

9-13 Q & A Podcast COVID-19 Update

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SPEAKERS

Dr. Halena Gazelka, Dr. Gregory Poland, Narrator

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- N** Narrator 00:01
Coming up on Mayo Clinic Q&A,
- D** Dr. Gregory Poland 00:04
It's really heartbreaking to watch what's happening with kids. When you look at last week's cases, over a quarter of those are now occurring in kids. Fortunately, it's less likely, of course, than adults that they get hospitalized or have severe disease where they end up on a ventilator or died. But it does happen.
- N** Narrator 00:30
With schools back in session and kids in the classroom, many are not wearing masks, and children are becoming infected with COVID. How might these decisions to not mask affect our kids and learning in the future?
- D** Dr. Gregory Poland 00:42
One of the phenomena that we're seeing is schools getting back in session not wearing masks, and very quickly having to go back to remote learning and then reinstituting school with masks on. So, it's still a mystery to me that people reject masking and at least

some semblance of distancing, in order to carry out what we all agree is the very important aspect of kids being in school, in person, if possible. But there are safe ways to do it, and there are unsafe ways to do it.

D Dr. Halena Gazelka 01:20

Welcome, everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. We are recording this podcast and Monday, September the 13th, 2021. Dr. Greg Poland and I are back together again to discuss COVID updates. And boy, has the listener mailbag been filling up since we skipped last week for Labor Day. Welcome, Greg.

D Dr. Gregory Poland 01:41

I don't know that we can take a holiday weekend off again.

D Dr. Halena Gazelka 01:45

I don't think it's going to be allowed or this podcast is going to be about two hours long. I want to apologize right up front to those individuals whose questions we won't get to this week. We'll try to do some more next week.

D Dr. Gregory Poland 01:57

Sounds good.

D Dr. Halena Gazelka 01:59

All right, Greg. Give us some updates. What's going on with COVID and kids in school?

D Dr. Gregory Poland 02:04

Yeah, you know, it's really heartbreaking to watch what's happening with kids. When you look at last week's cases, over a quarter of those are now occurring in kids. Fortunately, it's less likely, of course, than adults that they get hospitalized or have severe disease where they end up on a ventilator or die. But it does happen. And in many cases, it need not happen. One of the phenomena that we're seeing is schools getting back in session not wearing masks, and very quickly having to go back to remote learning and then reinstating school with masks on. So, it's still a mystery to me that people reject masking, and at least some semblance of distancing in order to carry out what we all agree is the very important aspect of kids being in school, in person if possible, but there are safe ways

to do it, and there are unsafe ways to do it.

D Dr. Halena Gazelka 03:16

Greg, like you I have been astounded by the furor and the actual the emotion that seems to surround masking. And we're going to get to listener questions later. But I have one I want to throw in here because I think it's pertinent. A listener had sent us a message asking whether it is safe to mask, they had seen a study, perhaps out of Korea or somewhere that there's a higher risk of cancer and other health issues when individuals are rebreathing their own carbon dioxide and bacteria and germs all of the time. And I'm curious, what would you say about that?

D Dr. Gregory Poland 03:51

Yeah, that's a good example of the kind of dis and misinformation that makes its way, and interestingly enough what I think is kind of telling is that dramatic, you know, bad news like that goes, to use a bad pun, goes viral very quickly, and everybody knows about it. But actual truthful information and good news seems to not penetrate into that same level of understanding. So, no, there's absolutely zero evidence for an increased risk of cancer. People have said, well people become acidotic wearing masks. I mean, we're in masks all day long. We've got health care providers that are in masks 10 hours a day, for the last 18 months. There's just no evidence for that. And as I say, it's misinformation.

D Dr. Halena Gazelka 04:48

Yes, I and I trained as an anesthesiologist, of course, and we wear masks in the operating room full, you know, 18 hour days if you're there, however long you're there.

D Dr. Gregory Poland 04:59

Yeah.

D Dr. Halena Gazelka 04:59

For years on end, so,

D Dr. Gregory Poland 05:01

Yeah.

D Dr. Halena Gazelka 05:03

Greg, I have been particularly interested in what the fallout from the Sturgis rally is because I think it speaks to what happens when large groups get together. And I'm interested if you share a little bit about what that looks like.

