

# SAFETY FIRST.

## INFECTION PREVENTION CONTROL

### Vaccines are important because they save lives

*By Dr. Natalie Jones*

University of Kentucky

Cooperative Extension Service

There has been a lot of talk about vaccines lately, but the concern goes beyond what you might think.

During the pandemic, not as many children have received the required vaccinations against childhood diseases, and now that they can get vaccinated for COVID-19, parents have been slow to get them vaccinated.

Most Kentuckians have been vaccinated for COVID, but many have not, and now that flu season is here, doctors worry about a "twindemic" that could fill up our hospitals. So, health officials are urging Kentuckians to get ALL their vaccinations.

#### Vaccine History

Vaccines are one of the greatest success stories in public health. They work by preventing disease. Just two examples: Smallpox has been eradicated, and we have nearly eliminated the polio virus. It all started 225 years ago with Dr. Edward Jenner, who collected pus from cowpox – the animal variant of smallpox – from the arm of a milkmaid and scratched it into the arm of an 8-year-old boy. This was successful and proved that immunity to smallpox was possible. In 1798, the first smallpox vaccine was developed.

Vaccines are important because they save lives. In the history of vaccines, we have successfully eliminated the threat of multiple diseases. The first polio vaccine was available in the United States in 1955. Thanks to the widespread use of the polio vaccine, the U.S. has been polio-free since 1979. Around the world, the number of cases has decreased as well, with just 33 cases of polio in the world reported in 2018.

In addition, in 2000, thanks to the MMR vaccine, which protects against measles, mumps, and rubella, measles has been largely eradicated in the U.S.

Getting any vaccine is relatively easy. Vaccines are available at the doctor's office and many pharmacies. If you have questions or concerns about recommended

vaccines for you and your family, talk to your family doctor.

#### Vaccine Schedules

The Centers for Disease Control and Prevention recommends certain vaccinations to protect children and adults against many diseases, and some are required by state law for children to attend school.

The CDC's vaccine schedule is recommended by its Advisory Committee on Immunization Practices, which includes hundreds of vaccine experts, scientists, doctors, and public health professionals. Each recommended vaccine is carefully developed to protect against a specific illness.

Some shots are "one and done" while others require more than one dose to build enough immunity, or to boost immunity that can decrease over time. That's why we need a flu vaccine each year, because the disease changes over time and the vaccine is changed to keep up with it.

By following the vaccine schedule, we reduce the spread of illness. People who don't follow the schedule are not only at risk of getting sick but can spread illness to others who are not protected, such as infants, who are too young for vaccines, and people with weakened immune systems. By getting your vaccines on time, you are protecting yourself, your friends, family, and community.

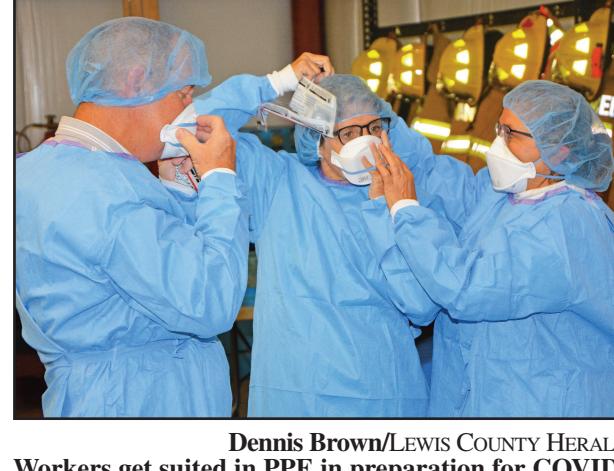
#### Vaccine Mandate History

Vaccine mandates are not new. In fact, the first vaccine mandate in schools was enacted in Massachusetts in the 1850s to prevent smallpox. By the mid-1900s, because of measles and smallpox outbreaks across the country, nearly half of all states had the same requirement.

