**AkashicINQUIRY015** / **RESEARCH NOTE**

# Psilocybin Across Time

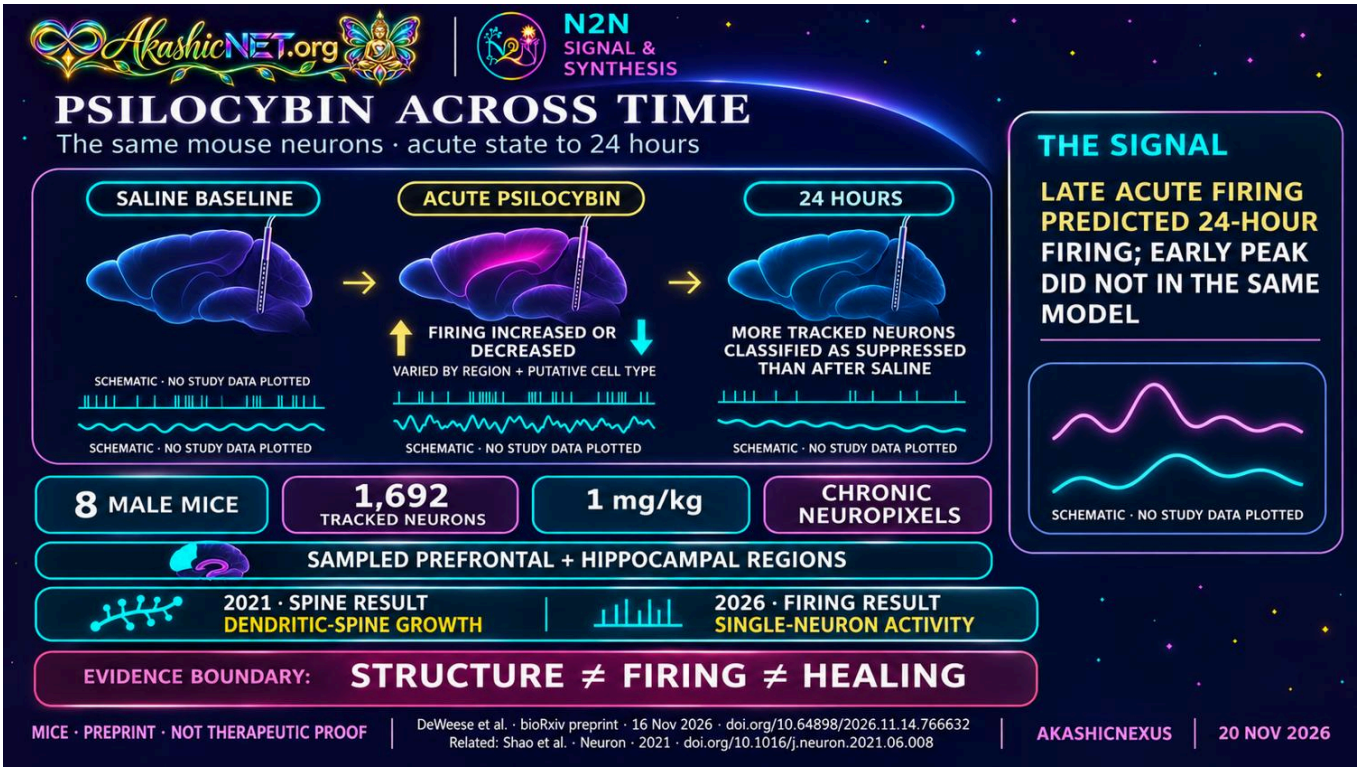
What changed when researchers recorded the same mouse neurons again a day later?

Preprint posted: 16 November 2026 · Synthesis: 20 November 2026

## AkashicABSTRACT

Researchers tracked 1,692 neurons in eight male mice before, during and 24 hours after psilocybin. In the prefrontal and hippocampal regions sampled, some neurons fired more during the acute response and others fired less. At 24 hours, a larger share of tracked neurons showed reduced firing after psilocybin than after saline.

In the authors' model, a neuron's firing late in the acute response predicted its firing the next day. The early peak did not show a clear association in that model. The study did not test whether either pattern was beneficial.




AkashicNET × N2N editorial infographic. The traces illustrate the recording stages; no study data are plotted.
View the full-size infographic and analysis.

# What Can We Conclude?

## Design and confidence

Following individual neurons across sessions lets us ask whether an early change lasts in the same cell. The 1,692 neurons came from just eight animals, all male. Saline always came first, so drug effects cannot be fully separated from changes over successive recording days. The work is a preprint and the cell types were inferred.

## How the older finding fits

Shao and colleagues tracked dendritic spines, small protrusions that receive many excitatory inputs. Their 2021 mouse study found growth in spine size and density. A neuron can gain spines without firing more often. The studies did not measure spine growth and firing together in the same cells.

## An open question

Do neurons that gain spines subsequently fire more often, less often or neither? Measuring both features in identified cells, with independently assigned saline and psilocybin groups, would test that link directly. Human experience and clinical benefit would still require separate evidence.

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## Sources and Further Reading

**DeWeese et al. (2026) · bioRxiv preprint**
Tracking single neurons across days reveals acute and persistent effects of psilocybin in the mouse brain. Primary study; not peer reviewed.

**Shao et al. (2021) · Neuron**
Frontal-cortex spine growth in mice. Earlier r/microdosing discussion.

**Shao et al. (2025) · Nature**
Cell-type and receptor experiments. Publisher correction.

**Knox et al. (2026) · bioRxiv preprint**
Spine plasticity and fear extinction in chronically stressed mice. Not peer reviewed.

Read the full 11-module AkashicNEXUS appraisal on AkashicNET.