COVID-19 VACCINE FOR KIDS <5

Top 6 parental concerns answered

June 2022

- 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.
  - 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 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 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
- Long COVID-19 occurs among kids. Vaccines reduce the risk of long COVID-19.

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 *failed* 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).
- Reinfection 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 degrades 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.

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