In 1977, the U.S. government started a Childhood Immunization Initiative to increase vaccination against the seven diseases for which children routinely get vaccines: diphtheria, measles, mumps, pertussis, polio, rubella, tetanus and pertussis (whooping cough).

Now, all states have vaccination requirements for children to attend school and child-care facilities.

The military also requires



Dennis Brown/LEWIS COUNTY HERALD  
Workers get suited in PPE in preparation for COVID-19 testing in Vanceburg. Testing continues this week at the Vanceburg Fire Station/Community Center for all adults. Workers conducted 145 tests on Thursday for first responders, medical workers and those age 60 and over.

service members to be vaccinated.

The first U.S. immunization mandate was in January

1777, when George Washington ordered troops

in Philadelphia to be inoculated against smallpox.

For over 230 years, the military

health-care system has immu-

nized troops to protect them

personally and to help them

accomplish their missions.

This is because a sick service

member can infect and be a

threat to an entire unit, pre-

venting them from completing

a mission. By staying

healthy and immunized, serv-

ice members are able to return

home safely.

#### Vaccine Safety

To ensure continued suc-

cess of vaccines, safety pre-

cautions are followed as

vaccines are developed. Be-

fore any vaccine is approved

by the Food and Drug Ad-

ministration or distributed to

the public, scientists test it ex-

tensively to ensure it is effec-

tive and safe. The COVID-19

vaccines have received the

most intense safety monitor-

ing in U.S. history, which has

allowed public-health offi-

cials to make science-based

recommendations to keep

people safe.

All the COVID-19 vac-

cines were cautiously tested

and reviewed. The vac-

cines went through a detailed

and thorough three-phase

clinical trial process and no

shortcuts were taken. More

than 150,000 people partici-

pated in U.S. clinical trials of

the vaccines, and now, hun-

dreds of millions of vaccine

doses in the U.S. have been

safely administered.

#### mRNA Vaccine History

The Pfizer-BioNTech and

Moderna vaccines for

COVID-19 use messenger

RNA to make the body pro-

duce the coronavirus spike

protein to produce immunity

to the virus. Some people are

hesitant about mRNA vac-

cines, thinking they use a

new technology or could

change people's DNA. Nei-

ther is true.

Researchers have been

studying and working with

mRNA vaccines for decades.

Messenger RNA, or mRNA,

was discovered in the early

1960s; research into how

mRNA could be delivered

into cells was developed in

the 1970s. mRNA vaccines

have been studied before for

flu, Zika, and rabies. Thanks

to decades of research and inno-

vation, mRNA vaccine

technology was ready for

#### Getting Your COVID-19 Vaccine

The best way to protect against COVID-19 is to get a vaccine and a booster as soon as you are eligible. Currently, everyone ages 5 and older is eligible to get vaccinated against COVID-19.

Being vaccinated is espe-

cially important for people 50 and older, residents of

long-term care settings, peo-

ple with underlying medical

conditions, and pregnant

people, because of the in-

creased risk for severe ill-

ness from COVID-19. The

vaccine can protect you,

your family and your com-

munity from this potentially

deadly disease.

You have three ways to find

vaccines near you, including

boosters:

- Go to vaccines.gov
- Text your ZIP code to 438829
- Call 1-800-232-0233

*Dr. Natalie Jones is the family health specialist in the Department of Family and Consumer Sciences at the University of Kentucky, and writes for the UK Cooperative Extension Service.*

### Another reason to get the COVID-19 vaccine: Every case of the coronavirus is an opportunity for the virus to mutate

*By Melissa Patrick*

Every case of the corona-

virus – whether in an adult

or a child and whether it is

symptomatic or not – gives

the virus another opportunity

to mutate.

"David O'Connor, a viro-

logy expert at the University

of Wisconsin-Madison, said

he likens infections to "lottery

tickets that we're giving the

virus." The jackpot? A variant

even more dangerous than the

contagious delta currently cir-

culating," Laura Ungar re-

ports for The Assoc-

iated Press.

