

# COVID-19 Vaccination in Children 6 Months to 5 Years of Age in Ontario

Statement from paediatric  
infectious diseases physicians across Ontario



**Preamble:** The 2022-2023 respiratory virus season in Ontario has had an early and challenging start, particularly among young children. Hospitals and paediatric health-care providers are stretched to care for high volumes of acutely ill children who have contracted viruses such as SARS-CoV-2, influenza and RSV. We must anticipate this viral season could be longer and more severe than years prior. Amid this surge, it is imperative that health-care providers and caregivers use all the tools available to them to protect young children from respiratory illnesses. These tools include but are not limited to vaccinations against influenza and SARS-CoV-2.

Among children, those less than 5 years of age are among those at greatest risk of severe outcomes from influenza and as such vaccination is recommended for those 6 months and older. With respect to COVID-19, it is particularly important for the youngest children, aged 6 months to 5 years of age, to be vaccinated against COVID-19 as they are the least vaccinated age group yet at the highest risk of hospitalization due to COVID-19 within the pediatric population.

We, as paediatric infectious diseases physicians from across Ontario, support vaccination of all eligible children and youth to enable them to have the best protection against the respiratory viruses, notably, SARS-CoV-2 and influenza. Resources are available from Public Health Units and the MOH to support vaccination efforts. The specific document supplements the information that is available for the COVID-19 vaccine among children 6 months to 5 years of age.

#### **Key messages:**

- COVID-19 vaccination has been approved for use in children 6 months to 5 years of age in Canada. We recommend COVID-19 vaccinations for all children in this age group. We firmly believe that all paediatric health-care providers in Ontario should promote COVID-19 vaccination and encourage caregivers to pursue vaccination for their children aged 6 months to 5 years of age.
- Health-care providers should raise awareness in parents that COVID-19 can cause serious illness in young children even without underlying comorbidity. Although most healthy children have asymptomatic or mild illness, some healthy children may require hospitalization for acute COVID-19 or complications of this infection. To date, there has been 1,441 children aged 0 to 4 years of age who have been hospitalized for COVID-19 in Ontario, corresponding to 202.2 hospitalization per 100,000 children, a rate that is higher than what has been observed in older children, teenagers and young adults aged 20 to 39 years old.
- In the current context of increased circulation of respiratory viruses such as SARS-CoV-2, influenza, and RSV, optimizing the uptake of both COVID-19 and influenza vaccines in children are of crucial importance, especially before the winter and holiday season.
- Safety findings from various monitoring systems in children ages 6 months to 5 years have shown that most reported adverse events are mild, with serious adverse events being rarely reported and no cases of myocarditis/pericarditis having been observed in this age group in Ontario (as of November 6) and the United States (as of August 21).

**Background Information:** On July 14, 2022, Health Canada approved COVID-19 vaccination for children 6 months to 5 years of age, with the National Advisory Committee on Immunization (NACI) recommending that a primary series of the COVID-19 vaccine be offered to all children in this age group shortly thereafter. However, the proportion of children less than 5 years of age who have been vaccinated against COVID-19 lags considerably behind other age groups. As of November 6, 2022, 7.3% of Ontarian children less than 5 years old have received at least one dose of COVID-19 vaccine, with as few as 2.3% having completed their primary series [1]. In contrast, 52.5% of children 5 to 11 years old received at least one dose, and 83.4% of teenagers 12 to 17 years old received at least one dose.

**We recommend COVID-19 vaccinations for all eligible children less than 5 years of age. We firmly believe that all paediatric health-care providers in Ontario should promote COVID-19 vaccination and encourage caregivers to pursue vaccination for their children aged 6 months to 5 years of age. In addition, it is appropriate to address equity issues as this relates to how pediatric vaccination will be promoted and accessed across the socioeconomic spectrum in the province.**

The reasons for the significant discrepancy in vaccine uptake that has been observed between children younger than 5 years old and older children are still being examined. Few studies that have assessed caregivers' willingness to vaccinate their children prior to vaccine approval have suggested that parents' perception of COVID-19 severity in children and safety and effectiveness of the vaccine were significantly associated with vaccine acceptance [2, 3]. Caregivers' perceptions of vaccine safety may differ by age group, and perceptions of the severity of COVID-19 and vaccine effectiveness have also changed compared to when SARS-CoV-2 initially circulated. It is possible that the decreased risk perception of COVID-19 for both children and the population at large has negatively affected vaccine uptake. However, similarly to many other respiratory viruses, young children can develop severe illness from contracting SARS-CoV-2.

