COVID-19 Vaccines for Children Ages 12 – 17 Years

What COVID-19 vaccines are available for young children?

FDA has approved COVID-19 vaccines for children ages 12 years through 17 years from Pfizer and Moderna. Additionally, the FDA has granted an emergency use authorization (EUA) for the Novavax vaccine for children ages 12 years through 17 years. Patients and their parents or guardians are encouraged to speak with a trusted health care provider to decide which vaccine is best for them.

Staying Up to Date on COVID-19 Vaccinations:

Most individuals 5 years and older are considered up to date on COVID-19 vaccination if they have received just one updated COVID-19 vaccine. Parents should talk to their healthcare provider for up-to-date recommendations for their child.

COVID-19 Illness & Complications in Adolescents Ages 12-17 years

Symptomatic Infection

Children and adolescents are less likely to experience symptoms while infected with COVID-19 than adults; however, there is the risk that anyone could develop symptoms and/or become severely ill while infected, including previously healthy individuals. Additionally, those with underlying health conditions are even more susceptible to experiencing mild to severe symptomatic infection.

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Hospitalizations

While most adolescents who contract COVID-19 will have mild symptoms or have no symptoms, some adolescents may become severely ill from COVID-19 infection. They may require hospitalization, intensive care, or a ventilator to help them breathe.

- Nationally, about twenty percent of children hospitalized due to COVID-19 had no underlying medical conditions. Additionally, only 3% of children hospitalized were up-to-date with the COVID-19 vaccine.

Deaths

In rare cases, adolescents who contract COVID-19 may die. Individuals with underlying health conditions such as asthma, diabetes, or obesity are at increased risk of death.

- As of September 2024, there have been over 600 deaths among the 12-17 year old population in the U.S.

Multisystem Inflammatory Syndrome

COVID-19 infection has also been linked to a rare but serious health condition called multisystem inflammatory syndrome in children (MIS-C). Children and adolescents who develop MIS-C experience inflammation in different body parts, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs. These individuals may face ongoing health issues due to heart or other organ damage as a result of COVID-19 infection.

- There have been over 9,700 cases of MIS-C in children reported in the United States that have met CDC's case definition. The median age of patients with MIS-C was 9 years. Half of children with MIS-C were between the ages of 5 and 13 years. Additionally, 60% of reported patients were male.

Post COVID-19 Conditions ("Long COVID")

A person of any age who has had COVID-19 can later develop a post-COVID condition. Although post-COVID conditions appear to be less common in children and adolescents than in adults, long-term effects after COVID-19 can and do occur in children and adolescents. There is still a lack of data available regarding the long-term impact COVID-19 infection has on children; however, emerging research tells us that some children who contract COVID-19 suffer long-lasting symptoms.

- A study from the United Kingdom found that children can have prolonged symptoms of COVID-19, including fatigue, headache, muscle/joint pain, rashes, heart palpitations and mental health issues such as lack of concentration and short-term memory problems. A survey of the parents of 510 children with persistent COVID-19 symptoms revealed that their children experienced ongoing COVID-19 symptoms for an average of 8.2 months. Only 10% of the children included in the study returned to previous levels of physical activity.
- Another article from Italy found that more than 50% of pediatric patients previously diagnosed with COVID-19 reported at least one symptom 120 days after having COVID-19, and 42.6% reported being impaired by these symptoms during daily activities.
- There is accumulating evidence that COVID-19 vaccination reduces Post-COVID conditions among children and adults.

Reasons to Vaccinate Adolescents

- COVID-19 vaccines are safe and effective and provide protection from COVID-19 infection, hospitalization, and death. Vaccines are the single best way to protect adolescents from serious illness or even death due to COVID-19 disease.
- Vaccinating everyone helps us reach community immunity so we can continue to enjoy the activities that we love. It is important for adolescent development that they can return to the routines and activities that support learning and growth.
- Most adolescents have a grandparent or other person in their lives who are at higher risk of serious illness from COVID-19. Vaccination of adolescents will help prevent them from passing COVID-19 to loved ones and other vulnerable people in the community.

About the COVID-19 Vaccines for Adolescents

How do COVID-19 vaccines work?

COVID-19 vaccines work similarly to other vaccines. The vaccine stops the virus by helping the immune system make special proteins, called antibodies, to fight the virus. COVID-19 vaccines are not live virus vaccines and do not alter human DNA.

Are there side effects of COVID-19 vaccines?

Some people have mild or moderate side effects after getting vaccinated. The most common side effects reported after COVID-19 vaccination include pain, swelling, or redness where the shot was given, mild fever, headache, muscle pain, swollen lymph nodes and joint aches. Side effects are more common after additional doses. Side effects indicate that the immune system is working and building antibodies to fight the virus if it ever faces it.

Is there a risk of developing myocarditis after vaccination?

