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

Updated 1 April 2022

People affected by cancer have many questions about the COVID-19 vaccines, including questions about:

- Vaccines in general, as well as the COVID-19 vaccines in particular
- When and where people affected by cancer can receive the COVID-19 vaccines
- Whether the COVID-19 vaccines are safe and whether they work for people affected by cancer (safety and effectiveness)
- Risks and side effects of the COVID-19 vaccines for people affected by cancer
- Whether a person's cancer care or other health care (such as flu vaccination) will be affected by the COVID-19 vaccine
- How we will collect information about the use of the COVID-19 vaccines in people with 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 recommendations of the Australian Technical Advisory Group on Immunisation (ATAGI), and currently available national and international published evidence.

This information 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.

This webpage is regularly updated as new information and evidence emerges.

What's new?

- The COVID-19 vaccines are now available to all people in Australia aged 5 years or older.
- For most people in Australia, the COVID-19 vaccination schedule involves 2 "primary" doses for people aged 5 years or older, plus a booster dose for people aged 16 years or older 3 months after they have completed their primary course of a COVID-19 vaccine.
- For people aged 5 years or older who are severely immunocompromised, ATAGI recommends a 3rd primary dose of a COVID-19 vaccine to address the risk of a suboptimal response or non-response to the standard 2-dose primary vaccine schedule.
- For selected population groups who are at greatest risk of severe illness from COVID-19 (including people aged 16 years and older who are severely immunocompromised, adults aged 65 years or older; residents of aged care or disability care facilities; and Aboriginal and Torres Strait Islander people aged 50

years and older), ATAGI recommends an additional (2nd) booster dose known as the "winter booster dose" 4 months after the 1st booster dose.
- This means that for people who are severely immunocompromised, 3 primary doses are recommended for those aged 5 years and older, and 2 booster doses (5 doses total) are recommended for those aged 16 years or older.

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?	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. 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.
What is a COVID-19 vaccine? How does it work?	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. 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. 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.
How are the COVID-19 vaccines tested for safety before they are approved for use in Australia?	Australia has strict requirements for the testing and approval of vaccines. Before a COVID-19 vaccine is approved for use in Australia, it must: • 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. For more information, visit How COVID-19 vaccines are tested and approved on the Australian Government Department of Health website.

Which COVID-19 vaccines are available in Australia?	Australia has agreements in place for the supply of the following COVID-19 vaccines[2]: 1. Pfizer/BioNTech (also known as Comirnaty). This vaccine has been provisionally approved by the Therapeutic Goods Administration (TGA) for people 5 years and older.[3, 4,5] The paediatric vaccine dose of Pfizer for children aged 5-11 years is one third of the dose for people aged 12 years and older.[6] 2. University of Oxford/AstraZeneca (also known as Vaxzevria). This vaccine has been provisionally approved by the TGA for people 18 years and older.[7] 3. Moderna (also known as Spikevax). This vaccine has been provisionally approved by the TGA for people 6 years and older.[8, 9] The paediatric vaccine dose of Moderna for children aged 6-11 years is half of the dose used for the primary course for people aged 12 years and older.[9] 4. Novavax (also known as Nuvaxovid). This vaccine has been provisionally approved by the TGA for people aged 18 years and older.[10]
What is the difference between the COVID-19 vaccines available in Australia? How does each vaccine work?	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. 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. You might hear some of the scientific terms for the different types of vaccines, including "mRNA vaccines", "viral vector vaccines", and "protein-based vaccines". • 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 the coronavirus, usually the spike protein, to prompt an

