

Comparison of the effects of diseases and the side effects of vaccines

for parents and caregivers...

Effects from disease	Possible side effects of vaccines*
Diphtheria is a serious respiratory tract infection caused by bacteria which infects the nose, throat, tonsils and skin. It produces a toxin (powerful poison) that damages the heart, nerves, kidneys and other organs. Around 2-10 per 100 of those infected die.	Infanrix®-hexa About 1 in 10 have local inflammation, mild fever, restlessness and/or crying. Mild swelling, when occurs, usually resolves within a couple of days. See also; Infanrix®-IPV , Boostrix® and ADT®-Booster
Tetanus is a disease of the nervous system caused by a bacteria which can be found in soil. Bacteria enters through a break in the skin and releases a toxin that causes severe painful muscle spasms. For unimmunised people, there are around 5-10 cases a year in New Zealand. Nearly 1 in 10 of those affected die.	see Infanrix®-hexa , Infanrix™-IPV , Boostrix™ or ADT™-Booster About 1 in 10 to 1 in 100 have local site reactions or fever. Brachial neuritis (a condition causing inflammation of nerves in the arm causing muscle weakness and pain) is very rare occurring in 1-2 per 200,000.
Pertussis (commonly called whooping cough) is a very contagious respiratory illness caused by bacteria. Symptoms include a severe 'barking' cough that comes in spasms and can last up to three months. The coughing can be associated with difficulty in breathing and vomiting. Complications include ear infections, pneumonia, internal bleeding from coughing spasms, convulsions and/or brain inflammation. Infants and young children are at highest risk of complications, including permanent brain damage or death. The disease is still very common and tends to come in epidemics every 3-4 years.	see Infanrix®-hexa or Infanrix™-IPV or Boostrix™ About 1 in 10 have local inflammation. Approximately 1 in 20 have mild fever, and/or restlessness and crying. Mild swelling at the injection site occurs occasionally and is usually resolved within a couple of days.
Polio is a viral infection of the nervous system. It is spread by contact with an infected person or their faeces. Often there are no symptoms. However it can lead to fever, sore throat, headache and stiff neck. Infection can quickly progress to paralysis of the limbs and chest, making walking and breathing very difficult. Paralysis is permanent. About 1 in 20 hospitalised patients die and 1 in 2 patients who survive are permanently paralysed.	see Infanrix®-hexa , Infanrix™-IPV or IPOL About 1 in 10 have local site reactions, fever, crying and/or decreased appetite.
Hepatitis B is a virus which can cause liver disease. It is transmitted from individuals through contact with their blood or bodily fluids. Younger children and infants catching hepatitis B are more likely to end up carrying the disease long term. Carriers have a 5 in 100 risk of developing chronic active hepatitis or cirrhosis, and a 5-10 in 100 risk of developing liver cancer. Hepatitis B is believed to be second only to tobacco as a cause of human cancer.	see Infanrix®-hexa or HBvaxPRO® About 1 in 15 to 1 in 100 have local pain or fever.
Haemophilus influenzae type b is a bacterial respiratory disease which can cause severe illness in infants and young children. The organism spreads to the organs causing meningitis (inflammation of the tissues surrounding the brain), epiglottitis (throat obstruction), pneumonia, swollen joints and skin infections. About 1 in 20 patients with bacterial meningitis die and 1 in 4 survivors have permanent brain or nerve damage. About 1 in 100 patients with epiglottitis dies.	see Infanrix®-hexa or Hiberix® About 1 in 20 have discomfort or local inflammation. About 1 in 50 have fever.

*For all vaccines (as for most medications) an extremely rare (approximately 1-3 per million) allergic reaction called 'anaphylaxis' can occur. All vaccinators will have training and equipment to deal with this situation in the unlikely event of it occurring.

Effects from disease

Measles is a highly contagious viral respiratory disease. It causes a high fever, rash, cough, runny nose and red eyes. One in 15 children with measles develops pneumonia and 1 in 1,000 develops encephalitis (brain inflammation). For every 10 children who develop encephalitis, 1 will die and up to 4 have permanent brain damage. About 1 in 100,000 develop subacute sclerosing panencephalitis (SSPE, brain degeneration), which is always fatal.

Mumps is a viral disease that affects the salivary glands. Women who develop mumps during the first trimester of pregnancy have an increased risk of miscarriage. One in 200 infected children develop encephalitis (brain inflammation). About 1 in 5 males past puberty develop inflammation of the testicles. Rarely, mumps causes infertility. Profound deafness is seen in 1 per 15,000 cases.

