COVID-19 Vaccine Summary Chart

Quick Links

- CDC: Frequently Asked Questions about COVID-19 Vaccination
- CDC: Understanding and Explaining Viral Vector COVID-19 Vaccines
- FDA: COVID-19 Vaccines
- CDC: V-safe After Vaccination Health Checker
- CDC: VaxText℠ COVID-19 Vaccination Second-Dose Reminder
- USP: COVID-19 Vaccine Handling: Operational Considerations for Healthcare Practitioners

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
FDA Approval	Issued August 23, 2021 • For use in adults ages 16 years and older		
Prescribing Information	Comirnaty Package Insert		
Emergency Use Authorization	Issued December 11, 2020 Revised May 10, 2021 • For use in persons ages 12-15 years old	Issued December 18, 2020	Issued February 27, 2021
Fact sheet	• Health care providers • Recipients/caregivers	• Health care providers • Recipients/caregivers	• Health care providers • Recipients/caregivers
ACIP	Interim recommendation for use: Persons aged **≥12 years** for prevention of COVID-19	Interim recommendation for use: Persons aged **≥18 years** for prevention of COVID-19	Interim recommendation for use: Persons aged **≥18 years** for prevention of COVID-19
CDC resources	Pfizer-BioNTech COVID-19 Vaccine	Moderna COVID-19 Vaccine	Janssen COVID-19 Vaccine
CDC clinical considerations	Interim Clinical Considerations		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Dosing and Administration			
Vaccine type	mRNA		Viral Vector
Administer	Intramuscular (I.M.)		
Administration Errors	Refer to CDC's COVID-19 Vaccine Administration Errors of Deviations guide for information about how to handle these situations. *Note: Second doses of mRNA vaccine given more than 42 days from the first dose is considered an administration error and should be documented.		
Primary Vaccine Series			
Dose	30 mcg (**0.3 mL each**)	100 mcg (**0.5 mL each**)	$5x10^{10}$ viral particles (**0.5 mL each**)
Doses per vial	6	10-11 dose vial or 13-15 dose vial	5
Schedule	Two-dose series	Two-dose series	Single dose
Recommended interval	21 days from first dose	28 days from first dose	N/A
Earliest interval	17 days from first dose	24 days from first dose	N/A
Additional Dose			
Additional dose recommendations	Recommended for moderately or severely immunocompromised individuals		Not recommended at this time.
Dose	30 mcg (0.3 mL)	100 mcg (0.5 mL)	
Recommended interval	≥ 28 days after primary series		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Dosing and Administration *(continued)*			
Booster Dose			
Booster dose recommendations	**Should** get a booster dose: • People aged ≥ 65 years • Residents in long-term care settings • People aged 50–64 years with underlying medical conditions **May** get a booster dose based on individual risk and benefit: • People aged 18–49 years with underlying medical conditions • People aged 18–64 years at increased risk for COVID-19 exposure and transmission because of occupational or institutional setting	Not recommended at this time for individuals who received the Moderna COVID-19 vaccine as their primary vaccine series.	Not recommended at this time for individuals who received the Janssen COVID-19 vaccine as their primary series.
Dose	30 mcg (0.3 mL)	N/A	N/A
Recommended interval	≥ 6 months after primary series	N/A	N/A

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Storage*			
How product arrives	Frozen liquid. No preservative.		Liquid suspension. No preservative.
Long-term storage	Ultra-low freezing until expiry date** OR store frozen between -25°C to -15°C (-13°F to 5°F) for up to 2 weeks	Store frozen between -50°C to -15°C (-58°F to 5°F) until expiry date; check expiry date here: https://www.modernatx.com/covid19vaccine-eua/providers/vial-lookup	Refrigerate until expiry date; check the expiry date here: https://vaxcheck.jnj/
Thawing	Thaw in refrigerator for at least 2–3 hours or at room temperature; must be at room temperature for at least 30 mins before dilution; do NOT refreeze	Thaw in refrigerator for at least 2–3 hours or at room temperature; must be at room temperature for at least 30 mins before administration; do NOT refreeze	Product is stored frozen by manufacturer until shipped at refrigerated temperatures; If vaccine is still frozen upon receipt, thaw at refrigerated temperature or if immediate use is required, thaw at room temperature; do NOT refreeze
Max time refrigerated unpunctured	30 days	30 days	Until expiry date
Max time at room temperature unpunctured	2 hours	24 hours	12 hours

