



Considerations in choosing a COVID-19 booster: a guide for healthcare professionals and patients

Last updated November 30, 2021

This guidance was developed by the San Francisco Department of Public Health (SFDPH) for local use. It will be posted at sfcdcp.org/boosters.

Summary of changes since the November 15, 2021 version

- **As of November 29, 2021, both the Centers for Disease Control and Prevention (CDC) and California Department of Public Health (CDPH) recommend everyone 18 years and older get a COVID-19 booster.**
- **No one asking for a booster should be turned away if they finished a primary Pfizer or Moderna vaccination series at least six months ago OR if they got a J&J vaccine at least 2 months ago.**
- **Due to the uptick in COVID-19 cases and the increased contact during the holiday season, anyone 18 years and older should get a booster vaccine for added protection, in alignment with the CDPH & CDC.**

AUDIENCE: People who want a COVID-19 booster and their healthcare providers.

PURPOSE: To outline considerations for choosing which COVID-19 vaccine to receive as a booster.

BACKGROUND: San Francisco continues to prioritize getting everyone fully vaccinated¹. COVID-19 vaccination is recommended for everyone aged 5 years and older for the prevention of COVID-19. All three of the COVID-19 vaccines authorized in the United States (Pfizer, Moderna, J&J) are highly effective in reducing risk of severe disease, hospitalization, and death, even against the widely circulating Delta variant. On October 21, 2021, the CDC endorsed the FDA's authorization of a booster dose of all three of these COVID-19 vaccines.

Rationale for Boosters

Certain populations, such as the elderly or immunocompromised, may have reduced protection against mild and moderate disease as the time from their initial vaccination gets longer and those who work in high-risk settings for COVID-19 transmission may have higher amounts of ongoing exposure. Data from small clinical trials show that a booster dose increases the immune response. With an increased immune response, people should have improved protection against COVID-19, including new variants. Based on the available evidence, **SFDPH strongly urges everyone 18 years and older to get a booster**. Given new variants and the increased contact during the upcoming holiday season, boosters should be **given to anyone 18 years and older for additional protection provided they qualify** based on the timing of their previous vaccine dose (see the Booster Guidance diagram below).

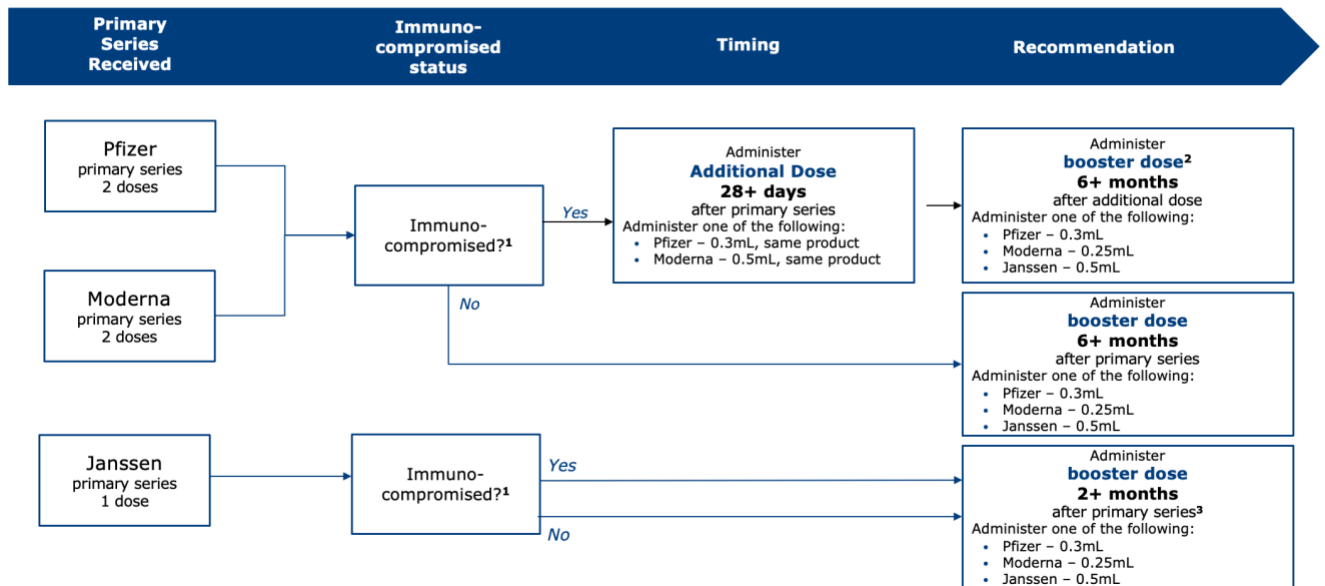
¹ You are considered fully vaccinated two weeks after your second dose in a two-dose series or two weeks after a single-dose vaccine.

