



NSW Medications in Pregnancy & Breastfeeding Service



Whooping cough vaccination in pregnancy

Whooping cough vaccination during pregnancy has been shown to be the most effective way to protect infants from whooping cough, before they are old enough to receive their own immunisation at six weeks.

Use of the whooping cough vaccination during pregnancy has been shown to be safe during pregnancy in studies involving over 40 000 women.

The National Health and Medical Research Council (NHMRC) latest recommendation is for routine vaccination of pregnant woman against whooping cough during the third trimester of each pregnancy.

Whooping Cough

Whooping cough (also called pertussis) is a serious respiratory infection that causes a long coughing illness. In babies, the infection can sometimes lead to pneumonia and occasionally brain damage and can be even life threatening. Older children and adults can get whooping cough and can spread it to others, including babies.

Whooping cough starts like a cold with a blocked or runny nose, sneezing, a mild fever and an occasional cough. As the disease progresses the cough gets worse and severe bouts of uncontrollable coughing develop. Coughing bouts can be followed by vomiting, choking or taking a big gasping breath which causes a "whooping" sound. The cough can last for many weeks and can be worse at night.

The disease is particularly serious in newborns; they may not cough at all but stop breathing completely and turn blue. Other babies have difficulties feeding or they can choke and gag.

Older children and adults may just have a mild cough that doesn't go away which can commonly last 5-7 weeks, and sometimes longer.

Why is whooping cough so serious?

While for adults, whooping cough can just be an annoying cough, for babies, it can be life threatening. Severity is closely related to a baby's age. Newborns and premature infants are at greatest risk. Whooping cough in babies can lead to: apnoea (pauses in normal breathing), pneumonia, frequent vomiting, feeding problems leading to weight loss, seizures or brain damage when breathing problems, heart failure or pneumonia interfere with oxygen getting to the brain, very low blood pressure which can lead to failure of other organs.

Babies with whooping cough may require hospitalisation and some require treatment in intensive care.

For more information call MotherSafe: NSW Medications in Pregnancy and Breastfeeding Service on 9382 6539 (Sydney Metropolitan Area) or 1800 647 848 (Non-Metropolitan Area) Monday -Friday 9am-5pm (excluding public holidays)



Why should women get vaccinated during pregnancy?

Recent evidence suggests that whooping cough vaccination during the third trimester of pregnancy is effective at preventing whooping cough disease in infants ^{1,2} (who are at the greatest risk for whooping cough associated morbidity and mortality ^{2,3}) and is safe for both infant and mother ⁴⁻⁷.

How does it work?

Whooping cough vaccination during pregnancy is likely to protect new born babies through a combination of in utero transfer of antibodies to the infant and indirectly through reducing the likelihood of the mother acquiring and transmitting whooping cough to the newborn ^{1,2}.

Is it safe?

Yes. Current evidence (from studies involving more than 40 000 participants) suggests that vaccination during pregnancy is safe for both the mother and baby. The majority of studies – including a large observational study and a randomised clinical trial – have found no increased risk of significant adverse events or adverse pregnancy outcomes, including stillbirth ^{4,7,8}.

Whooping cough vaccination should occur in each pregnancy

Immunity from whooping cough (whether through vaccination or natural infection) fades over time. After getting vaccinated during pregnancy there is an immune response which produces antibodies. These antibodies are passed to the baby before birth. The antibodies will protect the infant while it is most vulnerable; helping keep it safe until it is able to get its own vaccinations.

To ensure the highest protection for infants vaccination needs to occur during each pregnancy at 28 – 32 weeks. The 28 week visit is an ideal time to get the whooping cough vaccine.

Is it safe to breastfeed after getting the whooping cough vaccine?

Yes. Breastfeeding after receiving the whooping cough vaccine during pregnancy is not only safe but will also pass on some more protection against whooping cough to the baby. By vaccinating at 28 weeks, there will be time for your body to produce antibodies which will be present in breast milk as soon as it comes in.

Do babies still need their own whooping cough vaccination?

Yes, the protection against whooping cough that is passed on to infants through maternal vaccination is only temporary. The baby still needs its own vaccination to be protected against disease. This should be given as early as possible at six weeks of age, followed by two further doses at 4 and 6 months of age.

All children are now recommended to have booster doses of whooping cough vaccine at 18 months and 4 years of age.



- 1 Amirthalingam, G. *et al.* Effectiveness of maternal pertussis vaccination in England: an observational study. *The Lancet***384**, 1521-1528, doi:[http://dx.doi.org/10.1016/S0140-6736\(14\)60686-3](http://dx.doi.org/10.1016/S0140-6736(14)60686-3) (2014).
- 2 Dabrera, G. *et al.* A Case-Control Study to Estimate the Effectiveness of Maternal Pertussis Vaccination in Protecting Newborn Infants in England and Wales, 2012–2013. *Clinical Infectious Diseases***60**, 333-337, doi:10.1093/cid/ciu821 (2015).
- 3 Carlsson RM, von Segebaden K, Bergström J, Kling AM & L., N. Surveillance of infant pertussis in Sweden 1998–2012; severity of disease in relation to the national vaccination programme. *Eurosurveillance***20** (2015).
- 4 Donegan, K., King, B. & Bryan, P. Safety of pertussis vaccination in pregnant women in UK: observational study. *BMJ***349** (2014).
- 5 Kharbanda, E. O., Vazquez-Benitez, G., Lipkind, H. S. & *et al.* Evaluation of the association of maternal pertussis vaccination with obstetric events and birth outcomes. *JAMA***312**, 1897-1904, doi:10.1001/jama.2014.14825 (2014).
- 6 Munoz, F. M., Bond, N. H., Maccato, M. & *et al.* Safety and immunogenicity of tetanus diphtheria and acellular pertussis (tdap) immunization during pregnancy in mothers and infants: A randomized clinical trial. *JAMA***311**, 1760-1769, doi:10.1001/jama.2014.3633 (2014).
- 7 Shakib, J. H. *et al.* Tetanus, Diphtheria, Acellular Pertussis Vaccine during Pregnancy: Pregnancy and Infant Health Outcomes. *The Journal of Pediatrics***163**, 1422-1426.e1424, doi:10.1016/j.jpeds.2013.06.021.
- 8 Zheteyeva, Y. A. *et al.* Adverse event reports after tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccines in pregnant women. *American Journal of Obstetrics and Gynecology***207**, 59.e51-59.e57, doi:<http://dx.doi.org/10.1016/j.ajog.2012.05.006> (2012).