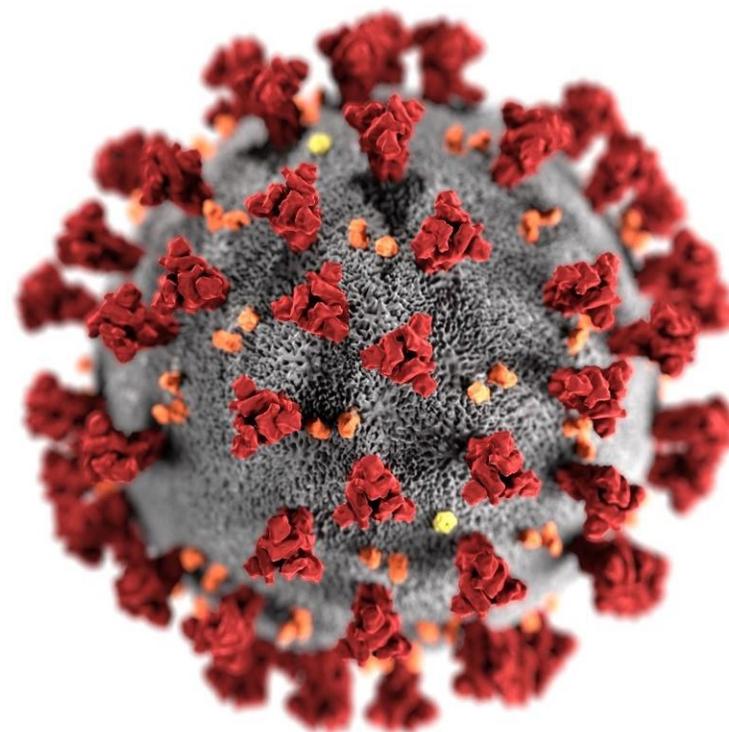


CDC Interim Clinical Considerations for Use of COVID-19 Vaccines Currently Authorized in the United States

Eddy A. Bresnitz, MD, MS
NJ DOH



Adapted from CDC

Interim Clinical Considerations for Use of COVID-19 Vaccines Currently Authorized in the United States

https://www.cdc.gov/vaccines/covid-19/info-by-product/clinical-considerations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fvaccines%2Fcovid-19%2Finfo-by-product%2Fpfizer%2Fclinical-considerations.html

These interim CDC clinical considerations are informed by data submitted to the FDA for Emergency Use Authorization (EUA) of the vaccines, other data sources, [general best practice guidelines for immunization](#), and expert opinion. These considerations apply only to the vaccine products currently authorized in the United States (i.e., Pfizer-BioNTech, Moderna, and Janssen COVID-19 vaccines). Considerations will be updated when additional information becomes available or if additional vaccine products are authorized.



Preventive Measures

Non-pharmaceutical

1. Wearing a mask
2. Staying at least 6 feet away from others
3. Avoiding crowds
4. Avoiding poorly ventilated spaces
5. Covering coughs and sneezes
6. Washing hands often
7. Following travel guidance

Vaccines (All intramuscular)

Currently FDA-authorized

- a. Pfizer: mRNA (≥ 12 years old)
- b. Moderna: mRNA (≥ 18 years old)
- c. Janssen (JnJ): Vector-based (≥ 18 years old)

N.B. Vaccines for children younger than 12 years old not expected before the end of 2021



COVID-19 Vaccines available in US through
FDA Emergency Use Authorization (EUA)
Efficacy vs Effectiveness

Vaccine Efficacy

- Preliminary data from clinical trials suggest high vaccine efficacy in preventing COVID-19 following receipt of two doses of mRNA COVID-19 vaccine or 1 dose of the Janssen vaccine:
 - Pfizer-BioNTech: 95.0% [95% CI: 90.3%, 97.6%] Ages 16 and over.
 - Pfizer-BioNTech: 100% [95% CI: 75.3%, 100%] Ages 12-15 in preventing symptomatic, laboratory-confirmed COVID-19. (Same dose as adults).
 - Moderna: 94.1% [95% CI: 89.3%, 96.8%] Ages: 18 and over.
 - Janssen: 66.3% (95% CI: 59.9%, 71.8%) Ages 18 and over: against symptomatic, laboratory-confirmed COVID-19 from ≥ 14 days after vaccination with Janssen COVID-19 vaccine. Vaccine efficacy for the prevention of COVID-19-associated hospitalization was high; vaccine efficacy against hospitalization ≥ 14 days after vaccination was 93.1% (95% CI: 71.1%, 98.4%). No COVID-19-associated hospitalizations occurred ≥ 28 days after vaccination in the vaccine group, and 16 occurred in the placebo group (vaccine efficacy = 100%; 95% CI = 74.3%, 100.0%).
- Limited data are currently available regarding the efficacy of a single dose of the mRNA vaccines.
- A person is fully vaccinated ≥ 2 weeks following receipt of the second dose in 2-dose series, or ≥ 2 weeks following receipt of one dose of a single-dose series).
- Durability of efficacy of COVID-19 vaccines is unknown at this point.