The fewer people who are

infected, the fewer "lottery

tickets" the virus has, "and

the better off we're all going

to be in terms of generating

the variants," he told Ungar,

who writes that variants "are

even more likely to emerge

in people with weakened im-

mune systems who harbor

the virus for a long time."

And that's one more reason

why it's so important for all

eligible people to get the

COVID-19 vaccine, because

in doing so it limits the oppor-

tunity for spread, especially

children who often have the

virus, but don't have any

symptoms.

"Vaccinating kids also

means reducing silent spread,

since most have no or mild

symptoms when they contract

the virus," Ungar writes.

"When the virus spreads un-

seen, scientists say, it also

goes unabated. And as more

people contract it, the odds of

new variants rise."

Cadell Walker of Louisville

## Why it's important for children to be up to date on vaccinations

By the Kentucky Department for Public Health

Immunization is one of the greatest public-health achievements, preventing tens of thousands of deaths, millions of cases of disease, and saving billions of dollars each decade.

Immunization is a safe, effective way to protect children from disease, including some cancers, as well as hospitalization, disability, and death. It is especially important during a pandemic or other public-health emergency to maintain routine immunizations to prevent further outbreaks.

Pediatricians play a crucial role in immunizing children and are a trusted source for vaccine information. Vaccine conversations with parents should begin as early as possible – at prenatal visits/interviews, ideally – as families often make immunization decisions during pregnancy through the first two months of a baby's life.

On-time vaccination throughout childhood is essential because it helps provide immunity before children are exposed to potentially life-threatening diseases. Vaccines are tested to ensure they are safe and effective for children to receive at the recommended ages.

Immunity is the body's way of preventing disease. When a baby is born, its immune system is not fully developed, which can put the infant at greater risk for infections. Vaccines reduce a child's risk of infection by working with his or her body's natural defenses to help safely develop immunity to disease.

Children are exposed to thousands of germs every

day in their environment. This happens through the food the child eats, the air the child breathes, and things the child puts in his or her mouth.

Babies are born with immune systems that can fight most germs, but there are some deadly diseases they can't handle. That's why they need vaccines to strengthen their immune system.

Vaccines use very small amounts of antigens to help a child's immune system recognize and learn to fight serious diseases. Antigens are parts of germs that cause the body's immune

system to go to work.

To simplify the decision-making process for parents and families, we've compiled five reasons you should make sure your children are up to date on their vaccination schedules.

Vaccines can save your children's lives: Some of the deadliest diseases targeting children have been eliminated through vaccines. For example, polio paralyzed and killed thousands of children yearly until a vaccine was created in the early 1950s. As a result of this adding this vaccine to the childhood vaccination schedule, no new cases of polio have been reported for more than 42 years.

Vaccinations are safe and effective: Vaccines are not created overnight and only

are administered to the public after a long and careful review process by scientists and doctors. Vaccines are constantly tested and monitored even after initial approval. They may cause slight discomfort, pain or redness at the site of injection, but these side effects are small compared

to future generations: Vaccines have eliminated several deadly diseases in recent years. For example, smallpox was eradicated worldwide by a vaccine. As a result, children no longer receive the vaccination for smallpox. Continuing to follow the immunization schedule set for your children can help the community further eliminate harmful or deadly diseases for future generations.

Immunization protects

diseases they were specifically designed to prevent.

Immunization protects others you care about: Children too young to be vaccinated are most vulnerable when it comes to contracting vaccine-preventable diseases. In the last 10 years, we've seen resurgence of several diseases that affect children, like measles and whooping cough. In the U.S., about 10–20 babies die each year from whooping cough because they are too young to receive the vaccine and contract the disease from someone who was not vaccinated against it.

Immunizations can save your family time and money: Children without up-to-date immunization records can be denied admission to schools or child care. Your children are exposed to millions of germs through their day-to-day interactions and the only way to fight these germs is to ensure your children are up to date on their vaccinations.

