

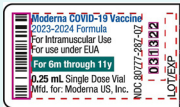

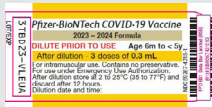

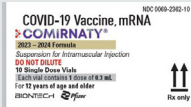
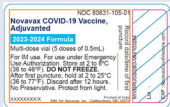
# Guide to COVID-19 Vaccinations



APhA COVID-19 RESOURCES:  
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This resource summarizes key information about COVID-19 vaccination schedules. Reference CDC's [Clinical Considerations for Use of COVID-19 Vaccines](#) for detailed information and recommendations. (CDC Clinical Considerations last updated March 1, 2024)

**Table 1: FDA Approved Vaccines**

|  | Moderna 2023-2024   |                      |   | Pfizer-BioNTech 2023-2024   |   |   | Novavax 2023-2024   |
|--|---|----------------------|---|---|---|---|---|
| Authorization                              | <a href="#">EUA Fact Sheet</a>  |                      | <a href="#">SPIKEVAX</a><br><a href="#">FDA Highlights</a>                        | <a href="#">EUA Fact Sheet</a>  |   | <a href="#">COMIRNATY</a><br><a href="#">FDA Highlights</a>                         | <a href="#">EUA Fact Sheet</a>  |
| Vial cap color                             | Dark Blue   |                      | Blue  | Yellow  | Blue  | Gray  | Royal Blue  |
| Label color                                | Green   |                      | Blue  | Yellow  | Blue  | Gray  | Blue  |
| Label/Box                                  |  |                      |  |   |  |  |  |
| Indication                                 | 6 months–4 years*   | 5–11 years           | 12+ years   | 6 months–4 years†   | 5–11 years  | 12+ years   | 12+ years   |
| Dosage if NOT previously vaccinated        | 2 doses, 0.25 mL each<br><br>Dose 1: Week 0<br>Dose 2: 4-8 weeks‡ later           | Single dose, 0.25 mL | Single dose, 0.5 mL   | 3 doses, 0.3 mL each<br>Dose 1: Week 0<br>Dose 2: 3-8 weeks‡ later<br>Dose 3: ≥ 8 weeks later                             | Single dose, 0.3 mL   | Single dose, 0.3 mL   | 2 doses, 0.5 mL each<br>Dose 1: Week 0<br>Dose 2: 3-8 weeks‡ later                  |
| If previously vaccinated with 1 prior dose | 1 dose, 0.25 mL<br>4 weeks after previous dose of Moderna COVID-19 Vaccine        | Single dose, 0.25 mL | 0.5 mL ≥ 2 months after previous dose of any COVID-19 vaccine                     | 2 doses, 0.3 mL each<br>Dose 1: 3 weeks after previous dose of Pfizer-BioNTech COVID-19 vaccine<br>Dose 2: ≥8 weeks later | 0.3 mL ≥ 8 weeks after previous dose of any COVID-19 vaccine                        | 0.3 mL ≥ 8 weeks after previous dose of any COVID-19 vaccine                        | 0.5 mL ≥ 8 weeks after previous dose of any COVID-19 vaccine                        |

*Continues.*



**Table 1: FDA Approved Vaccines** (continued)

|  | Moderna 2023-2024  |                      |  | Pfizer-BioNTech 2023-2024   |   |  | Novavax 2023-2024                                 |
|--|--|----------------------|--|---|---|--|---|
| <b>If vaccinated with ≥2 prior doses</b> | 0.25 mL ≥ 8 weeks after previous doses of 2023-2024 Moderna COVID-19 vaccine.  | Single dose, 0.25 mL | 0.5 mL ≥ 2 months after previous dose of any COVID-19 vaccine.   | 0.3 mL ≥ 8 weeks after previous dose of Pfizer-BioNTech COVID-19 vaccine.   | 0.3 mL ≥ 8 weeks after previous dose of any COVID-19 vaccine. | 0.3 mL ≥ 8 weeks after previous dose of any COVID-19 vaccine.  | Immunocompromised people may get additional dose. |
| <b>Doses per vial</b>                    | single dose vial (10 vials per carton)   |                      | 5-dose multi-dose vial (10 vials per carton), single dose vial (10 vials per carton) and manufacturer-prefilled syringes (10 units per carton) | 3-dose multi-dose vial (10 vials per carton)  | single dose vial (10 vials per carton)                        | single dose vial (10 vials per carton) and manufacturer-prefilled syringes glass and plastic (10 units per carton) | 5-dose multi-dose vial (2 vials per carton)       |
| <b>Dilution required</b>                 | No   |                      | No   | Yes (1.1 mL of sterile 0.9% NaCl)   | No  | No   | No  |
| <b>Storage<sup>§</sup></b>               | Standard freezing temperatures until expiration;<br>30 days at refrigerator temperature<br><br>May be stored at room temperature for a total of 24 hours |                      |  | Ultra-cold storage until expiration; 10 weeks at refrigerator temperature<br><br>Glass manufacturer-prefilled syringes should not be frozen<br><br>May be stored at room temperature for a total of 12 hours. |   |  | Store in refrigerator                             |