D Dr. Gregory Poland 05:17

Yeah, in fact, I looked up some information just so that we had the latest data on that. And it looks like when you look at the two weeks, 14 days before Sturgis in South Dakota, they had about 644 cases. Look at the two weeks after Sturgis, they went up to just under 4,000 cases. That's a big surge in a very lightly populated area like South Dakota. So, you look overall in that two weeks after Sturgis and I think they estimate they had about a half a million people there. Their case rate went up six-fold. Now, this is concerning, because when a post-mortem was done on Sturgis last year, they found cases that occurred in 25 states as a result of that. So, these are people who come from around the U.S., even around the world gathered together. The nature of many, not all of them, of many of them is that they don't believe in masking. They don't believe in vaccines. They're crowded together. Alcohol flows liberally. There are concerts. Ironically enough, two of the musicians that were there performing ended up with COVID and one pretty seriously. And it's no surprise that when you take a highly transmissible and infectious virus, like the Delta variant, that this kind of thing, results. If you look at just the county where Sturgis occurred, their cases went up 1,550%, 1,500% increase. I mean, why do we allow these kind of mass events that materially harm the public? It's a mystery to me.

D Dr. Halena Gazelka 07:18

Interesting, because I had seen some comparisons to some other events where there was a requirement for vaccination or requirement for masking and distancing. The events were held outside, and the actual incidence afterward was not anywhere near as high as you raise.

D Dr. Gregory Poland 07:38

You raise a good point Halena, and that is, you know, the risk of something like Sturgis is less likely the outdoor nature as everybody's crowding in three times a day or longer to be in the bars to eat, to be in the restaurants and the social events, etc. and indoor transmission is much more a driver than outdoor. And if you look at the photos and some of the videos that I have, from Sturgis, you basically don't see masks at all.



Dr. Halena Gazelka 08:14

All right, tell us about this newer variant that we're hearing about. Is it as transmissible as the Delta variant, what do you know?



Dr. Gregory Poland 08:23

It's called the Mu variant, and we don't know yet. There's a lot of questions to be answered. And you see a lot of stuff in the media of people saying, well, it's not vaccine resistant, it's not as highly transmissible, I would say, disregard those voices. The truth is, we don't know yet. The truth is that you go back and look at the beginning of Delta, it started the same way. You sort of see this stuttering case rate, and then all of a sudden it takes off. Could Mu do that? Sure. There's no there's no reason that prevents that. I think right now, and again, it's hard to tell, Delta is so transmissible, that likely Mu would have to have a property that would allow it to outcompete Delta. And right now, it's not clear that it has, but this bears careful, careful watching. We've gone from a few handfuls of cases in the U.S. to now having new cases in all 50 states. There's about 2,500 known cases, and several 100 cases in Florida, there's been kind of a mini outbreak. So, this very much bears watching. I think the lesson here, based on what we know today, again, that can change a week or month from now, but the lesson here is until we reach high rates of vaccination and immunity, we're going to continue to be plagued by these variants, one or more of which will learn how to evade monoclonal antibodies, vaccine, prior infection induced immunity, and really put us in a bad situation. So, you know, as we see these escalating mandates and concerns, it relates to we are giving up the opportunity to control this, and to lead lives more like what we all want to lead, and to not suffer the economic consequences of one variant after another, putting us into various kinds of lockdown. As we said, at the top of our time, it's just a disaster to watch what's happening to schoolkids when we know better.



Dr. Halena Gazelka 10:53

But using your example, if we had 100% of the population vaccinated, even in light of the Delta variant, we may not have as many people in our hospitals.



Dr. Gregory Poland 11:04

We would not have as many people in our hospitals, it would become, you know, for the next generation of medical students, it would become something like, wow, that's an unusual thing, tell me about that case. From right now, there are hospitals at 120% of capacity, with no ICU beds left in some of the western states. So, a dramatic shift in the

severity of disease and the quantitative number of cases by using vaccine.

D Dr. Halena Gazelka 11:40

Greg, what role is testing playing in the pandemic at this point?