The CDC did not endorse a preference of which vaccine to use and stated that vaccines may be “mixed and matched,” meaning people who received one brand for their initial vaccination can safely choose a different brand for their booster. In alignment with the CDC, SFDPH does not give a recommendation on which specific booster to use, however this document may help with individualizing booster considerations. Because of the wide availability of all vaccines, you may consider the risks and benefits of each booster and talk with your healthcare provider about which booster is most appropriate for you.

Current recommendations on who should receive boosters

Booster Guidance for people 18 years and older*

Use this map to understand the current guidelines.



* Per the CDPH and CDC, everyone 18 years and older should get a booster if it's been at least 6 months since completing their primary mRNA vaccine series, or it's been at least 2 months since receiving their J&J dose. This diagram was adapted from local use from Pennsylvania Department of Public Health (<https://www.health.pa.gov/>). For more information see the [CDC's Interim Clinical Considerations for Use of COVID-19 Vaccines](#).

1. Immunocompromised as defined by CDC can be found [here](#).

2. Persons with moderate or severe immune compromise, who received a primary mRNA vaccine series (Pfizer or Moderna) are eligible for an "additional" mRNA vaccine dose at least 28 days following completion of their primary series. They then become eligible for a booster dose 6 months after their "additional" dose.

3. Persons with moderate or severe immune compromise who received a primary Janssen/J&J dose, are eligible for one booster dose at least 2 months later. Further booster doses are not yet defined for this group. Persons who participated in the SFDPH "supplemental" dose accommodation and received a "supplemental" mRNA after a primary Janssen/J&J dose, are considered to have completed their booster dose and are not eligible for further doses at this time.

Considerations

You can consider the following as you decide which COVID-19 vaccine to get as a booster:

Convenience: Whatever is easiest and most convenient to get based on what is available when you are ready to get your booster.

- For example, if you want to get a booster from your nearby pharmacy before you travel, it is fine to choose what is available from that location at that time.

Familiarity: If you did not experience any problems with your first series, you may decide to choose the same (homologous) vaccine for your booster because you will know what to expect.

Current evidence:

- Clinical trial data show that using the same vaccine for the booster strengthens the immune response and has an acceptable safety profile.
- If you choose a different (heterologous) vaccine for your booster, early studies show that they stimulate a similar or higher immune response than using homologous boosters.
- If you received J&J for your first vaccine, an mRNA (Pfizer, Moderna) booster likely gives a stronger immune response than a J&J booster.
- The Moderna primary series seems to offer protection for longer than the Pfizer primary series, but we don't know how the boosters will compare.

Side effects:

- The minor side effects (such as fatigue, fever, muscle aches, pain on the arm where you got the vaccination) are the same for all 3 vaccines.
- If you had a severe or immediate allergic reaction to any ingredient to an mRNA vaccine, then you should not get an mRNA booster.
- If you developed pericarditis or myocarditis (see definitions below under "Special considerations in certain populations") after an mRNA vaccine, then you should not get an mRNA booster.
- If you had severe or immediate allergic reaction to any ingredient in the J&J vaccine, then you should not get the J&J booster.
- If you developed TTS (see definitions below under "Special considerations in certain populations") after your first J&J vaccine, then should not get a J&J booster.

Special considerations in certain populations: If you suspect you (or your patient) may be at risk of a serious reaction to one of the vaccines, that can be a consideration in which booster to choose. However, all the following serious reactions are **extremely rare**, and no booster product is contraindicated in the following populations. For a complete discussion, see CDC's [Interim Clinical Considerations for Use of COVID-19 Vaccines](#).

