

Sociability may depend upon brain cells generated in adolescence

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Mice become profoundly anti-social when the creation of new brain cells is interrupted in adolescence, a surprising finding that may help researchers understand schizophrenia and other mental disorders, Yale researchers report.

When the same process is interrupted in adults, no such behavioral changes were noted, according to research published in the Oct. 4 issue of the journal *Neuroscience*.

"This has important implications in understanding social development at the molecular level," said Arie Kaffman, assistant professor of psychiatry and senior author of the study.

Scientists have known for quite some time that new [brain cells](#) are continually generated in specific [brain regions](#) after birth. This process, called neurogenesis, occurs at a significantly greater rate during childhood and adolescence than in adulthood, yet most research has focused upon the function of these neurons in older brains.

The Yale team decided to explore the function of these new brain cells in mice of different ages. Normal [adult mice](#) tend to spend a lot of time exploring and interacting with unfamiliar mice. However, adult mice that had neurogenesis blocked during adolescence showed no interest in exploring other adult mice and even evaded attempts made by other mice to engage in social behavior.

"These mice acted like they did not recognize other mice as mice," Kaffman said.

Blocking adult neurogenesis had no effect on social behavior, suggesting that brain cells generated during adolescence make a very different contribution to [brain function](#) and behavior in adulthood, note the scientists.

Intriguingly, schizophrenics have a deficit in generating new neurons in the hippocampus, one of the [brain areas](#) where new neurons are created. Given that symptoms of schizophrenia first emerge in adolescence, it is possible that deficits in generating new neurons during adolescence or even in childhood holds new insights into the development of some of the social and cognitive deficits seen in this illness, Kaffman said.

Provided by Yale University

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