FAQs for Healthcare Professionals - COVID-19 Vaccination for Adult Patients with Cancer

Version 9.0 11/10/2021

Note: The information contained in these FAQs was correct at the time of writing. Please check https://www.hse.ie/eng/health/immunisation/hcpinfo/covid19vaccineinfo4hps/covid19vaccineinfo4hps.html for the most up-to-date information on the Covid-19 vaccine.

1. How is the COVID-19 vaccine given?

The COVID-19 vaccine is given as an intramuscular injection into the upper arm (deltoid muscle). The COVID-19 vaccines that are currently being used in the Irish vaccination programme are the AstraZeneca vaccine, the Janssen vaccine, the Moderna vaccine and the Pfizer/BioNTech vaccine (also known as 'Comirnaty'). The AstraZeneca, Moderna and Pfizer/BioNTech vaccines are administered in a two-dose course, with recommended intervals defined in the vaccine Summary of Product Characteristics (SmPC). [1,2,3] The Janssen vaccine (manufactured by Johnson&Johnson) is administered as a single dose. [4]

2. Will the vaccine provide protection against COVID-19 immediately?

No. Depending on which vaccine is administered, it may take between 7-15 days after the course is completed for the body to be protected from COVID-19.

- AstraZeneca: Vaccine recipients may not be protected until 15 days after the second dose and the vaccine may not protect all vaccinees. Clinical trial follow-up is ongoing to determine the duration of protection from the vaccine.

[1] Pfizer/BioNTech vaccine: https://www.ema.europa.eu/en/documents/product-information/comirnaty-epar-product-information_en.pdf

[2] Moderna vaccine: https://www.ema.europa.eu/en/documents/product-information/covid-19-vaccine-moderna-product-information_en.pdf

[3] Astra Zeneca vaccine*: https://www.ema.europa.eu/en/documents/product-information/covid-19-vaccine-astrazeneca-product-information-approved-chmp-29-january-2021-pending-endorsement_en.pdf

*NIAC update: https://www.rcpi.ie/news/releases/national-immunisation-advisory-committee-niac-recommends-temporary-deferral-of-the-administration-of-the-covid-19-vaccine-astrazeneca/

[4] Janssen vaccine: https://www.ema.europa.eu/en/medicines/human/EPAR/covid-19-vaccine-janssen#product-information-section

- Moderna: Vaccine recipients may not be protected until 14 days after the second dose and the vaccine may not protect all vaccinees. Clinical trial follow-up is ongoing to determine the duration of protection from the vaccine.
- Pfizer/BioNTech (Comirnaty): Vaccine recipients may not be protected until 7 days after the second dose and the vaccine may not protect all vaccinees. Clinical trial follow-up is ongoing to determine the duration of protection from the vaccine.
- Janssen: Vaccine recipients may not be protected until 14 days after vaccination and the vaccine may not protect all vaccines. Clinical trial follow-up is ongoing to determine the duration of protection from the vaccine.

3. Are COVID-19 vaccines as effective in patients with cancer?

The efficacy of the COVID-19 vaccines may be lower in those who are immunosuppressed, including people with cancer. The level of immunity generated by the vaccine in patients with cancer may be affected by a range of factors, including the type of cancer, the type of anticancer treatment, the timing of administration of the vaccine, pre-existing immune dysfunction and general level of fitness.

People who are immunocompromised are advised to continue following public health and infection control advice to reduce their risk from getting COVID-19. Specific advice for how to avoid COVID-19 for people most at risk of severe disease is available on the Health Protection Surveillance Centre (HPSC) website at the following link: https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/peopleatincreasedriskofsevereillness/othersatincreasedriskofsevereillness/

An additional dose has been recommended for those who are immunosuppressed at the time of their initial COVID-19 vaccine course[5]. Some studies have demonstrated that immunosuppressed patients had a lower antibody response to vaccination which improved with an additional vaccine dose.

