COVID-19 vaccine for kids <5
Top 6 parental concerns answered

• For children under 5 years old, parents have two options for a COVID-19 vaccine:
  - Moderna: 2-dose series taken 4 weeks apart. Each dose is 25 µg, which is 1/4 the dosage of the adult vaccine.
  - Pfizer: 3-dose series. Dose 2 is 3 weeks after Dose 1. Dose 3 is 8 weeks after Dose 2. Each dose is 3 µg.

The vaccines are effective

- Moderna’s clinical trial included 6,300 children.
  - Antibodies after Dose 2 were the same or exceeded those in adults.
  - Efficacy against infection was 51% for 6–23 month olds and 37% for 2–5 year olds.
  - Efficacy was consistent with vaccine effectiveness for adults during Omicron.
  - A booster will likely be needed. Studies are underway and results are expected at end of summer.
- Pfizer’s clinical trial included 1,400 children.
  - Antibodies after Dose 3 exceeded adults.
  - Efficacy against infection after Dose 3 was 75% for 6–23 month olds and 82% for 2-4 year olds.
  - There were extremely few cases during the trial, so there is significant uncertainty around these efficacy numbers.
  - Note: Efficacy for these two vaccines cannot be directly compared due to varying length of follow-up, months the study was conducted (and thus, circulating virus), and different number of doses.
  - Vaccines can prevent infection and transmission, especially in the first few months. Unfortunately, as the virus continues to mutate, this timeline can be shortened. The vaccines’ primary purpose is to prevent severe disease and death. Both vaccines are expected to decrease hospitalizations and ICU stays among this age group.

The vaccines are safe

- During both clinical trials:
  - Temporary pain at injection site was common.
  - FEVERS were more common after vaccine than placebo.
  - Fatigue and headache was most common in children ages 2–5 years; irritability and sleepiness was more common in children ages 6–23 months.
  - Side effects were more common with Moderna compared to Pfizer.
  - Serious adverse events were rare. No deaths occurred.
- The vaccine is not expected to cause myalgia, rash, fever, fatigue, or emotional lability.
- A child in each trial had a high fever which led to seizure or hospitalization.

Myocarditis is rare

- Myocarditis (heart inflammation) has been linked to mRNA vaccines in adolescents, but remains rare. Risk of myocarditis after mRNA COVID-19 vaccination, if any, in young children is unknown.
- No cases of myocarditis were reported in clinical trials. But the clinical trials were not large enough to capture such rare adverse events.
- Based on the epidemiology of classic myocarditis and safety monitoring in children ages 5–11 years, myocarditis after mRNA COVID-19 vaccination in young children is expected to be rare due to smaller doses and myocarditis being fundamentally different in young children.
- Kids can get myocarditis from the virus, and it can be more severe.

There is a need

- COVID-19 disease in kids can range from asymptomatic to severe illness.
  - The majority of children have mild-to-moderate disease.
  - COVID-19 can cause severe disease, even among healthy children.
- Deaths: Since 2020, 442 children aged 0–4 years old have died from COVID-19. While this is lower than in adults, COVID-19 is a top 10 leading cause of death for kids.
- Hospitalizations: During the first Omicron wave, COVID-19 hospitalization among kids under 5 were higher than for any other child age group.
  - 86% of hospitalizations were for COVID-19 (as opposed to with COVID-19).
  - Hospitalizations passed previous flu peaks and previous COVID-19 peaks.
  - Of toddlers hospitalized for COVID-19, 1 in 4 went to the ICU.
  - 30–50% of hospitalized children had no underlying medical condition.

Previously recovered still need the vaccine

- As of February 2022, 75% of children had been infected with SARS-CoV-2 in the U.S.
  - Getting a vaccine, even for people who have already recovered from COVID-19, strengthens their immune response. CDC states vaccinations can be delayed up to 3 months after infection.
  - Protection from infections can be effective, but a recent study showed some children fail to make antibodies after infection (the immune system’s first line of defense) and had mediocre T-cell responses (the immune system’s second line of defense).
  - Reinflection should be expected. SARS-CoV-2 is changing quickly.
  - Omicron infections do not elicit antibodies against other variants of concern. While Omicron may be the dominant variant right now, this could change in the future.

Long-term side effects, like infertility, are highly unlikely

- We do not know the long-term effects of mRNA COVID19 vaccines. However, based on our knowledge of mRNA and the human body, we do not expect them:
  - It’s biologically impossible for mRNA to alter DNA.
  - Previous research on other mRNA vaccines show no long term effects. mRNA research started in 1961. The first clinical trial with mRNA was in 2001.
  - Vaccine ingredients are cleared from the body very quickly. mRNA is very fragile and disintegrates within 72 hours of injection. Fat bubbles that carry the mRNA degrade within 4 days. Ingredients do not linger in the body.
  - mRNA vaccines are not made of the actual pathogen. This means that they don’t contain weakened, dead, or noninfectious parts of a virus.
  - In the history of vaccines, serious adverse side effects only occur within the first 2 months of rollout. We have more than 24 months of vaccine follow-up data by now.
  - Thousands of people have gotten pregnant after vaccination.
  - There are reports that menstrual cycles change after a COVID19 vaccine. The body is mounting an immune response, and this is likely a temporary side effect, like a fever.