HEALTH CANADA HAS AUTHORIZED THE SALE OF THIS COVID-19 VACCINE UNDER AN INTERIM ORDER[1]

AstraZeneca COVID-19 Vaccine

COVID-19 Vaccine (ChAdOx1-S [recombinant])

INFORMATION FOR CANADIAN HEALTHCARE PROFESSIONALS

ASTRAZENECA COVID-19 VACCINE is indicated for:

Active immunization of individuals 18 years of age and older for the prevention of coronavirus disease 2019 (COVID-19).

The use of ASTRAZENECA COVID-19 VACCINE is permitted under an interim authorization delivered in accordance with section 5 of the COVID-19 Interim order (IO)*. Patients should be advised of the nature of the authorization. The interim authorization is associated with Terms and Conditions that need to be met by the Market Authorization Holder to ascertain the continued quality, safety and efficacy of the product. For further information on authorization under this pathway, please refer to Health Canada's IO Respecting the Importation, Sale and Advertising of Drugs for Use in Relation to COVID-19.

* https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/interim-order-import-sale-advertising-drugs.html

AstraZeneca COVID-19 VACCINE (manufactured by AstraZeneca) and COVISHIELD (manufactured by Serum Institute of India) are ChAdOx1-S recombinant vaccines developed by AstraZeneca and the University of Oxford. Health Canada has reviewed the manufacturing information for these vaccines and found them to be comparable. Individuals can complete the vaccination course with either AstraZeneca COVID-19 Vaccine or COVISHIELD.

REVIEWED BY PAAB

MEMBER OF INNOVATIVE MEDICINES CANADA

VAX2101E

About this guide

- This guide is for Canadian healthcare professionals and covers information about AstraZeneca COVID-19 Vaccine, known as ChAdOx1-S (recombinant) COVID-19 Vaccine, that may be important.
- It does not cover other non-ChAdOx1-S (recombinant) COVID-19 vaccines, COVID-19 treatments or the disease.
- This should be used in conjunction with the Health Canada Product Monograph.[1]
- It does not include national or local guidelines for immunization of COVID-19.

There is a separate guide written for the general public here www.azcovid-19.com, suitable for discussion with your patients. The public guide should be used in conjunction with the Health Canada Patient Medication Information section of the Product Monograph.[1]

Contents

How to use this guide

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Checklist

Before vaccination

- ☐ Indicated for active immunization of individuals **18 years of age and older** for the prevention of COVID-19.
- ☐ **Consult local guidelines** on who is included in local vaccination programs.
- ☐ **Consider the benefits and potential risks** of vaccination for each individual, including:
  - ☐ review of ***Contraindications*** and ***Precautions***
  - ☐ review of ***Benefits and risks***.

Hypersensitivity reactions including anaphylaxis and angioedema have occurred following administration of AstraZeneca COVID-19 Vaccine. Appropriate medical treatment, training for immunizers and supervision after immunization should be readily available in case of anaphylaxis following the administration of the vaccine.

At the time of vaccination

- ☐ **Educate the recipient on key points** relevant to vaccination including:
  - ☐ benefits and risks
  - ☐ possible side effects after vaccination
  - ☐ that the vaccine cannot cause COVID-19
  - ☐ use of acetaminophen or ibuprofen
- ☐ Inspect the vaccine for particulate matter or discolouration prior to administration. The vaccine is colourless to slightly brown, clear to slightly opaque. Discard if the solution is discoloured or visible particles are observed.
- ☐ Administer 0.5 mL (1 dose) injection **intramuscularly**, preferably in the deltoid muscle. See ***Administering the vaccine***.
- ☐ Each vial contains at least the number of doses stated. It is normal for liquid to remain in the vial after withdrawing the final dose. When low dead volume syringes and/or needles are used, the amount remaining in the vial may be sufficient for an additional dose. Care should be taken to ensure a full 0.5 mL dose is administered. Where a full 0.5 mL dose cannot be extracted, the remaining volume should be discarded. Do not pool excess vaccine from multiple vials.

After vaccination

- ☐ Advise the recipient:
  - ☐ to return for their next vaccination in 4 to 12 weeks or as recommended by the clinic
  - ☐ that information is available in the public guide and Patient Medication Information is available at www.azcovid-19.com
  - ☐ to contact a healthcare professional if they have any concerns about side effects
  - ☐ to retain record of vaccine name, batch/lot number and date they receive the vaccine
  - ☐ to report any adverse effects after vaccination
- ☐ Observe the vaccine recipient for at least 15 minutes for possible anaphylaxis.[4]
- ☐ Retain appropriate vaccination records, including vaccine name and batch/lot number.