	immune response. The AstraZeneca vaccine is a viral vector vaccine. • 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]
Which COVID-19 vaccine is suitable for which age group?	Currently, the Pfizer vaccine is available for all people aged 5 years and older, the Moderna vaccine is available for all people aged 6 years and older, and the AstraZeneca and Novavax vaccines are available for all people aged 18 years and older. **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.[11-13] 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. 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.[12, 13] In the context of a COVID-19 outbreak, ATAGI recommends that people under the age of 60 should strongly consider the AstraZeneca COVID-19 vaccine if they are unable to access Pfizer, Moderna or Novavax vaccines.[12-14] 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.[12] The Pfizer or Moderna vaccines are also the recommended COVID-19 vaccines for pregnant women.[13] **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.[11, 12] The Australian Government Department of Health has developed a guide about the benefits and risks of the AstraZeneca vaccine showing the potential benefits and harms associated with the use of the AstraZeneca vaccine by age group. For more information, visit the following information on the Australian Government Department of Health website: • Where you can get vaccinated • About the AstraZeneca COVID-19 vaccine • COVID-19 vaccination – AstraZeneca vaccine – Risk-benefit of vaccination scenarios in an Australian context

Getting the COVID-19 vaccines – for people with cancer	
FAQ	**Answer**
When and where can people affected by cancer receive their COVID-19 vaccine?	**All people in Australia aged 5 years or older are eligible to receive a COVID-19 vaccine now.** 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. Vaccines are available through Commonwealth Vaccination Clinics, participating general practices, Aboriginal Community Controlled Health Services, state and territory-operated vaccination clinics, and community pharmacies. In addition, the Royal Flying Doctor Service is providing vaccinations in some remote communities. For more information about where the COVID-19 vaccines will be available, visit: • The Australian Government's COVID-19 vaccine eligibility checker • ATAGI clinical guidance on COVID-19 Vaccine in Australia in 2021 • Where you can get vaccinated on the Australian Government Department of Health website

	• State and Territory Health Department websites.
Who will give (administer) the COVID-19 vaccines to people with cancer?	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. 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.[15] 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 website.
How many doses of the COVID-19 vaccine should people with cancer receive (including booster doses)?	Most people in Australia require **2 "primary" doses** of the COVID-19 vaccines available in Australia (the Pfizer, AstraZeneca, Moderna and Novavax vaccines).[13] Severely immunocompromised people (including many people with cancer) aged 5 years or older are also recommended to receive a **3rd primary dose** to maximise the level of immune response to as close as possible to the general population.[16] A **booster dose** of the COVID-19 vaccine is also available to everybody in Australia aged 16 years or older .[17, 18] A **2nd booster dose** (known as the "winter booster dose") is also recommended for selected population groups who are at greatest risk of severe illness from COVID-19. Eligible groups for the "winter booster" are: people aged 16 years or older who are severely immunocompromised; adults aged 65 years or older; residents of aged care or disability care facilities; and Aboriginal and Torres Strait Islander people aged 50 years and older.[13] ATAGI is currently not recommending booster doses for people under 16 years of age.[18, 19] **Vaccination schedule for the first 2 primary doses** • The 2 primary doses of the Pfizer vaccine should be given between 3-6 weeks apart for people aged 12 years or older, or 8 weeks apart for children aged 5 to 11 years. Studies show it is particularly important for people with cancer to get a second dose of the vaccine to improve protection against COVID-19.[20,21] • The 2 primary doses of the AstraZeneca vaccine can be safely administered between 4-12 weeks apart. The Australian Technical Advisory Group on Immunisation (ATAGI) recommends 12 weeks between the first and the second dose for maximal vaccine efficacy;

however, in the context of a COVID-19 outbreak setting, an interval of between 4 and 8 weeks is preferred.[14]

- The 2 primary doses of the Moderna vaccine should be given between 4-6 weeks apart for people aged 12 years or older (in special circumstances the interval may be longer). For children aged 6 to 11 years old, the primary doses of the Moderna vaccine should be given 8 weeks apart.[22]
- The 2 primary doses of the Novavax vaccine should be given 3 weeks apart.[23]

Vaccination schedule for the first booster dose

A booster dose of the COVID-19 vaccine is available to everybody in Australia aged 16 years or older, 3 months after completing their primary course of a COVID-19 vaccine.[17, 22]

Vaccination schedule for severely immunocompromised people: 3 primary doses and 2 booster doses

For severely immunocompromised people* aged 5 years or older, ATAGI recommends **3 primary doses** of COVID-19 vaccine to address the risk of a suboptimal response or non-response to the standard 2 dose schedule.[16]

For severely immunocompromised people* aged 16 years or older, ATAGI recommends **2 booster doses (5 doses in total)** with the 2nd booster dose at least 4 months after the 1st booster dose.

