

## Peter Hotez, MD, PhD, on not waiting for fall to get second booster shot

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Watch the AMA's COVID-19 Update, with insights from AMA leaders and experts about the pandemic.

### Featured topic and speakers

In today's COVID-19 Update, 2022 Nobel Peace Prize Nominee Peter Hotez, MD, PhD, discusses his coronavirus vaccine, CorbeVax, as well as his Paxlovid rebound infection experience, and growing concerns around monkeypox. AMA Chief Experience Officer Todd Unger hosts.

Peter Hotez, MD, PhD, is dean of the National School of Tropical Medicine at Baylor College of Medicine, and co-director of the Texas Children's Hospital Center for Vaccine Development in Houston.

Learn more at the AMA COVID-19 resource center.

### Speaker

- Peter Hotez, MD, PhD, dean, National School of Tropical Medicine, Baylor College of Medicine; co-director, Texas Children's Hospital Center for Vaccine Development

### Transcript

**Unger:** Hello, this is the American Medical Association's COVID-19 Update video and podcast. We've got a lot to talk about today. Variants, vaccines and concerns for the fall, both COVID and monkeypox.

I'm excited to see Dr. Peter Hotez, dean of the National School of Tropical Medicine at Baylor College of Medicine, co-director of the Texas Children's Hospital Center for Vaccine Development in Houston, and of course, a very important friend of the COVID-19 Update. I'm Todd Unger, AMA's chief experience officer in Chicago. Dr. Hotez, it's great to see you again.

**Dr. Hotez:** It's great to see you. Although, I wish it were under better circumstances. I suddenly realized that I only see you when under times of duress. And the fact that we need to talk again, as much as I love speaking with you, Todd, it is under troubling circumstances that we face both with COVID and of course, now with monkeypox. And by the way, we have this thing called polio as well. So there is a lot on our plate right now.

**Unger:** Well, we're going to get into all three of those things. Before we start, I just want to highlight three important things that have happened to you since we last talked. Number one, the continuing global rollout of a vaccine that you developed, Corbevax. The fact that you and your colleague, Dr. Bottazzi—if I have that pronunciation right—were nominated for a Nobel Peace Prize. And the third thing is, after all our talking about COVID and everything you've done, you finally got COVID yourself.

**Dr. Hotez:** Yeah, that's right. Well, our vaccine that we developed at our Texas Children's Hospital Center for Vaccine Development at Baylor, as we provided it, the technology to Biological E in India, to be Biofarma in Indonesia and SEPTA in Bangladesh, Immunity Bio that wants to do this in Southern Africa, and Bio-E has gotten the furthest of course, and 66 million doses have been administered so far among adolescents 12 to 14-year-old. So I think it's a record in terms of if you look at number of doses in the numerator and public dollars required to do it, and the denominator, I think we break all records.

**Unger:** That's amazing.

**Dr. Hotez:** Something to be proud. And now we're waiting for the five to 11-year-olds, and the booster, and then the emergency use listing by the World Health Organization. So lots moving. And now Indonesia with their own version of the vaccine is in phase 3 trials, so that would really ramp up the doses as well. So everything's pointing in the right direction in terms of the vaccine.

And yeah, I was thrilled to get the nomination. We'll see where it goes. I'm not buying tickets to Oslo just yet. But just the recognition is nice. You've been with me through this whole thing, Todd, the last two and half years, and we've been talking, and you know the difficulties we face to do this on modest support. And on top of all the anti-vaccine aggression, that I got is in reward for it. So it's nice to be in this place, even though we're still not on the other side of this pandemic.

**Unger:** Is having COVID yourself and even experiencing a rebound infection after Paxlovid, has that changed anything about your perspective?

**Dr. Hotez:** Well, it made me realize what a blessing these vaccines are. And just like the President said, the reason he's doing Zoom calls from the Oval Office, and I was doing Zoom calls and interviews from home and isolation was not by accident. It was because I was fully boosted, and immunized, and fully boosted.

And we now know from data from the CDC that individuals over the age of 50 who have had those two boosts on top of the two primary immunizations, that makes all the difference whether you're home working or doing whatever you want to do versus sick in the hospital bed, or an intensive care unit. And that's the message to get out, that there's still too few Americans are taking the boosters, only about 1/3 of the country has taken the first booster.

You know, I took the second booster, and a few colleagues, but not many more. I think only about 23-25% of people over 65 have gotten their second booster. And that's not good, because those are the ones who are going to wind up going to the hospital.

**Unger:** Absolutely. And now we're dealing with, of course, a different Omicron sub-variant. We've got BA.4, BA.5 making up the majority of cases here in the U.S. Is that changing the landscape at this point?

