

# Pneumococcal Conjugate Vaccine (PCV7)

## 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 tetanus, diphtheria, pertussis (whooping cough), polio, measles and rubella (german measles). 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 pneumococcal disease?

Pneumococcal disease is an infection caused by bacteria (germs). Most people who come in contact with the bacteria do not have symptoms and do not become sick. But these people can pass on the bacteria to others without knowing it.

Pneumococcal disease is spread by fluids in the nose, mouth and throat through close contact such as sneezing, coughing, or sharing food, drinks, or children's toys. When the body's natural defences do not work to fight the bacteria, disease can occur. Pneumococcal bacteria can cause severe illness at any age, but children under five are at higher risk of infection.

Pneumococcal bacteria can affect the body in several different ways:

- *pneumococcal meningitis* affects the lining around the spinal cord and brain. It can

cause deafness (in 20 per cent of cases), brain damage (10 per cent) and sometimes death (seven per cent);

- *pneumococcal blood infections* can cause shock (low blood pressure) and, in rare cases, death;
- *pneumococcal pneumonia*, an infection of the lungs, often requires hospitalization but rarely causes death;
- *acute otitis media*, which is a middle-ear infection. Rarely, infection from the middle ear can cause a serious infection in the surrounding bone mass.

On average every year in Manitoba, among children younger than five years of age, pneumococcal disease causes:

- two cases of meningitis,
- 26 blood infections, and
- 410 cases of pneumonia.

The bacteria can cause a potentially serious infection in one of every 500 children age six years or younger that it affects.

### How effective is the vaccine?

The vaccine is 93 per cent effective against meningitis and blood infections. It is less effective against pneumonia (11 per cent) and otitis media (7 per cent) because there are other causes of these conditions.

### Are booster doses required?

At this time, it is not known if a booster dose of the vaccine is required. The vaccine is expected to produce long-term protection.

### Who should receive this vaccine?

The National Advisory Committee on Immunization recommends that the vaccine be given to:

- all children 23 months of age or younger;
- children two to four years of age with the following medical conditions that place them at higher risk of infection (“high-risk conditions”):
  - no spleen or a spleen that doesn’t work properly (sickle cell and other hemoglobin conditions, inflammatory bowel disease, low platelets of unknown cause, celiac disease, lupus, etc.);
  - conditions that weaken the immune system (HIV, cancer, organ transplants, radiation therapy or drugs that suppress the immune system including long-term, high-dose steroids, nephrotic syndrome);
  - chronic heart or lung disease (except asthma);
  - poorly controlled diabetes;
  - kidney failure;
  - cerebrospinal fluid (CSF) leak; and
  - children with cochlear (inner ear) implants.

The National Advisory Committee on Immunization also recommends that the vaccine be considered for *all* children aged two to four years, especially those who attend a child care setting and Aboriginal children living in isolated communities.

### Who is eligible at no charge?

Children aged two months to four years (up to 59 months) with high-risk conditions, as described above, are eligible for free pneumococcal conjugate vaccine.

**Starting fall 2004**, free vaccine will also be available to healthy infants born on or after January 1, 2004. Children in this age group will be eligible to get the vaccine at two, four, six and 18 months of age.

### Who should not receive pneumococcal conjugate vaccine?

Anyone who:

- had a severe allergic reaction to a previous dose of pneumococcal *or diphtheria* vaccine;
- has a severe allergy to other substances in the vaccine or its packaging (latex stopper).

A doctor or public health nurse may decide to delay vaccination in someone with a high fever or infection worse than a cold (the vaccine can be given later).

*As a safety measure, report all serious allergies to your health care provider before being immunized.*

### How many doses are required?

The number of doses depends on the age when immunization is started and whether a high-risk condition is present.

Age vaccine series is started	Number of doses
2-6 months	4
7-11 months	3
12-23 months	2
24-59 months*	1

\*Children two years of age or older with high-risk conditions require two doses of the vaccine.

### How is the vaccine given?

The vaccine is given to infants in the muscle of the thigh; for older children, it is given in the deltoid muscle of the upper arm.

### Can the pneumococcal conjugate 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 any side effects?

Pneumococcal conjugate vaccine is very safe. It contains no living bacteria so a person cannot get the disease from the vaccine. But as with any medicine, side effects sometimes occur.

Minor side effects that may appear within three days and last for one to two days may include:

- redness, swelling and tenderness at the injection site;
- headache, chills, fever higher than 38°C;
- drowsiness, fussiness, diarrhea, vomiting.

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. These severe reactions may include:

- 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.

### Is there another kind of “pneumo” vaccine?

There are currently two different kinds of pneumococcal vaccine: Pneumococcal 7-valent conjugate vaccine – PCV7 (the kind that this fact sheet is about) and pneumococcal 23-valent polysaccharide vaccine – PPV23. PPV23 protects against many strains of the bacteria (23 in total, including those against which PCV7 protects). The

PPV23 vaccine is used for children over two years of age and adults with high-risk medical conditions. Children with the high-risk conditions listed above should also receive a single dose of the PPV23 vaccine once they are two years old, and an additional dose three to five years later.

### Your record of protection

Make sure your doctor or public health nurse updates 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	
18 months	X	X				X					
4 to 6 years	X		X							X	
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 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 polysaccharide A,C,Y,W-135

**V** Varicella

**Flu** Influenza

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

**\*\*\*\*** Given to children (six to 23 months of age) starting fall 2004.

**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* (2002). Canadian Paediatric Society
- *What Every Parent Should Know About Vaccines* (2002). 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](http://www.gov.mb.ca/health/publichealth/cdc/index.html)
- Division of Immunization and Respiratory Diseases – Health Canada  
[www.hc-sc.gc.ca/pphb-dgspsp/dird-dimr/index.html](http://www.hc-sc.gc.ca/pphb-dgspsp/dird-dimr/index.html)
- Canadian Immunization Awareness Program – Canadian Public Health Association  
[www.immunize.cpha.ca/english/index.htm](http://www.immunize.cpha.ca/english/index.htm)
- Canadian Paediatric Society  
[www.caringforkids.cps.ca/immunization/index.htm](http://www.caringforkids.cps.ca/immunization/index.htm)
- National Immunization Program – Centres for Disease Control and Prevention – USA  
[www.cdc.gov/nip/default.htm](http://www.cdc.gov/nip/default.htm)
- Immunization Action Coalition  
[www.immunize.org/index.htm](http://www.immunize.org/index.htm)

*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 about 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*