

Tetanus, Diphtheria and acellular Pertussis

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. For some vaccines, booster (extra) needles are needed to continue protection against certain diseases.

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 are tetanus, diphtheria and pertussis?

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.

Diphtheria: Diphtheria are bacteria (germs) that 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 infected skin sores (if present).

Pertussis: Also called "whooping cough," pertussis is a serious disease, especially in children. Pertussis causes long coughing spells that make it hard to eat, drink or even breathe, especially for infants and young children. 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.

Are these diseases in Canada today?

Yes. For instance:

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, break in the skin) or breathing in the tetanus germs from the soil. In Manitoba, the last case of tetanus was reported in 2006.

Diphtheria: Each year in Canada, anywhere from none (zero) 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 2008. During the last three years, three cases were reported to provincial public health officials.

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 spread the infection to infants and children who are at high risk of developing the disease and its complications. In Manitoba, doctors tested and diagnosed 282 cases of pertussis since 2001.

How effective is the vaccine?

The Tdap vaccine is effective. The vaccine provides over 85 per cent protection against tetanus, diphtheria and pertussis.

If an individual who has received the vaccine develops one of these diseases, the disease may be milder. This means the individual may 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 receive the Tdap (booster) vaccine ?

The National Advisory Committee on Immunization (NACI) recommends the Tdap vaccine for adolescents and adults who have already been immunized against tetanus, diphtheria and pertussis during their childhood. The Tdap booster provides added protection against tetanus, diphtheria and pertussis.

Who is eligible and should receive the Tdap vaccine at no charge in Manitoba ?

- All 14 to 16-years-olds who live in Manitoba are eligible. The vaccine is offered by public health nurses in the schools; and
- Children (four years or older) not immunized in early infancy.

How many doses are required?

- One dose (needle) of the Tdap vaccine is recommended, as a booster, for youth 14 to 16 years old, previously immunized.
- Children (four years or older) not immunized in early infancy may require more than one dose. The doctor or public health nurse will provide advice about an alternate schedule to make sure children in this group receive all the recommended shots.

How is the vaccine given?

The vaccine is given (with one needle) in the muscle of the upper arm.

Can the Tdap vaccine be given at the same time as other vaccines?

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

Who should NOT get the Tdap vaccine?

Anyone who:

- has a severe allergy to any of the vaccine ingredients or packaging; or had a severe allergic reaction to a previous meningococcal, diphtheria or tetanus shot;
- experienced problems of the nervous system (ex: seizure within a week after the immunization with a vaccine against pertussis). The doctor will determine the benefits and the risks of administering the vaccine at the clinic visit or later.
- experienced bleeding problems following a previous immunization with a vaccine against diphtheria and/or tetanus.
- 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.
- developed the Guillain-Barré syndrome (GBS) within eight weeks of a previous tetanus-containing vaccine dose.
- is younger than four years of age because of the quantity of diphtheria and pertussis in the vaccine. The lower levels of these ingredients may not provide adequate protection.

Note: Immunization recommended during pregnancy is based on the risks of disease and the benefits of the vaccine. Consult your doctor or public health nurse for more information.

Are there side effects?

The Tdap vaccine is safe. It contains no living bacteria so a person cannot get the disease from the vaccine. As with any medicine, minor side effects sometimes occur.

Common side effects can occur within the first few days of the immunization and usually go away on their own. These include:

- soreness, swelling and redness where the needle was given
- headache
- feeling tired and unwell

Uncommon side effects include the following and also usually resolve on their own:

- dizziness
- upset stomach (vomiting and diarrhea)

Acetaminophen (i.e. Tylenol® or Tempra®) or ibuprofen (i.e. Advil® or Motrin®) can be given for fever and soreness at the injection site. NEVER give acetylsalicylic acid (ASA or aspirin) to children. A cold, damp cloth may help ease minor pain where the needle was given.

Severe reactions following the administration of the combined tetanus, diphtheria and pertussis vaccine are very rare but as with other medication, severe reactions can occur.

Severe allergic (anaphylactic) reactions can include:

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

If you have questions about rare side effects, consult your doctor or public health nurse for more information.

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.

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 Division
www.gov.mb.ca/health/publichealth/index.html

Centre for Immunization and Respiratory Infectious Diseases – Public Health Agency of Canada
www.phac-aspc.gc.ca/irid-diir/index-eng.php

Canadian Coalition for Immunization Awareness and Promotion – Canadian Public Health Association
www.immunize.cpha.ca/

Caring for Kid – Canadian Paediatric Society
www.caringforkids.cps.ca/immunization/index.htm

Vaccines and Immunizations – Centers for Disease Control and Prevention – USA
www.cdc.gov/vaccines/

Immunization Action Coalition
www.vaccineinformation.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 and Healthy Living 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