\* Individuals turning from 4 to 5 years of age during the vaccination series: administer both doses with Moderna COVID-19 Vaccine (2023–2024 Formula).

† For individuals turning from 4 to 5 years of age during the vaccination series: administer all doses with Pfizer-BioNTech COVID-19 Vaccine (2023–2024 Formula) supplied in vials with yellow caps and labels with yellow borders.

‡ Extending the interval to 8 weeks between the first and second doses for some people might reduce the rare risk of vaccine-associated myocarditis and pericarditis.

§ Proper temperature range for room temperature is 15°C to 25°C (59°F to 77°F), refrigeration is 2°C to 8°C (36°F to 46°F), and ultra-cold is -90°C to -60°C (-130°F to -76°F).

*Continues.*



**Table 1: FDA Approved Vaccines** (continued)

|                           | Moderna 2023-2024   |   | Pfizer-BioNTech 2023-2024  |   |   | Novavax 2023-2024             |
|---------------------------|---|---|--|---|---|-------------------------------|
| <b>Thaw time required</b> | Thaw in refrigerator for 45 minutes followed by 15 minutes at room temperature.<br><br>OR<br><br>Thaw at room temperature for 15 minutes. | Thaw in refrigerator.<br>Multidose vial for 2 hours.<br><br>Single dose vial for 45 minutes.<br><br>Prefilled syringe for 1 hour.<br><br>Let each unit stand at room temperature for 15 minutes before administering.<br><br>OR<br><br>Thaw at room temperature.<br><br>Single dose vial for 15 minutes.<br><br>Multi-dose and prefilled syringes for 45 minutes. | Thaw in refrigerator for 2 hours.<br><br>If not previously thawed in refrigerator, allow multiple dose vials to thaw at room temperature for 30 minutes. | Thaw in refrigerator may take up to 2 hours.<br><br>If not previously thawed in refrigerator, allow single dose vials to thaw at room temperature for 30 minutes. | Thaw plastic prefilled syringes in refrigerator (may take up to 2 hours).<br><br>Thaw plastic prefilled syringes may also be thawed at room temperature for 1 hour.<br><br>Prefilled syringes thawed in the carton by either method may be stored in the refrigerator for 10 weeks and at room temperature for 12 hours prior to use.<br><br>If individual frozen prefilled syringes are thawed at room temperature outside of the carton, they can be kept at room temperature and must be used within 4 hours of thawing. |                               |
| <b>BUD for vials</b>      | 12 hours after first puncture   |   | 12 hours after first puncture  |   |   | 12 hours after first puncture |

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## COVID-19 vaccine schedules: instructions for use and key concepts

See CDC's detailed immunization schedules for people who are [moderately or severely immunocompromised](#).

The table above summarizes the current COVID-19 vaccination schedules based on age (Table 1). The key concepts listed below have been compiled for ease of reference.