These additional doses are expected to improve protection against symptomatic infection and serious illness from COVID-19.[13, 17]

** These recommendations apply to people with certain conditions, including cancer, or on treatments leading to severe immunocompromise. This includes the following:*

- *People with active blood (haematological) cancer.*
- *People with other (non-haematological) cancers, on current active treatment including chemotherapy, whole body irradiation, and biologic and targeted therapies anticipated to reduce the immune response to the COVID-19 vaccine. This does not include people treated only with immunotherapy with immune checkpoint inhibitors.*
- *People who have had a solid organ transplant with immunosuppressive therapy.*

	• *People who have had a stem cell transplant or chimeric antigen receptor T-cell (CAR-T) therapy, within 2 years of transplantation.* *ATAGI notes that clinicians may use their judgement about treatments which may cause immunosuppression which are not specified in their advice.* The Pfizer or Moderna vaccines are the preferred vaccines for the 3rd primary dose and booster doses. The Novavax vaccine can also be used, noting there are limited data on its efficacy in people with immunocompromise. The AstraZeneca vaccine, while not preferred, can be used in some situations.[16] Protection from COVID-19 vaccination in severely immunocompromised people may still be lower than the general population.[16] 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 practising good hygiene, wearing a mask, and maintaining physical distancing. For more information, visit: • ATAGI recommendations on the use of a third primary dose of COVID-19 vaccine in individuals who are severely immunocompromised[16] • The Australian Government's COVID-19 booster vaccine advice[18] • ATAGI Clinical recommendations for COVID-19 vaccines • The Australian Technical Advisory Group on Immunisation's (ATAGI) COVID-19 vaccination decision guide for people with immunocompromise.[13]
Why is it important for people with cancer and their carers to receive the vaccine?	People who have been diagnosed with cancer and are undergoing cancer treatments can have weaker immune systems. People with compromised immune systems as a side effect of cancer treatments, or from the cancer itself, 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.[16, 24, 25] 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".[26] 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.[27] **Vaccination can help protect you from having severe illness and needing to go to hospital as a result of getting COVID-19.** Those living in the same household as a person with cancer, as well as caregivers or other close contacts of a person with cancer, should also get vaccinated. For more information: • The Australian Technical Advisory Group on Immunisation's (ATAGI) COVID-19 vaccination decision guide for people with immunocompromise • NCCN COVID-19 Vaccination Guide for People With Cancer
Why is it important for people with cancer to receive the full course of the COVID-19 vaccine?	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. Results from studies using the Pfizer vaccine 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, 28, 29] 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.[16, 24, 25] 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 practising good hygiene, wearing a mask, and maintaining physical distancing.

Safety and effectiveness	
FAQ	**Answer**
Were people with cancer included in the initial clinical trials for the COVID-19 vaccines?	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.[30] 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 this data and regularly updates these FAQs as new information and evidence emerges.
Is it safe for people with cancer or people who have a weaker immune system (are immunocompromised) to get the COVID-19 vaccines?	Many 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).[31-33] This is because: • People with cancer are more vulnerable to contracting COVID-19 and are at an increased risk of more severe infection.[31, 34-42] • Similar evidence from use of other vaccines suggests that COVID-19 vaccines may be safe and effective for people with cancer.[31, 43-45] Because people with cancer were not included in the initial clinical trials, the evidence about whether the COVID-19 vaccines are safe for people with cancer, or people who are immunocompromised because of cancer or cancer treatments, is limited. However, in principle there are no theoretical additional safety concerns for any of the COVID-19 vaccines available in Australia* in people who are immunocompromised, on the basis of a general understanding of the vaccines.[13] 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 created information sheets outlining the short-term side effects for each cancer population group, including a comparison to the general population. To

	view the information sheets, visit https://ausvaxsafety.org.au/safety-data/covid-19-vaccines.
	
