

Diphtheria, Tetanus, Pertussis, Polio, *Haemophilus influenzae* type b 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.

Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b are vaccine preventable diseases.

Diphtheria is rare in Canada; however this serious disease occurs in many countries worldwide. The bacteria are 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.

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.

Pertussis ('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). Due to immunization, type 2 poliovirus has been eliminated worldwide. However, types 1 and 3 are still found in certain countries. Polioviruses are in the stool of infected people. If stool contaminates hands, water or food, others can become infected within 3 to 35 days.

Polio symptoms include fever, tiredness, headache, nausea and vomiting. Most polio cases have no symptoms while 1% 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.

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

***Haemophilus influenzae* type b (Hib)** is a bacterial infection that most commonly infects children under 5 years old. Despite its name, this disease is not the same as influenza or the "flu". Hib bacteria are spread by coughing, sneezing or close face-to-face contact. Hib can cause serious and life-threatening infections of the lining that covers the brain (meningitis), the blood (septicemia) and the throat (epiglottitis). A child with epiglottitis has severe difficulty breathing and may need an emergency operation (called a 'tracheotomy') to help them breathe. 1 in 20 children could die.

How can these diseases be prevented?

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

Who can get this vaccine for free?

- Children starting at 2 months of age. **It is very important to begin your child's immunizations on time for the best protection against these five diseases.**

Dose	Child's Age
1 st dose	2 months
2 nd dose	4 months
3 rd dose	6 months
4 th dose	18 months

- Some people 5 years of age and older who have certain medical conditions.

Who should not get this vaccine?

- **A mild illness, with or without a fever, is not a reason to avoid immunization.**
- People who have a serious illness, with or without a fever, should delay immunizations.
- People who have had a life-threatening reaction to a previous dose of the vaccine or who have serious allergies to any of the vaccine components.
- People who developed Guillain-Barré Syndrome (GBS) within 6 weeks of getting tetanus-containing vaccine should not get the vaccine. GBS is a rare neurological condition that can result in weakness and paralysis of the body's muscles.

Acetaminophen (Tylenol, Tempra) 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.

What are common reactions to this vaccine?

- **Vaccines are very safe. It is much safer to get this vaccine than to get these serious diseases.**
- Temporary soreness, redness and swelling at the injection site.
- Some children may have a fever, or experience crankiness, drowsiness, or a loss of appetite.
- These mild reactions generally last 1 to 2 days.

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.

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

References: Product monographs (INFANRIX®-IPV/Hib, 2015; PEDIACEL®, 2012).

Who should you report reactions to?

- Report any adverse or unexpected reactions to your local public health nurse, your doctor, or nurse practitioner as soon as possible.

Talk to your public health nurse if:

- You have questions or concerns about your or your child's reaction to an immunization.
- You had to take your child to a doctor, hospital or health center with an illness that might be related to an immunization.

What does this vaccine contain?

PEDIACEL® contains diphtheria toxoid, tetanus toxoid, acellular pertussis toxoid, filamentous haemagglutinin, pertactin, fimbriae types 2 and 3, inactivated poliomyelitis vaccine types 1, 2 and 3, purified polyribosylribitol phosphate capsular polysaccharide of *Haemophilus influenzae* type b, aluminum phosphate (adjuvant), 2-phenoxyethanol, polysorbate 80, residual bovine serum albumin, neomycin, polymyxin B and trace amounts of streptomycin, formaldehyde and glutaraldehyde. Thimerosal-free. Latex-free.

INFANRIX®-IPV/Hib contains diphtheria toxoid, tetanus toxoid, acellular pertussis toxoid, filamentous haemagglutinin, pertactin, inactivated poliovirus vaccine types 1, 2, and 3, purified polyribosyl-ribitol-phosphate capsular polysaccharide of *Haemophilus influenzae* type b, lactose, sodium chloride, aluminum adjuvant (as aluminum salts), Medium 199 (as stabilizer including amino acids, mineral salts and vitamins), water for injection, residual formaldehyde, polysorbate 80, potassium chloride, disodium phosphate, monopotassium phosphate, glycine and trace amounts of neomycin sulphate and polymyxin sulphate. Thimerosal-free. Latex-free.

To ensure that a complete immunization record is maintained, every immunization administered to an individual will be documented by Public Health into the electronic provincial immunization registry, known as Panorama. Panorama is a secure electronic system used in Saskatchewan to record and manage immunization records and the health information related to immunization for all Saskatchewan residents. Immunization records may be shared with other health care professionals to provide public health services; assist with diagnosis and treatment; and to control the spread of vaccine preventable diseases. Information about Panorama is detailed in the "Protecting the Privacy of Your Immunization Record" fact sheet.