

Table 2.3.1: Vaccinations in pregnancy

Live attenuated vaccines		
Bacterial	Recommendation	Comments
BCG vaccine (Live attenuated strain <i>M. bovis</i>)	Contraindicated.	Hypothetical risk only. BCG has not been shown to cause fetal damage.
Rotavirus vaccine	Contraindicated. Not registered for use in adults.	Rotavirus vaccine can be safely administered to household contacts of pregnant women.
Oral typhoid vaccine	Contraindicated.	Studies in animals are inadequate but available data show no evidence of an increased occurrence of fetal damage with oral live attenuated vaccine. Inactivated typhoid Vi polysaccharide vaccine is preferred.
Live attenuated vaccines		
Viral	Recommendation	Comments
Measles-mumps-rubella (MMR) vaccine	Contraindicated.	Hypothetical risk only. Despite concerns that attenuated rubella vaccine virus might cause congenital abnormalities, rubella vaccine (either monovalent or as MMR) has been given to pregnant women (usually inadvertently) without harm to the fetus. Even though the rubella vaccine virus can infect the fetus if given in early pregnancy, there is no evidence that it causes congenital rubella syndrome in infants born to susceptible mothers vaccinated during pregnancy and, in particular, rubella vaccination during pregnancy is not an indication for termination. ³ Women of child-bearing age should avoid pregnancy for 28 days after vaccination. It is standard practice to test all pregnant women for immunity to rubella, and to vaccinate susceptible women as soon as possible after delivery (preferably using MMR).
Smallpox vaccine	Contraindicated.	Should not be given to women who are pregnant or considering becoming pregnant. Pregnancy should be avoided for 3 months after vaccination.
Varicella vaccine	Contraindicated.	Hypothetical risk only. Congenital varicella syndrome has (to date) not been identified in women who have been inadvertently vaccinated in early pregnancy. ⁴ This provides some reassurance of the safety of the vaccine. Women of child-bearing age should avoid becoming pregnant for 28 days after vaccination.
Yellow fever vaccine	Contraindicated, unless travelling to yellow fever endemic area.	Hypothetical risk only. Yellow fever vaccine has been given to a large number of pregnant women with no adverse outcomes. ⁵ Pregnant women who travel to a yellow fever-endemic area against medical advice should receive yellow fever vaccine. The administration of yellow fever vaccine in early pregnancy is not an indication for termination.

Inactivated vaccines		
Bacterial	Recommendation	Comments
Cholera (oral) vaccine	Not recommended.	Inadequate information on safety of oral cholera vaccine in pregnancy.
Adolescent/adult formulation dTpa vaccine	Recommended for pregnant women who work in close contact with infants eg. childcare, neonatal units.	Data on use of adolescent/adult formulation dTpa during pregnancy are not available, so it should be given in pregnancy only when the possible advantages outweigh the possible risks to the fetus. All women who are planning pregnancy should be encouraged to receive a single dose of dTpa before pregnancy; if not given before pregnancy, it should be given as soon as possible after delivery.
<i>Haemophilus influenzae</i> type b (Hib) vaccine	Recommended for pregnant women at increased risk of Hib disease (eg. hyposplenia, asplenia).	Available clinical data suggest that it is unlikely that use of Hib vaccine in pregnant women would have any deleterious effects on the pregnancy.
Meningococcal C conjugate vaccine (MenCCV)	Recommended for pregnant women at increased risk of meningococcal disease (eg. hyposplenia, asplenia), or possible exposure to serogroup C.	Although no clinical study data are available on the use of MenCCV in pregnant women, it is unlikely that it would have any deleterious effects on the pregnancy.
Meningococcal polysaccharide vaccine (4vMenPV)	Recommended for pregnant women at increased risk of meningococcal disease who have not been vaccinated with 4vMenPV in the past 3 years (eg. hyposplenia, asplenia), or possible exposure to serogroup A, W ₁₃₅ or Y.	No documented adverse events in either pregnant women or their newborns when vaccinated with 4vMenPV administered in the second and third trimesters of pregnancy. The number of pregnant vaccinees reported in the literature is small.
7-valent pneumococcal conjugate vaccine (7vPCV)	Not recommended.	Vaccination during pregnancy has not been evaluated for potential harmful effects to mother or fetus. Although unlikely to result in adverse effects, the vaccine is currently only registered for use in children ≤9 years of age.
23-valent pneumococcal polysaccharide vaccine (23vPPV)	Recommended for pregnant women at increased risk of invasive pneumococcal disease (IPD) (eg. asplenia, impaired immunity, chronic illness, CSF leak) who have not received 23vPPV in the past 5 years (and provided they have not received 2 previous doses).	No adverse effects when administered in pregnancy. Data are limited to clinical trials and deferral of vaccine is recommended unless there is an increased risk of IPD. Women of reproductive age with known risk factors for IPD (including smokers) should be vaccinated before planned pregnancy.
Q fever vaccine	Not recommended.	Safety of use in pregnancy has not been established.
Typhoid Vi polysaccharide vaccine	In pregnant women travelling to endemic countries where water quality and sanitation is poor.	There is no evidence of risk to the fetus from vaccination with Vi polysaccharide vaccine.

