

Be COVID Correct: Vaccine Facts vs. Fiction

Episode 2 – COVID-19 Vaccine Safety and Efficacy

The following transcript has been lightly edited for clarity.

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Transcript

DR. DANIEL GRIFFIN, GUEST: ... for the unvaccinated who haven't taken advantage, we're seeing massive numbers of hospitalizations. We're seeing days with over 2,000 people die in a single day. So really, this decision to vaccinate can put you in this world where you're moving past the pandemic. The decision not to get to vaccinate keeps you in 2020.

DR. DEBORAH MARTIN, HOST: Hello and welcome back. I'm Dr. Deborah Martin with Elite Learning, and you've just heard Dr. Daniel Griffin make a valuable point about vaccination against COVID-19. We've been talking with Dr. Griffin about COVID-19 vaccines and some of the concerns that have kept people from being vaccinated against the disease.

Those concerns primarily revolve around the [safety of the vaccines](#). In the first episode of this podcast, Dr. Griffin addressed apprehension about how quickly the vaccines were developed and how they actually work. In this second episode of this two-part series, he relieves worries about adverse reactions following vaccination and discusses the proven efficacy of the vaccines. He also addresses the efficacy of supplements, such as Vitamin D, zinc, and ivermectin, that we've heard about in media reports, as well as the things we, as healthcare professionals, can do to help our patients — and our colleagues — separate fact from fiction concerning COVID-19.

Dr. Griffin is a board-certified internal medicine and infectious disease physician with expertise in such areas as global health, tropical medicine, parasitology, and virology. You can learn more about his background in the show notes that accompany this episode on our web page.

Let's jump back into the discussion. Here's Dr. Griffin.

GRIFFIN: So what currently are those vaccines available in the US? And let's talk a little bit about what things we might be thinking and worried about. So Moderna and Pfizer, right? These are the mRNA vaccines. That's Spikevax and Comirnaty. The current recommendation – you get that first shot. Three or four weeks later, you get that second shot.

Why aren't we waiting a little longer? Part of the rationale has been the pandemic setting. You don't want to wait. You want to get that boost in. Because as I mentioned, those mRNA vaccines, they're not taking that first sticky note so seriously. You're only getting a little bit of protection. You really got to get that second.

And then, now, we're seeing a lot of discussion about giving a boost. About five months later, actually boosting. And we'll talk about why we're doing that. The J&J vaccine. The one-and-done has now become two-and-done, getting one shot, and then maybe getting a second. And then we're still waiting on those protein-based vaccines.

So what are the minor adverse events we should be thinking about? What are the serious adverse events? So I'm going to go through these. And we're going to talk a little bit about, are we really seeing them? Because we looked for all. Before we were going to encourage vaccines, we have an incredibly high bar for safety with vaccines.

We'll tolerate actually quite a bit with medicines that you can just stop taking. But a vaccine, once it goes in, we want to know that people are going to be OK. And one of the things I'll say as we go into this is for decades and decades, we've been doing vaccinations for a long time. It takes about two months for you to really gather all that information about what adverse events might happen.

So people always say, how do we know what will happen in several years? You can know that in the first two months. That's, I think, a solid answer that we can share.

So things we worry about – we worry a little bit about those minor adverse events. No one really wants a sore arm, a little bit of a rash there. No one wants to feel a little bit of a fever. No one wants to feel crummy for a day. We consider those minor adverse events. But as I joke with my patients, what's a minor adverse event? It's what happens to your neighbor, but we consider those minor.

(LAUGHTER)

MARTIN: They're minor when it's somebody else. Yes.

(LAUGHTER)

GRIFFIN: So these are, I will say, not serious. But those are things that we definitely are seeing. People do feel a little bit of crummy. So a lot of times, people will plan. Don't do this the day before you're about to do a podcast, for instance. You might feel crummy and miss your debut.

(LAUGHTER)

GRIFFIN: But what are the serious adverse events that we worry about? And what are we seeing? So let's start off. What is the worst thing that could happen? Death, right? Are people going to get the vaccine and then die from the vaccine? And we have gone ahead and vaccinated billions of people.

So some people are going to die after they get the vaccine. But are they dying because they were in a car accident? Are they dying because they died of something else? Are we actually causing any deaths with our vaccines? And I can reassuringly say very, very few causal connections with deaths.

