

## Recalling old and new fear memories use different brain pathways

People with anxiety disorders, such as [post traumatic stress disorder](#) (PTSD), often experience prolonged and exaggerated fearfulness. Now, an animal study suggests that this might involve disruption of a gradual shifting of brain circuitry for retrieving fear memories.

“While our memories feel constant across time, the neural pathways supporting them actually change with time,” explained Gregory Quirk, Ph.D., of the University of Puerto Rico School of Medicine. A research team led by Quirk and Fabricio Do-Monte, D.V.M., Ph.D., report on their findings January 19, 2015, in the journal *Nature*.

In the same issue of *Nature*, NIMH grantees Bo Li, Ph.D., and Mario Penzo, Ph.D. of Cold Spring Harbor Laboratory in New York, and colleagues, reveal how the long-term fear memory circuit works in mice to translate detection of stress into adaptive behaviors.

Li and colleagues independently discovered the same shift in memory retrieval circuitry occurring, over time, after fear conditioning in mice. Using powerful genetic-chemical, as well as optogenetic, methods to experimentally switch pathways on and off, they showed conclusively that neurons originating in the paraventricular region (PVT) regulate fear processing by acting on a class of neurons that store fear memories in the central amygdala area.

**Read full, original story:** [Brain recalls old memories via new pathways](#)