



NEWS RELEASE

UNDER EMBARGO UNTIL OCTOBER 8, 2013, 12:01 AM ET

Contact:

Beverly Lytton

Tel: 858-534-9340

eAJPM@ucsd.edu

New Study Shows Link Between Car Crashes and Adverse Pregnancy Outcomes
Latest Data Highlights Risks of Driving Without a Seat Belt for Expectant Mothers in
New Issue of the *American Journal of Preventive Medicine*

San Diego, CA, October 8, 2013 – A new study published in the *American Journal of Preventive Medicine* indicates that motor vehicle crashes can be hazardous for pregnant women, especially if they are not wearing a seat belt when the accident occurs.

Trauma is a leading cause of maternal and fetal morbidity and mortality. Blunt abdominal trauma is of particular concern to a pregnant woman and her fetus since it can directly and indirectly harm fetal organs as well as shared maternal and fetal organ systems. Car crashes are responsible for most injuries requiring hospitalization during pregnancy; however, little is known about the relationship between auto accidents and specific fetal outcomes.

The study, which is the largest retrospective state-based study of its kind, looked at data for 878,546 pregnant women aged 16-46 years who gave birth to a single infant in the state of North Carolina between 2001 and 2008. Using vital records and crash reports, investigators were able to study the association among car crashes, vehicle safety features, and adverse pregnancy outcomes.

Investigators focused on four pregnancy outcomes: preterm birth, placental abruption, premature rupture of the membranes, and stillbirth. They found that compared to women who were not involved in an auto accident, pregnant drivers had elevated rates of preterm birth, placental abruption, and premature rupture of the membranes after a single crash.

While previous studies had only looked at the link between one crash and adverse pregnancy outcomes, this new study also looked at women who had been involved in multiple motor vehicle collisions during their pregnancies. Following a second or subsequent crash, investigators found pregnant women had more highly elevated rates of preterm birth, placental abruption, premature rupture of the membranes and stillbirth. The investigators also found that the rates of these unfavorable outcomes increased as the number of crashes increased.

Regardless of the number of crashes, stillbirth rates were elevated following accidents involving unbelted pregnant drivers. "Non-seat belt use and the lack of airbags were associated with elevated rates of selected adverse pregnancy outcomes," explains lead investigator Catherine J. Vladutiu, PhD, Postdoctoral Fellow in the Department of Epidemiology at the University of North Carolina's Gillings School of Global Public Health. "Most notably, the stillbirth rate following a crash involving an unbelted

pregnant driver was almost three times as high as the stillbirth rate following a crash involving a belted pregnant driver.”

While this new study offers greater insight than existing reports, more population-based studies are necessary to increase understanding of the effect of multiple crashes, seatbelts, and airbags on pregnancy outcomes.

“This study highlights the importance of crashes during pregnancy and their possible adverse effects on pregnancy outcomes. Clinicians should be aware of these effects and should advise pregnant women about the risk of being in a crash and the long-term consequences that crashes can have on their pregnancies,” concludes Dr. Vladutiu. “Given the associations that were observed, a better understanding of the circumstances surrounding crashes during pregnancy is needed to develop effective strategies for prevention.”

###

NOTES FOR EDITORS

“Adverse Pregnancy Outcomes Following Motor Vehicle Crashes,” by Catherine J. Vladutiu, PhD; Stephen W. Marshall, PhD; Charles Poole, ScD; Carri Casteel, PhD; M. Kathryn Menard, MD; and Harold B. Weiss, PhD, is available online as of October 8, 2013 at www.ajpmonline.org and in print in the *American Journal of Preventive Medicine*, Volume 45, Issue 5 (November 2013), DOI 10.1016/j.amepre.2013.06.018.

Full text of the article is available to credentialed journalists upon request; contact Beverly Lytton at 858-534-9340 or eAJPM@ucsd.edu. Journalists wishing to interview the authors should contact Catherine Vladutiu at cvladutiu@unc.edu.

ABOUT THE AMERICAN JOURNAL OF PREVENTIVE MEDICINE

The *American Journal of Preventive Medicine* (www.ajpmonline.org) is the official journal of [The American College of Preventive Medicine](http://www.acpm.org) (www.acpm.org) and the [Association for Prevention Teaching and Research](http://www.aptrweb.org/) (<http://www.aptrweb.org/>). It publishes articles in the areas of prevention research, teaching, practice and policy. Original research is published on interventions aimed at the prevention of chronic and acute disease and the promotion of individual and community health. The journal features papers that address the primary and secondary prevention of important clinical, behavioral and public health issues such as injury and violence, infectious disease, women's health, smoking, sedentary behaviors and physical activity, nutrition, diabetes, obesity, and alcohol and drug abuse. Papers also address educational initiatives aimed at improving the ability of health professionals to provide effective clinical prevention and public health services. The journal also publishes official policy statements from the two co-sponsoring organizations, health services research pertinent to prevention and public health, review articles, media reviews, and editorials.

The *American Journal of Preventive Medicine*, with an Impact Factor of 3.945, is ranked 15th out of 158 Public, Environmental, and Occupational Health titles and 18th out of 151 General & Internal Medicine titles according to the *2012 Journal Citation Reports*® published by Thomson Reuters.

ABOUT ELSEVIER

Elsevier is a world-leading provider of scientific, technical and medical information products and services. The company works in partnership with the global science and health communities to publish more than 2,000 journals, including *The Lancet* (www.thelancet.com) and *Cell* (www.cell.com), and close to 20,000 book titles, including major reference works from Mosby and Saunders. Elsevier's online solutions include ScienceDirect (www.sciencedirect.com), Scopus (www.scopus.com), SciVal (<http://info.scival.com>) Reaxys (www.elsevier.com/reaxys), ClinicalKey (www.clinicalkey.com) and Mosby's Suite (www.confidenceconnected.com), which enhance the productivity of science and health professionals, helping research and health care institutions deliver better outcomes more cost-effectively.

A global business headquartered in Amsterdam, Elsevier (www.elsevier.com) employs 7,000 people worldwide. The company is part of Reed Elsevier Group plc (www.reedelsevier.com), a world leading provider of professional information solutions. The group employs more than 30,000 people, including more than 15,000 in North America. Reed Elsevier Group plc is owned equally by two parent companies, Reed Elsevier PLC and Reed Elsevier NV. Their shares are traded on the London, Amsterdam and New York Stock Exchanges using the following ticker symbols: London: REL; Amsterdam: REN; New York: RUK and ENL.