

FAQ - VACCINATION

DIFFERENCES BETWEEN FLU AND COLD

The flu and cold are respiratory infections. Because they have similar symptoms, they're often confused. However, a cold is more prevalent and banal than the flu.

Symptoms and their severity may vary with age and health status.

Symptoms	Flu	Cold
Fever	<ul style="list-style-type: none"> • Common • Temperatures between 38 °C and 40 °C (between 100,4 °F and 104 °F) • Sudden onset 	<ul style="list-style-type: none"> • Rare
Cough	<ul style="list-style-type: none"> • Common • Sudden onset 	<ul style="list-style-type: none"> • Common • Mild of moderate
Headache	<ul style="list-style-type: none"> • Common • Sometimes intense 	<ul style="list-style-type: none"> • Rare
Aches and pains	<ul style="list-style-type: none"> • Common • Sometimes intense 	<ul style="list-style-type: none"> • Rare
Fatigue	<ul style="list-style-type: none"> • Common • Intense • Duration: A few days, sometimes longer 	<ul style="list-style-type: none"> • Common • Mild
Nausea and vomiting	<ul style="list-style-type: none"> • Common, especially in children • Often accompanied by diarrhea and abdominal pain in children 	<ul style="list-style-type: none"> • Rare • Mild
Runny nose or nasal congestion	<ul style="list-style-type: none"> • Rare 	<ul style="list-style-type: none"> • Common
Sneezing	<ul style="list-style-type: none"> • Rare 	<ul style="list-style-type: none"> • Common
Sore throat	<ul style="list-style-type: none"> • Rare 	<ul style="list-style-type: none"> • Common

Source : <http://sante.gouv.qc.ca/en/conseils-et-prevention/differences-entre-la-grippe-et-le-rhume/>

HOW DO VACCINES WORK?

Vaccines protect us from diseases that can have serious consequences and even lead to death. They stimulate our body's defense system, also called the **immune system**, to produce a way to protect us from infection (immunity) without causing disease.

Most vaccines contain a small amount of virus or attenuated (or dead) bacterium, or even a piece of a virus or bacterium. These vaccines stimulate the immune system, enabling it to produce antibodies that are stored in its memory for varying amounts of time, depending on the type of vaccine. The antibodies "remember" the previous tactics used to fight the virus or bacteria. If the virus or bacterium that actually causes the disease enters our body after vaccination, our immune system will know how to defend us.

For all sorts of reasons some people cannot be vaccinated. Others are not protected by the vaccine because it does not produce the desired effect in them. There are always some people who are not protected against disease. That's why it's important that as many people as possible get protected through vaccination. Indeed, by not catching the disease and transmitting it, people who have been vaccinated against disease protect people who are not.

CAN VACCINES CAUSE THE DISEASES THEY ARE DESIGNED TO FIGHT?

Most vaccines contain a small amount of virus or attenuated (or dead) bacteria, or even a piece of a virus or bacteria. These vaccines stimulate the immune system, but they cannot cause the disease.

Vaccines enable the immune system to produce antibodies that will be stored in its memory for varying amounts of time, depending on the type of vaccine. The antibodies then "remember" the tactics used to fight against the virus or bacteria. If the virus or bacterium that actually causes the disease enters our body after vaccination, our immune system will know how to defend us.

ARE VACCINES EFFECTIVE?

Yes, they are very effective. In fact, vaccines have eliminated smallpox worldwide. Polio has disappeared from Canada, while many diseases—such as diphtheria, tetanus, and German measles—are now rare here. The main cause of bacterial meningitis in children (*Haemophilus influenzae type b*) has also decreased significantly. Moreover, hepatitis B has practically disappeared among vaccinated young people.

ARE VACCINES SAFE?

Yes. In fact, they are very safe. Vaccines are produced according to very strict safety standards, but they can still have side effects.

Vaccination side effects are most often mild, such as a slight fever or tenderness at the injection site. These effects are temporary and part of the body's normal reaction to vaccines. In very rare instances, however, effects such as severe allergic reaction can occur after vaccination, such as after eating a new food. The person administering the vaccine can treat allergic reactions, should one occur. This is why it is recommended to wait for 15 minutes after being vaccinated.

Vaccine side effects are under constant surveillance in Quebec and around the world. Surveillance provides for screening for unexpected, severe, or rare effects, and intervening, if necessary. Through research, vaccines are also constantly being improved. For example, the pertussis (whooping-cough) vaccine used in the 1950s has been replaced with a vaccine that has many fewer side effects.

IS VACCINATION MANDATORY IN QUÉBEC?

