

# Comparison of Effects of Vaccines and Diseases

DISEASE	EFFECTS OF DISEASE	SIDE EFFECTS OF VACCINATION
Diphtheria – contagious bacteria spread by droplets; causes severe throat and breathing difficulties.	About 1 in 15 patients dies. The bacteria release a toxin, which can produce nerve paralysis and heart failure.	DTPa vaccine – about 1 in 10 have local inflammation or fever. Serious adverse events are very rare, and much less common than with DTPw.
Hepatitis B – virus spread mainly by blood, sexual contact or from mother to newborn baby; causes acute hepatitis or chronic carriage.	About 1 in 4 chronic carriers will develop cirrhosis or liver cancer.	About 1 in 15 to 1 in 100 will have pain and fever.
Hib – contagious bacteria spread by droplets; causes meningitis, epiglottitis (respiratory obstruction), septicaemia, osteomyelitis.	About 1 in 20 meningitis patients dies and 1 in 4 survivors has permanent brain or nerve damage. About 1 in 100 epiglottitis patients dies.	About 1 in 20 has discomfort or local inflammation. About 1 in 50 has fever.
Human Papillomavirus (HPV) – virus spread mainly via sexual contact.	About 1 in 2 cervical cancers worldwide have been associated with HPV16 and 1 in 10 with HPV18.	About 1 in 10 will have pain and swelling at the site of injection and very occasionally headache, fever and nausea.
Influenza – contagious virus spread by droplets; causes fever, muscle and joint pains, pneumonia.	Causes increased hospitalisation in the elderly. High-risk groups include the elderly, diabetics and alcoholics.	About 1 in 10 have local reactions. Guillain-Barré syndrome occurs in about 1 in 1 million.
Measles – highly infectious virus spread by droplets; causes fever, cough, rash.	1 in 25 children with measles develops pneumonia and 1 in 2,000 develops encephalitis (brain inflammation). For every 10 children who develop measles encephalitis, 1 dies and 4 have permanent brain damage. About 1 in 25,000 develops SSPE (brain degeneration), which is always fatal.	About 1 in 10 have discomfort, local inflammation or fever. About 1 in 100 develops a rash, which is non-infectious. 1 in 1 million recipients may develop encephalitis (inflammation of the brain).
Meningococcal infections – bacteria spread by respiratory droplets. Causes sepsis (infection of the blood stream) and meningitis (infection of the tissues surrounding the brain).	About 1 in 10 patients die. Of those that survive, 1 in 30 have severe skin scarring or loss of limbs, and 1 in 30 has severe brain damage.	Polysaccharide vaccine: Local reactions common. Mild fever, headache, malaise in 1 in 30. Conjugate vaccine: About 1 in 10 has local inflammation, fever, irritability, anorexia or headaches.
Mumps – contagious virus spread by saliva; causes swollen neck and salivary glands, fever.	1 in 200 children develops encephalitis. 1 in 5 males past puberty develop inflammation of the testes. Occasionally mumps causes infertility or deafness.	1 in 100 vaccine recipients may develop swelling of the salivary glands. 1 in 3 million recipients develop mild encephalitis.
Pertussis – contagious bacteria spread by droplets; causes whooping cough and vomiting, lasting up to 3 months.	About 1 in 200 whooping cough patients under the age of 6 months dies from pneumonia or brain damage.	As for DTPa vaccine (see diphtheria).
Pneumococcal infections – bacteria spread by droplets; causes fever, pneumonia, septicaemia, meningitis.	About 1 in 10 meningitis patients dies.	Polysaccharide vaccine: Less than 1 in 20 has pain or local reaction. Conjugate vaccine: About 1 in 10 has local reaction or fever.
Polio – contagious virus spread by faeces and saliva; causes fever, headache, vomiting and may progress to paralysis.	While many infections cause no symptoms, about 1 in 20 hospitalised patients dies and 1 in 2 patients who survive is permanently paralysed.	IPV: Local redness (1 in 3), pain (1 in 7) and swelling (1 in 10) common. Up to 1 in 10 has fever, crying, and decreased appetite.
Rotavirus – virus spread by faecal-oral route; causes gastroenteritis which can be severe.	In children <5 years of age, rotavirus infections in Australia account for approximately 10,000 hospitalisations every year, approximately 115,000 children visit a GP and approximately 22,000 children require an Emergency Department visit. Illness may range from mild, watery diarrhoea of limited duration to severe dehydrating diarrhoea and fever which can result in death.	1 - 3 in a hundred vaccine recipients may develop diarrhoea or vomiting in the week following vaccine administration.
Rubella – contagious virus spread by droplets; causes fever, rash, swollen glands, but causes severe malformations to babies of infected pregnant women.	About 5 in 10 patients develop a rash and painful swollen glands; 5 in 10 adolescents and adults have painful joints; 1 in 3,000 develops thrombocytopenia (bruising or bleeding); 1 in 6,000 develops inflammation of the brain; 9 in 10 babies infected during the first 10 weeks after conception will have a major congenital abnormality (such as deafness, blindness, or heart defects).	About 1 in 10 have discomfort, local inflammation, or fever. About 1 in 20 has swollen glands, stiff neck, or joint pains. About 1 in 100 have a rash, which is non-infectious. Thrombocytopenia (bruising or bleeding) occurs after a first dose of MMR at a rate of 1 in 30,500.
Tetanus – caused by toxin of bacteria in soil; causes painful muscle spasms, convulsions, lockjaw.	About 1 in 10 patients dies. The risk is greatest for the very young or old.	As for DTPa vaccine (see diphtheria).
Varicella (chickenpox) - caused by highly contagious virus; causes low-grade fever and vesicular rash.  Reactivation of the virus later in life causes herpes zoster (shingles).	1 in 5,000 patients develop encephalitis (brain inflammation). About 3 in 100,000 patients die.  Infection during pregnancy can result in congenital malformations in the baby. Onset of infection in the mother from 5 days before to 2 days after delivery results in severe infection in the newborn baby in up to one-third of cases.	About 1 in 5 has a local reaction or fever. A mild varicella-like rash may develop in 3 - 5 per hundred recipients.