

COVID-19 Vaccination Guidance for children 12 years and older undergoing cancer treatment and children with non-cancerous blood disorders

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ANZCHOG has worked in close consultation with paediatric infectious disease experts, paediatric immunologists and cardiologists to develop these guidelines. Consumer input has contributed to these guidelines.

Following approval by the Therapeutic Goods Association (TGA) for use of Comirnaty (Pfizer-BioNTech) and Spikevac (Moderna) COVID vaccines in younger adolescents, the Australian Technical Advisory Group on Immunisation (ATAGI) has recommended vaccination for all Australians aged 12 years and older, extending its previous recommendation for vaccination for those at greater risk of severe COVID-19 (including adolescents with cancers and survivors of childhood cancers).

These vaccines are not live vaccines and therefore pose no risk of COVID-19 infection.

RISKS OF COVID-19 INFECTION IN CHILDREN AND ADOLESCENTS WITH CANCER AND NON-CANCEROUS BLOOD DISORDERS

Some types of cancer and cancer treatments can suppress or weaken the immune system causing immunosuppression. These treatments include chemotherapy, steroids, radiation therapy, and stem cell or bone marrow transplant. Additionally, certain non-cancerous blood disorders (for example aplastic anaemia, sickle cell disease, Evan's syndrome, Shwachmann diamond syndrome, Fanconi anaemia) are associated with immunosuppression.

Evidence suggests that immunosuppression increases the risk of severe COVID-19 infection by three fold. Although the risk of serious illness or death remains low in children, not unsurprisingly, it is higher in children with cancer (1). In addition, having COVID-19 infection, even if mild, may result in modification of anti-cancer therapy (e.g. delay, reduction or withholding) therefore possibly compromising a child's cancer treatment (1).

Hence vaccinating patients with immunosuppression is a priority.

CURRENT VACCINE RECOMMENDATIONS

- All children (**aged 12 years and over**) and adolescents, including those with cancer and receiving cancer treatment or who recently completed cancer treatment should be vaccinated against COVID-19. The location where your child should receive the vaccination (treating centre/Follow up programme vs standard community-based vaccination program) should be discussed with your oncology unit.
- All survivors of childhood cancer should be vaccinated – this can be done through a standard community-based vaccination programme.
- All children (**aged 12 years and over**) and adolescents with certain non-cancerous blood disorders, (for example aplastic anaemia, sickle cell disease, Evan's syndrome, Shwachmann diamond syndrome, Fanconi anaemia) should be vaccinated. The location where your child should receive the vaccination (treating centre/Follow up programme vs standard community-based vaccination program) should be discussed with your haematology unit.
- The timing of vaccination should be discussed with the treating team to make sure current treatment is considered when scheduling vaccination, as is the case for other vaccinations like the seasonal influenza vaccination.
- Vaccination should be delayed in those with active myocarditis/pericarditis (inflammation of the heart/ sac lining the heart). A decision on the future timing of COVID-19 vaccination should be made following review by your child's treating team.

- Children who have been treated with specific chemotherapeutic agents including anthracyclines as part of their cancer treatment are not considered to be at higher risk of side effects from vaccination.
- There is a very small chance that children who have had an allergic reaction or are anaphylactic (a severe, potentially life-threatening allergic reaction) to Peg-asparaginase may be at an increased risk of allergic or anaphylactic reactions to COVID-19 vaccination. It is recommended that vaccinations are given in a hospital setting.
- Vaccination is recommended for children receiving a bone marrow transplant, CAR-T cell therapy or treatment with rituximab **before treatment begins**, however if the child has already received these, vaccination is recommended **from 3 months after this treatment**. It is important to talk to the child's oncologist/bone marrow transplant physician about the best time to schedule vaccination.
- For children undergoing cancer treatment, vaccination should not replace other COVID-safe practices (e.g. masks, social distancing, ensuring good indoor ventilation, and hand hygiene) to reduce risk of COVID-19 infection.
- For children receiving current cancer treatment, we do not recommend interruption of treatment during vaccination.
- All household contacts, including parents, siblings 12 years and older, and grandparents, should also be vaccinated as an important preventative measure.
- After vaccination, children and their close contacts should continue to practice usual COVID-safe practices (e.g. masks, social distancing, ensuring good indoor ventilation, and hand hygiene) in accordance with national and regional guidelines.

FREQUENTLY ASKED QUESTIONS

Is it safe for my child to be vaccinated while undergoing cancer treatment?

Yes, it is safe. The TGA has approved vaccination for all children and adolescents from 12 years. Vaccination is recommended by ATAGI for all children in this age group.

My child has had an allergic or anaphylactic (a severe, potentially life-threatening allergic reaction) reaction before, should they still be vaccinated?

In most cases yes, but please discuss this with your child's treating oncologist to ascertain the details and severity of the allergic reaction, as this will determine the specific answer for you. For example, children who have had an allergic or anaphylactic reaction to Peg-asparaginase may be at a very small increased risk of allergic or anaphylactic reaction to COVID-19 vaccination and so it is recommended that vaccinations are given in a hospital setting.