What the vaccine is

About this vaccine

AstraZeneca COVID-19 Vaccine is a replication-defective chimpanzee adenovirus-vectored vaccine (ChAdOx1 - Chimpanzee Adenovirus Oxford 1) which expresses the gene for the unmodified Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) spike protein.

This vaccine stimulates neutralizing antibody and cellular immune responses, to help protect against COVID-19.[1,13]

Is it a live vaccine?

This vaccine is not a conventional live vaccine and it does not contain live coronavirus. The replication-defective adenovirus is live but it cannot multiply or spread throughout the body.[7,11]

How the vaccine works

After administration, the modified adenovirus (viral vector) binds to the surface of human cells and delivers the genetic code for the coronavirus spike protein to the cell, where it is processed to form the spike protein itself.

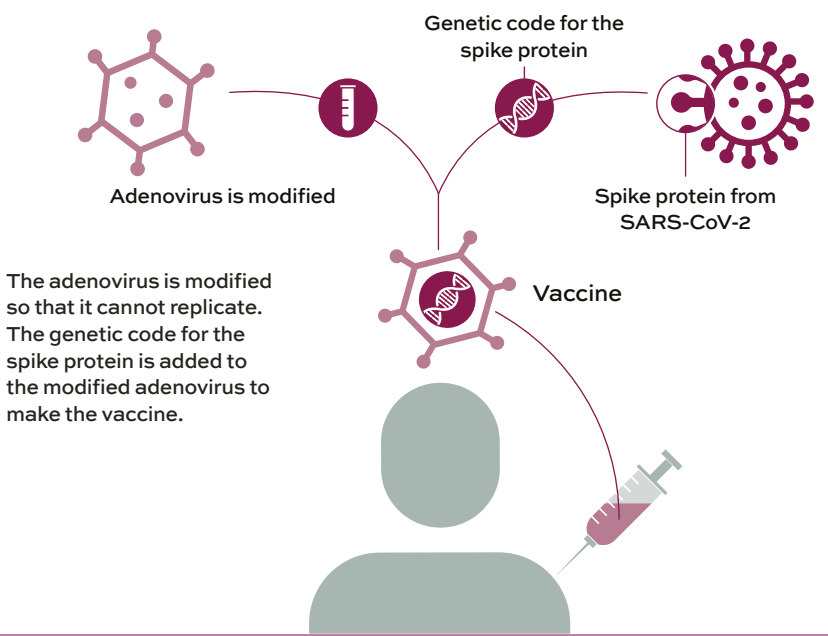
Antibodies and immune cells (T-cells) in the circulation recognize the spike protein which instigates the neutralising antibody and cellular immune responses.

The immune system subsequently forms an immune memory of the coronavirus spike protein, which facilitates quick recognition and rapid immune response in the case of future SARS-CoV-2 coronavirus exposure.[13,14,17]

Click to see more details on:

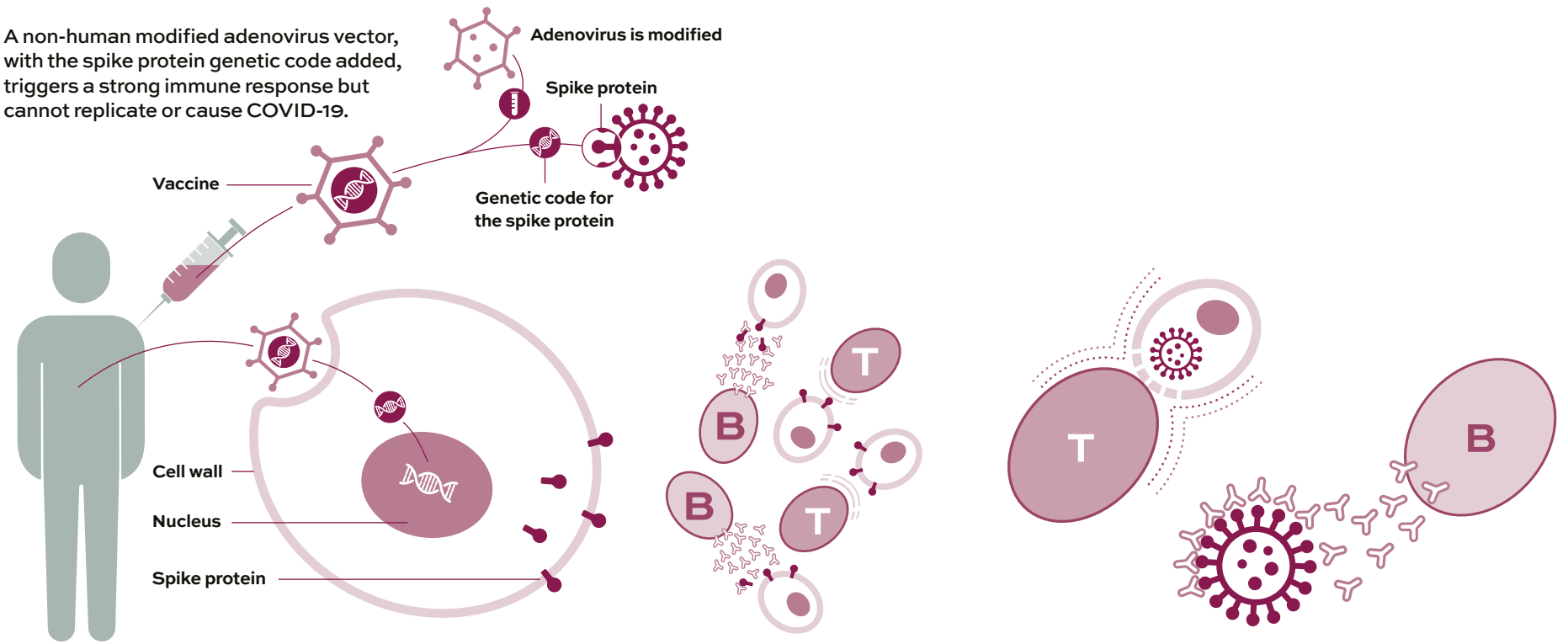
▶ *Vaccine ingredients*

How the vaccine is made



How this vaccine works

A non-human modified adenovirus vector, with the spike protein genetic code added, triggers a strong immune response but cannot replicate or cause COVID-19.



The viral vector enters the body's cells and delivers the genetic code for the spike protein. The human cells then produce the spike protein but there are no changes to the human DNA.

T-cells and B-cells recognize the spike protein and multiply. B-cells start releasing antibodies.

The immune system also produces memory cells. If they spot SARS-CoV-2 in the future, antibodies and T-cells are rapidly produced in response.

T-cells destroy cells infected with the virus. Antibodies bind to the spike proteins, blocking the ability for viruses to enter cells. Together they can help prevent disease.

More details on what the vaccine is

Vaccine ingredients

As in all vaccines, AstraZeneca COVID-19 Vaccine consists of an active ingredient as well as inactive ingredients which facilitate administration by injection. These inactive ingredients also stabilize the product. The vaccine does not contain any preservatives.[1,13]

The **active ingredient** is a genetically modified adenovirus (ChAdOx1) containing spike protein genetic code.[1,13]

The **inactive ingredients** are L-Histidine (an amino acid); L-Histidine hydrochloride monohydrate (an amino acid); magnesium chloride hexahydrate (supports many activities inside cells); polysorbate 80 (a stabiliser); ethanol (alcohol); sucrose (sugar); sodium chloride (salt); disodium edetate dihydrate (EDTA, a binding agent); water for injection.[1]

Latex: There is no latex in the vial or stopper.[9]

Origin of ingredients

- It does not contain milk, lactose, soya, egg, maize/corn starch, peanuts, gluten.[9]
- None of the ingredients are of human or animal origin, however the active ingredient, a genetically modified adenovirus, is grown using cells that are of human origin, called human embryonic kidney cells (HEK293). None of these cells remain at the time the vaccine is administered.[a,3,9]

Two genetic alterations have been made to the adenovirus in order to make the vaccine[3]:

- Genes essential for adenovirus replication have been deleted.
- The coronavirus (SARS-CoV-2) spike protein gene has been added.

These changes allow the vaccine to deliver the spike protein genetic code to the cells without causing COVID-19.

Click to see more details on:

► *Disposal*

Religious beliefs

Information on the ingredients is included in the public guide. Individuals should decide themselves whether their treatment is compliant with their own religious belief systems.

Before vaccination

Indication

AstraZeneca COVID-19 Vaccine is indicated for active immunization of individuals 18 years of age and older for the prevention of coronavirus disease 2019 (COVID-19).[1]

Consult provincial/territorial guidelines on who is included in local vaccination programs.

