

Ministry of Health

Administration of AstraZeneca COVID-19 Vaccine/COVISHIELD Vaccine

Version 3.0 May 25, 2021

Highlights of changes

- Updated Considerations for Administration section to reflect changes to Ontario's use of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine (Pages 4-5)
- Link to NACI for vaccine effectiveness data (Page 5)
- New section on Contraindications, Warnings & Precautions (Pages 5-6)
- Clarified sources of Polyethylene Glycol (Page 6)
- Updated information on Side Effects including details on rare cases of serious thrombosis (blood clots) and thrombocytopenia (low platelets) (Pages 8-11)
- Updated guidance on AEFI reporting (Pages 11-12)
- Link to Public Health Ontario resource on the Management of Anaphylaxis Following Immunization in the Community (Page 11)
- Updated Point of Care guidance for second doses, with link to the COVID-19 Vaccine Information for Individuals that received a first dose of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine document (Page 12)

This guidance provides basic information only. This document is not intended to provide or take the place of medical advice, diagnosis or treatment or legal advice.

In the event of any conflict between this guidance document and any applicable emergency orders, or directives issued by the Minister of Health, Minister of Long-Term Care, or the Chief Medical Officer of Health (CMOH), the order or directive prevails.

- Please check the Ministry of Health (MOH) [COVID-19 website](#) regularly for updates to this document.

What is COVID-19?

COVID-19 is a novel coronavirus disease 2019 that is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Anyone can be infected with SARS-CoV-2 (COVID-19). However, some populations are at increased risk of exposure to the virus (e.g., due to living or work settings), and some populations are at increased risk of severe disease and death due to biological (e.g., advanced age, pre-existing medical conditions) and social (e.g., socioeconomic status, belonging to a racialized population) factors.

The AstraZeneca COVID-19 vaccine (manufactured by AstraZeneca) and COVISHIELD vaccine (manufactured by Verity Pharmaceuticals and the Serum Institute of India (SSI)) are COVID-19 ChAdOx1-S recombinant, non-replicating viral vector vaccines developed by AstraZeneca and Oxford University. Additional information about the AstraZeneca COVID-19 vaccine can be found in the [product monograph](#). Additional information about the COVISHIELD vaccine can be found in the [product monograph](#).

General Clinic Precautions

All staff working in the clinic must take appropriate infection prevention and control measures, including donning appropriate personal protective equipment (PPE) when interacting with clients as they move through the immunization clinic and when responding to any adverse events following immunization (AEFI).

The Vaccine

AstraZeneca COVID-19 Vaccine/COVISHIELD vaccine (ChAdOx1-S [recombinant])	
Type of vaccine	Non-replicating viral vector (Chimpanzee adenovirus (ChAd))
Date of authorization in Canada	February 26, 2021
Authorized ages for use	Health Canada has authorized this product for 18 years of age and older. The safety and efficacy in children under 18 years of age has not yet been established.
Dose	5 x 10 ¹⁰ viral particles per 0.5 mL

Schedule	2 doses	
	Minimum Interval ¹	28 days
	Authorized Interval ²	4 to 12 weeks
	Recommended Interval ³	<p>4 months*[^]^ε</p> <p>To increase the number of individuals benefiting from the first dose of vaccine, the province is following recommendations from the National Advisory Committee on Immunization (NACI) to extend the second dose of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine to up to 4 months after receipt of the first dose.</p> <p>*Note: Residents of long-term care homes, retirement homes, Elder Care Lodges, Assisted Living facilities, on-reserve First Nation members, and remote and isolated First Nation communities (being supported by Operation Remote Immunity) should be maintained at 4-12 weeks.</p> <p>[^]There is specific guidance for medical exceptions to extended dose intervals for COVID-19 vaccines which can be found in the Vaccine Clinical Advisory Group (VCAG) Recommendations on Exceptions to Extended Dose Intervals for COVID-19 vaccines.</p> <p>^ε An exception to the extended dose interval is also in place for highest risk health care workers as described in this list: High-Risk Health Care Workers Eligible to Receive a Second Dose of the COVID-19 Vaccine at a Shortened Interval</p>

¹ National Advisory Committee on [Immunizations](#) (NACI). Recommendation on the use of COVID-19 vaccines

² Health Canada Product Monographs: [COVISHIELD](#) vaccine & [AstraZeneca](#) COVID-19 vaccine

³ In clinical trials, the AstraZeneca COVID-19 vaccine demonstrated optimal 2-dose vaccine efficacy when the interval between the first and second doses was ≥ 12 weeks ([NACI](#))

Booster doses	At present, no evidence for additional boosters after the 2-dose series
Route of administration	Intramuscular (IM) into the deltoid muscle
Nature of the antigen	Transmembrane spike (S) protein
Adjuvant (if present)	None
Storage requirements	
Primary storage requirements, pre-puncture	+2 °C to +8 °C
Diluent	No
Formats available	Multi-dose vial (8- and 10- dose presentations). Preservative free.
Usage limit post-puncture	6 hours when stored at room temperature (up to +30°C) OR 48 hours when stored in a refrigerator (+2 °C to +8°C).
Drug Interactions	No interaction studies have been performed.

