

Two-Dose Varicella Immunization Schedule Questions and Answers for Health Care Providers

This fact sheet provides basic information only. It is not intended to provide or take the place of medical advice, diagnosis or treatment.

The Ministry of Health and Long-Term Care (“the ministry”) is introducing a second dose of varicella vaccine to the *Publicly Funded Immunization Schedules for Ontario* to protect children against chickenpox infection.

About the varicella vaccine (Varivax[®] III and Varilrix[®]):

Q1: What does the varicella vaccine protect against?

A1: The varicella vaccines, Varivax[®] III and Varilrix[®] were approved for use in Canada in December 2002. This vaccine is indicated for the active immunization against varicella disease. The vaccine will reduce the risk of potential complications such as bacterial skin infections, ear infections, pneumonia and varicella encephalitis or central nervous system involvement.

Q2: What is the age indication for the Varivax[®] III and Varilrix[®] vaccines?

A2: The Varivax[®] III and Varilrix[®] vaccines were approved by Health Canada for children 12 months of age and older. In Ontario, the varicella vaccine is publicly funded for children born on or after January 1, 2000 as well as for people with medical conditions that put them at increased risk for complications due to varicella.

Please refer to the *Publicly Funded Immunization Schedules for Ontario* for information on varicella vaccine high-risk criteria. See Attachment B for the routine and catch-up eligibility criteria for the varicella vaccine:

- **Table 1: ROUTINE MMR, Varicella and MMRV Immunization**

- **Table 2: CATCH-UP Two-Dose Varicella Immunization**

Q3: Where do I find more information about the vaccine such as common side effects, contraindications, storage recommendations and where to inject the vaccine?

A3: Refer to the vaccine product monographs which are available at:

Varivax[®] III:

http://www.merckfrosst.ca/mfcl/en/corporate/products/varivax_iii.html

Varilrix[®]: http://www.gsk.ca/english/docs/pdf/Varilrix_2011.pdf

About the publicly funded program:

Q4: Why has the ministry expanded the varicella vaccine program to a two-dose schedule?

A4: In 2010, Canada’s National Advisory Committee on Immunization (NACI) recommended that children receive a second dose of the varicella vaccine.

Recent studies have demonstrated that a two-dose regimen is more effective than the one-dose regimen in controlling disease, especially breakthrough disease. These studies confirmed that the two-dose varicella schedule significantly

reduced the rate of varicella breakthrough cases and increased vaccine efficacy.

A second dose of the varicella vaccine should help to improve protection, decrease varicella cases by 22%¹, which in turn will reduce the number of children who suffer complications from chickenpox.

Two doses of the varicella vaccine are now recommended as part of the childhood schedule where, previously, only one dose was recommended.

Q5: What is the epidemiology of varicella in Ontario?

A5: Varicella is mainly a childhood disease that develops in 50% of unvaccinated Canadian-born children before they reach five years of age and in 90% of unvaccinated children before 12 years of age. In Ontario, chickenpox infection is underreported. However, limited available data shows that, since the introduction of the one-dose varicella vaccine in 2004, there have been 32,135 cases of chickenpox reported.

Eight hundred and fifty-six of these cases were severe, resulting in health complications, hospitalization or death. Since 2008, approximately 7,400 cases of varicella have been reported annually in Ontario, showing a 23% reduction in the number cases since 2004.

An Ontario study by Kwong et al., published in 2008, assessed the effect of private availability of varicella vaccines and subsequent implementation of a publicly funded vaccination program on varicella-related hospitalizations, emergency department use and visits to physicians' offices. This study found that the introduction of the publicly funded varicella immunization program in Ontario was associated with greater declines in varicella-related health care use.

Q6: Who is eligible to receive the publicly funded univalent varicella vaccine and when should they receive it?

A6: Refer to the eligibility criteria as outlined in Attachment B:

- **Table 1: ROUTINE** MMR, Varicella and MMRV Immunizations
- **Table 2: CATCH-UP** Two-Dose Varicella Immunization

Q7: What is the recommended schedule for children to receive two doses of varicella vaccine or varicella-containing vaccine?

A7: **Starting** August 8 2011, a second dose of the varicella vaccine will be routinely offered to children at four years of age in the form of the MMRV (measles, mumps, rubella and varicella) vaccine. However, the monovalent varicella-only vaccine will continue to be used for the first dose at 15 months of age as well as for those individuals who are not eligible to receive the MMRV or require the varicella-only vaccine for medical or travel related reasons.

As part of the catch-up program for the second dose of varicella vaccine, children born on or after January 1, 2000 who have already received two doses of the MMR (measles, mumps and rubella) vaccine and one dose of the varicella vaccine will be eligible to receive a second dose of varicella vaccine.

According to the National Advisory Committee on Immunization (NACI), the minimal interval between two monovalent varicella vaccines and between a monovalent varicella vaccine and the MMRV (measles, mumps, rubella and varicella) vaccine should be **three months**.

