

Whooping cough vaccination during pregnancy boosts moms' antibodies to protect babies

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The largest randomized, placebo-controlled multi-country study performed to date assessed the safety and immunogenicity of single dose diphtheria, tetanus and pertussis (Tdap) vaccine in pregnant women and

has been published in the journal *Vaccine*.

The study's lead author, Dr. Kirsten Perrett from the Murdoch Children's Research Institute in Melbourne, Australia, said, "This large multi-center study involving 687 women in six countries showed that high levels of protective antibodies against whooping cough were transferred from vaccinated mums to their newborn babies."

Every year in Australia, an average of one baby under six months old dies and more than 200 are hospitalized due to whooping cough.

"The second part of this study showed that the antibodies transferred from mum to baby during pregnancy persisted until the babies were old enough to receive their own vaccinations. These results give families confidence their baby is protected against this highly contagious and serious bacterial infection during their first few months."

As seen in previous research studies, this study showed that an infant's ability to produce its own whooping cough antibodies is reduced when its mother had been vaccinated, however this doesn't appear to have a clinically relevant impact.

The study also assessed the rates of adverse events of specific interest in vaccinated and unvaccinated mums and their babies, and solicited general and unsolicited adverse events between the two groups. No difference was seen in these rates, demonstrating the safety of the vaccination.

Current Australian recommendations are that [pregnant women](#) receive Tdap vaccination between 20 and 32 weeks' gestation, and babies receive their primary vaccination at two months of age.

Pregnant women should discuss Tdap vaccination with their GP,

obstetrician or maternity care provider.

About pertussis (whooping cough), diphtheria and tetanus

Pertussis (whooping cough): [pertussis](#) is a highly infectious illness. The disease affects the airways causing severe spells of coughing that may interfere with normal breathing. The coughing is often accompanied by a "whooping" sound, hence the common name "whooping cough". The cough may last for 1-2 months or longer. Pertussis can also cause ear infections, bronchitis which may last a long time, pneumonia, fits, brain damage and death.

Reports from the World Health Organisation (WHO) suggest that vaccination against pertussis infection has prevented about 687,000 global deaths caused by pertussis infection. However, latest figures show that there were still an estimated 24.1 million global cases of pertussis in 2014, with most deaths (53%) among infants younger than one-year old.

Diphtheria: diphtheria mainly affects the airways and sometimes the skin. Generally, the airways become inflamed (swollen) causing severe breathing difficulties and sometimes suffocation. The bacteria also release a toxin (poison), which can cause nerve damage, heart problems, and even death.

Tetanus (Lockjaw): tetanus bacteria enter the body through cuts, scratches or wounds in the skin. Wounds that are especially prone to infection are burns, fractures, deep wounds or wounds contaminated with soil, dust, horse manure/dung or wood splinters. The bacteria release a toxin (poison), which can cause muscle stiffness, painful muscle spasms, fits and even death. The muscle spasms can be strong enough to cause bone fractures of the spine.

More information: Kirsten P. Perrett et al. Impact of tetanus-diphtheria-acellular pertussis immunization during pregnancy on subsequent infant immunization seroresponses: follow-up from a large randomized placebo-controlled trial, *Vaccine* (2019). [DOI: 10.1016/j.vaccine.2019.10.104](https://doi.org/10.1016/j.vaccine.2019.10.104)

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