Vaccine Effectiveness (VEffect)

- Early distribution of two mRNA COVID-19 vaccines (Pfizer-BioNTech and Moderna) to HCPs allowed assessment of the effectiveness of these vaccines in a real-world setting.
- A test-negative case-control study is underway to evaluate mRNA COVID-19 vaccine effectiveness (VEffect) against symptomatic illness among HCP at 33 U.S. sites across 25 U.S. states.
- Interim analyses indicated that the VEffect of a single dose (measured 14 days after the first dose through 6 days after the second dose) was 82% (95% confidence interval [CI] = 74%–87%), adjusted for age, race/ethnicity, and underlying medical conditions.
- The adjusted VEffect of 2 doses (measured ≥ 7 days after the second dose) was 94% (95% CI = 87%–97%).
- VEffect of partial (1 dose of a 2-dose series) and complete (2 doses) vaccination in this population is comparable to that reported from two clinical trials and recent observational studies, supporting the effectiveness of mRNA COVID-19 vaccines against symptomatic disease in adults, with strong 2-dose protection.
- These findings are consistent with VEffect results in other observational studies.
- Too early to assess VEffect for the Janssen vaccine

Advisory Committee on Immunization Practices (ACIP) Recommendations



[MMWR: ACIP Interim Recommendation for Use of Pfizer-BioNTech COVID-19 Vaccine \(Dec. 13\)](#)

[Interim Clinical Considerations for Use of Pfizer-BioNTech COVID-19 Vaccine \(Dec. 14\)](#)

ACIP/CDC recommendations for use of COVID-19 vaccines

- On December 12, 2020, ACIP recommended use of the Pfizer-BioNTech COVID-19 vaccine in persons 16 years of age and older under the FDA's Emergency Use Authorization
- On December 18, 2020, ACIP recommended use of the Moderna COVID-19 vaccine in persons 18 years of age and older under the FDA's Emergency Use Authorization
- On Feb 28, 2021, ACIP recommended use of the JnJ/Janssen COVID-19 vaccine in persons 18 years of age and older under the FDA's Emergency Use Authorization
- On May 12, 2021, ACIP recommended use of the Pfizer COVID-19 vaccine in persons 12-15 years of age and older under the FDA's Emergency Use Authorization

https://www.cdc.gov/mmwr/volumes/69/wr/mm6950e2.htm?s_cid=mm6950e2_w

<https://www.cdc.gov/mmwr/volumes/69/wr/mm695152e1.htm>

[https://doi.org/10.15585/mmwr.mm7009e4external icon](https://doi.org/10.15585/mmwr.mm7009e4external_icon)

https://www.cdc.gov/mmwr/volumes/70/wr/mm7020e1.htm?s_cid=mm7020e1_w

Vaccine Administration

Interchangeability of COVID-19 vaccine products-I

- Either of the currently authorized mRNA COVID-19 vaccines can be used when indicated. ACIP does not state a product preference.
 - These mRNA COVID-19 vaccines are **not** interchangeable with each other or with other COVID-19 vaccine products.
 - The safety and efficacy of a mixed-product series have not been evaluated. Both doses of the series should be completed with the same product.
 - However, if two doses of different mRNA COVID-19 vaccine products are inadvertently administered, no additional doses of either product are recommended at this time.
 - In situations where the same mRNA vaccine product is temporarily unavailable, it is preferable to delay the second dose (up to 6 weeks) to receive the same product than to receive a mixed series using a different product.
 - If two doses of different mRNA COVID-19 vaccine products are administered in these situations (or inadvertently), no additional doses of either product are recommended at this time.
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Interchangeability of COVID-19 vaccine products-II

- The safety and efficacy of Janssen COVID-19 vaccine administered after an mRNA COVID-19 vaccine has not been established.
- However, in limited, exceptional situations where a patient received the first dose of an mRNA COVID-19 vaccine but is unable to complete the series with either the same or different mRNA COVID-19 vaccine (e.g., due to contraindication), a single dose of Janssen COVID-19 vaccine may be considered at a minimum interval of 28 days from the mRNA COVID-19 vaccine dose.
- Patients who receive Janssen COVID-19 vaccine after a dose of an mRNA COVID-19 vaccine should be considered to have received a valid, single-dose Janssen vaccination—not a mixed vaccination series—and are considered fully vaccinated against COVID-19 ≥ 2 weeks after receipt of the single dose of the Janssen vaccine.