4. Will patients with cancer require an additional dose of a COVID-19 vaccine?

Yes, some patients with cancer may not have mounted a sufficient immune response to vaccination either due to disease or treatment. These patients should be given an mRNA vaccine as an additional dose to mount an adequate immune response – this is not a booster dose.

[5] NIAC advice: https://rcpi-live-cdn.s3.amazonaws.com/wp-content/uploads/2021/09/Recommendations-re-additional-COVID-19-vaccine-dose-for-those-with-Immunocompromise-FINAL-30082021.pdf

For practical purposes, the following groups can be used to identify those recommended by the National Immunisation Advisory Committee (NIAC) to receive an additional dose of an mRNA vaccine:

- Anyone under your care who has received cytotoxic chemotherapy, targeted therapy, monoclonal antibodies or immunotherapies in the past 12 months
- Anyone under your care who is being actively treated for a haematological malignancy, including those on 'watch & wait'
- Anyone with advanced or metastatic cancer
- Anyone listed for haematopoietic stem cell transplant (HSCT) or who underwent a HSCT in the past 12 months. Note that patients on immunosuppressant therapy for the treatment of Graft-versus-Host disease should be included, regardless of time since transplant
- Anyone treated with radiotherapy since March 2021
- Any other patient not included above whom you consider profoundly immunosuppressed due to disease or treatment (for example high dose corticosteroids) and likely to have had a suboptimal response to the routine COVID-19 vaccination course. Clinical discretion should be exercised in identifying this cohort, including those who have received certain treatments (e.g. B-cell depleting agents) where the effects are expected to persist for more than 12 months post cessation

Further information is available on the NIAC recommendations for an additional COVID-19 vaccine dose for those with immunocompromise associated with a suboptimal response to vaccines here.

5. Are COVID-19 vaccines effective against variants of concern such as the delta variant?

Current evidence suggests that COVID-19 vaccines are effective against variants of concern.

6. How long does the protection last?

We do not yet know how long the vaccines will provide immunity from COVID-19. It is important to note that some people who receive the vaccine, e.g. people who are immunosuppressed due to an underlying disease or treatment, may not mount an adequate immune response to the vaccine.

7. Do people who are vaccinated need to continue following general public health advice to prevent the spread of COVID-19?

Yes - when a person has received both doses of the COVID-19 vaccine they should still continue observing public health measures to reduce the spread of COVID-19, including physical distancing, cough etiquette, wearing face coverings where required and regular hand washing.

8. What are the side effects of the COVID-19 vaccine?

Most of the known side effects of COVID-19 vaccines are mild to moderate and usually resolve within a few days after vaccination.

The most frequent reported side effects are:

- pain at injection site
- feeling tired
- headache
- feeling achy
- low grade fever or chills

Analgesics may be used to alleviate these side effects if appropriate and in consultation with the treating consultant. If a cancer patient reports a high temperature following COVID-19 vaccination, it may be related to infection and should be investigated as appropriate.

Axillary lymphadenopathy on the same side as vaccine administration has been observed in some patients post COVID-19-19 vaccination.
Moderna vaccine lists this adverse effect as very common i.e. >1/10
Astra Zeneca and Pfizer vaccines list this adverse effect as uncommon i.e. >1/1,000 and <1/100

Very rare cases of unusual blood clots associated with low platelets have been reported with the Astra Zeneca and Janssen vaccines. The reported combination of blood clots and low blood platelets is very rare, and the overall benefits of the vaccine in preventing COVID-19 outweigh the risks of side effects[6]. The COVID-19 vaccines are new vaccines and their safety and efficacy will continue to be monitored on an ongoing basis.

Further information on the COVID-19 vaccines can be found here:
https://www2.hse.ie/screening-and-vaccinations/covid-19-vaccine/

9. Can the COVID-19 vaccine cause an allergic reaction?

Yes. Patients with a history of serious allergic reaction (anaphylaxis) to a COVID-19 vaccine or any of its constituents should not receive the COVID-19 vaccine. If a patient has a reaction to the vaccine it usually occurs within minutes of administration. Staff administering vaccines should be trained to manage allergic reactions/anaphylaxis.