Contraindications

Do not give the vaccine to anyone with a history of **hypersensitivity** to any of the vaccine ingredients.[1]

See ***What the vaccine is-vaccine ingredients and excipients***.

As with all injectable vaccines, always be prepared in case of anaphylaxis following the administration of the vaccine.

Precautions

Children

The safety and efficacy of AstraZeneca COVID-19 Vaccine in children and adolescents (aged <18 years old) have not yet been established. No data are available.[1]

Pregnancy

The safety and efficacy of AstraZeneca COVID-19 Vaccine in pregnant women have not yet been established.

Use of AstraZeneca COVID-19 Vaccine in pregnant women should be based on an assessment of whether the benefits of vaccination outweigh the potential risks.

There is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to AstraZeneca COVID-19 Vaccine during pregnancy. Women who are vaccinated with AstraZeneca COVID-19 Vaccine during pregnancy are encouraged to enrol in the registry by visiting https://c-viper.pregistry.com or calling 1-800-616-3791.

Breast-feeding

There are no data on the use of AstraZeneca COVID-19 Vaccine in lactating women. It is unknown whether AstraZeneca COVID-19 Vaccine is excreted in human milk. A risk to breast-fed newborns and infants cannot be excluded. Use of AstraZeneca COVID-19 Vaccine in breast-feeding women should be based on an assessment of whether the benefits of vaccination outweigh the potential risks. The developmental and health benefits of breast-feeding should be considered along with the mother's clinical need for immunization against COVID-19.

Fertility

It is unknown whether AstraZeneca COVID-19 Vaccine may impact fertility. No data are available.[1]

Elderly

Currently, there is limited information from clinical trials on the efficacy of AstraZeneca COVID-19 Vaccine in individuals ≥65 years of age. No dose adjustment is required in elderly individuals (65 years or older).[1]

Before vaccination

Precautions (continued)

Medical history

- Use caution when vaccinating anyone with **thrombocytopenia**, any **coagulation disorders** and/or receiving **anticoagulation therapy**. This is because, as with other intramuscular injections, **bleeding or bruising** may occur following administration.[1] For more information about optimizing vaccinations for bleeding disorders, refer to the Canadian Immunization Guide at https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-7-immunization-persons-with-chronic-diseases.html.
- **Immunocompromised persons**, including individuals receiving immunosuppressant therapy, may have a diminished immune response to the vaccine.
- **Fainting** can occur following, or even before, any vaccination as a psychogenic response to a needle injection. Procedures should be in place to prevent injury from fainting and to manage syncopal reactions.

Thrombocytopenia and Coagulation Disorders

- A combination of thrombosis and thrombocytopenia, in some cases accompanied by bleeding, has been observed very rarely following vaccination with AstraZeneca COVID-19 Vaccine. This includes severe cases presenting as venous thrombosis, including unusual sites such as cerebral venous sinus thrombosis, mesenteric vein thrombosis, as well as arterial thrombosis, concomitant with thrombocytopenia. The majority of these cases occurred within the first seven to fourteen days following vaccination. Some cases had a fatal outcome.
- Healthcare professionals should be alert to the signs and symptoms of thromboembolism and or thrombocytopenia. Those vaccinated should be instructed to seek immediate medical attention if they develop symptoms such as shortness of breath, chest pain, leg swelling, persistent abdominal pain following vaccination. Additionally, anyone with neurological symptoms including severe or persistent headaches or blurred vision after vaccination, or who experiences skin bruising (petechia) beyond the site of vaccination after a few days, should seek prompt medical attention.

Concurrent illness

- Screen for COVID-19 symptoms prior to vaccination.[1] Vaccination should be deferred in symptomatic individuals with confirmed or suspected SARS-CoV-2 infection, or those with respiratory symptoms, in order to avoid attributing any complications resulting from infection with SARS-CoV-2 to vaccine-related AEFI and to minimize the risk of COVID-19 transmission at an immunization clinic/venue (National Advisory Committee on Immunization, NACI).
- Postpone vaccination in individuals suffering from an acute severe febrile illness or acute infection. However the presence of a minor infection and/or low-grade fever should not delay vaccination.
- Clients with symptoms that could be COVID-19 should be advised to contact their health care provider before going out for a vaccination.

Important! Consider the potential ***benefits and risks*** of vaccination with AstraZeneca COVID-19 Vaccine for each individual.

More details on before vaccination

Administration with other vaccines

- The safety, efficacy and immunogenicity (strength of immune response) of co-administration of AstraZeneca COVID-19 Vaccine with other vaccines have not been evaluated.[1]
- In the clinical trials, other vaccines were not permitted during the 30 days before or after administration of AstraZeneca COVID-19 Vaccine.[14,15]
- Further studies are planned to evaluate use with other vaccines.

