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**TRANSCRIPT - GR 01 07 22 *"***Stopping The Covid Pandemic***" Paul Offit*, MD from Children’s Hospital of Philadelphia**

**Izzy Budnick**

00:27:10Okay.

* 00:27:11Good started with grand rounds I’ll just do a brief introduction for speaker today and then hand it over to Dr profit so on, so today we have Paul often.
* 00:27:20he's the director of vaccine education vaccine education Center at the children's hospital of Philadelphia.
* 00:27:26As well as the Maurice our Hillman Professor backs analogy, and a professor of pediatrics at the promo and school of medicine at the University of Pennsylvania.
* 00:27:34Is a recipient of many awards, including the jab and Bradley prize for excellence in pediatrics from the University of Maryland Medical School.
* 00:27:41Young investigator warden vaccine development for the infectious disease society of America and a research career development of work from the national institutes of health.
* 00:27:48Dr off it is published, more than 160 papers and medical and scientific journals near his rotavirus specific immune responses and vaccine safety.
* 00:27:57he's also the Co-inventor of the rotavirus vaccine wrote attack recommended for universal use and infants by the CDC in 2006 and by the World Health Organization in 2013.
* 00:28:07For this achievement, Dr off it received the Luigi Mastroeni and William Osler awards from the University of Pennsylvania school of medicine.
* 00:28:14The turtles marissa award from the national foundation for infectious diseases, and it was honored by Bill and Melinda gates during the launch of their foundations living proof project for global health.
* 00:28:24And 2009 Dr offered received the President certificate proud standing service from the American Academy of pediatrics.
* 00:28:302011 Dr off it received the humanitarian of the year award from the biologic industry organization.
* 00:28:35David Rogers award from the American association of medical colleges, the Odyssey award from the Center for medicine and public interest and was elected to the Institute of medicine of the National Academy of Sciences.
* 00:28:46In 2012 Dr appt received the distinguished medical achievement award from the College of physicians in Philadelphia, and the Drexel medicine prize and translational medicine from the Drexel University College of medicine.
* 00:28:58In 2013 Dr aphra received the maximum fellow Award for outstanding scientific achievement from the national foundation for infectious diseases.
* 00:29:05amongst many others, in addition to as many awards Dr often is the author of over 10 publications, including the cutter incident.
* 00:29:15How America’s first polio vaccine led to today's current vaccine crisis and vaccinated one man's quest to defeat the world's Deadliest diseases so with all of that, please join me in welcoming Dr off it to the virtual lectern to get medicine grand rounds.

**Paul Offit**

00:29:28Thank you very much, try so, hopefully, I can see the screen, this will stop others okay good yes alright, so, in theory, I should get a window this.

