

# Are you up to date on your vaccines?

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While the COVID-19 vaccines held center stage over the last couple of years, something else was happening behind the scenes: a dip in the rate of children and adults getting their non-COVID vaccinations, including flu, measles, smallpox, and shingles, among others. An estimated 37 million children and adults in the United States missed some or all of their routine vaccinations when they avoided in-person medical visits during the pandemic.

Meanwhile, cases of COVID-19 and flu are rising across the country.

We spoke with Yale Medicine [infectious diseases](#) specialist Scott Roberts, MD, and pediatrician Maryellen Flaherty-Hewitt, MD. They talked about the dip in vaccination and answered commonly asked questions about the importance of vaccines.

## **How serious is the decline in vaccination?**

During the 2020–21 school year, the percentage of kindergarteners who had their routine vaccines dropped by 1%, bringing the overall figure down to 94% vaccination—which is below the 95% target set by the Office of Disease Prevention and Health Promotion, a part of the U.S. Department of Health and Human Services.

Goals are set for each [vaccine](#), including the MMR (measles, mumps, and rubella) vaccine, DTaP (diphtheria, tetanus, and acellular pertussis) vaccine, and the [varicella vaccine](#). The targets, which vary by vaccine, are vital to maintaining herd immunity for each of the diseases the vaccines are designed to protect against; falling behind on a target may bring a resurgence of the associated disease.

Adults were behind on vaccines before the pandemic—three out of four were already missing one or more recommended vaccines, according to the Centers for Disease Control and Prevention (CDC).

The pandemic just exacerbated an existing problem, especially for children. "Pediatricians tried hard to keep their doors open during the pandemic so infants and [young children](#) could get into the office, but we're still finding that there were kids who fell through the cracks, as far as vaccination," Dr. Flaherty-Hewitt says.

## What about flu and COVID-19 vaccines?

Hospitalizations from COVID-19 began ticking upward around Thanksgiving, while influenza was already surging, and officials expressed concern at a time when fewer people are wearing masks and taking other mitigation measures.

The COVID-19 boosters from Pfizer-BioNTech and Moderna, available to people ages 6 months and older, are bivalent, meaning half of the vaccine targets the original coronavirus strain, while the other half targets the BA.4 and BA.5 omicron subvariant lineages, which are predicted to continue circulating this winter.

Most people ages 6 months and older also should get the [influenza vaccine](#) if they haven't already, Dr. Roberts says. The flu has historically been a seasonal virus, surfacing in October in the U.S. and disappearing in May. But vaccination after October still provides protection through the flu season's peak, which usually falls between December and February, according to the CDC.

## Could measles become a threat?

Measles is one of the most contagious of all known infections. The CDC estimates that if one person gets measles, 90% of people who are close to that person—and who have no immunity to it—will become infected.

Overall, the U.S. is less vulnerable to a measles outbreak than many other parts of the world. Here, measles was declared "eliminated" in 2002, a designation that means there was no continuous transmission for a year or longer. Many people have been vaccinated, and a number of people born before 1957 (when the first vaccine became available) have immunity because they had the disease, Dr. Roberts explains. But the

infection risk goes back up in areas where people aren't vaccinated.

"Measles is airborne, so if someone sneezes, it can spread," Dr. Roberts says. There have been scattered clusters of measles cases, including one in 2014 in which measles was diagnosed in people who had visited Disneyland in California. It quickly became a public health problem that resulted in 147 cases in multiple U.S. states, as well as in Mexico and Canada.

An even larger outbreak in 2019 led to 1,274 cases in 31 states. But the numbers dropped sharply during the pandemic. As of September, there have only been 13 cases in 2022.

## **What other vaccinations are recommended?**

There are many vaccines available in the U.S. that protect against severe illness, disability, and death from a variety of infectious diseases. These include (but are not limited to) hepatitis A, hepatitis B, herpes zoster (shingles), HPV-related cancers, influenza, pertussis (or whooping cough), pneumococcal disease, and tetanus.