**Dr. Hotez:** It sure is. I mean, it's just so highly transmissible. And everybody has colleagues that are getting sick with COVID now. And that's not by coincidence. This is the most transmissible of all the variants. And with each wave these seem to be more transmissible and they have the immune escape properties as well.

So that's why we're seeing a lot of breakthrough cases and new cases among those who are vaccinated. I mean, the good news is by now, pretty much all of the country has either been infected before, or vaccinated, or infected then vaccinated, or vaccinated and then breakthrough infections. So on a population level, that has reduced the number of deaths and hospitalizations.

But there's still a lot of deaths and hospitalizations. It's not 2,000 to 3,000 every day but now it's 400 to 500. COVID is still the—

**Unger:** That's a lot.

**Dr. Hotez:** Fourth leading cause of death in the United States right now on a daily basis. And that word is not getting out enough. And it's happening because there's still this group that's deeply dug in and refusing to get vaccinated. And then as I say, the underachievement in the percentage of the population willing to get boosted and people aren't vaccinating their kids. So that's yet another problem.

So maximizing out your medical interventions to have some situational awareness of your vaccination status and take every opportunity if you have it to get those boosts. And if you do get sick, whether or not you've been vaccinated, take Paxlovid. And there's some now some data trickling in on people who are not taking Paxlovid. There seems to be a similar geographic divide or partisan divide, blue state versus red state divide for even taking Paxlovid.

And the people that aren't vaccinated probably need the Paxlovid the most. And part of that is a rural-urban split as well. So we're also not persuading people to take advantage of getting that medicine.

**Unger:** Yeah, big article in The New York Times today about that rural-urban split even within states, so definitely an issue. And we've got waning immunity, lack of vaccination, lack of boosters and then a highly transmissible variant that seems to be escaping the effects of previous infection.

**Dr. Hotez:** I mean, Ashish Jha, the White House coordinator made a very provocative statement, and he got criticized for it but he's not entirely wrong. I mean, he says that no one should have to die from COVID anymore. And it's a bit over the top but not that much over the top, you know. He's more right than wrong. And trying to convince people to take full advantage of what the government's made available to them is really critical.

**Unger:** Well, looking to the fall, there's been a lot of talk about a new vaccine formulation that would be focused on Omicron and its sub-variants. But are the vaccines that we have now still effective? And what about your own vaccine or the new vaccine, Novavax?

**Dr. Hotez:** So a few things, the new proposed strategy of a bivalent mRNA vaccine comprised of one mRNA for the original lineage, another mRNA for BA.5, I have mixed feelings about because I think by the time it's ready in the fall, BA.5 may be past us and we may be onto something entirely new. And given the fact that the mRNA boosters are not holding up quite as well as we'd like, I don't know that that's the best strategy.

It may be all we have but I've been saying what we really need to do is look past mRNA technology to see if we can boost with something else. Now, having said that, I have a total conflict of interest in this since we have another vaccine not being used in the U.S. but Corbevax in India, could that be a potential boost? So we're starting some of those discussions, as well, and also the Novavax as a possible boost as well. So all of those things are on the table. And I think we have to really give some serious consideration to that.

And then there's a longer term strategy of the need to develop a universal coronavirus vaccine. My colleagues, Eric Topol and Akiko Iwasaki, have been pushing the idea of alternative delivery mechanisms, mucosal delivery, skin delivery, all those. And we're doing that ourselves. We're also making a universal coronavirus vaccine and looking at alternative delivery platforms.

I don't think it's a quick fix though. I think, at the White House Summit that we just recently had, I said, you know, 2024 at the earliest. And everybody disagreed with me for two different reasons. One said, no, 2024 is too optimistic. And the other half of the room said, no, 2024 is too pessimistic.

So I guess 2024 kind of splits the difference but you get the idea. They're not these new concepts, you know. And by the way, we have no funding for them right now. Although, the Democrats are pushing a \$20 billion spending bill. But if that doesn't happen, then it could be lights out. But even if it does, I still see this as maybe a couple of years away. And we still need a strong interim strategy.

**Unger:** So for somebody who's eligible right now for, let's say, a second booster, would you say go ahead and get it?

**Dr. Hotez:** I would. Well definitely, if you're over the age of 50, you're up for a second booster. All the data saved, there's a big difference in getting the second booster and just having one booster.

**Unger:** I guess it was that question that I hear a lot, and I see a lot, which is if there's something in the fall, should I wait?

**Dr. Hotez:** My opinion, no, because one, we don't know. Fall is a long time. Is it early fall, September? Or are we talking early December? And even if you take the booster now, the one that's available, by the time the other booster is available, you take a third one. And the third one would be the new one.

