

Why do we need vaccines?

Vaccines are medicine's bright and shining stars. Since the development of vaccines, many illnesses that cause severe illness and death, especially in children, have been prevented. Yet, some diseases that can be prevented by vaccines are still common. Pertussis, (whooping cough), for example, is especially serious for those not fully protected by vaccine, including infants younger than six months. Other diseases, although not commonly seen in Canada, continue to infect small numbers of children, adolescents and adults (for example, mumps, measles and Hib [*haemophilus influenzae type b*]). A reduction in immunization for these diseases could result in new outbreaks of disease. Although some vaccine-preventable diseases have been all but eliminated in Canada, they still occur in other countries and could unknowingly be imported to this country.

How do vaccines work?

A vaccine is made from a tiny amount of the disease germ (virus or bacteria). For example, measles vaccine is made from the measles virus. The germ in the vaccine is killed or weakened to ensure the person will not contract the disease. When the vaccine is given, the body produces antibodies against the small amount of the germ in the vaccine. These antibodies fight off the disease when a person is exposed to the germ in the future. Vaccines safely expose people to a germ and protect them from disease in the future.

How safe are vaccines and who regulates them in Canada?

Vaccines used in Canada are very safe. Before a vaccine is approved for use, it undergoes years of research and testing. The Public Health Agency of Canada continues to monitor all vaccines after they are approved. Serious reactions to vaccines are rare but do occur. Your immunization provider can discuss the benefits, risks and side-effects before giving you or your child a vaccine. It is important to report any unusual or serious side-effects after immunization to the person who gave the vaccine to you or your child. The risks and consequences of vaccine-preventable diseases are much greater than vaccine side-effects.

What happens if we stop immunizing?

The goal of immunization is to prevent disease. Until a disease has disappeared, it remains a risk to unimmunized people. If we stop immunizing against disease that is still circulating, those who are not immunized may become ill and, in turn, spread it to others, leading to outbreaks or epidemics. An example occurred in Japan in the 1970s. Rumours circulated that pertussis (whooping cough) immunization was no longer needed and that the vaccine was not safe. By 1976, only one in 10 infants was being immunized. In 1979, Japan experienced a major pertussis epidemic, with more than 13,000 cases of whooping cough and 41 deaths. In 1981, the government there began immunizing with acellular pertussis vaccine, and the number of pertussis cases dropped again.

Doesn't giving multiple vaccines at once overload the immune system?

Not at all! In fact, the immune system is strengthened by immunization. Every day our bodies come in contact with millions of germs, causing our immune system to work continuously to protect us. The killed or weakened germs in each vaccine are very few when compared to the millions of germs fought every day by our immune system. A single cold virus presents a much greater challenge to the immune system than the number of antigens in vaccines. Today, we immunize against a great number of diseases, and because of advances in vaccine production, there are fewer antigens in vaccines today than there were 40 or 100 years ago.

Are there reasons not to immunize according to the recommended schedule?

There are some reasons people should not receive a particular vaccine. For example, if someone has a life-threatening allergy to any ingredient of the vaccine (for instance, an antibiotic), or its container (for instance, latex) or to a previous dose, they should not receive the vaccine. Live vaccines, such as MMR or varicella, should not be given to pregnant women and some people who have problems with their immune system. It is always important to inform your immunization provider of any allergies or medical conditions that you or your child has before immunization.

Are there reasons to postpone or wait to immunize?

If you or your child has a moderate or severe illness on the day any vaccine is to be given, your immunization provider may decide to delay immunization until the illness has subsided. Live vaccines such as MMR and varicella, should be postponed if you or your child has received a blood product or immune globulin within the past three to 11 months. If you or your child needs to have two or more live vaccines, they should be given on the same day or one month apart.

Are there circumstances that require consultation?

Sometimes consultation with your doctor or specialist may be necessary before you or your child receive a vaccine. If you or your child's immune system is affected by illness, steroid medication or cancer treatments, protection from a vaccine may be reduced. If you or your child developed Guillain-Barré syndrome (a neurological condition) within eight weeks of receiving a vaccine, your physician must decide if future doses of the same vaccine should be given.

Should you be concerned about thimerosal in vaccines?

Thimerosal is an effective and safe preservative used in vaccines. It is found in some multi-dose vials of vaccines. Thimerosal contains ethyl mercury, which is broken down and quickly eliminated from the body. Another type of mercury is methyl mercury. This type of mercury is dangerous **but it is not the same type** of mercury that is in thimerosal. Since March 2001, all routine childhood vaccines in Canada are produced without thimerosal. Multi-dose vials of influenza vaccine do contain thimerosal.

Does MMR vaccination cause autism?

Scientific investigation does not support the claim that vaccines cause autism. The reason for an increase in autism is not known. One explanation might be that autism can include many more behaviours and learning disorders than it did in the past.