

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. Canada's National Advisory Committee on Immunization (NACI), a national expert group on immunization, strongly recommends annual influenza immunization.

3. What are quadrivalent influenza vaccines?

Seasonal influenza vaccines are either trivalent or quadrivalent formulations. Quadrivalent vaccines are designed to protect against three different influenza viruses, two influenza A viruses and two influenza B viruses. Trivalent vaccines are designed to protect against three

different influenza viruses, two influenza A viruses and one influenza B virus.

There are two main types of influenza B viruses and as the quadrivalent vaccine provides protection against both types it 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 for your body to fight off an influenza infection.

Quadrivalent influenza vaccines offer broader protection than trivalent influenza vaccines since they contain four strains of the influenza virus, two influenza A strains and two B strains. The trivalent and quadrivalent influenza vaccines provide similar protection against the three strains they share in common. The quadrivalent influenza vaccines will offer extra protection if the additional B strain in that vaccine is also in circulation during an influenza season.

It takes about two weeks following immunization to develop protection against influenza. As protection wanes over time and virus strains change frequently, it is important to be immunized each season. Due to the potential mismatch in vaccine and circulating influenza virus types and less than 100% protection provided by current vaccines, people who are immunized can still get influenza. In these cases the illness may be milder. The vaccine will not protect against colds and other respiratory illnesses that may be mistaken for influenza.

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 product(s)	Fluzone® Quadrivalent Flulaval® 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. The safety of thimerosal in vaccines has been demonstrated across numerous studies.	No thimerosal or any other preservative

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Which influenza vaccine(s) are infants, children and adolescents 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)
Who should NOT get the vaccine?	<p>Individuals should not get QIV if they are:</p> <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 	<p>Individuals should not get Q-LAIV if they are:</p> <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 • Individuals with severe asthma, as defined as currently on oral or high dose inhaled glucocorticosteroids or active wheezing, or those with medically attended wheezing in the 7 days prior to immunization. • Have weakened immune system due to disease or medical treatment • Are on long-term aspirin or aspirin-containing therapy • Pregnant 	
Should vaccination with the influenza vaccine be delayed if illness is present?	<p>Administration of the influenza vaccine should be temporarily delayed in the following circumstances:</p> <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. 		

* 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?

According to NACI the burden of influenza B is highest in people less than 20 years of age. Given that 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 is therefore offering quadrivalent influenza vaccines 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, October or early November. Community-based influenza immunization clinics generally begin when the UIIP is officially launched in mid to late October.

9. Do infants, children and adolescents 6 months to 17 years of age need to receive the influenza vaccine every year?

Expert advisory groups recommend that the influenza vaccine be administered annually because influenza viruses change often and immunity wanes between influenza seasons. 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.

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. The most common reactions following injectable QIV include soreness, redness or swelling at the injection site, lasting for 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 typically 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 vaccines?

Influenza vaccines, like any medicine, are capable of causing side effects, which are typically mild. The risk of the vaccine causing serious reactions 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 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 reactions following vaccination

14. Who can administer quadrivalent influenza vaccines?

Health care providers who administer the vaccine to children and adolescents 6 months through 17 years of age include physicians and nurse practitioners as well as registered nurses or registered practical nurses under a medical directive. Trained pharmacists can administer 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 and other immunizations?

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

If you do not have a yellow immunization card you may obtain one from your health care provider.

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: www.ontario.ca/flu. Questions about the vaccine that are specific to an individual's medical condition should be discussed with a 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
- e) 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/)