



Frequently Asked Questions about COVID-19 vaccines for people affected by cancer

Updated 3 March 2023

People affected by cancer have many questions about the COVID-19 vaccines, including questions about specific recommendations for vaccination for people affected by cancer, and whether the COVID-19 vaccines are safe and effective for people affected by cancer.

Cancer Australia has compiled these Frequently Asked Questions (FAQs) based on input from cancer clinicians and people affected by cancer, including via a roundtable meeting of key cancer control stakeholders, consultation with consumer representatives and organisations, and queries and concerns raised in social media. The answers to these FAQs are based on information provided by the Australian Government Department of Health and Aged Care and recommendations of the Australian Technical Advisory Group on Immunisation (ATAGI), and currently available national and international published evidence.

This information to support people affected by cancer is intended to supplement the broader information provided by the Australian Government for clinicians and the Australian community about COVID-19 vaccines in Australia, available at www.health.gov.au/COVID19-vaccines.

These FAQs are regularly updated as new information and evidence emerges visit: <https://www.canceraustralia.gov.au/covid-19-vaccine-and-cancer>

If you have cancer and test positive to COVID-19, there are COVID-19 treatments available. Learn more about [managing your cancer care in the context of COVID-19](#).

What's new?

COVID-19 booster vaccines

These recommendations replace previous ATAGI Advice

- **All adults can get a booster if it's been 6 months or longer since their last COVID-19 booster or confirmed infection** (whichever is most recent) for additional protection against severe illness from COVID, regardless of how many vaccine doses they have previously received.
 - **This is particularly recommended for people at higher risk of severe illness**, including:
 - everyone 65 years and over
 - everyone 18 years and over with medical comorbidities, disability or complex health needs, including cancer.
- **Children and adolescents aged 5 to 17 with health conditions, including cancer, that put them at risk of severe illness** can also get a booster dose if it's been 6 months since their last dose or COVID-19 infection, based on an individual risk assessment with their immunisation provider.
 - Booster doses are not recommended at this time for children and adolescents aged 18 years or under who do not have any risk factors for



severe COVID-19.

- **All currently available COVID-19 vaccines are approved for use in Australia** and continue to provide very strong protection against serious illness from COVID-19, however, Omicron-specific bivalent vaccines are preferred for boosters.
- **To book a booster dose**, use the [COVID-19 Clinic Finder](#) or use 'Hey Eva' – Easy Vaccine Access.
 - [EVA](#), is a simple callback service to help people book a COVID-19 vaccine.
 - If you need help making a COVID-19 vaccine booking, SMS 'Hey EVA' to 0481 611 382. A trained call agent from the National Coronavirus Helpline will call you to help book your COVID-19 vaccination.
- The date you had your last COVID-19 vaccine is on your COVID-19 [digital certificate](#).

Refer to the [Department of Health and Aged Care website for more information about COVID-19 boosters](#).

COVID-19 vaccines

- COVID-19 vaccinations are recommended for all people aged **5 years or older**.
- Vaccination is also [recommended for children ages 6 months to under 5 years in at risk population groups](#), including for children with cancer.
 - Learn more about [COVID-19 vaccinations for children](#)
- The [ATAGI recommended doses and vaccines](#) outlines which vaccines and doses are recommended for each age and population group.

Refer to the [Department of Health and Aged Care](#) website for more information about COVID-19 vaccines

To print these FAQs, [click here](#).

FAQs for Aboriginal and Torres Strait Islander people

With the assistance of Aboriginal and Torres Strait Islander people and health experts, Cancer Australia has also developed dedicated [FAQs about the COVID-19 vaccines for Aboriginal and Torres Strait Islander people with cancer and complementary FAQs for their healthcare team](#).

FAQs in languages other than English

With the assistance of NSW Multicultural Health Communication Service translators and checkers, these FAQs have been translated into the ten most commonly spoken languages in Australia other than English: Arabic (العربية); Chinese, Simplified (简体中文); Chinese, Traditional (繁體中文); Greek (Ελληνικά); Hindi (हिन्दी); Italian (Italiano); Korean (한국어); Spanish (Español); Tagalog (Tagalog); Vietnamese (Tiếng Việt). For FAQs in your language, visit www.canceraustralia.gov.au/CALD.



General information about the COVID-19 vaccines	
FAQ	Answer
What is a vaccine? How does it work?	<p>Vaccines are a way of producing an immune response in the body without causing illness. Vaccines strengthen a person's immune system by training it to recognise and fight against specific infections.</p> <p>Vaccines use weakened (or inactivated) viruses or parts of the virus (such as a protein) to make our bodies think we have already had a particular disease. When a person is vaccinated against a disease, their immune system can quickly recognise and clear out bacteria and viruses that can cause serious illnesses from that disease.</p>
What is a COVID-19 vaccine? How does it work?	<p>The COVID-19 vaccines strengthen a person's immune system by training it to recognise and fight something that is specific to COVID-19. For most of the COVID-19 vaccines, this specific thing is the coronavirus 'spike' protein.</p> <p>The spike protein is not the virus itself – it is the 'pointy' bit of the coronavirus cell which helps the virus enter people's bodies. The COVID-19 vaccines that are available in Australia train our immune system to recognise this spike protein as foreign and produce long-lasting immune cells and antibodies to fight it.</p> <p>None of the COVID-19 vaccines approved for use in Australia use the live or whole virus that causes COVID-19.¹ The COVID-19 vaccines cannot give you COVID-19.</p>
How are the COVID-19 vaccines tested for safety before they are approved for use in Australia?	<p>Australia has strict requirements for the testing and approval of vaccines. Before a COVID-19 vaccine is approved for use in Australia, it must:</p> <ul style="list-style-type: none">• pass several different phases of clinical trials to prove the vaccine is safe and effective; and• pass the Therapeutic Goods Administration's (TGA) rigorous assessment and approval processes. This includes assessment of the vaccine's safety, quality and effectiveness. <p>For more information, visit How COVID-19 vaccines are tested and approved on the Australian Government Department of Health and Aged Care website.</p>