1. All time intervals listed in the diagram indicate the **minimum time interval between doses**.
2. Doses administered up to 4 days before the minimum interval or age, known as the [4-day grace period](#), are considered valid.
3. COVID-19 vaccines may be administered without regard to timing of other vaccines. Simultaneous administration of COVID-19 vaccine and other vaccines on the same day is acceptable.
4. The 2023–2024 Pfizer-BioNTech COVID-19 Vaccine and Moderna COVID-19 Vaccine are supplied as different products containing the same vaccine formulation. The dilution requirements and recommended use differs for each product. It is important to adhere to the recommended product options and use for each age group.
5. All COVID-19 vaccine doses for the 6 months to 4 years age group should be homologous.
6. COVID-19 vaccine doses from the same manufacturer should be administered whenever recommended. In the following circumstances, an age-appropriate COVID-19 vaccine from a different manufacturer may be administered:
  - a. Same vaccine not available at the vaccination site at the time of the clinic visit
  - b. Previous dose unknown
  - c. Person would otherwise not receive a recommended vaccine dose
  - d. Person starts but unable to complete a vaccination series with the same COVID-19 vaccine due to a contraindication
7. Moderna, Novavax and Pfizer all have products with blue caps, introducing opportunity for error.
8. Persons with known current SARS-CoV-2 infection should defer any COVID-19 vaccination at least until recovery from the acute illness (if symptoms were present) and [criteria](#) to discontinue isolation have been met. People who recently had SARS-CoV-2 infection may consider delaying a COVID-19 vaccine dose by 3 months from symptom onset or positive test (if infection was asymptomatic).

9. People ages 65 years and older should receive 1 additional dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 4 months following the previous dose of updated (2023–2024 Formula) COVID-19 vaccine. For initial vaccination with Novavax COVID-19 Vaccine, the 2-dose series should be completed before administration of the additional dose.
10. An additional dose of updated (2023–2024 Formula) COVID-19 vaccine is **not recommended** for people younger than age 65 years.
11. Recipients of **hematopoietic cell transplantation (HCT)** and **chimeric antigen receptor (CAR) T** cell therapy who received 1 or more doses of COVID-19 vaccine prior to or during treatment should be revaccinated. Revaccination should start at least 3 months (12 weeks) after transplant or CAR-T-cell therapy and should follow the currently recommended schedule for people who are unvaccinated.

## Best Practices

- Do not refreeze thawed vials or prefilled syringes after thawing.
- For multidose vials: **Discard the vial and excess volume** after extracting a single dose. If the amount of vaccine remaining in the vial cannot provide full dose appropriate for the individual being vaccinated, discard the vial and contents doses appropriate for the individual being vaccinated, discard the vial and contents. Do not pool excess vaccine from multiple vials.
- Preparing Administration of Moderna
  - Swirl vial gently after thawing and between each withdrawal. **Do not shake. Do not dilute the vaccine.**
  - Withdraw a single 0.25 mL dose using a sterile needle and syringe.
- Preparing Administration of Pfizer
  - For multiple dose vials with yellow caps and labels with yellow borders:
    - **Dilute prior to use by adding 1.1 mL of sterile 0.9% NaCl** into the vaccine vial. Before removing the needle from the vial, equalize vial pressure by withdrawing air into the empty diluent syringe.
    - Record the date and time of dilution on the vial label.
    - After dilution, multiple-dose vials contain 3 doses of 0.3 mL each.

# Guide to COVID-19 Vaccinations (continued)



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- For single dose vials with blue caps and labels with blue borders:
  - **Do Not Dilute.**
  - Withdraw a single 0.3 mL dose.
- Preparing Administration of Novavax
  - The Novavax COVID-19 Vaccine, Adjuvanted is a colorless to slightly yellow, clear to mildly opalescent suspension, free from visible particles. Inspect visually for particulate matter and discoloration prior to administration. Do not administer the vaccine if either of these conditions.
  - Gently swirl the multi-dose vial before each dose withdrawal. **Do not shake. Do not dilute the vaccine.**
  - Record the date and time of the first puncture on the vial label.

***Disclaimer:** Information related to the COVID-19 pandemic is changing rapidly and continuously. The material and information contained in this publication is believed to be current as of the date included on this document. The American Pharmacists Association assumes no responsibility for the accuracy, timeliness, errors or omission contained herein. Links to any sources do not constitute any endorsement of, validity, or warranty of the information contained on any site. The user of these materials should not under any circumstances solely rely on, or act based on this publication. Pharmacy professionals retain the responsibility for using their own professional judgment and practicing in accordance with all rules, regulations, and laws governing the pharmacy practice within their jurisdiction.*

