

# Pediatric Vaccine Cases

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# Disclosures

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  - Serve as a member of the FDA/VRBPAC (not involved in review of COVID-19 related vaccines or therapeutics)
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# Case 1

- 11 year and 11 months and 20-day old healthy, COVID-19 unvaccinated female
- SARS-CoV-2 positive with mild symptoms, day 5 after symptom onset

*When should she receive her first vaccine dose?*

*What dose should she receive for her first vaccine?*

*What dose should she receive for her second vaccine?*



# Case 1

- 11 year and 11 months and 20-day old healthy, COVID-19 unvaccinated female
- SARS-CoV-2 positive with mild symptoms, day 5 after symptom onset

*When should she receive her first vaccine dose?*

*Eligible to receive her first dose when her isolation period has ended, and her symptoms have resolved.*

*What dose should she receive for her first vaccine?*

*COVID-19 vaccine dosage is based on age on the day of vaccination, not on size or weight. If she will be 11 years of age on the date of administration, she should receive the “orange cap” Pfizer-BioNTech formulation*

*What dose should she receive for her second vaccine? If she will be 12 years of age on the date of administration, she should receive the “purple cap” or “gray cap” Pfizer-BioNTech formulation*

# Case 1

Table 1. COVID-19 vaccine formulations currently approved or authorized in the United States

Vaccine manufacturer	Age indication	Vaccine vial cap color	Dilution required	Primary series		Booster doses	
				Dose	Injection volume	Dose	Injection volume
Pfizer-BioNTech	5–11 years	Orange*	Yes	10 µg	0.2 mL	10 µg	0.2 mL
Pfizer-BioNTech	12 years and older	Purple*	Yes	30 µg	0.3 mL	30 µg	0.3 mL
Pfizer-BioNTech	12 years and older	Gray*	No	30 µg	0.3 mL	30 µg	0.3 mL
Moderna	18 years and older	Red†	No	100 µg	0.5 mL	50 µg	0.25 mL
Moderna	18 years and older	Blue†	No	NA	NA	50 µg	0.5 mL
Janssen	18 years and older	Blue	No	5×10 <sup>10</sup> viral particles	0.5 mL	5×10 <sup>10</sup> viral particles	0.5 mL

Abbreviation: NA = not applicable

\* The Pfizer-BioNTech COVID-19 Vaccine supplied in a vial with an orange cap is authorized for use only in children ages 5-11 years. It is NOT interchangeable with Pfizer-BioNTech COVID-19 Vaccine for people ages 12 years and older (supplied in vials with a purple cap or a gray cap).

† Either Moderna COVID-19 Vaccine supplied in a vial with a red cap (0.25 mL injection volume) or Moderna COVID-19 Vaccine supplied in a vial with a blue cap (0.5 mL injection volume) can be used to administer a 50 µg booster dose.

For additional information on the formulations, storage and handling, preparation, and administration of COVID-19 vaccines, see [U.S. COVID-19 Vaccine Product Information](#).

## Case 2

- 15-year-old COVID-19 unvaccinated overweight male with poorly controlled reactive airway disease
- Parents and siblings had respiratory symptoms one month ago
- Patient hospitalized and diagnosed with MIS-C
- SARS-CoV-2 PCR positive and antibody IgG positive

*When should he receive his first vaccine dose?*

# Case 2

- 15-year-old COVID-19 unvaccinated overweight male with poorly controlled reactive airway disease
- Parents and siblings had respiratory symptoms one month ago
- Patient hospitalized and diagnosed with MIS-C
- SARS-CoV-2 PCR positive and antibody IgG positive

*When should he receive his first vaccine dose?*

*Evidence to date suggests that vaccination against COVID-19 appears to be safe for children who have had multisystem inflammatory syndrome in children (MIS-C) and does not appear to increase the risk for inflammation of the heart or other organs. Most clinicians would defer vaccination to > 90 days following their MIS-C diagnosis.*

## Case 3

- 9-year-old COVID-19 unvaccinated male who is 2 years s/p living-related renal transplant

*When should he receive his first vaccine dose?*

*How many doses should he receive?*

*What are the dosing intervals for his doses?*



# Case 3

- 9-year-old COVID-19 unvaccinated male who is 2 years s/p living-related renal transplant