	The Australian Technical Advisory Group on Immunisation (ATAGI) recommend people who are immunocompromised should be among the priority groups to receive the COVID-19 vaccines because of their increased risk of severe illness with COVID-19.[13]
	
	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 website:
	
	• COVID-19 vaccination – AstraZeneca vaccine – Risk-benefit of vaccination scenarios in an Australian context
	
	• The Australian Technical Advisory Group on Immunisation's (ATAGI) COVID-19 vaccination decision guide for people with immunocompromise
	
	** 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.*
	
	For more information, visit Vaxzevria (AstraZeneca) – Use in particular groups.

Do the COVID-19 vaccines work for people affected by cancer (are they effective)?	Emerging evidence from international studies suggests the COVID-19 vaccines have similar effectiveness and safety in people with cancer compared to people without cancer.[29, 46, 47] Although there is limited evidence from the initial clinical trials about whether the COVID-19 vaccines work for people affected by cancer, we do have a lot of *similar* evidence from use of other vaccines that suggests the COVID-19 vaccines may be effective for people affected by cancer: • Evidence from flu vaccinations suggests that people affected by cancer can mount a protective immune response from COVID-19 vaccines (that is, whether their immune system becomes trained to recognise and fight against specific germs). However, the level of immunity may be affected by a range of factors (such as cancer type, therapies, and immune function).[31] • There is evidence from other vaccinations used to prevent infection to support their use for people affected by cancer, even in those undergoing immunosuppressive therapy.[31, 43-45] 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.[13] This is why a 3rd primary dose of COVID-19 vaccine is recommended in severely immunocompromised people.[16] In addition, results from studies using the Pfizer vaccine 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, 28, 29] 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 practising good hygiene and maintaining physical distancing.
What factors should a person affected by cancer consider when deciding about when to get the COVID-19 vaccine?	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: • 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.[30] 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.[30] For more information, visit the Australian Technical Advisory Group on Immunisation's (ATAGI) COVID-19 vaccination decision guide for people with immunocompromise.

Risks and side effects	
FAQ	**Answer**
If I have allergies, should I avoid any of the COVID-19 vaccines?	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. 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: • 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. 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.[48-50]
What are the side effects of the COVID-19 vaccines for people affected by cancer?	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. In general, common side effects from the COVID-19 vaccines are similar to those of other vaccines, including: • Pain, redness and/or swelling where you received the needle • Muscle pain/aches • Mild fever • Headache • Tiredness.[51] These side effects are usually mild and usually go away within one or two days. **AusVaxSafety** 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. 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. AusVaxSafety captures COVID-19 vaccine safety data for the following cancer population groups: • 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

AusVaxSafety has analysed the data collected from people who reported these pre-existing conditions and has created information sheets outlining the short-term side effect profile for each cancer population group, including a comparison to the general population. These information sheets provide individuals affected by cancer with real-world information on the prevalence of potential side-effects following COVID-19 vaccination.

To view the information sheets, visit https://ausvaxsafety.org.au/safety-data/covid-19-vaccines.

Thrombosis (clotting) and the AstraZeneca vaccine

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.[11]

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.

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.[12, 13] In the context of a COVID-19 outbreak where the supply of Pfizer is limited, ATAGI recommends that people under the age of 60 should strongly consider the AstraZeneca COVID-19 vaccine if they are unable to access Pfizer or Moderna vaccines.[12-14]

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.

