

Mayo Clinic Q & A - Dr. Gregory Poland YouTube Audio for Cap...

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SPEAKERS

Dr. Halena Gazelka, Dr. Gregory Poland, Narrator

- N** Narrator 00:00
Coming up on Mayo Clinic Q&A,
- D** Dr. Gregory Poland 00:03
We're now at about 46%, who are fully vaccinated and almost 60%, who have gotten at least one dose.
- N** Narrator 00:14
But as vaccination numbers continue to climb, there is a segment of the population where COVID cases are on the rise, children.
- D** Dr. Gregory Poland 00:22
COVID is becoming a childhood disease, and at a time when these new variants have much higher viral burdens, and therefore people are likely to get sicker. Children have composed over 16,000 hospitalizations for COVID, about 300 have died.

- D** Dr. Halena Gazelka 00:42
Welcome, everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. We're recording this podcast on Monday, May the 24th, 2021. The World Health Organization estimates that somewhere between six and eight million people worldwide have died from the COVID pandemic, a much higher number than officially reported by countries around the world. But there is some positive news closer to home, and we're going to share that today. The numbers of COVID-19 cases, hospitalizations and deaths continue to decline in the US. Well, here to discuss with us again today, and to answer some listener questions as well is Dr. Greg Poland, infectious disease expert from Mayo Clinic. Hi, Greg.
- D** Dr. Gregory Poland 01:24
Good morning. Halena.
- D** Dr. Halena Gazelka 01:26
Happy Monday.
- D** Dr. Gregory Poland 01:27
Yeah, Welcome to Monday.
- D** Dr. Halena Gazelka 01:29
Tell me what's going on in the world of COVID.
- D** Dr. Gregory Poland 01:31
Ah, lots of things. And you know, one thing that's really important as we talk about COVID is things are getting more and more nuanced. So, for example, when we look at the US in the last week, so I'm talking about a week's time frame, we've had about 176,000 new cases, and just under 4,000 new deaths. That is quite a decrease from our highs, you know, say a year ago or so.
- D** Dr. Halena Gazelka 02:00
Boy, it sounds like a lot still.

- D** Dr. Gregory Poland 02:02
But that's still but that's still a lot. And while that's a substantial decrease at the population level, there are areas of the country where we're still seeing rises in cases. So, it is very context and geographic nuanced compared to just hearing an overall US total.
- D** Dr. Halena Gazelka 02:25
How are we doing the vaccination rates, Greg?
- D** Dr. Gregory Poland 02:28
You know, that's a that's a place that is both cause for celebration and concern, again, this nuance. When we look at the number of vaccinees, so, you have to be careful of the numbers here. If we look at vaccine eligibles, okay, so just people who are eligible to get a vaccine, we're now at about 46% who are fully vaccinated, and almost 60%, who have gotten at least one dose. Now, if you translate that to numbers of what about for the whole population, fully vaccinated is only 40%, and at least one dose is at about 50%.
- D** Dr. Halena Gazelka 03:12
Wow, not what we'd like to be seeing.
- D** Dr. Gregory Poland 03:14
No, right, we'd still like to see it higher. I think we're doing well, with the 12 to 15-year-olds, almost four and a half million kids of that age have already gotten vaccinated. So, we're doing well there. But we are bumping up against those who are vaccine hesitant, who have questions, and those who reject vaccines.
- D** Dr. Halena Gazelka 03:37
Greg, I saw that there's been some really unique measures that states have been putting into place to try to induce people to get vaccinated. For instance, I saw an article that in Ohio, a couple of people were going to win the lottery, and were getting vaccinated. And they had in one day, as many vaccinations as they had in the three weeks prior after they introduced that.
- D** Dr. Gregory Poland 04:00

I'm laughing, I saw that too, a million-dollar lottery to get vaccinated. Well, you know that raises a lot of questions in my mind. At one level, I'm happy for anything that works, right. At another level, it kind of tells you this really might not in all cases be about legitimate concern. So, it seems, or at least, maybe somebody feels like, you know, I don't think they're safe, but I'm willing to risk it for a million dollars. I don't know.

