New neurons archive old memories

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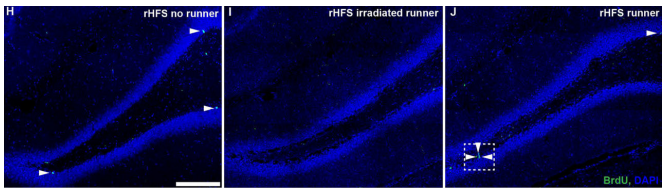

Ability to obtain new memories in adulthood may depend on neurogenesis -- the generation of new neurons in the hippocampus -- to clear out old memories that have been safely stored in the cortex, according to research in male rats published in *JNeurosci*. Credit: Alam et al., *JNeurosci* (2018)

Neurogenesis Conserves Hippocampal Memory Capacity, *The Journal of Neuroscience* (2018). DOI: 10.1523/JNEUROSCI.2976-17.2018

Provided by Society for Neuroscience

The ability to obtain new memories in adulthood may depend on neurogenesis—the generation of new neurons in the hippocampus—to clear out old memories that have been safely stored in the cortex, according to research in male rats published in *JNeurosci*.

Previous research suggests that the hippocampus has a finite capacity to acquire and store new memories. It is unknown how the brain compensates for this limitation to facilitate learning throughout life.

Kaoru Inokuchi and colleagues show that reducing neurogenesis in rats impairs recovery of learning capacity while promoting neurogenesis through physical activity on a running wheel increased hippocampal capacity. This finding implies that neurogenesis, which can be reduced by stress and aging, underlies the brain's capacity for new memories.

The study may also explain why exercise is especially important for patients with memory disorders such as Alzheimer's disease as well as for healthy people to help maintain memory as they age.

More information: Md Jahangir Alam et al, Adult