

Diphtheria, Pertussis, Tetanus, Polio and Haemophilus influenzae type b (DaPTP-Hib) Vaccine

COMMUNICABLE DISEASE CONTROL

What are vaccines?

Vaccines are also called needles, baby shots or immunizations. Vaccines help your immune system learn how to recognize the germs that cause diseases and fight them.

Vaccines not only protect the people who are immunized but may also protect those who cannot be immunized for medical reasons. This is because someone who is immunized is less likely to spread infection to others.

Before vaccines were available, little could be done to prevent serious diseases such as diphtheria, pertussis (whooping cough), tetanus (lockjaw), polio and haemophilus type b. Now, very few Canadians get sick or die from these diseases because people are protected by immunization. However, in countries where vaccines are not routinely used, experience shows that these diseases could again become a concern in Canada if we do not continue to immunize against them.

What is the purpose of this vaccine?

This vaccine is recommended to prevent diphtheria, pertussis (whooping cough), tetanus, polio and haemophilus influenzae type b. These five diseases are caused by germs and spread in different ways:

- **Diphtheria:** Diphtheria bacteria (germs) infect the throat, nose or skin. The germs can be passed on to others by close face-to-face contact with an infected person. They can be spread by coughing, sneezing, or by touching skin sores if present with the infection.
- **Pertussis:** Also called whooping cough, pertussis is another serious disease, especially in children. Pertussis causes long coughing spells that make it hard for infants and children to eat, drink or even breathe. The disease may last up to three months. It may

lead to serious complications, hospitalization and sometimes death. Pertussis can be spread through close, face-to-face contact with someone who is already infected, particularly when that person coughs or sneezes. The bacteria (germs) are very contagious, especially in a home where there are infected individuals.

- **Tetanus:** Also known as “lockjaw,” tetanus is caused by tetanus germs when they get into cuts, puncture wounds or burns. Tetanus germs are common, especially in dirt, dust and manure. Tetanus germs in a wound form a poison, or toxin, that causes muscles to tighten and go into spasms. A spasm is a painful tightening of the muscles that cannot be controlled. Tetanus can be very serious if the breathing muscles are affected by these spasms. Unlike other vaccine-preventable diseases, tetanus is not contagious and does not spread from person to person. Instead, an infection occurs when tetanus spores (germs) enter the skin and attack the muscles.
- **Polio:** Polio can cause sudden fever, sore throat, headache, muscle weakness and pain. It can also lead to paralysis and death. Polio viruses can be passed on when someone comes in contact with the feces (stool or bowel movement) of an infected person. This can occur through contact with feces-contaminated water, food and hands.
- **Haemophilus influenzae type b:** Haemophilus influenzae type b, also known as Hib disease, is especially dangerous in children under five years of age. Hib causes serious infections such as meningitis, an infection of the covering of the brain; and pneumonia, an infection of the lungs. The bacteria can be passed on to others when

they come into close face-to-face contact with an infected person (ex: coughing, sneezing).

Are these diseases in Canada and in other countries today?

Yes. For instance:

- **Diphtheria:** Each year in Canada, anywhere from none at all to five people are identified as being infected with diphtheria. In countries where they stopped vaccinating against diphtheria, such as the former Soviet Union in the 1990s, over 140,000 cases (infected persons) and 4,000 deaths were reported. In Manitoba, the most recent case was identified in 2004. This has been the only case identified in the province over the last five years.
- **Pertussis:** Up to 10,000 cases of pertussis were reported in Canada between 1990 and 2004. This number only includes persons who went to see a doctor. It is suspected a large number of people, especially teenagers and adults, are infected with the bacteria and unknowingly transmit the infection to infants and children who are at high risk of developing the disease and its complications. In Manitoba, between 2001 and 2006, doctors tested and diagnosed 270 cases of pertussis.
- **Tetanus (lockjaw):** An average of four tetanus cases are reported in Canada each year. Infection typically occurs after some kind of skin trauma (ex: animal bites, injection drug use) or breathing in the tetanus germs from the soil. In Manitoba, the last case of tetanus was reported in 2004.
- **Polio:** No polio cases have been reported in Canada since the mid-1990s, however cases still occur around the world. The recent polio cases were associated with the older polio vaccine also known as the live oral polio vaccine (OPV). This vaccine is no longer used in Canada. Given individuals travel around the world where polio is present, un-immunized or partially immunized individuals are still at risk of getting the disease.

