

COMPARISON OF THE EFFECTS OF DISESES AND THE SIDE EFFECTS OF VACCINES

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/dTpa vaccine – about 1 in 10 have local inflammation or fever. Booster doses of DTPa may occasionally be associated with extensive circumferential swelling of the limb, but this resolves completely within a few days. Serious adverse events are very rare.
Hepatitis A – contagious virus spread by contact of ingestion of faecally contaminated water/food or through contact with the faecal material of a person infected with hepatitis A.	Jaundice (yellowing of the skin and eyes), fever anorexia, nausea, vomiting, hepatic (liver) pain and malaise (tiredness). It may take up to 1 month for patients to recover and some patients may require hospitalisation. Young children may not show any symptoms but are still infectious. Patients are infectious up to 2 weeks before the onset of jaundice and for approximately 1 week after the jaundice appears.	About 1 in 5 will have discomfort or local inflammation at the site of injection.
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 will have injection site pain and 1 in 100 will have fever. Anaphylaxis occurs in about 1 in 600,000.
Hib – contagious bacteria spread by respiratory droplets, causes meningitis, epiglottitis (respiratory obstruction), septicaemia, and 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 die.	About 1 in 20 have discomfort or local inflammation. About 1 in 50 have fever.
Human papillomavirus – virus spread mainly via sexual contact.	About 1 in 2 of cervical cancers worldwide have been associated with HPV16 and 1 in 10 with HPV18.	About 8 in 10 will have pain and 2 in 10 will have swelling/redness at the site of injection. Very occasionally headache, fever and nausea may occur.
Influenza – contagious virus spread by respiratory droplets; causes fever, muscle and joint pains, pneumonia.	Causes increased hospitalisation in the elderly. High-risk groups include the elderly, diabetics, alcoholics, etc.	About 1 in 10 have local reactions, Guillain-Barre syndrome occurs in about 1 in 1 million.
Measles – highly infectious virus spread by droplets; causes fever, cough and rash.	1 in 15 children with measles develops pneumonia and 1 in 1,000 develops encephalitis (brain inflammation). For every 10 children who develop measles encephalitis, 1 dies and up to 4 have permanent brain damage. About 1 in 100,000 develops SSPE (brain degeneration), which is always fatal.	About 1 in 10 have discomfort, local inflammation or fever. About 1 in 20 develops a rash, which is non-infectious. Fewer than 1 in 1 million recipients may develop encephalitis (inflammation of the brain).
Meningococcal infections – bacteria spread by respiratory droplets. Cause septicaemia (infection of the blood stream) and meningitis (infection of the tissue surrounding the brain)	About 1 in 10 patients dies. Of those that survive, 1 in 30 has severe skin scarring or loss of limbs, and 1 in 30 have severe brain damage.	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 (brain inflammation). 1 in 5 males past puberty develops inflammation of the testicles. 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 (inflammation of the brain).
Pertussis – contagious bacteria spread by respiratory 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.	DTPa/dTpa vaccine – about 1 in 10 has local inflammation or fever. Booster doses of DTPa may occasionally be associated with extensive circumferential swelling of the limb, but this resolves completely within a few days. Serious adverse events are very rare.
Pneumococcal infections – bacteria spread by respiratory droplets; causes septicaemia, meningitis and occasionally other infections.	About 1 in 10 meningitis patients dies.	7vPCV - About 1 in 10 has local reaction or fever 23VPPV - About 1 in 2 has a local reaction
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.	Local redness, pain and swelling at the site of injection are 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 < 5yrs 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 100 vaccine recipients may develop diarrhoea or vomiting in the week following vaccines administration.
Rubella – contagious virus spread by droplets; causes rash, fever, swollen glands, but causes severe malformations in 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, brain damage or heart defects).	About 1 in 10 has discomfort, local inflammation, or fever. About 1 in 20 has swollen glands, stiff neck, or joint pains. About 1 in 20 has 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 3 in 100 patients dies. The risk is greatest for the very young or old.	DTPa/dTpa vaccine – about 1 in 10 has local inflammation, or fever. Booster doses of DTPa may occasionally be associated with extensive circumferential swelling of the limb, but this resolves completely within a few days. Serious adverse events are very rare.
Varicella (chickenpox) – highly contagious virus; causes low-grade fever and vesicular rash. Reactivation of the virus later in life causes herpes zoster (shingles).	1 in 100,000 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 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 in 100 recipients.