#### **COVID FAQs**

#### What is COVID?

COVID is short for COVID-19, which is shorthand for **CO**rona**VI**rus **D**isease-20**19**. It is the illness caused by the virus SARS-CoV2, which is shorthand for **S**evere **A**cute **R**espiratory **S**yndrome – **Co**rona**V**irus **2**. Although technically COVID refers to the illness, in common everyday language it is used to refer to the virus as well, and that is how it will be used here.

### Where did COVID come from?

Although there are unfounded theories that the virus arose from a lab accident or was intentionally created in a lab, the best evidence we have suggests that it arose from an existing precursor virus in an animal and was transferred to a human at an open air market in Wuhan, China.

#### How is COVID transmitted?

COVID is mostly spread by virus particles in the air or by hand contact with a surface that has the virus on it (like another hand or a doorknob). Particles can become airborne just by talking, but are more likely to be spread by coughing, sneezing or singing. When airborne, the virus particles tend to drift downward, so that the further away someone is from the source, the less likely they are to get infected. The virus gets into the respiratory tract (primarily the nose or lungs) where it starts dividing to make more copies of itself. People are generally most contagious (most likely to spread the virus to others) in the first few days after being infected.

#### Why is COVID such a big deal?

The likelihood of severe illness or death for the average person is higher for COVID than it is for the flu – about 1.5 times higher. Compounding that is the fact that the virus is highly contagious; again, it is about 1.5-2 times more contagious than the flu is. Although that doesn't sound like much of a difference, it's an exponential function. Imagine that there is one virus starting in a single person that can pass from each infected person to 2 other people every day, while another virus can infect 3 people every day – a 1.5 times difference. At the end of the 1<sup>st</sup> day, the 1<sup>st</sup> virus will have caused a total of 3 infections (the first case plus the 2 new infections), and on the 2<sup>nd</sup> day it will have caused a total of 9 infections (the initial 3 plus the 6 that they infect); meanwhile, on the 1<sup>st</sup> day the 2<sup>nd</sup> virus will have caused 4 infections, and on the 2<sup>nd</sup> day it will have caused 16 total infections. After 2 weeks, the 1<sup>st</sup> virus will have caused about 4.8 million infections, while the 2<sup>nd</sup> virus will have caused about 268 million infections.

More than a million Americans have died and more than 6 million have been hospitalized from COVID so far. There are currently more than 1,600 deaths and about 5,000 hospitalizations due to COVID in the US weekly.

#### What does the COVID illness look like?

In the short-term, COVID's most common effects show up in the respiratory tract as anything from a mild cold-like syndrome to severe pneumonia. However, it can cause symptoms in other

systems, such as fatigue, conjunctivitis (pink eye), diarrhea, difficulty thinking, kidney and heart problems and others. These symptoms tend to last only a few days to a couple of weeks.

If you have a thermometer at home, it is worthwhile to check your temperature every now and then if you have COVID. If you have a pulse oximeter at home (a machine that measures the level of oxygen in your blood), it is worthwhile checking that, especially if you're having any trouble breathing.

There is a syndrome known as "long COVID" (or "long haul COVID"), which affects about 5-10% of people with acute COVID infection. People with long COVID have symptoms for weeks to months to years after the initial illness. Fatigue, shortness of breath and difficulty thinking ("brain fog") tend to predominate in long COVID, but other symptoms may be present, such as loss of sense of taste or smell, headaches, insomnia, depression, anxiety and others. It is not clear why some people experience long COVID while most people don't, but the risk of long COVID increases with the number of times a person is infected. The risk is also higher among people who haven't been vaccinated and among people who had severe acute illness. Recent studies indicate that long COVID is associated with altered immune and hormone function.

Some people can get COVID and have no symptoms at all, particularly if they've been fully vaccinated.

