



COVID-19 Novavax Vaccine

March 2022

Background

The Novavax 'Nuvaxovid' COVID-19 vaccine (also known in some countries as 'Covovax') was authorized for use in Canada on February 17, 2022, following rigorous review of multiple trial stages including safety and efficacy.ⁱ This vaccine was the first recombinant protein-based COVID-19 vaccine to be approved for use in the country,ⁱⁱ differentiating it from other COVID-19 vaccines already in use. As per this authorization, the Novavax vaccine is available as a primary two-dose series for Canadians aged 18 and older.ⁱⁱⁱ

Nuvaxovid is a protein-based vaccine, meaning that it contains a lab-grown coronavirus protein, which upon injection stimulates an immune system response. The protein is modified so that it cannot replicate inside the human body. Specifically, Nuvaxovid is composed of five micrograms of the SARS-CoV-2 spike protein plus 50 micrograms of the 'Matrix-M' adjuvant.^{iv} 'Matrix-M' is a proprietary compound created using particles from the evergreen soapbark tree found predominantly in South America,^v and helps to generate a greater immune system response with a smaller dose of vaccine.^{vi} Studies have shown that the Nuvaxovid vaccine is approximately 90% effective at protecting against severe illness caused by COVID-19, seven days after administering the second dose, with a 21-day interval between first and second doses.^{vii} This type of protein-based vaccines are in common usage and have been used to develop vaccines for illnesses including human papillomavirus (HPV), hepatitis B, and some strains of influenza.^{viii}

Presently there are two global manufacturing facilities which produce the Novavax vaccine, one in Czech Republic and the other in India.^{ix} However, preparation has long been underway to create another manufacturing plant located just outside of Montreal, Quebec. Once finished, the Montreal facility will be the first Canadian-based plant to manufacture COVID-19 vaccines for Canadian use and will be able to produce approximately 24 million doses of the Novavax vaccine per year upon its opening.^x Additionally, while the facility has been initially contracted by the Government of Canada to prepare the Novavax vaccine, the facility may be able to manufacture other biopharmaceuticals in the future, including other vaccines (viral vector, protein-based, virus-like particles based, and recombinant protein).^{xi}

While it is imperative to follow all public health measures, becoming vaccinated (and boosted) with a COVID-19 vaccine authorized in Canada is an important way to help mitigate serious illness. The approval of an additional vaccine helps to ensure greater access to life-saving vaccines. For example, the Novavax vaccine only requires standard refrigeration temperatures for storage (2-8 degrees Celsius) and can remain at regular ambient temperatures (2-26 degrees Celsius) for up to six hours, making this vaccine easy to store and ship.^{xii} As experts in vaccine delivery and public health, nurses understand that this is a critical component when it comes to vaccine access and availability, especially for individuals who live in rural, remote, and underserved communities. Moreover, with the addition of the Novavax vaccine, nurses have an opportunity to continue to have conversations with patients and clients about the safety and efficacy of the COVID-19 vaccines approved for use in Canada. Nurses consistently rank as one of the most trusted professions because they understand how to take complex information and distill it into what makes sense to people. Nursing is based on evidence and science and when combined with a patient and family centred care approach, there is a huge opportunity to inform and provide clarity. When clarity and facts on immunization are presented by those in trusted positions, uptake increases. Immunizations are a personal health decision and nurses can provide clear, evidence based and factual information about the vaccine to support evidence-informed decisions making in a therapeutic and supportive conversation.

Key Messages

- The COVID-19 Novavax vaccine 'Nuvaxovid' was approved for use in Canada on February 17, 2022.
- Nuvaxovid is authorized for use as a two-dose primary series of COVID-19 vaccines for adults aged 18 and over.



