



VACCINATION AGAINST COVID-19

ADDITIONAL DOSE OF COVID-19 VACCINE IN IMMUNOCOMPROMISED INDIVIDUALS

OCTOBER 2021



Immunocompromised individuals have a higher risk of complications with COVID-19 infection.

They may also be less protected after two doses. An additional dose, preferably of a messenger RNA (mRNA) vaccine (Pfizer-BioNTech Comirnaty COVID-19 vaccine or Moderna Spikevax COVID-19 vaccine), provides better protection against COVID-19 in the context of the predominance of the Delta variant, which is more virulent and more transmissible than its predecessors.

IMMUNOSUPPRESSION

Immunosuppression is a reduction of the activation or efficacy of the immune system against a pathogen.

Immunosuppressive therapies, agents that modulate the immune response, are used in the treatment of many chronic inflammatory or autoimmune diseases.

Systemic sclerosis (aka scleroderma) results from a dysfunction of the immune system and immunosuppressive therapies are sometimes prescribed to patients to control this autoimmune disease.

Currently, there is little evidence for the vaccination of individuals with autoimmune diseases against COVID-19. The humoral and/or cellular immune response is impaired to varying degrees, but the extent of this impairment is still unclear.

COVID-19 VACCINATION

Given that current evidence suggests a reduction in the actual efficacy of the SARS-CoV-2 and COVID-19 vaccine in immunocompromised individuals compared with the general population, it is recommended that an additional dose (i.e., a 3rd dose or "booster shot") of a licensed mRNA vaccine against COVID-19 be offered to moderately to severely immunocompromised individuals in the licensed age groups who have already received a complete primary series of one or two doses of COVID-19 vaccine. In addition, the Comité d'immunisation du Québec (CIQ) considers that the benefits of vaccination against COVID-19 outweigh the risks in individuals with autoimmune disease and therefore recommends their vaccination.

As of August 31, 2021, as part of the COVID-19 vaccination campaign, a third dose of a mRNA vaccine (Pfizer, Moderna) against COVID-19 is recommended for:

- ▶ People on dialysis;
- ▶ People with compromised immune systems, i.e., those:
 - who are undergoing chemotherapy or radiotherapy,
 - who are taking medications that affect their immune system,
 - who are living with HIV.

SCLERODERMA AND IMMUNOSUPPRESSIVE THERAPIES

The assessment of immunosuppression to determine if a vaccine can be administered is done on an individual basis, either by the vaccinator according to the PIQ (Protocole d'immunisation du Québec) recommendations regarding immunosuppressive therapies, or by the treating physician.

Immunosuppression varies with the nature of the drug, the dose and the duration of treatment. When a person is taking several immunosuppressive drugs at doses considered low, it is up to the treating physician to judge whether the synergy between these drugs leads to significant immunosuppression.



The main immunosuppressive therapies that can produce immunosuppression in people with systemic scleroderma are:

- ▶ Conventional immunosuppressants;
- ▶ Biological agents for the treatment of chronic inflammatory or autoimmune diseases;
- ▶ Corticosteroids in immunosuppressive doses.

Some conventional scleroderma treatment agents are immunosuppressive, while others are not considered immunosuppressive. Thus, it is important for the vaccinator or treating physician, as the case may be, to conduct a rigorous evaluation before administering a COVID-19 vaccine.

Corticosteroid therapy is immunosuppressive when the following 3 conditions are met:

- ▶ It is administered systemically (orally or intravenously);
- ▶ It lasts 2 weeks or more;
- ▶ The dose exceeds 20 mg of prednisone per day or its equivalent.

In an immunocompromised individual, the recommended interval is 4 weeks between the 1st and 2nd dose of COVID-19 vaccine; and 4 weeks or more between the 2nd and 3rd dose. A longer interval between the 2nd and 3rd dose (e.g., 2 or 3 months) may increase the immune response of the 3rd dose, but may also prolong the exposure period for infection.

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OTHER CONSIDERATIONS

An immunocompromised individual who develops COVID-19 should receive 3 doses of a COVID-19 vaccine. The CIQ recommends that a COVID-19 mRNA vaccine be used preferentially in immunocompromised individuals, whether or not they have had the disease.

An immunocompromised person who has been vaccinated with a vaccine not licensed in Canada should receive a total of 2 doses of COVID-19 mRNA vaccine. The interval between doses should be 4 weeks or more.

OTHER VACCINES

For people taking biologic or conventional immunosuppressive agents, live attenuated vaccines are generally contraindicated to avoid adverse effects resulting from the uncontrolled replication of the vaccine virus. These include the varicella (chickenpox) vaccines and one of the shingles (herpes zoster) vaccines (Zostavax II from Merck).

Shingrix inactivated shingles vaccine (GSK) can be given along with the influenza or flu vaccine. A minimum interval of 14 days before or after administration of an inactivated or live attenuated vaccine is recommended before administering a COVID-19 vaccine. However, given the advantages of vaccination against COVID-19, recent administration of an inactivated vaccine should not delay the administration of a COVID-19 vaccine.

One must follow meticulously instructions given by public health authorities during and after vaccination against COVID-19, as the virus is still circulating in our communities. These measures may be relaxed over time as public health authorities issue new or updated guidelines.

VACCINATION APPOINTMENTS

There are both walk-in and scheduled vaccination clinics for COVID-19. Please visit <https://portal3.clicsante.ca/> for clinic schedules and locations.

REFERENCES

- ▶ **PIQ** (*Protocole d'immunisation du Québec*)
-Related documentation: *COVID-19 vaccination*
Additional dose of COVID-19 vaccine
- ▶ **MSSS** (*Ministère de la Santé et des Services sociaux du Québec*):
www.msss.gouv.qc.ca/sujets/santepub/vaccination/
- ▶ Campagne de vaccination contre la COVID-19 - Information à l'intention des vaccinateurs (31 août 2021)



In this document, following the Institut de santé publique du Québec (INSPQ) usage, the terms immunosuppression, immunosuppressor and immunosuppressed are equivalent to the terms immunodepression, immunodepressant and immunodepressed (immunocompromised) respectively.

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