

## **No adverse outcomes for infants associated with mums booster of whooping cough vaccine**

### *What is whooping cough, or pertussis?*

Whooping cough, or pertussis, is a highly contagious bacterial respiratory infection that can be very serious for young infants. Symptoms include violent coughing fits which can last for weeks and make it difficult to eat and breathe properly. The infection is especially dangerous in babies who are too young to have received the full course of vaccinations, leaving them particularly vulnerable to severe complications such as pneumonia, brain damage, and even death.

This infection is very hard to control, it is one of the most infectious diseases known to humans, up there with COVID-19 and measles. One of the challenges is that while the vaccines we have are pretty good at preventing symptoms they are not so great at preventing infection so the bacterium continues to circulate in the community. Even having the disease may not stop another bout later down the track. While most older children and adults do not require medical care, an estimated 95 percent of all pertussis deaths from this disease occur in children under one year old. How can we protect them?

### *How to prevent whooping cough in new born babies*

The most effective way to protect infants against this disease is by vaccinating their mothers during pregnancy. This is called maternal immunisation and it is way to reduce the risk of vaccine-preventable diseases in infants through the protective antibody that can pass from mom to baby before birth. However, while it is effective it is also important to know that it is very safe for both mother and the baby.

Our study looked at safety outcomes in pregnant women and their infants.

We did a study using government administrative data on the entire population of New Zealand to find out how safe the Tdap vaccine was for mums and their babies. No individuals are identifiable in these types of studies. All women who were pregnant in 2013 were able to be included, and the outcomes for both them and their infants followed. In this part of the study we looked at different health events among babies with or without their mother getting the vaccine.

The beauty of using this type of big data is that it is possible to include everyone in the study and compare people who are exposed to something and those who are not. It is important to control for factors that might make a person more likely to get a vaccine and also more likely to have complications in pregnancy, and vice versa. In this study we controlled for maternal age, ethnicity, socioeconomic status, antenatal care history, BMI, history of chronic disease, and number of previous children. However, there may be residual confounding due to important variables not being included which is important to acknowledge.

We found that babies whose mother got the vaccine had lower risks for some health problems like having a low birth weight, breathing issues, jaundice, and anaemia. However, we didn't find any increase in other things like Apgar score after birth, asphyxia, sepsis or infection, or hypoxic ischemic encephalopathy (brain injury due to lack of oxygen).

*Take home message*

Our study is in agreement with many other studies looking at the safety of maternal immunisation. Not only it is very effective but getting the whooping cough vaccine is also very safe for pregnant women and their infants.

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## **Publication**

[A Retrospective Cohort Study of Safety Outcomes in New Zealand Infants Exposed to Tdap Vaccine in Utero](#)

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