Over time, vaccine-preventable diseases become expensive to treat

compared to the short time spent at the doctor's office getting your children their shots. Immunization vaccines typically are covered by insurance, making them inexpensive or free methods to protect your kids from deadly diseases.

Immunization protects future generations: Vaccines have eliminated several deadly diseases in recent years. For example, smallpox was eradicated worldwide by a vaccine. As a result, children no longer receive the vaccination for smallpox. Continuing to follow the immunization

schedule set for your children can help the community

further eliminate harmful or deadly diseases for future generations.

### What vaccines are required for children?

In

Kentucky,

to

enter

kindergarten,

all

children

at

least

5

years

of

age

must

have:

- Five doses of DTaP or DTP (diphtheria, tetanus, pertussis) or combinations of the two vaccines.
- Four doses of IPV or OPV (polio) or combinations of the two vaccines.
- Three doses of hepatitis B.
- Two doses of MMR (measles, mumps, rubella).
- Two doses of varicella (chickenpox), unless a health-care provider states that the child has had a diagnosis of typical varicella disease or verification of a history of varicella disease by a health-care provider or a diagnosis of herpes zoster disease or verification of a history of herpes zoster disease by a health-care provider.
- One dose of MCV or MPSV (meningococcal vaccine).

In addition to the required vaccines, the Centers for Disease Control and Prevention recommends these vaccines for children and adolescents:

- Rotavirus (RV)
- Haemophilus influenzae type b (Hib)
- Pneumococcal conjugate (PCV13)
- Influenza
- Hepatitis A
- Meningococcal
- Pneumococcal polysaccharide (PPSV23)

More information about vaccination can be found at:

<https://www.cdc.gov/vaccines/schedules/easy-to-read/child-easyread.html>

<https://www.cdc.gov/vaccines/parents/why-vaccine-decision.html>

<https://www.cdc.gov/vaccines/parents/why-vaccine-index.html>

<https://www.aap.org/en/patient-care/immunizations/>

## With Omicron, more effective masks should be worn, experts say

By Al Cross

"With another coronavirus variant racing across the U.S., once again health authorities are urging people to mask up indoors. Yes, you've heard it all before," Maria Godoy reports for NPR. "That study also found that Omicron reaches higher levels in

the University of Hong Kong shows "Omicron multiplies 70 times faster inside human respiratory tract tissue than the delta variant does," NPR reports. "That study also found that Omicron reaches higher levels in

masks, N95, KN95 and KF94 respirators are all made out of material with an electrostatic charge." That "pulls these particles in as they're floating around and prevents you from inhaling those particles," Karan



Chart from ShopMasks.com

"But given how contagious Omicron is, experts say, it's seriously time to upgrade to an N95 or similar high-filtration respirator when you're in public indoor spaces."

"Cloth masks are not going to cut it with omicron," Linsey Marr, a researcher at Virginia Tech who studies how viruses transmit in the air, told NPR.

Omicron "spreads at least three times faster than Delta," Godoy notes. "One person is infecting at least three others at a time on average, based on data from other countries."

Robert Wachter, chair of the medicine at the University of California, San Francisco, told Godoy, "The kind of encounter that you could have had with prior versions of the virus that would have left you uninfected, there's now a good chance you will get infected from it."

Early research at

respiratory tract tissue 48 hours after infection, compared with Delta."

Marr said, "That would suggest to me that maybe it reaches higher levels and then we spew out more [virus particles] if we're infected," Also, Omicron may be so contagious that it takes fewer viral particles to create an infection.

Also, "Virus particles from an infectious person can linger in the air indoors for minutes or even hours after they leave a room in some situations, says Dr. Abraar Karan, an infectious disease physician at Stanford University," Godoy reports. Karan told her, "I think that people need to realize that transmission here can happen even when you're not near somebody."