Administration with other medicines

- Drug interaction studies have not yet been conducted.[1]
- Refer to ***Precautions*** for guidance on medical history.[1]

Vaccine interchangeability

- There are no safety, immunogenicity or efficacy data to support interchangeability of AstraZeneca COVID-19 Vaccine with other non-ChAdOx1-S (recombinant) COVID-19 vaccines.[1]

Duration and level of protection

The duration of protection has not yet been established.[1]

As with any vaccine, vaccination with AstraZeneca COVID-19 Vaccine may not protect all vaccine recipients. Individuals may not be optimally protected until after receiving the second dose of the vaccine.[1]

Vaccination of individuals with previous COVID-19 infection

Subjects with previous COVID-19 infection can be vaccinated with AstraZeneca COVID-19 Vaccine.

Administering the vaccine

Before administration

- Consider the benefits and potential risks of vaccination with AstraZeneca COVID-19 Vaccine for each individual.[1]
  – see ***Before vaccination***.
- When a recipient is due the second dose, ensure the first dose was with either AstraZeneca COVID-19 Vaccine or COVISHIELD and that there were no adverse events with the first dose that would preclude re-vaccination.[1]
- Individuals should complete the vaccination course with either AstraZeneca COVID-19 Vaccine or COVISHIELD.[1]

Do not give the vaccine to anyone with **hypersensitivity** to any of the vaccine ingredients or a previous dose of the vaccine
– see ***Vaccine ingredients and excipients***.

At administration

- Ensure appropriate medical supervision and treatment is available and observe the vaccine recipient for at least 15 minutes in case of anaphylaxis following the administration of the vaccine. A second dose of the vaccine should not be given to those who have experienced a hypersensitivity reaction to the first dose of AstraZeneca COVID-19 Vaccine.[1]
- Educate the vaccine recipient on key points in the Health Canada Patient Medication Information section of the Product Monograph and Public Guide related to vaccination with AstraZeneca COVID-19 Vaccine, including[1]:
  - ☐ benefits of vaccination
  - ☐ risks, including injection site reactions and other vaccine related adverse reactions (including signs, symptoms and duration of effects)
  - ☐ possible side effects after vaccination
  - ☐ the vaccine cannot cause COVID-19
  - ☐ when to call a doctor or seek medical attention immediately
  - ☐ when they need to come back for their next vaccination
- Inspect the vaccine for particulate matter or discolouration. It is a colourless to slightly brown, clear to slightly opaque solution. Discard if the solution is discoloured or visible particles are observed.[1]
- Withdraw 0.5 mL into a syringe. Choice of needle length/gauge must be made by each healthcare professional based on individual patient needs.[1]

- Use a separate sterile needle and syringe for each recipient.[1]
  – Multidose vials contain 8 or 10 vaccine doses. *Not all pack sizes may be marketed*. See ***Multidose vials***.[1]
  – It is presumed that some liquid may remain in the vial after withdrawing the final dose. This will not be enough for a full dose and should be discarded.[1]
- Administer the vaccine by **intramuscular** (IM) injection, preferably into the deltoid muscle.[1]

Administering the vaccine

Administer two injections, between 4 and 12 weeks apart or as recommended by the local clinic

2 doses administered **4-12 weeks apart**

Advise the recipient to[1]:

- return between 4 and 12 weeks or as recommended by the clinic after the first dose
- complete the full 2-dose treatment with either AstraZeneca COVID-19 Vaccine or COVISHIELD.

Click to see more details on:

- ▶ *Vaccine ingredients*
- ▶ *Multidose vials*
- ▶ *Storage and stability details*
- ▶ *Shelf life*
- ▶ *What to do if a vial has been shaken*
- ▶ *Disposal*
- ▶ *Vaccine interchangeability*

After administration

Monitor vaccine recipients for anaphylactic reaction for **at least 15 min** or as directed by local guidelines.