D

Dr. Halena Gazelka 04:31

That's right. I don't know. Say, Greg, we have used in the past this term herd immunity, and you talked very specifically about percentage of people who've been vaccinated and thus protected. One of our readers had a very astute question that when we talk about this herd immunity, do we include people who haven't yet been vaccinated but have had COVID-19 and are waiting to get vaccinated, because they would be also protected at this point, correct?

D

Dr. Gregory Poland 04:59

They would. We don't know for how long, but that listener is exactly right. Here's the difficulty. I'm going to keep using the word nuance today. Here's the nuance in that, is the number of vaccinees is easy to track. We have a registry. So, we know how many doses we've given out. In terms of people who have been COVID infected, the only ones we know about are those who got tested, or who got sick enough to go to a hospital. We don't know about the asymptomatic, the people with mild symptomatic disease who never got tested never reported. We certainly know there are lots of those. But the listener is right, that herd immunity in the short-term will be the equation of those previously infected, plus those vaccinated. And we believe that number is going to have to be in any given geographic area, somewhere north of 80 plus percent. I want to note that in Manaus, Brazil, where they were having just awful outbreaks, and where they estimated from blood donors, that about 76 to 80% of the population had evidence of immunity, they were still acquiring infections. On top of it, with some of these variants, we see a decrease in the level of immunity. So, you know, as we get toward this fall and winter, is when we'll really have a better sense of are we at herd immunity, and are we stopping any resurgence of these variants?

D

Dr. Halena Gazelka 06:42

And then Greg, speaking of variants, I mentioned that Dr. Anthony Fauci had stated that whether we will need booster shots kind of depends on variants. Can you explain what he meant by that?

D Dr. Gregory Poland 06:56
Yeah, what he's saying and for simplicity, so please, nobody mistake this, we don't really know these numbers. But for simplicity, let's just say that you need an antibody titer of one to 100. Well, many of these vaccines are inducing antibody titers, one to 2000 or even higher. But there's a spread from perhaps a frail elderly person who has a lot of medical conditions whose antibody level might be anywhere from zero to one in 2000. Young, healthy people like yourself, you're going to be up in the 2000-3000 range.

D Dr. Halena Gazelka 07:38
Thank you for saying young.

D Dr. Gregory Poland 07:39
Yeah, you are. And you're very active, so I know. With these variants, so let's say you need a level of one to 100. With these variants, instead of needing a level of one to 100, maybe you need a level of one to 200, or maybe your level of one to 2000 is being reduced by 10 to 60-fold. So, there is going to be some people who cross that line into not being protected. In addition, we don't know the long-term durability of either getting previously infected or having gotten vaccine. So, that's why I think he's being cautious, and appropriately so, in saying we don't know what level protects you yet, we're getting closer. We do know that these variants reduce the amount of neutralizing antibody that you develop. And we don't know how long that immunity will last. So, it's kind of a complicated matrix of factors that we'll only know as we continue to move into an era where we have more and more variants circulating.

D Dr. Halena Gazelka 08:55
Okay. And then Greg, tell me what we know about whether these vaccines can be mixed and matched at this point?

D Dr. Gregory Poland 09:02
Well, we don't have a lot of information. There has been one study done in the UK that looked at a first dose of an adenovectored vaccine, the AstraZeneca, and a second dose of mRNA vaccine. They found, not unexpectedly, excellent immunity after that, but at the price of a little more reactogenicity, more fever, more achiness, more pain and swelling, more not feeling well for a day or two, maybe sometimes three. So, but I think the immunologic principle, can you boost with one kind of vaccine prime with a different? The

early answer is yes.

D Dr. Halena Gazelka 09:48

Interesting. All right, Greg. Let's open the mailbag. I have some of those questions that may stump you from some of our very savvy listeners. The first listener asks, I would love to hear a succinct description of how the mRNA that is administered in the vaccine does its job in the cells. Some of this individual's friends are hesitant, because they wonder how long the mRNA stays in their bodies, and will this cause autoimmune issues down the road because the antibodies will keep seeing other proteins on the surface of our cells?

D Dr. Gregory Poland 10:25

Because the antibodies will see other proteins.

D Dr. Halena Gazelka 10:28

In other words, with those mRNA, I think is what they're asking, will this immunization cause their body to react to other proteins?