Interval Between mRNA Doses

- The second dose of Pfizer-BioNTech and Moderna vaccines should be administered as close to the recommended interval as possible, but not earlier than recommended (i.e., 3 weeks [Pfizer-BioNTech] or 4 weeks [Moderna]).
 - Second doses administered within a grace period of ≤ 4 days from the recommended date for the second dose are considered valid; however, doses administered earlier do not need to be repeated. The second dose should be administered as close to the recommended interval as possible. However, there is no maximum interval between the first and second dose for either vaccine.
 - If it is not feasible to adhere to the recommended interval and a delay in vaccination is unavoidable, the second dose of Pfizer-BioNTech and Moderna COVID-19 vaccines may be administered up to 6 weeks (42 days) after the first dose.
 - Currently, only limited data are available on efficacy of mRNA COVID-19 vaccines administered beyond this window.
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Coadministration with other vaccines

- COVID-19 vaccines and other vaccines **may now be administered without regard to timing.**
 - This includes simultaneous administration of COVID-19 vaccines and other vaccines on the same day, as well as coadministration within 14 days.
 - It is unknown whether reactogenicity of COVID-19 vaccine is increased with coadministration, including with other vaccines known to be more reactogenic, such as adjuvanted vaccines or live vaccines.
 - When deciding whether to coadminister another vaccine(s) with COVID-19 vaccines, providers should consider whether the patient is behind or at risk of becoming behind on recommended vaccines, their risk of vaccine-preventable disease (e.g., during an outbreak or occupational exposures), and the reactogenicity profile of the vaccines.
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Vaccination of Persons with Prior SARS-CoV-2 Infection or Exposure

Persons with a history of SARS-CoV-2 infection

- Vaccination should be offered to persons regardless of history of prior symptomatic or asymptomatic SARS-CoV-2 infection
 - Data from phase 2/3 clinical trials suggest vaccination safe and likely efficacious in these persons
- Viral or serologic testing for acute or prior infection, respectively, is not recommended for the purpose of vaccine decision-making



Persons with known current SARS-CoV-2 infection

- Vaccination should be deferred until recovery from acute illness (if person had symptoms) *and* criteria have been met to discontinue isolation
- No minimal interval between infection and vaccination
- However, current evidence suggests reinfection uncommon in the 90 days after initial infection, and thus persons with documented acute infection in the preceding 90 days may defer vaccination until the end of this period, if desired

Persons who previously received passive antibody therapy for COVID-19

- Currently no data on safety or efficacy of COVID-19 vaccination in persons who 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 the treatment with vaccine-induced immune responses
 - Based on estimated half-life of therapies and evidence suggesting reinfection is uncommon within 90 days of initial infection
- This recommendation applies to people who receive passive antibody therapy before receiving any vaccine dose and to those who receive passive antibody therapy after the first dose of an mRNA vaccine but before the second dose, in which case the second dose should be deferred for at least 90 days following receipt of the antibody therapy.

Persons with a known SARS-CoV-2 exposure

- Community or outpatient setting:
 - Defer vaccination until quarantine period has ended to avoid exposing healthcare personnel (HCP) or other persons during vaccination visit
- Residents of congregate healthcare settings (e.g., long-term care facilities):
 - May be vaccinated, as likely would not result in additional exposures. HCP are already in close contact with residents and should employ appropriate infection prevention and control procedures
- Residents of other congregate settings (e.g., correctional facilities, homeless shelters)
 - May be vaccinated, in order to avoid delays and missed opportunities for vaccination
 - Where feasible, precautions should be taken to limit mixing of these individuals with other residents or non-essential staff

