

## Can loneliness and isolation damage the brain?

Mice yanked out of their community and held in solitary isolation show signs of brain damage. After a month of being alone, the mice had smaller nerve cells in certain parts of the brain.

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It's not known whether similar damage happens in the brains of isolated humans. If so, the results have implications for the health of people who spend much of their time alone, including the estimated tens of thousands of inmates in solitary confinement in the United States and elderly people in institutionalized care facilities.

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The researchers uncovered other worrisome signals, too, including reductions in a protein called BDNF, which spurs neural growth. Levels of the stress hormone cortisol changed, too. Compared with mice housed in groups, isolated mice also had more broken DNA in their neurons.

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It's also not known how the neural changes relate to mice's behavior. In people, long-term isolation can lead to depression, anxiety and psychosis. Brainpower is affected, too. Isolated people develop problems reasoning, remembering and navigating.

[Neurobiologist Richard] Smeyne is conducting longer-term studies aimed at figuring out the effects of neuron shrinkage on thinking skills and behavior. He and his colleagues also plan to return isolated mice to their groups to see if the brain changes can be reversed.

**Read full, original post:** [Loneliness is bad for brains](#)