



Administration of COVID-19 Vaccines and Adverse Events

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Sputnik V (Gam-COVID-Vac)

Administration

- Two 0.5 ml separate doses (rAd26 and rAd5) within 21-28 days
- Intra-muscular injection into deltoid muscle (non-dominant side)
(if not possible, inject into vastus lateralis muscle)

Contraindications

- Hypersensitivity to any of the vaccine components
- Severe allergic reactions in the past
- Acute infectious and noninfectious diseases
- Flares of chronic diseases
- Pregnancy and
- Breastfeeding
- Individuals 18 years of age and younger

Contraindications (component II)

- Severe post-vaccination complications:
 - ✓ Anaphylactic shock
 - ✓ Severe generalized allergic reactions
 - ✓ Convulsive disorder
 - ✓ Temperature above 40°C

Caution

- Autoimmune diseases (stimulation of the immune system)
- Malignant neoplasms

- Chronic liver and kidney disease
- Endocrine disorders at decompensation stage
- Serious diseases of the hematopoietic system
- Epilepsy and other CNS diseases
- Acute coronary syndrome
- Myocarditis
- Endocarditis
- Pericarditis

Adverse Reactions

- Usually within 3 subsequent days (local and systemic reactions)
- Injection site reactions (pain, tenderness, swelling, erythema)
- Flu-like syndrome (fever, chills, myalgia, headache, fatigue, sorethroat)
- NSAID, antihistamines
- Nausea, dyspepsia, loss of appetite, enlarged regional lymph nodes

Adverse Reactions

- Dizziness
- Nausea/ vomiting
- Dyspepsia
- Loss of appetite
- Pruritus
- Enlarged regional lymph nodes

- Elevated liver transaminase levels, serum creatinine or CPK



Oxford–AstraZeneca (Vaxzevria; Covishield)

Administration

- Two 0.5 ml doses within 28-84 days
- Intra-muscular injection into deltoid muscle (non-dominant side)

- Protection starts from approximately 3 weeks after the first dose of COVID-19 Vaccine AstraZeneca.
- Individuals may not be fully protected until 15 days after the second dose is administered.

Contraindication

- Hypersensitivity to the active substance or to any of the excipients.
 - Individuals 18 years old and younger
 - Acute phase of disease
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- ✓ The AstraZeneca vaccine does not contain PEG but does contain a related compound called polysorbate 80.

Pregnancy

- Limited experience
 - Results from the preliminary animal study
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- JCVI advises that breastfeeding women may be offered vaccination with the Pfizer BioNTech, Moderna and AstraZeneca COVID-19 vaccines.

Adverse Reactions


Table 1 Adverse drug reactions

MedDRA SOC	Frequency	Adverse Reactions
Blood and lymphatic system disorders	Uncommon	Lymphadenopathy
Metabolism and nutrition disorders	Uncommon	Decreased appetite
Nervous system disorders	Very common	Headache
	Uncommon	Dizziness Somnolence
Gastrointestinal disorders	Very common	Nausea
	Common	Vomiting Diarrhoea
Skin and subcutaneous tissue disorders	Uncommon	Hyperhidrosis Pruritus Rash
Musculoskeletal and connective tissue disorders	Very common	Myalgia Arthralgia
General disorders and administration site conditions	Very common	Injection site tenderness Injection site pain Injection site warmth Injection site pruritus Injection site bruising ^a Fatigue Malaise Feverishness Chills
	Common	Injection site swelling Injection site erythema Fever ^b

^a Injection site bruising includes injection site haematoma (uncommon)

^b Measured fever $\geq 38^{\circ}\text{C}$

Prothrombotic Immune Thrombocytopenia

- Very rare (0.0004% - 0.001%)  platelet activating antibody
- Cerebral venous thrombosis
- Portal vein thrombosis
- Splenic vein thrombosis
- Hepatic vein thrombosis
- Arterial thrombosis
- Deep vein thrombosis
- Pulmonary embolism

✓ *Prophylactic antiplatelet and anticoagulant is not recommended*

Symptoms

- Dyspnea
- Chest pain
- Abdominal pain
- Cold extremities
- Blurred vision and diplopia
- Paresthesia
- Aphasia
- Headache
- Petechiae



