Eating when we should be sleeping may play havoc with our brains

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Mice are nocturnal and eat throughout the night. To find out what happens when this pattern is disturbed, Dawn Loh and her colleagues at the University of California, Los Angeles, fed one group of mice between 9 pm and 3 am, while another group only had access to food between 9 am and 3 pm. The mice ate this way for two weeks.

Although both groups slept for the same amount of time, the mice that fed during the day had more frequent, shorter bouts of sleep. Their circadian rhythms were out of sync, which affected levels of proteins including one important for learning and memory. The “misaligned” mice also performed less well on memory tests (*eLIFE*, doi.org/97j).
The study is the first evidence that the timing of meals might affect learning and memory. It is too soon to say whether those of us who indulge in late-night eating will suffer the same effects, although Loh thinks her findings might apply to people. Night-shift workers, for example, have been shown to perform less well on cognitive tests.

(Image: D.Hurst/Alamy)

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