

Comparison of the Effects of Diseases and the Side Effects of NIP Vaccines

From *The Australian Immunisation Handbook* 10th Edition (2013) Updated June 2015

Disease	Effects of Disease	Side Effects of Vaccination
Diphtheria – bacteria spread by respiratory droplets; causes severe throat and breathing difficulties.	About 1 in 7 patients dies. The bacteria release a toxin which can produce nerve paralysis and heart failure.	About 1 in 10 has local swelling, redness or pain at the injection site, or fever (DTPa/dTpa vaccine). Booster doses of DTPa may occasionally be associated with extensive swelling of the limb, but this resolves completely within a few days. Serious adverse events are very rare.
Hepatitis A – virus spread by contact or ingestion of faecally contaminated water/food or through contact with the faecal material of a person infected with hepatitis A.	At least 7 in 10 adult patients develop jaundice (yellowing of the skin and eyes), fever, anorexia (decreased appetite), nausea, vomiting, hepatic (liver) pain and malaise (tiredness).	About 1 in 5 will have local swelling, redness or pain at the injection site. Serious adverse events are very rare.
Hepatitis B – virus spread mainly by blood, sexual contact or from mother to newborn baby; causes acute hepatitis (liver infection) or chronic infection ('carrier').	About 1 in 4 chronic carriers will develop cirrhosis or liver cancer.	About 1 in 20 will have local swelling, redness or pain at the injection site and 2 in 100 will have fever. Anaphylaxis occurs in about 1 in 1 million. Serious adverse events are very rare.
Hib – bacteria spread by respiratory droplets; causes meningitis (infection of the tissues surrounding the brain), epiglottitis (respiratory obstruction), septicaemia (infection of the blood stream) and septic arthritis (infection in the joints).	About 1 in 20 meningitis patients dies and about 1 in 4 survivors has permanent brain or nerve damage. Epiglottitis is rapidly and invariably fatal without treatment.	About 1 in 20 has local swelling, redness or pain at the injection site. About 1 in 50 has fever. Serious adverse events are very rare.
Human papillomavirus – virus spread mainly via sexual contact; up to 80% of the population will be infected with HPV at some time in their lives. Some HPV types are associated with the development of cancer.	About 7 in 10 cervical cancers worldwide have been associated with HPV-16 and 1 in 6 with HPV-18.	About 8 in 10 will have pain and 2 in 10 will have local swelling, redness or pain at the injection site. Headache, fever, muscle aches and tiredness may occur in up to 3 in 10 people. Serious adverse events are very rare.
Influenza – virus spread by respiratory droplets; causes fever, muscle and joint pains, pneumonia. About 1 in 10 to 1 in 5 persons will get influenza every year.	There are an estimated 3000 deaths in people older than 50 years of age each year in Australia. Causes increased hospitalisation in the very young (under 5 years of age) and the elderly. Other high-risk groups include pregnant women, people who are obese, diabetics and others with certain chronic medical conditions.	About 1 in 10 has local swelling, redness or pain at the injection site. Fever occurs in about 1 in 10 children aged 6 months to 3 years. Guillain-Barré syndrome occurs in about 1 in 1 million. Serious adverse events are very rare.
Measles – highly infectious virus spread by respiratory droplets; causes fever, cough and rash.	About 1 in 15 children with measles develops pneumonia and 1 in 1000 develops encephalitis (brain inflammation). For every 10 children who develop measles encephalitis, 1 dies and many have permanent brain damage. About 1 in 100,000 develops SSPE (brain degeneration) which is always fatal.	About 1 in 10 has local swelling, redness or pain at the injection site, or fever. About 1 in 20 develops a rash which is non-infectious. Low platelet count (causing bruising or bleeding) occurs after the 1st dose of MMR vaccine at a rate of about 1 in 20,000 to 30,000. Serious adverse events are very rare.
Meningococcal infection – bacteria spread by respiratory droplets; causes septicaemia (infection of the blood stream) and meningitis (infection of the tissues surrounding the brain).	About 1 in 10 patients dies. Of those that survive, 1 to 2 in 10 have permanent long-term problems such as loss of limbs and brain damage.	About 1 in 10 has local swelling, redness or pain at the injection site, fever, irritability, loss of appetite or headaches (conjugate vaccines). About 1 in 2 has a local reaction (polysaccharide vaccine). Serious adverse events are very rare.

