

# Quick Review of Model System Research

### Effects of Statin Treatment on Outcomes after Traumatic Brain Injury1

### What is the study about?

Neuroprotective treatments have shown promise in improving recovery from traumatic brain injury (TBI) in animals. However, no studies to date have shown such treatments to be effective in humans. One reason for this may be because such treatments are given to animals before or soon after experimental injury, but humans are often not treated for several hours. Statins are neuroprotective in animals, and are commonly used to reduce cholesterol in humans, so many patients are on them at the time of injury.

### What did the study find?

This study found no association between using statins at time of injury or adherence vs non-adherence to prescribed statin use and improved functional outcomes for individuals with TBI. Even so, the results of this study could not entirely rule out a small beneficial effect from using statins at time of injury.

### Who participated in the study?

Participants (n= 224) had to be enrolled in the Traumatic Brain Injury Model System and at least 50 years old with a moderate to severe TBI.

### How was the study conducted?

Demographic data, cardiovascular history, and brain injury history were reviewed. A national pharmacy search service was used to determine prescription medication use. Glasgow Coma Scores (GCS) were examined and obtained through review of emergency department records. This study found no statin effects on GCS, the duration of post-traumatic amnesia, FIM scores at rehabilitation admission, discharge, and 1-year post-injury, or on acute or rehabilitation hospital lengths of stay.

### [How can people use the results?](file:///C%3A%5CUsers%5Cccai%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5C4WHR71C4%5CBogner_CER-1403-13476_DFRR_Professional%20and%20Public%20Abstract_SME%20Review_102918%20ccai.docx#Note)

Clinicians, individuals with TBI, and caretakers alike can use the results of this study to become more informed on the effects statins on functional outcomes at time of injury for individuals with TBI.

1Whyte, J., Ketchum, J. M., Bogner, J., Brunner, R. C., Hammond, F. M., Zafonte, R., . . . Weintraub, A. (2019). Effects of Statin Treatment on Outcomes after Traumatic Brain Injury. Journal of Neurotrauma, 36(1), 118-125. doi:10.1089/neu.2017.5545

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