D Dr. Gregory Poland 11:45

You know, testing is, has, and always will be a really important part of understanding what's called the epidemiology of the disease. And this has been, I would admit an uneven part of the nation's pandemic preparedness. While an awful lot of testing has occurred, we need more. We need to understand what variants are circulating, who's getting breakthrough disease and who isn't. I would point to the U.K., a much smaller nation that has done a fabulous job with this. They have round after round of study where they'll take 100,000 people who will swab themselves every week for a month and collect that data to understand what is happening at the community level. Right now, we could not tell you with definitiveness, we have broad trends, but we could not tell you definitively what's happening in communities of color, what's happening in nursing homes, what's happening in people 85 and older, or 75 and older, what's happening in people with specific diseases. All that information is really important in identifying who's at risk, how should we craft public policy over boosters or use of monoclonal or antivirals, so we are doing more of it. The federal government has purchased, I can't even remember now, was it 50 million or something, testing kits to be used in the states, and many are using it at the school level to understand just how much school based and then community based transmission occurs. And that's how we know. If we just look for sort of the canary in the mine of people sick enough to have to be hospitalized, that's the tip of the iceberg. We want to know the bottom of the iceberg in terms of community transmission.

D Dr. Halena Gazelka 13:56

That is very interesting. Greg, it is getting to be that time when Mayo Clinic starts vaccinating all employees with the flu vaccine. And we often line up in our cafeterias and elsewhere to get our flu vaccines. And I think there are a lot of questions by individuals this year. We know that flu was decreased last year, and you've explained that that probably had a lot to do with our distancing, and our mask wearing. What does it look like this year? And is there a reason, is there a time that there has to be spaced between having a COVID vaccine and a flu vaccine? Many of our listeners want to know.

D Dr. Gregory Poland 14:36

Yeah, great questions. At this point, the studies that have been done suggest no difficulty in getting the two vaccines simultaneously. So, let's just suggest that there might be a booster campaign. Right as we're, you know, implementing the flu vaccine campaign. Nope, no problem with it. I would separate them in different arms so that any local reaction can be distinguished, you know, that sort of thing. In fact Halena, there are two companies here in the U.S., that are beginning testing of a combined COVID-19 and influenza vaccine with plans to add additional pathogens like RSV, for example, which is also surging now in the face of no masking. So, what will this fall and winter bring? It truly is impossible to know. If you made me guess, I would say, likely we're going to see a lot more influenza this year. And that is problematic because the symptoms of COVID-19 and the symptoms of influenza overlap, like you know, the Olympic rings so much that it can be hard to distinguish from one another. So, now we will need to test against both, maybe even adding RSV in there, because how we treat influenza, and how we treat COVID-19, and how we would treat co-infection which will occur, is very different. And so, we need to know and understand that. So, bottom line is what can the public do? Everybody aged six months and older should get a flu vaccine. And as we've talked about where you're eligible, getting a COVID vaccine and wearing a mask when you're indoors.

D

Dr. Halena Gazelka 16:34

Wonderful. Greg, we are going to move to our mailbag because we have a number of very interesting and insightful questions for you again. The first is from an individual who writes in that their son graduated several years ago from college, has been vaccinated against COVID, but many of his friends and colleagues in his peer group are concerned about becoming infertile, if they take the vaccine. What would you say to address that?

D

Dr. Gregory Poland 17:01

Yeah, you know, again, when legitimate questions come up, they deserve to be addressed. This one has come up. And it has been addressed. Studies showing no decrease in sperm count or semen quality, no decreases in women infertility rate or the ability to carry a normal pregnancy to term. So, in fact, there have not been any studies that suggest any interference with female or male fertility or the ability to conceive. So, we can, I think we can put that one to rest and people can breathe their collective sigh of relief.

D

Dr. Halena Gazelka 17:43

I think you've even said in the past, Greg, that infection could carry more of a risk to an individual. I think it was Mississippi where I saw there was a discussion about rates of spontaneous abortion increasing during COVID. It related to infections, but it was

unrelated to vaccinations they said.