Vaccinated People Who Subsequently Develop COVID-19

- For people who have received one or more doses of COVID-19 vaccine and subsequently experience COVID-19, prior receipt of a COVID-19 vaccine should not affect treatment decisions (including use of monoclonal antibodies, convalescent plasma, antiviral treatment, or corticosteroid administration) or timing of such treatments.
- If a person who has SARS-CoV-2 RNA or antigen detected on a respiratory specimen collected ≥ 14 days after they complete all recommended doses of an FDA-authorized COVID-19 vaccine (defined as a [COVID-19 vaccine breakthrough case](#)), CDC encourages local health departments, healthcare providers, and clinical laboratories to:
 - Request the respiratory specimen be held for further testing
 - Report the case to the state health department where the individual resides for further investigation and reporting to the national system
- COVID-19 vaccine breakthrough cases that result in hospitalization or death should be reported to [VAERS](#)

Vaccination of Special Populations



Persons with underlying medical conditions

- COVID-19 vaccines may be administered to persons with underlying medical conditions who have no contraindications to vaccination
- Phase 2/3 clinical trials demonstrate similar safety and efficacy profiles in persons with underlying medical conditions, including those that place them at [increased risk for severe COVID-19](#), compared to persons without comorbidities

Immunocompromised persons

- Persons with HIV infection, other immunocompromising conditions, or who take immunosuppressive medications or therapies [might be at increased risk for severe COVID-19](#)
- Data not currently available to establish safety and efficacy of vaccine in these groups
- Persons with stable HIV infection were included in mRNA COVID-19 vaccine clinical trials, though data are limited.
- Immunocompromised individuals may still receive COVID-19 vaccines unless otherwise contraindicated
- Individuals should be counseled about:
 - Unknown vaccine safety and efficacy profiles in immunocompromised persons
 - Potential for reduced immune responses
 - Need to continue to follow all current guidance to protect themselves against COVID-19

Persons with autoimmune disorders

- No data are currently available on the safety and efficacy of mRNA COVID-19 vaccines in persons with autoimmune conditions, though these persons were eligible for enrollment in clinical trials.
- No imbalances were observed in the occurrence of symptoms consistent with autoimmune conditions or inflammatory disorders in clinical trial participants who received an mRNA COVID-19 vaccine compared to placebo.
- Persons with autoimmune conditions who have no contraindications to vaccination may receive an mRNA COVID-19 vaccine.

Persons with a history of Guillain-Barré syndrome

- To date, no cases of Guillain-Barré syndrome (GBS) have been reported following vaccination among participants in the mRNA COVID-19 vaccine clinical trials.
 - One case of GBS was reported in a participant in the vaccine group in the Janssen COVID-19 vaccine clinical trial, compared to one GBS case among those who received placebo.
 - With few exceptions, ACIP's [general best practice guidelines for immunization](#) does not include history of GBS as a contraindication or precaution to vaccination.
 - Persons with a history of GBS may receive a COVID-19 vaccine unless they have a contraindication to vaccination.
 - Any occurrence of GBS following a COVID-19 vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS).
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Considerations for the Use of Janssen COVID-19 Vaccine in Certain Populations

- Thrombosis with thrombocytopenia syndrome (TTS) among Janssen COVID-19 recipients is a rare syndrome that involves acute venous or arterial thrombosis and new onset thrombocytopenia (low blood platelets) in patients with no recent known exposure to heparin. The FDA's EUA now includes a warning that rare clotting events might occur after vaccination with this vaccine , primarily among women ages 18–49 years.
 - Provider and patient education about this warning is critical to ensure that women aged <50 years are aware of the increased risk for TTS after receipt of the Janssen COVID-19 vaccine and the availability of other FDA-authorized COVID-19 vaccines (i.e., mRNA vaccines).
 - The EUA fact sheets and prescribing information should be provided to all vaccine recipients and their caregivers (as relevant) before vaccination with any FDA-authorized COVID-19 vaccine.
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Persons with a history of Bell's palsy

- Cases of Bell's palsy were reported following vaccination in participants in both the Pfizer-BioNTech and Moderna COVID-19 vaccines clinical trials.
 - However, the FDA does not consider these to be above the frequency expected in the general population and has not concluded that these cases were causally related to vaccination.
 - Post-authorization safety surveillance will be important to further assess any possible causal association.
 - In the absence of such evidence, persons with a history of Bell's palsy may receive an mRNA COVID-19 vaccine unless they have a contraindication to vaccination.
 - Any occurrence of Bell's palsy following mRNA COVID-19 vaccination should be reported to VAERS
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Pregnant women