Will the vaccine still be effective if my child is immunocompromised?

Effectiveness studies in patients who are immunocompromised including patients undergoing cancer treatment confirm that it is essential to receive 2 doses of COVID-19 vaccine, as one dose may not offer enough protection. It is possible that a third dose may be needed in the future to fully protect some immunocompromised patients. We will update this advice based on further recommendations from ATAGI as more data in this area becomes available.

My child has been asked to participate in a clinical trial about COVID-19. Should I consider this?

ANZCHOG is aware of a number of clinical trials around Australia and New Zealand addressing the limited knowledge around the effectiveness of the COVID-19 vaccine in children with cancer, we encourage participation after discussion with your child's treating team.

My child is currently having treatment, should they wait to have their vaccination?

No, because evidence suggests that immunosuppression increases the risk of severe COVID 19 infection by three fold and having COVID 19 infection, even if mild, is likely to delay cancer treatment, possibly compromising your child's cancer therapy. Hence it is important to vaccinate patients with immunosuppression as soon as is practicable and not wait for the completion of treatment.

My child has just had a bone marrow transplant, CAR-T cell therapy or treatment with rituximab can they be vaccinated?

Yes, vaccination is recommended, however a bone marrow transplant, CAR-T cell therapy or treatment with rituximab, is likely to interfere with vaccine effectiveness, so we recommend your child wait 3 months after the therapy before having their vaccination. Your child's oncologist/ bone marrow transplant physician will provide more information about this timing for your child.

Will vaccination cause any other changes to my child's treatment?

The timing of vaccination should be discussed with your child's treating team to make sure current treatment is considered when scheduling vaccination.

What side effects could my child have from their vaccination?

Evidence demonstrates the vaccine is safe in adolescents and immunocompromised patients with increasing data on their use in children with cancer. The side effects are similar to those who are not undergoing cancer treatment.

Common side effects include:

- Local reaction at the vaccine injection site including local tenderness and pain, redness and/or swelling
- Fever and chills
- Headache
- Fatigue
- Muscle and joint aches

There is a chance your child may get a fever following the vaccine – if this occurs please consult your oncology/haematology unit, as you normally would.

If you are concerned your child is possibly having more severe or unexpected side effects (for example chest pain) please consult your treating team.

My child has completed their cancer treatment. Do they need to see a medical specialist before getting their vaccination?

In most instances if your child has completed their cancer treatment more than 6 months ago then no this is not necessary. If your child has had a bone marrow transplant, received rituximab or CAR-T cell therapy in the past 12 months we recommend you consult your oncology unit for specific advice.

My child is under 12 and undergoing treatment for cancer. Can they have a vaccination?

No, not at this stage. There are no vaccines yet approved for children in Australia and New Zealand aged under 12 years. Clinical trials are being conducted on vaccine use in children from 6 months to 11 years. We will update this advice when these data are available.

Where can I find more information about vaccination for my child?

You can speak to your child's medical treatment team to get more information that is specific for your child.

Additional information sources:

- ASCIA - https://www.allergy.org.au/images/stories/pospapers/ASCIA_HP_Guide_COVID-19_Vaccination_2021-07-29.pdf
- ATAGI/CSANZ - <https://www.health.gov.au/resources/publications/covid-19-vaccination-guidance-on-myocarditis-and-pericarditis-after-mrna-covid-19-vaccines>
- AusVaxSafety - <https://www.ausvaxsafety.org.au/safety-data/covid-19-vaccines>
- ANZTCT - <https://anztct.org.au/wp-content/uploads/2021/02/FINAL-ANZTCT-COVID19-Vaccination-Position-Statement-Version2-2-Feb-2021.pdf>
- ASH-ASTCT: [COVID-19 and Vaccines: Frequently Asked Questions - Hematology.org](https://www.hematology.org/COVID-19-and-Vaccines-Frequently-Asked-Questions)

References

1. Mukkada S, Bhakta N, Chantada GL, Chen Y, Vedaraju Y, Faughnan L, Homsy MR, Muniz-Talavera H, Ranadive R, Metzger M, Friedrich P, Agulnik A, Jeha S, Lam C, Dalvi R, Hessissen L, Moreira DC, Santana VM, Sullivan M, Bouffet E, Caniza MA, Devidas M, Pritchard-Jones K, Rodriguez-Galindo C; Global Registry of COVID-19 in Childhood Cancer. **Global characteristics and outcomes of SARS-CoV-2 infection in children and adolescents with cancer (GRCCC): a cohort study.** *Lancet Oncol.* 2021 Aug 26:S1470-2045(21)00454-X. doi: 10.1016/S1470-2045(21)00454-X. Epub ahead of print. PMID: 34454651. [https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(21\)00454-X/fulltext](https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(21)00454-X/fulltext)