D

Dr. Gregory Poland 18:08

Thank you for reminding me of that. You're absolutely right. We do see changes in fertility, sperm count, the ability to carry a pregnancy to term in people who get infected with COVID. And this again, represents something that we've seen over and over again, a large amount of definable risk from the disease and either tiny risks from the vaccine, like a few in a million to no risk, but a lot of mis and disinformation. People get scared by these tiny risks and overlook these huge, large risks from actual infection. And a lot of people think, well, I'm young, I'm healthy, I'm not going to get infected. Well, that's just not what the data shows. The data shows that if you are not protected, you are going to become infected at some point. If you haven't already, it will happen. This is so transmissible and such high level infectivity, that it will happen. It's inevitable if you're not protected.

D

Dr. Halena Gazelka 19:17

Greg, our next listener says that no one was talking about this vaccine needing a booster when it was rolled out. It seems that many vaccines have gone even decades, maybe before it was discovered you needed a booster. Have you ever seen this happen this quickly before? And how did it happen?

D

Dr. Gregory Poland 19:35

Oh, yeah. I mean, let's take a vaccine like measles. We gave one dose for decades and then realized we needed a second dose. But measles is what's called a monotypic virus even though it's a respiratory virus, it does not mutate in the ways that let's say influenza and COVID do. So, what's an example where we do need to boosters? Well, in essence, that's what influenza is. You know, we get, I'll get my vaccine yet this month as soon as we open up our program at Mayo. And then by this time next year, I will need another vaccine, and I'll need one every year because the viruses, the four viruses that are contained in it, change over time. That is they mutate. We call it antigenic drift. So, we have examples on both sides. In this case, we're talking about a respiratory virus, highly transmissible, that has demonstrated the ability to introduce about 25 mutations into its genome per year. Some of them are mutating, some of the variants are mutating at about 40 to 45 mutations per year. So, in the face of a virus like that, it's no surprise that we would start to see some vaccine escape and talk about boosters. Many of us think that while it may be graded in other words might be that at age 50 and above, the standard regimen will be three doses. Whereas maybe if you're younger, the standard regimen might be two doses, just like HPV vaccine, in fact, may well occur. So, remember that we're

still learning some of the science around when a booster would be needed based on new variants, and time, since the vaccines were given. It's not possible to look ahead and say, yep, at six months, we're going to need to give a booster. You have to wait till you get there and see, is it really necessary?

D

Dr. Halena Gazelka 21:49

Our next question is an astute individual, who states that if you get vaccinated and then get the disease, they ask is the disease less severe. Now the assumption we've talked observationally about less hospitalization, less death, etc. The assumption would be that the vaccine lessens the effects, but are there studies that actually show that? This would be an important thing to prove, given the reports of significant breakthrough infections in some areas.

D

Dr. Gregory Poland 22:22

So, it's a good place to talk about this concept. There is a population level answer, and there's an individual level answer, because I'm going to give the population level answer, and people will write in and say, Yeah, but I heard of a case. So, they're going from the population to the individual level. So, the presupposition behind the question is that somebody got the vaccine and responded. If that's the case, which broadly is the case at the population level, what we see is less severe disease, what we see is much less long COVID type symptoms. At the individual level, what if that person didn't respond well to the vaccine, and now they get infected, they're going to have a more severe case. So, there are differences in our individual health of our immune systems. There's differences in our immune response genetics, all of which, in part, predetermine how we'll react to a vaccine, how we'll react to infection, and whether we're protected. But the short answer is at the population level, no question. Lots of studies showing that if you get vaccinated and then have breakthrough disease it is mild. If you get disease and then have a dose of vaccine, you really boost your immunity. And the likelihood is that if you got breakthrough infection, it'll be asymptomatic.

D

Dr. Halena Gazelka 23:54

Greg, our next listener has a question about treatment with monoclonal antibodies. They understand that people who are diagnosed with COVID can get monoclonal antibody therapy in some cases. If you have this treatment, do you still develop your own antibodies and long-term protection? And does having this infusion inhibit your own response in any way?