- Manage any unused vaccine as per storage guidance (see ***Storage and stability details***).[1]
- Advise vaccine recipients[1]:
  - ☐ to retain records of vaccine name, vaccination dates and batch/lot number. These will be needed if they report an adverse event
  - ☐ to contact you or another healthcare provider if they have any health concerns they think may be related to the vaccine
  - ☐ to seek medical attention as soon as possible if symptoms or signs of an allergic reaction develop
  - ☐ to return for their next vaccination in 4 to 12 weeks' time or as recommended by the local clinic
  - ☐ that there is further information available to them (Public Guide and Health Canada Patient Medication Information section of the Product Monograph).
- Retain appropriate vaccination records, including vaccine name, date of vaccination and batch/lot number.[1]

Click to see more details on:

- ▶ *COVID-19 restrictions following vaccination*
- ▶ *COVID-19 tests following vaccination*
- ▶ *Reporting side effects*

More details on administering the vaccine

COVID-19 restrictions following vaccination

Advise vaccine recipients to continue to follow local public health/government guidance to reduce transmission of COVID-19, such as mask wearing, handwashing and social distancing. Vaccines do not protect everyone vaccinated and may not prevent transmission.

COVID-19 tests after vaccination

Polymerase Chain Reaction (PCR) tests

The vaccine will not lead to a positive PCR test for COVID-19. The vaccine does not contain live coronavirus or the part of the virus the PCR test looks for.[6]

Antibody tests

The antibodies produced following vaccination may affect the result of a COVID-19 antibody test, but only if the test looks for antibodies against the spike protein of the coronavirus.

Reporting side effects

Reporting suspected side effects is important. It allows continued monitoring of the benefit and risk balance of the medicine.

- Side effects can be reported at:

Reporting Suspected Side Effects for Vaccines

For the general public: Should you experience a side effect following immunization, please report it to your healthcare professional.

Should you require information related to the management of the side effect, please contact your healthcare professional. The Public Health Agency of Canada, Health Canada and AstraZeneca Canada Inc. cannot provide medical advice.

For healthcare professionals: If a patient experiences a side effect following immunization, please complete the Adverse Events Following Immunization (AEFI) Form appropriate for your province/territory (https://www.canada.ca/en/public-health/services/immunization/reporting-adverse-events-following-immunization/form.html) and send it to your local Health Unit.

- When reporting side effects, provide as much information as possible about the event including vaccine administration and timing of onset of symptoms including:
  - ☐ recipient's medical history
  - ☐ any other medicines they are taking
  - ☐ date and batch/lot number of vaccination(s).

Multidose vials

- AstraZeneca COVID-19 Vaccine multidose vials come in two sizes (not all pack sizes may be marketed)[1]:
  - 10 doses (5 mL vial)
  - 8 doses (4 mL vial).

More details on administering the vaccine

Storage and stability details[1]

- The vaccine does not contain any preservative.
- Unopened (unpunctured) multidose vial
  - Store in a refrigerator (2 to 8°C) until expiration date.
  - Do not freeze.
  - Store in outer carton in order to protect from light.
- Opened multidose vial
  After first opening, chemical and physical in-use stability has been demonstrated from the time of vial puncture to administration for no more than:
  - 6 hours at room temperature (up to 30°C).
  - 48 hours in a refrigerator (2 to 8°C).

  The vial can be re-refrigerated, but the cumulative storage time at room temperature must not exceed 6 hours, and the total cumulative storage time must not exceed 48 hours after first puncture.

AstraZeneca COVID-19 Vaccine is not provided in pre-filled syringes. There are no available data on storing AstraZeneca COVID-19 Vaccine in syringes filled in advance.

Shelf life

- Unopened multidose vials of AstraZeneca COVID-19 Vaccine should be stored until the expiration date.[1]

What to do if a vial has been shaken

- The vial does not need to be shaken but can still be used if it has been shaken.

Disposal[1]

- AstraZeneca COVID-19 Vaccine contains genetically modified organisms. Any unused vaccine or waste material should be disposed of in accordance with local requirements.
- Spills should be disinfected with an appropriate antiviral disinfectant.

Benefits and risks

Background to benefit analysis[1]

- The overall efficacy of AstraZeneca COVID-19 Vaccine is based on an interim analysis of pooled data from two randomized blinded clinical trials in the UK and Brazil.
- This analysis was conducted with 11,636 participants (active and control) who were followed up for a median of 9 weeks after the second dose.
- Participants were excluded if they previously had COVID-19, were pregnant, had severe and/or uncontrolled cardiovascular, gastrointestinal, liver, renal, endocrine/metabolic disease, and neurological illnesses; as were those with severe immunosuppression.
- Participants are planned to be followed for at least 12 months, for assessments of safety and efficacy against COVID-19 disease.
- 2,070 (35.6%) participants who received AstraZeneca COVID-19 Vaccine had at least one pre-existing comorbidity, including:
  - BMI ≥30 kg/m^2
  - cardiovascular disorder
  - respiratory disease
  - diabetes

Overall benefits[1]

Refer to the Health Canada Product Monograph for a detailed description of clinical trial results.