Considerations For Administration

- As of May 11th, 2021 Ontario has paused the rollout and administration of first doses of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine. This decision was made out of an abundance of caution due to an observed increase in the rare blood clotting condition, known as Vaccine Induced Immune Thrombotic Thrombocytopenia (VITT), linked to the AstraZeneca vaccine. More information on the decision can be found in the press release: [Ontario Pauses Administration of AstraZeneca Vaccine | Ontario Newsroom.](#)

- A supplemental document has been developed that patients who received a first dose of the AstraZeneca COVID-19 vaccine must review before they receive a second dose of vaccine: [COVID-19 Vaccine Information for Individuals that received a first dose of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine](#). Consent for the second dose will be informed through understanding the benefits and risks of the choices, supported by discussion with a health care provider. It is very important for people receive both doses to complete their vaccine.
- The National Advisory Committee on Immunization (NACI) has updated its [recommendations on the use of COVID-19 vaccines](#), including the use of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine.
- Evidence on vaccine effectiveness for COVID-19 vaccines currently authorized for use in Canada continues to evolve. For up to date information on vaccine efficacy and effectiveness, please consult the NACI statements and publications on the [Government of Canada webpage](#).

Contraindications

AstraZeneca COVID-19 vaccine/COVISHIELD vaccine is contraindicated in individuals who have experienced major venous and/or arterial thrombosis with thrombocytopenia following vaccination with any vaccine.

The AstraZeneca COVID-19 vaccine/COVISHIELD vaccine is contraindicated in individuals who have experienced a previous cerebral venous sinus thrombosis (CVST) with thrombocytopenia or who have experienced heparin-induced thrombocytopenia (HIT). Individuals who think they have experienced a previous CVST with thrombocytopenia or heparin-induced thrombocytopenia (HIT) should not receive the vaccine.

These recommendations come from the province's Vaccine Clinical Advisory Group (VCAG).

Warnings & Precautions

Anyone receiving the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine should be informed of the risk of Vaccine-Induced Immune Thrombotic Thrombocytopenia (VITT) and advised to seek immediate medical attention if they develop symptoms of VITT ([NACI](#)). See Side Effects section below for details.

Precautions During Vaccination Should Be Taken For:

- Refer to [Vaccination Recommendations for Special Populations](#) for information on vaccination for all patients with allergies (including those with allergic reactions to previous doses of any COVID-19 vaccine, or vaccine components).
 - A component of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine that may cause type I hypersensitivity reactions is polysorbate 80. Due to potential cross-reactivity with polysorbate, allergies to polyethylene glycol (PEG) must also be considered.
 - Allergic reactions to polysorbate 80 are rare. Polysorbate 80 is found in products such as medical preparations (such as vitamin oils, tablets, and anticancer agents) or cosmetics.
 - Allergic reactions to PEG are rare, PEG is found in products such as prescription medications, bowel preparation products for colonoscopy, over the counter products (e.g. laxatives, cough syrups), cosmetics, dermal fillers, skin care products, products such as ultrasound gel, and contact lens care solution. PEG also can be found in foods or drinks, but is not known to cause allergic reactions from foods or drinks.
- Individuals who fainted or became dizzy after receiving a vaccine or medical procedure, or those with high levels of fear about injections. These individuals can receive the vaccine. To reduce injuries due to fainting, people should be immunized while seated, or if considered at high-risk, while lying down. These individuals are also advised they may bring a support person.
- Individuals who have a bleeding disorder, bruise easily or are taking blood-thinners can safely receive the vaccine. Individuals taking long-term anticoagulation (e.g. warfarin or heparin therapy) are not considered to be at higher risk of bleeding complications following immunization and may be safely immunized through the intramuscular route as recommended, without discontinuation of their anticoagulation therapy. In individuals with bleeding

disorders, the condition should be optimally managed prior to immunization to minimize the risk of bleeding.

