

1. Mark your confusion.
2. Show evidence of a close reading.
3. Write a 1+ page reflection.

The Complicated Calculus of Mask-Wearing
Source: Dr. Sanjay Gupta, CNN.com, May 9, 2021

Let's face it, masks have been a hot button issue in this country since the very start of the pandemic. They were politicized early on, and quickly became a symbol of how seriously a person took the threat of the coronavirus.

In our new world, where there's now a highly effective way to prevent the spread of Covid-19 -- vaccines -- masks still remain a complicated issue, especially since US Centers for Disease Control and Prevention relaxed its guidance on face coverings for fully vaccinated people outdoors.

Now, masks aren't only tied to politics, they're also causing plenty of confusion.

But we have to sort through that confusion: Masks continue to be a useful tool, especially because coronavirus infection rates in much of the country are still elevated. But as more people get vaccinated and infection rates fall even further, we are going to have to start thinking about when we can loosen indoor mask restrictions, too.

Of masks and mandates

It is worth remembering why masks were recommended in the first place. It was to greatly reduce the amount of virus an asymptomatic carrier might release into the air. While there was some protection to the wearer as well, especially with high filtration masks, most of the benefit was to those around you.

With Covid-19, more than half the spread is estimated to come from people with asymptomatic and pre-symptomatic infections who often have no knowledge they're carrying the virus. The solution was to recommend masks broadly when people were in public.

But that leaves open the question, is mask-wearing still as necessary today, when approximately 57% of US adults have gotten at least one dose of the vaccine and roughly 43% are fully vaccinated and natural infections have created immunity in millions more?

The CDC updated its outdoor mask guidance for fully vaccinated people against a backdrop of falling coronavirus cases and the rising number of vaccinated Americans. Here is what they mean for you: If you are fully vaccinated, you can now go unmasked among friends from multiple households during small outdoor gatherings or when dining outside. Unvaccinated people should still wear a mask at those kinds of gatherings.

The CDC advises that both vaccinated and unvaccinated people still wear masks during crowded outdoor events, such as concerts, parades and sporting events. And, the same guidance is in place for all indoor public spaces.

When I speak to experts at the CDC, they give two main reasons to justify that continued cautious guidance. Because viral transmission is still high in about 35% of the counties in this country -- home to almost 42% of the population -- officials are worried that, statistically, large gatherings are still places where spreader events can occur. The vaccines don't confer 100% protection and so-called breakthrough cases have been documented.

Another issue is that most settings don't require proof of vaccination. So, until systems are in place to identify those with natural or vaccine-acquired immunity, or enough of the country has been vaccinated, the CDC is likely to continue to recommend masking in indoor situations.

The vaccine piece of the puzzle

The original clinical trials of the three vaccines to receive emergency use authorization by the US Food and Drug Administration showed they are very effective in preventing people from developing and dying from symptomatic Covid-19. What wasn't initially known: how good the vaccines are at preventing asymptomatic disease and transmission of the virus. In other words, could a vaccinated person still get infected (but not know it) and pass on the virus to someone who wasn't yet vaccinated? Again, that is one of the main reasons we are asked to keep our masks on.

But evidence is beginning to trickle in showing that these vaccines, especially Pfizer/BioNTech and Moderna, are very effective at not only reducing asymptomatic infection but also reducing viral load if a vaccinated person does get infected. For example, recently published real-world studies on the Pfizer/BioNTech vaccine suggests it reduced asymptomatic infection by as much as 92%.

The variants may throw a wrench into all of this, but so far, the vaccines appear to be protective against serious disease with them as well.

Here is the critical point: The possibility of being a vaccinated silent carrier is becoming lower and lower. It's not zero, but it's pretty low. So how much should we continue to worry? And what will the threshold be when we can finally, collectively, breathe an unmasked sigh of relief?

Unmasking indoors vs. outdoors

While it is not easy, there are objective ways to figure this out. To start, you can ask yourself, what is the likelihood that I'm going to breathe in someone else's air and that air will have enough of the virus in it for me to get infected?

One of the biggest factors is the environment. Where are you? If outdoors, the likelihood of you breathing in someone else's air with enough virus to give you an infection is very small.

According to a recent review of five international studies, the odds of transmission indoors was calculated to be almost 19 times greater than outdoors, and fewer than 10% of coronavirus infections occurred outdoors. That's not to say it's impossible, but just much less likely.

And as more people get vaccinated, that likelihood goes down even further. For all those reasons, it really doesn't appear necessary to still wear a mask outdoors, except in crowded situations where you will be next to the same people for a long period of time. That increases the likelihood you will breathe in their air. If there is a lot of virus circulating in the community, the chance that breathed-in air has virus is higher.