* 00:29:41fair.
* 00:29:47Okay, you come assuming you all can see that are so today, I just want to focus on.
* 00:29:53Stopping the COPA 19 pandemic you've probably been reading about this pandemic in the newspapers it's sort of been all over the place all right so um let's start with how to get on top of this panel so first the immunity induced by vaccination.
* 00:30:06This is not surprising, a study out of coven that up through the end of August, showing that you if you have received a vaccine, independent of how old you are.
* 00:30:16You have a dramatically decreased risk of being hospitalized, which is to say that this vaccine is excellent at preventing a severe disease associated with coven.
* 00:30:27And that it continues to last I mean this this this the good news about this vaccine all I’ll take a step back so the virus that raised its head and whoo ha the so called whoo slash 2020 strain is the strain, to which all vaccines were made.
* 00:30:42All of them.
* 00:30:44that the so called ancestral strength, but that's not the string that left China, the strain that let's try and it was the first variant.
* 00:30:50Because it was more contagious the D 614 G variant which swept across Asia swept across Europe with across the United States called a couple hundred thousand people here.
* 00:30:59And that would replace them by the Alpha.
* 00:31:01Because it was more contagious which was replaced by the delta very because it was more contagious which has now been replaced by the Omicron and because it is more contagious but the good news.
* 00:31:09Is that the T helper cell and cited toxic T cell episodes that are recognized by the vaccine induced immunity have remained fairly stable and because, and for that reason, I think you have continued protection against serious illness provided by that original vaccine.
* 00:31:27And, as I said so protection against fear, and this is really mediated by immunological memory B amp T cells, which are long lived.
* 00:31:34Here, this is a study by john where he and his coworkers here at the University of Pennsylvania, and if you look at sort of the blue man there on the left.
* 00:31:41What he did was he looked at after to dose of em RNA containing vaccines.
* 00:31:47Did you still have fairly high frequencies of memory details and T cells, and the answer was yes.
* 00:31:52And there are out there been six studies published actually in the last week that show not only to those memory P amp T cells last for six months they last for eight months for as long as really we have data on this all good news.
* 00:32:04And then there is the immunity that's induced by disease, the if you look on the.
* 00:32:11msnbc or CNN they'll say things like 55 million Americans have been affected, but that those are just people who've been tested and found to be infected is probably at least 100 billion people in this country who've already been.
* 00:32:22Naturally infected, and this was a study done very early on, out of Cleveland and 52,000 healthcare workers have 1400 of them had been infected but not subsequently vaccinated and they found that that.
* 00:32:33There was protection that was mediated by a natural fit really when the virus first sort of wheeled into this country in January of 2020 with vax analysis we're most interested in learning.
* 00:32:43Was if you're infected with this virus and effective severely and then you're really exposed, which would be considered likely.
* 00:32:49Did you develop severe illness, the second time, and the answer was no so that was good same things true with rotavirus rsv natural infection modifies.
* 00:32:59diseases associated with three exposure so you're protected against generally against moderate to severe disease, not as well against mild disease.
* 00:33:07But that that was good, because that meant that if natural infection could protect.
* 00:33:11That all you had to do is try and mimic the immunity that's induced by natural infection to protect against disease it's not true of all pathogens, I mean you can get a gonorrhea severely again and again, you can get a strep infection severely again and again, so this was welcome news.
* 00:33:27And, as is true for vaccinations similarly for natural infection, if you look on the right hand portion of this slide memory B cells are long lived.
* 00:33:36All good so um what is required for herd immunity or said another way what is what has to happen.
* 00:33:46For there to be a significant slowing in the spread of this virus we're not going to eliminate this virus anymore that we're going to eliminate.
* 00:33:53influenza or rotavirus or pertussis from this from this country or this world, I mean, these are mucosal infections.
* 00:34:01That don't have irie me as part of pathogenesis and therefore it's going to be hard to completely eradicate them, unlike diseases like smallpox.
* 00:34:08or polio measles, which can all be eradicated, because by remi is part of pathogenesis so it's easier to eradicate those kinds of diseases but what's going to be required to at least get on top of this, this address.
* 00:34:20So as of December 29 about 500 million doses of covert vaccines had been administered about 62% of the population is considered to be fully vaccinated 73% have received at least one dose of vaccine.
* 00:34:32Also at least 100 million people I think we've been naturally infected obviously there's overlap between.
* 00:34:37Between these two groups these aren't separate groups.
* 00:34:40But if you combine the immunity induced by disease with that induced by immunization at least 80% of the US population should be protected against the securities and I think that's a low number.
* 00:34:49If you look, there was a study actually out of JAMA that looked at like 1.5 million units of blood that had been donated and in these blood samples researchers looked at.
* 00:35:02The presence of antibodies against the virus nuclear protein which would then.
* 00:35:07show that that person had been naturally in fact did look at people who had antibodies against the spike protein, but not the nuclear protein which then would have been people who've been vaccinated.
