

Vaccine Safety: 10 Facts for Parents

As a parent, you want to make the best decisions to protect your child. Being informed helps when you speak with your doctor — and keeps your family healthy. Your questions are important and you deserve reliable information to support your decisions.

This fact sheet has been reviewed by medical experts. If you want to learn more, ask your doctor for a “consultation visit,” or check out the websites at the end.

1. Are vaccines safe?

Yes. Vaccines are safe. Millions of children and adults are vaccinated every year. However, any vaccine can cause a reaction in people. The most common reactions are swelling or tenderness at the injection site and fever. The most serious reactions are very rare, happening in one to two people out of a million injections given.

Thousands of people take part in clinical trials to test a new vaccine before it is approved by the Biologics and Genetic Therapies Directorate (BGTD) of Health Canada.

Once licensed, the **Canadian Adverse Events Following Immunization Surveillance System (CAEFISS)** tracks any health effect that occurs hours, days, weeks, and even months later. Anyone can report a possible reaction so that it can be studied. This monitoring helps ensure vaccines are safe.

2. Why do children today get so many immunizations?

Children get immunizations to save lives. Advances in medical science have developed vaccines to protect us against more than 15 dangerous diseases. Only a few years ago vaccines prevented just a small handful of diseases.

Who benefits most? Babies benefit the most because without immunization their bodies may be too weak to fight off a serious disease. Many vaccine-preventable diseases can have dangerous complications including seizures, brain damage, blindness, and even death.

3. Are diseases of the “old days” really still something to worry about?

Diseases do exist, though many parents of babies today haven’t seen them. This is the success of our country’s immunization program. Those not vaccinated, especially children, are at

continuing risk for common illnesses like influenza, whooping cough, and chicken pox.

Before the *Haemophilus influenzae* type b (Hib) vaccine, these bacteria made over 500 Canadian children ill per year — most of them suffering from Hib meningitis. Over 50 died every year from this infection. Diseases that are now less common, like rubella, measles, and mumps, still happen unexpectedly and can spread quickly.

Some diseases are just a plane ride away. International travellers who are not up-to-date on their immunizations can easily bring a disease back home and infect others.

- In 2008, two siblings became ill with measles on a visit to Canada from Switzerland where there was an ongoing measles outbreak. Neither one was immunized. In the following months, 23 more cases of measles occurred in Ontario. People were exposed to measles in a variety of settings including school trips, hospital clinics, family parties, and visits to the doctor’s office. Public health officials had to contact hundreds of people who may have been exposed to measles. These people all had to take precautions to make sure the disease didn’t spread any further.
- In a 2007 outbreak in Nova Scotia, more than 900 college and university students developed mumps. Unvaccinated people, or those who had only one dose of the vaccine, were the most likely to get mumps.
- Whooping cough is on the rise in Canada, particularly in teens and adults. Cases in these age groups have tripled in the last 10 years. It’s a serious disease at any age, but more so with babies because they can die from the complications. Families, child care workers, and communities that are up-to-date with their immunizations protect our most vulnerable individuals from getting infected.



4. What about holistic medicine or “natural immunity”?

Holistic medicines may have helpful effects, but they do not provide immunity to diseases prevented by vaccines.

Vaccine immunity **is** natural immunity. According to Dr. Andrew Weill, a supporter of holistic medicine, *“Immunization facilitates a natural process by stimulating encounters between the body’s immune system and killed or weakened viruses and bacteria (or pieces and products of them).”*

Some people believe getting a disease is the “natural” way to trigger the body’s immune response. Vaccines work the same way — they trigger an immune response — but not the disease.

Waiting for immunity from the real disease can be dangerous because it means getting sick with the infection and the possible risk of serious complications, including death.

5. Is it safe for a child’s immune system to have multiple shots?

Yes. Children are exposed to many “foreign” molecules (called antigens) daily. This happens during normal activities like eating and playing. Antigens make the immune system develop and do its work. Vaccines represent only a tiny part of what a child’s immune system deals with routinely. For example, the average child is infected with four to six viruses per year.

Getting immunized is no extra burden — even for babies. Healthy babies’ immune systems easily handle vaccine antigens.

What about “combination” vaccines (when a single immunization protects against more than one disease)? Or getting several vaccines in one visit?

Multiple immunizations are safe. In fact, today’s vaccines are more refined than in the past. So even though babies and children get more vaccines, they get far fewer antigens all together than in the past.

6. What about getting vaccines later, or more spread out?

Most doctors follow the recommended immunization schedule. There is no proof that receiving fewer vaccines in one visit is safer. The opposite is true: delaying immunizations is less safe because it leaves a child at risk for a longer time.

Babies and young children are the most likely to become seriously ill from certain diseases. That’s why vaccines are recommended for all babies and why most doctors and paediatricians use the standard schedule.

It’s your job to protect your child. It’s the doctor’s job to listen and advise you. And, it’s quite normal to feel nervous when your child is due for immunizations. Talk about your concerns. Your doctor can help you weigh the risks and benefits of any choice.

7. Do vaccines cause autism?

No. Research shows that autism rates are the same in vaccinated and *unvaccinated* children.

The diagnosis of autism has been increasing around the world for many years, perhaps due to better methods of detection. The causes of autism haven’t yet been discovered, though they may be linked to genetic make-up and parental age. Because virtually all children get immunized and because autism symptoms are usually first detected at the ages during which young children get their routine immunizations, the two events can seem to be related.