And that actually was the issue with the J&J. We did have about 8 individuals in 16 million doses here in the US who actually developed a clotting complication and did die. So J&J has been moved there. But let's put that in perspective. That is a 1 in 2 million chance of death from the vaccine. Eight deaths – we see that every minute or two from COVID itself here in the US, so certain people.

MARTIN: If you lay the pros and cons and death being one of them of who are against the vaccine, 8 out of ...

GRIFFIN: Yeah, 16 million.

MARTIN: ... 16 million is very different than not being vaccinated.

GRIFFIN: Yeah, but I think that's important to say. That is there. That's a real number. Doves? Is it doves? No, it's less than 10. So as we look around the world, these vaccines have been incredibly safe. We are not seeing more than very rare issues in that regard.

What about myocarditis? Right? That has actually gotten a lot of publicity. Can you get the vaccine and have some inflammation of the heart? Well, this is – let's talk about the different vaccines. Because this is associated with some, not with others. We'll start with the youngest individuals, and that's where people worry.

What about under 12, all these kids? Different risk ratio, myocarditis with this lower Pfizer mRNA dose. We are not seeing myocarditis in the under 12. And that's huge. Millions and millions of vaccines being given, we're not seeing it. When we move up into the slightly older age, we are starting to see some cases of myocarditis, particularly with the Moderna vaccine, which is actually the advantage that we're using Pfizer. Pfizer tends to have a lower risk.

But let's then move into our seniors. In our seniors, the risk of myocarditis looks to be very rare. And we may actually be getting some better efficacy with Moderna. The data we just saw out of Singapore was incredibly encouraging. People with two doses of Moderna, their chance of dying of COVID: 1 in 100,000. Pretty impressive.

And when we're seeing myocarditis, rates of 1 in 100,000, 1 in 200,000. It's usually about a day, a little bit of inflammation. A little bit of discomfort self-resolves, so much different than the myocarditis we see as part of

COVID where people end up in the hospital. They end up with permanent heart damage. So myocarditis is important to be thinking about in your decisions. To think of that 70-year-old man that we talked about when he was weighing vaccines, that might factor in.

What about this vaccine-induced thrombotic thrombocytopenia, right? And that was what we brought up with the J&J. As a rare side effect, we actually saw this clotting. And we did have deaths early on before we really recognized and knew how to treat that. So that's important to have in our things.

What about Guillain-Barré? Right? This is something we've talked about with flu vaccines, with natural flu, something we've definitely seen with COVID itself. Not something we're seeing often with our vaccines, but something we keep our eyes out.

MARTIN: And if I could ask a question...

GRIFFIN: Go for it.

MARTIN: ... about that as well. What about other vaccines at the same time as the COVID vaccine? Would it double your chances, for example, if you get two vaccines at the same time of having one of these adverse outcomes?

GRIFFIN: So I'm going to say no. And I think that that's a really important change in our guidance. Early on, the idea was you get your COVID vaccine and then no other vaccines for two weeks. And if got another vaccine, you wait two weeks. Let's see. And a lot of that early on was surveillance.

We wanted to say, so, OK, we've done a study. We've looked at 30,000. We've looked at 40,000 people that got this vaccine. Now, let's look at a million. Now, let's look at 100 million. OK, now, we have good data. Start taking your flu shot the same day as your COVID. So it was not necessarily a concern that there be an issue. We just wanted to be able to differentiate.

Are you having an issue with the other vaccine? Are you having issue with the COVID vaccine? We now have that data. We now feel comfortable. Go ahead, get those vaccines. Don't miss an opportunity to vaccinate. Don't delay that opportunity to vaccinate, end up getting COVID or the flu while you're waiting.

MARTIN: Thank you.

GRIFFIN: All right. So the other – and I want to talk about this. Because this has come up a little bit, something called antibody-dependent enhancement. Have you heard about this? People been asking you about this at all?

MARTIN: I've not heard about that one. No.

GRIFFIN: So maybe people don't know much about this, but this is something we saw with dengue, one of those viral infections people might get in the tropics from mosquito bites. And this is where they get one strain. And then they get another strain. And the antibodies that protect you against the first one cross-react and actually enhance the second.