Parents, in consultation with their health care provider, may have their children immunized with MMR and varicella as separate vaccines if there are existing medical reasons or if the child will be travelling outside Canada prior to his/her fourth birthday when he/she becomes eligible for the MMRV vaccine.

Q8: What are the detailed schedules for children who have not completed or have not started their MMR or varicella immunization series?

A8: See detailed schedules for MMR, MMRV and Varicella immunization series outlined in Attachment B - **Table 3: RECOMMENDED** vaccines and doses required to complete measles, mumps, rubella and varicella immunization series.

¹ Brisson, M., Gurgun, K., Drolet, M. et al. Modelling the impact of one- and two-dose varicella vaccination on the epidemiology of varicella and zoster. *Vaccine* 2010; 28(19):3385-3397.

Q9. What happens if a child receives his/her first dose of varicella vaccine prior to 12 months of age? Will the second dose provide the needed immunity?

A9. If the first dose of varicella vaccine was given before the child's first birthday, the child should receive two additional doses of varicella after his/her first birthday with appropriate intervals between doses and other live (e.g. MMR) vaccines.

Q10. Are all children eligible for the second dose of varicella or are only those who are still susceptible eligible? (Please also see Q11)

A10. Children who have evidence of immunity to varicella do not need the vaccine.

Persons are generally considered to be immune if they have any of the following:

- documentation of two age-appropriate doses of varicella vaccine;
- laboratory confirmation of immunity or infection; or
- diagnosis or verification of a history of varicella disease by a health care provider.

Individuals do not need the varicella vaccine, if they meet any of the above criteria. If immunity is unknown, it is still safe and the child is eligible to receive the vaccine even if he/she previously had chickenpox.

Q11. If a child has a history of chickenpox prior to one year of age should he/she receive the varicella vaccine?

A11. Children with a history of chickenpox prior to one year of age are eligible to receive two doses of the vaccine at 15 months and four years of age. Since the clinical presentation of chickenpox during the first year of life may not be typical due to maternally acquired antibody, it may be difficult to determine whether infection occurred.

Q12: Who should not receive the varicella vaccine?

A12: Children should not receive the vaccine if they have:

- allergies to the vaccine or any component of the vaccine;
- an anaphylactic reaction to a prior dose of the vaccine; or

- known allergies to neomycin or gelatine.

Special considerations are needed for children who have:

- a weakened immune systems or those on medications that suppress their immune system;
- severe acute febrile illness (administration of MMRV should be postponed; however, vaccination can occur if the individual has a minor infection); or
- received Immune Globulin or blood products (vaccination should be delayed for three to 11 months).

Note: Pregnant women or women trying to get pregnant should not be vaccinated. According to the vaccine manufacturer, pregnancy should be avoided for at least three months after vaccination.

Q13: What is the vaccine ordering process?

A13: Order the vaccine through your regular vaccine supply source (i.e. local public health unit or the Ontario Government Pharmaceutical and Medical Supply Service [OGPMSS]).

Q14: How should the monovalent varicella vaccine be stored?

A14: In order to ensure that children receive optimal protection, monovalent varicella vaccine (like other vaccines) must be maintained at a temperature between +2°C and +8°C from the time of manufacture until the vaccines are administered to individuals. This temperature must be monitored and maintained at all times.

Q15: What should be done for adverse events following immunization (AEFIs)?

A15: Under section 38 of the *Health Protection and Promotion Act, R.S.O. 1990*, physicians or other persons authorized to administer an immunizing agent are required to inform the person who consents to immunization of the importance of immediately reporting to a health care provider any reaction that may be a reportable event. Local public health units should subsequently be notified of the adverse event.

The AEFI reporting form can be found on the Public Health Agency of Canada website along with a User Guide at: www.phac-aspc.gc.ca/im/ae-fi-form-eng.php. Send the

completed form to your local public health unit.

A list of health units can be found at:

www.health.gov.on.ca/english/public/contactphu/phuloc_mn.html.

References:

1. Public Health Agency of Canada. (2006). Canadian Immunization Guide (7th ed.).
2. Kuter et al. (2004), Ten year follow-up of healthy children who received one or two injections of varicella vaccine. *Pediatric Infectious Diseases Journal*, 23, 132-37.
3. Kwong, J.C., Tanuseputro, P., Zagorski, B., Moineddin, R. & Chan, K.J. (2008). Impact of varicella vaccination on health care outcomes in Ontario, Canada: Effect of a publicly funded program? *Vaccine*, 26, 6006-12.
4. National Advisory Committee on Immunization (NACI). Varicella vaccination two-dose recommendations. Canadian Communicable Disease Report. 2010; 36; 1-26. Available from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/10vol36/acs-8/index-eng.php>
5. Vaccine Product Monograph; Varivax[®] III, Merck Frosst Canada Ltd., July 20, 2005. http://www.novaccine.com/pdffiles/VARIVAX_III_package_insert.pdf
6. Vaccine Product Monograph; Varilrix[®], GlaxoSmithKline Inc., October 2010. http://www.gsk.com.au/products_vaccines_detail.aspx?view=26