Duration and level of protection[1]

The duration of protection has not yet been established. Further studies are planned to evaluate the duration of protection.

As with any vaccine, vaccination with AstraZeneca COVID-19 Vaccine may not protect all vaccine recipients. Individuals may not be optimally protected until after receiving the second dose of the vaccine.

Click to see more details on:

- ▶ *Vaccine development and authorization*
- ▶ *Scientific publications for AstraZeneca COVID-19 Vaccine*
- ▶ *Reporting side effects*

Benefits and risks

Refer to the Health Canada Product Monograph for a detailed description of the benefits and risks.

Background to safety analysis[1]

- The safety profile of AstraZeneca COVID-19 Vaccine is based on an interim analysis of pooled data from four clinical trials conducted in the United Kingdom, Brazil and South Africa.
- At the time of analysis, 23,745 participants ≥18 years of age had been randomized and received either AstraZeneca COVID-19 Vaccine or control. Out of these, 12,021 received at least one dose of AstraZeneca COVID-19 Vaccine.
- The majority of participants were white (75.5%), black (10.1%) or Asian (3.5%).

Gender and age of study participants[1]

		%
Gender	Male	44.2
	Female	55.8
Age	18 to 64 years	90.3
	65 years of age and older	9.7

Side effects[1]

- In the reactogenicity subset of patients receiving the AstraZeneca COVID-19 Vaccine (n=1,736), the most frequently reported adverse reactions were injection site tenderness (75.3%), injection site pain (54.2%), fatigue (62.3%), headache (57.5%), myalgia (48.6%), malaise (44.2%), pyrexia (33.6%), chills (31.9%), arthralgia (27.0%), and nausea (21.9%).
- Following vaccination, recipients may experience multiple adverse reactions occurring at the same time (e.g., myalgia/arthralgia, headache, chills, pyrexia and malaise).
- When compared with the first dose, adverse reactions reported after the second dose were generally milder and reported less frequently.
- Adverse reactions were generally milder and reported less frequently in older adults (≥65 years old).

Vaccine development and authorization

Clinical trials

Adenovirus-vectored vaccines, similar to AstraZeneca COVID-19 Vaccine but targeted for other diseases, have been developed and tested in thousands of people.[13]

Extensive clinical trials to test the AstraZeneca COVID-19 Vaccine have been conducted. The vaccine has undergone the phase I, II and III clinical trials that are expected of all new vaccines. So far, over 55,000 people have taken part in clinical trials, in countries including the USA, UK, Brazil, South Africa, India, Kenya and Japan. Trials include a broad range of ages and co-morbidities, and diverse racial, ethnic and geographic groups.[2,14,15,16]

Clinical trials are continuing to evaluate long term effects and additional studies are planned.[a,15,16] See ***Planned and ongoing clinical trials*** for more detail.

Accelerated product development

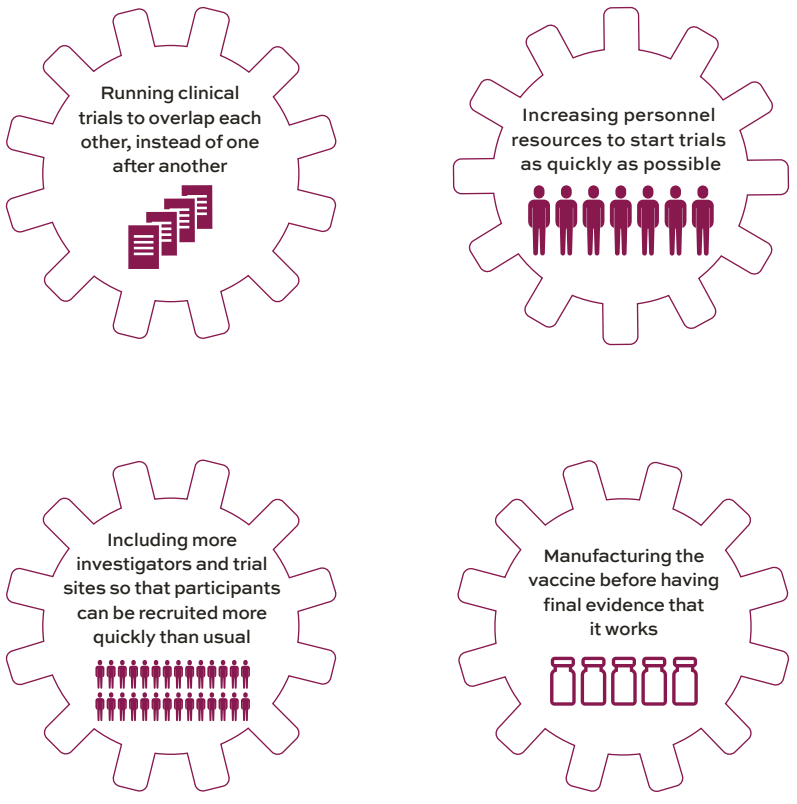
Patient safety is of paramount importance. Although the development of this vaccine has been accelerated, it has not been rushed.