<p>Which COVID-19 vaccines are available in Australia?</p>	<p>See ATAGI 2023 booster advice for details of the rationale behind the updated booster recommendations.</p> <p>For more details on vaccines see: COVID-19 vaccine information.</p> <p>Australia has agreements in place for the supply of the following COVID-19 vaccines²:</p> <ol style="list-style-type: none">1. Pfizer/BioNTech (also known as Comirnaty). This vaccine has been provisionally approved by the Therapeutic Goods Administration (TGA) for people 6 months and older.^{3,4}2. AstraZeneca (also known as Vaxzevria). This vaccine has been provisionally approved by the TGA for people 18 years and older.⁵3. Moderna (also known as Spikevax). This vaccine has been provisionally approved by the TGA for people 6 months and older.^{6,7}4. Novavax (also known as Nuvaxovid). This vaccine has been provisionally approved by the TGA for people aged 12 years and older.⁸ <p>For more information, visit Department of Health and Aged Care, Approved COVID-19 vaccines</p>
<p>What is the difference between the COVID-19 vaccines available in Australia? How does each vaccine work?</p>	<p>Four different COVID-19 vaccines are currently available for use in Australia (the Pfizer, AstraZeneca, Moderna and Novavax vaccines), but many other vaccines are still being tested in clinical trials.</p> <p>There are several different types of COVID-19 vaccines. All COVID-19 vaccines aim to cause an immune response specific to the COVID-19 coronavirus without causing illness. Most of the vaccines use the coronavirus 'spike' protein to cause an immune response.</p> <p>You might hear some of the scientific terms for the different types of vaccines, including "mRNA vaccines", "viral vector vaccines", and "protein-based vaccines".</p> <ul style="list-style-type: none">• Messenger RNA vaccines (or mRNA vaccines) use a genetic code called ribonucleic acid (RNA) to spark the production of the coronavirus' specific spike protein. The Pfizer and Moderna vaccines are mRNA vaccines. The vaccine cannot change your DNA or genes.• Viral vector vaccines use a safe, weakened animal virus which contains the genetic code for a protein unique to



	<p>the coronavirus, usually the spike protein, to prompt an immune response. The AstraZeneca vaccine is a viral vector vaccine.</p> <ul style="list-style-type: none">• Protein-based vaccines use a non-infectious component of the coronavirus, usually the spike protein. (manufactured in a laboratory), to prompt an immune response. The Novavax vaccine is a protein-based vaccine.¹
<p>Which COVID-19 vaccine is suitable for which age group?</p>	<p>Children with health conditions which increase the risk of severe COVID-19, including children undergoing treatment for cancer, are also eligible for COVID-19 vaccination with the Moderna and Pfizer vaccines.</p> <p>The Department of Health and Aged Care have produced resources for children, teens and parents/guardians about COVID-19 vaccination:</p> <ul style="list-style-type: none">• COVID-19 vaccine information for children, teens and parents/guardians• How to speak to kids about COVID-19 vaccines• Pfizer information and consent form for parents and guardians of children aged 5 to 11 years• Moderna information and consent form for parents and guardians of children aged 6 months to 5 years• Pfizer COVID-19 vaccine for children aged 6 months to 4 years – Information for parents and guardians <p>For adults aged under 60 years, the Australian Technical Advisory Group on Immunisation (ATAGI) recommends that the Pfizer, Moderna or Novavax COVID-19 vaccines are preferred over the AstraZeneca vaccine.⁹⁻¹¹</p> <p>The prioritisation of the Pfizer, Moderna or Novavax vaccines for adults aged under 60 years is based on a potentially increased risk of a rare but serious side effect involving thrombosis (clotting) with thrombocytopenia (low blood platelet count) following the AstraZeneca vaccine in those under 60 years.</p> <p>However, people aged between 18-59 years can choose to receive the AstraZeneca vaccine if the person has made an informed decision based on an understanding of the risks and benefits.^{10, 11}</p> <p>People who have had the first dose of the AstraZeneca vaccine without any serious adverse effects can be given the second dose, including adults under 60 years.¹⁰</p>



	<p>The Pfizer or Moderna vaccines are also the recommended COVID-19 vaccines for pregnant women.¹¹</p> <p>For adults aged 60 years and older, the individual benefits of receiving a COVID-19 vaccine are greater than in younger people. The risks of severe outcomes of COVID-19 infection increase with age and are particularly high in older unvaccinated people. ATAGI continues to advise that the benefit of vaccination with the AstraZeneca vaccine in preventing COVID-19 outweighs the risk of thrombosis (clotting) with thrombocytopenia (low blood platelet count) in this age group.^{9, 10}</p> <p>For more information, visit the following information on the Australian Government Department of Health and Aged Care website:</p> <ul style="list-style-type: none"> • Where you can get vaccinated • About the AstraZeneca COVID-19 vaccine
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Getting the COVID-19 vaccines – for people with cancer	
FAQ	Answer
<p>When and where can people affected by cancer receive their COVID-19 vaccine?</p>	<p>All people in Australia aged 5 years or older are eligible to receive a COVID-19 vaccine.</p> <p>Children aged 6 months to < 5 yrs with health conditions which increase the risk of severe COVID-19, including children undergoing treatment for cancer, are also eligible for COVID-19 vaccination.</p> <p>For people affected by cancer, decisions about when and where to receive the COVID-19 vaccine may be made on an individual basis by the person affected by cancer, in consultation with their healthcare team.</p> <p>For more information about where the COVID-19 vaccines will be available, visit:</p> <ul style="list-style-type: none"> • The Australian Government's COVID-19 Vaccine Clinic Finder • ATAGI recommendations on COVID-19 vaccine use in children aged 6 months to <5 years



	<ul style="list-style-type: none">• Where you can get vaccinated on the Australian Government Department of Health and Aged Care website
Who will give (administer) the COVID-19 vaccines to people with cancer?	<p>The decision about who will give people with cancer their COVID-19 vaccine may be made on an individual basis, together with their healthcare team.</p> <p>Only qualified healthcare professionals can administer the COVID-19 vaccines. Additionally, every healthcare professional who administers the COVID-19 vaccines must complete compulsory COVID-19 vaccination training which covers the handling and administration of COVID-19 vaccines.¹²</p> <p>For more information about the training required in order to administer the COVID-19 vaccines, visit COVID-19 vaccination training program on the Australian Government Department of Health and Aged Care website.</p>
How many doses of the COVID-19 vaccine should people with cancer receive (including booster doses)?	<p>To receive the best protection against serious illness from COVID-19, you should be vaccinated against COVID-19.</p> <p>Most people aged 5 years or older in Australia are recommended to have 2 “primary” doses of the COVID-19 vaccines available in Australia.¹¹</p> <p>The Australian Technical Advice Group on Immunisation (ATAGI) has recently recommended an early 2023 COVID-19 vaccine booster dose for adults in the following groups, if their last COVID-19 vaccine dose or confirmed infection was 6 months or longer:</p> <ul style="list-style-type: none">• All adults can get a booster if it's been 6 months or longer since their last COVID-19 booster or confirmed infection (whichever is most recent) for additional protection against severe illness from COVID, regardless of how many vaccine doses they have previously received.<ul style="list-style-type: none">○ This is particularly recommended for people at higher risk of severe illness, including:<ul style="list-style-type: none">▪ everyone 65 years and over▪ everyone 18 years and over with medical comorbidities, disability or complex health needs, including cancer.• Children and adolescents aged 5 to 17 with health conditions, including cancer, that put them at risk of severe illness can also get a booster dose if it's been 6 months since their last dose or COVID-19 infection, based on an individual risk assessment with their immunisation provider.