D Dr. Gregory Poland 10:38

Okay. So, first of all, after 260 million doses in the US, we have not seen any evidence of the induction of autoimmune diseases, nor have we seen any significant exacerbation of existing autoimmune diseases. So, that's a good thing. How do the mRNA vaccines work? The mRNA is actually just a short genetic blueprint, chemically synthesized, a short little genetic blueprint for one piece of the virus called the S protein. That's enclosed in a lipid particle called a nanoparticle. You injected into the muscle, the muscle takes up that lipid nanoparticle, the lipid nanoparticle dissolves. The mRNA, then gets what's called translated into that S protein. That mRNA lasts in your muscle cell, a few hours, that's all. And then that S protein gets displayed on the outside of your cells, immune surveillance cells see that and react to it by producing B cell, that is antibody, and T cell, that is cellular immunity. So, there's no long-lasting amount of that on your cells. It cannot get into the nucleus of your cell. You hear some people raising concerns over whether they might get into the nucleus or into the DNA. There's zero evidence that that can happen. So, it appears to be an overall very, I should say, extraordinary, safe vaccine, and as we've seen extraordinary efficacy.

D

Dr. Halena Gazelka 12:25

Excellent. Well, here's a question about efficacy from another listener. What does Dr. Poland believe the real-life efficacy of the mRNA vaccine is in reducing asymptomatic and symptomatic infection? Does he believe that it is greater than 90% for asymptomatic infection? And more than that, for symptomatic infection? What do you think the true numbers are?

D

Dr. Gregory Poland 12:50

Yeah, well, the listener is astute in using the term real-world effectiveness. So, we know numbers from tightly controlled clinical trials. But real world-effectiveness refers to now when everybody's eligible, so you could be severely immunocompromised to a young, healthy, 18-year-old with no medical problems and everything in between. So, there is, I'm always hesitant to say there's one number because then people think, well, I have that number. The reality of it is that number is a point estimate. It's a best estimate, at a population level for how well it works. That's point one. Point two is it depends on what we mean by effectiveness. If you mean death, fatal disease, severe disease, hospitalization, we are in excess of 95, even up to 100% effectiveness, if you have a healthy immune system. If you mean symptomatic disease, we're probably in the 95 to 97 plus percent, depending on the health of your immune system. If you mean asymptomatic, we're yet a little bit lower. So, you see it's very effective against death, severe disease, really very good against symptomatic disease, yet a notch lower against asymptomatic disease.

D

Dr. Halena Gazelka 14:21

Interesting. All right, next question. This listener, thanks you for your weekly updates and has a question about vaccine selection. This individual is a senior citizen who had COVID in January, required hospitalization, has many medical comorbidities. They were told to wait 90 days before receiving the vaccine after having COVID, and have been concerned about the potential for side-effects and wonder if there's one particular vaccine or another that they should seek?

D

Dr. Gregory Poland 14:50

Yeah, you know, there's really no individual vaccine recommendation. First of all, if that listener is listening, I'm sorry to hear what they've been through, and I know the concern after being hospitalized with COVID. I'm sure that's pretty frightening. But I would say that we wait a minimum of 90 days before immunizing. There are people who have gotten previously COVID infected, and then get reinfected. What that reinfection rate will be,

particularly in the in the type of patient that you described, in the setting of these new variants we don't yet know, logically higher than it was with the less severe variants that we had a year ago. So, I would recommend immunization in a case like this. When you ask about side-effects, the side-effects are very likely to be there, though, I will say, if there's any advantages to getting older, it's that after the age of 65, the reactogenicity is less than in people younger than 65. So, what would be average? Average would be that you would get the first dose, likely have no issues other than a sore arm that lasts a day or two. But with the second dose, you'd get a more sore arm, probably a low-grade fever, on average, not really feeling well for a day or two, all of which resolves on its own.

D

Dr. Halena Gazelka 16:23

Greg, I have a follow-up question to that. And that is that when we originally had started talking about individuals delaying having a vaccination after they had had COVID. We were talking about the availability of vaccines as being one of the concerns for having those individuals who had some immunity now to hold off. What is the reason now if we have vaccine available, for having individuals who've had COVID wait to get vaccinated?