So I think we're going to wind up moving to third boosters pretty soon anyway. So I wouldn't wait because BA.5, we're in the throes of a pretty screaming level of transmission of BA.5 now. Do whatever you can to protect yourself from getting it or at least not getting hospitalized because of it. And then worry about getting a third booster later on.

**Unger:** Now, you mentioned—

**Dr. Hotez:** Which by the way, may or may not materialize.

**Unger:** Absolutely. You mentioned before the subject of kids. We're not seeing great uptake in either the 5 to 11 year range, or even now the younger group. How do we address that?

**Dr. Hotez:** Yeah you're right. I mean, of the five to 11-year-olds, only about 30% of parents have taken advantage of that. And that's nationally. Again, big geographic variation up in the blue state north, it's 50-60%. Down where I am here, and especially go to Louisiana, Mississippi, we're looking at 11%, so really, really low.

And then for the under-fives, forget it. I think the CDC came out a week or two ago and said of the cohort of 18 million under fives who are eligible to get vaccinated against COVID-19, only about 300,000 have been immunized, so single digit percentages. So I think there's a lot of advocacy. And

part of that may be because it's the summer and maybe pediatricians have more restricted office hours, and the kids are still on vacation or not at home. So there could be that as well. But I still don't see the numbers picking up a lot.

So I think that one, we have to explain to parents why COVID-19 is a bad actor in kids. It's okay maybe on average. It's not as severe as adults. But 1,200 children have died from COVID so far. And that's more than most of our other vaccine preventable diseases. And the hospitalizations and the long COVID we're seeing in kids.

And we don't know what the long-term developmental consequences, neurodevelopmental consequences of long COVID are going to be in kids. So for all those reasons, I'm a pretty vocal advocate to get our kids vaccinated. But parents are holding back.

**Unger:** And really, those are really important reasons to get that vaccine. Let's turn our attention to another growing concern, which is monkeypox. And we recently had a really great conversation with some folks from the CDC about what physicians need to know. But in your view, how concerned do we need to be about monkeypox relative to COVID? And are we responding in the best way we can?

**Dr. Hotez:** Well, it's a very different disease, of course. And it doesn't have the fatality rate in the current population, which tend to be younger, healthier men. But you know, I'm worried if it starts to generalize in kids and pregnant women, and those who are immunocompromised. Then we are going to start seeing some deaths. And I think that's a real possibility. So that's one concern.

My other bigger concern is the trajectory of the cases. They're really going up pretty fast. And we know from everything else we've had to deal with, those numbers, reported numbers are always underestimates by some unknown factor. So the numbers are going up.

And I'm worried that if unless we can get our arms around this, and really start to beat it back with vaccinations, it's going to generalize across the U.S. population, and not only the U.S. If you look at where the largest number of cases in Europe are right now, it's Portugal and Spain. And pretty much anything that you see in Portugal and Spain goes pretty quickly to Latin America, to Brazil in the case of Portugal too, the other South American, Central American countries in the case of Spain.

So I worry this now is going to really—especially a place like Brazil, where we know epidemics can really—like COVID, like HIV/AIDS can really rip through the population.

So I'm worried about some potential catastrophes there in Brazil. And not only generalizing among the human population but what happens if it gets into animal populations? We know it's in the wastewater. What if this gets into rodent populations like it has in Central and West Africa? Then it becomes a permanent fixture.

**Unger:** Right.

**Dr. Hotez:** Then next thing that happens is a pandemic. And then even after the pandemic subsides, it becomes enzootic or becomes a permanent part of the landscape. And so what was purely essential a West African problem is now a global infectious disease. And that's never good either.

So I'm very worried for reasons that are different from COVID but very worried nonetheless. And can't say enough how important it is to vaccinate, to get those vaccine doses up and maybe start doing some creative things maybe until we can accelerate the production of the Bavarian Nordic vaccine, which is the non-replicating MVA vaccine. Look at that older vaccine, which we know has problems but maybe you could do a mix and match with MVA, the Bavarian Nordic vaccine, the older ACAM vaccine and figure out a way to do that safely. So I think we have to start looking at some options there.

**Unger:** Well, Dr. Hotez, it's always incredible to talk to you. You're officially the only person that I know who's been nominated for a Nobel Prize, so it's always an honor to be able to speak with you. Thanks for joining us today.

And that's it for today's COVID-19 Update. We'll return soon with another COVID-19 Update video and podcast. You can check out all our videos at [ama-assn.org/podcasts](https://ama-assn.org/podcasts). Thanks for joining us today. Please take care.

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