	<ul style="list-style-type: none">• An early 2023 booster dose is not recommended at this time for children and adolescents aged 18 years or under who do not have any risk factors for severe COVID-19.• For more information visit ATAGI COVID-19 booster vaccine advice. <p>Vaccination schedule for severely immunocompromised people*</p> <p>For severely immunocompromised people, including many patients with cancer, ATAGI recommends:</p> <ul style="list-style-type: none">• Children aged 6 months to 17 years old receive three primary COVID-19 vaccine doses• Children and adolescents aged 5 to 17 with health conditions that put them at risk of severe illness can also get a booster dose if it's been 6 months since their last dose or COVID-19 infection, based on an individual risk assessment with their immunisation provider.• A booster dose is particularly recommended for all adults aged 18 years and over with medical comorbidities, disability or complex health needs, including cancer. <p>'Primary doses' refer to the initial course of a vaccine which helps protect against COVID-19. 'Booster doses' are additional doses that helps strengthen the immune response against COVID-19 as the primary doses wane over time.</p> <p>The 3rd primary dose for immunocompromised people is intended to address the risk of a suboptimal response or non-response to the standard 2 dose schedule.¹⁵</p> <p>These additional doses are expected to improve protection against symptomatic infection and serious illness from COVID-19.¹¹</p> <p><i>* These recommendations for severely immunocompromised people apply to people with certain conditions, including cancer, or on treatments leading to severe immunocompromise. This includes the following:</i></p> <ul style="list-style-type: none">• <i>People with active blood cancer (haematological malignancy)</i>
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	<ul style="list-style-type: none"> • People with non-haematological malignancy with current active treatment (e.g., chemotherapy, whole body irradiation) • Haematopoietic stem cell transplant (HSCT) recipients or chimeric antigen receptor T-cell (CAR-T) therapy within 2 years of transplantation. • People on immunosuppressive therapies. <p>ATAGI notes that clinicians may use their judgement about treatments which may cause immunosuppression which are not specified in their advice.</p> <p>Protection from COVID-19 vaccination in severely immunocompromised people may still be lower than the general population.¹⁵ Even after receiving the vaccine, it is still important for people affected by cancer, and their close contacts, to continue taking other protective measures against COVID-19, such as wearing a mask, and maintaining physical distancing.</p> <p>For more information, visit:</p> <ul style="list-style-type: none"> • The Australian Government's Who can get vaccinated advice • The Australian Government's COVID-19 booster vaccine advice¹³ • ATAGI recommendations on COVID-19 vaccine use in children aged 6 months to <5 years • ATAGI COVID-19 vaccination – Shared decision making guide for people with immunocompromise¹¹ • ATAGI recommended COVID-19 doses and vaccines
<p>What is the difference between a primary dose and booster dose of a COVID-19 vaccine?</p>	<p>“Primary doses” refers to the initial course of a vaccine, which is intended to provide very good protection against COVID-19. The primary course of the COVID-19 vaccines available in Australia consists of 2 primary doses for most people, or 3 primary doses for severely immunocompromised people. The 3rd primary dose for immunocompromised people is intended to address the risk of a suboptimal response or non-response to the standard 2 dose schedule.¹⁵</p> <p>Immunity against COVID-19 can wane over time after receiving the primary course of a COVID-19 vaccine. “Booster doses” of a COVID-19 vaccine are recommended for certain population</p>



	<p>groups to strengthen immune response to COVID-19 after the primary dose starts to wane.</p> <p>For an overview of which vaccines and doses are recommended for each age and population group, visit:</p> <ul style="list-style-type: none">• The Australian Government's COVID-19 booster vaccine advice• This infographic: ATAGI recommended COVID-19 doses and vaccines
<p>Why is it important for people with cancer and their carers to receive the vaccine?</p>	<p>People who have been diagnosed with cancer and are undergoing cancer treatments can have weaker immune systems. People with compromised immune systems either from the cancer itself or as a side effect of cancer treatments, may be at increased risk of contracting COVID-19 and increased risk of more severe infection. Additionally, people who are immunocompromised can have prolonged COVID-19 infection, which can increase the risk of viral evolution during infection and the risk of development of viral variants.¹⁵⁻¹⁷</p> <p>In most cases, COVID-19 infection resolves within weeks of symptoms developing; however, some people may experience lingering symptoms that last for months, known as "long COVID-19".¹⁸ Emerging evidence from a study currently being conducted in the UK shows that up to 15% of cancer patients who had been infected with COVID-19 experienced lingering symptoms, including respiratory symptoms, chronic fatigue, and cognitive or psychological dysfunction, which could impact on their cancer outcomes.¹⁹</p> <p>Most people with COVID-19 recover completely within a few weeks of their first symptoms. However, some people may experience longer-term effects from their infection. Learn about long COVID and where you can get help for your ongoing symptoms visit: https://www.health.gov.au/health-alerts/covid-19/testing-positive/long-covid</p> <p>Vaccination can help protect you from having severe illness and needing to go to hospital as a result of getting COVID-19.</p> <p>For more information:</p> <ul style="list-style-type: none">• ATAGI COVID-19 vaccination – Shared decision-making guide for people with immunocompromise Long COVID on the Department of Health and Aged Care
<p>Why is it important for people with cancer to receive the full course</p>	<p>It is important for all people to get the recommended dosage of the COVID-19 vaccine they are offered. However, this may be particularly important for people with cancer.</p>



<p>of the COVID-19 vaccine?</p>	<p>Results from studies of the COVID-19 vaccines in adults found that cancer patients had lower levels of protection from the SARS-CoV-2 virus (the virus that causes COVID-19) following the first dose of the vaccine, compared to people without cancer. However, when cancer patients received their second dose 3 weeks after the first dose, protection against the SARS-CoV-2 virus improved significantly.^{20, 21, 22, 23}</p> <p>When people who have lower COVID-19 protection come into contact with the virus, they are more vulnerable to COVID-19 and also risk spreading the virus to their close contacts, such as family and carers. Additionally, people who are immunocompromised can have prolonged COVID-19 infection, which can increase the risk of viral evolution during infection and the risk of development of viral variants.¹⁵⁻¹⁷</p> <p>Even after receiving the vaccine, it is still important for people affected by cancer in Australia, and their close contacts, to continue taking other protective measures against COVID-19, including wearing a mask, and maintaining physical distancing.</p>
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Safety and effectiveness	
FAQ	Answer
<p>Were people with cancer included in the initial clinical trials for the COVID-19 vaccines?</p>	<p>People with cancer were not included in the initial clinical trials for the COVID-19 vaccines. This is because clinical trials typically need to see whether the vaccines will work in people with healthy immune systems. However, data on the safety and effectiveness of the COVID-19 vaccines for people affected by cancer is being collected from studies and vaccination programs in Australia and internationally. Cancer Australia is monitoring these data and regularly updates these FAQs as new information and evidence emerges.</p>
<p>Is it safe for people with cancer or people who have a weaker immune system (are immunocompromised) to get the COVID-19 vaccines?</p>	<p>Cancer organisations internationally currently recommend COVID-19 vaccination for people with cancer and those with a weaker immune system (this is also known as being immunocompromised).²⁴⁻²⁶ This is because:</p> <ul style="list-style-type: none"> • People with cancer are more vulnerable to contracting COVID-19 and are at an increased risk of more severe infection.^{24, 27-35} • Similar evidence from use of other vaccines suggests that COVID-19 vaccines may be safe and effective for people with cancer.^{24, 36-38}



Information is being collected from COVID-19 vaccination programs internationally, and so far, there have been no reports of any significant safety issues specific to people with cancer receiving the COVID-19 vaccines in other countries. This will continue to be monitored.