D

Dr. Gregory Poland 16:51

You know, that recommendation really hasn't changed. Though, as you point out, it's not an issue of vaccine availability. Anybody who is age eligible can walk into any of these existing clinics and get a vaccine. I do think that, and we see this with other vaccines, in general, we like to wait an interval of time, so that you're not increasing the reactogenicity of the vaccine by having high pre-existing antibody levels. I would not be surprised that in the near future, we potentially lengthen out that 90 days, nobody has data for that yet. And part of the reluctance is these new variants. We now have the so-called B 1617, or "India variant" in the US. There are documented cases. What will be the effect of that in somebody, let's say who was older like our last listener, who is older, has a lot of medical conditions? Are they going to be more likely to get infected with a more severe variant like that, and therefore we don't dare change that interval? I don't know yet. In a young, healthy person, I don't have any problem with delaying it longer than 90 days, they're going to have high levels of antibody, they are highly unlikely to get reinfected in that three-to-four month time period.

D

Dr. Halena Gazelka 18:29

Okay. Our next two questions come from different listeners who have questions about getting children vaccinated. And so, I'm going to combine them a little bit for you. This individual wants to know, how can I encourage my grown children to have grandkids ages

12 to 15? vaccinated? The adult children have had their vaccinations, but seem reluctant to make that decision for their children? And then the next listener says, how do we know that these vaccines are safe for children long-term? It's a big responsibility to make that decision for a younger person. And how would you advise?

D

Dr. Gregory Poland 19:06

Well, first of all, I'm sympathetic with that. You know, there's a lot not known. There are a lot of nuances here. There's a lot of misinformation and disinformation at the same time that we're collecting information as we go along. So, when you get to the 12 to 15-year-olds, we don't have data on 260 million people. We have data on about four to four and a half million. Now that that's larger than we would have for any other vaccine. But I get that people feel these are very novel vaccines and they're concerned. So, here's to me, what you're weighing, a theoretical risk of the unknown, and I can't quantitate that by definition, and the known high-risk of getting COVID. So, what does that look like? Let's localize it to the US. What's happening with children in the US? Well, the COVID virus has infected a known 4 million children. It's much more than that. But because with the previous variant, children tended to be asymptomatic, they didn't go in for testing. With these new variants, that's a different story. COVID is becoming, because most of us adults have gotten vaccinated, COVID is becoming a childhood disease, and at a time when these new variants have much higher viral burdens, and therefore people are likely to get sicker. Children have composed over 16,000 hospitalizations for COVID, about 300 have died. Now, I know that 300 may not sound like a high number compared to what we've seen around the world with adults. But you know, the death of anybody, much less the death of a child is heartbreaking. And just to put context on it, 300 deaths due to COVID in the US makes COVID in children, one of the top 10 causes of death in children. So, the way I would do the calculus, and this is, you know, got to be individualized right, with parents, is to say, well, maybe there's a theoretical risk. We have not seen that in 260 million doses. There's no reason to think that whether you're 12, or 15, or 25, or 45, or 75, that those are going to be any different. And we know a definite risk of COVID and circulation of COVID. Now, what's going to make this a little harder I think, Halena, is that very likely, just like last year, we're going to see as we are this dip, dip, dip, dip, dip, dip, dip in number of cases, hospitalizations and deaths. And then as the fall and winter come, both because of the seasonality, and because of kids going back to school, likely, I mean, a lot of colleges and universities will restart, a lot of businesses are planning on having workers come back to the office. All that combined is a risk for a resurgence of this disease at that time with who knows what variant. So, I think parents have a little bit of time to think about this and consider it. But I personally would waive that in favor of getting vaccinated before school or summer camps start.

D Dr. Halena Gazelka 22:50

Greg, one of the articles that I have seen recently discussed, that the CDC is now aware of some perhaps cases of rare heart issues related to COVID infections in youth. And my question would be, is it possible that as this becomes a disease of younger individuals, if we might see more of that, sort of as we did with the long-haulers disease in adults?

