

Methamphetamine withdrawal may lead to brain-related concerns for recovering addicts

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University of Florida researchers have found changes in the behavior and in the brains of mice in withdrawal from methamphetamine addiction. These findings may affect the way physicians treat recovering methamphetamine addicts, the researchers write in the current issue of the journal *Synapse*.

"When people treat drug addicts, they need to know that during withdrawal, people in recovery may experience cognitive consequences," said Habibeh Khoshbouei, an associate professor of neuroscience and psychiatry in the UF College of Medicine. "Their [brain chemistry](#) has changed."

Khoshbouei, Ashley North of Meharry Medical College and their colleagues studied mice during full-blown methamphetamine addiction, examining their behavior and looking at the activity in the hippocampus, a region of the brain known to be involved in [memory retention](#) and formation. In mice on methamphetamine, they saw no signs of changes in the hippocampal activity or in their observed behavior.

"When the animals were on the drug, they didn't have short-term memory problems," Khoshbouei said.

Next the researchers examined mice in withdrawal from methamphetamine addiction. Once more they studied the behavior and the brain physiology of these mice, and they found a different story. The animals experiencing withdrawal showed changes in their ability to

remember things and had a decrease in [neuronal activity](#). They saw these effects in mice two weeks after withdrawal began—the equivalent of a year in humans.

Khoshbouei likened the changes that occurred in the brains of mice experiencing methamphetamine withdrawal to [neurological changes](#) seen in degenerative [brain disorders](#) such as Parkinson's disease.

"Current protocols treat the addiction, but our research shows that there is more to it than that," Khoshbouei said. "They should be treated like they have a chronic disease."

Provided by University of Florida

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