- **Haemophilus influenzae type b:** Since the introduction of the haemophilus influenzae type b (Hib) vaccine in the late 1980s, about 10 people are infected with the bacteria each year. Before the widespread use of this vaccine, Hib was the most common cause of meningitis, severe infections (ex: pneumonia, blood or skin infection) and deaths in very young children. In Manitoba, cases of this infection have ranged from eight per year (in 2001) to zero in 2006.

How effective is the vaccine?

The DaPTP-Hib vaccine is very effective. When an infant or a child receives the recommended number of shots, the vaccine provides 95 per cent protection against pertussis, diphtheria, tetanus, polio and Hib infections.

If an infant or a child who has received the vaccine develops one of these diseases, the disease may be milder. This means the child will not get as sick as he or she would have become without the immunization.

What is the vaccine made of?

The vaccine is made from inactivated (killed) germs and contains small amounts of other ingredients to make the vaccine safe and effective in preventing diseases. These ingredients can include antibiotics, preservatives and adjuvants (for better and longer protection). Vaccine content varies by manufacturer. Please check with your doctor or your public health nurse if you are not sure your child should be getting the vaccine.

Who should be immunized?

The National Advisory Committee on Immunization (NACI) recommends all infants and children be immunized against diphtheria, pertussis (whooping cough), tetanus, polio and haemophilus influenzae type b.

Who is eligible and should receive the DaP_{TP}-Hib vaccine?

All infants and children who live in Manitoba are eligible. Infants and children should get the DaP_{TP}-Hib vaccine at:

- two months of age,
- four months of age,
- six months of age and
- 18 months of age.

One shot is not enough. Your child must get all the shots at the recommended ages to get the best protection from these five diseases. If the series of shots was started late or not completed, your doctor or public health nurse will provide advice about an alternate schedule to make sure your child receives all the recommended shots.

Who should NOT get the DaP_{TP}-Hib vaccine?

- Anyone with a severe allergy to any of the vaccine ingredients or who, in the past, has had a severe allergic reaction to a diphtheria, pertussis, tetanus, polio and Hib shot, should not get the vaccine.
- Anyone with an unstable neurologic condition such as uncontrolled seizures, should not get the vaccine. The doctor will determine the benefits and risks of administering the vaccine at the clinic visit or later.
- Anyone who is seriously ill, with or without a fever, should not get the vaccine. However, a mild illness with or without a low fever is not a reason to avoid immunization.
- Anyone who developed Guillain Barré syndrome (GBS) within eight weeks of a previous tetanus-containing vaccine dose should not get the vaccine.
- Children seven years of age or older and adults should not get the vaccine, because of the quantity of diphtheria and pertussis it contains. The higher levels of these ingredients may cause side effects such as a very sore muscle where the vaccine was given, fever and feeling unwell.

How many doses are required?

The number of doses will depend on the age your child starts getting immunized. If your child is immunized starting at two months of age, there will be a total of three doses given at two, four and six months of age (also known as the primary series of shots). Another dose will be given at 18 months. Finally, either during kindergarten years or before the start of elementary school, your child will be offered one more dose of this vaccine without the Hib ingredient.

How is the vaccine given?

The vaccine is given (with one needle) to infants in the muscle of the thigh; for older children, it is given in the muscle of the upper arm.

Can the DaP_{TP}-Hib vaccine be given at the same time as other vaccines?

Yes. It is safe to give more than one vaccine at a clinic visit.

Are there side effects?

The DaP_{TP}-Hib vaccine has been shown to be safe. It contains no living bacteria so a person cannot get the disease from the vaccine. But as with any medicine, minor side effects sometimes occur.