D Dr. Gregory Poland 24:17

Yes, when we give monoclonal antibodies, and they're given in a defined time period after the onset of symptoms. And the whole idea behind that is that it neutralizes the virus. To the extent that that happens, it does prevent you from developing immunity to that virus. In essence, you stop the infection. So, the virus doesn't go on to cause the infection that it normally would have. Therefore, you don't develop antibody. Now, in fact, what happens for some people, and we generally try to give this within seven to 10 days of exposure and development of symptoms. For some people, they may have had a long enough time period before treatment that they develop some markers of immunity. But it won't be like it would have been if they had not been treated or not gotten vaccinated. That's why the recommendation that anybody who gets monoclonal antibodies gets vaccinated about 90 days after that infusion of monoclonal antibodies.

D Dr. Halena Gazelka 25:30

All right. Greg, how accurate are antibody tests? Does having antibodies that you develop because you actually had COVID, what does that mean for your future likelihood of contracting COVID versus having antibodies from getting a vaccine?

D Dr. Gregory Poland 25:50

I'm not sure I understand the question. Is it a difference between predicting your protection by antibody by vaccine versus infection?

D Dr. Halena Gazelka 26:00

That's correct, Greg.

D Dr. Gregory Poland 26:01

So, generally speaking, again this is at the population level. Generally speaking, disease will raise your antibody level higher than vaccine. Disease followed by a vaccine is stupendous immunity. The problem is we don't want people to get infected because not everybody survives that. So, the whole idea of antibody testing is a difficult one. It's expensive. It's difficult to take resources to do that in the face of the need for that manpower to do testing of the presence of the virus rather than antibody. And we don't yet have what's called a correlative protection. So, at any given antibody level that you would tell me about, I don't know, does that mean you're protected or not? Now at very, very high levels, we can probably presume immunity. But I don't know where that cut off

is. Nobody knows right now. I also can't use that number to prognosticate how long before you might become susceptible. In part because we don't have those data yet. But in major part, because we don't know what new variants are going to develop because people are not immunized. And those variants, as we've talked about, logically will begin to escape vaccine induced immunity, at least in part. So, it's so hard to know. And that's why there are no recommendations at the current time for any kind of routine antibody testing. Greg, what about home testing for COVID infection? While those tests may work differently than the antibody tests, they're becoming increasingly popular. In fact, I've had an extended family member tell me that they've been using them fairly regularly in their home. What do you think about that? Yeah, this has really been problematic. I would say that the home testing kits do not in general, do not have the same attributes. We would call it sensitivity and specificity that would allow us to be assured. Now there are some uses and sports teams and even schools have used this, where they'll take these less sensitive, rapid tests, and they'll do them very frequently. And that does increase the sensitivities somewhat, but I just would not at this point, heavily depend on those. The strategy of doing it at the individual level at home, I just don't think that's likely to be of high value.

D

Dr. Halena Gazelka 28:57

Okay. The next question is something I've also wondered. Here at Mayo Clinic, we are mandated to wear eye protection along with masks when we are engaged in face-to-face interactions with patients. When we're outside of work and are masking, what is the recommendation regarding eye protection, and what's the evidence for it?

D

Dr. Gregory Poland 29:19

Yeah, so let me speak to, you know, our own Mayo Clinic policy. You know, as we talk about it and every male employee knows these seven words, the needs of the patient come first. This policy is an out living, of that policy, of that mission. So, what I mean by that is, at Mayo Clinic, we perceive a dual responsibility, a responsibility for me as a health care provider to not get sick, so that I'm available to help, but simultaneously, to not pass that infection on to one of our dear patients. And so, the idea behind appropriate masking, and either a face shield, goggles or some other eye protection is to keep me safe, but also because I'm immunized and I could have a symptomatic infection to try to prevent infecting somebody else by not getting infected myself in the first place. Now, what about outside? And the other thing I would mention is that working in the healthcare field, we are exposed much more than logically you are, you know, if you're going to the grocery store or something like that. We're seeing COVID patients all the time. So, we know we're being exposed,

D Dr. Halena Gazelka 30:42
And we're often not six feet away.

D Dr. Gregory Poland 30:46
We can't be because, you know, when I look into somebody's eye, I'm this far away from them. We're both wearing masks, and I'm wearing, you know, goggles or a face shield or some other eye protection. Well, what about in out in public and in routine life? In general, the intensity of that exposure is so much less that I feel comfortable wearing glasses and a proper mask properly.

