

26 FEBRUARY 2021¹

COVID-19 Vaccine ChAdOx1-S [recombinant]

Developed by Oxford University and AstraZeneca

Manufacturers²:

- SK Bioscience Co. Ltd. [COVID-19 Vaccine (ChAdOx1-S [recombinant])]
- Serum Institute of India Pvt. Ltd. [COVISHIELD™, ChAdOx1 nCoV-19 Corona Virus Vaccine (Recombinant)]



The ChAdOx1-S/nCoV-19 [recombinant] vaccine is a replication-deficient adenoviral vector vaccine against coronavirus disease 2019 (COVID-19). The vaccine expresses the SARS-CoV-2 spike protein gene, which instructs the host cells to produce the protein of the S-antigen unique to SARS-CoV-2, allowing the body to generate an immune response and to retain that information in memory immune cells. Efficacy shown in clinical trials in participants who received the full series of vaccine (2 doses) irrespective of interval between the doses was 63.1%, based on a median follow-up of 80 days, but tended to be higher when this interval was longer. The data reviewed at this time support the conclusion that the known and potential benefits of ChAdOx1-S/nCoV-19 [recombinant] vaccine outweigh the known and potential risks.

Date of WHO Emergency Use Listing (EUL) recommendation:

- COVID-19 Vaccine (ChAdOx1-S [recombinant], SK Bioscience Co. Ltd: 15 February 2021
- COVISHIELD™, ChAdOx1 nCoV-19 Corona Virus Vaccine (Recombinant), Serum Institute of India Pvt. Ltd: 15 February 2021
- AZD1222 (ChAdOx1-S [recombinant]), AstraZeneca, UK: anticipated March–April 2021

Date of prequalification (PQ): not applicable

National regulatory authorities (NRAs) can use reliance approaches for in-country authorization of vaccines based on WHO PQ/EUL or emergency use authorizations by stringent regulatory authorities (SRAs).

Product characteristics

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| Presentation | Liquid, preservative-free, multi-dose suspension |
| Number of doses | SK Bioscience: 10 doses per vial (each dose of 0.5 mL) COVISHIELD™: 2 doses per vial (each dose of 0.5 mL) 10 doses per vial (each dose of 0.5 mL) |
| Vaccine syringe type and needle size | Auto-disable (AD) syringe: 0.5 mL Needle for intramuscular injection 23G x 1" (0.60 × 25 mm) |

¹ Contents will be updated as new information becomes available.

² AstraZeneca is partnering with several manufacturers to ensure supply. All manufacturing partners are subject to Current Good Manufacturing Practice (CGMP) and appropriate Quality Systems. In this document, the AstraZeneca vaccine manufactured at SK Bio and the SIPL are referred to as ChAdOx1-S/nCoV-19 [recombinant], used as a common designation.

COVID-19 Vaccine ChAdOx1-S [recombinant]

Schedule and administration

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| Recommended for age | 18 years of age and above, including persons 65 years of age and older |
| Recommended schedule | <p>2 doses (0.5 mL each) can be administered with an interval of 4-12 weeks. WHO recommends an interval 8–12 weeks:</p> <p>Dose 1: at the start date</p> <p>Dose 2: 8 to 12 weeks after first dose.</p> <p>If the second dose is inadvertently administered earlier than 4 weeks after the first, the dose does not need to be repeated.</p> <p>If the second dose is inadvertently delayed, it should be given at the earliest possible opportunity.</p> <p>Both doses are necessary for protection. The same product should be used for both doses.</p> |
| Route and site of administration | Intramuscular (i.m.) administration The preferred site is deltoid muscle. |
| Dosage | 0.5 mL (single dose) |
| Diluent | None needed |
| Mixing syringe | None needed |
| Preparation/reconstitution/dilution requirement | <p><u>No dilution is required.</u></p> <p>Vaccine administration:</p> <ol style="list-style-type: none"> 1. Vaccine is ready to use, do not dilute. 2. Do not shake. 3. Inspect the vial to make sure that the liquid is clear to slightly opaque, and colourless to slightly brown. If visible particles or discoloration are present, discard the vial. 4. Record date and time of the first use (first puncture and withdrawal of the dose) on the vial label. 5. Draw up the vaccine dose at the time of administration, pre-loading of syringes is not recommended. 7. Use all vaccine in the vial within 6 hours after first puncture. <p>After withdrawing the final dose, some liquid may remain in the vial. Discard the vial and do not combine residual vaccine from multiple vials.</p> |
| Multi-dose vial policy | After the first dose has been withdrawn, keep between 2 °C and 8 °C during the in-use period, and discard any unused vaccine in the vial after 6 hours, or at the end of the immunization session, whichever comes first. Keep opened vaccine vial in the foam pad of the vaccine carrier. |
| Contraindications | <ul style="list-style-type: none"> • Known history of anaphylaxis to any component of the vaccine. • Persons who developed anaphylaxis after the first dose should not receive a second dose of ChAdOx1-S/nCoV-19 [recombinant] vaccine. |

