

Population and Public Health Division

Quadrivalent Influenza Vaccines: For individuals 6 months through 17 years of age

This fact sheet provides basic information only. It must not take the place of medical advice, diagnosis or treatment. Always talk to a health care professional about any health concerns you have, and before you make any changes to your diet, lifestyle or treatment.

1. What is influenza?

Influenza is an acute respiratory illness that is caused by a virus. People who get influenza may have a fever, chills, cough, runny nose, sore throat, headache, muscle aches, extreme weakness and fatigue. Children can also have earaches, nausea, vomiting and diarrhea.

People of any age can get influenza. Illness due to influenza usually lasts two to seven days, however, the cough and fatigue can persist for several weeks, making the return to full activity difficult. Some people can become very ill, developing complications such as pneumonia and requiring hospitalization. Influenza can be a fatal infection, although this is rare in children.

Influenza spreads through respiratory droplets from infected persons, for example, through coughing or sneezing. It is also spread through direct contact with surfaces and objects contaminated by the influenza virus, such as toys, unwashed eating utensils and unclean hands.

2. How are individuals protected against influenza?

Influenza vaccine is the best defense against influenza. The National Advisory Committee on Immunization (NACI), a national expert group on immunization, strongly recommends annual influenza immunization.

3. What is the quadrivalent influenza vaccine?

Until recently, seasonal influenza vaccines were designed to protect against three different influenza viruses, and so were referred to as trivalent influenza vaccines. The seasonal trivalent influenza vaccine protects against two influenza A viruses and one influenza B virus. However, there are two different types of influenza B viruses that can circulate in a given influenza season and the recently introduced quadrivalent vaccine provides protection against both types of influenza B. The quadrivalent vaccine therefore offers broader protection against the influenza B viruses that may circulate.

4. How well will the quadrivalent influenza vaccine protect against influenza?

Influenza immunization builds up antibodies against the influenza viruses in the vaccine, making it easier to fight influenza infection before it starts.

The quadrivalent influenza vaccines offers broader protection than the trivalent influenza vaccine since it contains four strains of influenza virus, two influenza A strains and two influenza B strains. The TIVs and quadrivalent influenza vaccines provide the same degree of protection against the three strains they share in common. Generally influenza vaccines offer about 60% protection when the vaccine and circulating strains are well matched. The quadrivalent influenza vaccines will offer extra protection if the additional B strain in that vaccine is in circulation during influenza season.

It takes about two weeks following immunization to develop protection against influenza; protection can last up to one year. People who receive the vaccine can still get influenza but if they do, they may not get as sick. The vaccine will not protect against colds and other respiratory illnesses that may be mistaken for influenza, but are not caused by the influenza virus.

5. What quadrivalent influenza vaccines are available for children and youth?

The chart below describes the two types of quadrivalent influenza vaccines that are available free of charge through Ontario's Universal Influenza Immunization Program (UIIP) for children and youth (6 months through 17 years of age) who live, work or attend school in Ontario:

		Quadrivalent Inactivated Vaccine (QIV)	Quadrivalent Live Attenuated Vaccine (Q-LAIV) (more detailed information can be found on the FluMist® fact sheet)
Vaccine products		Fluzone® Quadrivalent Fluval® Tetra	FluMist® Quadrivalent
How is the vaccine administered?		Injection in the arm For infants, injection in the leg	Intranasal spray
Can the vaccine cause influenza?		QIV contains inactivated influenza virus so individuals cannot get influenza from the vaccine.	While Q-LAIV does contain live attenuated viruses (unlike QIV), the viruses are weakened so individuals cannot get influenza from the vaccine.
Does the vaccine contain Thimerosal?		Depends on vaccine packaging. Only multi-dose vials contain trace amounts to prevent growth of bacteria and fungus in the vaccine vial. There is no risk in giving thimerosal to children.	No thimerosal or any other preservative.
Which influenza vaccine are children and youth eligible to receive?	6 to 23 months	✓	* (too young to receive Q-LAIV)
	2 to 17 years	✓ (either QIV or Q-LAIV can be given)	✓ (either QIV or Q-LAIV can be given)

