

Flu vaccine protects pregnant women against pertussis

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Gram stain of the bacteria *Bordetella pertussis*. Credit: CDC

Research by Wits scientists shows that pregnant women vaccinated against influenza also have less pertussis infection.

Pertussis, also known as whooping cough, is a highly [contagious respiratory disease](#) caused by the bacterium *Bordetella pertussis*.

Wits researchers at the MRC Respiratory and Meningeal Pathogens Research Unit (RMPRU) published a paper in the *New England Journal of Medicine*, which shows that pregnant women vaccinated against influenza have 50 percent less pertussis infection than those not vaccinated.

Furthermore, pregnant women who received the [flu vaccine](#) were not only less likely to become infected with the flu virus throughout pregnancy and for six months after giving birth, but also had

fewer infections by the *Bordetella pertussis* bacterium compared to unvaccinated women.

"This very interesting observation suggests that the benefits of the influenza vaccine extend beyond the direct protection against [influenza infection](#), and informs us about the possible interactions between viruses and bacteria in the [upper respiratory tract](#)," says Marta C. Nunes, Associate Professor at the RMPRU and co-author of the paper along with Dr. Clare Cutland and Professor Shabir Madhi.

Because women who received the flu vaccine had less *B. pertussis* infections (for which the vaccine does not have a direct protective effect), researchers speculated that influenza infections predispose to co-infections with bacteria.

"So by preventing viral infections, we were also preventing bacterial super-infections that might be very severe," says Nunes, adding that flu vaccinations for [pregnant women](#) could curb severe pertussis disease in their babies later.

"Most severe pertussis disease happens before babies are immunized against pertussis. Household contact – particularly by mothers – is a major source of infection in infants, so combined flu and pertussis vaccination during pregnancy might have a cumulative benefit against *B. pertussis* infection in future."

More information: Marta C. Nunes et al. Influenza Vaccination during Pregnancy and Protection against Pertussis, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMc1705208](https://doi.org/10.1056/NEJMc1705208)

Provided by Wits University

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