

# Head injuries increase after motorcycle helmet law repeal

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Pennsylvania motorcyclists suffered large increases in head injury deaths and hospitalizations in the two years following the repeal of its motorcycle helmet law, according to a University of Pittsburgh study to be published in the August issue of the *American Journal of Public Health*, available online June 12. Even after accounting for increases in motorcycle registrations that occurred during this period, study authors noted a 32 percent increase in head injury deaths and a 42 percent increase in head injury-related hospitalizations, raising concerns about motorcyclists' safety and the impact of this trend on health care costs.

Pennsylvania repealed its universal motorcycle helmet law in 2003. Under the current law, only motorcyclists under 21 and riders with less than two years experience who have not taken a safety course are required to wear helmets.

Study authors analyzed data from Pennsylvania's departments of Health and Transportation during the years 2001-2002 and 2004-2005. They found helmet use by motorcyclists involved in reported crashes decreased from 82 percent to 58 percent in the two years after repeal. The authors also looked at data from head injury and non-head injury deaths to determine specifically how many deaths were caused by not wearing helmets. They found the registration-adjusted head injury death rate increased by 32 percent, whereas the non-head injury death rate did not change.

"Our study shows that since the repeal of Pennsylvania's motorcycle

helmet law, helmet use has gone down, while head injuries from motorcycle crashes have gone up, even after increased motorcycle registration," said Kristen Mertz, M.D., M.P.H., study lead author and assistant professor, Department of Epidemiology, University of Pittsburgh Graduate School of Public Health. "We looked at both head injuries and non-head injuries to get a clearer picture of the impact of the helmet law repeal. The relatively large increase in head injury deaths and hospitalizations after the repeal suggests that the law was protecting riders."

The study authors looked at hospitalizations per 10,000 registrations from motorcycle crashes by examining discharge data compiled from all acute care hospitals in the state. They found an increase of 42 percent in the head injury hospitalization rate and a 2 percent increase in the non-head injury hospitalization rate. The number of head-injured, hospitalized motorcyclists requiring further care at facilities specializing in rehabilitation and long-term care increased 87 percent after the repeal, and increased 16 percent for non-head injured motorcyclists.

Total acute care hospital charges stemming from motorcycle-related head injuries increased 132 percent in the two years following repeal compared to 69 percent for non-head injuries.

"Our findings strengthen the argument for more comprehensive helmet laws that help protect riders and lower the cost of health care," said Hank Weiss, Ph.D., M.P.H., study co-author and associate professor, Department of Neurological Surgery, Center for Injury Research and Control, University of Pittsburgh. "Serious head injuries, causing anything from short-term memory loss, inability to concentrate to coma and death, can severely impact quality of life and affect not just those injured, but their families as well. Until a universal helmet law is reinstated, Pennsylvania needs effective voluntary strategies to increase helmet use."

Motorcycle helmet laws have weakened nationwide since 1975, when the federal government stopped withholding highway money from states without such regulations. Only 20 states now have laws that require all riders to wear helmets.

Source: University of Pittsburgh

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