### How common is COVID now?

We no longer have an accurate way of determining how common COVID is in the community, because so many people are doing at-home testing (and those test results are rarely reported to public health organizations), or not testing at all when they're sick or exposed. The best indicators we have of the magnitude of infection in the community now are COVID emergency department visits (percent of ED visits due to COVID) and hospitalization rates (number of hospitalizations per 100,000 population) over a 7-day period. These rates started increasing in the summer, and while there was a slight downturn in early fall, rates are climbing again and are comparable to what they were last winter. COVID hospitalization and death rates in the US have more than tripled since June.

The CDC has set 3 levels of community COVID risk based on hospitalization rates per 100,000 population per week – less than 10 is low, 10-19.9 is medium, and 20 or more is high. Currently (as of January 6, 2024), the rates in Albemarle and neighboring counties are considered low. Only about 54% of the counties in the country are considered low (down from about 90% of US counties in October). The rates in Albemarle county are rising, and most counties in Virginia are now in the medium range. You can see an interactive map of COVID hospitalization rates by county at <u>this link</u>. And you can see graphs of trends in hospitalizations, deaths, ER visits, and test positivity <u>here</u>.

Another way that COVID presence is estimated is by measuring the amount of COVID in wastewater. This measure also indicates that COVID rates have increased since the summer. You

can see a graph of national COVID wastewater trends and a map of COVID wastewater measurement by county <u>here</u>.

### Why are COVID rates increasing?

Many people think that the exceptionally hot summer that we had this past year drove people to spend more time indoors with other people, thus increasing the risk of exposure for many people. And the same is true for the cold weather we are experiencing now, compounded by large holiday get-togethers. The most common circulating COVID strain, termed JN.1, which first appeared in the US in September, appears to be highly transmissible.

### What's a significant exposure?

Spending at least 15 minutes in close contact (within 6 feet) with someone who is unmasked and who has COVID should be considered a likely exposure. Not all exposures result in infection, though.

### What should I do if I think I may have been exposed or if I have symptoms?

If you think you might have COVID, either because you have COVID symptoms or because you were or may have been exposed to someone with COVID, you should isolate yourself (stay away from others) until you can get tested.

### What about at-home testing?

While the US government discontinued its policy of providing free at-home tests in May 2023, the policy has been resumed. Tests can be obtained <u>here</u>. Also, the Virginia Department of Health has partnered with a limited number of public libraries to provide test kits for free (you don't need a library card to pick them up) – check for the location of the participating library nearest you at <u>this link</u>.

It is important to know that the free tests are antigen tests, which have limited reliability for testing persons without symptoms (the tests are often negative even if the person is infected). If you want to test a person who may have been exposed but has no symptoms, a PCR test is best. PCR testing may be available for free for people without insurance – check <u>here</u> to find a site near you.

If you do want to use an at-home antigen test for a person without symptoms, it is recommended that the person should have 3 negative tests, starting 5 days after the most recent exposure, with at least 48 hours between tests, before being considered negative.

For testing persons with symptoms using an antigen test, it is recommended that the person should have 2 negative tests, with at least 48 hours between tests, before being considered negative.

You should consider testing if the risk in your community is medium or high, and you have regular close contact with someone who may be at high risk for severe disease.

A positive antigen or PCR test should be considered reliable. That said, a person can continue to test positive for several weeks after infection, especially with a PCR test. In that situation, a positive test should not be considered an indication that the person is still contagious, and in fact it is probably not worthwhile to do follow-up testing.

Remember to check the expiration date on your kit. Importantly, the FDA has determined that some test kits are still reliable after the printed expiration date – you can check the status of your kit <u>here</u>.

## What should I do if I test positive?

If you test positive for COVID and have symptoms, you should isolate yourself (stay away from others) as much as is possible for 5 days from the day your symptoms started; if you have no symptoms, isolation should be maintained for 5 days after your 1<sup>st</sup> positive test. That said, if everyone in your home has COVID, there's no reason to isolate from each other at home.

If you do have to be around people, you should try to do so in well-ventilated spaces and you should wear a high-quality (N95 or equivalent) mask. After 5 days, you no longer need to isolate if you don't have any symptoms or if your symptoms are improving and you don't have a fever. You should continue to wear a high-quality mask around others for a further 5 days.

