

# Flu shot during pregnancy shows unexpected benefits in large study

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Getting a flu shot during pregnancy provides unanticipated benefits to the baby, according to the authors of a large population-based study examining the issue. Specifically, the study showed that H1N1 vaccination during the pandemic was associated with a significantly reduced risk of stillbirth, preterm birth and extremely small babies at birth.

Researchers at the Ottawa Hospital Research Institute (OHRI), the CHEO Research Institute and the University of Ottawa (uOttawa) used data from Ontario's birth record database, BORN, to examine 55,570 single-child births that took place in Ontario during the H1N1 pandemic. The resulting paper, "H1N1 [Influenza Vaccination](#) during Pregnancy and Fetal and [Neonatal Outcomes](#)," was recently published by the [American Journal of Public Health](#).

The study shows that, compared to pregnant women who were not immunized against H1N1, mothers who received the H1N1 vaccination were:

- 34% less likely to have a stillbirth,
- 28% less likely to deliver before 32 weeks, and
- 19% less likely to give birth to a child with a birth weight for [gestational age](#) in the bottom third percentile.

"These are all significant results, but especially interesting is the finding

that the vaccinated mothers were one-third less likely to have a stillborn child," says lead author Deshayne Fell, an epidemiologist for BORN Ontario. "This is one of the only studies large enough to evaluate the association between maternal [flu vaccination](#) and stillbirth—a very rare event."

"What surprised me and the research team was the strength of the protective benefits we found," says co-author Dr. Ann Sprague, the Scientific Manager of BORN Ontario at the Children's Hospital of Eastern Ontario (CHEO) Research Institute.

The study also found no increase in adverse outcomes for H1N1-vaccinated mothers and their babies during the weeks before and just after birth, also referred to as the perinatal period.

"The findings of this study are very helpful," says co-author Dr. Mark Walker, a Senior Scientist at OHRI, a High-Risk Obstetrician at The Ottawa Hospital, and a Professor and Tier One Research Chair in Perinatal Research at the University of Ottawa.

"Pregnant women are generally very, very careful about what they put into their bodies. For health-care providers like me, such a large-scale study that shows no adverse perinatal outcomes resulting from the H1N1 flu vaccine will be extremely helpful when discussing maternal vaccination."

Of all the single-child births recorded from November 2009 to April 2010, 42% of the women received the H1N1 vaccination, which makes the findings robust. BORN—the Better Outcomes Registry & Network—collects data from all births in Ontario. In order to conduct the research for this study, questions about H1N1 vaccination were added to the database in advance of the H1N1 vaccine becoming available. BORN includes demographic data that allowed the research

team to correct for smoking, education and income; however, as with any population-based study, it may not be possible to account for all influencing factors.

**More information:** [ajph.aphapublications.org/doi/ ...  
105/AJPH.2011.300606](https://ajph.aphapublications.org/doi/10.1093/ajph.2011.300606)

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