The ones you need—and when—vary, depending on such factors as age, pregnancy, health conditions, and whether you are a health care worker, immigrant, or refugee. The CDC provides vaccination schedules for children and adolescents, as well as for adults.

## **When should you get vaccinated?**

Generally, the first vaccinations are given in infancy, and more are provided throughout childhood, in middle age, and later in life.

"We start protecting newborns early. For example, they routinely get the

hepatitis B vaccine in the nursery before they are even discharged from the hospital," says Dr. Flaherty-Hewitt. "Routinely, pediatricians will continue the vaccine process, with a number of vaccines for different illnesses at the 2-month visit and through the newborn and toddler periods. We can protect them from various diseases by the time they go to kindergarten."

Some vaccines are held for later, such as the human papillomavirus (HPV) vaccine, which is given to preteens to protect against HPV-related cancer that can develop later in life. Another example is the pneumococcal vaccine for pneumonia, which is given at age 65 to anyone who hasn't received it previously, in some cases because they were immunocompromised. It is also given to those under 65 with risk factors, adds Dr. Roberts. "The pneumonia vaccine is a critical one, and it changes pretty frequently because the strain of that vaccine is updated," Dr. Roberts says.

## **What if you aren't sure if you had a particular vaccine?**

There is no national agency that maintains vaccination records. The best records are the ones in your electronic medical record, or, for those whose medical history started before electronic records, the paper records the doctor provided to you or your parents when the vaccine was given. You can also check your state health department to see if it has a registry that includes adult vaccines.

The CDC has additional suggestions for locating vaccination records.

If you don't have records, it's worth talking with your doctor. You can ask whether there is a blood test that can tell if you have immunity to the disease you are concerned about or, if not, whether you should get the

vaccination again.

For diseases that people either had or were vaccinated against as children, a written note from a medical provider saying they were immunized is sufficient, as is documentation of certain childhood diseases such as chicken pox or [measles](#), says Dr. Roberts.

But obtaining such records might be difficult, if not impossible. "When in doubt, unless you were in a community that deliberately avoided vaccination, most people can assume they were vaccinated," says Dr. Roberts.

## **How can parents make sure their children are protected?**

Dr. Flaherty-Hewitt says parents who think their children may have missed vaccines during the pandemic should talk to their pediatrician.

Parents who feel hesitant about a vaccine should discuss their concerns, adds Dr. Flaherty-Hewitt. "The most important thing is to have an open dialogue with the pediatrician. Their role is really to guide and help your child grow over 20 years," she says. "So, no pediatrician should ever shy away from answering questions about vaccines. We understand this is your child, and we will make sure you have all the facts you need to make a good decision."

## **How safe are the routine vaccines?**

Vaccines have dramatically improved the odds of avoiding and surviving some of the most difficult diseases. "I have been in practice for 20 years and done thousands of vaccines, and children have done well with them," says Dr. Flaherty-Hewitt. "I'm part of a crossover generation. So, just as

I was starting my training, some of these illnesses were still fairly prevalent. We still had children with bacterial meningitis and other diseases that we now rarely see because of vaccines."

Older people who remember infectious diseases like polio before vaccines became available have seen even worse scenarios, including more children being hospitalized and long-term complications like hearing loss and paralysis, she adds. In comparison, side effects from vaccines are minor. "The biggest side effects are possibly irritation at the injection site and a low fever in some children," she says.

Both doctors say children and adults who have missed their vaccines should talk to their doctors right away about catching up. "Large pockets of unvaccinated people are especially vulnerable to the spread of infectious diseases," says Dr. Roberts.

"At the end of the day, our advice is to follow the routine immunization schedule because we have many years of science to back up our recommendations," says Dr. Flaherty-Hewitt. "And we want to keep everyone healthy."

Provided by Yale University

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