*When should he receive his first vaccine dose?*

***As soon as possible***

*How many doses should he receive? What are the dosing intervals for his doses?*

- ***Primary Series:***  
*2-dose series separated by at least 3 weeks*  
*A series started with COVID-19 vaccine (Pfizer) should be completed with this product*
- ***Additional Primary Dose (3<sup>rd</sup> dose):***  
*Moderately and severely immunocompromised people: Administer an additional primary dose at least 4 weeks after the initial 2-dose primary series*
- ***Booster Dose:***  
*Administer 1<sup>st</sup> booster dose at least 3 months after 3<sup>rd</sup> dose*
- *Administer 2<sup>nd</sup> booster dose at least 4 months after 1<sup>st</sup> booster*

## Case 4

- 12-year-old female, COVID-19 vaccinated x 1 dose 3 months ago presents for well child encounter. She is age-eligible to receive one dose of MenACWY vaccine, her first dose of HPV vaccine, and a Tdap vaccine.

*Which vaccines should she receive at this encounter?*

- She only wants to receive one vaccine today and one vaccine per future encounters.

*How do you prioritize and on what schedule?*



# Case 4

- 12-year-old female, COVID-19 vaccinated x 1 dose 3 months ago presents for well child encounter. She is age-eligible to receive one dose of MenACWY vaccine, her first dose of HPV vaccine, and a Tdap vaccine.

*Which vaccines should she receive at this encounter?*

*She is age eligible to receive all vaccines, including her a second dose of a COVID-19 vaccine.*

- She only wants to receive one vaccine today and one vaccine per future encounters.

*How do you prioritize and on what schedule?*

*Assess upcoming exposures. I would administer a second dose of a COVID-19 vaccine as a priority followed by MenACYW#1, followed by Tdap, followed by HPV#1 vaccine.*

*There is no contraindication to receiving all vaccines simultaneously.*

## Case 5

- 7-year-old male, COVID-19 unvaccinated, no known COVID-19 infection. Had pathogen-negative myocarditis as a 6-year-old; hospitalized x 1week. Annual cardiac evaluations have been unremarkable.

*What would you advise regarding COVID-19 vaccination for this child?*



## Case 5

- 7-year-old male, COVID-19 unvaccinated, no known COVID-19 infection. Had pathogen-negative myocarditis as a 6-year-old; hospitalized x 1week. Annual cardiac evaluations have been unremarkable.

*What would you advise regarding COVID-19 vaccination for this child?*

*On June 23, 2021, the Advisory Committee on Immunization Practices concluded that the benefits of COVID-19 vaccination to individual persons and at the population level clearly outweighed the risks of myocarditis after vaccination.*

*Unclear in this situation, if this child's myocarditis was due to SARS-CoV-2 or some other etiology. The recommendation would be to initiate the COVID-19 vaccine series.*

## Case 6

- 12-year-old female, COVID-19 unvaccinated. COVID-19 positive in February 2022. Three months of symptoms consistent with fatigue, inability to concentrate, and weight gain. She has been diagnosed with POTS, but symptoms have not improved.

*Is there a role for COVID-19 vaccine in her management?*



# Case 6

- 12-year-old female, COVID-19 unvaccinated. COVID-19 positive in February 2022. Three months of symptoms consistent with fatigue, inability to concentrate, and weight gain. She has been diagnosed with POTS, but symptoms have not improved.

*Is there a role for COVID-19 vaccine in her management?*

*The best way to prevent post-COVID conditions is to protect against children from being infected. Getting vaccinated and staying up to date with vaccines against COVID-19 can help prevent COVID-19 infection and protect against severe illness.*

*People who are vaccinated but experience a breakthrough infection are less likely to report post-COVID conditions, compared to people who are unvaccinated.*

*COVID-19 vaccination in people experiencing post-acute COVID-19 symptoms may lessen or eliminate symptoms due to:*

- 1. Antibody and T-cell response induced by COVID-19 vaccination could clear a lingering viral reservoir*
- 2. Induction of cytokines to suppress autoimmune reactions*