

New study shows link between car crashes and adverse pregnancy outcomes

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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."

More information: "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](https://doi.org/10.1016/j.amepre.2013.06.018)

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