[6] http://www.hpra.ie/homepage/medicines/news-events/item?t=/statement-from-the-health-products-regulatory-authority-vaxzevria-(formerly-covid-19-vaccine-astrazeneca)&id=c65d0f26-9782-6eee-9b55-ff00008c97d0

The mRNA[7] COVID-19 vaccines (i.e. Pfizer/BioNTech and Moderna) contain a substance called polyethylene glycol (PEG), which forms a protective coating around the mRNA, facilitating delivery of mRNA to the cells. Severe allergic reactions to PEG are rare, and persons with a history of PEG allergy may not be eligible to receive mRNA vaccines. Appropriate advice should be sought from relevant specialists and/or affected patients should consider availing of COVID-19 vaccines that do not contain PEG.

The viral vector vaccines (i.e. AstraZeneca and Janssen) do not contain PEG but do contain a related compound called polysorbate 80, which is widely used in the food industry and is present in many medicines including monoclonal antibodies. People with PEG allergies may not be eligible for the viral vector COVID-19 vaccines. Some influenza vaccines contain polysorbate 80 – individuals who have tolerated injections containing polysorbate 80 are likely to tolerate the AstraZeneca and Janssen vaccines.

For patients receiving the Pfizer/BioNTech (Comirnaty), Moderna, AstraZeneca or Janssen vaccine, advice from a relevant specialist should be sought for a person with a history of an immediate systemic allergic reaction to any other vaccine, injectable therapy or polysorbate 80 (because of the possibility of cross reactivity with PEG). The risks should be weighed against the benefits of vaccination. The patient should be observed for 30 minutes after vaccination.

The Pfizer/BioNTech, Moderna, AstraZeneca and Janssen vaccines do not contain latex. The Pfizer/BioNTech, Moderna, AstraZeneca and Janssen vaccines do not contain any egg proteins and are not contraindicated in egg allergy.

10. Are there any contraindications with the COVID-19 vaccines?

Yes. Patients with a history of anaphylaxis (serious systemic allergic reaction requiring medical intervention) following a previous dose of a COVID-19 vaccine or any of its constituents should not receive the COVID-19 vaccine. See the product SmPC of each COVID-19 vaccine for further information on the vaccine ingredients.

For patients receiving the AstraZeneca or Janssen vaccines, contraindications include anaphylaxis following a previous dose of the vaccine or any of its constituents (including polysorbate 80).

[7] mRNA = messenger ribonucleic acid. A molecule in cells that carries genetic code from the DNA in the nucleus of the cell to ribosomes for protein synthesis

For patients receiving the Pfizer/BioNTech (Comirnaty) or Moderna vaccine, contraindications include anaphylaxis following a previous dose of the vaccine or any of its constituents (including polyethylene glycol (PEG)).

11. What other considerations are advised with the COVID-19 vaccine?

Vaccination of patients with acute severe febrile illness or acute infection should be deferred until recovery. A minor infection and/or low grade fever should not delay vaccination.

Patients who are receiving anticoagulant therapy or those with thrombocytopenia or any coagulation disorder should be given the vaccine with caution – the usual precautions for intramuscular injection should be taken when administering the COVID-19 vaccine[8]. Some patients receiving SACT may have a low platelet count - in advance of COVID-19 vaccination it is recommended that patients have a platelet count of 30 x 10^9/L or above[9]. Pressure should be applied to the injection site for 5-10 minutes. Those receiving regular platelet transfusions should have their vaccine after a platelet transfusion. Patients who do not meet the above recommendations may proceed at the discretion of the consultant.