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Mumps – virus spread by saliva; causes swollen neck and salivary glands, and fever.	1 in 5000 children develops encephalitis (brain inflammation). 1 in 5 males (adolescent/adult) develop inflammation of the testes. Occasionally, mumps causes infertility or permanent deafness.	About 1 in 100 may develop swelling of the salivary glands. Serious adverse events are very rare.
Pertussis – bacteria spread by respiratory droplets; causes whooping cough, with prolonged cough lasting up to 3 months.	About 1 in 125 babies under the age of 6 months with whooping cough dies from pneumonia or brain damage.	About 1 in 10 has local swelling, redness or pain at the injection site, or fever (DTPa/dTpa vaccine). Booster doses of DTPa may occasionally be associated with extensive 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 (infection of the blood stream), meningitis (infection of the tissues surrounding the brain) and occasionally other infections.	About 3 in 10 people with meningitis die. One-third of all pneumonia cases and up to half of pneumonia hospitalisations in adults is caused by pneumococcal infection.	About 1 in 5 has local swelling, redness or pain at the injection site, or fever (conjugate vaccine). Up to 1 in 2 has local swelling, redness or pain at the injection site (polysaccharide vaccine). Serious adverse events are very rare.
Polio – virus spread in faeces and saliva; causes fever, headache and vomiting and may progress to paralysis.	While many infections cause no symptoms, up to 3 in 10 patients with paralytic polio die, and many patients who survive are permanently paralysed.	Local redness, pain and swelling at the injection site are common. Up to 1 in 10 has fever, crying and decreased appetite. Serious adverse events are very rare.
Rotavirus – virus spread by faecal – oral route; causes gastroenteritis which can be severe.	Illness may range from mild diarrhoea to severe dehydrating diarrhoea and fever, which can result in death. Of children under 5 years of age, before vaccine introduction, approximately 10,000 children were hospitalised, 115,000 needed GP visits and 22,000 required an Emergency Department visit each year in Australia.	Up to 3 in 100 may develop diarrhoea or vomiting in the week after receiving the vaccine. About 1 in 17,000 babies may develop intussusception in the first few weeks after the 1st or 2nd vaccine doses. Serious adverse events are very rare.
Rubella – virus spread by respiratory droplets; causes fever, rash and swollen glands, but causes severe malformations in babies of infected pregnant women.	Patients typically develop a rash, painful swollen glands and painful joints. 1 in 3000 develops low platelet count (causing bruising or bleeding); 1 in 6000 develops encephalitis (brain inflammation). Up to 9 in 10 babies infected during the first trimester of pregnancy will have a major congenital abnormality (including deafness, blindness or heart defects).	About 1 in 10 has local swelling, redness or pain at the injection site. About 1 in 20 has swollen glands, stiff neck or joint pains. About 1 in 20 has a rash, which is non-infectious. Low platelet count (causing bruising or bleeding) occurs after the 1st dose of MMR vaccine at a rate of about 1 in 20,000 to 30,000. Serious adverse events are very rare.
Tetanus – caused by toxin of bacteria in soil; causes painful muscle spasms, convulsions, lockjaw.	About 2 in 100 patients die. The risk is greatest for the very young or old.	About 1 in 10 has local swelling, redness or pain at the injection site, or fever (DTPa/dTpa vaccine). Booster doses of DTPa may occasionally be associated with extensive 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 (fluid-filled spots). Reactivation of the virus later in life causes herpes zoster (shingles).	1 in 100,000 patients develop encephalitis (brain inflammation). Infection during pregnancy can result in congenital malformations in the baby. Infection in the mother around delivery time results in severe infection in the newborn baby in up to one-third of cases.	About 1 in 5 has local reaction or fever. About 3 to 5 in 100 may develop a mild varicella-like rash. Serious adverse events are very rare.