What about indoors?

Currently, the CDC recommends mask-wearing and social distancing when indoors around people who don't live in the same household. But interim recommendations for fully vaccinated people now advise they can visit indoors and without masks with other fully vaccinated people, and with unvaccinated people from a single household who are at low risk for severe Covid-19.

The CDC has said it will continue to update the guidelines as the situation in the country evolves, although an agency official told CNN in an email Tuesday they were unaware of any current plans to update it.

In my background conversations with senior officials at the CDC, I often ask not just about the recommendations, but also how they work and think through these recommendations. What's become increasingly clear to me is that the recommendations of indoor mask-wearing will probably be among the last public health measures the agency will loosen.

Let me explain. Remember that public health recommendations fundamentally balance risk and reward. In this case, how much of a sacrifice is the individual being asked, balanced against the potential benefit?

With indoor mask wearing, CDC officials have told me they believe it's easy to wear one (not a big sacrifice) and the public health rewards are still quite high, given the amount of persistent viral spread.

That is not the way all organizations appear to view the risk-reward proposition. Starting Monday, the New York Stock Exchange will allow fully vaccinated people on the trading floor to go unmasked when socially distanced, according to an internal memo obtained by CNN.

It will be a provocative way to do things, and many in the public health community will find it irresponsible. How will they ensure people do in fact have immunity? Will there be adequate ventilation? And isn't a trading floor a very crowded environment in which to try to maintain physical distance?

Linsey Marr, a professor and an expert on the airborne transmission of viruses at Virginia Tech, told CNN in an email she isn't especially troubled by the NYSE's actions.

"If everyone in the room is vaccinated, then I do not think any precautions are needed. If unvaccinated people are present, then it comes down to the vaccinated person's own risk tolerance. We know the vaccines are very good, that they protect against severe illness and death, but breakthrough infections do occur," Marr said, noting that from the photos she's seen, the high ceilings help dilute exhaled breath and reduce the risk of transmission.

She added that good ventilation and filtration, avoiding crowded parts of the floor and avoiding people who are yelling and shouting will reduce risk further, if that's even possible on the trading room floor.

Writing in the Washington Post, Joseph G. Allen, an associate professor and director of the Healthy Buildings program at Harvard University's T.H. Chan School of Public Health, put it bluntly -- medical science tells us you don't need to wear a mask indoors if you're vaccinated.

"The risk to yourself and others is low," he wrote.

"Social science tells us something different. In this interim phase, as vaccinations go up and cases come down, the right thing to do is wear masks indoors in public spaces until every adult has had a fair and equitable chance to be vaccinated -- likely around June 1. It takes about 30 days for people to be fully vaccinated and for full protection to kick in. That means it's reasonable to expect that we will be able to ditch indoor mask mandates by July 4. Independence Day. Seems fitting."

Our brains have been trained

As we move into the next phase of the pandemic there will be a subset of people who still just feel uncomfortable taking off their masks. Take my parents, for example. I was FaceTiming with them over the weekend and saw that they had their masks on while going for a walk. I told them they don't really need to wear them and my mom replied they're just trying to be careful because while they were vaccinated, there may be unvaccinated people around.

Maybe, their tolerance for risk is lower. But neuroscience would probably add in another reason. After a year of wearing masks, our brains have simply been trained to do it. It's become a habit.

Each time we engage in regular new behaviors, like mask-wearing, our brains actually change -- they slightly rewire to accommodate that new experience. Specifically, that experience causes the formation of new dendrites -- which are segments of brain cells that receive electrical impulses. With repeated behavior and learning, existing dendrites strengthen, they make more connections which then become the normal pattern of transmission in our brains. It's called neuroplasticity.

For over a year, we've been engaging in regular behaviors linked to the pandemic -- like mask wearing and elbow-bumping and more frequent handwashing -- and because of this, we have rewired our brains, entrenching these habits. This process may be even more fortified in kids. I watch as my three daughters reflexively grab a mask whenever they walk out the door.

And much of that is good: Increased public health behavior will probably better protect us against other pathogens, like flu. That rewiring, though, may also make it more challenging to shift our habits again as Covid-19 restrictions are eased.

Science tells us we may go maskless more frequently and see each other's faces again for the first time in over a year. For some of us, however, it may take our brains a little longer to catch up -- which is also OK, because in truth, there is no mandate, no CDC guidance, telling us not to mask.

Possible Response Questions:

- What are your thoughts about deciding when to wear a mask? Explain.
- Does anything surprise you in this article? Explain.
- Pick a word/line/passage from the article and respond to it.
- Discuss a "move" made by the writer in this piece that you think is good/interesting. Explain.