Inactivated vaccines		
Viral	Recommendation	Comments
Hepatitis A vaccine	Recommended for susceptible pregnant women travelling to areas of moderate to high endemicity or who are at increased risk of exposure through lifestyle factors, or where severe outcomes may be expected (eg. pre-existing liver disease).	Hepatitis A vaccine should only be given to pregnant women who are non-immune and where there is a clear indication. As for any inactivated viral vaccines, although data are limited, no adverse effects on the developing fetus are expected.
Hepatitis B vaccine	Recommended for susceptible pregnant women for whom this vaccine would otherwise be recommended.	Hepatitis B vaccine should only be given to pregnant women who are non-immune and where there is a clear indication. As for any inactivated viral vaccines, although data are limited, no adverse effects on the developing fetus are expected.
Human papillomavirus (HPV) vaccine	Not recommended.	There are no concerns that HPV vaccines are teratogenic and animal studies have found no evidence of teratogenicity or adverse fetal outcomes. However, where vaccine has inadvertently been administered during pregnancy, further doses should be deferred until after delivery.
Influenza vaccine	Recommended for all pregnant women who will be in the second or third trimester during the influenza season, including those in the first trimester at the time of vaccination.	There is no evidence of congenital defects or adverse effects on the fetus of women who are vaccinated against influenza in pregnancy.
Japanese encephalitis (JE) vaccine	Recommended for pregnant women at risk of acquiring JE.	No adverse effects on pregnancy have been attributed to JE vaccine, whereas JE infection is associated with miscarriage.
Inactivated polio vaccine (IPV)	Recommended for pregnant women at risk of poliovirus exposure (eg. travel to endemic countries).	IPV should only be given to pregnant women when clearly indicated. There is no convincing evidence of risk to the fetus from IPV administered in pregnancy.
Rabies vaccine	Recommended for pregnant women for whom this vaccine would otherwise be recommended (eg. travellers to rabies endemic countries).	Pregnancy is never a contraindication to rabies vaccination in situations where there is a significant risk of exposure (related to occupation or travel), or where there has been a possible exposure to rabies virus or Australian bat lyssavirus.
Toxoids and immunoglobulins		
Tetanus/diphtheria toxoid	Recommended for pregnant women.	Toxoids are safe in pregnancy.
Pooled or hyperimmune immunoglobulins	Recommended for susceptible pregnant women exposed to: measles, hepatitis A, hepatitis B, rabies or Australian bat lyssavirus, varicella viruses and tetanus.	There is no known risk to the fetus from passive immunisation of pregnant women with immunoglobulins.