- Women younger than 50 years of age
 - Thrombosis with thrombocytopenia syndrome (TTS) is a rare syndrome that involves acute venous or arterial blood clots with low platelets in patients with no recent heparin use.
 - As of October 20, 2021, after more than 15.3 million J&J doses given, there are 47 confirmed cases of TTS, most of these occurring in women 18-49 years of age.
- Males 50 to 64 years of age
 - Guillain-Barré syndrome (GBS) is a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. Most people fully recover from GBS, but some have permanent nerve damage.
 - As of October 20, 2021, after more than 15.3 million J&J/Janssen COVID-19 Vaccine doses administered, 238 cases of GBS have been reported, most of them in men older than 50 years.
- Males younger than 30 years of age
 - As of October 20, 2021, 1,698 cases of myocarditis (inflammation of the heart muscle) or pericarditis (inflammation of the sac around the heart) were reported among people ages 30 and younger who received COVID-19 vaccine. Most of these people fully recovered. Most cases have been reported after mRNA COVID-19 vaccination particularly in male adolescents and young adults.
 - The risk of developing myocarditis/pericarditis from COVID-19 infection is significantly higher than from an mRNA vaccine.

Considerations	Booster choice		
	Pfizer	Moderna	J&J
Convenience	✓	✓	✓
Booster with the same vaccine	✓	✓	✓
Booster with a different vaccine	✓	✓	✓
Minor side-effects	✓	✓	✓
Severe or immediate allergic reaction to any component of an mRNA (Pfizer/Moderna) vaccine*	✗	✗	✓
History of myocarditis or pericarditis after an mRNA (Pfizer/Moderna) vaccine	✗	✗	✓
Severe or immediate allergic reaction to any component of the J&J vaccine*	✓	✓	✗
History of TTS after J&J vaccination	✓	✓	✗
Females younger than 50 years of age	See ' <i>Special considerations in certain populations</i> ' above		
Males 50 to 64 years of age			
Males younger than 30 years of age			
Immunocompromised	See <i>flow chart</i> above		

* A severe allergic reaction is one that needs to be treated with epinephrine or EpiPen or with medical care. An immediate allergic reaction means a reaction within 4 hours of exposure, including symptoms such as hives, swelling, or wheezing (respiratory distress).

Resources and references

Centers for Disease Control and Prevention (CDC)

- [COVID-19 booster shots](#)
- [Interim Clinical Considerations for Use of COVID-19 Vaccines](#)
- [Pfizer vaccine information](#)
- [Moderna vaccine information](#)
- [J&J vaccine information](#)
- [Adverse events reported after vaccine administration](#)
- [ACIP slides: NIH study on heterologous boosters](#)
- [ACIP slides: Evidence to Recommendation Framework: Pfizer-BioNTech COVID-19 Booster Dose](#)
- [MMWR: The Advisory Committee on Immunization Practices' Interim Recommendations for Additional Primary and Booster Doses of COVID-19 Vaccines — United States, 2021](#)
- [MMWR: Monitoring Incidence of COVID-19 Cases, Hospitalizations, and Deaths, by Vaccination Status — 13 U.S. Jurisdictions, April 4–July 17, 2021](#)
- [MMWR: New COVID-19 Cases and Hospitalizations Among Adults, by Vaccination Status — New York, May 3–July 25, 2021](#)
- [MMWR: Effectiveness of COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Frontline Workers Before and During B.1.617.2 \(Delta\) Variant Predominance — Eight U.S. Locations, December 2020–August 2021](#)
- [Waning immunity of the BNT162b2 vaccine: A nationwide study from Israel](#)
- [Resurgence of SARS-CoV-2 Infection in a Highly Vaccinated Health System Workforce](#)
- [Covid-19 in the Phase 3 Trial of mRNA-1273 During the Delta-variant Surge](#)
- [Protection of BNT162b2 Vaccine Booster against COVID-19 in Israel](#)
- [Immunogenicity and reactogenicity of BNT162b2 booster in ChAdOx1-S-primed participants \(CombiVacS\): a multicentre, open-label, randomised, controlled, phase 2 trial](#)
- [Neutralization of the SARS-CoV-2 Delta variant after heterologous and homologous BNT162b2 or ChAdOx1 nCoV-19 vaccination](#)
- [Heterologous ChAdOx1 nCoV-19 and mRNA-1273 vaccination](#)
- [A 'mix and match' approach to SARS-CoV-2 vaccination](#)
- [Immune responses against SARS-CoV-2 variants after heterologous and homologous ChAdOx1 nCoV-19/BNT162b2 vaccination](#)
- [Immunogenicity and reactogenicity of heterologous ChAdOx1 nCoV-19/mRNA vaccination](#)
- [Comparison of two highly effective mRNA vaccines for COVID-19 during periods of Alpha and Delta variant prevalence](#)