



## MISCONCEPTIONS ABOUT VACCINE SAFETY

### The Issue

Misconceptions about vaccine safety could cause a decrease in the number of Canadians who are immunized against vaccine-preventable diseases such as measles, polio, and mumps. This could possibly result in epidemics of diseases that are seldom seen these days in developed countries.

### Background

The successful use of vaccines in preventing disease means that most parents of young children in Canada today have never seen a life-threatening case of diphtheria, polio, or even measles. The continued success of immunization programs depends on a high level of public confidence in their safety.

Unfortunately, a small minority of people actively oppose immunization. Their messages, which are often dramatic and misleading, receive wide publicity through print, radio, television, and the Internet. This can cause confusion for people who want to make responsible, informed decisions about immunization for their children and themselves.

### Common Misconceptions about Vaccines

Here are some common misconceptions about vaccines, followed by the facts:

**Misconception:** Vaccines are not safe.

**The Facts:** Vaccines are among the safest tools of modern medicine. You may have some swelling or tenderness

at the spot where you get the needle, or a mild fever, but these reactions are most often minor and temporary. Serious side effects can happen, but are extremely rare. For example, severe allergic reactions occur in Canada less often than once per million doses of vaccine.

On the other hand, the diseases that vaccines fight pose serious threats. Diseases such as polio, diphtheria, measles, and whooping cough can lead to paralysis, pneumonia, choking, brain damage, heart problems, and even death. The dangers of vaccine-preventable diseases are many times greater than the risk of a serious adverse reaction to the vaccine.

**Misconception:** Vaccines are linked to chronic diseases such as autism, multiple sclerosis (MS), and Crohn's disease.

**The Facts:** These are false claims made by anti-vaccine books and Web sites. Recent research using the best scientific methods, and reviews of studies from around the world, provide strong evidence that:

MMR (measles, mumps and rubella) vaccine does not cause autism or inflammatory bowel disease (Crohn's).

Hepatitis B vaccine does not cause multiple sclerosis (MS) or relapses of pre-existing MS.

Pertussis (whooping cough) vaccine does not cause brain damage.

Childhood vaccines do not increase the risk of asthma.

Vaccines do not cause sudden infant death syndrome (SIDS).

Misconception: Vaccines are not necessary because the diseases are gone.

The Facts: You are not safe from a vaccine-preventable disease just because it is uncommon in Canada. Travelers can carry diseases from country to country, and if you are not immunized you could be at serious risk. It is also important to realize that some people cannot have vaccines because of certain medical conditions or severe allergies. When you are vaccinated, you help protect the people who can't have vaccines.

Experience from other countries shows that diseases return quickly when fewer people are immunized. For example, in 1994 there were 5,000 deaths from diphtheria in Russia after the organized immunization system was suspended. Previously, Russia (like Canada) had only a few cases of diphtheria each year, and no deaths. Unless a disease has completely disappeared, there is a real risk that small outbreaks can turn into large epidemics if most of the community is not protected.

Misconception: Vaccines contain toxic substances.

The Facts: Every batch of vaccine in Canada is tested for safety and quality before it is released for public use. The main

ingredient in most vaccines is the killed or weakened germ (virus or bacterium), which stimulates the immune system to recognize and prevent future disease. Some vaccines also contain extremely small amounts of preservatives or antibiotics to prevent bacterial growth. One preservative called thimerosal received a lot of attention in the U.S. in 1999 because it contains a tiny amount of mercury and was used in some childhood vaccines. A review conducted by an independent panel of the U.S. Institute of Medicine found no evidence that the tiny amount of mercury in childhood vaccines causes damage to a child's nervous system.

In Canada, the only routine vaccine for children that contains thimerosal is the hepatitis B vaccine. A new generation of hepatitis B vaccine products with no thimerosal added as a preservative is now available.

Misconception: Vaccines weaken the immune system.

The Facts: Vaccines strengthen the immune system to protect children and adults from specific diseases. Scientists estimate that the immune system can recognize and respond to hundreds of thousands, if not millions, of different organisms. The vaccines recommended for Canadian children and adults use only a small portion of the immune system's "memory."

## To Minimize Your Risks

There is no reason to suffer from a disease if there is a safe and effective way to prevent it. Take steps to protect your family against vaccine-preventable diseases.

If you have concerns about vaccines, talk to your doctor, pediatrician, or other health care provider. You can also find reliable, science-based information about vaccine safety on Web sites produced by Health Canada, The Canadian Immunization Awareness Program, The Canadian Paediatric Society, and the World Health Organization (WHO). These organizations have the facts about vaccines and vaccine safety.

## Need More Info?

The following Web sites contain reliable, science-based information about vaccines:

Health Canada, Population and Public Health Branch

<http://www.hc-sc.gc.ca/hpb/lcdc/bid/di/index.html>

Canadian Immunization Awareness Program  
<http://www.immunize.cpha.ca>

World Health Organization (WHO)

<http://www.who.int/vaccines-surveillance/ISPP/index.shtml>

U.S. Centers for Disease Control and Prevention, National Immunization Program

<http://www.cdc.gov/nip/>

The Canadian Paediatric Society

<http://www.cps.ca/english/index.htm>

It's Your Health - [http://www.hc-sc.gc.ca/english/iyh/medical/childhood\\_immu.html](http://www.hc-sc.gc.ca/english/iyh/medical/childhood_immu.html)