



Update on Booster Doses: Pfizer, Moderna, Johnson & Johnson/Janssen

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Update on COVID-19 vaccine booster dosing from the CDC and FDA

On March 29, 2022, the Food and Drug Administration ([FDA](#)) [authorized](#) the use of a second booster dose for COVID-19 vaccines in certain population groups. On March 29, 2022, the Centers for Disease Control and Prevention (CDC) Director also [updated existing booster dose recommendations](#) for a second booster dose of COVID-19 vaccines in certain population groups. The summary of recommendations from these two agencies is as follows:

For individuals who received a Pfizer-BioNTech vaccine, the following groups are eligible for a second booster vaccine dose 4 months or more after their initial booster dose:

- Persons 50 years and older
- Persons 12 years and older with [certain immunocompromising conditions](#) (for example, patients with certain types of cancer, patients receiving specific immunosuppressive treatments, etc.)

For individuals who have received a Moderna COVID-19 vaccine, the following groups are eligible for a second booster vaccine dose 4 months or more after their initial booster dose:

- Persons 18 years and older with similar kinds of immunocompromising conditions

For individuals 18 – 49 years old who received a Johnson & Johnson (J and J) COVID-19 vaccine as both their primary series dose and booster dose:

- May receive a second booster dose using an mRNA COVID-19 vaccine at least 4 months after their first J and J booster dose

The CDC recommends that [mRNA vaccines be used preferentially](#) over J and J vaccines for all doses in the COVID-19 vaccine series: initial doses, additional doses and booster doses. In people ages 12–17 years, only Pfizer-BioNTech COVID-19 Vaccine can be used.

The FDA and the CDC want the public to know:

- Ensuring that we vaccinate all of those still unvaccinated should be a key priority.
- COVID-19 vaccines still provide strong protection against severe outcomes of COVID-19 disease, including severe illness, hospitalization and death, even against the widely circulating Omicron variant.
- The effectiveness of COVID-19 vaccines in protecting against mild and moderate disease appears to wane over time for the different vaccines.
- Mild to moderate COVID-19 disease can be associated with severe outcomes such as blood clots and long COVID-19.
- Authorizing boosters is essential for continued protection against COVID-19 disease in light of the evidence of waning immunity in the population, including in some individuals who are fully vaccinated.
- The FDA and the CDC will continue to follow the ongoing studies on the safety and effectiveness of booster doses.

Rationale for a second booster dose for those over 50 years of age and people who are immunocompromised

From the Office of the CDC Director, Dr. Rochelle P. Walensky:

Data continue to show the importance of vaccination and booster doses to protect individuals both from infection and severe outcomes of COVID-19. For adults and adolescents eligible for a first booster dose, these shots are safe and provide substantial benefit.

During the recent Omicron surge, those who were boosted were 21-times less likely to die from COVID-19 compared to those who were unvaccinated and 7-times less likely to be hospitalized.

CDC continues to recommend that all eligible adults, adolescents, and children 5 and older be up to date on their COVID-19 vaccines, including getting an initial booster when eligible.

<https://www.cdc.gov/media/releases/2022/s0328-covid-19-boosters.html>

From the Office of the FDA:

Emerging evidence suggests that a second booster dose of an mRNA COVID-19 vaccine improves protection against severe COVID-19 and is not associated with new safety concerns.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-second-booster-dose-two-covid-19-vaccines-older-and>

Please refer to the 'Background Information' section below for additional information

What does it mean to be up to date on COVID-19 vaccines?

A person is considered up to date for COVID-19 vaccines when they have received all recommended primary vaccine series doses and a booster dose, when eligible. Receipt of a second booster dose is not necessary to be considered up to date at this time.

What is the primary vaccine series?