In Australia, AusVaxSafety has been actively monitoring the short-term side effects of COVID-19 vaccines through post-vaccination surveys sent to vaccine recipients, including people with cancer. AusVaxSafety has developed information outlining the short-term side effects for each cancer population group, including a comparison to the general population. To view this information, visit [AusVaxSafety COVID-19 vaccines](#).

The decision about whether to receive a COVID-19 vaccine should be made on an individual basis by the person affected by cancer, in consultation with their healthcare team.

For more information, visit the following information on the Australian Government Department of Health and Aged Care website:

- [ATAGI COVID-19 vaccination – Shared decision making guide for people with immunocompromise](#)
- [Clinical recommendations for COVID-19 vaccines](#)

** With regard to safety concerns about the AstraZeneca vaccine: ATAGI has recommended some people not be vaccinated with the AstraZeneca vaccine. This includes:*

- *People who have had an allergic reaction to a previous dose or to any component of the AstraZeneca vaccine*
- *People who have a history of capillary leak syndrome*
- *People who have had blood-clotting with low blood platelet count (thrombosis with thrombocytopenia (TTS)) or any other serious side effect after a previous dose of the AstraZeneca vaccine*
- *People with a history of any of the following specific blood conditions:*
 - *cerebral venous sinus thrombosis (CVST)*
 - *heparin-induced thrombocytopenia (HIT)*
 - *idiopathic splanchnic (mesenteric, portal and splenic) venous thrombosis*
 - *anti-phospholipid syndrome with thrombosis.*



	<p>For more information, visit Vaxzevria (AstraZeneca) – Use in particular groups.</p>
<p>Do the COVID-19 vaccines work for people affected by cancer (are they effective)?</p>	<p>Emerging evidence from international studies suggests the COVID-19 vaccines have similar effectiveness and safety in people with cancer compared to people without cancer.^{23, 39, 40}</p> <p>However, the immune response to vaccination may be reduced in people who are immunocompromised, which may result in lower vaccine effectiveness and protection compared to people who are not immunocompromised.¹¹ This is why a 3rd primary dose of COVID-19 vaccine is recommended in severely immunocompromised people aged 6 months or older.¹⁵</p> <p>Results from studies of the COVID-19 vaccines found that cancer patients had lower levels of protection from the SARS-CoV-2 virus (the virus that causes COVID-19) following the first dose of the vaccine, compared to people without cancer. However, when cancer patients received their second dose 3 weeks after the first dose, protection against the SARS-CoV-2 virus improved significantly.^{20, 21, 22, 23}</p> <p>Even after receiving the vaccine, it is important for people affected by cancer (especially those who are immunocompromised) and any close contacts, to continue taking other protective measures against COVID-19, including wearing a mask and maintaining physical distancing.</p>
<p>What factors should a person affected by cancer consider when deciding about when to get the COVID-19 vaccine?</p>	<p>For people with cancer, the decision about when to receive a COVID-19 vaccine should be made on an individual basis by the person affected by cancer in consultation with their healthcare team. Factors to consider include:</p> <ul style="list-style-type: none">• The type of cancer the person has/had• The type of treatment they are receiving/received• The timing of their treatment• The type(s) of vaccine(s) available• How their immune system is working.⁴¹ <p>For example, some cancer treatments (like chemotherapy, radiation therapy, or immunotherapy) can affect the immune system, which might make the vaccine less effective in some people.⁴¹</p> <p>For more information, visit the ATAGI COVID-19 vaccination – Shared decision making guide for people with immunocompromise.</p>



Risks and side effects	
FAQ	Answer
If I have allergies, should I avoid any of the COVID-19 vaccines?	<p>People who have had an allergic reaction or a severe allergic reaction (anaphylaxis) to any ingredients contained in the COVID-19 vaccines should avoid the specific COVID-19 vaccine(s) that contain those ingredients. Talk to your healthcare team if you have had an allergic reaction or anaphylaxis to any medication (including chemotherapy) in the past.</p> <p>The ingredients for each of the COVID-19 vaccines can be found in the 'Product details' section of their 'Consumer Medicines Information' leaflet, available on the TGA website:</p> <ul style="list-style-type: none">• Click here for the Cominarty [Pfizer] Consumer Medicines Information leaflet• Click here for the Vaxzevria [AstraZeneca] Consumer Medicines Information leaflet.• Click here for the Spikevax [Moderna] Consumer Medicines Information leaflet.• Click here for the Nuvaxovid [Novavax] Consumer Medicines Information leaflet. <p>Allergies that may be particularly relevant to people affected by cancer include allergies to polysorbate 80, which is one of the ingredients in the AstraZeneca vaccine, and polyethylene glycol (PEG) which is one of the ingredients in the Pfizer vaccine. These ingredients are also used in cancer treatments, such as chemotherapy medications, docetaxel and paclitaxel. If you have had an allergic reaction or anaphylaxis in response to polysorbate 80 or PEG, speak to your health professional or seek expert advice on COVID-19 vaccination before being vaccinated.⁴²⁻⁴⁴</p>
What are the side effects of the COVID-19 vaccines for people affected by cancer?	<p>Currently, there is no evidence to suggest that people affected by cancer will experience significantly different or worse side effects to the COVID-19 vaccines.</p> <p>In general, common side effects from the COVID-19 vaccines are similar to those of other vaccines, including:</p> <ul style="list-style-type: none">• Pain, redness and/or swelling where you received the needle



