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## Pre-Injury Exercise May Mitigate the Effects of Traumatic Brain Injury in Mice

*Being physically fit before a traumatic brain injury (TBI) might improve recovery, preliminary findings suggest. After TBI, mice bred for running behavior exhibited smaller brain lesions and engaged in more extensive post-injury activity than did mice that had been sedentary before the injury.*

The research was presented at Neuroscience 2010, the annual meeting of the Society for Neuroscience, held in San Diego.

Engaging in physical exercise after TBI is known to improve cognitive outcome. "Our findings suggest that people who are already physically fit will have a better recovery profile than sedentary people," said senior author Jerome Badaut, PhD, at Loma Linda University.

In a preliminary study, Badaut and his colleagues compared four mice genetically selected for running behavior with five control mice. The runner mice were allowed to run on wheels for two weeks before undergoing a procedure that mimics a TBI; the sedentary mice were not.

Magnetic resonance imaging revealed that the brain lesions in the exercising mice were 34 percent smaller in volume than those in the sedentary mice. In addition, the exercising mice spent more time on a balance beam task, indicating that the smaller lesions contributed to improved behavior. They also gradually increased their activity after injury, while the sedentary mice decreased theirs.

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**Editor's Note:** This article is not intended to provide medical advice, diagnosis or treatment.