	Quadrivalent Inactivated Vaccine (QIV)	Quadrivalent Live Attenuated Vaccine (Q-LAIV) (more detailed information can be found on the FluMist® fact sheet)
Who should NOT get the vaccine?	Individuals should not get QIV if they are: <ul style="list-style-type: none"> • Under 6 months of age • Have a serious allergy (anaphylaxis) to a previous dose or to any ingredient in the vaccine, with the exception of egg • Developed Guillain-Barré Syndrome (GBS) within six weeks of a previous influenza vaccination 	Individuals should not get Q-LAIV if they are: <ul style="list-style-type: none"> • Under 2 years of age • Have a serious allergy (anaphylaxis) to a previous dose or to any ingredient in the vaccine, with the exception of egg • Developed GBS within six weeks of a previous influenza vaccination • Have severe asthma* or active wheezing • Have weakened immune system due to disease or medical treatment • Are on long-term aspirin or aspirin-containing therapy • Taking a medication active against influenza (influenza antiviral medication) • Pregnant**
Should vaccination with the influenza vaccine be delayed if illness is present?	Administration of the influenza vaccine should be temporarily delayed in the following circumstances: <ul style="list-style-type: none"> • Those with a severe acute illness with or without fever should usually wait until the symptoms subside before being immunized. However, people with a minor illness with or without a fever (e.g., a cold) can still get the influenza vaccines. • Those with a significantly congested nose that could impede the delivery of the vaccine should delay vaccination with Q-LAIV vaccine until the nasal congestion is reduced. Alternatively, QIV can be received. 	

* Individuals on oral or high dose inhaled glucocorticosteroid or medically attended wheezing in the last 7 days prior to vaccination are considered to have severe asthma.

** Pregnant women should not get Q-LAIV vaccine. However, Q-LAIV can be given to mothers who are breastfeeding.

6. How many doses of quadrivalent influenza vaccine are needed to provide protection?

Age	Number of doses required
9 years and older	1 dose
6 months to under 9 years of age - <i>Not previously immunized with influenza vaccine ever in the past</i>	2 doses at least 4 weeks apart*
6 months to under 9 years of age - <i>Previously immunized with influenza vaccine at least once in the past</i>	1 dose

*It is not a requirement to receive the same type of vaccine for both doses – a child who received live attenuated vaccine for the first dose can receive inactivated vaccine for the second dose and vice versa.

7. Why are the quadrivalent influenza vaccines only publicly funded for children and youth aged 6 months through 17 years?

NACI has assessed that the burden of influenza B is highest in people less than 20 years of age. Given that the influenza B affects children and adolescents more frequently than it affects the adult population, NACI recommends quadrivalent vaccine be administered to children and adolescents. Ontario selected the quadrivalent influenza vaccines as the recommended products for children 6 months up to and including 17 years of age.

8. When should the quadrivalent influenza vaccine be given?

Influenza vaccine should be offered as soon as it becomes available at doctors' offices, participating pharmacies and at local public health units. It is recommended that people receive the influenza vaccine prior to the onset of the influenza season if possible, such as in October or early November. Community-based influenza immunization clinics generally begin when the UIIP is officially launched in mid to late October.

9. Do children and youth need to receive the influenza vaccine every year?

Because influenza viruses change often and immunity may not last more than one year, it is necessary to get vaccinated every year to receive the best protection from the virus strains that may be circulating that year. Expert advisory groups recommend that the influenza vaccine be administered annually. Children 6 months to less than 9 years of age who have never received the influenza vaccine before need two doses given 4 weeks apart this influenza season.

10. Can the quadrivalent influenza vaccine be given at the same time as other vaccines?

The quadrivalent influenza vaccines (QIV or Q-LAIV) may be given at the same time as other vaccines or at any time before or after other vaccines. If given by injection at the same time as other vaccines given by injection, separate limbs should be used. Alternatively, the injections may be administered into the same muscle separated by at least 2.5 cm (1"). Different administration sets (needle and syringe) must be used for each vaccine given by injection.

11. Are the quadrivalent influenza vaccines safe?

The quadrivalent influenza vaccines are safe and well tolerated. Influenza vaccines that protect against four influenza viruses are made in the same way as the influenza vaccines that have been around for years that protect against three influenza viruses. These vaccines have undergone the same testing as other vaccines approved for use in Canada.

Most people who get the vaccine have either no side effects or mild side effects. Most common reactions for injectable QIV include soreness, redness or swelling at the injection site, lasting up to two days.

Q-LAIV may result in mild symptoms including runny nose, nasal congestion or cough, chills, tiredness/weakness, sore throat and headache. Life-threatening allergic (anaphylactic) reactions from QIV or Q-LAIV are very rare. If they do occur, it is within a few minutes to a few hours after receiving the vaccine. If this type of reaction occurs, medical attention should be sought immediately.