Godoy says, "Given all this, you want a mask that means business when it comes to blocking viral particles. Unlike cloth

told her. "And that really is key."

Surgical masks also have an electrostatic charge, but they tend to fit loosely, "A snug fit – with no gaps around nose, cheeks or chin – really makes a big difference," says Marr, who has studied mask efficacy," Godoy reports.

"KN95s tend to be a bit more comfortable than N95s, but counterfeits continue to be a problem. For safer shopping, check out a site like Project N95, a nonprofit that helps consumers find legitimate personal protective equipment. Or check the CDC's site for advice on how to spot a counterfeit and a list of trusted sources for surgical N95s. For maximum protection, make sure your N95 fits snugly as well, creating a seal around your mouth and nose. The CDC explains what makes a good fit and how to test that yours is sealing well."

## Protect your child's health with these five easy steps.

**1. Talk with your pediatrician or family doctor.** Meet with your pediatrician or family doctor to share your concerns and schedule your child's vaccine.

**2. Talk with your child.** Discuss with your children what vaccines are, their importance and what might happen after they get it. They may have arm pain, a headache, feel tired, or have achy muscles. These should go away in a day or two. It's important they know this will protect the people around them too!

**3. Schedule your child's vaccine appointment.** Pick a location and time that is convenient and fits in your child's schedule. No matter where your child gets the vaccine – doctor's office, school, church, pharmacy, etc. – all locations can access your child's medical record.

**4. Prepare your vaccine-ready kit.** Hydration is key. Doctors recommend hydrating before and after the vaccine. Also, have a non-aspirin child's pain reliever on hand in case your child has pain at the injection site, sore muscles, or a headache.

**5. Get your child vaccinated.** When you're at the doctor's office or immunization clinic, be calm. Remember kids pick up on how the adults around them are feeling. And remember to reward your kiddo for being brave with a **high five for health!**

High Five for Health is a public service campaign that speaks directly to the concerns of Kentucky parents about COVID-19 vaccines for children ages 5 to 11 years old. The campaign is made possible by the Foundation for a Healthy Kentucky and supported by Anthem Blue Cross and Blue Shield Medicaid.

For more information about the campaign, visit [highfiveforhealth.org](http://highfiveforhealth.org)

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FOR A HEALTHY KENTUCKY



## Masks can prevent COVID-19, and there ways to make them more effective; claim that they trap excess carbon dioxide is false

By Alec Foust

Wearing a face mask can help prevent the spread of COVID-19, and certain mask combinations and modifications can increase a mask's effectiveness.

A study led by researchers from the National Institute for Occupational Safety and Health looked at how effectively different mask types, combinations, and modifications blocked respiratory aerosols like those that carry the coronavirus. The study involved humans and simulator mannequins in various experiments to simulate coughs and exhalations to see how well aerosols were blocked.

The study found that layering a three-ply cloth mask over a medical mask (double masking) or securing a medical mask with an elastic brace provided the best protection. Using earloop tog-



Photo by Kemal Yildirim, Getty Images

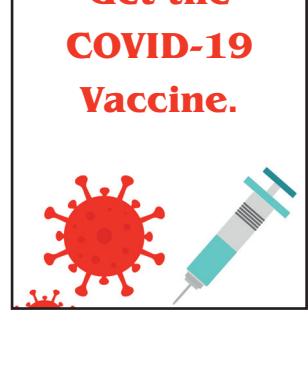
gles or an earloop strap, or knotting and tucking the mask, also increased performance as compared to medical masks without modification. Two other modifi-

cations, crossing the earloops or placing a bracket under the mask, did not increase performance. The study is published in the peer-reviewed American Journal of Infection Control.

"Since the start of the COVID-19 pandemic, there has been considerable confusion about the most effective use of face masks, especially among the general public, to reduce the spread of infection," said Ann Marie Pettis, president of the Association for Professionals in Infection Control and Epidemiology. "The NIOSH study findings are important and timely because they identify specific, practical combinations of face masks and mask modifications that may improve mask seal and thereby measurably reduce the expulsion of infectious aerosols into the environment."

