

FACT # 1 VACCINES DO NOT CAUSE AUTISM

Medical researchers and scientists around the world have not found a link between vaccines and autism. The study that had initially reported a link between the measles-mumps-rubella (MMR) vaccine and autism was retracted in 2011.

Evidence-based reviews performed by the U.S. Institute of Medicine (IOM) have rejected any causal associations between the measles-mumps-rubella (MMR) vaccine and autism spectrum disorders in children. In addition to these reviews, a Danish research team studied children born between 1991 and 1998 (537,303 children) and concluded that there is no difference in the rate of autism between vaccinated and unvaccinated children.

Some speculation has tried to link thimerosal (a preservative added to multi-dose vaccines to protect vaccines from contamination with germs) in the MMR vaccine to autism, but the MMR vaccine routinely used in Canada has never contained thimerosal. DTaP, polio and Hib vaccines have not contained this preservative since 1997-98.

Although the reason for the increase in autism is not yet conclusively known, one explanation may be the broader definition and inclusion of many more behaviours and learning disorders within autistic spectrum disorders.



FACT # 2 VACCINES ARE SAFE

Vaccines used in Canada are safe and effective. They are developed to meet the highest standards and are continually monitored for safety and effectiveness both in Canada and around the world before they are approved for use. On average, it takes about 10 years of research and development before a vaccine is considered for approval by Health Canada. Following approval, the National Advisory Committee on Immunization recommends how the vaccine should be used. Once vaccines are made available to the public, they are regularly monitored for safety by the Public Health Agency of Canada through its Canadian Adverse Events Following Immunization Surveillance System (CAEFISS), and IMPACT (Immunization Monitoring Program ACTive), a paediatric hospital-based national active surveillance network.

As with any medical procedure, immunization has some risks. Individuals may react differently to vaccines. When considering immunization, both the risks and the benefits should be discussed with a qualified health care provider. The benefits of immunization are substantial and well documented.

FACT # 3 VACCINES DO NOT CONTAIN HARMFUL TRACES OF ADDITIVES OR ADJUVANTS

Some vaccines contain...

Additives to help vaccines stay effective while being stored

Gelatin

Some vaccines contain gelatin to protect them against freeze-drying or heat. Gelatin is also used as a stabilizer in live vaccines. However, the use of gelatin in vaccines as an additive has been reduced, even though the incidence of allergic reactions is currently very low.

Adjuvants help the body create a better immune response to a vaccine. Without adjuvants such as aluminum salts and squalene added to vaccines, people would need more frequent doses of vaccines to be protected against viruses and bacteria.

Aluminum salts

Aluminum salts (aluminum hydroxide, aluminum phosphate, or potassium aluminum sulfate) are used as adjuvants, substances added to a vaccine to enhance and strengthen the immune system's response. Aluminum is naturally present in our environment, including air, food, earth and water, and presents little risk to people. The safety of aluminum salts has been established over the past 70 years, with millions of people being vaccinated with aluminum-containing vaccines.

Squalene

Squalene is a naturally occurring substance often found in plants, animals and humans, as well as foods and cosmetics. It is a compound produced by the liver and circulates freely throughout the bloodstream. Squalene has been added as an adjuvant to some seasonal influenza vaccines in Canada to increase the immune response and improve their efficacy for certain age groups.

**FACT # 4
VACCINES DO NOT CONTAIN HARMFUL
TRACES OF PRESERVATIVES OR
RESIDUAL PRODUCTS**

Some vaccines contain...

Preservatives which help keep vaccine vials from getting contaminated with germs

Thimerosal

Thimerosal is an ethyl mercury derivative. It is a preservative used only in multi-dose vials of vaccines, and not in single-dose vials or syringes. Low doses of thimerosal have not been shown to produce any negative health effects. Nevertheless, no vaccine in Canada since March 2001 for routine use in children contains thimerosal, with the exception of some influenza vaccines. DTaP, polio and Hib vaccines have not contained this preservative since 1997-98. The MMR vaccine used in Canada has never contained thimerosal.

Residuals of the vaccine production process which are required to make the vaccine but are removed from the final product

Formaldehyde

Formaldehyde is sometimes used in the manufacturing process of vaccines to inactivate viruses and toxins. However, it is mostly removed during the purification process. Formaldehyde occurs naturally in the human body and helps with metabolism. There is approximately ten times the amount of formaldehyde in a baby's body at any time than there is in a vaccine.

**FACT # 5
MULTIPLE INJECTIONS DO NOT
OVERWHELM THE IMMUNE SYSTEM**

Every day our bodies come into contact with millions of germs, causing our immune system to work continuously to protect us. Therefore, exposure to antigens (parts of weak or dead viruses or bacteria) in vaccines is easily handled by our immune systems. In fact, our immune system needs to be challenged continually to stay vigorous. Modern biotechnology has reduced the number of antigens in today's vaccines. For example, in 1980 the diphtheria, tetanus and acellular pertussis vaccine (DTaP) had 3017 antigens. At present, infants receiving recommended vaccines starting at two months of age come into contact with only 34 antigens - just 34 antigens among the millions handled every day by our immune systems.



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Immunization: Get the Facts

