cold: These heat maps show a social behavior test of Timothy syndrome mice using a new technique in which researchers don't handle the mice.

Researchers have designed an automated cage assay to minimize the anxiety mice feel as they are being tested for social behavior. The new technique was presented at the **Society for Neuroscience annual meeting** in San Diego.

A good test for sociability in mice is key for autism researchers, who are trying to model a complex social disorder in a fairly simple animal. Reproducibility can be a problem with existing assays: autism mouse models often show different social behavior when studied by different laboratories.

Mehrdad Shamloo, who runs the **Stanford Behavioral and Functional Neuroscience Laboratory**, says the solution to this problem is to remove the researcher from the scenario.

Shamloo's team has developed an automated cage assay that scores by video how much time mice spend in various areas of a cage, creating a heat map that shows their preferences. Sociability is measured by how often a mouse approaches a small cup that contains another mouse, compared with an empty cup — a traditional approach.

Because the scoring is automated, however, the mice are not handled or watched closely by the researchers, which can make the mice anxious and confound the results.

Researchers have already used the new method to test mouse models, including a **Timothy syndrome model** presented at the meeting.

The researchers noted that both the Timothy syndrome and control mice interact with a confined mouse more during the first hour after it is introduced. This may be because of curiosity rather than sociability. "Mice are very exploratory animals, they like novelty," says Shamloo.

The novel mouse is introduced for only a period of four hours at a time, because the cup that holds the mouse is small, with no access to food or water.

The researchers are working on designing adjacent cages for both mice. This would allow them to measure interactions over long time periods, eliminating the effects of both anxiety and novelty.

"Our goal is to make their experience as normal as possible. We want [the experiment cage] to be their home," says Shamloo.