

# MMR-Var

## Measles-Mumps-Rubella-Varicella Combined Vaccine

Revision Date: April 3, 2024

### Rationale for Update:

- Updated to indicate that this vaccine is no longer routinely offered to children between 4 and 6 years of age as a catch-up, because all children in this age group will now have been offered vaccine at 18 months of age.
- Identified areas where measles is circulating in Canada.

Please consult the Product Monograph for further information about the vaccine.		
	<b>PRIORIX-TETRA®<sup>(1)</sup></b> <i>(Not currently available)</i>	<b>ProQuad®<sup>(2)</sup></b>
<b>Manufacturer</b>	GlaxoSmithKline Inc.	Merck Canada Inc.
<b>Licensed use</b>	Individuals 9 months of age up to and including 12 years of age.  Infants younger than 12 months of age may not respond sufficiently to the measles component of the vaccine in part due to the persistence of maternal antibody: therefore MMR or MMR-varicella combined vaccine doses administered before 12 months of age should be repeated at 12 months of age or older.	Individuals 12 months of age up to and including 12 years of age.
<b>Off-license use</b>	None	
<b>Areas where measles is circulating in Canada</b>	<ul style="list-style-type: none"><li>• Montreal</li><li>• Toronto</li></ul>	
<b>Indications for use of provincially funded vaccine</b>	<b>Healthy children 12 months up to and including 12 years of age.</b> <b>Notes:</b> <ul style="list-style-type: none"><li>• When both MMR vaccine and varicella vaccine are indicated for children 12 months up to and including 12 years of age, MMR-Varicella combined vaccine should be considered.</li><li>• Verbal history of disease in the varicella vaccine era is not a reliable indicator of immunity.<sup>(3,4)</sup><ul style="list-style-type: none"><li>○ Children born August 1, 2012 or later with a verbal history of chicken pox disease should be offered varicella containing vaccine <b>as they present in child health clinic.</b></li><li>○ Children born prior to August 1, 2012 who have a history of chickenpox disease occurring at one year of age and older will not be offered varicella containing vaccine at this time.</li></ul></li></ul>	

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	<ul style="list-style-type: none"> <li>Children traveling to or through areas where measles is circulating in Canada and all countries outside of Canada should have two doses of measles-containing vaccine with the appropriate minimum interval between doses dependent upon the measles-containing vaccine used.<sup>(5)</sup></li> </ul>
<b>Dose</b>	0.5 mL
<b>Route</b>	Subcutaneous
<b>Schedule</b>	<p><b>Children 12 months of age up to and including 12 years of age:</b></p> <ul style="list-style-type: none"> <li>❖ Dose 1: 12 months of age</li> <li>❖ Dose 2: 18 months of age</li> </ul> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>The recommended interval between two doses of MMR and/or varicella containing vaccines is at least three months; however a four week interval can be used if child is off schedule and rapid protection is required.<sup>(3)</sup></li> <li>Any dose of MMR or MMR-Var vaccine administered before one year of age must be repeated on or after 12 months of age and separated by the appropriate interval.</li> <li>Parents who decline the combined vaccine and wish to have the vaccines as separate components (MMR and univalent varicella vaccines) may be accommodated.</li> <li>Children who received a single dose of varicella-containing vaccine and developed <b>laboratory-confirmed</b> varicella disease do not require the second dose of varicella-containing vaccine.<sup>(3)</sup></li> <li>Children traveling to or through areas where measles is circulating in Canada and all countries outside of Canada should have two doses of measles-containing vaccine with the appropriate minimum interval between doses dependent upon the measles-containing vaccine used.<sup>(5)</sup></li> <li>Questions about the measles virus or immunizations can be directed to a public health expert or primary care provider.</li> </ul>
<b>Spacing between MMR-Var and Yellow Fever vaccine</b>	Limited data suggest it may be preferable for individuals to receive MMR-containing and Yellow Fever vaccine at least 30 days apart if time permits, because of lower seroconversion rates for mumps, rubella, and yellow fever in those immunized simultaneously than in those immunized 30 days apart. <sup>(6,7)</sup> However, it is important to ensure that travelers, of all ages, are immunized appropriately before travel, therefore coadministration of Yellow Fever vaccine and MMR-Var is acceptable. <sup>(7)</sup>
<b>Contraindications</b>	<ul style="list-style-type: none"> <li>Known hypersensitivity to any component of the vaccine.<sup>(1-3)</sup></li> <li>Anaphylactic reaction to a previous dose of vaccine containing measles, mumps, rubella and/or varicella.<sup>(3)</sup></li> <li>Pregnancy.<sup>(3)</sup></li> <li>Impaired immune function including those with primary or secondary immunodeficiencies.<sup>(1-3)</sup></li> <li>HIV-infected children.<sup>(3)</sup> See Biological Products <a href="#">MMR vaccine</a> and univalent <a href="#">Varicella vaccine</a>.<sup>(3)</sup></li> <li>Immunosuppressive therapy (including high dose corticosteroids).<sup>(2)</sup></li> </ul>