* 00:35:16And they found that at least 80% combined sewer prevalence now, this was interesting, not a perfect study it only went through May of this year, so May of last year, so.
* 00:35:27that number is probably higher but also, these are people who choose to donate blood which may be those who are more likely to have been vaccinated.
* 00:35:35So what percentage of the population needs to be immune to induce herd immunity?
* 00:35:41So there's a formula used to determine this actually in the book plugins vaccines there's a chapter called Community immunity which goes through how this formula was derived.
* 00:35:51But, but what it is, is it's are not minus one over are not divided by the effectiveness of the vaccine to prevent contagiousness now so or not is.
* 00:36:00is contagious this index, so if a contagious index of five that is five That means that if you're infected and you go about your normal day you will infect five more people, assuming that they're all susceptible to the virus.
* 00:36:13So if you assume that are not a five and a vaccine effectiveness of 90% which is generous, because I think that's not going to be true for protection again shedding.
* 00:36:21Then, at least 90% of the population would need to be immune and currently we're less than that, I think we still need to vaccinate about 40 million more people if you look at Israel, Israel has a a fully vaccinated population at around 91%.
* 00:36:36And they have truly slowed the spread of that fire, so, if you look at least as a few days ago they were having about two deaths a day from coven.
* 00:36:45Which if you just account for differences in population size would meet about 70 deaths per day here, which is significantly less than what we're currently experiencing yesterday was about 1800 deaths.
* 00:36:56So you can't we can get there, we just have to vaccinate the population, which is part of what I want to talk about today, the challenges associated with that, so there, there are three obstacles to herd immunity and I’ll go through them, the first is the variance.
* 00:37:12As I said earlier, we've had a variety of variance the delta variant was the most recent variant up until, which accounted for about actually about 97%.
* 00:37:21of cases in this country until it was replaced by the Omicron variant this slide is just through December 18 at the most recent seed CDC slide had this it over 90% of them are contrarian.
* 00:37:33what's what's it about the Omicron is we all say it's more contagious but technically that's not true, the are not for Omicron is actually very similar to the yarn offer adult has been shown in studies and out of Denmark.
* 00:37:45that the difference is that oh McCaughey is more immune invasive so, in other words, even if you've been vaccinated.
* 00:37:52You are more likely to develop mild disease with Omicron, then you would have been for delta again, that was a Denmark study that clearly show that, so the secondary attack rate in a vaccinated household is higher than the secondary.
* 00:38:05For Omicron is higher than the secondary attack rate for delta in a household so that that's the problem with younger crowd it's a little off target.
* 00:38:13for protection against mild illness which is mediated primarily by neutralizing antibodies and less and less so, by memory so and This just shows the younger crowd variant which has at least 30 mutations in the in the spike protein.
* 00:38:29Okay, so obstacle number two is misinformation.
* 00:38:34This is a New Yorker cartoon honey come look, I found some information all the world's top scientists and doctors missed.
* 00:38:43So the I’ll just go through a few of what are many sort of anti-vaccine tropes that are out there, one is the coven 90 vaccines aren't necessary for children, this is, if you had to pick the group.
* 00:38:56That you really want to make sure it gets vaccinated what you hear about in the media, mostly is, we need to vaccinate people who are you know in counties with it are heavily that heavily voted for.
* 00:39:08Republicans in the previous election and or you hear about you know African Americans generally being an under vaccinated groups or, in some cases pockets of ultra Orthodox Jewish folks or communities that have.
* 00:39:21populations of the Amish Community or evangelical Christians but really the biggest group or people less than 30 that this represents the biggest challenge, we need to vaccinate young people if we're going to get on top of this pandemic.
* 00:39:37So this is just a series of slides showing that children certainly are an important part of this this coven a pandemic, where, as in as of October 10 10.6% of cases were accounted for by children.
* 00:39:55This is another slide showing that that this was.
* 00:39:58About as sort of October 10 again that you can see that there were at least about 2 million roughly 2 million cases among children five to 11 years of age.
* 00:40:08The the other thing is interesting here is that.
* 00:40:10That, although, if you look at children who come into the hospital, who are in that age group, the five to 11 year old age group, two thirds have co-morbidities but one third dump therefore all children are at risk of being hospitalized or sent to the intensive care unit.
* 00:40:26And, and for this this again for the look to the five to 11 year old there have the 66 coven deaths as of sort of October 10 that number is actually gone up but that puts it in the top 10 for things that kill children.
* 00:40:42Also it's interesting that if you compare children who were in the hospital with influenza as compared to children who are in the hospital with coven.
* 00:40:50you're actually more likely to have an icu admission more likely require mechanical ventilation and then with covert and we're lucky to have a longer hospital stay with coca than with flu so it's bad illness.
* 00:41:03Suddenly missy is primarily disease, the five to 11 year old peaks at about nine years of age they've been at that, as this this slide around 5200 cases it's more than that now.
* 00:41:15All of which is preventable by vaccination and we've had a vaccine now available through the five to 11 year old since November, the second.