A claim that masks trap dangerous levels of carbon dioxide is false, medical experts say. "Wearing a mask does not raise the carbon dioxide (CO<sub>2</sub>) level in the air you breathe," says the Centers for Disease Control and Prevention. "A cloth mask does not provide an airtight fit across the face. The CO<sub>2</sub> completely escapes into

the air through the cloth mask when you breathe out or talk. CO<sub>2</sub> molecules are small enough to easily pass through any cloth mask material. In contrast, the respiratory droplets that carry the virus that causes COVID-19 are much larger than CO<sub>2</sub>, so they cannot pass as easily through a properly designed and properly worn cloth mask."



# Here are answers to frequently asked questions about the coronavirus, the COVID-19 disease and the vaccines

By Melissa Patrick

Kentucky Health News

One of the many challenges facing Kentuckians who remain unvaccinated against the coronavirus is that they still have unanswered questions about vaccines, some based on facts and others based on myths. This story is an attempt to sort through some of those questions and to counter misinformation.

This information is not only for the unvaccinated. Kentucky Health News encourages individuals who have already been vaccinated to use it as a resource when talking to their loved ones about getting vaccinated, since friends and family have proven to be highly influential in persuading them to do so.

**COVID-19 is no worse than the seasonal flu, right?** Wrong. While influenza and COVID-19 are both contagious respiratory illnesses, they are caused by different viruses. COVID-19 appears to be more contagious and to spread more quickly, and is more deadly. Preliminary estimates from the **Centers for Disease Control and Prevention** are that the U.S. had 35 million flu cases and 20,000 deaths from it in the 2019-20 flu season, for a death rate of 0.06 percent. The U.S. has had more than 74 million confirmed cases of the coronavirus and over 879,000 deaths from COVID-19. In Kentucky, there have been over 1 million cases and more than 12,000 deaths.

**Kids don't get it, do they?** Yes, they do. Children can be infected with the virus, and can get sick from COVID-19 and spread the virus to others without knowing they have it. In Kentucky, more than one-fifth of cases have been in people under 20. Most children have mild symptoms or no symptoms, but some have become severely ill from the disease and a few have died. They can also get a rare but serious condition, Multisystem Inflammatory Syndrome, that sometimes doesn't show up until weeks after the infection. Kentucky has had more than 50 reported cases, according to the CDC. The more contagious Omicron variant of the virus that recently became dominant seems to affect them more.

**These vaccines were developed very quickly; how can we be sure that they have**

much more data over a longer time than is required for emergency use authorization. Moderna has completed its submission for full approval of its COVID-19 vaccine for ages 18 and older and has asked for priority review, but even with priority review the approval process typically takes months to complete.

**Why has the Pfizer vaccine been permanently licensed?** The FDA reviewed nine months of experience with the vaccine and found it safe. It granted Pfizer's request that the review of its data be "fast tracked," which means the agency agreed to prioritize the analysis over other work, "such as meetings with other drug developers. It does not mean the review was rushed," **McClatchy Newspapers** report. The FDA said, "We have taken an all-hands-on-deck approach, including identifying additional resources such as personnel and technological resources from across the agency and opportunities to reprioritize other activities, in order to complete our review to help combat this pandemic surge."

**Does this new type of vaccine change your DNA?** "COVID-19 vaccines do not change or interact with your DNA in any way," the CDC says. The new types of vaccines deliver instructions "to our cells to start building protection against the virus that causes COVID-19." **Johns Hopkins University** says, "The messenger RNA from two of the first types of COVID-19 vaccines does enter cells, but not the nucleus of the cells where DNA resides. The mRNA does its job to cause the cell to make protein to stimulate the immune system, and then it quickly breaks down – without affecting your DNA."