	<ul style="list-style-type: none">• Muscle pain/aches• Mild fever• Headache• Tiredness.⁴⁵ <p>These side effects are usually mild and usually go away within one or two days.</p> <p>AusVaxSafety</p> <p>AusVaxSafety is an active vaccine safety surveillance system led by the National Centre for Immunisation Research and Surveillance (NCIRS) that monitors the safety of vaccines in Australia.</p> <p>AusVaxSafety has been actively monitoring the short-term side effect profile of COVID-19 vaccines used in Australia through post-vaccination safety surveys sent to vaccine recipients. These surveys also allow people to report pre-existing medical conditions, allowing AusVaxSafety to capture COVID-19 vaccine safety data for people affected by cancer.</p> <p>AusVaxSafety captures COVID-19 vaccine safety data for the following cancer population groups:</p> <ul style="list-style-type: none">• People with cancer (not including blood or bone marrow cancer) diagnosed in the last 12 months• People with blood cancer (e.g. leukaemia, lymphoma, or myelodysplastic syndrome) diagnosed within the last 5 years• Organ transplant recipients on immune suppressive therapy or bone marrow transplant recipients in the last 2 years <p>AusVaxSafety has analysed the data collected from people who reported these pre-existing conditions and has developed information outlining the short-term side effect profile for each cancer population group, including a comparison to the general population. This information provide individuals affected by cancer with real-world information on the prevalence of potential side-effects following COVID-19 vaccination.</p> <p>To view the information sheets, visit AusVaxSafety COVID-19 vaccines.</p> <p>Thrombosis (clotting) and the AstraZeneca vaccine</p>
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	<p>On 8 April 2021, the Australian Technical Advisory Group on Immunisation (ATAGI) issued a statement on the AstraZeneca vaccine in response to new vaccine safety concerns.⁹</p> <p>ATAGI noted further evidence of a rare but serious side effect involving thrombosis (clotting) with thrombocytopenia (low blood platelet count) after receiving the AstraZeneca vaccine.</p> <p>ATAGI recommends that the Pfizer, Moderna, or Novavax vaccines are preferred over AstraZeneca vaccine in adults aged under 60 years. This recommendation is based on the increasing risk of severe outcomes from COVID-19 in older adults (and hence a higher benefit from vaccination) and a potentially increased risk of thrombosis with thrombocytopenia following the AstraZeneca vaccine in those under 60 years. However, people aged between 18-59 years can choose to receive the AstraZeneca vaccine if the person has made an informed decision based on an understanding of the risks and benefits.^{10, 11}</p> <p>People who have had the first dose of the AstraZeneca vaccine without any serious adverse effects can be given the second dose, including adults under 60 years.</p> <p>The Pfizer, Moderna or Novavax vaccines are also the recommended COVID-19 vaccines for pregnant women.¹¹</p> <p>For more information, visit the following information on the Australian Government Department of Health and Aged Care website:</p> <ul style="list-style-type: none">• ATAGI statement on revised recommendations on the use of COVID-19 Vaccine AstraZeneca, 17 June 2021• After your COVID-19 vaccination• COVID-19 Vaccine Side Effect Checker <p>The Therapeutic Goods Administration (TGA) is monitoring the ongoing safety of the COVID-19 vaccines, and this webpage will be updated as new information emerges.</p>
<p>What do I do if I have a side effect (adverse event) after receiving the COVID-19 vaccine?</p>	<p>Serious reactions to the COVID-19 vaccines are extremely rare.</p> <p>All people who receive the COVID-19 vaccine should wait at least 15 minutes before leaving the vaccination clinic in case a serious reaction occurs. If you have a history of anaphylaxis (a severe allergic reaction) to anything, you should wait at least 30 minutes before leaving.</p> <p>If you experience a side effect (adverse event) after receiving the vaccine, you should contact a member of your treating</p>



	<p>healthcare team or call the National Coronavirus Helpline on 1800 020 080, available 24 hours a day.</p> <p>Adverse events should be reported to the Therapeutic Goods Administration (TGA). This helps the TGA monitor the ongoing safety of the vaccine, and if any safety risks become evident, the TGA can inform the community and health providers as soon as possible. Adverse events can be reported to the TGA by you or a health professional, and can be done via an online form, by email, or by phone.</p> <p>For more information, visit Report a problem or side effect on the TGA website.</p>
<p>Are there any potential risks for people who have, or are at risk of, lymphoedema (swelling)?</p>	<p>Lymphoedema is swelling of a part of the body and can be a side effect of cancer treatment. Within the areas of the body affected by lymphoedema, the immune cells which fight infection may not work as well. Vaccination into these areas may therefore result in a weaker immune response and less protection from COVID-19. Damage to the skin within an area of lymphoedema can also act as an entry site for infection, so careful skin care and protection is advisable for areas of swelling. As a precaution the COVID-19 vaccine should be given in the untreated limb if possible.^{46, 47}</p>
<p>Are there any potential risks relating to people with bleeding disorders and people who are taking blood thinners?</p>	<p>People with bleeding disorders, those receiving antiplatelet or anticoagulant therapy (blood thinners) and those with low platelet counts may have an increased risk of bleeding or significant bruising at the site where the COVID-19 vaccine was given,⁴⁸ which can be painful for the person. Talk to your health professional if you are concerned about any medication you are taking, before being vaccinated.</p>

Impacts and interactions	
FAQ	Answer
<p>Will the COVID-19 vaccines affect or</p>	<p>Currently, there is limited information available from COVID-19 vaccines clinical trials about whether the COVID-19 vaccines will</p>



<p>interact with my cancer treatment(s)?</p>	<p>affect or interact with cancer treatments. This is because the initial clinical trials for the COVID-19 vaccines did not include people with cancer.</p> <p>Recommendations vary and there are a number of factors to consider for every individual, including:</p> <ul style="list-style-type: none">• The type of cancer you have/had• The type of treatment you are receiving/received• The timing of the treatment you are receiving/received• The type(s) of vaccine(s) available• How your immune system is working. <p>There are some theoretical risks of immune-related side effects for COVID-19 vaccination for people receiving immunotherapy, including checkpoint inhibitors such as pembrolizumab, nivolumab and ipilimumab. However, evidence of studies of COVID-19 vaccination in people receiving immunotherapy supports the safety of COVID-19 vaccination of patients on immunotherapy. This is supported by multiple national and international cancer organisations who recommend vaccination of patients on immunotherapy.^{25, 43, 49}</p> <p>Optimal responses to the vaccine are more likely more than 3-6 months after stem cell transplant or CAR-T therapy.⁵⁰</p> <p>If you are having treatment for cancer, speak to your healthcare team about the best timing for you based on your own situation.</p> <p>Some organisations have provided recommendations for health professionals about the timing of the COVID-19 vaccines and cancer treatments.⁴³ These are located at COVID-19 vaccines and cancer – health professional guidance on the Cancer Australia's website.</p>
<p>Does the COVID-19 vaccine impact screening and diagnostic mammograms?</p>	<p>There have been some reports internationally about people who have received a COVID-19 vaccine having lymph node swelling which is being mistaken for possible breast cancer. This swelling occurs in the lymph glands in the underarm area and is known as lymphadenopathy. Lymphadenopathy is an immune system response to an infection or a vaccine. However, as lymphadenopathy is also a symptom of breast cancer, this may lead to a false positive mammogram result; that is, that the mammogram may look abnormal even though there is no cancer actually present.</p>