* 00:41:23So if you sort of look at the five to 11 year old primarily it's been almost 2 million cases at 300 hospitalizations 2300 cases of missy 94 deaths.
* 00:41:32All of which is is preventable and you know the I think the biggest hit the children take is the lack of socialization and social development that comes with being in school.
* 00:41:43And in Philadelphia, you know, with all the school closures I’m sorry, with all the school closures that we've had you know it's interesting last year they reported incidents of.
* 00:41:53of child abuse and Philadelphia was zero and that's not because there was zero child abuse it's because child abuse picked up in school, and for many children in the Philadelphia area school is the only time they got a decent meal during the day.
* 00:42:06Okay, the other things that you commonly hear about or the coven 19 vaccines decreased fertility.
* 00:42:14So this fear was born when two researchers petition the European Medicines Agency or AMA which is kind of the European equivalent of the FDA here.
* 00:42:25to withdraw approval for coven 19 vaccines, claiming that the SARS COVID to spike protein share genetic sequences was sensitive one.
* 00:42:34Which is a protein that's on the surface of placental cells and import is important for placental sell health.
* 00:42:41First of all, that's not true, though those genetic sequences weren't we're not particularly similar it's like saying you and I had the same social security number, because they both contain the number five.
* 00:42:51And in fact those two proteins are immunologically distinct, but the thinking of these two researchers was that if you're making an immune responses are is.
* 00:42:58COVID to spike for protein from Mr RNA vaccines are from these vectored virus vaccines that you're also inadvertently making immune response to your own placenta, so there were a few things that argue against this.
* 00:43:12first day during although during the Mr and a trials and the initial Johnson and Johnson trial pregnant women were discouraged from entering the trial and also we're encouraged, not to get pregnant during the trial and nonetheless as Jeff Goldblum said in the movie.
* 00:43:29The drastic park life finds a way, so there were three dozen pregnancies that occurred during that.
* 00:43:35That those trials and it was true that antibiotics directed against the spike protein and decrease fertility, then there should have been.
* 00:43:42Most pregnancies and occurring in the placebo group, but that wasn't true, it was divided equally 18 in the vaccine group and 18 in the placebo group.
* 00:43:51also remember when you're naturally infected with SARS COVID to you're also making an immune response to the SARS COVID to spike protein, and given that roughly 100 million people.
* 00:44:01have been infected over the last couple years what's happened to the birth rate, if it's true that antibodies against the spike protein then decrease fertility, then the birth rate should have gone down, but it has actually stayed about the same for the last couple years.
* 00:44:17The other notion is that coven 90 vaccines alter DNA it's not surprising that this pops up, I mean this is the mo na vaccines, or a genetic vaccine the.
* 00:44:27The vector virus vaccines are a genetic vaccine, meaning that you are giving to this, the recipient the genes that code for the SARS Kofi to spike protein so in the case of messenger RNA.
* 00:44:38On this slide that Madonna had, but the young, so you have it, do you have a single stranded, you have messenger RNA a.
* 00:44:46small piece of genetic material that is encapsulated in a liquid nano particle that then enters that this word then joins that piece of messenger RNA.
* 00:44:56or pieces of messenger RNA join about 200,000 other pieces of messenger RNA the residing cytoplasm.
* 00:45:03That messenger RNA then enters the rabbit hole system it's translated to a protein that protein is input on the surface of the cell or it's broken down and put on the surface of the cells at 10 to 15 or.
* 00:45:13A peptide or it's excluded from the cell that that's what happens.
* 00:45:18But what it cannot do what the messenger RNA cannot do is it cannot enter the nucleus, which is where DNA resides because it requires a nuclear access signal which it doesn't have.
* 00:45:28Even if it entered that the nucleus, which can't, it would still it's RNA it's not DNA, so what has to be reversed transcribed to DNA, which requires the enzyme reverse transcriptase which it also does have.
* 00:45:41Even if it were Trent reverse transcribed to DNA would have to be inserted into DNA, which generally requires integration which it also doesn't have.
* 00:45:49So the chances of em RNA altering your DNA aren't small there's zero frankly, you have a greater chance of having.
* 00:45:57The messenger RNA make cause you to be spider man Oh, I never quite which just for the record because we never like to leave the science at the children's hospital of Philadelphia you become spider man when you're bitten by a radioactive spider.
* 00:46:12Although I never really do understand why is when people think that it's going to alter your DNA why can't it alter your DNA for the better, I mean why can't you have X Ray vision or something like that, but it's always thought to be for the worse.
* 00:46:23Okay, the nexus that's coven 19 vaccines shouldn't be given during pregnancy, that the Odyssey here has been actually interesting what I think should have happened.
* 00:46:32During these phase three trials, is that pregnant women should have been included.
* 00:46:36They should have we needed that information when these vaccines launched, and the reason that we needed it.
* 00:46:41Was the pregnant women are increased risk of severe disease as compared to women have the same age who aren't correct.
* 00:46:47So, for example, you're three times more likely to require intensive care unit care if you're pregnant, as compared to not two to three times more likely to require intubation mechanical ventilation or ecmo support and about one and a half full.
* 00:47:01Full more likely to die if you're infected with this virus and pregnant, as compared to not correct, so what.