- COVID-19 and pregnancy
 - Increased risk of severe illness (ICU admission, mechanical ventilation and death)
 - Might be an increased risk of adverse pregnancy outcomes, such as preterm birth
- There are currently few data on the safety of COVID-19 vaccines in pregnant women
- COVID-19 vaccines and pregnancy
 - Not live vaccines and cannot cause infection in the mother or the fetus
 - They are degraded quickly by normal cellular processes
- CDC recently released the first U.S. data on the safety of mRNA COVID-19 vaccines administered during pregnancy. The report analyzed data from three vaccine-safety-related databases: VAERS, the v-safe active surveillance system, and the v-safe pregnancy registry, which collects more detailed data on people who are pregnant and their infants. **Early data from these systems did not identify any safety concerns for pregnant people who were vaccinated or for their babies.** Most of the pregnancies in these systems are ongoing; additional follow-up is needed, particularly among those vaccinated in the first and second trimesters of pregnancy.

Immunogenicity of COVID-19 mRNA Vaccine in Pregnant and Lactating women

- In an exploratory analysis of a convenience sample of 103 women aged 18-45, receipt of a COVID-19 mRNA vaccine was immunogenic in pregnant women, and vaccine-elicited antibodies were transported to infant cord blood and breast milk. Pregnant and nonpregnant women who were vaccinated developed cross-reactive antibody responses and T-cell responses against SARS-CoV-2 variants of concern.

Pregnant women

- Considerations for vaccination:
 - level of COVID-19 community transmission (risk of acquisition)
 - her personal risk of contracting COVID-19 (by occupation or other activities)
 - the risks of COVID-19 to her and potential risks to the fetus
 - the efficacy of the vaccine
 - the known side effects of the vaccine
 - the limited but growing data about the vaccine during pregnancy
- Pregnant women who experience fever following vaccination should be counseled to take acetaminophen as fever has been associated with adverse pregnancy outcomes
- Routine testing for pregnancy prior to receipt of a COVID-19 vaccine is not recommended.

Breastfeeding/Lactating Women

- There are limited data on the safety of COVID-19 vaccines in lactating women or the effects of mRNA vaccines on the breastfed infant or milk production/excretion
- COVID-19 vaccines are not considered live virus vaccines and are not thought to be a risk to the breastfeeding infant
- If a lactating woman is part of a group (e.g., healthcare personnel) who is recommended to receive a COVID-19 vaccine, she may choose to be vaccinated

Vaccination of children and adolescents

- Adolescents aged 12–17 years are included among persons eligible to receive the Pfizer-BioNTech COVID-19 vaccine under the EUA, with appropriate assent.
- Available safety, immunogenicity, and reactogenicity data are similar to those seen in young adults ages 16-25 years.
- Fainting (syncope) may occur in association with any injectable vaccines, especially among adolescents. Procedures should be in place to prevent falling injuries and manage syncopal reactions.
- Children and adolescents younger than 12 years of age are not authorized to receive the Pfizer-BioNTech COVID-19 vaccine at this time.
- Children and adolescents younger than 18 years of age are not authorized to receive the Moderna or Janssen COVID-19 vaccine at this time

Patient Vaccine Counseling

Reactogenicity

- Before vaccination, providers should counsel vaccine recipients about expected local and systemic post-vaccination symptoms
- Unless a person develops a contraindication to vaccination, they should be encouraged to complete the series even if they develop post-vaccination symptoms in order to optimize protection against COVID-19
- Antipyretic or analgesic medications may be taken for treatment of post-vaccination symptoms
 - Routine prophylaxis for the purposes of preventing symptoms is not recommended at this time, due to lack of information on impact of use on vaccine-induced antibody responses

Public Health Recommendations for Fully Vaccinated People

Guidance after vaccination

Fully vaccinated people:

- Indoor and outdoor activities pose minimal risk to fully vaccinated people.
- Fully vaccinated people have a reduced risk of transmitting SARS-CoV-2 to unvaccinated people.

Fully vaccinated people can:

- Resume activities without wearing masks or physically distancing, except where required by federal, state, local, tribal, or territorial laws, rules and regulations, including local business and workplace guidance.
- Resume domestic travel and refrain from testing before or after travel or self-quarantine after travel.
- Refrain from testing before leaving the United States for international travel (unless required by the destination) and refrain from self-quarantine after arriving back in the United States.
- Refrain from testing following a known exposure, if asymptomatic, with some exceptions for specific settings.
- Refrain from quarantine following a known exposure if asymptomatic.
- Refrain from routine screening testing, if feasible.

For now, fully vaccinated people should continue to:

- Get tested if experiencing [COVID-19 symptoms](#)
- Follow CDC and state/local health department travel requirements and recommendations.