	<p>The Royal Australian and New Zealand College of Radiologists (RANZCR) does not recommend delays to COVID-19 vaccination nor any breast imaging (screening mammogram or diagnostic imaging for breast cancer symptoms).⁵¹ However, women having a mammogram should tell their healthcare professional if they have been recently vaccinated.</p> <p>For more information:</p> <ul style="list-style-type: none"> • The Royal Australian and New Zealand College of Radiologists' Statement on Vaccine Induced Adenopathy
<p>Can people with cancer get the COVID-19 vaccine at the same time as the influenza (flu) vaccine or other vaccines?</p>	<p>COVID-19 vaccines can be co-administered with a flu vaccine (i.e. both vaccines can be given on the same day).¹¹</p> <p>COVID-19 vaccines can also be co-administered with other vaccines, if required; however, there is limited evidence on the co-administration of COVID-19 vaccines with other vaccines, and there is a potential for an increase in mild to moderate side effects when more than one vaccine is given at the same time.¹¹</p> <p>For more information, visit the Australian Government's COVID-19 booster vaccine advice</p> <p>For more information, visit ATAGI statement on recommendations on a winter booster dose of COVID-19 vaccine.</p>

Collecting information about the use of the COVID-19 vaccines in people affected by cancer

FAQ	Answer
<p>Is any data being collected about the safety and effectiveness of the COVID-19 vaccines for people affected by cancer?</p>	<p>Data about the use of the COVID-19 vaccines can help us better understand the safety and effectiveness of the COVID-19 vaccines for people affected by cancer.</p> <p>SerOzNET</p> <p>Cancer Australia has established an important clinical study to better understand the safety and efficacy of the COVID-19 vaccines in people with cancer, including in people with solid tumours and blood (haematological) malignancies. Monash Health, Victoria have been engaged to develop and implement an Australian clinical trial based on the US National Cancer Institute (NCI) Serological Sciences Network for COVID-19 (SeroNet) framework, which uses innovative technology to examine the safety and efficacy of COVID-19 vaccines in cancer patients. The study (ACTRN12621001004853) has been</p>



	<p>called SerOzNET to highlight the unique Australian population it will study.</p> <p>The study is recruiting people with cancer aged 5 years and older across six sites, including:</p> <ul style="list-style-type: none">• Monash Health, VIC• Monash Children's Hospital, VIC• Kids Cancer Centre, Randwick, NSW• Cancer Centre for Children, Westmead, NSW• St Vincent's Hospital, Darlinghurst, NSW• Royal Perth Hospital, WA <p>The study is now also monitoring eligible patients following their third primary dose and booster doses (for those eligible) of a COVID-19 vaccine.</p> <p>Rapid implementation of this study has provided information to the Australian cancer community about the safety and efficacy of the COVID-19 vaccines in people with cancer.</p> <p>For more information about the SerOzNET study, visit www.canceraustralia.gov.au/SerOzNET-Study.</p> <p>Cancer Australia is also monitoring data on the safety and effectiveness of the COVID-19 vaccines for people affected by cancer from international vaccination programs, and we will provide more information here as it becomes available.</p>
Is any data being collected about the side effects of the COVID-19 vaccines for people affected by cancer in Australia?	<p>Data about the use of the COVID-19 vaccines can help us better understand the side effects of the COVID-19 vaccines for people affected by cancer.</p> <p>AusVaxSafety</p> <p>AusVaxSafety has been actively monitoring the short-term side effect profile of COVID-19 vaccines used in Australia through post-vaccination safety surveys sent to vaccine recipients, including people with cancer. AusVaxSafety has published information outlining the short-term side effect profile for each cancer population group, including a comparison to the general population. To view the information sheets, visit AusVaxSafety COVID-19 vaccines.</p>
Is any data being collected about COVID-19 vaccination rates for people	<p>Data about the use of the COVID-19 vaccines can help us better understand the COVID-19 vaccination rates for people affected by cancer.</p>



<p>affected by cancer in Australia?</p>	<p>45 and Up COVID Insights rapid online survey results – COVID-19 vaccination rate in people with cancer</p> <p>Cancer Australia is delighted to have had the opportunity to include questions about cancer patients and carers in the Sax Institute's recent 45 and Up COVID Insights rapid online survey, to understand more about the COVID-19 vaccine experiences in Australian cancer patients and their carers. 45 and Up COVID Insights is funded through a NSW Health COVID-19 Research Grant.</p> <p>The 45 and Up Study is Australia's largest ongoing study of health and ageing, following over 250,000 participants in NSW aged 45 and over since 2006. The 45 and Up COVID Insights is a series of rapid online surveys of a subgroup of 32,117 participants in the 45 and Up Study. The series of five surveys commenced in November 2020 and continues until early 2022 exploring the health and social impacts of the COVID-19 pandemic. The third survey was completed from 10 June to 1 September 2021, with a total of 27,016 participants.</p> <p>25% of respondents in the survey reported ever having a cancer diagnosis (including skin cancers). Of these, 31% had received cancer treatment in the last 12 months. The main treatment was surgery (61%). Other treatments include radiotherapy (12%), chemotherapy (11%) and immunotherapy (6%).</p> <p>By 1 September 2021, 84% of all respondents in the survey had had at least one dose of the COVID-19 vaccine and 25% were fully vaccinated. In respondents who had ever been diagnosed with cancer, the vaccination rate was slightly higher, with 86% having had at least one dose and 27% being fully vaccinated.</p> <p>For more information about the 45 and Up COVID Insights rapid online survey, visit https://www.saxinstitute.org.au/our-work/45-up-study/research-underway/45-and-up-covid-insights/.</p>
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References

1. Australian Department of Health and Aged Care. How COVID-19 vaccines work Canberra, ACT: Australian Department of Health; 2021 [updated 09 August 2022; cited 2022]