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Schedule and administration contd.**Precautions**

- Although no severe allergic reactions or anaphylaxis have been recorded after ChAdOx1-S/nCoV-19 [recombinant] vaccine, all persons should be vaccinated by a health care professional in settings where appropriate medical treatment is available. An observation period of at least 15 minutes should be ensured post vaccination.
- Vaccination of people suffering from acute severe febrile illness (body temperature higher than 38.5 °C) should be postponed until they are afebrile.
- Vaccination of persons with acute COVID-19 should be postponed until they have recovered from acute illness and criteria for discontinuation of isolation have been met.
- Minor infections such as cold, or those with low-grade fever should not delay vaccination.

Special population groups (based on available data as of February 2021)

- For persons with **comorbidities** such as obesity, cardiovascular disease, respiratory disease and diabetes that have been studied in clinical trial and that have been identified as increasing the risk of severe COVID-19, vaccination is recommended.
- For persons above 65 years of age, taking into account the totality of evidence, vaccination is recommended as immune response in older persons is well documented and similar to those in other age groups.
- Available data on administration in pregnant women are insufficient to assess vaccine efficacy and/or inform vaccine-associated risks in pregnancy. Until pregnancy safety data are available, **pregnant women** can receive ChAdOx1-S/nCoV-19 [recombinant] vaccines if the benefit of vaccination to the pregnant woman outweighs the potential vaccine risks, such as if they are health workers at high risk of exposure or have comorbidities that place them in a high-risk group for severe COVID-19. Information and, if possible, counselling on the lack of safety data for pregnant women should be provided. It should be noted that ChAdOx1-S/nCoV-19 [recombinant] is a non-replicating vaccine. WHO does not recommend pregnancy testing prior to vaccination or delaying pregnancy because of vaccination.
- There are no data on the safety of ChAdOx1-S/nCoV-19 [recombinant] vaccines for **lactating women** or on the effects on **breastfed children**. As this is a non-replicating vaccine (i.e. does not make new virus particles), it is unlikely to pose a risk to the breastfeeding child. A lactating woman who is a part of a group recommended for vaccination should be offered vaccination. WHO does not recommend discontinuing breastfeeding after vaccination.
- Available data are currently insufficient to assess vaccine efficacy or vaccine-associated risks in **severely immunocompromised persons**, who may have diminished immune response to vaccine. Nevertheless, if part of a recommended group for vaccination, they may be vaccinated, given that the vaccine is non-replicating. Information and, where possible, counselling about vaccine safety and efficacy profiles in immunocompromised persons should be provided to inform individual benefit–risk assessment.
- Persons with **autoimmune conditions** who have no contraindications to vaccination may be vaccinated.
- **HIV-positive persons** who are well controlled on highly active antiretroviral therapy and are part of a group recommended for vaccination can be vaccinated, given that the vaccine is non-replicating. Available data for HIV-positive persons who are not well controlled on therapy are currently insufficient to allow assessment of vaccine efficacy and safety in this group. Testing for HIV infection prior to vaccine administration is not necessary.
- For persons who have received monoclonal antibodies or convalescent plasma as part of COVID-19 treatment, vaccination should be deferred for at least 90 days to avoid interference of treatment with vaccine-induced immune response.

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Schedule and administration contd.

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| SARS-CoV-2 variants | WHO currently recommends the use of ChAdOx1-S/nCoV-19 [recombinant] vaccine according to prioritization roadmap, even if the variants are present in a country. Countries should conduct a benefit-risk assessment according to the local epidemiological situation including the extent of circulating virus variants. |
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Stability and storage

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| Vaccine storage temperature | Store in the original carton in a refrigerator at +2 to +8 °C. Do not store in a freezer. |
| Shelf life at different temperatures | Unopened vials in a refrigerator between +2 and +8 °C: until expiry date stated on the label. The expiry date refers to the last day of that month. Opened vials (after first needle puncture) should be kept cooled at temperatures between +2 °C and +8 °C during the immunization session. |
| Freeze sensitivity | Do not freeze. |
| Light sensitivity | Store in the original outer carton to protect from light. Avoid exposure to direct sunlight and ultraviolet light. |
| Conditions before use | Vaccine is ready to use; it may be used if kept cooled at +2 °C to +8 °C within 6 hours after opening. |
| Wastage rates | Will be dependent on country context. |
| Buffer stock needed | Will be dependent on country context. |

Labelling and packaging*

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| For AMC92 countries, UNICEF will supply only 10-dose vials. | |
| Vaccine Vial Monitor (VVM) (if yes, location and type) | Initial pandemic supply will not include a VVM. |
| Information on vial label | SK Bioscience: batch number, expiry date, serial number COVISHIELD™ 10-dose: batch number, expiry date, serial number |
| Information on secondary packaging | SK Bioscience: 2D datamatrix, batch number, expiry date, serial number COVISHIELD™ 10-dose: batch number, expiry date, serial number |
| Information on tertiary packaging | SK Bioscience: 2D datamatrix, batch number, expiry date, serial number COVISHIELD™ 10-dose: batch number, expiry date, serial number |

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Labelling and packaging* contd.