And a lot of people were worried. Once those antibodies get up, you get great protection. But maybe as they go down, they're going to enhance the infection. It'll be worse. We are not seeing this, fortunately. We are seeing that the vaccines continue to be safe. They're not triggering this.

So let's talk about, what are those vaccines going to give you? And I alluded to this early on. So I've made my decision. And we'll go through a few scenarios. I've decided to get vaccinated. But, oh, my gosh, I still got COVID. How could that happen?

(LAUGHTER)

MARTIN: It obviously didn't work, right? No.

GRIFFIN: Well, that's what people think. And so let's talk a little bit about this. So one of the things that vaccines never really did before was do much of protecting us from getting infected. The injectable polio vaccine – no protection at all against getting infected with polio. You just weren't bothered if you got infected. You didn't end up paralyzed. You didn't end up severely ill. But it didn't actually keep you from getting infected.

We've always used the analogy [that] vaccines are fire extinguishers, they're not fire-retardant. So one of the things, and this was a bit of a superpower of these new vaccines: These new vaccines actually seem to have pretty impressive vaccine efficacy against infection.

And so this is something we started to see. And this is something behind this boosting phenomenon. For about 4 to 5 months after receiving that second vaccine, after receiving a boost, you actually have pretty significant vaccine efficacy against infection.

So in a pandemic time when there's a surge, if you're working around vulnerable people, the whole concept of a vaccine keeping you from getting infected can actually protect those people around you. Also, people are still worried about long COVID. We're still worried about the other things. I don't even want to get infected at all. So this vaccine efficacy against infection is something we've been talking about.

What do we know in a population level? As those antibodies start to go down, we think our vaccine efficacy against infection is actually decreasing as well.

And I'm going to talk about the other. And this is, I'm going to say, the more important. And you're going to hear more and more discussion about this, I think – vaccine efficacy against disease.

And there was a really impressive publication last week where they started looking over time. And they looked. People were vaccinated with one of the US-approved vaccines. About 6 months had gone by. We were starting to see those antibody levels. We say contract. That's the proper word, what they're supposed to do. Waiting sounds like something is going wrong. But you can't stay on high alert all the time.

But what they saw is once you got past 6 months and looked at those people that were about 120 days out, you were seeing an additional 30% protection against severe disease. So as the antibodies were going down and everyone was starting to get worried, we actually were seeing those T cells, that memory response. That vaccine efficacy against disease was actually maturing and improving.

So I think this is really encouraging. Because people are now talking, and a lot of this is public policy. Are we going to be vaccinating everyone every 5 months? What is the end game here? So it's encouraging to see that even 6 months out, we're still seeing robust vaccine efficacy against.

MARTIN: That's a good point. And with the virus being so new in the world of viruses, it's probably going to take some time to see what happens over time. What happens in 6 months? What happens in a year? What happens in two years? Because we just haven't played out those years yet.

GRIFFIN: I think that's completely true. Because people always keep asking, well, what are we going to do? Will this be every year? Will this be twice a year? Will it just be three and done? And a lot of that – it's going to take time, right?

MARTIN: Mm-hmm.

GRIFFIN: So it's going to take time to see. How long do those antibodies last? How long do those T cells last? How long does this protection work? And then, again, with different variants, is that going to change? Are we going to need Omicron-specific vaccines? Are we going to need different vaccine?

MARTIN: Is there a role for homeopathic and other types of, I won't call them medications, but supplements that can be used in addition to vaccines or instead of vaccines? I think about some of the things that we've heard in the news about ivermectin, and zinc, and vitamin C, and some of those other products out there. What are your thoughts about that?

GRIFFIN: Yeah, so let's go through them. I think that's OK. And I think it's OK to discuss these things. I know some of my colleagues, they discuss these and all go south, but it's OK.

MARTIN: Oh, it's OK.

GRIFFIN: What do we know? What do we know? So one of the things I've always said for a while is there's no reason to be vitamin D deficient. There's no advantage of going into a COVID infection, carrying extra weight, not being healthy, not taking care of yourself.

We're not sure that if you wait and start popping a whole bunch of vitamin D after you get the virus, if it's going to make a difference, but no reason to go through a pandemic with vitamin D deficiency. So that's a good idea.