*Temperature Key:

- Ultra-low Frozen Temperature: -90°C to -60°C (-130°F to 76°F)
- Pfizer-BioNTech Frozen Temperature: -25°C to -15°C (-13°F to 5°F)
- Moderna Frozen Temperature: -50°C to -15°C (-58°F to 5°F)
- Refrigerated Temperature: 2°C to 8°C (36°F to 46°F)
- Room Temperature: 9°C to 25°C (47°F to 77°F)

**Note: Cartons and vials of Pfizer-BioNTech COVID-19 Vaccine with an expiry date of August 2021 through February 2022 printed on the label may remain in use for 3 months beyond the printed date as long as authorized storage conditions between -90°C to -60°C (-130°F to -76°F) have been maintained.

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Dose Preparation			
Dilution	Dilute with 1.8 mL of 0.9% sodium chloride (normal saline, preservative free).	Not diluted.	
Coloring	Off-white suspension		Colorless to slightly yellow, clear very opalescent suspension
Handling	Do NOT shake; **invert only**	Do NOT shake; **swirl before drawing up dose**	
Max time refrigerated after first punctured	6 hours after dilution	12 hours	6 hours
Max time at room temperature after first punctured	6 hours after dilution	12 hours	**2 hours**
Efficacy and Safety Information			
Publications	Dagan, et al. *NEJM*. Feb 24, 2021 Polack, et al. *NEJM*. Dec 31, 2020 Walsh, et al. *NEJM*. Dec 17, 2020	Baden, et al. *NEJM*. Feb 4, 2021 Anderson, et al. *NEJM*. Dec 17, 2020 Jackson, et al. *NEJM*. Nov 12, 2020	Sadoff, et al. *NEJM*. Jan 13, 2021
Overall efficacy; prevention of COVID-19 infection	**95%** beginning 7 days after second dose: primary analysis of Phase III trial data in 43,538 volunteers	**94%** beginning 14 days after second dose: primary analysis of Phase III trial data in >30,000 volunteers	**67%** beginning 14 days after single dose: primary analysis of Phase III trial data in >40,000 volunteers
Prevention of severe COVID-19 infection	**89%**	**100%**	**85%**
Prevention of asymptomatic COVID-19 infection	Under evaluation	Limited data suggest some degree of prevention	Data suggest a 60% reduction in asymptomatic infection from 29 days after dose

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Efficacy and Safety Information *(continued)*			
Study demographics	Diversity of volunteers: 81.9% White; 26.2% Hispanic/Latino; 9.8% African American; 4.4% Asian; <3% other races/ ethnicities Age and sex distribution: 50.6% male; 49.4% female; 21.4% 65 years and older	Diversity of volunteers: 79.4% White; 20% Hispanic/Latino; 9.7% African American; 4.7% Asian; <3% other races/ ethnicities Age and sex distribution: 52.6% male; 47.4% female; 25.3% 65 years and older	Diversity of volunteers: 59% White; 45% Hispanic/Latino ; 19% African American; 3% Asian ; 9% Native American Age and sex distribution: 55% male; 45% female; 34% 60 years and older
Patient Counseling	• **Injection site:** Pain, swelling, erythema at injection site, localized axillary lymphadenopathy (80%–89% of vaccinated persons*) • **Systemic:** Fever, fatigue, headache, chills, myalgia, arthralgia (55%–83% of vaccinated persons*; acetaminophen or ibuprofen may be used) • These symptoms tend to be more common after the second dose and resolve 1–3 days after vaccination • Reports suggest there is an increased risk of myocarditis and pericarditis, particularly in young adults, after vaccination; symptom onset generally occurs within a few days after vaccination and resolve with appropriate medical management; refer to CDC's guidance on Myocarditis and Pericarditis • Anaphylaxis following vaccination is noted in US postmarket surveillance at a rate of 4.7 cases/million for Pfizer-BioNTech and at a rate of 2.5 cases/million for Moderna as of 1/18/21; unless contraindicated, benefit of vaccination outweighs risk of anaphylaxis; refer to CDC's guidance on Managing Anaphylaxis • Access a comprehensive summary of local reactions, systemic reactions, adverse events, and serious adverse events for the Pfizer or Moderna COVID-19 vaccines ** Depending on the vaccine, age group, and vaccine dose*		• **Injection site:** Pain, swelling, erythema • **Systemic:** Headache, fatigue, muscle ache, nausea, fever • Warn about the rare potential onset of symptoms of thrombocytopenia syndrome (TTS) 1–2 weeks after vaccination, including shortness of breath, chest pain, leg swelling, abdominal pain, persistent headache, or bruising around injection site. • Access a comprehensive summary for the Janssen COVID-19 vaccine.