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It should be acknowledged that this data also includes infants aged 0 to 6 months old, who are not eligible for COVID-19 vaccination. However, in the United States, 6 months to 4 years old children have also experienced the highest rate of COVID-19-associated hospitalization amongst the pediatric population, with an important increase having been observed since the emergence of Omicron [5]. Further, the number of COVID-19-associated emergency department visits have been comparable between all pediatric age groups (1-4, 5-11 and 12-17 years old), suggesting that young children who contract SARS-CoV-2 have a higher probability of being hospitalized for COVID-19 compared to other age groups [5]. Although most healthy children have asymptomatic or mild illness, some healthy children may require hospitalization for acute COVID-19 or complications of this infection. [6-8].

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The recent surge of children ill because of respiratory viruses in Ontario, including SARS-CoV-2, influenza, RSV and human metapneumovirus, amongst others, have led to significant pressure on the health-care system. Many hospitals are struggling to deal with far more children admitted to general paediatric wards and intensive care units than would typically be expected, even during the winter season. In addition to COVID-19 vaccines, measures to mitigate the burden and transmission of respiratory viruses include the promotion of influenza vaccination in eligible children and household members, and reinforcing the role of hand hygiene and wearing masks in indoor settings [9-14]. All children should also be up-to-date on their routine childhood immunizations, including the pneumococcal vaccine. This helps to provide them with protection against secondary infectious diseases that might occur as complications from respiratory viral illnesses.

Understandably, caregivers' perception of vaccine effectiveness may also influence their decision to pursue vaccination for their child. Although the effectiveness of monovalent mRNA COVID-19 vaccines has been lower against infection with the Omicron variant compared to infection with previous strains, vaccines do retain moderate to good protection against Omicron-related hospitalization in other age groups [15-19]. In children aged 6 months to 5 years of age, clinical trials showed that vaccines provided protection against COVID-19, including against infection with the Omicron variant [20, 21]. However, studies assessing the real-world vaccine effectiveness and the length of protection in this age group are currently ongoing. Furthermore, caregivers' perspectives of the effectiveness of monovalent COVID-19 vaccines for young children may have also been affected by the recent availability of bivalent vaccines in older age groups, which are expected to have higher effectiveness against Omicron based on immunobridging studies [22]. However, bivalent vaccines have only been studied when administered after an initial primary series of monovalent vaccines, and as such, it is currently recommended that they only be given as booster doses. It is important that children 6 months to 5 years of age complete their primary series with monovalent COVID-19 vaccines before they become eligible for bivalent boosters.

**With mRNA COVID-19 vaccines having been broadly administered in adults and older children in the past years, there is an abundance of data reporting on the short and longer-term safety of these vaccines, including clinical trials and various post-marketing surveillance approaches. Findings from safety monitoring systems in children ages 6 months to 5 years have also shown that most reported adverse events are mild, with serious adverse events being rarely reported [23].**

To date, in Ontario, no cases of myocarditis/pericarditis have been observed in children 6 months to 5 years old, amongst 53,363 children who have received at least one dose of the vaccine, and no cases have been observed in the United States as of August 21 [4, 23, 24]. In 5 to 11 year-old children, cases of myocarditis/pericarditis following vaccination have also been extremely rare, with a reporting rate of 5.6 events per one million COVID-19 vaccine doses administered in Ontario; this stands in contrast to what has been observed in 18 to 24 year-old males (109.7 per one million doses) [24].

We are calling for health-care providers and stakeholders to continue their efforts to facilitate access to COVID-19 vaccines in younger children, while addressing ongoing barriers to vaccine access. Several outreach initiatives to increase vaccine access and confidence for adults at higher risk of severe disease were implemented in Ontario during the initial phase of the vaccine rollout, and such initiatives are needed for the paediatric vaccine rollout. Facilitating access to COVID-19 vaccines in settings where childhood immunizations and influenza vaccines are already being routinely given (primary care clinics, public health units and participating pharmacies) may provide the best opportunity to increase uptake in younger children. Given that it may be challenging for both health-care providers and parents

to schedule multiple visits to administer all recommended immunizations in young children, concurrent administration of COVID-19 vaccine and other vaccines, including against influenza, may be reasonable at this time in order to facilitate vaccine access. There is no reason to believe that there would be any safety consideration with co-administration in this age group, based on extensive experience in older children and adults.

In light of the points discussed above, joint efforts of paediatric health-care providers in supporting COVID-19 and influenza vaccine access and uptake in children aged 6 months to 5 years old will be one of the crucial interventions to maintain the well-being and health of Ontarian children through the upcoming winter.

**Available Products:**

Comirnaty (Pfizer-BioNTech), three doses (3mcg) 8 weeks apart

Spikevax (Moderna), two doses (25mcg) 8 weeks apart

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