No, but it is strongly recommended. Vaccination is the best protection against vaccine-preventable diseases. Getting vaccinated also helps prevent the spread of disease to people who cannot be vaccinated. Vaccination requires informed consent. Refusing vaccination must also be an informed decision.

HADN'T INFECTIOUS DISEASES ALREADY BEGUN TO DISAPPEAR BEFORE VACCINES WERE INTRODUCED?

No. It is true that, prior to the advent of vaccines, infectious diseases were on the wane because of improved living conditions. They weren't, however, in the process of disappearing. With the use of vaccines, some infectious diseases have become rare and others have disappeared. For example, in recent years, the main cause of bacterial meningitis in children (*Haemophilus influenzae* type b) has decreased significantly. Yet living conditions have remained the same. So, only vaccination can account for the drop.

WHAT WOULD HAPPEN IF WE STOPPED VACCINATING?

Halting vaccination would cause infectious diseases to rapidly reappear and spread, which is what has happened in a number of countries. In Ireland, in particular, vaccination coverage for measles fell to 76% as the result of claims (which proved to be false) of a link between the vaccine and autism. The number of infected individuals with measles shot from 148 in 1999 to 1,603 in 2000, and 3 children died from measles-related complications.

AREN'T VACCINES JUST A WAY FOR PHARMACEUTICAL COMPANIES TO GET RICH?

Vaccines are indispensable and unavoidable in improving public health. Regardless of whether manufacturing them is profitable or not for pharmaceutical companies, the health impacts should production stop would be unacceptable.

DON'T NATURAL INFECTIONS PROVIDE BETTER PROTECTION THAN VACCINES?

While it is true that, in most cases, a natural infection provides better protection than vaccines, but at what a cost! Vaccine-preventable diseases involve suffering, complications, sequelae, and possibly even death. Natural protection involves much more risk than vaccines and their side effects. Vaccines also have the advantage of sometimes being able to protect against several strains of the disease. When someone contracts a disease, they only contract one strain at a time. As a result, natural infection only provides protection against the particular strain.

DO THE RISKS ASSOCIATED WITH THE ACTUAL DISEASE OUTWEIGH THE POSSIBLE SIDE EFFECTS OF VACCINATION?

Yes, in every case the serious risks associated with vaccines are much rarer than those associated with the disease.

ARE THERE ALTERNATIVES TO VACCINATION (E.G. BREAST-FEEDING, HEALTHY DIET, AND HOMEOPATHY)?

No. Besides infection, only a vaccine can stimulate the body to produce specific antibodies against a virus or bacterium.

A healthy diet helps keep the body's overall defense mechanisms in good working order. It helps fight infections but can't prevent them.

Breast-feeding provides a certain level of protection against various infections such as colds, ear infections, and diarrhea. Yet it only provides infants with partial and short-lived protection against diseases that vaccination can prevent.

Medicinal herbs, homeopathy, and vitamins are no substitutes for vaccines.

WHY DO WE NEED VACCINATION IF WE HAVE THE BEST HYGIENE AND HEALTH CONDITIONS HERE IN CANADA?

Because improving living conditions reduces the risks of infection and transmission, but doesn't eliminate them. Many countries with living conditions similar to ours have experienced a substantial increase in vaccine-preventable diseases when the number of vaccinated people dropped.

CAN VACCINES RUN DOWN OR OVERLOAD THE IMMUNE SYSTEM?

No. Vaccines represent only a very small fraction of the antigens against which the immune system must defend itself naturally every day. Moreover, vaccines use only an infinitesimally small part of immune memory.

From birth, the human body naturally defends itself against thousands of antigens found in water, in the air, in food, and on items on a daily basis. Upon entering the body, these antigens trigger the immune system to react. The immune system begins producing specific antibodies against the antigen and commits its reaction to memory to recognize and eliminate it in the future.

Scientists estimate that an infant's immune system can react to 10,000 different antigens at a time and that it could eventually recognize and react to hundreds of thousands, even millions of different microorganisms.

Vaccines for children and adults use only and infinitesimally small part of immune memory. Moreover, even if children receive more vaccines than in the past, the total amount of antigens in today's vaccines is now much lower. For example, the 4 vaccines on the 1980 regular vaccination schedule contained a total of about 3041 antigens. In 2000, the 11 vaccines on the regular calendar had only 126.

IS IT TRUE THAT VACCINES CAN CAUSE SERIOUS ILLNESS?

