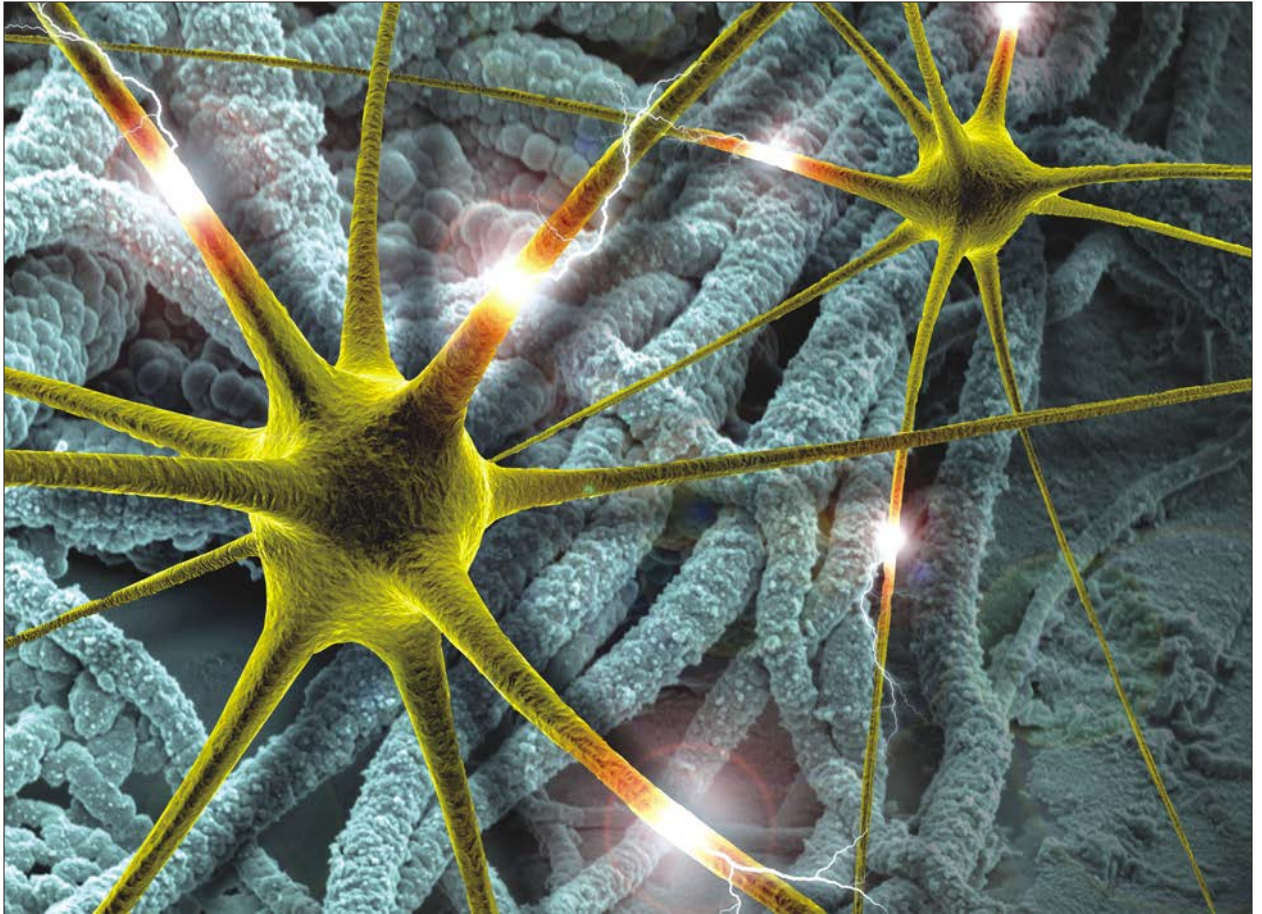




Current Research in **Neuroscience**

ISSN 1996-3408



Academic
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Older Animals Unable to Distinguish Similar-Looking Objects

Older rats appeared unable to discriminate between objects with similar features, behavior comparable to that of elderly people, who often have memory and perception troubles. The older rats' actions may be similar to those of young rats with damage in specific brain regions, according to a new study.

These results were presented in Neuroscience 2010, the annual meeting of the Society for Neuroscience, held in San Diego.

"A symptom of aging is a decreased ability to distinguish something novel from something familiar," said study author Sara Burke, PhD, of the University of Arizona. "Our experiment implies that this might be caused by age-related changes in the perirhinal cortex, an area of the temporal lobe associated with both memory and perception."

As rats age, they display some of the same cognitive impairments that humans do. Young rats are quick to discern new objects, exploring unfamiliar things for several seconds more than items they have previously encountered. But while old rats can classify unfamiliar and familiar items over the short term, they become confused as time passes, and eventually act as though unknown objects are well-known. In this study, researchers explored how older rats would react to known objects that are similar but distinct in appearance.

Burke and her team compared the behavior of old rats with young. Each rat was first given two identical objects and was then presented with either an identical object, or an object similar but distinctly different from the previous ones. Only the young rats extensively explored the novel object. The older rats explored the alike and unlike objects for the same amount of time, indicating they were unable to tell them apart.

"Because their behavior was reminiscent of rats with perirhinal cortical lesions, it is possible that this behavioral deficit is caused by age-related changes targeted that area of the brain," Burke said. "Such alterations could contribute to the increased incidence of false memories experienced by elderly individuals."

Research was supported by the National Institute on Aging, the McKnight Brain Research Foundation, and the Arizona Undergraduate Biology Research Program.