- For most people, receiving 2-dose series of an mRNA COVID-19 vaccine (Pfizer-BioNTech and Moderna) or a single dose of Janssen Vaccine completes the primary series.
- For moderately or severely immunocompromised people, receipt of a 3-dose series of an mRNA COVID-19 vaccine or a single dose of Janssen COVID-19 Vaccine completes the primary series.
- The same mRNA vaccine product should be used for all primary series doses.
- **Pfizer-BioNTech COVID-19 vaccine** is FDA-approved or FDA-authorized in people ages 5 years and older as a 2-dose primary series, with an interval of 3 weeks between doses.
- **Moderna COVID-19 vaccine** is FDA-approved or FDA-authorized in people ages 18 years and older as a 2-dose primary series, with an interval of 4 weeks between doses.
- mRNA COVID-19 vaccines (Pfizer and Moderna) are safe and effective at the abovementioned intervals, but a longer interval may be considered for some populations. While the risk is small, the relative risk for [myocarditis](#) is higher for males ages 12-39 years, and this risk might be reduced by extending the interval between the first and second dose. **Therefore, an 8-week interval may be optimal for some people ages 12 years and older, especially for males ages 12–39 years.**
- Although mRNA vaccines are preferentially recommended in most situations over the Janssen COVID-19 vaccine, the Janssen COVID-19 vaccine may be considered in some cases. Visit [Contraindications and precautions](#) and [Safety considerations for Janssen COVID-19 Vaccine](#).
- Janssen COVID-19 vaccine is FDA-authorized for use in people ages 18 years and older. The primary series is a single primary dose. See [Appendix D. Interim Clinical Considerations from the CDC](#) for additional information about completing schedules that have included the use of the Janssen COVID-19 vaccine in people who are moderately or severely immunocompromised.

Booster doses for the general population (Refer to Tables 1a, 1b)

How many booster doses are currently recommended?

- Most people 12 years and older are currently recommended to receive only 1 booster dose. Some people over the age of 50 years, and those 12 years and older who are moderately or severely immunocompromised, are recommended to receive a second booster dose.
- ***mRNA vaccines (Pfizer and Moderna) are preferred over J and J vaccines for booster doses.***

Booster dose 1 (recommended for everyone 12 years and older)

The recommended interval for the booster dose is based on the product received for the primary series. In most people, the interval is:

- At least 5 months after mRNA 2-dose primary vaccination or
- At least 2 months after Janssen single dose primary vaccination

Booster dose 2 (recommended for adults over 50 years of age, adults 18-49 years old who received a J and J COVID-19 vaccine as both their primary series dose and first booster dose, and for people 12 years and older who are moderately or severely immunocompromised)

The recommended interval for booster dose 2 is:

- At least 4 months after the first booster dose

Additional and booster doses for people who are moderately or severely immunocompromised (Refer to Tables 2a and 2b)

People with immunocompromising conditions or who take immunosuppressive medications or therapies are [at increased risk for severe COVID-19](#).

People who are considered [moderately or severely immunocompromised](#) are recommended to receive more doses than the general population:

- For people 5 years and older, an **additional dose** in the primary vaccine series (total of 3 primary vaccine doses)*
- For people 12 years and older, two booster doses (given 4 months apart)

Additional dose in the primary vaccine series in immunocompromised people

- An additional dose of vaccine is administered when a person's immune response after receiving a primary vaccine series may not be sufficient. An additional mRNA COVID-19 vaccine (Pfizer or Moderna) dose should be given to moderately to severely immunocompromised people at least 28 days after an initial 2-dose mRNA primary vaccine series, making it a total of 3 doses in the primary vaccine series.
*J and J vaccine is not currently recommended for use as an additional dose vaccine. However, immunocompromised people who received a J and J vaccine as their primary vaccine dose are recommended to receive an additional dose using an mRNA COVID-19 vaccine (Pfizer or Moderna) at least 4 weeks after the J and J dose.

Booster dosing after receipt of an additional dose in immunocompromised people

- Booster doses are recommended for people 12 years of age and older after a primary vaccination series is completed. Pfizer vaccine should be used for people 12 -17 years old.
- A booster dose is another dose of vaccine that is administered when the individual did not have a sufficient immune response after the primary vaccine series. However, that response may have waned (lessened) over time.
- For immunocompromised people who received a 3-dose primary mRNA vaccine series, **booster dose #1** is recommended at least 3 months after the third dose in the primary series, **for a total of four doses**. mRNA COVID-19 vaccines are preferred for booster dose #1.
- For those who initially received a J and J vaccine as their primary dose and an additional dose using an mRNA vaccine, booster dose #1 is recommended at least 2 months after the additional dose, **for a total of 3 doses** (1 Janssen vaccine dose followed by 1 additional mRNA vaccine dose, then 1 booster dose). mRNA vaccines are preferred for booster dose #1. (Note: *Many people who received a Janssen COVID-19 vaccine may have already received a booster dose (Pfizer-BioNTech, Moderna [50 µg, 0.25 ml], or Janssen vaccine) without having had the second (additional) mRNA vaccine dose. In this situation, regardless of the type and timing of the vaccine received as the second dose, administer a Pfizer-BioNTech vaccine or a Moderna vaccine (100 µg [0.5 mL]) as the third dose at least 2 months*

after dose 2. See Appendix D at <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised> for further details.

