

## Study charts origins of fear memory

September 16 2005

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A team of researchers led by the University of Toronto has charted how and where a painful event becomes permanently etched in the brain. The researchers said their discovery has treatment implications for pain-related emotional disorders such as post-traumatic stress.

U-of-T Physiology Professor Min Zhuo and colleagues, Professor Bong-Kiun Kaang of Seoul National University and Professor Bao-Ming Li of China's Fudan University, identified where emotional fear memory begin.

In a paper published in the Sept. 15 issue of *Neuron*, they detail using mice to show how receptors in the brain's pre-frontal cortex play a critical role in fear development.

Previous research had pointed to activation in the hippocampus, an area that regulates emotion and memory, as the origin of fear memory.

"This is critical as it changes how and where scientists thought fear was developed," said Zhuo. "By understanding the bio-molecular mechanisms behind fear, we could potentially create therapeutic ways to ease emotional pain in people. Imagine reducing the ability of distressing events, such as amputations, to be permanently imprinted in the brain."

The university's Toronto Innovations Foundation is working with Zhuo to translate the findings into treatments.

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Citation: Study charts origins of fear memory (2005, September 16) retrieved 12 August 2024 from <https://phys.org/news/2005-09-memory.html>

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