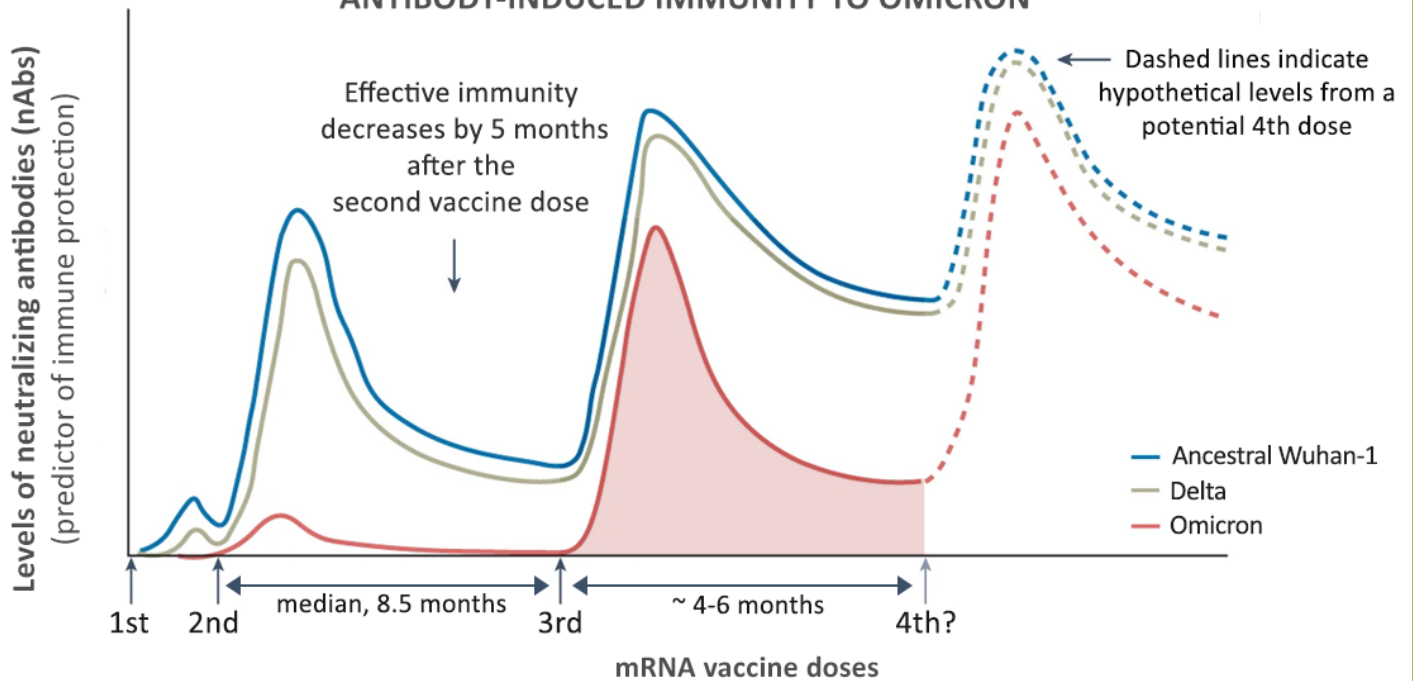


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IMPORTANCE OF THIRD DOSE OF COVID-19 VACCINE FOR ANTIBODY-INDUCED IMMUNITY TO OMICRON



Adapted from: Shen, X. 2022. Boosting immunity to Omicron. *Nat Med* 28, 445–446

BOOSTING IMMUNITY TO OMICRON: Neutralizing antibodies are part of the adaptive immune system against an infectious organism and are produced in response to an infection or vaccination. The level of neutralizing antibodies present is generally correlated with the amount of protection, including against symptomatic infection. Multiple studies have shown that Omicron neutralization is weak after two doses of mRNA vaccine and a third dose is *crucial* to mount a strong neutralizing antibody response¹. Vaccine effectiveness substantially increased (up to **70%**) against symptomatic infection 2-4 weeks after the third dose for both, the Omicron subvariant BA.1 and the rapidly emerging BA.2 subvariant^{2,3}. For protection against severe disease, vaccine efficacy continued to remain high (up to **80%**) for both the subvariants of Omicron, 7 months after receiving the third dose³. A recently published pre-print however indicated that the protection from the third dose against symptomatic infection could wane by 4-6 months⁴. For adults who had received two doses of COVID-19 vaccine and then got infected with SARS-CoV-2, an interval of three months after symptom onset or a positive test is recommended before getting the third dose⁵.

In January, compared to fully vaccinated persons with additional or **booster doses** in each age group shown below, the monthly rates of COVID-19-associated hospitalizations were:

12X Higher in Unvaccinated Adults Ages 18 Years and Older

8x Higher
in Unvaccinated Adults
Ages 18-49 years

10x Higher
in Unvaccinated Adults
Ages 50-64 years

15x Higher
in Unvaccinated Adults
Ages 65 Years and Older



Source: <https://covid.cdc.gov>

NEW COVID-19 VACCINES APPROVED BY HEALTH CANADA

Novavax NUVAXOVID is an adjuvanted, protein-based COVID-19 vaccine that was approved by Health Canada on February 17, 2022 for people who are 18 years of age or older. The vaccine contains recombinant spike protein of the original strain of SARS-CoV-2 and is given intramuscularly in two doses 21 days apart. Nuvaxovid has shown to be 90% effective against symptomatic infection from previous variants one week after receiving the second dose⁶. However, additional data is required to determine vaccine effectiveness against Omicron subvariants BA.1 and BA.2.

COVIFENZ by Medicago is another COVID-19 vaccine that was approved by Health Canada on February 24, 2022 for people aged 18 to 64, with a dosing scheduling similar to Novavax. This vaccine contains plant-based virus-like particles of the SARS-CoV-2 spike protein from the original strain and is 71% effective against COVID-19⁷. At present, additional data is required to understand its effectiveness against the new subvariant of Omicron. Both of these new vaccines are safe and can be used as alternatives to mRNA or viral vector vaccines.

EFFECTIVENESS OF FACE MASKS AGAINST COVID-19

The Ontario government removed the provincial mask mandate on March 21, 2022 in most indoor settings, except for public transit and high-risk congregate care & living settings. Mask requirement for all remaining areas will be eliminated on April 27, 2022, making wearing a face mask a matter of personal choice. Below are few things to keep in mind when doing an individual risk assessment:

- Mounting evidence validates wearing a mask reduces exposure to infection (inhaling) but also acts as source control to limit spread to others (exhaling)^{8,9}.
- Widespread community transmission of COVID-19 is still occurring within the province with daily number of estimated cases being 15,000 to 20,000 as of March 17, 2022¹⁰.
- Wearing a mask in indoor settings is one of the simplest, non-pharmacological control measures to reduce spread of COVID-19, especially when other measures like adequate filtration/ventilation, physical distancing, and vaccination (children <5 years old) are not present or possible.
- If you have compromised immunity or live with someone who does, a well-fitted mask can provide an added layer of protection in indoor areas with standing air where virus may collect.
- A mask also provides protection against asymptomatic and pre-symptomatic transmission, which is higher with Omicron than previous variants of concern¹¹.

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