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Efficacy and Safety Information *(continued)*			

Contraindications	• Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine
	  • Persons with a contraindication to mRNA COVID-19 vaccines (including due to a known allergy to polyethylene glycol [PEG]) have a precaution to Janssen COVID-19 vaccine, and vice versa
	  • Persons with a contraindication to Janssen COVID-19 vaccine (including due to a known allergy to polysorbate) have a precaution to mRNA COVID-19 vaccines
	• Immediate (within 4 hours) allergic reaction of any severity after a previous dose or known (diagnosed) allergy to a component of the vaccine (see ingredients below)
	• Persons with contraindication to one mRNA vaccine should not receive doses of either mRNA vaccine (Pfizer-BioNTech or Moderna)
	• If screen positive for a contraindication, do not vaccinate and consider referral to allergist-immunologist		

Precautions	• Among persons without a contraindication, a history of any immediate (within 4 hours) allergic reaction to other vaccines or injectable therapies • Persons with a contraindication to mRNA COVID-19 vaccines (Pfizer-BioNTech or Moderna) have a precaution to Janssen COVID-19 vaccine, and vice versa • If screen positive for a precaution, complete a risk assessment, consider referral to allergist-immunologist, and observe for 30 minutes postvaccination		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Clinical Considerations			
Interchangeability of COVID-19 vaccines	In general, COVID-19 vaccines are not interchangeable; some nuances include: • If the first dose of an mRNA COVID-19 vaccine was received, but the patient is unable to complete the series (e.g., contraindication), then the Janssen COVID-19 vaccine may be given at a minimum interval of 28 days from mRNA dose and the patient is considered to have received a valid, single-dose Janssen vaccination, not a mixed vaccination series • If the mRNA COVID-19 vaccine product given for the first dose cannot be determined and it has been at least 28 days, a second dose of either product can be administered • For moderate to severely immunocompromised individuals, if the original mRNA vaccines administered is not available it is okay to administer the other mRNA vaccine		
Coadministration with other vaccines	May be administered without regard to timing (can be administered on same day and without waiting period); if multiple vaccines are administered at a single visit, administer each injection in a different injection site per best practices; have discussion with patient regarding potential vaccine reactions and how to manage		
Coadministration with antipyretic/analgesic	Prophylactic administration of antipyretic or analgesic medications for the prevention of postvaccination symptoms is NOT recommended; these medications *may be used if postvaccination symptoms occur, and patient need exists*		
Persons with a history of SARS-CoV-2 infection	Vaccination should be offered regardless of prior SARS-CoV-2 infection; while vaccine supplies remain limited, persons with a history of infection may choose to delay vaccination, if desired		
Persons with a history of MIS-C or MIS-A	There is no data on the safety and efficacy of COVID-19 vaccines in people with a history of multisystem inflammatory syndrome in children (MIS-C) or in adults (MIS-A); access more information on the risks and benefits		
Persons treated with antibodies	Persons who received monoclonal antibody therapy for COVID-19 infection treatment should defer vaccination for 90 days		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Additional Considerations by Age			
Children and adolescents (<18 years old)	Children and adolescents ages 12–17 years are eligible for vaccination; this age group may be at increased risk of syncope after any vaccine, including COVID-19; symptoms of myocarditis and pericarditis after receipt of mRNA vaccination have been reported	Not recommended to persons <18 years of age	Not recommended to persons <18 years of age