- 25 August]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/about-covid-19-vaccines/how-covid-19-vaccines-work>.
2. Australian Department of Health and Aged Care. Australia's vaccine agreements Canberra, ACT: Australian Department of Health; 2021 [updated 08 July 2022; cited 2022 25 August]. Available from: <https://www.health.gov.au/node/18777/australias-vaccine-agreements>.
3. Therapeutic Goods Administration. TGA provisionally approves Pfizer's COVID-19 vaccine, COMIRNATY (Tozinameran) for use in children aged 6 months to less than 5 years: Australian Government; 2022 [Updated 29 September 2022; cited 11 October 2022]. Available from: <https://www.tga.gov.au/news/media-releases/tga-provisionally-approves-pfizers-covid-19-vaccine-comirnaty-tozinameran-use-children-aged-6-months-less-5-years> .
4. Australian Department of Health and Aged Care. ATAGI recommendations on Pfizer COVID-19 vaccine use in children aged 5 to 11 years 2021 [updated 21 February 2022; cited 2022 21 August]. Available from: <https://www.health.gov.au/resources/publications/atagi-recommendations-on-pfizer-covid-19-vaccine-use-in-children-aged-5-to-11-years>.
5. Therapeutic Goods Administration. COVID-19 Vaccine: AstraZeneca ChAdOx1-S Canberra, ACT:16 February 2021 [updated 5 April 2022; cited 2022 25 August]. Available from: <https://www.tga.gov.au/covid-19-vaccine-astrazeneca-chadox1-s>.
6. Therapeutic Goods Administration. COVID-19 vaccine: Spikevax (elasomeran) Canberra, ACT: Therapeutic Goods Administration.; 04 September 2021 [updated 17 August 2022; cited 2022 25 August 2022]. Available from: <https://www.tga.gov.au/covid-19-vaccine-spikevax-elasomeran>.
7. Australian Department of Health and Aged Care. Spikevax (Moderna) Canberra, ACT: Australian Department of Health; 2022 [updated 08 July 2022; cited 2022 25 August]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/approved-vaccines/moderna>.
8. Therapeutic Goods Administration. TGA provisionally approves Novavax (Biocelect Pty Ltd's) COVID-19 vaccine NUVAXOVID: Australian Government; 2022 [updated 29 January 2022; cited 2022 25 August]. Available from: <https://www.tga.gov.au/media-release/tga-provisionally-approves-novavax-biocelect-pty-ltds-covid-19-vaccine-nuvaxovid>.
9. Australian Department of Health and Aged Care. ATAGI statement on revised recommendations on the use of COVID-19 Vaccine AstraZeneca, 17 June 2021 Canberra, ACT: Australian Department of Health; 17 June 2021 [updated 17 June 2021; cited 2022 25 August]. Available from: <https://www.health.gov.au/news/atagi-statement-on-revised-recommendations-on-the-use-of-covid-19-vaccine-astrazeneca-17-june-2021> .
10. Australian Department of Health and Aged Care. About the AstraZeneca COVID-19 vaccine Canberra, ACT: Australian Department of Health and Aged Care; 2022 [updated 8 July 2022; cited 2022 25 August]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/learn-about-covid-19-vaccines/about-the-astrazeneca-covid-19-vaccine>.
11. Australian Technical Advisory Group on Immunisation (ATAGI). Clinical recommendations for COVID-19 vaccines Canberra, ACT: ATAGI; 2021 [updated 12 July 2022; cited 2022 25 August]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/advice-for-providers/clinical-guidance/clinical-recommendations#booster-dose-recommendations->.
12. Australian Department of Health and Aged Care. Mobilising Australia's COVID-19 vaccine workforce Canberra, ACT: Australian Department of Health; 21 January 2021 [updated 21 January 2021; cited 2022 25 August]. Available from: <https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/mobilising-australias-covid-19-vaccine-workforce>.
13. Australian Department of Health and Aged Care. COVID-19 booster vaccine advice: Australian Department of Health; 2022 [updated 09 August 2022; cited 2022 25 August 2022]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/getting-your-vaccination/booster-doses>.
14. Australian Department of Health and Aged Care. ATAGI recommendations on first booster dose in adolescents aged 12-15 years Canberra, ACT: Australian Department of



Health; 2022 [updated 9 June 2022; cited 2022 25 August]. Available from:

<https://www.health.gov.au/news/atagi-recommendations-on-first-booster-dose-in-adolescents-aged-12-15-years>.

15. Australian Department of Health and Aged Care. ATAGI recommendations on the use of a third primary dose of COVID-19 vaccine in individuals who are severely immunocompromised Canberra, ACT: Australian Department of Health; 08 October 2021 [updated 12 July 2022; cited 2022 25 August]. Available from:

<https://www.health.gov.au/resources/publications/atagi-recommendations-on-the-use-of-a-third-primary-dose-of-covid-19-vaccine-in-individuals-who-are-severely-immunocompromised>.

16. Aydillo T, Gonzalez-Reiche AS, Aslam S, van de Guchte A, Khan Z, Obla A, et al. Shedding of Viable SARS-CoV-2 after Immunosuppressive Therapy for Cancer. *N Engl J Med*. 2020;383(26):2586-8.

17. Choi B, Choudhary MC, Regan J, Sparks JA, Padera RF, Qiu X, et al. Persistence and Evolution of SARS-CoV-2 in an Immunocompromised Host. *N Engl J Med*. 2020;383(23):2291-3.

18. National Health Service. Long-term effects of coronavirus (long COVID) 2021 [updated 9 August 2022; cited 2022 25 August]. Available from:

<https://www.nhs.uk/conditions/coronavirus-covid-19/long-term-effects-of-coronavirus-long-covid/>.

19. Cortellini A, Roldán E, Garcia MCC, Berardi R, Sánchez A, Martínez C, et al. 1560O_PR - Prevalence and impact of COVID-19 sequelae on treatment pathways and survival of cancer patients who recovered from SARS-CoV-2 infection. *Annals of oncology : official journal of the European Society for Medical Oncology*. 21 September 2021;32(Suppl_5):S1129-S63.

20. Monin L, Laing AG, Muñoz-Ruiz M, McKenzie DR, del Molino del Barrio I, Alaguthurai T, et al. 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*. 2021.

21. Agha M, Blake M, Chilleo C, Wells A, Haidar G. Suboptimal response to COVID-19 mRNA vaccines in hematologic malignancies patients. *medRxiv*. 2021:2021.04.06.21254949.

22. Palich R, Veyri M, Marot S, Vozy A, Gligorov J, Maingon P, et al. Weak immunogenicity after a single dose of SARS-CoV-2 mRNA vaccine in treated cancer patients. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2021:S0923-7534(21)01184-4.

23. Waldhorn I, Ben-Aharon I, Holland R, Peer A, Halberthal M, Lago TGG-. 1559O Efficacy and toxicity of BNT162b2 vaccine in cancer patients. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2021;32(suppl_5):S1129-S63.

24. European Society for Medical Oncology. COVID-19 vaccination in cancer patients: ESMO statements Lugano: European Society for Medical Oncology; 2020 [cited 2021 04 Febuary]. Available from: <https://www.esmo.org/covid-19-and-cancer/covid-19-vaccination>.

25. National Comprehensive Cancer Network. NCCN COVID-19 Vaccination Guide for People with Cancer USA: National Comprehensive Cancer Network; 10 June 2021 [updated 5 May 2022; cited 2022 25 August]. Available from: https://www.nccn.org/docs/default-source/covid-19/covid-vaccine-and-cancer-05.pdf?sfvrsn=45cc3047_2.

26. Thirumalairaj R, Parikh PM, Agarwal A, Singh R, Krishnamurthy A, Desai SS, et al. South Asian Declaration-Consensus Guidelines for COVID-19 Vaccination in Cancer Patients. *South Asian journal of cancer*. 2021;10(1):3-8.

27. Liang W, Guan W, Chen R, Wang W, Li J, Xu K, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *The Lancet Oncology*. 2020;21(3):335-7.

28. Yang F, Shi S, Zhu J, Shi J, Dai K, Chen X. Clinical characteristics and outcomes of cancer patients with COVID-19. *Journal of medical virology*. 2020;92(10):2067-73.

29. Zhang L, Zhu F, Xie L, Wang C, Wang J, Chen R, et al. Clinical characteristics of COVID-19-infected cancer patients: a retrospective case study in three hospitals within Wuhan, China. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2020;31(7):894-901.