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	<ul style="list-style-type: none"> <li>• Family history of congenital or hereditary immunodeficiency, unless the immune competence of the potential vaccine recipient is demonstrated.<sup>(2,3)</sup></li> <li>• Active untreated tuberculosis.<sup>(3)</sup> <ul style="list-style-type: none"> <li>○ See Precautions section for further details.</li> </ul> </li> <li>• Solid organ transplant recipients. See: <ul style="list-style-type: none"> <li>○ <a href="#">Immunization for Child SOT (before 18 months of age)</a>, and</li> <li>○ <a href="#">Immunization for Child SOT (after 18 months of age)</a>.</li> </ul> </li> <li>• Hematopoietic stem cell transplant (HSCT) recipients. See: <a href="#">Immunization for Child HSCT</a>.</li> <li>• Recent (within the past 11 months) administration of immune globulins and blood products. The interval between the receipt of IG or a blood product and the subsequent MMR-Var administration is dependent upon the IG or blood product received and the dosage administered.<sup>(3)</sup></li> </ul> <p>Refer to <a href="#">Assessment Expected Prior to Vaccine Administration</a> – Guidelines for Interval between Blood Products and Live Vaccines. See also Canadian Immunization Guide<sup>(3)</sup> – <a href="#">Blood products, human immune globulin and timing of immunization</a>.</p>
<b>Precautions</b>	<ul style="list-style-type: none"> <li>• There is an increased risk of fever and febrile seizures 5 to 12 days after the first dose of MMR-Var vaccine in children 12 to 47 months of age as compared to MMR and varicella given separately.<sup>(8)</sup> However, this risk is highest in children ages 12-23 months.<sup>(1-3,9)</sup></li> <li>• Research suggests that children with a personal or family (i.e. sibling or parent) history of seizures of any etiology including febrile or epilepsy are at increased risk of febrile seizures.<sup>(10)</sup> Therefore, the following information should be discussed with parents/caregivers: <ul style="list-style-type: none"> <li>○ The risk for fever and potential for febrile seizures is higher with the first dose (given between 12 to 47 months) of combined MMR-Var vaccine than MMR and varicella vaccines given separately.<sup>(3,8,10)</sup></li> <li>○ MMR and varicella vaccines can be offered separately.<sup>(1,8,10,11)</sup></li> <li>○ If the parent/caregiver decides to proceed with combined MMR-Var vaccine they should be counselled to monitor the child for fever.<sup>(8,11)</sup></li> <li>○ There is no indication of an increased risk after the second dose of MMR-Var.<sup>(1,8)</sup></li> </ul> </li> <li>• Egg allergy is not a contraindication to immunization with MMR-Var vaccine.<sup>(1-3)</sup> See <a href="#">Assessment Expected Prior to Vaccine Administration</a>.</li> <li>• Immunization with a measles-containing vaccine can temporarily suppress tuberculin reactivity resulting in false-negative results.<sup>(3)</sup> If tuberculin skin testing is required, it should be done on the same day as immunization with a measles-containing vaccine or delayed for at least four weeks after immunization.<sup>(3)</sup></li> <li>• The use of MMR-Var vaccine in children who suffered thrombocytopenia after a first dose of live measles, mumps, and rubella vaccines should be carefully evaluated in terms of risk-benefit.<sup>(1,2)</sup> Individuals who develop vaccine-associated thrombocytopenia should have serology to assess immunity to measles and rubella.<sup>(12)</sup> A second dose of vaccine should only be administered if non-immune and after careful consideration of the risks and benefits of the vaccine.</li> <li>• Avoid the use of salicylates for six weeks after immunization if possible.<sup>(1,2)</sup> Because adverse events have not been reported with the use of salicylates after varicella immunization, children with conditions requiring chronic salicylate therapy should be considered for immunization with close subsequent monitoring.