In rare cases, some young people may experience myocarditis/pericarditis (inflammation of the heart muscle) following a COVID-19 mRNA vaccination. These occur most often in males and are typically mild to not life-threatening. Zero cases of myocarditis/pericarditis occurred during Pfizer's or Moderna's vaccine trials for this age group. However, as of August 20, 2022 the CDC has identified 598 myocarditis case reports in children ages 12–17 years after over 18 million Pfizer-BioNTech doses administered in this age group in the United States. No cases of myocarditis have been reported following a bivalent booster or 2023-2024 COVID-19 vaccine in this population. It is important to note that the risk of myocarditis/pericarditis after receiving a COVID-19 vaccine is *lower* than the risk of myocarditis/pericarditis associated with COVID-19 infection in adolescents and adults.

Can my child receive the COVID-19 vaccine at the same time as other vaccines?

Yes. COVID-19 and other vaccines can be administered at the same time. It is recommended that adolescents receive other important vaccines, including those that protect against whooping cough, tetanus, diphtheria, cancer-causing human papillomavirus (HPV) and meningitis. Certain vaccines are required for Kindergarten, 7th, 11th, and 12th grades as well as entry to college. COVID-19 vaccine is NOT required for childcare or school entry. Schedule an appointment TODAY for COVID-19 and adolescent vaccines. This is especially important if your child fell behind on immunizations during the pandemic.

Are immunocompromised adolescents 12 years and older eligible for an additional dose of COVID-19 vaccine?

Yes, children ages 12-17 years who are moderately to severely immunocompromised have the option to receive 1 additional dose of COVID-19 vaccine at least 2 months after their previous dose of COVID-19 vaccine. Further additional doses may be given, informed by the clinical

judgement of a healthcare provider and personal preference and circumstances. Any further doses should be administered at least 2 months following the previous vaccine dose.

Moderately or severely immunocompromised children can include those who have:

- Been receiving active cancer treatment for tumors or cancers of the blood
- Received an organ transplant and are taking medicine to suppress the immune system
- Received a stem cell transplant within the last 2 years or are taking medicine to suppress the immune system
- Moderate or severe primary immunodeficiency (such as DiGeorge syndrome, Wiskott-Aldrich syndrome)
- Advanced or untreated HIV infection
- Active treatment with high-dose corticosteroids or other drugs that may suppress your immune response

Parents or guardians should talk to their child's health care provider if they have further questions regarding their child's immunocompromising medical condition and whether getting an additional dose is appropriate for them.

Some highlights from Pfizer's phase 3 adolescent COVID-19 vaccine trial:

- The trial included 2,260 children ages 12-15 years old in the U.S., about half of whom received the Pfizer COVID-19 vaccine.
- There were 18 cases of COVID-19 in the placebo (unvaccinated) group and none in the vaccinated group (100% efficacy).
- No hospitalizations due to COVID-19 or cases of MIS-C were reported by any trial participant.
- There were no severe adverse events in adolescents who received the Pfizer COVID-19 vaccine during phase 3 clinical trials.
- Fewer side effects were seen in the 12-15 age group than the 16 – 25 year age group.
- Fevers were observed more frequently in the vaccinated 12- to 15-year-olds, about 20%, compared to 17% in the 16- to 25-year-olds.

Some highlights from Moderna's adolescent COVID-19 vaccine trial:

- Over 3,700 children ages 12-17 years were vaccinated during Moderna's child and adolescent vaccine trial. Of which, 2,486 were vaccinated with Moderna's mRNA-1273 vaccine. Making the vaccine to placebo ratio 2:1.

- There were 4 cases of COVID-19 in the placebo (unvaccinated) group and none in the vaccinated group (100% efficacy).
- No hospitalizations due to COVID-19 or cases of MIS-C were reported by any trial participant.
- There were no severe adverse events in adolescents who received the Moderna COVID-19 vaccine that were determined to be related to the vaccine.
- Fewer side effects were seen in the 12-17 age group than observed in adult 18-25 year old age group.
- The most commonly reported side effects included pain at the injection site, headache, fatigue, and myalgia.
- Fevers were uncommon following vaccination, but those that did experience a fever were more likely to after dose 2 (12% of vaccine recipients).

COVID-19 vaccines are being administered under the most intensive vaccine safety monitoring effort in the United States' history. These web-based platforms give CDC scientists information about the safety of COVID-19 vaccines in real time. If any vaccine safety issues—also called adverse events— are reported, CDC scientists can quickly study them and determine if there is a safety concern with a particular vaccine. Here are some of the tools that CDC uses to keep close tabs on the safety of COVID-19 vaccines:

- Vaccine Adverse Event Reporting System (VAERS): VAERS is the national system that collects reports of adverse events that happen after vaccination.
- Vaccine Safety Datalink (VSD): VSD utilizes data from nine different health systems in the U.S. and compares health and vaccine safety outcomes of those vaccinated to those who are not to determine if the outcome is caused by the vaccine.

For more information…

- COVID-19 Vaccination | CDC
- COVID-19 Vaccine for Children (aap.org)
- The Science Behind the COVID-19 Vaccine: Parent FAQs - HealthyChildren.org

- Package Insert and FDA Approved Patient Labeling - COMIRNATY
- Patient Package Insert - SPIKEVAX

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