

Tetanus, Diphtheria, Pertussis and Polio Vaccine

Vaccines have saved more lives in Canada in the last 60 years than any other medical intervention. Vaccines help your immune system to recognize and fight bacteria and viruses that cause diseases.

Tetanus, diphtheria, pertussis and polio are vaccine preventable diseases.

Tetanus ('lockjaw') is caused by bacteria found in the soil worldwide. The bacteria make a strong toxin within 3-21 days after entering the body through a cut or injury to the skin. The toxin causes painful tightening of muscles in the body. In severe cases, breathing muscles are affected. Without treatment, up to 8 in 10 people who get tetanus could die. It cannot be spread from person to person.

Diphtheria is rare in Canada; however this serious disease occurs in many countries worldwide. The bacteria spread through the air by sneezing or coughing, and direct skin-to-skin contact. Symptoms include a mild fever, sore throat, difficulty swallowing, tiredness and loss of appetite. A grayish white membrane appears in the throat within 2 to 3 days of illness which causes severe breathing problems like airway obstruction and suffocation. Within 2 to 5 days, the bacteria produce a strong toxin that can cause heart failure and paralysis. Without treatment 1 in 10 people could die.

Pertussis, or "whooping cough", is a serious bacterial infection of the lungs and throat. Pertussis can cause pneumonia, convulsions, brain damage or death. These complications are seen most often in infants. The bacteria are easily spread by coughing, sneezing or close face-to-face contact. Pertussis can cause severe coughing that often ends with a whooping sound before the next breath. This cough can last several months and occurs more often at night. 1 in 200 infants who get pertussis could die.

Polio (poliomyelitis) is a disease caused by 3 types of poliovirus (type 1, type 2 and type 3). Polioviruses are in the stool of infected people. If stool contaminates hands, water or food, others can become infected within 3 to 35 days. Due to immunization, poliovirus type 2 has been eradicated worldwide. However, poliovirus types 1 and 3 are still found in certain countries.

- **FACT:** Canada was certified as a 'polio free' country in 1994.

Polio symptoms include fever, tiredness, headache, nausea and vomiting. Most polio cases have no symptoms but 1% of cases may have paralysis of the arms and legs. Paralysis of the breathing and swallowing muscles can be life-threatening. There is no known treatment for polio and previously infected people can become infected again with another type of poliovirus. Some people develop muscle weakness ('postpolio syndrome') many years after they had polio.

How can these diseases be prevented?

- Be immunized. When you and your child are immunized, you help protect others as well.
- Practice good hygiene (e.g. handwashing).

Who can get the vaccine for free?

- People who are 4 years of age and older.

Who should not get this vaccine?

- Individuals who have a serious illness, with or without a fever, should delay immunizations.
- People who had a life-threatening reaction to a previous dose of a tetanus, diphtheria, pertussis or polio-containing vaccine, or any components of the vaccine.
- People younger than 4 years of age.
- People who developed Guillain-Barré Syndrome (GBS) within 6 weeks of getting a tetanus-containing vaccine should not get this vaccine. GBS is a rare neurological condition that can result in weakness and paralysis of the body's muscles.

- People who developed encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) within 7 days of a previous dose of a pertussis-containing vaccine that is not attributable to another identifiable cause is a contraindication to vaccination with any pertussis-containing vaccine.
- Individuals who have experienced transient thrombocytopenia or other neurological complications following an earlier immunization against diphtheria and/or tetanus.

What are common reactions to this vaccine?

- **Vaccines are very safe and effective. It is much safer to get this vaccine than to get these serious diseases.**
- Temporary pain, swelling and at the injection site.
 - **Up to 20%** of children who get this vaccine may have redness, swelling and pain at the injection site/arm for up to 5 days afterward. The symptoms usually resolve without any treatment (e.g., antihistamines) given.
- Tiredness, headache, mild fever, nausea, body aches and chills.
- For most children, these mild reactions generally last 1 to 2 days.
- Only treat a fever (at least 6 to 8 hours after immunization) if your child is uncomfortable, refusing fluids and not sleeping.

Acetaminophen (Tylenol, Temptra) may be given for fever or soreness. ASA (Aspirin) must NOT be given to anyone younger than 18 years old because of the risk of Reye syndrome.

It is important to stay in the clinic for 15 minutes after getting any vaccine because there is an extremely rare possibility of a life-threatening allergic reaction called anaphylaxis. This may include hives, difficulty breathing, or swelling of the throat, tongue or lips. **If this happens after you leave the clinic, call 911 or the local emergency number.** This reaction can be treated, and occurs in less than one in one million people who get the vaccine.

What does the vaccine contain?

BOOSTRIX®-POLIO contains diphtheria toxoid, tetanus toxoid, three purified pertussis antigens (pertussis toxoid, filamentous haemagglutinin and pertactin) adsorbed onto aluminum salts and inactivated polioviruses (types 1, 2 and 3). It also contains aluminum (as aluminum salts), medium 199, sodium chloride, water for injection. Residues from the manufacturing process: disodium phosphate, formaldehyde, glutaraldehyde, glycine, monopotassium phosphate, neomycin sulphate, polymyxin B sulphate, polysorbate 80, and potassium chloride. Thimerosal and latex free.

ADACEL®-POLIO contains tetanus toxoid, diphtheria toxoid, acellular pertussis (pertussis toxoid, filamentous haemagglutinin, pertactin, fimbriae types 2 and 3) and inactivated polioviruses (types 1, 2 and 3), aluminum phosphate (adjuvant), 2-phenoxyethanol, polysorbate 80, water for injection. Trace amounts of bovine serum albumin, formaldehyde, glutaraldehyde, streptomycin, neomycin and polymyxin B may be present in trace amounts. Thimerosal and latex free.

Mature Minor Consent

It is recommended that parents/guardians discuss consent for immunization with their children. Efforts are first made to get parental/guardian consent for immunizations. However, children at least 13 years of age up to and including 17 years of age, who are able to understand the benefits and possible reactions for each vaccine and the risks of not getting immunized, can legally consent to or refuse immunizations in Saskatchewan by providing mature minor informed consent to a healthcare provider.

Provincial immunization fact sheets are available at www.saskatchewan.ca/immunize.

For more information, contact your local public health office, your physician, nurse practitioner, HealthLine online or by calling 811.

References: BOOSTRIX®-POLIO (2021) and ADACEL®-POLIO (2022) product monographs.