<sup>(3)</sup> Medical consultation is recommended before proceeding with immunization for children on salicylate therapy.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Children taking long-term antiviral therapy should discontinue these drugs (e.g., acyclovir, valacyclovir or famciclovir) if possible from at least 24 hours before administration of varicella-containing vaccine and should not restart antiviral therapy until 14 days after immunization.<sup>(3)</sup> Medical consultation is recommended before proceeding with immunization.</li> <li>• Following MMR-Var vaccine, transmission of measles, mumps and rubella vaccine viruses from vaccine recipients to susceptible contacts has not been documented, and transmission of varicella vaccine virus may occur very rarely between healthy vaccine recipients who develop a varicella-like rash and their susceptible contacts.<sup>(3)</sup> If a vaccine recipient develops a varicella-like rash, the rash should be covered and direct contact with susceptible high-risk individuals (e.g., immunocompromised individuals) should be avoided for the duration of the rash.</li> <li>• Measles-containing vaccines are contraindicated in individuals with active, untreated tuberculosis as a precautionary measure. Tuberculosis may be exacerbated by natural measles infection, but there is no evidence that measles-containing vaccines have such an effect. Nonetheless, anti-tuberculous therapy for active TB disease is advisable before administering measles-containing vaccines and it may be prudent to avoid vaccine in those with active TB disease until treatment is underway. Consultation with attending physician is recommended.<sup>(3)</sup></li> <li>• Live attenuated influenza vaccine (LAIV) may be administered any time before or after the administration of live parenteral vaccines (MMR, MMR-Var and VZ).<sup>(3)</sup></li> </ul>
<b>Possible reactions</b>	See Product Monograph
<b>Pregnancy</b>	Pregnancy should rarely be an issue as MMR-Var vaccine is recommended only for children younger than 13 years of age. However, MMR-Var vaccine is contraindicated if pregnant and pregnancy should be avoided for at least 4 weeks following immunization. <sup>(3)</sup>
<b>Lactation</b>	<ul style="list-style-type: none"> <li>• Adequate human data on the use of MMR-Var vaccine during breastfeeding is not available.<sup>(1,2)</sup></li> <li>• Susceptible individuals who are breastfeeding should be immunized with a varicella-containing vaccine according to an age-appropriate schedule.<sup>(3)</sup></li> </ul>
<b>Program Notes</b>	<ul style="list-style-type: none"> <li>• 2010 September - MMR-Var was introduced into the routine childhood immunization schedule for 12 month olds.</li> <li>• 2012 August - MMR-Var second dose introduced for 4 – 6 year olds (i.e. children born August 1, 2005).</li> <li>• 2015 January - MMR-Var (Priorix-Tetra®) for SOT candidates beginning at 9 months of age.</li> <li>• 2018 September - Children with a verbal history of chicken pox disease are eligible to receive varicella containing vaccine as they present in child health clinic. (i.e. children born August 1, 2012 or later)</li> <li>• 2018 December 01 - MMR-Var recommended for HSCT recipients.</li> <li>• 2021 January 1 – MMR-Var second dose offered at 18 months instead of 4 years of age.</li> <li>• 2022 March 15 - Updated to align with SOT and HSCT immunization guidelines – MMR-Var is not indicated or recommended for SOT and HSCT as there is limited data on the use of MMR-Var vaccine in these groups.</li> <li>• 2022 December 1 - Updated to indicate that Priorix-Tetra is not currently available.</li> <li>• 2024 April 3 – Updated to indicate that this vaccine is no longer routinely offered to children between 4 and 6 years of age as a catch-up, because all children in this age group will now have been offered vaccine at 18 months of age. Areas where measles is circulating in Canada have been identified.</li> </ul>

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## References

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