12. Should patients defer/delay their treatment while waiting for a vaccination?

Any decision to defer or delay the start of treatment while awaiting a vaccination should be discussed with the patient. This includes chemotherapy, radiotherapy or surgery. Clinicians should advise patients who are due to start cancer treatment (chemotherapy/radiotherapy) or due to undergo cancer surgery to avail of the vaccine as soon as it is offered to them unless clinically contraindicated.

13. When should patients on systemic anticancer therapy (SACT) (e.g. chemotherapy and immunotherapy) receive the COVID-19 vaccine?

Patients with immunosuppression may not mount a sufficient immune response to vaccination. Patients who have undergone B cell depletion in the past 6 months may have a reduced immune response to vaccination.

As the currently available COVID-19 vaccines are not live vaccines, it is unlikely that they would pose an additional safety risk to patients receiving SACT. In the absence of definitive evidence regarding the immunogenicity of the COVID-19 vaccine in immunosuppressed patients, the following recommendations have been made based on current knowledge of the COVID-19 vaccine and the evidence available in relation to other vaccines.

[8] https://www.hse.ie/eng/health/immunisation/hcpinfo/covid19vaccineinfo4hps/clinicalguidance.pdf

[9] https://b-s-h.org.uk/media/19195/haematology-covid-19-v10-vaccination-statement-231220.pdf

Patients should receive the COVID-19 vaccine as soon as possible before they start treatment, or if already on treatment they should receive the vaccine as soon as possible. Consider administration of the vaccine on a day other than SACT treatment day on cycle 1. From cycle 2 onwards vaccination on the same day as SACT can be considered. Patients receiving continuous SACT treatment e.g. tyrosine kinases or treatment with short treatment breaks e.g. capecitabine, there is no evidence to suggest a treatment interruption to allow for vaccination is beneficial and will increase the time the patient is left without any protection and may lead to greater risk of severe COVID-19 disease. Where possible, the vaccine should be administered at a time where there is the least amount of immunosuppression e.g. just before the next cycle of treatment.

There is a theoretical risk that COVID-19 vaccination could exacerbate immune-mediated toxicity in patients receiving combination immune checkpoint inhibitors (PD-1/PD-L1 and anti CTLA-4) based on studies with flu vaccines[10],[11]. However, the available evidence does not contraindicate COVID-19 vaccination in these patients. Patients receiving combination immune checkpoint inhibitors should consult with their treating clinician prior to vaccination.

14. When should bone marrow transplantation patients receive the COVID-19 vaccine?
As the currently available COVID-19 vaccines are not live vaccines, it is unlikely that they would pose an additional safety risk to bone marrow transplantation patients. However, patients who have undergone B cell depletion in the past 6 months may have a reduced immune response to vaccination.

The timing of vaccination after allogeneic stem cell transplantation should follow general recommendations – in the absence of graft-versus-host disease (GVHD), the vaccine can typically be administered 6 months post stem cell transplantation. If the transmission rate in the local area is high, the vaccine could be administered 3 months after stem cell transplantation and should take precedence over regular vaccinations – wait approximately 6-8 weeks post Covid-19 vaccination before administering other vaccines. GVHD patients should not be excluded from COVID-19 vaccination unless their GVHD is severe, uncontrolled grades 3-4.

[10] https://journals.lww.com/immunotherapy-journal/pages/articleviewer.aspx?year=2012&issue=01000&article=00010&type=abstract

[11] https://www.annalsofoncology.org/article/S0923-7534(20)36377-8/fulltext

An additional vaccine dose is recommended for those who have undergone stem cell transplantation in the 12 months prior to their initial vaccine course.

15. Can a patient on radiotherapy treatment receive the COVID-19 vaccine?

Clinicians should advise patients due to start radiotherapy to avail of the COVID-19 vaccine as soon as it is offered to them unless clinically contraindicated. Clinicians should discuss the timing of the vaccination with patients who are undergoing radiotherapy treatment when they are offered the vaccine in their allocation group.