- Nuvaxovid is the first recombinant protein-based COVID-19 vaccine approved for use in Canada, however, protein-based vaccines have previously been developed for other uses for many years.
- Work is currently underway to finalize a Canadian-based vaccine manufacturing facility just outside of Montreal, and once completed, is expected to produce 24 million Novavax vaccine doses per year.
- According to clinical stage trial data, the Novavax vaccine has an efficacy rate of approximately 90%, seven days after the second dose.
- The Novavax Nuvaxovid vaccine requires standard refrigeration temperatures for storage (2-8 degrees Celsius) and as such can be stored and shipped more readily to rural, remote, and underserved communities that may not have previously been able to receive or store some other COVID-19 vaccines.
- With the addition of the Novavax vaccine, nurses have an opportunity to continue to have evidence and science-based conversations with patients and clients about the safety and efficacy of the COVID-19 vaccines approved for use in Canada.
- Utilizing a trusted, patient and family centred approach to care, nurses can provide clarity and facts on immunization which in turn can continue to increase uptake.

Further Reading/Resources

- [NNPBC: Guide to COVID-19 Vaccines](#)
- [Understanding the COVID-19 \(SARS-CoV-2\) Variants](#)
- [BC Centre for Disease Control \(BCCDC\): Vaccines Available in B.C.](#)
- [National Advisory Committee on Immunization \(NACI\): Recommendations on the use of Novavax Nuvaxovid COVID-19 vaccine](#)
- [World Health Organization: Novavax vaccine, what you need to know](#)

ⁱ Health Canada. 'Health Canada authorizes Novavax's Nuvaxovid COVID-19 vaccine.' Feb 17, 2022.

<https://www.canada.ca/en/health-canada/news/2022/02/health-canada-authorizes-novavaxs-nuvaxovid-covid-19-vaccine.html>;

National Advisory Committee on Immunization (NACI). 'An Advisory Committee Statement (ACS) National Advisory Committee on Immunization (NACI): Recommendations on the use of Novavax Nuvaxovid COVID-19 vaccine.' Feb 17, 2022. <https://www.canada.ca/content/dam/phac-aspc/documents/services/immunization/national-advisory-committee-on-immunization-naci/recommendations-use-novavax-nuvaxovid-covid-19-vaccine.pdf>.

ⁱⁱ ImmunizeBC. 'COVID-19 Vaccines.' Feb 28, 2022. <https://immunizebc.ca/covid-19>.

ⁱⁱⁱ BC Centre for Disease Control (BCCDC). 'Vaccines Available in B.C. [Novavax Nuvaxovid COVID-19 vaccine].' Feb 24, 2022. <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/covid-19-vaccine/vaccines-for-covid-19>.

^{iv} Health Canada. 'Novavax Nuvaxovid COVID-19 vaccine.' Feb 17, 2022. <https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/vaccines/novavax.html>.

^v Health Canada. *Novavax Nuvaxovid COVID-19 vaccine*. Feb 17, 2022.

^{vi} Chan, Adam. *CTV News*. 'Great news:' Novavax vaccine coming to B.C., says top doctor.' Feb 23, 2022. <https://vancouverisland.ctvnews.ca/great-news-novavax-vaccine-coming-to-b-c-says-top-doctor-1.5793404>.

^{vii} Dunkle, Lisa M, Kotloff, Karen L, Gay, Cynthia L, Anez, German, et al. *New England Journal of Medicine*. 386:531-543.



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^{viii} Chan, Adam. *CTV. Great news, Novavax vaccine coming to BC, top doctor.* Feb 23, 2022.

^{ix} World Health Organization. 'The Novavax vaccine against COVID-19: What you need to know.' Dec 21, 2021. <https://www.who.int/news-room/feature-stories/detail/the-novavax-vaccine-against-covid-19-what-you-need-to-know>.

^x CBC News. 'How Montreal could lead the way to Canada's first domestically produced COVID-19 vaccine.' Nov 4, 2021. <https://www.cbc.ca/news/canada/montreal/montreal-novavax-vaccine-production-facility-1.6233282>.

^{xi} National Research Council of Canada (NRC). 'Biologics Manufacturing Centre.' Mar 2, 2022. <https://nrc.canada.ca/en/research-development/nrc-facilities/biologics-manufacturing-centre>.

^{xii} NACI. *An ACS NACI: Recommendations on the use of Novavax Nuvaxovid COVID-19 vaccine.* Feb 17, 2022.