You can read more about isolation and precautions here.

## If I'm infected but I haven't had any symptoms, can I still infect others?

Yes, it is estimated that about 15-25% of COVID infections come from people before they develop any symptoms, including some people who never develop symptoms.

## How can I protect myself and others from COVID?

There are 2 means of protection against COVID illness – limiting the risk of exposure to the virus, and immunity. It is important to keep in mind that, by protecting yourself, you are also protecting others in your community, some of whom may be at high risk for severe illness.

#### How do I limit my exposure?

The risk of exposure to the virus can be limited by reducing the likelihood that the virus gets from one person to another. Options include limiting time around others (especially indoors), avoiding poorly ventilated spaces, maintaining distance from others, avoiding person-to-person contact, washing hands with soap or hand sanitizer when it is possible that there has been hand contact with the virus, and wearing a high-quality mask.

## How do I know if I'm in a well-ventilated space?

There are few reports of COVID transmission in outdoor settings, and they almost all involved crowded events such as weddings. Presumably whatever virus may be floating around outside gets diluted in the huge volume of air outdoors and/or blown away by moving air. We can use  $CO_2$  (carbon dioxide) monitoring to see if our indoor spaces are suitably comparable. Outdoor  $CO_2$  levels tend to be in the range of 450-550 parts per million (ppm). If you have a  $CO_2$  monitor,

you can see if your indoor space is close to this – anything less than about 600ppm is probably close to being as safe as outdoors.

If you want to maximize ventilation, keep your doors and windows open as much as is possible. Fans can also help, particularly if you can direct them to blow outside (e.g., a window box fan blowing outdoors or a ceiling fan that vents outdoors). If you're somewhere indoors where you don't have control over the ventilation and wearing a mask is problematic, like a restaurant indoors, consider trying to sit near an open door or window.

Air purifiers can be expensive, but can also contribute to cleaner air.

## Should I mask?

Everyone should feel free to mask at any time. The <u>CDC recommends</u> further that if <u>COVID</u> <u>levels</u> are medium in your community (10-19.9 hospitalizations per 100,000 per week), people who are at <u>high risk</u> for severe infection should mask – this would include people age 65 or older, people on immunosuppressive therapy or with poor immune systems, and people with certain medical conditions such as chronic lung / heart / kidney / or liver disease, diabetes, dementia, obesity and others. If COVID levels are high in your community (at least 20 hospitalizations per 100,000 per week), everyone should mask, and people at high risk should avoid indoor activities in public as much as is possible.

You should consider masking if the risk in your community is medium or high, and you have regular close contact with someone who may be at high risk for severe disease.

## What kind of mask is recommended?

While any mask is better than no mask at all, N95 masks or their equivalents are much better at reducing the risk of COVID transmission than are cloth masks or even surgical masks. Estimates from the period when the highly contagious omicron variant had become dominant indicated that if an infected person was unmasked, an uninfected person within 6 feet can be infected within 15 minutes with no face covering, and within 30 minutes if wearing a surgical mask, while it would take 2.5 hours if wearing an N95 mask.

#### How do I become COVID-immune?

Immunity can be gained naturally (by being infected with the virus) or through vaccination. It is not clear how long effective immunity from either mechanism lasts, but it is probably on the order of a few to several months for most people, and it may vary widely from person to person. And while some studies have indicated that natural immunity is more long-lasting or more effective than vaccine immunity, those studies also demonstrated that people with naturally-acquired immunity were more likely to be hospitalized or to die than were those who were vaccinated.

## What happens to the vaccine after it is injected into your body?

The vaccine stays where it is injected (the muscle) or nearby lymph glands (mostly in the armpit assuming it's injected into the upper arm) – it does not go anywhere else in the body. The Pfizer

and Moderna vaccines use messenger RNA (mRNA), which doesn't enter the nucleus of the cell, so it can't affect your DNA (which is found only in the nucleus). The vaccine tells the cell to make the spike protein that is found on the virus – that's all it does. mRNA lasts only a few days, so there can be no direct effect from the vaccine itself after that because it's gone. The spike protein that the vaccine tells your body to produce lasts only a few weeks, so there can be no direct effect from the spike protein after that because it's gone. The only thing left of the vaccine effects after the spike protein is gone is your body's immune response to the spike protein, which is what protects you against the virus.

