

Vaccines: Common concerns

Many parents and caregivers have concerns about vaccines. Some are scared that vaccines will harm their child. Others are not sure whether their child really needs all the vaccines being given. Parents may also feel confused by online information and comments on social media. But the risks associated with the vaccines Canadian children receive are much, much less than the risks associated with the diseases themselves.

Here are some common questions parents and caregivers have about vaccines.

Do vaccines really work?

Yes. All vaccine-preventable diseases have declined in countries with successful vaccination programs. When vaccination rates are high, disease rates are low. But, when vaccination rates start to go down (for example, when there is fear of vaccines, or health care is disrupted during a war or other disaster), disease and related deaths always go up.

Vaccines protect children who are immunized, and people close to them – like newborns too young to be vaccinated or others whose immune systems don't work as well – by preventing the spread of disease.

Can vaccines wear out my child's immune system?

No. Our immune system responds to very large numbers of antigens (proteins and complex sugars) that are found all around us every day. Vaccines only add a few antigens to these numbers.

Are vaccines properly tested for safety?

Vaccines are safe and effective. Like all medicines, vaccines must go through many steps before Health Canada approves them for use. Vaccines must prove to be safe and effective at preventing the diseases they target. Once a vaccine is in use, Canadian health authorities continue to monitor for side effects. Serious side effects to vaccines are very rare.

Do vaccines have side effects?

The chance of getting sick from a vaccine-preventable disease is far greater than the very small risk of having a serious side effect from the vaccine itself.

- Some children will have mild pain and redness – sometimes with a bit of swelling – where the needle went into the arm or leg.
- A mild fever is common after vaccination. A high fever can happen in young infants, especially after the first dose of a vaccine. In a few cases, fever may cause a febrile seizure. Febrile seizures are NOT dangerous and don't cause any brain damage. They happen more often in children whose parents or siblings have also had febrile seizures. They are also more likely to happen in children who already have epilepsy or a brain disorder. Febrile seizures also occur when high fever is caused by an infection.
- Fever combined with a rash may happen after the MMR, MMRV or varicella (chickenpox) vaccine.
- Anxiety about needles may cause fainting, especially in older children and teens.

Other side effects, including serious allergic reactions, are very rare. Children who have had a serious allergic reaction to a previous dose of vaccine (swelling of the face or lips, difficulty breathing or a drop in blood pressure) should not get that vaccine again *unless* seen by a specialist or vaccinated in a special clinic that can control severe reactions.

Can measles vaccine or measles-mumps-rubella (MMR) vaccine cause autism or other developmental disorders?

No. There is no scientific evidence to support this claim. Because signs of autism may appear around the same age that children receive the MMR vaccine, some parents believe the vaccine causes the condition.

Much of the controversy over the MMR vaccine and autism came from a paper published in 1998 that suggested a link. But since then, the report has been found to be fraudulent and was withdrawn by the journal that published it. Many large scientific studies around the world have found no link between the MMR vaccine and autism.

Also, there is no evidence to link any other vaccines to autism. The number of children with autism seems to have increased in recent years. This is because the diagnosis of autism now includes children with milder symptoms who would not have been included in the past. There is also greater public awareness of autism, and more parents are seeking help. Scientists recently found a gene linked to autism.

Can the pertussis (“whooping cough”) vaccine cause brain damage?

No. But, pertussis *infection* can cause seizures, brain damage and infant death.

Can vaccines cause SIDS (sudden infant death syndrome)?

No. Many large studies have found no link between vaccines and SIDS. In fact, some studies found that babies who died of SIDS were **less likely** to have been recently vaccinated than babies who did not die.

Can vaccines cause type 1 diabetes?

There is no relationship between vaccines and type 1 diabetes. While the cause of type 1 diabetes is not known, there is evidence to suggest that viral infections may be important triggers for this disease in children.

Can vaccines cause asthma and other kinds of allergic

disease?

No. Studies show that vaccination does not increase the number of asthma cases and other allergic diseases in children.

Can vaccines cause cancer?

No. There is no evidence of a link between vaccines and cancer. In fact, two vaccines protect against cancer. Hepatitis B vaccine protects against cancer of the liver, and human papilloma virus (HPV) vaccine protects against cancer of the cervix and some other genital cancers.

Can vaccines cause Crohn's disease or colitis?

No. There is no association between vaccines and Crohn's disease or any other form of inflammatory bowel disease.

Can vaccines cause multiple sclerosis (MS)?

There is no evidence that vaccines cause MS or even flare-ups in a person with MS. In particular, hepatitis B and influenza (flu) vaccines have been shown to have no effect on symptoms or on the speed that symptoms progress in patients with MS. But, seasonal flu *infections* have been linked with flare-ups of MS.

Can vaccines cause infections?

Most vaccines contain inactivated viruses. They have no living germs in them, so they can't cause infections. Live vaccines (mumps, rubella, chickenpox, rotavirus and the nasal flu vaccine) contain weakened forms of the germs. These do not cause disease in healthy people although a few children will have a very mild rash and fever with MMR, MMRV or varicella vaccine.

Live vaccines may cause disease in people with conditions that prevent their immune system from working. These people should not be given these vaccines.

Additional resources

- Immunize Canada
(<https://immunize.ca/>)

Reviewed by the following CPS committees

- Infectious Diseases and Immunization Committee

Last updated: January 2022



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