12. What are the risks from the quadrivalent influenza vaccine?

Influenza vaccine, like any medicine, is capable of causing side effects, which can be either mild or, rarely, severe. The risk of the vaccine causing serious harm is extremely small and can include serious allergic reactions and the following:

Guillain-Barré Syndrome (or GBS)

GBS is a very uncommon disease that causes muscle paralysis and has been associated with certain infectious diseases (e.g., *Campylobacter*, a bacteria that causes diarrhea). Overall, the risk of GBS occurring in association with immunization is very small. In comparison to the very small risk of GBS, the risk of illness and death associated with influenza is much greater. In addition, influenza illness itself can cause GBS, and the risk of GBS from influenza illness appears to be greater than the very small risk from the vaccine. Individuals who have developed GBS within 6 weeks of an influenza vaccination, should avoid subsequent influenza vaccinations.

Oculorespiratory Syndrome (ORS)

In Canada, during the 2000-2001 influenza season, ORS was reported after administration of the influenza vaccine in some individuals. Symptoms include redness in both eyes that are not itchy, and/or swelling of the face, and/or respiratory symptoms occurring within 24 hours of influenza immunization. Since the 2000-2001 influenza season, few cases of ORS have been reported.

Persons who experienced ORS symptoms in the past may be safely re-immunized with influenza vaccine except for those who have experienced ORS with severe lower respiratory symptoms (wheeze, chest tightness, difficulty breathing) within 24 hours of influenza immunization. These individuals should seek expert medical advice before being immunized again with influenza vaccine.

13. When should parents/guardians seek medical attention for their child after immunization with the quadrivalent influenza vaccine?

Parents/guardians should be advised to call their doctor/nurse practitioner or go to the nearest hospital emergency department if any of the following symptoms develop within three days of getting the vaccine:

- Hives
- Swelling of the mouth and throat
- Trouble breathing, hoarseness or wheezing
- High fever (over 40°C or 104°F)
- Convulsions or seizures
- Other serious reaction to the vaccine

14. Who can administer quadrivalent influenza vaccines?

Quadrivalent influenza vaccines will be available for ordering and administration by health care providers who administer the vaccine to children and adolescents 6 months through 17 years of age. This includes physicians and nurse practitioners as well as registered nurses or registered practical nurses under a medical directive. Trained pharmacists can administer quadrivalent influenza vaccines to individuals 5 years of age and older in accordance with Ontario's Universal Influenza Immunization Program (UIIP).

15. Can quadrivalent influenza vaccines be purchased privately for those not eligible for the publicly funded quadrivalent influenza vaccines?

Individuals not eligible to receive publicly funded quadrivalent influenza vaccines (QIV or Q-LAIV) may still purchase them on the private market (e.g., at their local pharmacy) should they wish to do so.

16. How can parents/guardians keep track of their child's influenza immunizations and other immunizations?

After the child receives their vaccine, please write the immunization in their yellow immunization card.

17. Who should parents/guardians talk to if they have questions about influenza or any other vaccines?

Individuals looking for general information about influenza, the influenza vaccine or the province's Universal Influenza Immunization Program, can call: 1-877-844-1944 (TTY#1-800-387-5559) or visit website: www.ontario.ca/flu.

Questions about the vaccine that are specific to an individual's medical condition should be discussed with their health care provider or local public health unit. For a list of public health units, please visit www.health.gov.on.ca/en/common/system/services/phu/locations.aspx

For additional information on influenza or the vaccine, please visit the following websites or call your local public health unit:

- a) Ontario's Universal Influenza Immunization Program: www.ontario.ca/flu
- b) Public Health Agency of Canada site: National Advisory Committee on Immunization (NACI) Statement on Seasonal Influenza Vaccine: www.phac-aspc.gc.ca/naci-ccni/#rec
- c) *Immunize Canada*: www.immunize.cpha.ca
- d) Centers for Disease Control and Prevention (CDC): Seasonal Influenza: www.cdc.gov/flu

ServiceOntario, INFOline: 1-877-234-4343 toll free in Ontario (TTY: 1-800-387-5559)

Version française disponible en communiquant avec le 1 877 234-4343 ATS: 1 800 387-5559 (web site: www.health.gov.on.ca/fr/ccom/flu/)