- There is some evidence to suggest that IM administration with a small gauge needle (23 gauge or smaller) may be preferred to minimize the risk of bleeding, with firm pressure applied to the injection site for 5 to 10 minutes.
- For more detailed recommendations on people with allergies, as well as breastfeeding or pregnant individuals, those with autoimmune conditions, or individuals who are immunocompromised due to disease or treatment, please consult the [Vaccination Recommendations for Special Populations](#) guidance document.

Who Should Delay Receiving the Vaccine

- Vaccination should be deferred in symptomatic individuals with confirmed or suspected SARS-CoV-2 infection, those with an acute illness, or those with [symptoms of COVID-19](#) in order to avoid attributing any complications resulting from infection with SARS-CoV-2, or other illnesses, to vaccine-related adverse events and to minimize the risk of COVID-19 transmission at an immunization clinic. It would be prudent to wait for all symptoms of an acute illness to completely resolve before receiving the vaccine.
- Individuals who have been advised to self-isolate due to suspected or confirmed SARS-CoV-2 infection or due to close contact with a COVID-19 positive case should not attend a vaccine clinic and should wait to get their vaccine until their isolation period is over.
 - Note: Please refer to [Guidance for COVID-19 Immunization in Long-Term Care Homes and Retirement Homes](#) for specific guidance on vaccinating high risk contacts, those with symptoms or confirmed SARS-CoV-2 infection in long-term care and retirement homes.
- Individuals who have received another vaccine within the past 14 days.
- Individuals who intend to receive a vaccine within 4 weeks of receiving the COVID-19 vaccine.
 - Anyone who receives a dose of a COVID-19 vaccine should wait 28 days before receiving another vaccine (except in the case when another vaccine is required for post-exposure prophylaxis).

Considerations for Other Patient Groups

- The AstraZeneca COVID-19 vaccine/COVISHIELD vaccine can safely be given to persons with a history of prior SARS-CoV-2 infection. Vaccination should be offered to persons regardless of history of prior symptomatic or asymptomatic SARS-CoV-2 infection.
- Having prolonged COVID-19 symptoms (sometimes called Long COVID or Post-Acute COVID-19 Syndrome) is not a contraindication to receiving the COVID-19 vaccine.
 - If the patient is seriously debilitated, still under active investigation, or has evidence of recent deterioration, deferral of vaccination may be considered to avoid incorrect attribution of any change in the person's underlying condition to the vaccine. Common side effects of the vaccine (e.g., fatigue, myalgia, arthralgia) may be similar to ongoing prolonged COVID-19 symptoms.

Information on immunizing special populations, including breastfeeding or pregnant individuals, those with allergies, with autoimmune conditions, or those who are immunocompromised due to disease or treatment, is available in the [Vaccination Recommendations for Special Populations](#) guidance document. Point-of-care guidance for these individuals can be found in the [COVID-19 Vaccine – Pre-Screening Assessment Tool for Health Care Providers \(gov.on.ca\)](#)

Side Effects

The AstraZeneca COVID-19 vaccine/COVISHIELD vaccine, like medicines and other vaccines can cause side effects. In clinical trials most of the side effects experienced were mild to moderate and on average did not last longer than three days. Please see the product monographs for [AstraZeneca COVID-19 vaccine](#) and [COVISHIELD](#) vaccine for a complete list of reported side effects/adverse reactions.

Very common side effects	May affect more than 1 in 10 people	<ul style="list-style-type: none"> • Pain, tenderness, warmth at the injection site • Fatigue • Chills (common after second dose) • Headache • Muscle pain • Nausea (common after second dose) • Joint pain • Fever/ Feverishness
Common side effects	May affect 1 to less than 10 in 100 people	<ul style="list-style-type: none"> • Localized redness, swelling, and pruritis • Induration Vomiting (uncommon after second dose)
Uncommon side effects	May affect up to 1 in 100 people	<ul style="list-style-type: none"> • Enlarged lymph nodes

Source: National Advisory Committee on Immunization, Appendix [E: Frequency of solicited adverse events following immunization for COVID-19 vaccines in clinical trials](#).

