

Measles/Mumps/Rubella (MMR) 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 tetanus, diphtheria, pertussis (whooping cough), polio, measles and rubella. 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 prevents measles, mumps and rubella. These three diseases are caused by viruses. The viruses are spread either through the air or by fluids coming from the mouth or nose of infected people when they sneeze or cough. There is no specific treatment for these diseases, but children can be protected from them by immunization.

What are these diseases?

Measles causes a red blotchy rash, fever, red eyes, runny nose and cough. It usually lasts one to two weeks. In some people, the illness can be quite severe. Some people suffer an infection of the middle ear or get pneumonia. A smaller number may get an inflammation of the brain, which can result in headaches, seizures, coma and/or long-term damage. Very rarely, a long-term infection of the brain can occur. This causes seizures and problems with brain function, eventually leading to death.

People of any age who are not immune (protected) can get measles. Protection (immunity) comes from having had the disease or by immunization shots. Large outbreaks of the disease usually occur among children.

Mumps can cause painful, swollen saliva glands (usually in the cheeks) and fever. Painful inflammation of the testicles occurs in about 25 per cent of boys beyond puberty and painful inflammation of the ovaries in about five per cent of girls beyond puberty. Inflammation of the lining surrounding the brain (meningitis) occurs in 10 to 30 per cent of cases. Usually there are no long-term problems from mumps meningitis. Rarely, deafness on one side, inflammation of the brain and death can occur.

Rubella is an important disease to avoid during pregnancy because it can cause damage to the unborn baby. Brain damage, abnormally small head, deafness, heart defects, blindness, small eyes, diabetes and even death can result. A high number (90 per cent) of women infected during the first three months of pregnancy will have affected babies. Therefore, protection at an early age for all children is important to avoid either getting the disease later in life, or giving it to a pregnant mother.

In children and adults alike, rubella may cause a red rash, fever, sore throat, headache, swollen lymph glands, pain in the joints and arthritis. The joint pain and arthritis can take up to a month to disappear. Rarely, long-lasting arthritis or inflammation of the brain can occur.

What is the vaccine made of?

It is made of three weakened forms of these viruses along with a small amount of ingredients such as neomycin (an antibiotic), and sorbitol. Vaccine content varies by manufacturer. Please check with a public health nurse or doctor if you are not sure about getting the vaccine.

How effective is the vaccine?

The vaccine is highly effective. About 97 per cent of children immunized against rubella, 95 per cent of those immunized against mumps, and 85 to 95 per cent of those with one dose of measles vaccine develop protective antibodies. After two doses of the measles component of the vaccine, almost 100 per cent are protected. The vaccine gives most people lifelong protection from all three viruses.

Who should NOT get the vaccine?

- Anyone whose immune system is weakened should not get the vaccine. Anyone who has a medical condition, or is taking medication or X-ray therapy that can weaken the immune system, should check with a doctor before being immunized with MMR vaccine.
- Also, anyone with a severe allergy to any of the vaccine ingredients or who, in the past, has had a severe allergic reaction to a measles, mumps or rubella shot, should not get the vaccine.
- Anyone who is severely allergic to latex (in the packaging of some MMR vaccines) should check with a doctor first.
- 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 had immune globulin or received blood products in the last several months, should not be vaccinated. Depending on what was received and when, immunization may have to be delayed; check with your doctor or public health nurse.
- Women who are pregnant should not be immunized.

What are the side effects?

- Common short-term reactions in the arm where the shot is given can occur and include redness, swelling, hardness, stinging and tenderness.
- A red rash five to 12 days after immunization occurs in about five per cent of people who are not immune to measles or rubella. Sometimes it can cover the whole body. The rash disappears by itself and is not passed on to other people.

- Temporary swelling of lymph glands, especially those of the head and neck, occurs in about five to 15 per cent of people who are not immune to rubella.
- Fever over 39.4°C can occur in about five to 15 per cent of people who are not immune to the viruses. It generally begins five to 12 days after immunization and lasts one to two days. High fever can sometimes cause seizures, more commonly in people who have had seizures in the past or have family members who have seizures. Seizures due to fever do not lead to brain damage or increase the risk of developing seizures in the future.
- Arthritis and painful joints are rare in children younger than 12 years of age. However, they can occur in older children and adults, especially women. The risk is greatest among those people who are not already immune. These conditions occur about four times less often with the vaccine than with the disease itself.
- In rare cases, chronic arthritis, bleeding problems, severe allergic reactions, inflammation of the saliva glands and testicles, and death (almost always in people with weakened immune systems) can occur.

What should I do if side effects occur?

Fever can be treated by:

- keeping the room temperature at about 18°C;
- removing clothing;
- encouraging rest and liquids, such as watered-down apple juice or flat soft drinks;
- taking acetaminophen (Tylenol® or Tempra®). **Never** give acetylsalicylic acid (ASA or aspirin) to children.

Also, a cool damp cloth may help ease minor pain where the needle was given.

If problems more serious than moderate fever (up to 39.4°C), redness, pain, swelling or rash occur, please contact your doctor.

Are there any precautions that should be taken?

Women should not become pregnant within one month of receiving the vaccine.

How is the vaccine given?

The vaccine is given by injection (shot) with a needle into the tissue below the skin, in the upper arm.

When should the vaccine be given?

The first dose of measles/mumps/rubella (MMR) vaccine should be given shortly after a child's first birthday. The second dose is recommended at age five.

Does a child have to be immunized with the vaccine to attend school?

Manitoba Health recommends **all** children receive two doses of measles-containing vaccine before entering grade one, unless a parent or guardian provides evidence that:

- the child is already immune;
- the child has a medical reason for not receiving the vaccine; or
- the parent or guardian holds religious or other beliefs against immunization.

Under the *Public Health Act*, any child not considered to be fully immunized would be excluded from school in the event of a measles outbreak.

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.

Manitoba's Routine Childhood Immunization Schedule

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 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 healthy 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.

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* (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
- Division of Immunization and Respiratory Diseases – Public Health Agency of Canada
www.phac-aspc.gc.ca/dird-dimr/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
- National Immunization Program – Centres for Disease Control and Prevention – USA
www.cdc.gov/nip/
- 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