Women aged < 50 years	No additional considerations.	No additional considerations.	May receive Janssen COVID-19 vaccine; should be made aware of the rare risk of TTS and the availability of mRNA vaccines
Additional Considerations for People with Underlying Medical Conditions			
Immunocompromised persons	May be vaccinated; a three-dose mRNA COVID-19 vaccine series is recommended for individuals who are moderately or severely immunocompromised; counsel on the potential for a reduced immune response to the vaccine (efficacy) and the need to follow current guidance to protect themselves against COVID-19 (e.g., masks, social distancing); antiviral therapy is unlikely to impact development of a protective antibody response		
Persons with autoimmune disorder	May be vaccinated; no safety and efficacy data available, but persons with autoimmune disorders were included in clinical trials		
People with a history of myocarditis or pericarditis	People with a history of myocarditis/pericarditis unrelated to an mRNA COVID-19 vaccine may receive any FDA-authorized COVID-19 vaccine as long as the episode of has resolved; people with a history of myocarditis/pericarditis after first dose of mRNA COVID-19 vaccine should speak with their physician to determine whether they should receive a second dose		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Additional Considerations for People with Underlying Medical Conditions *(continued)*			
Persons with a history/ risk for thrombosis	No additional considerations.	No additional considerations.	Persons with a history of an episode of an immune-mediated syndrome characterized by thrombosis and thrombocytopenia, such as heparin-induced thrombocytopenia (HIT), should avoid use; persons with a history or risk of venous thromboembolism are not believed to be more susceptible to TTS following receipt of vaccine
Persons with a history of Guillain-Barre syndrome	May receive any FDA-Approved or authorized COVID-19 vaccine; should be made aware of the possible association between the Janssen COVID-19 vaccine and an increased risk of GBS, a patient with a history of GBS and the availability of mRNA COVID-19 vaccines		
Other special populations	Persons with a history of Bell's palsy may be vaccinated; persons with a history of dermal filler use may experience temporary swelling at or near the site of filler injection following vaccination and should follow up with their health care provider if this occurs		
Additional Considerations for People Who Are Pregnant or Lactating			
Pregnant/lactating persons	May be vaccinated; pregnant or breastfeeding women were not included in the clinical trials; postauthorization safety monitoring of >30,000 women has not revealed a safety problem; mRNA and viral vector COVID-19 vaccines are not considered live virus vaccines and are not considered a risk to the breastfeeding infant		

COVID-19 Vaccine Summary Chart (continued)

Vaccine	Comirnaty and Pfizer-BioNTech (BNT162b2)	Moderna (mRNA-1273)	Janssen (Ad26.CoV2.S)
Ingredients			
	• Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 • 2[(polyethylene glycol)*-2000]-N,N-ditetradecylacetamide • 1,2-distearoyl-sn-glycero-3-phosphocholine • Cholesterol • (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate) • Potassium chloride • Monobasic potassium phosphate • Sodium chloride • Dibasic sodium phosphate dihydrate • Sucrose	• Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 • Polyethylene glycol (PEG)* 2000 dimyristoyl glycerol (DMG) • 1,2-distearoyl-sn-glycero-3-phosphocholine • Cholesterol • SM-102 (proprietary to Moderna) • Tromethamine • Tromethamine hydrochloride • Acetic acid • Sodium acetate • Sucrose	• Recombinant, replication-incompetent Ad26 vector, encoding a stabilized variant of the SARS-CoV-2 Spike (S) protein • Citric acid • Trisodium citrate • Ethanol • 2-hydroxypropyl-β-cyclodextrin • Polysorbate-80* • Sodium chloride

**As of March 1, 2021, mRNA COVID-19 vaccines are the only vaccines in the United States that contain PEG, though several vaccines contain polysorbate (more information can be found in CDC's vaccine excipient summary).*