Rare cases of serious thrombosis (blood clots) and thrombocytopenia (low platelets): Vaccine Induced Immune Thrombotic Thrombocytopenia (VITT)

- There have been very rare reports of serious blood clots (thrombosis), including cerebral sinus vein thrombosis (CSVT), associated with thrombocytopenia (low platelets) in individuals who received AstraZeneca COVID-19 vaccine/COVISHIELD vaccine ([Health Canada](#)).
- This phenomenon is named **Vaccine-Induced Immune Thrombotic Thrombocytopenia (VITT)** ([NACI](#)). There is considerable variability in the estimated rate of VITT, and is estimated to be between 1 in 26, 500 and 1 in 127, 300 ([Science Advisory Table](#)). The case fatality rate of VITT depends on prompt detection, diagnosis and treatment and is estimated to range between 25 and 40% ([NACI](#)). Case fatality rates may vary with increased awareness of the adverse event and appropriate early treatment ([NACI](#)).

- Data from the [United Kingdom \(UK\)](#) suggests that the rate of VITT following the second dose is approximately 1 in 600,000 doses administered. This is based on 15 events of VITT following approximately 9 million second doses of AstraZeneca vaccine administered in the UK.
- At this time are no specific risk factors that have been consistently identified in patients who develop VITT ([NACI](#)).
- [Health Canada](#) has assessed the available data and found that the benefits of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine in protecting Canadians from COVID-19 in the context of the COVID-19 pandemic continue to outweigh the risks.
 - Following an evidence review and a risk-benefit analysis NACI provided specific [guidance for the use of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine](#)
 - Vaccine regulators in Canada and internationally will continue to closely monitor the safety of all COVID-19 vaccines.
 - On May 11, 2021 Ontario announced the pause of the administration of first doses of the AstraZeneca vaccine out of an abundance of caution due to an observed increase in reports of VITT
- Healthcare providers administering the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine should inform clients to seek immediate medical attention for symptoms of thromboembolism and/or early signs of thrombocytopenia between days 4 and 28 after receiving the vaccine.
- **Symptoms to be vigilant for include:** persistent and severe headache, seizures, or focal neurological symptoms including blurred or double vision (suggesting CSVT or arterial stroke); shortness of breath, chest, back, or abdominal pain (suggesting pulmonary embolism, acute coronary syndrome, abdominal vein thrombosis, or adrenal hemorrhage); unusual bleeding, bruising, petechiae, or blood blisters (suggesting thrombocytopenia or disseminated intravascular coagulation); or limb swelling, redness, pallor, or coldness (suggesting deep vein thrombosis or acute limb ischemia) ([Ontario Science Advisory Table](#)).
- Healthcare providers should maintain vigilance for thrombosis and thrombocytopenia in vaccinated individuals and report any suspected [adverse events following immunization \(AEFI\)](#) to their local public health unit (as outlined in the section on “Adverse Events Following Immunization” below).

- Guidance for health care providers in diagnosing and treating VITT (Vaccine-induced thrombotic thrombocytopenia), previously named VIPIT (Vaccine-induced prothrombotic induced thrombocytopenia) are available from Ontario's Science Advisory Table Science Brief for healthcare professionals in [Emergency Department and Inpatient settings](#) and [Outpatient settings](#).

Adverse Events Following Immunization

All health care providers administering vaccines must be familiar with the anaphylaxis protocols for their clinic sites and ensure availability of anaphylaxis management kits (Refer to the Public Health Ontario resource on the [Management of Anaphylaxis Following Immunization in the Community](#) and the [Canadian Immunization Guide](#) for additional information).

Those administering vaccines should ensure that the vaccine recipients or their parents/guardians are advised to notify clinic staff, or if they have left the clinic, call their doctor/nurse practitioner or go to the nearest hospital emergency department if they develop any of the following:

- Hives
- Swelling of the mouth and throat
- Trouble breathing, hoarseness or wheezing
- High fever (over 40°C or 104°F)
- Convulsions (seizures)
- Other serious reactions

Guidance on reporting adverse events following immunization (AEFI) for healthcare providers

- Health care providers administering vaccines are required to inform vaccine recipients of the importance of immediately reporting adverse events following immunization to a physician or nurse in the extended class in accordance with s. 38 of the *Health Protection and Promotion Act* (HPPA). Vaccine recipients may also contact their [local public health unit](#) to ask questions or to report an adverse event following immunization.

- Specified health care providers (e.g., physicians, nurses and pharmacists) have a duty under s. 38 of the HPPA to report adverse events following immunizations (AEFIs) to their local [public health unit](#). Reports should be made using the [Ontario AEFI Reporting Form](#). See Public Health Ontario's [vaccine safety webpage](#) and [Fact Sheet - Adverse Event Following Immunization Reporting For Health Care Providers In Ontario \(publichealthontario.ca\)](#) for additional guidance.
- The Ontario Ministry of Health in collaboration with Public Health Ontario monitors reports of AEFIs. This monitoring is done in collaboration with the Public Health Agency of Canada and Health Canada.