What about zinc? A lot of people are excited about zinc, particularly. Oh, I've got exposed. Oh, I just tested positive. And we start taking a lot of zinc. We looked at that. And that is something that is certainly helpful in gastrointestinal disease. But we're not seeing it helping in COVID. If anything, we're seeing it's increasing the gastrointestinal discomfort, increasing diarrhea, vomiting, making people feel crummy, so zinc, not great.

Vitamin C: We really haven't seen anything compelling there.

What about ivermectin? A lot of people are talking about ivermectin. There's a couple trials going on. And one of them COVID, running out of University of Minnesota. Less than 100 people have to be enrolled. We're going to get answers soon, a really wonderful placebo-controlled, blinded study run through University of Minnesota, really well designed. It's going to answer this question. Right now, we still don't have science that is very compelling for ivermectin. We're hoping that helps.

Another big study, ACTIV-6 being run through the NIH, focused down there in Georgia, but really enrolling throughout the whole country, really large study. Thousands of people enrolling in that as well.

So do we have any compelling evidence to support ivermectin? We really don't. We're still doing the science. We're trying to look, but we don't recommend it across the board. The other – and I think this is really important – if someone ends up with COVID, not using antibiotics, right? We want to avoid doing harm.

But what I think we do know, and this comes up as risk factors: If you take care of yourself, if you keep to that ideal body weight, if you try to exercise, these are all just general common-sense things that make a lot of sense. Even when you go for that vaccine, I've had colleagues that work the night shift. They don't eat breakfast. They go and get a vaccine. Maybe you should take – eat some breakfast, get some sleep, then get the vaccine.

(LAUGHTER)

MARTIN: Good point.

GRIFFIN: All right. So let's discuss a few of, what are the vaccine eligibility and choices? What are our options out there? And we're going to talk. We're going to start with the youngest. And we're going to work our way up.

So right now in the US, the youngest individuals that can be vaccinated are those in the 5 to 11.

And I have to say, we're not doing a great job. Half of these kids have not had their vaccines. And what is the option for those 5 to 11-year-olds? It's Pfizer. It's one choice. I feel like it's a Model T, any car you want as long as it's black. This is the Pfizer. You can get the Pfizer vaccine as long as orange. And that's the cap color. So you go and get your orange Pfizer.

It is a smaller dose. This is a 10 microgram. You're getting the first dose. Twenty-one days later, you're getting your second dose. This was updated. If you're immunocompromised, as we discussed a little earlier, you may go ahead and get an additional primary dose about a month later, so really trying to help those folks make a response and then that there may be a boost down the road.

Well, what if you're a little bit over that 12 to 17? Then you're moving up to the purple top, right? Now, you're moving up to that adult dose, that 30 micrograms. This is going to be that first dose. About 21 days later, you're getting that second dose. And then we go forward.

But now, when you get a little bit older, now you're 18. You can vote. I don't think you can drink in any states left in the union. But when I was that age, I guess you could get the near beer in Colorado. Now, you've actually got all the choices. You can go with the Pfizer vaccine, the Pfizer-BioNTech Comirnaty. You can go with the Moderna Spikevax, or you can go with the J&J.

There is a – and based on the data we talked about – a preferential recommendation. Hey, go with the mRNA, unless you're really compelled to go with the J&J because of that 1 in 2 million issue that we talked about with the clotting and the deaths. But here, what are the choices?

And sometimes there's subtlety here. There is a little bit of data suggesting that Moderna may be a little more durable, may offer you a little more protection. So there is sometimes a bias in our more vulnerable population. But we're thinking maybe less myocarditis with the Pfizer-BioNTech vaccine. So we might have issues when we favor one over the other.

MARTIN: I find it interesting that the dosage is based on age versus weight. Is there a reason for that?

GRIFFIN: So there is. And that's a great question, right? Because shouldn't it be? Big guy. Why is he getting the same vaccine as this small woman? And then I should do the other. This big woman and the same dose as the small man. So the idea behind the different vaccine doses is that the immune system goes through a period of maturity. And that's why we pick these different ages. So there's a certain maturity of the immune system that occurs in that first 4 to 5 years. Immune system is a little bit different 5 to 11. We go through another maturation of the immune system. So a lot of the dosing was based upon the idea that the immune system would be at different maturity levels and different stimulation.