- **Booster dose #2** is recommended at least 4 months after booster dose #1 in immunocompromised people 12 years and older. mRNA vaccines are preferred for booster dose #2. For people 12-17 years, only Pfizer COVID-19 vaccine can be used.

References: [CDC: Additional and Booster doses](#)

Booster dosing and administration - Moderna and Pfizer COVID-19 vaccine

When using the Moderna vaccine as the booster dose, a 50 mcg booster dosage should be administered (instead of the primary series dose of 100 mcg). When using the Pfizer vaccine, the booster dosage amount is the same dose given in the primary series.

Background information

Information to Support Authorization of a Second COVID-19 Booster Dose (<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-second-booster-dose-two-covid-19-vaccines-older-and>)

The FDA has determined that the known and potential benefits of a second COVID-19 vaccine booster dose with either of these vaccines outweigh their known and potential risks in these populations. The evidence considered for authorization of a second booster dose following primary vaccination and first booster dose included safety and immune response information provided to the agency as well as additional information on effectiveness submitted by the companies.

A summary of safety surveillance data provided to the FDA by the Ministry of Health of Israel on the administration of approximately 700,000 fourth (second booster) doses of the Pfizer-BioNTech COVID-19 vaccine given at least 4 months after the third dose in adults 18 years of age and older (approximately 600,000 of whom were 60 years of age or older) revealed no new safety concerns.

The safety of Moderna COVID-19 vaccine, when administered as a second booster dose, is informed by experience with the Pfizer-BioNTech COVID-19 vaccine and safety information reported from an independently conducted study in which the Moderna COVID-19 vaccine was administered as a second booster dose to 120 participants 18 years of age and older who had received a two-dose primary series and a first booster dose of Pfizer-BioNTech COVID-19 vaccine at least 4 months prior. No new safety concerns were reported during up to three weeks of follow up after the second booster dose.

Immunogenicity data from an ongoing, open-label, non-randomized clinical study in healthcare workers at a single center in Israel were reported in a publication provided to the FDA. In this study, individuals 18 years of age and older who had received primary vaccination and a first booster dose with Pfizer-BioNTech COVID-19 vaccine were administered a second booster dose of Pfizer-BioNTech COVID-19 vaccine (154 individuals) or Moderna COVID-19 vaccine (120 individuals) at least four months after the first booster dose. Among these individuals, increases in neutralizing antibody levels against the SARS-CoV-2 virus, including delta and omicron variants, were reported two weeks after the second booster compared to 5 months after the first booster dose.

Per the [press release](#) from the CDC on March 29, 2022, “based on [newly published data](#), adults who received a primary vaccine and booster dose of Johnson & Johnson’s Janssen COVID-19 vaccine at least 4 months ago may now receive a second booster dose using an mRNA COVID-19 vaccine.”

Frequently Asked Questions

Is it okay to take a different COVID-19 dose for your booster dose(s)?

You can take a different vaccine brand as your booster dose. Everyone 12 years and older is eligible for a booster dose. CDC recommends that mRNA vaccines be administered preferentially over J and J vaccine for your booster doses.

Who is eligible to get a booster dose?

Please refer to table: Who Can Get a Booster: <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/booster-shot.html>.

Who is eligible to receive a second booster dose at this time?

