We acknowledge the support of the Natural Sciences and Engineering Research Council of Canada (NSERC).

Vaccine efficacy is the reduction in risk of disease in people who are vaccinated compared with people who are not vaccinated. The Pfizer vaccine trial included ~2500 children. The rate of symptomatic Covid-19 infection in children who got vaccinated was ~2 per 1,000. The rate of Covid-19 infection in children who got a placebo (salt water) was ~25 per 1,000. Vaccine efficacy is 91%.

**FREQUENTLY ASKED QUESTIONS**

**COVID-19 mRNA Vaccines for Children**

The National Advisory Committee on Immunization (NACI) recommends mRNA vaccines for children.¹²


- **Which vaccine can children get?**
  The Pfizer-BioNTech (Comirnaty®) COVID-19 mRNA vaccine is approved for children aged 5 to 11.³ The Moderna (Spikevax®) mRNA vaccine is approved for children aged 6 to 11.⁴ Experts think that the risk of myocarditis may be higher with the Moderna vaccine.² For this reason, the Pfizer vaccine is preferred for children at this time.²

- **How many vaccine doses are recommended for children?**
  For most children in the age groups studied, 2 doses of the Pfizer or Moderna vaccine are recommended.¹² Children who have a weakened immune system should have 3 doses.¹² This includes children who have specific health conditions or who take medications that affect their immune system (e.g., DiGeorge syndrome, chemotherapy).

- **What is the spacing between doses for children?**
  In studies, dose 2 of the Pfizer vaccine was given 3 weeks after dose 1.³ In studies, dose 2 of the Moderna vaccine was given 4 weeks after dose 1.⁴ The spacing used in the studies is the spacing approved by Health Canada.³⁴ NACI, however, recommends 8 weeks between dose 1 and dose 2.¹² Longer spacing between doses may give better long-term protection.¹² The risk of side effects may be lower.¹²

  For children with a weakened immune system, NACI recommends 4 to 8 weeks between doses.¹²

  Children will have the best possible protection once they have had all of the recommended doses.¹²

- **When can children who have had a COVID-19 infection be vaccinated?**
  Children who have had COVID-19 infections can be vaccinated once they are feeling better and their isolation period has ended.¹² Waiting 8 weeks after a COVID-19 infection to get a COVID-19 vaccine may give children better protection in the long-term.¹² For children who have a weakened immune system, getting a COVID-19 vaccine dose 4 to 8 weeks after a COVID-19 infection may give better protection in the long-term while also giving the most protection as soon as possible.¹² Children who have had multisystem inflammatory syndrome (MIS-C) should wait to be vaccinated for at least 90 days.¹

* Vaccine efficacy is the reduction in risk of disease in people who are vaccinated compared with people who are not vaccinated. The Pfizer vaccine trial included ~2500 children. The rate of symptomatic Covid-19 infection in children who got vaccinated was ~2 per 1,000. The rate of Covid-19 infection in children who got a placebo (salt water) was ~25 per 1,000. Vaccine efficacy is 91%.
• Are the vaccine doses for children the same as for teens and adults?
No. The Pfizer and Moderna vaccines for children use lower doses. The Pfizer vaccine used for teens and adults has 30 micrograms of mRNA. The vaccine for children has 10 micrograms. The Moderna vaccine used for initial doses for teens and adults has 100 micrograms of mRNA. The vaccine for children has 50 micrograms. Smaller vaccine doses are often used for children. They work well because children have stronger immune responses than adults.

• Should children who weigh more, or who are nearly 12, get bigger doses?
No. Children who weigh more or are nearly 12 do not need bigger doses. Vaccine doses are not based on weight. Children who turn 12 between doses can get the child or teen dose for dose 2.

• Do COVID-19 vaccines work for children?
Yes. In the Pfizer and Moderna COVID-19 vaccine trials, children had a strong immune system response to the vaccines. The Pfizer and Moderna vaccines protect children from getting sick with the Delta variant. During the Omicron wave, children who had 2 doses of the Pfizer vaccine had a 68% lower chance of needing to be treated for COVID-19 in hospital.