Point-of-care Guidance

- This is a two-dose series; Individuals may not be optimally protected until up to 2 weeks after their second dose of vaccine. It is essential to complete the vaccine series for protection.
- Do not mix the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine with other vaccines/products in the same syringe.
- The AstraZeneca COVID-19 vaccine/COVISHIELD vaccine should not be given simultaneously with other live or inactivated vaccines (except in the case when another vaccine is required for post-exposure prophylaxis).

Individuals who have received one dose of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine have options to consider for their second dose.

- Consent for the second dose will be informed through understanding the benefits and risks of the choices, supported by discussion with a health care provider.
- Guidance on the options for second doses can be found in the [COVID-19 Vaccine Information for Individuals that received a first dose of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine](#) document.

Vaccine Preparation:

Health Canada has authorized two manufacturers of the COVID-19 ChAdOx1-S vaccine:

- AstraZeneca (brand name [AstraZeneca](#) COVID-19 Vaccine)

- Verity Pharmaceuticals and Serum Institute of India in collaboration with AstraZeneca (brand name [COVISHIELD](#) vaccine)

Additional information on vaccine preparation can be found in the product monographs for [AstraZeneca COVID-19 vaccine](#) and [COVISHIELD vaccine](#).

- AstraZeneca COVID-19 vaccine/COVISHIELD vaccine must not be reconstituted, mixed with other medicinal products, or diluted
- The unopened multi-dose vial can be stored in a refrigerator (+2°C to +8°C)
- Do not freeze
- Store in original packaging in order to protect from light.
- Use the product before the expiration date on the vial label.
- The vaccine does not contain any preservative. After first opening, use the vial within:
 - 6 hours when stored at room temperature (up to +30°C), or
 - 48 hours when stored in a refrigerator (+2°C 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 this time, the vial must be discarded.

AstraZeneca COVID-19 vaccine	COVISHIELD vaccine
AstraZeneca COVID-19 vaccine is packaged in (not all pack sizes may be available): <ul style="list-style-type: none"> • 5 mL of solution in a 10-dose vial (clear type I glass) with stopper (elastomeric with aluminium overseal). • 4 mL of solution in an 8-dose vial (clear type I glass) with stopper (elastomeric with aluminium overseal). 	COVISHIELD vaccine is packaged in: <ul style="list-style-type: none"> • 5 mL of solution in a 10-dose vial (clear type I glass) with stopper (elastomeric with aluminium overseal).

- Vaccines should be mixed with a careful swirling motion until a uniform suspension is achieved prior to administration. Unless otherwise instructed by the manufacturer, the vaccine should not be shaken before use.
- Each vaccine dose of 0.5 mL is withdrawn into a syringe for injection to be administered intramuscularly. Use a separate sterile needle and syringe for each individual.

- Each vial contains at least the number of doses stated. It is normal for residual 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 observed.
 - Where a full dose cannot be extracted, the remaining volume should be discarded.
- Strict adherence to aseptic techniques must be followed.

Vaccine Administration:

- It is important that proper sized syringes are chosen to ensure the correct volume is accurately drawn up. Safety engineered needles must be used as required per O. Reg. 474/07 made under the *Occupational Health and Safety Act*.
- Visually inspect each dose in the dosing syringe prior to administration.

AstraZeneca COVID-19 vaccine	COVISHIELD vaccine
<ul style="list-style-type: none"> • clear to slightly opaque, colourless to slightly brown, sterile, particle free, preservative-free, solution for intramuscular injection 	<ul style="list-style-type: none"> • clear to slightly opaque, colourless to slightly brown essentially free from visible particles, preservative-free, solution for intramuscular injection

- Discard the vial if the solution is discoloured or visible particles are observed.
- During the visual inspection:
 - Verify the final dosing volume of **0.5 mL** and
 - Confirm there are no particulates and that no discolouration is observed.
- **If the visual inspection fails, do not administer the vaccine.**
- Administer the vaccine intramuscularly in the deltoid muscle.
- Do not inject the vaccine intravascularly, subcutaneously or intradermally.

All clients should be reminded to continue to practice recommended public health measures for prevention and control of COVID-19 infection and transmission regardless of receipt of COVID-19 vaccine.

Information on vaccine storage, stability and disposal can be found in the product monographs for [AstraZeneca COVID-19 vaccine](#) and [COVISHIELD vaccine](#) or the COVID-19 [Vaccine Storage and Handling Guidance](#) document.