Rubella (commonly called German measles) is a viral illness that causes a rash, low grade fever, and swollen glands. About 5 in 10 adolescents and adults have painful joints, 1 in 3,000 develop thrombocytopenia (bruising or bleeding) and 1 in 6,000 develop encephalitis (brain inflammation). However, 8-9 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).

Pneumococcal Disease is caused by the bacteria *Streptococcus pneumoniae* and is a leading cause of serious illness among young children. It can cause fever, pneumonia, swollen neck or salivary glands, septicaemia (infection of the blood), and meningitis. It is also the cause of some ear infections. About 1 in 10 patients with meningitis die. Around 150 preschool children are hospitalised each year with meningitis or septicaemia. Pneumococcal disease also causes approximately one quarter of all pneumonia cases in children.

Human Papillomaviruses (HPV) include more than 100 types of virus. Of these, 15 to 20 types have the potential to cause cervical cancer and cancers of the penis, vagina, anus, mouth and throat. Other types of HPV cause genital warts. To develop cervical cancer a woman needs to have been exposed to HPV, which occasionally stays present in the cervix and after many years causes the cells to become cancerous. Cervical cancer is the third most common cause of cancer in New Zealand midlife women.

Possible side effects of vaccines*

MMR®II

About 1 in 100 develops redness at the injection site. About 2-3 per 100 experience mild fever and 1-2 per 100 develop a fever over 39.5°C. About 1-2 in 100 develop a rash, which is non-infectious. About 4 per 100 are noticeably irritable. One in 1 million recipients may develop encephalitis (inflammation of the brain) from the measles component of the vaccine. Thrombocytopenia (bruising or bleeding) occurs after a first dose of MMR® at a rate of 1 in 30,500. This is self-limiting.

Prevenar®

About 1 in 10 have a minor local reaction.

Pneumovax®23*

Less than 1 in 20 has pain or local reaction.

*Pneumovax®23 is not routinely offered to all children. It is recommended for some children and adults who are at higher risk of pneumococcal disease.

Gardasil®

Mild pain occurs for about 8 in 10, while severe pain is rare, occurring in around 2-3 per 100. About 4 in 100 report fever. About 25 in 100 will have mild swelling at the injection site.

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Vaccines NOT funded except in special circumstances

Effects from disease	Possible side effects of vaccines*
Meningococcal disease is caused by bacteria spread by respiratory droplets. It can cause septicaemia (infection of the blood stream) and/or meningitis (inflammation of the tissues surrounding the brain). About 1 in 10 patients with meningitis die. Of those who survive about 1 in 4 have long term learning difficulties and 1 in 5 to 1 in 25 have permanent deafness or require limb amputation. One in 30 have severe skin scarring. One in 30 have severe brain damage.	Menomune™/Mencevax®ACWY Fever occurs in up to 2 out of 100 recipients. Mild local reaction occurs in 4-8 out of 10 vaccine recipients. Meningitec® Mild fever occurs in 25-30 per 100 recipients. Mild local reaction occurs in 9-36 per 100 vaccine recipients.
Varicella (chickenpox) is caused by a highly contagious virus. Symptoms include low-grade fever and raised rash. About 1 in 5,000 patients develop encephalitis (brain inflammation). About 2 in 50,000 patients die or suffer permanent disability. The effects from the disease are often worse in adults. 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 can result in severe infection in the newborn baby in up to 1 in 3 cases. Reactivation of the virus in later life causes herpes zoster (shingles).	Varilrix About 1 in 5 have a local reaction or fever. A mild varicella-like rash may develop in 2-7 per 100 recipients. One in 10,000 may have a febrile seizure. Mild local reactions are quite common.
Rotavirus is a highly infectious intestinal disease. It causes severe diarrhoea, mostly in babies and young children. It is often accompanied by vomiting and fever. Dehydration can be very severe and may cause death if left untreated. This is extremely rare in New Zealand.	Rotarix®/Rotateq® One to 3 per 100 of infants have mild, temporary diarrhoea or vomiting within 7 days after the vaccine.
Influenza is caused by a contagious virus spread by respiratory droplets. Between 10-20% of the population are infected with influenza each year. Infection with the influenza virus may lead to hospitalisation in all age groups particularly the elderly or those with an ongoing medical condition. Influenza causes fever, headache, body aches and pains. It can lead to pneumonia and in some cases may be life threatening.	Vaccine brand varies from year to year About 1 in 10 have local reactions. Mild fever is common, particularly in children. High fever can also occur. Guillain-Barré syndrome occurs in less than 1 in 1 million, the same rate as the general population.

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Vaccines are prescription medicines. Talk to your doctor or nurse about the benefits or any risks.