**What are the issues with the Johnson & Johnson vaccine? Is it still recommended?** In April 2021, the J & J (Janssen) single-dose vaccine was paused while the FDA and the CDC investigated a very small number of cases of blood clots in people who had received it, nearly all of them adult women younger than 50. The FDA and CDC recommended that administration of the vaccine could safely resume. After more than 18 million doses of the vaccine had been given in the U.S. there were 57 confirmed reports of people who got the

vaccine "clearly outweigh the known and potential risks." Through Jan. 20, there have been around 302 preliminary reports of Guillain-Barre syndrome out of more than 18 million J&J vaccine doses administered, according to the CDC. These cases have largely been reported about two weeks after vaccination and mostly in men, many 50 years and older.

**What are the side effects of a COVID-19 vaccination?** The most common side effects are pain, redness and swelling on the arm where you get the shot. Other side effects are tiredness, headache, muscle pain, chills, fever and nausea. Side effects after a second shot may be more intense. There have been three confirmed cases of the rare blood clot following the Moderna vaccine, out of 513 million doses of mRNA COVID-19 vaccines.

Serious adverse reactions after a coronavirus vaccination are rare, says the CDC. Anaphylaxis, which can occur after any vaccination, is severe and has occurred in approximately five people per million vaccinated in the U.S. Clinics keep people 15 minutes after a shot to make sure they don't have a reaction.

As of Jan. 20, there have been 2,132 preliminary reports of myocarditis or pericarditis among people 30 and younger who received a coronavirus vaccine. Most cases have followed the Pfizer or Moderna vaccine, particularly in male teenagers and young adults. The CDC has confirmed 1,233 of the preliminary cases.

**Do I need a shot if I've already had the virus?** The CDC recommends that those who have been infected with the virus should be vaccinated, because we don't know how long or strong the resulting immunity is. Emerging evidence shows that getting a COVID-19 vaccine after you recover from COVID-19 infection provides added protection to your immune system. One study showed that, for people who already had COVID-19, those who did not get vaccinated after their recovery are more than two times as likely to get COVID-19 again than those who get fully vaccinated," says the CDC. If you were treated for COVID-19 with monoclonal antibodies or convalescent

disease in the U.S.

**What's the latest information on who needs a booster?** Research has found that a booster shot of the Pfizer or Moderna vaccine is needed to protect against the highly contagious Omicron variant of the virus.

Adults 18 years and older can get *any* of the COVID-19 vaccines as a booster. A booster is recommended five months after the second shot for those who initially received a Pfizer-BioNTech or Moderna vaccine.

The CDC recently recommended 12-to-15-year-olds should get the Pfizer booster at least five months after their second Pfizer shot.

Additionally, the CDC recommends that moderately or severely immunocompromised 5-11-year-olds receive a booster dose of vaccine 28 days after their second shot.

Everyone who received the Johnson & Johnson (Janssen) vaccine is eligible for a booster shot at least two months after they get the single-dose vaccine. It is especially important for those who got the J&J vaccine to get a booster, since it has been shown to be less effective over time compared to the Pfizer and Moderna vaccines.

The latest guidance says people can receive a different brand of vaccine as a booster than they did their initial shots.

people capped vial.

The Pfizer-BioNTech COVID-19 vaccine for children 5 to 11 is one-third of the adult dose and comes in an orange capped vial and is delivered with a smaller needle, designed specifically for children.

Both of these vaccines require two doses, given three weeks apart.

**Why do I need to wear a mask if I've been vaccinated?** Research indicates that vaccinated people who contract the highly contagious Omicron variant can spread it to others. The CDC advises universal masking for everyone indoors, regardless of vaccination status. Several studies show that properly wearing masks slows the spread of the virus, as part of a multi-layered prevention approach.

The largest randomized controlled study of masks, led by researchers from **Stanford** and **Yale** universities, looked at the benefits of surgical-mask use by more than 342,000 adults in Bangladesh. It found that mask usage increased 29 percent in the intervention group where masks were promoted, and the group showed an 11% reduction in COVID-19 infections, with a 35% reduction among those over 60. **The Washington Post** reports that the study is under peer review with the journal **Science**.

vere illness and hospitalization.