30. Dai M, Liu D, Liu M, Zhou F, Li G, Chen Z, et al. Patients with Cancer Appear More Vulnerable to SARS-CoV-2: A Multicenter Study during the COVID-19 Outbreak. *Cancer discovery*. 2020;10(6):783-91.
31. Lai AG, Pasea L, Banerjee A, Denaxas S, Katsoulis M, Chang WH, et al. Estimating excess mortality in people with cancer and multimorbidity in the COVID-19 emergency. *medRxiv*. 2020:2020.05.27.20083287.
32. Moujaess E, Kourie HR, Ghosn M. Cancer patients and research during COVID-19 pandemic: A systematic review of current evidence. *Crit Rev Oncol Hematol*. 2020;150:102972-.
33. Wang Q, Berger NA, Xu R. Analyses of Risk, Racial Disparity, and Outcomes Among US Patients With Cancer and COVID-19 Infection. *JAMA oncology*. 2021;7(2):220-7.
34. R  thrich MM, Giessen-Jung C, Borgmann S, Classen AY, Dolff S, Gr  ner B, et al. COVID-19 in cancer patients: clinical characteristics and outcome-an analysis of the LEOSS registry. *Annals of hematology*. 2021;100(2):383-93.
35. Venkatesulu BP, Chandrasekar VT, Girdhar P, Advani P, Sharma A, Elumalai T, et al. A systematic review and meta-analysis of cancer patients affected by a novel coronavirus. *medRxiv*. 2020:2020.05.27.20115303.
36. Cordonnier C, Einarsdottir S, Cesaro S, Di Blasi R, Mikulska M, Rieger C, et al. Vaccination of haemopoietic stem cell transplant recipients: guidelines of the 2017 European Conference on Infections in Leukaemia (ECIL 7). *The Lancet Infectious diseases*. 2019;19(6):e200-e12.
37. Mikulska M, Cesaro S, de Lavallade H, Di Blasi R, Einarsdottir S, Gallo G, et al. Vaccination of patients with haematological malignancies who did not have transplantations: guidelines from the 2017 European Conference on Infections in Leukaemia (ECIL 7). *The Lancet Infectious diseases*. 2019;19(6):e188-e99.
38. Rieger CT, Liss B, Mellingerhoff S, Buchheidt D, Cornely OA, Egerer G, et al. Anti-infective vaccination strategies in patients with hematologic malignancies or solid tumors-Guideline of the Infectious Diseases Working Party (AGIHO) of the German Society for Hematology and Medical Oncology (DGHO). *Annals of oncology : official journal of the European Society for Medical Oncology*. 2018;29(6):1354-65.
39. Thomas SJ, Perez JL, Lockhart SP, Hariharan S, Kitchin N, Bailey R, et al. 1558O COVID-19 vaccine in participants (ptcpts) with cancer: Subgroup analysis of efficacy/safety from a global phase III randomized trial of the BNT162b2 (tozinameran) mRNA vaccine. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2021;32(suppl_5):S1129-S63.
40. Oosting S, A.A.M. VdV, GeurtsvanKessel CH, Fehrmann RSN, Binnendijk Rsv, Dingemans AC, et al. LBA8 Vaccination against SARS-CoV-2 in patients receiving chemotherapy, immunotherapy, or chemo-immunotherapy for solid tumors. *Annals of oncology : official journal of the European Society for Medical Oncology*. 2021;32(suppl_5):S1283-S346.
41. American Cancer Society. COVID-19 Vaccines in People with Cancer: American Cancer Society; 2021 [updated 29 July 2022; cited 2022 25 August]. Available from: <https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/infections/covid-19-vaccines-in-people-with-cancer.html>.
42. COVID-19 Vaccine AstraZeneca (ChAdOx1-S) solution for injection multidose vial Macquarie Park, NSW: AstraZeneca Pty Ltd; 2021 [cited 2021 Feb 23]. Available from: https://tga-search.clients.funnelback.com/s/search.html?collection=tga-artq&profile=record&meta_i=349072.
43. Medical Oncology Group of Australia. COVID-19 vaccination in patients with solid tumours: Medical Oncology Group of Australia Position Statement: Medical Oncology Group of Australia; 2021 [updated 29 July 2022; cited 2022 25 August]. Available from: <https://www.moga.org.au/all-position-statements/covid-19-vaccination-in-patients-with-solid-tumours>.
44. Australasian Society of Clinical Immunology and Allergy (ASCIA). Allergy, Immunodeficiency, Autoimmunity and COVID-19 Vaccination Position Statement: ASCIA; 20



September 2021 [cited 2022 25 August 2022]. Available from:

<https://www.allergy.org.au/hp/papers/ascia-hp-position-statement-covid-19-vaccination>.

45. Australian Department of Health and Aged Care. What happens after I am vaccinated for COVID-19? Canberra, ACT: Australian Department of Health; 2021 [updated 9 August 2022; cited 2022 25 August]. Available from: <https://www.health.gov.au/initiatives-and-programs/covid-19-vaccines/getting-vaccinated-for-covid-19/what-happens-after-i-am-vaccinated-for-covid-19>.

46. British Lymphology Society and The Lymphoedema Support Network. Consensus document on COVID-19 vaccination for patients with lymphoedema: British Lymphology Society and The Lymphoedema Support Network; 2021 [updated 25 May 2021; cited 2022 25 August]. Available from: <https://www.thebls.com/documents-library/consensus-document-on-covid-19-vaccination-for-patients-with-lymphoedema>.

47. Cancer Australia. Lymphoedema - what you need to know. Surry Hills, NSW; 2012.

48. Haematology Society of Australia and New Zealand. COVID-19 Vaccination in Haematology Patients: An Australia and New Zealand Consensus Position Statement: Haematology Society of Australia and New Zealand; 2021 [updated 2 February 2021; cited 2022 25 August]. Available from: <https://www.hsanz.org.au/news/10054698>.

49. UK Chemotherapy Board. Clinician Frequently Asked Questions (FAQs) and guidance on COVID19 vaccine for patients receiving Systemic Anti-Cancer Therapy: UK Chemotherapy Board; 2020 [updated 31 December 2020; cited 2022 25 August]. Available from:

https://4bd2316d-e45d-4e90-96b5-431f1c12dd3e.filesusr.com/ugd/638ee8_bc24796daf974cfa830a432248401191.pdf.

50. Hamad N, Ananda-Rajah M, Gilroy N, MacIntyre R, Gottlieb D, Ritchie D, et al. Australia and New Zealand Transplant and Cellular Therapies COVID-19 vaccination consensus position statement. *Int Med J*. 2021;51(8):1321-3.

51. The Royal Australian and New Zealand College of Radiologists. The Royal Australian and New Zealand College of Radiologists' Statement on Vaccine Induced Adenopathy: The Royal Australian and New Zealand College of Radiologists; 2021 March [updated 9 June 2021; cited 2022 25 August]. Available from: <https://www.ranzcr.com/documents-download/professional-documents/position-papers/5272-position-statement-on-covid-vaccines-and-breast-screening>.