But as we're learning with the under 5, we don't know as much as we think we know. They went with a little bit too small a dose in those individuals. So this is sort of the idea. This is how the studies were done. But is there some advantage to adjusting it, based on weight? We don't know. It's one size fits all. But it's based on that. It's based on the idea that the immune system has certain levels of maturity and just carrying that extra weight. At least it looks like in our studies that you're still getting a very similar immune response.

MARTIN: And that's interesting. Because in adults, it's the same dose, no matter if you're the large woman, the large man, the small woman, the small man. The dose is the same as well.

GRIFFIN: Yeah. And people do. They do ask that question like, my daughter is 11. She's going to turn 12 next month. Should I just wait, so she can get that bigger dose? Not necessarily. We're seeing really good response. So we really recommend just start where you are at that age and then whatever age you are.

MARTIN: Well, let's say your daughter turns 12 when it's time for her second shot. Would she go in with the 12-year-olds or which she stick with the 11-year-olds at that point?

GRIFFIN: It's a tough question. A lot of people are 12. You get year 12. But other pediatricians, we started with 10. Let's just finish off. Fortunately, between those first two, it's 21 days. But when it comes time for the booster, the booster is probably going to be for that higher age.

And there is some guidance on that [from] the CDC. But I think, to be honest, a lot of pediatricians are making that decision with the parents. They're a case-by-case basis.

All right. Well, let's get back to our gentleman. Do you remember our gentleman, 70 years old? He had this reaction.

MARTIN: That's right. He had a reaction, didn't he?

(LAUGHTER)

GRIFFIN: What are we going to do? So this is a slightly different question than everyone has. And this is a gentleman who had trouble breathing. He didn't feel well. He got an allergist involved. So the mRNA vaccines actually have a substance, PEG 2000. Some people can have an allergic reaction to that. There's actually testing where they do a little bit of an injection under the skin. And if that's fine, then you can look at an alternative vaccine.

This is where it's great that we have something like the J&J to offer an individual like this. The mix and match is something that we've looked at. It looks very effective. So if you get one vaccine, you have an issue like this, you can always switch over to the other.

The same would be said if you started with the J&J and you say, you know what? I just want to do something different. It's completely permissible to switch over to some other vaccine for your second or your boost. So in this individual, the advice was to consider the J&J vaccine. Went ahead. No issues. Tolerated well. We expect him to have really good, durable protection.

MARTIN: I like a good ending.

(LAUGHTER)

MARTIN: I like case studies that end in at a positive note.

GRIFFIN: And I think that's, and actually, that's perfect with vaccines. Because that's the way most of our vaccine stories end – individual being worried, having trepidation, having a lot of questions, wanting to hear the science, wanting to hear that all the proper steps were taken, getting that vaccination, and now being at lower risk.

And what we're seeing right now, here in America, is really, really just a split screen for those individuals that have taken advantage of vaccination, that are fully vaccinated. For most of them, getting exposed to, even getting infected with COVID with Omicron, which has really swept our country, is mild. It's a few days of not feeling great, some people not even knowing they have it.

But for the unvaccinated who haven't taken advantage, we're seeing massive numbers of hospitalizations. We're seeing days with over 2,000 people die in a single day. So really, this decision to vaccinate can put you in this world where you're moving past the pandemic. The decision not to get to vaccinate keeps you in 2020.

MARTIN: Can we talk just a little bit about the role of the healthcare team in vaccines? And pharmacists play a huge role, obviously. But we have pharmacists, nurses, physicians, MAs in the clinic, med techs that are administering the vaccine. So they all play a role in the delivery of the vaccine itself.

But what are the roles that they can play as individual professionals with interactions with patients or interactions among themselves so that the knowledge that you shared, for example, in this podcast that somebody may not have known? How do we get the word out about the efficacy, the long history of the development of the vaccine, all of those pieces? How can each individual contribute to our country and the world understanding a little bit more about vaccines and why it's so important?

GRIFFIN: Now, I think this is great. I would say never miss an opportunity to vaccinate. But maybe it should be never miss an opportunity to talk about vaccination. Because people have questions. It's been broken down into this polarizing. There's people, and they're anti-vax and they don't want to.