Sinopharm

Administration

- Two 0.5 ml separate doses within 21-28 days
- Intra-muscular injection into deltoid muscle (non-dominant side)

Contraindication

- Hypersensitivity to the active substance or to any of the excipients.
- Individuals 18 years old and younger
- Acute phase of disease
- Pregnancy and lactation

Adverse Reactions

- Injection site reactions (pain, tenderness, swelling, redness)
 - Fever
 - Fatigue
 - Headache
 - Diarrhea
-
- Nausea and vomiting
 - Muscle pain
 - Arthralgia
 - Drowsiness
 - Dizziness



Bharat (COVAXIN)



Administration

- Two 0.5 ml separate doses within 28 days
- Intra-muscular injection into deltoid muscle (non-dominant side)

Contraindication

- Hypersensitivity to the active substance or to any of the excipients.
- Individuals 18 years old and younger
- Acute phase of disease
- Pregnancy and lactation

Adverse Reactions

- Injection site reactions (pain, tenderness, swelling, redness)
- Headache
- Fever
- Malaise
- Nausea and vomiting
- Rashes

Caution

- Appropriate medical treatment and supervision
- Close observation for at least 15-30 minutes

- Susceptibility to bleeding:
 - Anticoagulant therapy
 - Thrombocytopenia
 - Hemophilia

Susceptibility to Bleeding

- Fine needles
- Injection site compression

Medication:

- Antiplatelets ✓
- NOAC ✓
- VKA 📌 INR 4
- Heparin/ LMWH 📌 interval
- Thrombocytopenia (Plt at least 30000)

COVID-19 History

- Vaccination after the course of illness (fever) and of cessation home quarantine is unimpeded 📅 6 months
- Plasma therapy or mAb 📅 3 months
- More intense adverse reactions

Allergy History

- Drug allergy or anaphylaxis
- Seasonal allergy or anaphylaxis
- Food allergy or anaphylaxis
- Mild reaction after first injection

Contraindication

Other Vaccines

- Rabies/ Tetanus vaccine 📌 14 days
- Influenza 📌 7 days

Pregnancy

- Increased susceptibility to infection
- Increased adverse effects from infection (e.g. preterm labor)
- AstraZeneca 📌 limited evidence ✓

Lactation

- AstraZeneca 📌 limited evidence ✓
- No need for cessation of lactation

Immunosuppression

- Decreased immunologic response to vaccine
 - ✓ Splenectomy
 - ✓ Chemotherapy
 - ✓ Immunosuppressive therapy
 - ✓ Prednisolone (more than 20mg daily)
 - ✓ ANC < 500; ALC < 200

Immunosuppressive Therapy

- None of the vaccines is live virus.
- Full vaccination ought to be done at least 2 weeks before immunosuppressive therapy initiation.
- Risk of disease activity should be taken into consideration.

Medication

- Corticosteroid pulse therapy ➡ 3-5 days after vaccination
- Vaccination ➡ 14 days after corticosteroid pulse therapy
- Cyclophosphamide ➡ 7 days after vaccination
- Tofacitinib ➡ 7 days after vaccination
- Fingolimod ➡ 14-28 days after vaccination
- Rituximab ➡ 28 days after vaccination
- Vaccination ➡ 4 months after rituximab
- Vaccination ➡ 6 months after ATG administration
- Chemotherapy ➡ 14 days after vaccination



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Vitamins and Supplements

Vitamin C

- Insufficient data to recommend either for or against the use of vitamin D, vitamin C and zinc for the treatment of COVID-19.
- Antioxidant properties
- Ameliorating inflammation and vascular injury
- Because patients who are not critically ill with COVID-19 are less likely to experience oxidative stress or severe inflammation, the role of vitamin C in this setting is unknown.

Vitamin D

- Modulating innate and adaptive immune responses
- Increase the levels and activity of T regulatory cells in healthy individuals and patients with autoimmune diseases

Zinc

- Increased intracellular zinc concentrations impair RNA virus replication.
- Long-term zinc supplementation ➡ copper deficiency:
 - Anemia
 - Leukopenia
 - Myelopathy
 - Paresthesia
 - Ataxia
 - Spasticity



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Thanks for Your
Attention