• What is in mRNA Covid-19 vaccines?
The Pfizer and Moderna vaccines contain mRNA. mRNA instructs your cells to make the COVID-19 spike protein. A lipid (fat) envelope protects the mRNA while it is getting into cells. The Pfizer vaccine for children has slightly different sugars and salts than the one used for adults, so it can be stored in the fridge longer. Neither vaccine contains any COVID-19 virus. They cannot cause a COVID-19 infection.

• Is mRNA technology safe?
Yes. Scientists have been studying mRNA since the 1960s. Scientists around the world worked together to develop COVID-19 mRNA vaccines. COVID-19 mRNA vaccines were tested in clinical trials. Trial results were reviewed by regulatory bodies before the vaccines could be used. Strong vaccine safety systems monitor for rare vaccine side effects. More than 78 million doses of mRNA vaccines have been safely given in Canada.

• What are the common side effects of COVID-19 mRNA vaccines in children?
Many children have mild side effects (e.g., sore arm, chills, headache) that go away in a few days.

• What are the serious side effects of COVID-19 mRNA vaccines in children?
Anaphylaxis (a severe allergy) happens very rarely after COVID-19 vaccines. Children with allergies to foods, drugs, insect stings, or other vaccines can get COVID-19 mRNA vaccines. Inflammation of the heart (myocarditis) and of the sac around the heart (pericarditis) can happen rarely after COVID-19 vaccines. These conditions happen even less commonly in children than in teens and adults. In the United States, there were 8 cases of myocarditis after the first 71 million doses of the Pfizer vaccine for children aged 5 to 11. The rate of myocarditis in children was 11 cases per 1 million doses (0.0001%). In children aged 5 to 11, myocarditis and pericarditis happen far more often after a COVID-19 infection. They happen after 126 - 176 per 1 million COVID-19 infections in children (0.0013 - 0.0018%). For more information, visit: https://uwaterloo.ca/pharmacy/sites/ca.pharmacy/files/uploads/files/myocarditis_and_pericarditis_after_covid-19_vaccines.pdf
• What are the long-term side effects of COVID-19 mRNA vaccines in children?

Long-term side effects are not expected from COVID-19 mRNA vaccines.2 Vaccine side effects tend to happen in the first 6 weeks. mRNA vaccines have been studied in humans since 2013 with no known long-term effects.5,10 The mRNA in the COVID-19 vaccine is broken down by the body in 2 to 3 days.6 The spike protein may stay in the body for up to 2 to 3 weeks.6 There have been reports of short-term menstrual cycle changes,11 but vaccines do not impact fertility, genes (DNA), or hormone levels.6,12

• How can I support a child who is anxious about vaccines?

Numbing skin patches or creams from a pharmacy can help children worried about pain. The CARD (Comfort, Ask, Relax, and Distract) system may also help: https://www.aboutkidshealth.ca/card. Guardians can talk with their healthcare team to make a plan for children with complex needs. For more tools, visit: https://caringforkids.cps.ca/uploads/handout_images/painreduction_kidsandteens_e.pdf and https://www.yummymummyclub.ca/health/it-doesnt-have-to-hurt-bc.

• How can I support a child with a disability or specific needs?

Some children need support to access COVID-19 vaccines.13 Guardians and children can speak with their healthcare team to make a plan (e.g., a longer appointment or a quiet space13), as needed.

What are the risks of COVID-19 infection in children?

COVID-19 infection can cause serious illness and death in any child.13,15 COVID-19 can cause myocarditis/pericarditis.19 Multisystem inflammatory syndrome (MIS-C) is most common in children aged 5 to 11.13 We are still learning about Long Covid.13,14 In early studies, 1 to 4 out of every 100 children with a COVID-19 infection had lasting symptoms (1% to 4%).15 Symptoms include tiredness, headache, sore throat, and loss of smell.15 Children can get Long Covid even after a mild illness.13,15

What are the benefits of COVID-19 vaccination for children?

COVID-19 is very contagious. It continues to spread in Canada. COVID-19 vaccines protect children from getting sick with COVID-19.1-5,7 Vaccines lower the risk of hospitalization, death and MIS-C.1-5,7,21 We are still learning whether vaccines protect from Long Covid.8 We are still learning whether vaccines lower the risk of spreading new COVID-19 variants to others.5