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| Secondary packaging dimension and volume | SK Bioscience: Box holding 10 vials/100 doses; 13.2 x 5.7 x 5.0 cm Volume per dose: 3.76 cm ³ /dose |
| | COVISHIELD™ 2-dose: Box holding 50 vials/100 doses; 18.5 x 9.5 x 4 cm Volume per dose: 7.03 cm ³ /dose |
| | COVISHIELD™ 10-dose: Box holding 50 vials/500 doses; 18.5 x 9.5 x 6 cm Volume per dose: 2.109 cm ³ /dose |
| Tertiary packaging dimension | SK Bioscience: Carton containing 24 secondary boxes with a total of 240 vials (2400 doses) External dimensions 24.8 x 28.8 x 18.0 cm |
| | COVISHIELD™ 2-dose: Carton containing 6 secondary boxes with a total of 300 vials (600 doses) External dimensions 31 x 19 x 9.3 cm |
| | COVISHIELD™ 10-dose: Carton containing 6 secondary boxes with a total of 300 vials (3000 doses) External dimensions 31 x 19 x 13.3 cm |

*Labelling and packaging may be subject to change, depending on supply source.

Safety information*

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| Possible events (by frequency) | <ul style="list-style-type: none"> Majority of adverse events observed were mild to moderate and usually resolved within a few days. Observed events were generally milder and less frequently reported in older adults (≥65 years) than in younger adults (18–64 years) Generally, when compared with the first dose, events reported after the second dose were milder and less frequent. <p>Very common (≥1/10): Tenderness, pain, warmth, itching or bruising at the injection site, fatigue, chills, headache, nausea, vomiting, myalgia, arthralgia</p> <p>Common (≥1/100 to <1/10): Swelling or redness at the injection site, fever (≥38 °C)</p> <p>Uncommon (≥1/1 000 to <1/100): Lymphadenopathy, decreased appetite, dizziness, abdominal pain, hyperhidrosis (abnormal sweating), pruritus, rash</p> <p>Very rare (< 1/10 000): Neuroinflammatory disorder (transverse myelitis) has been reported but a causal relationship with ChAdOx1-S/nCoV-19 [recombinant] has not been established.</p> |
| Co-administration of vaccines/medicines | There should be a minimum interval of 14 days between administration of this and any other vaccine against other diseases, until data on co-administration become available. |

*From clinical studies.

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Important reminders

Vaccination session and vaccine administration:

Before, during, and after vaccination, all people should continue to follow current guidance for protection from COVID-19 in their area (e.g. wearing a mask, keeping physical distance, hand hygiene).

A person presenting with COVID-19 symptoms should not be vaccinated. Vaccination may be offered to people who have recovered from symptomatic or asymptomatic COVID-19.

Testing is not recommended for the purpose of decision-making about vaccination, however, based on current data, persons with PCR-confirmed SARS-CoV-2 infection in the preceding 6 months may choose to delay vaccination until near the end of this period.

Before vaccination, advise vaccine recipient about possible post-vaccination symptoms and observe post-vaccination for at least **15 minutes**.

To alleviate post-vaccination symptoms, antipyretic or analgesic products (e.g. paracetamol-containing products) may be used, if required.

Encourage a vaccine recipient to complete the vaccination series to optimize protection and schedule the time for the second dose. The same vaccine product should be used for both doses. When scheduling vaccination for occupational groups (e.g. health workers) consideration should be given to the reactogenicity profile of ChAdOx1-S/nCoV-19 [recombinant] vaccine observed in clinical trials, occasionally leading to time off work in the 24-48 hours following vaccination.

SARS-CoV-2 variants

As SARS-CoV-2 viruses undergo evolution, new variants may be associated with higher transmissibility, disease severity, risk of reinfection, or a change in antigenic composition. Preliminary findings of slightly reduced ChAdOx1-S/nCoV-19 [recombinant] vaccine effectiveness against B.1.1.7 variant and marked reduction of ChAdOx1-S/nCoV-19 [recombinant] vaccine effectiveness in mild to moderate disease against B.1.351 variant need to be demonstrated in ongoing clinical trials and post-implementation evaluations. This highlights the urgent need for a coordinated approach for surveillance and evaluation of variants and their potential impact on vaccine effectiveness.

Resources and more information at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951851/uk-clean-spc-covid-19-vaccine-astrazeneca-reg174.pdf

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

https://www.seruminstitute.com/product_covishield.php

https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccines-SAGE_recommendation-AZD1222-2021.1

<https://extranet.who.int/pqweb/vaccines/covid-19-vaccines>