**Can vaccines affect fertility?** "The COVID-19 vaccine will not affect fertility," say physicians at **Johns Hopkins University** in Baltimore. They said the myth sprang from a false report on social media that the Pfizer and Moderna vaccines would affect not only the spike protein on the surface of the virus, but another spike protein that is involved in growth and attachment of the placenta in pregnancy.

"The two spike proteins are completely different and distinct, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant, including through *in vitro* fertilization methods," the doctors say. The CDC says, "There is currently no evidence that COVID-19 vaccination causes any problems with pregnancy, including the development of the placenta. In addition, there is no evidence that female or male fertility problems are a side effect of any vaccine, including COVID-19 vaccines."

**What about microchips?** There are no microchips or any kind of device in the vaccines, but this hasn't stopped about one in five people from thinking it's true. First and foremost, it is physically impossible; James Heathers of **The Atlantic** examined the notion in detail. A

## Vaccination is Important for Ending the COVID-19 Pandemic

### WHY DOES MY CHOICE MATTER TO OTHERS?

It matters because of the concept of "herd immunity." Here's how it works:

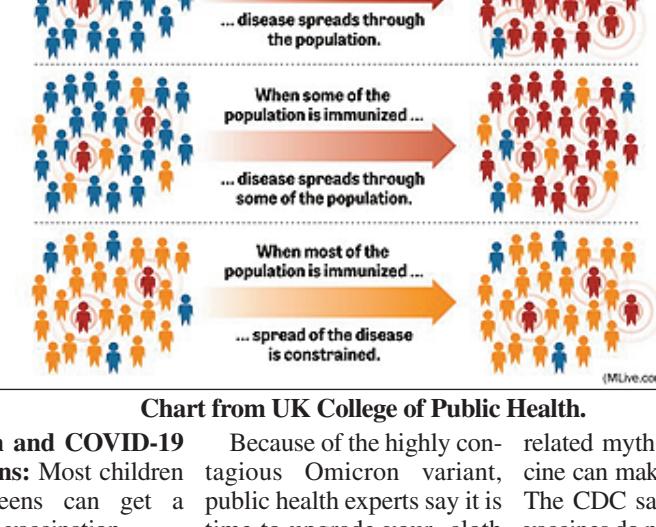


Chart from UK College of Public Health.

### Children and COVID-19 vaccinations:

Most children and all teens can get a COVID-19 vaccination.

The Pfizer-BioNTech

related myth is that the vaccine can make you magnetic. The CDC says, "COVID-19 vaccines do not contain ingredients that can produce an electromagnetic field at the site of your injection. All COVID-19 vaccines are free from metals."

**Why are we hearing so much about the Omicron variant?** It is now by far the dominant strain in the U.S. and Kentucky, and may be as contagious as measles, the most contagious virus known.

While Omicron appears to be less severe overall than the Delta variant, it can still cause severe and even deadly infections in some people. And because it is so contagious, it has the potential to overwhelm Kentucky's health care systems.

People who are not fully vaccinated and boosted are most at risk from the Omicron variant. If a community has a low vaccination rate, that creates an opportunity for local outbreaks that have the potential to overwhelm the health-care system.

While two doses of the Pfizer or Moderna vaccine provides some protection against the Omicron variant, a booster vaccination has been found to ramp up this protection, particularly against se-

## SARS-CoV-2 Vaccine production: Drawing on past science to move things quickly



### Traditional development

15 years or longer

### SARS-CoV-2 vaccine development

10 months to 1.5 years total

Krammer (2020)

Nature

586: 516

Review on a rolling basis?

Overlapping clinical phases

Production (at risk)

Review on a rolling basis?



# IMMUNIZATIONS ARE SAFE AND SAVE LIVES.

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