Patients who are receiving radiotherapy to a limb or hemithorax should receive the vaccine in the opposite arm.

16. Can a patient awaiting cancer surgery receive the COVID-19 vaccine?

Clinicians should advise patients awaiting cancer surgery to avail of the vaccine as soon as it is offered to them unless clinically contraindicated. Decisions regarding vaccination of patients awaiting cancer surgery should be made in close consultation with the treating clinician/team.

17. Can patients with lymphoedema, or those who are at risk of lymphoedema, receive the COVID-19 vaccine?

Yes, but avoid administering the vaccine in the affected limb.

18. Can a patient who had previous exposure/infection with COVID-19 receive the vaccine?

Yes, patients who were previously exposed to COVID-19 should receive the vaccine. Re-infection with COVID-19 is possible so it is important to be vaccinated to reduce the risk. Patients should wait until they have fully recovered from COVID-19 before getting vaccinated. Vaccination should be deferred until clinical recovery from COVID-19 and at least four weeks after diagnosis or onset of symptoms, or four weeks from the first PCR positive specimen in those who are asymptomatic.

If patients have had a laboratory-confirmed breakthrough infection since their last dose of COVID-19 vaccine, then any additional dose or booster dose should be delayed for 6 months following the onset of confirmed COVID-19 infection.

19. Can patients with cancer on clinical trials receive the COVID-19 vaccine?

Clinicians should advise patients to avail of the COVID-19 vaccine as soon as it is offered to them and advise on the timing of vaccination in relation to the clinical trial.

20. What COVID-19 vaccine is being used for the additional dose for those who cannot receive an mRNA vaccine?

An additional adenoviral vector vaccine (Vaxzevria® (Astrazeneca) or COVID-19 Vaccine (Janssen) can be considered for those with a contraindication or precaution to an mRNA vaccine.

21. How will patients know they require an additional vaccine dose?

Patients who are eligible/appropriate for the additional dose will be identified through their clinical team. Invitations will be issued to those identified via SMS requesting them to make an appointment to attend a HSE COVID-19 Vaccination Centre (CVC) closest to their place of residence, or through the Hospital if they are currently an inpatient.

22. Is there a timing interval between receiving the primary COVID-19 vaccine course and receiving the additional dose?

The additional COVID-19 vaccine dose should be administered at a minimum of 2 months since the last COVID-19 vaccine dose.

If patients have had a laboratory-confirmed breakthrough infection since their last dose of COVID-19 vaccine, then the additional dose should be delayed for 6 months following the onset of confirmed COVID-19 infection.

23. Can other vaccines be given at the same time as the additional COVID-19 vaccine?

The additional primary dose may be given at the same time or at any interval before or after seasonal influenza vaccine (or any other vaccines). If the additional primary dose is given at the same time, the vaccines should be administered in different arms.

24. Should an antibody test be used to identify eligible patients for an additional dose?

No. The recommendations for patients to receive an additional dose are currently based on clinical diagnosis or treatment history, rather than antibody test results. There is no agreed or recommended antibody level above which you would not vaccinate, or below which you would vaccinate.

25. Should children undergoing cancer treatment receive the additional dose of the COVID-19 vaccine?

The recommendation is that an additional mRNA vaccine dose should be given to those aged 12 and older with immunocompromise associated with a suboptimal response to vaccines who have completed their primary course.

Where can I find more information?

