



Clinician alert #72 – all clinicians

Effective from 10 December 2021

3rd Primary Dose of COVID-19 Vaccine for Severely Immunocompromised People

The Australian Technical Advisory Group on Immunisation (ATAGI) recommends a 3rd primary dose of COVID-19 vaccine in all severely immunocompromised individuals aged ≥ 12 years to address the risk of suboptimal or non-response following the standard 2 dose schedule.

The recommended interval for the 3rd PRIMARY dose is 2 to 6 months after the 2nd dose.

- A minimum interval of 4 weeks may be considered in exceptional circumstances (e.g. anticipated intensification of immunosuppression or during outbreaks).
- Immunocompromised people who received a 2nd COVID vaccine dose more than 6 months ago should receive a 3rd dose as soon as feasible.

An mRNA vaccine (Pfizer or Moderna) is preferred to Vaxzevria (AstraZeneca) for the 3rd Primary dose.

- AstraZeneca can be used for the 3rd dose for individuals who have received AstraZeneca for their first 2 doses if there are no contraindications or precautions, or if a significant adverse reaction occurred after a previous mRNA vaccine dose which contraindicates further doses of mRNA vaccine (e.g. anaphylaxis, myocarditis).
- For people who have had a single dose vaccine as their primary course overseas (e.g. Janssen), this advice would apply to a 2nd primary dose.

The 3rd PRIMARY dose differs from a COVID vaccine BOOSTER dose.

- A single COVID-19 vaccine BOOSTER dose is now available for anyone aged 18 years and older who received their second dose 6 or more months ago.
- ATAGI does not currently recommend more than three doses in severely immunocompromised individuals (i.e. a booster dose is not currently recommended for persons who have had a three dose primary series).

ALL individuals with severe immunocompromise, as defined in [ATAGI recommendations](#) should receive a 3rd primary dose of a COVID-19 vaccine.

- Studies have shown that immunocompromised persons with COVID-19 have about twice the risk of death compared to the general population.

The conditions and therapies for which a 3rd Primary dose is recommended are listed in Box 1 on the next page.

- This list is not exhaustive
- Clinicians may use their judgement for conditions or medications that are not listed and associated with severe immunocompromise
- ATAGI does not currently recommend a 3rd Primary dose for someone with a mild-to-moderate immunocompromising condition or therapy, or for immunocompetent people.

For complete details of the ATAGI recommendations please see:

[Recommendations on the use of a 3rd primary dose of COVID-19 vaccine in individuals who are severely immunocompromised](#), updated 2 November 2021.

Box 1: People with the following immunocompromising conditions and therapies for which a 3rd primary dose is recommended

N.B. This list is not exhaustive. Clinicians may use their judgement for conditions or medications that are not listed and which are associated with severe immunocompromise.

- Active haematological malignancy
- Non-haematological malignancy with current active treatment (e.g., chemotherapy, whole body irradiation)
- Solid organ transplant with immunosuppressive therapy
- Haematopoietic stem cell transplant (HSCT) recipients or chimeric antigen receptor T-cell (CAR-T) therapy within 2 years of transplantation.
 - These patients require *revaccination with 3 additional doses* of COVID-19 vaccine, irrespective of doses given prior to transplantation, commencing generally ≥3-6 months after their transplant after discussion with their treating specialist.
 - Those beyond 2 years from transplant should discuss with their treating specialist about the need for a 3rd dose.
- Immunosuppressive therapies including:
 - High dose corticosteroid treatment equivalent to >20mg/day of prednisone for ≥14 days in a month, or pulse corticosteroid therapy.
 - Multiple immunosuppressants where the cumulative effect is considered to be severely immunosuppressive.
 - Selected conventional synthetic disease-modifying anti-rheumatic drugs (csDMARDs):
 - including mycophenolate, methotrexate (≥10 mg/week), leflunomide, azathioprine (≥ 1mg/kg day), 6-mercaptopurine (≥ 0.5mg/kg/day), alkylating agents (e.g. cyclophosphamide, chlorambucil), and systemic calcineurin inhibitors (e.g. cyclosporin, tacrolimus).
 - excluding hydroxychloroquine or sulfasalazine when used as monotherapy.
 - Biologic and targeted therapies anticipated to reduce the immune response to COVID-19 vaccine. Refer to Table 1 below for examples. However, clinicians may use their judgement for medications which are not listed.
- Primary immunodeficiency including combined immunodeficiency and syndromes, major antibody deficiency (e.g. common variable immune deficiency (CVID) or agammaglobulinemia), defects of innate immunity (including phagocytic cells), defects of immune regulation, complement deficiencies and phenocopies of primary immunodeficiencies.
- Advanced or untreated HIV with CD4 counts <250/μL or those with a higher CD4 count unable to be established on effective anti-retroviral therapy.
 - a 3rd primary dose is not required for people living with HIV, receiving ART with CD4 counts ≥250/μL.
- Long term haemodialysis or peritoneal dialysis.

Table 1(a): A 3rd dose is recommended for people taking the following biologics

| Class | Examples |
|--|--|
| Anti-CD20 antibodies | rituximab, obinutuzumab, ocrelizumab, ofatumumab |
| BTK inhibitors | ibrutinib, acalabrutinib, zanubrutinib |
| JAK inhibitors | tofacitinib, baricitinib, ruxolitinib |
| Sphingosine 1-phosphate receptor modulators | fingolimod, siponimod |
| Anti-CD52 antibodies | alemtuzumab |
| Anti-complement antibodies | eculizumab |
| Anti-thymocyte globulin | anti-thymocyte globulin |

A list of biologics for which a 3rd primary dose is **not** recommended is available in the ATAGI guidance [Table 1(b)].

Dr Paul Effler, MD, MPH, FAFPHM

**SENIOR MEDICAL ADVISOR
WA DEPARTMENT OF HEALTH**