The Pfizer, Moderna or Novavax vaccines are also the recommended COVID-19 vaccines for pregnant women.[13]

	For more information, visit the following information on the Australian Government Department of Health website: • ATAGI statement on revised recommendations on the use of COVID-19 Vaccine AstraZeneca, 17 June 2021 • COVID-19 vaccination – Weighing up the potential benefits against risk of harm from COVID-19 Vaccine AstraZeneca • What happens after I am vaccinated for COVID-19? • COVID-19 Vaccine Side Effect Checker 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.
What do I do if I have a side effect (adverse event) after receiving the COVID-19 vaccine?	Serious reactions to the COVID-19 vaccines are extremely rare. 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. If you experience a side effect (adverse event) after receiving the vaccine, you should contact a member of your treating healthcare team or call the National Coronavirus Helpline on 1800 020 080, available 24 hours a day. 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. For more information, visit Report a problem or side effect on the TGA website.
Are there any potential risks for people who have, or are at risk of, lymphoedema (swelling)?	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.[52, 53]
Are there any potential risks relating to people with bleeding disorders and people who are taking blood thinners?	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,[54] 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.

Impacts and interactions	
FAQ	**Answer**
Will the COVID-19 vaccines affect or interact with my cancer treatment(s)?	Currently, there is limited information available from COVID-19 vaccines clinical trials about whether the COVID-19 vaccines will affect or interact with cancer treatments. This is because the initial clinical trials for the COVID-19 vaccines did not include people with cancer. Recommendations vary and there are a number of factors to consider for every individual, including: • 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. 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.[32, 49, 55] Optimal responses to the vaccine are more likely more than 3-6 months after stem cell transplant or CAR-T therapy.[56]

	If you are having treatment for cancer, speak to your healthcare team about the best timing for you based on your own situation. Some organisations have provided recommendations for health professionals about the timing of the COVID-19 vaccines and cancer treatments.[49] These are located at COVID-19 vaccines and cancer – health professional guidance on the Cancer Australia's website.
Does the COVID-19 vaccine impact screening and diagnostic mammograms?	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. 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).[57] However, women having a mammogram should tell their healthcare professional if they have been recently vaccinated. For more information: • The Royal Australian and New Zealand College of Radiologists' Statement on Vaccine Induced Adenopathy
Can people with cancer get the COVID-19 vaccine at the same time as the influenza (flu) vaccine or other vaccines?	COVID-19 vaccines can be co-administered with a flu vaccine (i.e. both vaccines can be given on the same day).[13] 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.[13] For more information, visit COVID-19 vaccination – ATAGI clinical guidance COVID-19 vaccine in Australia in 2021

Collecting information about the use of the COVID-19 vaccines in people affected by cancer	
FAQ	**Answer**
Is any data being collected about the safety and effectiveness of the COVID-19 vaccines for people affected by cancer?	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. **SerOzNET** 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 called SerOzNET to highlight the unique population it will study. The study is currently recruiting people with cancer aged 5 years and older across six sites, including: • Monash Health, VIC • Monash Children's Hospital, VIC • Sydney Children's Hospital, Randwick, NSW • The Children's Hospital, Westmead, NSW • St Vincent's Hospital, Darlinghurst, NSW • Royal Perth Hospital, WA The study is now also monitoring eligible patients following their third primary dose of a COVID-19 vaccine. Rapid implementation of this study will allow timely information to be provided to the Australian cancer community about the safety and efficacy of the COVID-19 vaccines in people with cancer. For more information about the SerOzNET study, visit www.canceraustralia.gov.au/SerOzNET-Study. 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.

Is any data being collected about the side effects of the COVID-19 vaccines for people affected by cancer in Australia?	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. **AusVaxSafety** 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 created information sheets 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 https://ausvaxsafety.org.au/safety-data/covid-19-vaccines.
Is any data being collected about COVID-19 vaccination rates for people affected by cancer in Australia?	Data about the use of the COVID-19 vaccines can help us better understand the COVID-19 vaccination rates for people affected by cancer. **45 and Up COVID Insights rapid online survey results – COVID-19 vaccination rate in people with cancer** 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. 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. 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%). 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. 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/.

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