## Why do we need to keep getting COVID shots?

One reason that boosters are needed is that immunity to the virus decreases over time. Also, COVID, like the flu virus, is an RNA virus (meaning its genetic makeup is composed of RNA, unlike ours, which is composed of DNA). RNA viruses tend to mutate over time as they make copies of themselves – this is why we have flu shots annually. COVID mutates even more rapidly than the flu does, and sometimes the mutated virus is not handled well by the immunity that we have developed to previous viruses. That was the case with the new omicron variant of the virus when it appeared.

The currently available COVID booster, released in September, more closely targets the current common strain of the virus than did the previous vaccine. You can read more about the vaccines <u>here</u>.

# How effective are the COVID vaccines?

The most recent COVID vaccines will reduce the risk of getting infected with the most recent strains of COVID by about half. More importantly, the vaccines will reduce the risk of severe disease (hospitalization or death) by about two-thirds to three-quarters. It's important to keep in mind that these data are based on people who had gotten the vaccine within the previous 2-4 months, and that the effectiveness of the vaccine probably drops off after that.

In addition to protecting vaccinated people against getting infected and against getting sick, data have demonstrated that people who do have COVID infection after being vaccinated are less likely to transmit the virus to others than are people who are unvaccinated.

## How safe is the vaccine?

Billions of vaccine doses have been administered worldwide, and the vaccines have been demonstrated to be among the safest vaccines ever developed. Most side effects of the vaccine are mild and short-lived, such as soreness around the injection site, swollen glands, fatigue, headache and fever. There are reports of more serious reactions, such as severe allergic reactions, clotting problems, heart problems, and neurologic problems. However, these effects are exceedingly rare (on the order of 1 in 10,000 to 1 in 500,000 vaccine doses), and numerous studies have demonstrated lower death rates among those who have been vaccinated compared with those who haven't been.

## Do I need to get a vaccine if I've already had COVID infection?

While having been infected does result in immunity, that immunity will likely wane over time to the point where you're no longer adequately protected. It may be reasonable to delay getting a vaccine for 2-4 months after a COVID infection. You should consider your personal concern about infection, whether others around you may be at increased risk, and the level of COVID in your community.

#### Can I get a COVID vaccine at the same time as other vaccines? Yes.

# Can I get COVID more than once?

While a COVID infection does provide some protection against further infection for a time, eventually that immunity wears off and you'll be at risk again. A recent study found that, compared with those who had been infected only once, people who had been reinfected with COVID had a greater chance of death, hospitalization, lung and heart problems, diabetes, fatigue, digestive and kidney disorders and mental health issues within six months of their last infection. The risk of long COVID also goes up with each infection. So people who have had COVID infection should be extra careful to try to reduce their risk of getting infected again.

# Are there treatments for COVID?

There are several treatments that have been approved by the FDA for COVID. Because COVID tends to be pretty mild in many people, particularly those who are up-to-date on COVID immunizations, not everyone needs treatment. If you have symptoms and have tested positive for COVID, or suspect that you have COVID, you should get in touch with your health care provider to discuss whether treatment is needed, particularly if you are at <u>high risk</u> for severe illness. If you experience moderate to severe symptoms such as shortness of breath or high fever, you should seek immediate healthcare attention (e.g., see your primary care provider, call 911 or go to the closest emergency room/urgent care provider).

We don't have specific effective treatments for long COVID yet. Treatment for long COVID is targeted to management of symptoms, and pulmonary rehabilitation if needed.

## What about non-approved treatments?

Alternative options such as hydroxychloroquine and ivermectin have been demonstrated to be ineffective in the treatment of COVID, and in some cases have been deadly. You can read about alternative tests, vaccines and treatments <u>here</u>.