More detailed information on COVID-19 vaccination from the National Immunisation Advisory Committee can be found at https://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/covid19.pdf

COVID-19 Vaccine Information for Health Professionals
https://www.hse.ie/eng/health/immunisation/hcpinfo/covid19vaccineinfo4hps/

Patient Frequently Asked Questions (FAQs) on the COVID-19 Vaccine for Adults with a Diagnosis of Cancer or who are receiving Cancer Treatment
https://www.hse.ie/eng/services/list/5/cancer/patient/leaflets/

COVID-19 Vaccine Bulletin 33
https://www2.hse.ie/screening-and-vaccinations/covid-19-vaccine/get-the-vaccine/weak-immune-system/
https://www.hse.ie/eng/health/immunisation/hcpinfo/covid19vaccineinfo4hps/bulletin/bulletin33.pdf

Bibliography

- National COVID-19 Vaccination Programme:Strategy https://www.gov.ie/en/publication/bf337-covid-19-vaccination-strategy-and-implementation-plan/#:~:text=Minister%20for%20Health%2C%20Stephen%20Donnelly,health%20and%20social%20care%20services
- Allergy UK https://www.allergyuk.org/about/latest-news/1374-allergy-and-the-coronavirus-covid19-vaccine
- Arthritis UK https://www.arthritis.org/health-wellness/about-arthritis/related-conditions/other-diseases/covid-19-faqs-medication-treatment-and-vaccines
- American Society of Haematology (ASH) https://www.hematology.org/covid-19/ash-astct-covid-19-and-vaccines
- American Society of Clinical Oncology (ASCO) https://www.asco.org/asco-coronavirus-resources/covid-19-patient-care-information/covid-19-vaccine-patients-cancer
- British Transplantation Society (BTS) https://bts.org.uk/wp-content/uploads/2020/12/December-2020-BTS-position-statement-vaccination-in-solid-organ-transplant-recipients-FINAL-002.pdf
- COVID-19 Real-Time Learning Network (in association with CDC and IDSA) https://www.idsociety.org/covid-19-real-time-learning-network/vaccines/vaccines-information--faq/#concurrent
- European Society for Blood and Marrow Transplantation (EBMT) https://www.ebmt.org/sites/default/files/2020-12/COVID%20vaccines%20version%202.03%20with%20table.pdf
- European Society Medical Oncology (ESMO) https://www.esmo.org/covid-19-and-cancer/covid-19-vaccination
- ESMO Ten Statements https://perspectives.esmo.org/news/covid-19-vaccination-in-patients-with-cancer-esmo-releases-ten-statements
- Health Products Regulatory Authority (HPRA) http://www.hpra.ie/homepage/medicines/covid-19-updates/approval-of-covid-19-vaccines-frequently-asked-questions
- HSE National Immunisation Guidelines Chapter 3. Immunocompromised Patients https://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/chapter3.pdf
- HSE Clinical Guidance for Covid-19 Vaccination V2.0 https://www.hse.ie/eng/health/immunisation/hcpinfo/covid19vaccineinfo4hps/clinicalguidance.pdf
- International Coalition of Medicines Regulatory Authority (ICMRA)

  http://www.icmra.info/drupal/en/covid-19/vaccines_confidence_statement_for_hcps
- HSE Clinical Guidance and Evidence https://hse.drsteevenslibrary.ie/c.php?g=679077&p=4922165
- International Myeloma Society Recommendations for Anti-Covid-19 vaccination in patients with multiple myeloma and related conditions, AL amyloidosis and other monoclonal gammopathies of clinical significance https://cms.cws.net/content/beta.myelomasociety.org/files/PM%20COVID%20vaccination%20in%20MM%20guidelines%20The%20Final.pdf
- NHS Specialist Pharmacy Service (SPS) https://www.sps.nhs.uk/home/covid-19-vaccines/
- Public Health England Covid-19 vaccination programme Information for healthcare practitioners V3.1 https://www.gov.uk/government/publications/covid-19-vaccination-programme-guidance-for-healthcare-practitioners
- UK Chemotherapy Board Clinician Frequently Asked Questions (FAQs) and guidance on Covid-19 vaccine for patients receiving Systemic Anti-cancer Therapy (SACT) v2.1 https://www.ukchemotherapyboard.org/publications
- UK Mastocytosis Covid-19 Vaccine Statement

https://ukmasto.org/COVID-19/

- US CDC https://www.cdc.gov/vaccines/covid-19/index.html