For a day or two after getting the needle, children may:

- have soreness, swelling and redness where the needle was given;
- have a slight fever;
- be cranky, fussy and cry;
- feel drowsy and/or not want to eat;
- have an upset stomach (vomiting and diarrhea).

Acetaminophen (Tylenol® or Tempra®) can be given for fever. NEVER give acetylsalicylic acid (ASA or aspirin) to children. A cold, damp cloth may help ease minor pain where the needle was given.

Rarely, severe allergic (anaphylactic) reactions can occur, including:

- hives;
- wheezing;
- shortness of breath;
- swelling of the face, mouth or throat; and/or
- low blood pressure, loss of consciousness.

Report any serious or unusual side effects to your doctor or public health nurse. Vaccine reactions are recorded and monitored in Manitoba and across Canada.

Your record of protection

Make sure your doctor or public health nurse updates your or your child's Immunization Record card after you receive an immunization. Keep the card in a safe place!

In Manitoba, vaccination is voluntary.

Manitoba's Routine Immunization Schedule for Infants and Children

Age	DaPTP*	Hib	MMR**	HBV	Tdap	PCV7	PPV23	MC	MP	V	Flu****
2 months	X	X				X					
4 months	X	X				X					
6 months	X	X				X					X***
12 months			X							X or	
18 months	X	X				X					
4 to 6 years	X		X							X or	
10 years				XXX				X		X	
14 to 16 years					X						
High-risk individuals only						X***	X***	X***	X***	X***	X*** yearly

DaPTP* Diphtheria, acellular Pertussis, Tetanus, Polio (given as “one needle” with Hib)

Hib Haemophilus influenzae type b

MMR** Measles, Mumps, Rubella (given as “one needle” on or after the first birthday)

HBV Hepatitis B (3-dose series)

Tdap Tetanus, diphtheria, acellular Pertussis (given as “one needle”)

PCV7 Pneumococcal conjugate 7 valent

PPV23 Pneumococcal polysaccharide 23 valent

MC Meningococcal conjugate

MP Meningococcal A,C,Y,W-135

V Varicella

Flu Influenza

******* More than one dose may be required depending on age.

******** Given to healthy children (six to 23 months of age).

High-risk individuals are those who are at risk of infection or complications. For more information, speak with your doctor or public health nurse.

Recommended Resources:

Available at local bookstores:

- *Your Child's Best Shot: A Parents' Guide to Vaccination* (2006). Canadian Paediatric Society. 3rd Edition.
- *Vaccines: What You Should Know, 3rd Edition* (2003). Dr. Paul Offitt & Dr. Louis M. Bell.

Available on the Internet:

- Government of Manitoba – Public Health Branch
www.gov.mb.ca/health/publichealth/cdc/index.html
- Division of Immunization and Respiratory Diseases – Public Health Agency of Canada
www.phac-aspc.gc.ca/im/index.html
- Canadian Coalition for Immunization Awareness and Promotion – Canadian Public Health Association
www.immunize.cpha.ca/
- Canadian Paediatric Society
www.caringforkids.cps.ca/immunization/index.htm
- Vaccines and Immunizations – Centres for Disease Control and Prevention – USA
www.cdc.gov/vaccines/
- Immunization Action Coalition
www.immunize.org/

Information about the shots that you or your children receive may be recorded in the Manitoba Immunization Monitoring System (MIMS). This computerized database allows your doctor, your child's doctor or your public health nurse to find out what shots you or your child have had or need to have. Information collected in MIMS may be used to produce vaccination records, or notify you or your doctor if someone has missed a particular shot. Manitoba Health may use the information to monitor how well different vaccines work in preventing disease.

If you need information on the shots that you or your child has received, contact your local public health unit or nursing station.

For more information

Talk to your doctor or public health nurse; or call Health Links-Info Santé in Winnipeg at 788-8200; toll-free elsewhere in Manitoba 1-888-315-9257.

Local Public Health Unit Stamp