But actually, a lot of people are just vaccine hesitant. They have questions. They want to know. And so every interaction, particularly the healthcare provider, is an opportunity to have a discussion. And if you can approach this in a nonjudgmental, I would say be ready to learn as much as you're ready to teach. If you can hear, learn from them. What is their concern? What has them thinking about this?

I've certainly gone into discussions where I said, oh, my gosh. What am I going to do for the next half hour? And then at the end of the half hour, the person says, all right, I'm going to go get vaccinated next Friday. And I might be shocked. I'm like, OK, wow. How did that happen?

But if people appreciate that you respect them, that you listen to them, that you hear what they have to say, answer their questions. Because don't worry. If you don't answer their questions, somebody else will be answering their questions. So take that opportunity. Have that discussion.

MARTIN: And it may not have a scientific basis.

(CROSSTALK)

GRIFFIN: Yeah. Unfortunately, if you're not answering the questions, that other person might have an agenda. They might not be there just to educate them. They may be there to sell them their product.

MARTIN: What do you think about, from an ethical perspective, the healthcare professionals who, I won't say even anti-vax, but do not support vaccine administration?

GRIFFIN: I think during this time, and with the efficacy and the safety profile of these vaccines, it doesn't make a lot of sense. I mean, this is a virus that is incredibly dangerous, incredibly deadly. It doesn't make any sense as a healthcare professional not to be behind this, not to appreciate just what an incredible tool this is for ending this pandemic or keeping our patients safe. MARTIN: I know the National Council of State Boards of Nursing has taken a stance, with some of the other national organizations for nursing, that it is a reportable offense to your state board of nursing if you are touting unscientific information and swaying the public in an unscientific way. So there are ethics and moral obligations as a professional that I think sometimes people don't understand that role as well, and that they are listened to as somebody that's an expert, even if they're not choosing to listen to the science.

GRIFFIN: No, I think it's a huge responsibility. I don't remember who made this quotation, but it was that "to lie is to steal someone's access to the truth." And you really do someone a disservice. They expect, because you are wearing this mantle, because you are a professional, that what you tell them is true. It isn't just a conspiracy theory. It isn't just your personal opinion. It's really what you as a professional have learned to be true. And so there's a huge responsibility.

MARTIN: I heard you say you listen. Are there any other tactics that you have taken to help sway people that are hesitant around vaccines to jump on the bandwagon and roll up their sleeve?

GRIFFIN: Yes. Yes. So, number one, as I mentioned, is listening. And number two is be there to educate, be there to share knowledge, be respectful. If your goal is just to get them a shot, don't think just of the short game. Go the long term. This will not be the first vaccine decision they make. This will not be the first vaccine decision or the last vaccine decision that their friends and family will make. This also will not necessarily be the last interaction with a healthcare professional.

So building those bridges, thinking of the long game, being ready to have that discussion again, not getting frustrated yourself. I mean, here is your opportunity to potentially educate a person, to potentially move that needle towards getting vaccinated. And if it isn't today, maybe it's that next discussion, so schedule a repeat. If you have a discussion, you say, all right, let's get back together if you're still on the fence.

MARTIN: Are you seeing at all in your practice, or have you heard colleagues talk about overall vaccine hesitancy that is a spillover from the COVID vaccine and that it has been so polarizing in our country? Has that spilled over into what we would have considered the routine vaccines for children, or shingles, or what have you?

GRIFFIN: Yeah. I mean, that's certainly one of our fears is that the opposition to vaccines will spread beyond what, for some people, has become a partisan, or a political, or a tribal idea. I worry. That's also why I think of the long game. Be respectful, don't distance, stay engaged. Because the decision not to get a COVID vaccine could ultimately be a decision to recommend against vaccination of children, vaccination against influenza, and all the others.

MARTIN: Well, thank you so much for being with us for this episode, always informative, to say the least. And for our listeners, keep your learning about COVID vaccines going by exploring their references and the resources for this course in our show notes. And listen a few moments longer to learn how you can obtain CE hours for this podcast. Thank you for listening.

This is Deborah Martin with Elite Learning.

(SOUNDBITE OF MUSIC)

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