The FDA and CDC recommend the following:

- A second booster dose of either the Pfizer-BioNTech COVID-19 vaccine or Moderna COVID-19 vaccine may be administered to people 50 years of age and older at least 4 months after receiving their first booster dose of any authorized or approved COVID-19 vaccine.
- A second booster dose of the Pfizer-BioNTech COVID-19 vaccine may be administered to people 12 years of age and older who are moderately or severely immunocompromised at least 4 months after receiving their first booster dose of any authorized or approved COVID-19 vaccine.
- A second booster dose of the Moderna COVID-19 vaccine may be administered at least 4 months after the first booster dose of any authorized or approved COVID-19 vaccine to people 18 years of age and older who are moderately or severely immunocompromised.
- For people who received the Johnson & Johnson (J and J) COVID-19 vaccine as both their primary dose and booster dose, a second booster dose using an mRNA COVID-19 vaccine is recommended at least 4 months after their first J and J booster dose.

If we need a booster shot, are the vaccines working?

Yes, COVID-19 vaccines are working well to prevent severe illness, hospitalization, and death. However, public health experts are starting to see reduced protection over time against mild and moderate disease, especially among certain populations.

Does the definition of “up to date” include a booster shot?

A person is considered up to date for COVID-19 vaccines when they have received all recommended doses in their primary vaccine series and a booster dose, when eligible. Receipt of a second booster dose is not necessary to be considered up to date at this time.

Are there studies to show it is safe to mix brands and that the vaccines are still effective if you mix them?

Yes. There is an ongoing [study from the NIH](#) (National Institutes of Health) which so far shows that it is safe to mix the vaccine brands and that you get the same or even better protection from mixing brands versus taking the same brand for your booster as you did for your initial vaccine. Scientists at the FDA and CDC continue to follow this study's results, but the results are encouraging so far. The VAERS system also continues to look at any reports to VAERS in persons who received a booster dose of a different vaccine than what they initially received. So far, there is no evidence of a safety problem in persons who initially received the J and J vaccine and later received either Moderna or Pfizer vaccine as their booster dose. ([CDC: VaST presentation 10 21 21](#))

What if someone received another COVID-19 vaccine internationally (one that was not authorized in the U.S.)? Can they get a booster dose here?

The recommendations for people vaccinated outside of the United States depend on the vaccine(s) received for the primary series, whether the primary series was completed, and whether a booster dose was received. Please refer to the detailed tables in Appendix A: <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#appendix-a> for further information.

Are there any data on breakthrough infections in persons who received a booster dose?

CDC scientists are still reviewing vaccine efficacy studies from the U.S. and Israel, where the Pfizer boosters have been used for a few months. Scientists know that breakthrough infection can still occur with booster doses from these studies. However, there is a reduced risk for breakthrough infections in persons who receive a booster dose. (Reference: CDC Partner Call 10/22/21)

People who were vaccinated with a primary series *and* an additional or booster dose had lower case rates overall compared with those *without* an additional or booster dose. Both of these groups had a lower risk of testing positive for COVID-19 and a lower risk of dying from COVID-19 compared with unvaccinated people. (<https://covid.cdc.gov/covid-data-tracker/#rates-by-vaccine-status>)

Are pregnant people considered at high risk for the purposes of COVID-19 booster vaccinations?

Yes, they are included in the group of 18-49 years older with underlying medical conditions who may receive a booster.

What should they do if someone did not complete their primary series of mRNA vaccines (i.e., only received one dose of Pfizer or Moderna vaccine)?

They should complete their primary series. They should complete the series preferably with an mRNA vaccine (Pfizer or Moderna).

Can a COVID-19 booster dose be given on the same day as the flu shot/vaccine?

Yes, both vaccines may be given on the same day but at a different injection site. Reference: <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>

Social Media Posts

Talking points, like those above, are meant for just that – talking. They shouldn't be used verbatim in print, email or social media.

Talking points are most effective when you use your language to share the basic information found in said content, sharing messages in a style of speech that is both expected and best understood by your audiences. For social media, that means keeping it short, conversational and not trying to tackle too much information at once. Stick to the essential details, and don't try to explain too much in a single post.