In reality, vaccines are among modern medicine's safest tools. However, they make easy targets for those wanting to explain the occurrence of a disease or health problem. This can be attributed to the following :

- A vaccine is a product administered to a healthy person, often a toddler, to prevent but not treat a disease. For this reason parents have little tolerance for the occasional side effects their children experience.
- A number of diseases or syndromes naturally occur around the same age when children receive various vaccines. The appearance of these diseases in that period is merely a coincidence. The fact that parents see a causal relationship with vaccination is quite understandable because often the medical profession cannot explain many of these diseases.

SHOULD I BE AFRAID OF POST-VACCINATION SIDE EFFECTS SUCH AS FEVER, PAIN, OR OTHER POSSIBLE REACTIONS?

Like many medications, vaccines can sometimes cause side effects—most of them minor. For example, many people experience soreness at the injection site, while others feel sick or develop a mild or moderate fever. These effects are temporary and are normal reactions to the vaccine's agent.

On the other hand, in very rare cases, severe allergic reactions can arise after vaccination—like what can happen when someone eats a new food they are allergic to. These severe allergic reactions can be treated on site by the person administering the vaccine.

In Québec, a monitoring system has been put in place to detect serious reactions associated with vaccines, whether rare or unexpected.

CAN THE THIMEROSAL USED IN VACCINES CAUSE AUTISM OR OTHER DEVELOPMENTAL DISORDERS?

No. Thimerosal does not cause autism or other developmental disorders. Thimerosal, a mercury derivative used as a preservative in certain vaccines, is not harmful.

The form of mercury that can produce severe brain and nerve lesions if ingested in large quantities is methylmercury. Once within the body, thimerosal is converted into another product, called ethylmercury. Unlike methylmercury, ethylmercury is rapidly eliminated from the body and the risk of it accumulating is low.

IS THE ALUMINUM FOUND IN CERTAIN VACCINES TOXIC?

While vaccines can contain aluminum salts, the quantity of aluminum in a given vaccine is less than 1 mg per dose. Based on observations, this amount is not harmful to humans. Much larger amounts of aluminum salts are ingested and absorbed by the body when a person takes an antacid (for example, 200 to 400 mg of aluminum hydroxide per tablet) without causing appreciable side effects.

CAN VACCINES TRANSMIT ANIMAL DISEASES TO HUMANS?

Since vaccines are biological products, sometimes animal cells must be used in producing them. This process is subject to strict regulation so that the vaccines produced entail no risk to human safety. During the manufacturing process, the vaccines are purified and all animal cells are eliminated. Moreover, each vaccine lot undergoes testing to ensure that it contains no infectious agents.

Bovine serum is sometimes used in producing some vaccines in Canada. Researchers in a number of countries have studied the risk of exposure to mad-cow disease through vaccination. The risk has been determined to be 1 out of 40 billion doses. Despite this extremely low risk, vaccine manufacturers are striving to find components to replace bovine serum.

ARE WE ABLE TO DETECT UNEXPECTED SIDE EFFECTS?

Yes, as a result of the surveillance systems designed to detect both rare and serious unexpected effects.

In Québec, physicians and nurses must declare any unusual effects occurring after vaccination to public-health authorities. Québec's program is related to the Public Health Agency of Canada's national program and the World Health Organization's international program.

Screening for unusual side effects leads to more specific research on these phenomena and to the adoption of appropriate measures. Here are some recent examples :

- Ocular respiratory syndrome and the influenza vaccine: Detection of this for the first time in Quebec in 2000, at a frequency of 46.6 cases per 100,000 doses, led to modifications in the vaccine's manufacturing process to reduce the risk of this syndrome.
- Meningitis and Trivirix vaccine (against measles, mumps, and rubella): Its detection in Canada 1988, at a frequency of 1 case for 62,000 doses, resulted in the vaccine being withdrawn from the market.

WHAT IS THE VACCINE INJURY COMPENSATION PROGRAM?

Despite vaccines being highly safe, some adverse reactions can occur in extremely rare instances. The Gouvernement du Québec initiated the provincial compensation program for vaccination victims in 1985 under the Public Health Act. The program entitles victims of bodily injury as the result of vaccination to compensation from the Minister of Health and Social Services. Québec is the only province to have implemented such a program.

The Public Health Act defines *victim* as: "the vaccinated person, a person having contracted the disease from a vaccinated person, the foetus of either of such persons or, if a death occurs, the person who is entitled to a death benefit." The Act defines *bodily injury* as: "any serious permanent physical or mental injury, or death."

The main points in the compensation program are as follows :

- The vaccination must have taken place in Québec.
- The targeted products are vaccines or immunoglobulins for diseases or infections established by regulation.
- Compensation is awarded on a no-fault basis.

Source : http://www.msss.gouv.qc.ca/sujets/santepub/vaccination/index.php?foire_aux_questions_en