Timelines have been accelerated by:

- running clinical trials to overlap each other, instead of one after another
- increasing personnel resources to start trials as quickly as possible
- including more investigators and trial sites so that participants can be recruited more quickly than usual
- manufacturing the vaccine before having final evidence that it works.

Vaccine development and authorization

How the development of AstraZeneca COVID-19 Vaccine has been accelerated



Regulatory review and authorization

Health Canada has been conducting a 'rolling review' of the AstraZeneca COVID-19 Vaccine as the data became available, rather than waiting for everything to be finished and submitted at the end.

Health Canada has clear and stringent efficacy and safety standards for the authorization of any new medicine.

During a public health emergency, Health Canada can allow the use of medicines and new vaccines more quickly than usual, when there is no alternative available. In this way, AstraZeneca COVID-19 Vaccine has been granted Health Canada authorization with terms and conditions. Read more on how the authorization mechanism process works below.

Summary of authorization mechanism in Canada

AstraZeneca COVID-19 Vaccine was authorized for use in relation to the COVID-19 pandemic, in accordance with the Interim Order Respecting the Importation, Sale and Advertising of Drugs for Use in Relation to COVID-19. Terms and conditions were imposed upon the authorization with respect to quality, clinical, labelling, and Risk Management Plan requirements. For more information, refer to the Authorization Terms and Conditions for AstraZeneca COVID-19 Vaccine.

Click to see more details on:

- ▶ *Planned and ongoing clinical trials*
- ▶ *Scientific publications for AstraZeneca COVID-19 Vaccine*

Planned and ongoing clinical trials

Further clinical studies are planned to evaluate long-term effectiveness and safety, as well as effectiveness in the wider population, including use in groups such as pregnant women, children and people who are immunocompromised.

References and further information

Scientific publications for AstraZeneca COVID-19 Vaccine

Phase I and II studies, and phase III interim analysis, are published:

a) Folegatti PM, Ewer KJ, Aley PK et al. Safety and immunogenicity of the ChAdOx1 nCoV-19 vaccine against SARS-CoV-2: a preliminary report of a phase 1/2, single-blind, randomised controlled trial. *Lancet* 2020; 396: 467-78.

b) Ramasamy MN, Minassian AM, Ewer KJ. Safety and immunogenicity of ChAdOx1 nCoV-19 vaccine administered in a prime-boost regimen in young and old adults (COV002): a single-blind, randomised, controlled, phase 2/3 trial. *Lancet* 2020; 396: 1979-93.

c) Voysey M, Costa Clemens SA, Madhi SA et al. Safety and efficacy of the ChAdOx1 nCoV-19 vaccine (AZD1222) against SARS-CoV-2: an interim analysis of four randomised controlled trials in Brazil, South Africa, and the UK. *Lancet* 2020; Dec 8. Online ahead of print.

d) Ewer KJ, Barrett JR, Belij-Rammerstorfer S et al. T cell and antibody responses induced by a single dose of ChAdOX nCoV-19 (AZD1222) vaccine in a phase 1/2 clinical trial. Nat Med. 2020 Dec 17. doi:10.1038/s41591-020-01194-5. Online ahead of print.

e) Barrett JR, Belij-Rammerstorfer S, Dold C, et al. Phase 1/2 trial of SARSCoV-2 vaccine ChAdOx1 nCoV-19 with a booster dose induces multifunctional antibody responses. Nat Med. 2020 Dec 17. doi: 10.1038/s41591-020-01179-4. Online ahead of print.

Contact AstraZeneca Medical Information for more information on these publications: 1-800-668-6000.

For more information, see

- Product Monograph[1]
- Patient Medication Information section of the Product Monograph[1]
- Public guide available at www.azcovid-19.com[18]

References and further information

Other references

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