You wouldn't read Shakespeare to a fifth-grade class; instead, you would talk about the general themes of Shakespeare's stories and avoid the complicated language. We suggest a similar approach to using critical vaccine information on social media. For example:

Social Media Examples

Booster doses have been in the news lately — what are they? Booster shots are typical for many vaccines. While not everyone needs a #COVID19 booster, some people are recommended to get one or even two booster doses. Learn more: *[insert a link to your local/state landing page]*

Social Media Sample Posts and Shareable Graphics From the [Public Health Collaborative](#)

The COVID-19 vaccines are safe and effective and continue to be highly effective against hospitalization and severe outcomes of COVID-19. The emergence of the omicron variant underscores the importance of getting vaccinated and getting a booster. If you have questions or are eligible to schedule your booster, learn more here: *[insert link to your local/state landing page]*

COVID-19 booster updates: adults age 50 and older and some immunocompromised people are now eligible to get a second Pfizer or Moderna booster dose at least 4 months after their first booster. Learn more about where/how to get a booster dose here: *[link to local/state landing page]*

Everyone ages 12 and older should get a booster shot. Learn more about booster doses, and where/how to get one, here: *[link to local/state landing page]*

It's still flu season, which means it's time to get your flu shot. If you're eligible to get a #COVID19 booster dose, you might be wondering if you can also get your flu shot the same day. You can! Learn more about getting your booster and flu shots here: *[insert link to your local/state landing page]*

COVID-19 Booster Doses

Adults age 50 and older and some immunocompromised individuals are now eligible to get a second booster, at least 4 months after their first booster.



As of 3/29/2022

References

- [CDC Additional Boosters for Certain Individuals](#)
- [FDA Authorization of Second Booster Dose](#)
- [CDC Interim Clinical Guidance for COVID-19 Vaccines](#)
- [CDC Vaccine Booster Shots](#)
- [CDC Article: Booster Doses Following J & J Vaccine](#)
[Public Health Collaborative, Topline Messages, Sample Posts and Graphics](#)

Tables (available at: <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#recommendations>)

Table 1a. COVID-19 vaccination schedule for the general public (people who are **NOT** moderately or severely immunocompromised)

Primary series vaccine manufacturer	Age group	Number of doses in primary series	Number of booster doses	Interval between 1st and 2nd primary doses	Interval between primary series and booster dose
Pfizer-BioNTech	5–11 years	2	NA	3 weeks	NA
Pfizer-BioNTech	12 years and older	2	1 [†]	3-8 weeks [‡]	At least 5 months [†]
Moderna	18 years and older	2	1 [†]	4-8 weeks [‡]	At least 5 months [†]
Janssen	18 years and older	1	1 [†]	NA	At least 2 months [†]

*For the vaccination schedule for people who are moderately or severely immunocompromised, see [Table 3](#)

†All people ages 12 years and older should receive 1 booster dose of a COVID-19 vaccine. Some adults may receive a second booster dose:

- Adults ages 18-49 years: Those who received Janssen COVID-19 Vaccine as both their primary series dose and booster dose may receive an mRNA COVID-19 booster dose at least 4 months after the Janssen booster dose.
- Adults ages 50 years and older: A second mRNA booster dose could benefit people ages 50 years and older, as they are at increased risk for severe COVID-19. People ages 50 years and older may choose to receive a second booster dose, if it has been at least 4 months after the first booster

‡An **8-week** interval may be optimal for some people ages 12 years and older, especially for males ages 12 to 39 years. A **shorter interval** (3 weeks for Pfizer-BioNTech; 4 weeks for Moderna) between the first and second doses remains the recommended interval for people who are moderately to severely immunocompromised; adults ages 65 years and older; and in situations in which there is increased concern about [COVID-19 community levels](#) or an individual's higher risk of severe disease.

Table 1b. COVID-19 vaccination schedule for people who are NOT moderately or severely immunocompromised

Vaccine	0 month	1 month	2 month	3 month	4 month	5 month	6 month	7 month	8 month	9 month	10 month	11 month
Pfizer-BioNTech (ages 5–11 years)	1 st dose	2 nd dose (3 weeks after 1 st dose)										
Pfizer-BioNTech (ages 12 years and older)	1 st dose	2 nd dose [†] (3–8 weeks after 1 st dose)					Booster dose [‡] (at least 5 months after 2 nd dose)				See footnote [§]	
Moderna (ages 18 years and older)	1 st dose	2 nd dose [†] (4–8 weeks after 1 st dose)					Booster dose [‡] (at least 5 months after 2 nd dose)				See footnote [§]	
Janssen (ages 18 years and older)	1 st dose		Booster dose [‡] (at least 2 months after 1 st dose)				See footnote [§]					

Note: Timeline is approximate. Intervals of 3 months or fewer are converted into weeks per the formula “1 month = 4 weeks.” Intervals of 4 months or more are converted into calendar months.

