

Third COVID-19 Vaccine for Lymphoma Patients

Lymphoma Canada, with the help of our Scientific Advisory Board comprised of leading hematologists /oncologists from across Canada, created a brief report addressing important questions from patients related to COVID-19 and the vaccine, to provide guidance from the clinician and policy levels.

In August 2021, provinces began to approve the administration of a third COVID-19 vaccine to individuals with two prior vaccinations. Provinces differ in their roll-out plan and eligibility criteria. For best guidance, please speak with your clinician to determine your eligibility and review your provinces roll-out plan for details on how to access the vaccine.

Why might immunocompromised individuals need a third dose of the COVID-19 vaccine?

Immunocompromised individuals have a weakened immune system due to disease or treatment. Some immunocompromised individuals have a lower immune response to the COVID-19 vaccines compared to the general population¹⁻¹⁰.

Recent studies show that some individuals who are moderately to severely immunocompromised who did not respond to or who had a reduced immune response after two doses of an mRNA vaccine may have an increased immune response after a third dose of an mRNA vaccine¹¹⁻¹³. However, at this time research has not been published on the safety and efficacy of a third vaccine dose in lymphoma patients.

How do I know if I am eligible to receive the third COVID-19 booster vaccine?

The National Advisory Committee on Immunization (NACI) released a guidance report regarding the additional dose of a COVID-19 vaccine in certain immunocompromised individuals following a 1- or 2-dose primary series. Based on research published on immunocompromised patients' response to the one or two vaccine doses¹⁻¹⁰ and the third vaccine dose¹¹⁻¹³, NACI recommends the following:

1. For those who **have not yet been immunized, moderately to severely immunocompromised*** individuals in the authorized age groups should be immunized with a primary series of three doses of an authorized mRNA vaccine.

2. For those moderately to severely immunocompromised* individuals in the authorized age groups **who have previously received a 1- or 2-dose complete primary series**, including those who received a mixed vaccine schedule, should be offered an additional dose of an authorized mRNA COVID-19 vaccine.

- An additional dose of a viral vector vaccine should only be considered when other authorized COVID-19 vaccines are contraindicated or inaccessible. Informed consent for an additional dose of a viral vector vaccine should include discussion about the lack of evidence on the use of an additional dose of viral vector COVID-19 vaccine in this population.

Moderately to severely immunocompromised includes individuals with the following conditions:

- Active treatment for solid tumour or hematologic malignancies
- Receipt of solid-organ transplant and taking immunosuppressive therapy
- Receipt of chimeric antigen receptor (CAR)-T-cell therapy or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy)
- Moderate to severe primary immunodeficiency (e.g., DiGeorge syndrome, Wiskott-Aldrich syndrome)
- Stage 3 or advanced untreated HIV infection and those with acquired immunodeficiency syndrome
- Active treatment with the following categories of immunosuppressive therapies: anti-B cell therapies (monoclonal antibodies targeting CD19, CD20 and CD22), high-dose systemic corticosteroids, alkylating agents, antimetabolites, or tumor-necrosis factor (TNF) inhibitors and other biologic agents that are significantly immunosuppressive.

Many provinces are adopting these recommendations, with specific eligibility criteria available through the province’s phased or non-phased roll-out plan. There may be some differences between this list above and the criteria listed by the province. Please review your provinces recommendation and eligibility criteria related to the third vaccine dose through the links below:

Province	Provincial Recommendations for the Third COVID-19 Vaccine Dose
British Columbia	http://www.bccdc.ca/health-info/diseases-conditions/covid-19/covid-19-vaccine/vaccine-registration-eligibility
Alberta	https://www.alberta.ca/covid19-vaccine.aspx
Saskatchewan	https://www.saskatchewan.ca/government/health-care-administration-and-provider-resources/treatment-procedures-and-guidelines/emerging-public-health-issues/2019-novel-coronavirus/covid-19-vaccine/vaccine-booking#check-your-eligibility
Manitoba	https://www.gov.mb.ca/covid19/vaccine/eligibility-criteria.html
Ontario	https://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/vaccine/COVID-19_vaccination_rec_special_populations.pdf
Quebec	https://www.quebec.ca/en/health/health-issues/a-z/2019-coronavirus/progress-of-the-covid-19-vaccination/additional-dose-covid-19-vaccine
Newfoundland & Labrador	https://www.gov.nl.ca/covid-19/vaccine/gettheshot/
Nova Scotia	https://novascotia.ca/coronavirus/vaccine/ https://www.halifaxtoday.ca/coronavirus-covid-19-local-news/immunocompromised-should-receive-3rd-covid-19-mrna-vaccine-immunization-panel-4321929
Prince Edward Island	https://www.cbc.ca/news/canada/prince-edward-island/pei-third-dose-covid-vaccine-immune-compromised-islanders-1.6175366



New Brunswick	https://www2.gnb.ca/content/gnb/en/corporate/promo/covid-19/nb-vaccine.html https://en.horizonnb.ca/media/1285743/2021-09-23_declaration_eligibility_third_dose_en.pdf
Northwest Territories	https://www.nthssa.ca/en/newsroom/public-notice-third-dose-vaccinations-specified-frontline-workers-and-immunocompromised
Yukon	https://yukon.ca/en/news/third-doses-covid-19-vaccine-be-available-select-group-immunocompromised-yukoners
Nunavut	No public statement released yet on the 3 rd COVID-19 vaccine dose.