D Dr. Halena Gazelka 31:16
Excellent. Greg, this individual writes that they have had tinnitus or ringing in their ears for months after a COVID vaccine. And they are wondering, what are the current updates? Is that something that goes away after vaccine or infection? What do we know about that?

D Dr. Gregory Poland 31:35
Yeah, interestingly enough, I developed moderate to severe tinnitus ringing in the ears within about an hour, hour and a half after my second dose of an mRNA vaccine. So, I'm intimately familiar with this. It's a very, very bothersome problem. It has maybe gotten slightly better in what is it, six, seven months since I was immunized. We think that this represents what's called an off-target inflammatory condition. And the nature of those is that they do tend to disappear or significantly wane over time. So, what can you do at this point? I think one is visit with your ENT, get an audiogram. That is a hearing test. Be sure there's no other cause for this. I should hasten to say that right now, while we have an outcome, and we have temporality, that does not necessarily mean causality. So, we don't yet have research, CDC and others are looking, that says yes, there is an increased risk of tinnitus over baseline. Anecdotal experience suggests that may be the case, but we need that kind of research to be definitive. So, what can you do, see your ENT, get a hearing test, avoid loud noise exposure, and go online and fill out a form that reports your side-effects whatever they may be. You just type in VAERS, and it will pop right up.

D Dr. Halena Gazelka 33:22
Greg, what was that that you called that? An off-target?

- D** Dr. Gregory Poland 33:24
An off-target inflammatory condition. So, we've seen this with tinnitus, we've seen various manifestations, people will say they get tingling, or a whole variety of sort of transient unusual symptomatology that tends, not always, but tends to lower and disappear over time.
- D** Dr. Halena Gazelka 33:49
And it's thought to be inflammatory conditions?
- D** Dr. Gregory Poland 33:51
Inflammatory in nature. So, the same is true for every vaccine. For example, you know, you get a tetanus shot, people will get a headache, they'll get a sore arm, they'll get redness, they'll feel yucky for a few hours. Those are off-target effects due to the inflammatory condition that's happening that will lead to immunity, but which has these off-target effects. We feel like we have the flu, we're not developing the flu. It's a manifestation of the immune response that reminds us of what it feels like to have the flu.
- D** Dr. Halena Gazelka 34:38
Last question of the day, is that are there any reports of iron depletion in the blood after receiving an mRNA vaccine?
- D** Dr. Gregory Poland 34:47
You know, this is actually a question that I've gotten, in fact, a whole variety of hematology questions after mRNA COVID vaccines. There have been occasional case reports. But we're always left in this temporality causality. To date, there has been no indication of people developing iron deficiency anemia after COVID vaccination. After COVID disease is a different story. And there are hematologic consequences of COVID infection. In fact, if you go to the American Society of hematology guidelines, where they talk about, you know, any contraindications to vaccination, iron deficiency anemia is not among them. So, it does not worsen iron deficiency anemia, it does not prevent you from having an immune response, unless you're severely iron deficient. And then you could see some decrease in your ability to respond to the vaccine with protective antibody levels.
- D** Dr. Halena Gazelka 35:56

Great. Well, thank you for a great conversation today, Greg.

- D** Dr. Gregory Poland 35:59
Boy, our listeners give the best questions.
- D** Dr. Halena Gazelka 36:02
I know, I thoroughly enjoy when you answer their questions, because I realize I have that question myself. I would like to know the answer to that. It's really stimulating.
- D** Dr. Gregory Poland 36:11
It's a privilege when we get those questions because, you know, you and I are able to help educate hundreds of 1000s who listen to these podcasts. So, I'm very glad and thankful for the questions.
- D** Dr. Halena Gazelka 36:23
Yes, thank you so much for keeping us on our toes and keeping Greg thinking. Well, we wish you a wonderful day today, Greg. Thank you for being here.
- D** Dr. Gregory Poland 36:33
Thank you. You too.
- D** Dr. Halena Gazelka 36:34
Our thanks to Dr. Greg Poland, vaccine, virology and infectious disease expert at the Mayo Clinic for being with us again to discuss COVID updates and answer your questions. I hope that you learned something. I know that I did. We wish each of you a wonderful day and a wonderful week.
- D** Dr. Gregory Poland 36:52
Be safe.
- N** Narrator 36:53

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