*See [Guidance for COVID-19 vaccination for people who are moderately or severely immunocompromised](#) for schedule for people who are moderately or severely immunocompromised.

†An 8-week interval may be optimal for some people ages 12 years and older, especially for males ages 12 to 39 years. A shorter interval (3 weeks for Pfizer-BioNTech; 4 weeks for Moderna) between the first and second doses remains the recommended interval for people who are moderately or severely immunocompromised; adults ages 65 years and older; and in situations in which there is increased concern about [COVID-19 community levels](#) or an individual’s higher risk for severe disease.

‡ A booster dose is not currently authorized for people ages 5–11 years. For people ages 12–17 years, only Pfizer-BioNTech can be used. An mRNA COVID-19 vaccine is preferred over the Janssen COVID-19 Vaccine for booster vaccination of people ages 18 years and older.

§ People ages 18–49 years who received Janssen COVID-19 Vaccine as both their primary series dose and booster dose may receive an mRNA COVID-19 booster dose at least 4 months after the Janssen booster dose. People ages 50 years and older may choose to receive a second booster dose if it has been at least 4 months after the first booster dose.

Table 2a. COVID-19 vaccination schedule for people who are moderately or severely immunocompromised*

Primary vaccination	Age group	Number of primary vaccine doses	Number of booster doses	Interval between 1st and 2nd dose	Interval between 2nd and 3rd dose	Interval between 3rd and 4th dose
Pfizer-BioNTech	5–11 years	3	NA	3 weeks	At least 4 weeks	NA
Pfizer-BioNTech	12 years and older	3	1*	3 weeks	At least 4 weeks	At least 3 months*
Moderna	18 years and older	3	1*	4 weeks	At least 4 weeks	At least 3 months*
Janssen	18 years and older	1 Janssen, followed by 1 mRNA	1*	4 weeks	At least 2 months	NA*

*People ages 12 years and older may choose to receive a second booster dose using an mRNA COVID-19 vaccine if it has been at least 4 months after the first booster dose.

Table 2b. COVID-19 vaccination schedule for people who are moderately or severely immunocompromised

Vaccine	0 month	1 month	2 month	3 month	4 month	5 month	6 month	7 month	8 month	9 month
Pfizer-BioNTech (ages 5–11 years)	1 st dose	2 nd dose (3 weeks after 1 st dose)	3 rd dose (at least 4 weeks after 2 nd dose)							
Pfizer-BioNTech (ages 12 years and older)	1 st dose	2 nd dose (3 weeks after 1 st dose)	3 rd dose (at least 4 weeks after 2 nd dose)			Booster dose* (at least 3 months after 3 rd dose)				See footnote [‡]
Moderna (ages 18 years and older)	1 st dose	2 nd dose (4 weeks after 1 st dose)	3 rd dose (at least 4 weeks after 2 nd dose)			Booster dose* (at least 3 months after 3 rd dose)				See footnote [‡]
Janssen (ages 18 years and older)	1 st dose	2 nd (additional) dose [†] using an mRNA COVID-19 vaccine (at least 4 weeks after 1 st dose)		Booster dose* (at least 2 months after additional dose)				See footnote [‡]		

Note: Timeline is approximate. Intervals of 3 months or fewer are converted into weeks per the formula “1 month = 4 weeks”. Intervals of 4 months or more are converted into calendar months.

*An mRNA COVID-19 vaccine is preferred over the Janssen COVID-19 Vaccine for booster vaccination of people ages 18 years and older. For people ages 12–17 years, only Pfizer-BioNTech can be used. A booster dose is not authorized for people ages 5–11 years.

†Only Pfizer-BioNTech or Moderna COVID-19 Vaccine should be used. See [Appendix D](#) for more information on vaccinating people who are moderately or severely immunocompromised and who received Janssen COVID-19 Vaccine for the primary series.

‡People ages 12 years and older may choose to receive a second booster dose using an mRNA COVID-19 vaccine if it has been at least 4 months after the first booster dose. For people ages 12–17 years, only Pfizer-BioNTech can be used.