Is the third COVID-19 vaccine right for me?

Lymphoma Canada recommends speaking with your doctor to determine if the third COVID-19 vaccine is best for you. This can depend on where you are with your treatment schedule as well as other health conditions. There are no specific criteria at this time based on lymphoma subtype, and as per eligibility criteria patients with a hematologic malignancy (which includes lymphoma) may be eligible to receive the third COVID-19 vaccine depending on your treatment.

How do I book my third COVID-19 vaccine?

To book your third COVID-19 vaccine, please go to your province's website where there may be the option to either book your third dose online or through a hotline. You may be required to provide a letter of support from your clinician depending on the province. If your clinician has not sent you this letter directly, please contact your doctor to discuss your eligibility to receive the vaccine and receive a support letter. Bring this letter with you to your vaccine appointment, along with personal identification. Further details on what may be required for your vaccine appointment can be found through your province's website.

Should patients receive an antibody test to assess their immune response to the previous vaccines before considering a third COVID-19 vaccine dose?

No. It is not possible to interpret from a SARS-CoV-2 spike serology test whether a patient is fully protected against COVID-19, as the immune response can be variable after both infection and vaccination. The antibody measurement may not necessarily be the best indicator of immunity. The Canadian Immunity Task Force also does not consider SARS-CoV-2 serology an appropriate test to determine vaccine effectiveness and thus does not indicate or recommend it. Therefore, we do not recommend basing the decision to take the third COVID-19 dose off the results of a SARS-CoV-2 spike serology test.

References

1. Chung, D.J. et al. (September 13, 2021). Disease and therapy-specific impact on humoral immune responses to COVID-19 vaccination in hematologic malignancies. *Blood Cancer Discov.*
2. Tamari, R., et al. (September 13, 2021). Predictors of humoral response to SARS-CoV-2 vaccination after hematopoietic cell transplantation and CAR T-Cell therapy. *Blood Cancer Discov.*
3. Diefenbach, C., et al. (2021). Impaired humoral immunity to SARS-CoV-2 vaccination in Non-Hodgkin lymphoma and CLL patients. *medRxiv.*
4. Herishanu, T., et al. (2021). Efficacy of the BNT162b2 mRNA COVID-19 vaccine in patients with chronic lymphocytic leukemia. *Blood.*, 137 (23): 3165–3173.
5. Massarweh, A., et. Al (May 28, 2021). Evaluation of seropositivity following BNT162b2 messenger RNA vaccination for SARS-CoV-2 in patients undergoing treatment for cancer. *JAMA Oncol.*, 7(8):1133-1140.
6. Mazzola, A., et al. (2021). Poor antibody response after two doses of SARS-CoV-2 vaccine in transplant recipients. *Clinical Infectious Diseases*, ciab580.
7. Monin, L., et al. (2021). Safety and immunogenicity of one versus two doses of the COVID-19 vaccine BNT162b2 for patients with cancer: interim analysis of a prospective observational study. *The Lancet Oncology.*
8. Parry, H.M., et al. (2021). Antibody responses after first and second Covid-19 vaccination in patients with chronic lymphocytic leukaemia. *Blood Cancer Journal*, 11:136
9. Roeker, Lindsey E., et al. (2021). COVID-19 vaccine efficacy in patients with chronic lymphocytic leukemia. *Leukemia*: 1-3.
10. Thakkar, A., et al. (2021). Seroconversion rates following COVID-19 vaccination among patients with cancer. *Cancer Cell*, 05: 05
11. Kamar, N. et al. (2021). Three Doses of an mRNA Covid-19 Vaccine in Solid-Organ Transplant Recipients. *N Engl J Med*, 385:661-662.
12. Epsi, M., et al. (2021). Justification, safety, and efficacy of a third dose of mRNA vaccine in maintenance hemodialysis patients: a prospective observational study. *medRxiv.*
13. Ducloux., et al. (2021). Humoral response after 3 doses of the BNT162b2 mRNA COVID-19 vaccine in patients on hemodialysis. *Kidney Int.*, 100(3): P702-704.