Twenty-three studies have tested hundreds of thousands of children and found no link between autism and vaccines. One 1998 study that suggested a connection between MMR vaccine and autism was retracted by 10 of its authors in 2004 and is now discredited.

After careful review of all the scientific studies, the Canadian Paediatric Society, the Canadian Medical Association, the U.S. Institute of Medicine, and the World Health Organization have made statements saying that there is no connection between vaccines and autism.



The group Autism Speaks, which helps fund international research, has a statement supporting children's immunization. Another group, the Organization for Autism Research has a helpful parents' guide that addresses the autism question.

8. What about kids with rare disorders like mitochondrial disease?

Mitochondrial disease (MD), a rare disorder, has been in the news recently. An American claims court has been examining if symptoms of brain injury and autism in a girl with MD may have been related to her vaccinations. The child's family has discussed her case with the press.

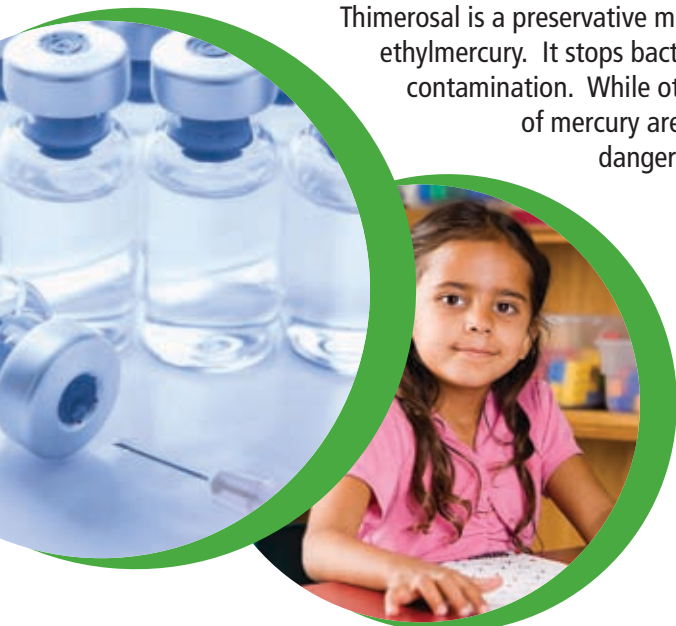
The important question is: should a child with MD get routine immunizations? According to mitochondrial disease specialists, the answer is "yes." The reason is that vaccines prevent diseases like measles, mumps, and chickenpox that are especially dangerous to kids with MD.

Dr. Darryl De Vivo is a professor of neurology and pediatrics at Columbia University in New York City. He is a leading expert in the field of mitochondrial disorders. The New York Times of June 28, 2008, quotes Dr. De Vivo as saying that "After caring for hundreds of children with mitochondrial disease, I can't recall a single one that had a complication from vaccination."

9. What about thimerosal (or mercury) in vaccines?

By the mid-1990's, all the vaccines used in the routine Canadian childhood immunization schedule were thimerosal-free. Influenza vaccine and some forms of hepatitis B vaccine are the only vaccines for children that have any amount of thimerosal.

Thimerosal is a preservative made with ethylmercury. It stops bacterial contamination. While other kinds of mercury are more dangerous,



the thimerosal ethylmercury has not been found to be unsafe in vaccines. To date, no reliable study has found any link between thimerosal in vaccines and developmental diseases including autism.

10. What about other vaccine ingredients?

There is no evidence that vaccine ingredients are harmful. The ingredients are used in tiny amounts for very specific purposes. Read more below.

Aluminum: Aluminum in vaccines helps to improve the body's immune response to the vaccine. Aluminum is common in food and drinks including fruit and vegetables and even breast milk and infant formula. It's also in antacids, antiperspirants, cooking pots, and soda cans.

The Children's Hospital of Philadelphia says that at six months of age, babies have had less aluminum from vaccines than they get from their diets.

Formaldehyde prevents microbial contamination. It's used in tiny amounts in some vaccines. It's also in the environment and is a natural by-product of the body's metabolism.



Make your research work for you

Be cautious about what you read and the information you rely on.

We recommend these trusted sites:

Autism Society of Canada

www.autismsocietycanada.ca/asd_research/resources/index_e.html

Canadian Coalition for Immunization Awareness & Promotion

Sections for parents and health care professionals
<http://www.immunize.cpha.ca/en/default.aspx>

Canadian Paediatric Society

www.cps.ca

Compare the risks of diseases to the risks of vaccines Canadian Immunization Guide 2006

www.phac-aspc.gc.ca/publicat/cig-gci/cedv-cemv-tab-eng.php

Evaluating Immunization Information on the Internet (pamphlet)

<http://immunize.cpha.ca/uploads/cciap%20internet%20tips%20e%202008.pdf>

Myth Busters: Risks vs. benefits of immunizing children

www.chsrf.ca/mythbusters/html/myth24_e.php

The National Advisory Committee on Immunization. Statement on Thimerosal.

Canada Communicable Disease Report 2007;Vol 33(ACS-6)

Thimerosal in Vaccines and Autism

www.phac-aspc.gc.ca/im/q_a_thimerosal-eng.php

Your Child's Best Shot: A parent's guide to vaccination, 3rd edition (Book) by Dr. Ronald Gold, MD, MPH.

Available from Canadian Paediatric Society.
Copies are available in all Halton public libraries.

Autism's False Prophets: Bad Science, Risky Medicine and the Search for a Cure. (Book)

Dr. Paul Offit

Parents of Kids with Infectious Diseases

www.pkids.org

For more information, contact

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