D Dr. Gregory Poland 23:16

It's a really good question. And I don't want to pretend that we have the answers on that yet. But to give some background, what happened is that primarily in people under the age of 30 in Israel, they did detect, I think it was 62 or 65 cases of what's called Myocarditis, or pericarditis. Myocarditis just means inflammation of the heart muscle. pericarditis means inflammation of, it kind of, if you'll pardon the analogy, it kind of looks like a piece of saran wrap that lays over the heart. So, they've seen inflammation of that. That is not uncommon. It happens in people of all ages due to other viruses. So, COVID alone can cause this, and the estimates are at a much higher rate than anything that might occur from the vaccine. So, what's happened in the US is, the CDC has not released numbers, they're saying quote "a handful or two of cases" out of four and a half million vaccines that have been given. They have occurred predominantly in males, usually within four days after getting the vaccine, is usually mild and resolves on its own. Now in Israel, I think what had people concerned, is that of the 62 cases, two of them did die. So, the question is, and this comes up with every side-effect, are we seeing this rate of side-effect any higher than we do in people who are not vaccinated, or any higher than we did two years ago before there was any COVID or COVID vaccine? And at this point, all CDC has said is that it does not appear that this is anything other than background rate. That remains to be seen and data are being collected.

D Dr. Halena Gazelka 25:16

So, Greg, it's an issue related to potentially, it's been noted after the vaccine, not after infection with COVID-19?

D Dr. Gregory Poland 25:24

Oh, both but much higher rates after COVID infection.

D Dr. Halena Gazelka 25:30

I see. Okay, I just wanted to be sure that I was clear about that.

D Dr. Gregory Poland 25:33
Maybe I didn't say it clear, but a definite, you know, elevated risk with COVID infection, what looks to be a background risk with COVID vaccination. But there's some unknown around that yet to be researched.

D Dr. Halena Gazelka 25:51
Lots of unknowns still aren't there?

D Dr. Gregory Poland 25:54
Yeah.

D Dr. Halena Gazelka 25:54
We keep going.

D Dr. Gregory Poland 25:56
And, you know, I understand why this makes the public uneasy. It's a question of, and we've talked a little bit about this, how do you balance the known high risks of COVID, against the unknown, but thus far, miniscule risks of the vaccine? And that's a tough equation for some people. I understand that. And my plea would be, you know, go to credible sources, talk to your doctor, go to CDC, Mayo Clinic, other large medical center's websites, and you'll find credible information there.

D Dr. Halena Gazelka 26:41
It is really difficult, Greg, but because it's new, I think. Otherwise, most Americans have embraced the idea of vaccinations for other diseases that used to be potentially, you know, measles, etc., things that used to have high morbidity, and we do still see this in the United States among those who are not vaccinated but have seen great success with those vaccinations and low risk.

D Dr. Gregory Poland 27:06
Yeah. And, you know, there will be things that we discover, everything we've discovered so far has been at miniscule, you know, risk levels. For that person, it's real. But at a population level, you know, you're talking of risks, one in a million, or, you know, along

those kinds of odds. The risks of complications after COVID, as we've talked about, including long-haul COVID are considerably higher than that. And that's the top calculus for people. I feel perfectly well now. They look at a neighbor who may have gotten COVID and had a mild case. And they say, what's the big deal, but these vaccines seem kind of scary to me. I have often said, and obviously we can't do it, but I've often said it's too bad that we can't give a more balanced look at what COVID is doing, take movie cameras into the hospital, again, we can't do that, but let people see what happens. Interviews with otherwise young, healthy people whose lives now are just immensely impacted with post COVID symptoms, and then a few trailing small numbers of people who feel they've been left with issues or problems related to vaccines. But it's so unequal in numbers, that I think that's the hard part for people, and as you said, the novelty of it.

D Dr. Halena Gazelka 28:40
Right. Well keep vaccinating right?

D Dr. Gregory Poland 28:43
Yes.

D Dr. Halena Gazelka 28:45
Thanks so much, Greg, for sharing today and for being here.

D Dr. Gregory Poland 28:48
My pleasure.

D Dr. Halena Gazelka 28:48
Happy Monday. Our thanks to Dr. Greg Poland from the Mayo Clinic for joining us today to talk about COVID-19 vaccinations and answer listener questions. Thank you for your questions. I know that I learned something today, and I hope you did too. If you have other questions for us, please send them in. If you have ideas for topics that you'd like to hear about on Q&A, send those too. We wish everyone a very wonderful day.

N Narrator 29:20
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