**Unknown Speaker**

00:47:09Francis and.

**Unknown Speaker**

00:47:12All that.

**Paul Offit**

00:47:15So what happened was um.

* 00:47:18Normally, what the CDC does when there aren't data for in this case for pregnant women is they will say it is contraindicated for using pregnancy, because they are so.
* 00:47:28With the CDC did here was they didn't do that, they said that a pregnant woman could reasonably choose to get the vaccine.
* 00:47:36And 10s of thousands did, and for that reason that you were able to compare women who were pregnant who got the vaccine.
* 00:47:43Two women who are pregnant, who didn't get the vaccine and Tom Schumann before and others at the CDC then ultimately reported those those findings in the New England Journal of medicine what they found.
* 00:47:53Was that there really were no differences in pregnancy outcome, such as miscarriage and stillbirth.
* 00:47:58No differences in pregnancy complications, such as eclampsia or your growth restriction and no differences needle out neonatal outcome, and with that with the CDC then did was they said the vaccine is recommended for pregnancy.
* 00:48:13were recently what they've said, given that there are a number of pregnant women who had been hospitalized taken to the intensive care unit delivered babies severely prematurely they has they changed that recommendation to pregnant women are urgently requested to get a vaccine.
* 00:48:30OK, the next is that I don't know if you've been following this story, but coven 19 vaccines cause people to be magnetic you may not have known this but.
* 00:48:39The good news is they don't but, in any case, this is an Anti vaccine activists named sherry 10 penny testifying in front of the.
* 00:48:47Ohio lawmakers claiming the coven 19 vaccines make people magnetic and, in fact, to support her point, there was a woman who actually went up to the microphone and show that indeed there it is.
* 00:48:59A key is sticking to her, because she got a vaccine.
* 00:49:02And now she's magnetic actually I really think anti-vaccine activists sort of I see them sitting around in back rooms betting on what they can get people to believe, no, no, I bet I can get them to believe that your magnetic but, in any case.
* 00:49:14So I’m mo RNA that so is that true can these vaccines cause you to be magnetic Mr RNA vaccines contain limits potassium chloride Mano base of potassium phosphate sodium chloride.
* 00:49:26die basic sodium phosphate to hydrate and too crazy sucrose, none of which are parent magnetic.
* 00:49:32Professor Michael kui from the school of physicians at Trinity College Dublin has stated quote.
* 00:49:37You would need about one gram of iron metal to attract and support a permanent magnet at the injection site, something you would easily feel where it they're just words who's a wonderful.
* 00:49:48Science communicator he's a chemist actually at the office of science and society at McGill University and has published a number of books.
* 00:49:55Making chemistry easy and fun stated quote our liver, which is loaded with aren't isn't ripped out of our body when we get an MRI scan is it.
* 00:50:04And people who get our injections we're taking supplements which do contain fair results as Paris ions repair guy on their power magnetic do not become magnetized.
* 00:50:17And there's Joe showing that you actually still can get things to stick to you just because of the secretions on your skin, even if you're not magnetic.
* 00:50:26Okay, this one has gotten a lot of traction there's a physician there's a scientist named Robert Malone, who has been pushing this and he's pretty much everywhere um he.
* 00:50:39Dr Malone, is a legitimate scientist he actually did a lot of the early work on on showing that if you took messenger RNA.
* 00:50:47and put it into a liquid nano particle that you could then get attached herself and get that messenger RNA then to.
* 00:50:54To be translated to a protein he did that work, I mean he often bills himself as the inventor of Mr and a technology which isn't quite true, I mean he is.
* 00:51:03I guess it's going to be up to the Nobel Prize Committee to determine that but what he didn't do was he didn't fit figure out how to alter Mr RNA so that it didn't have a pro inflammatory.
* 00:51:14response to Mr a frankly, is an adamant in many ways, has been used.
* 00:51:18In Old rabies vaccine is as a as an admin but it stimulates total like receptor three it stimulates total like receptor eight and that's not okay when you're trying to make a vaccine, that does not.
* 00:51:30cause significant side effects, so you had to really replace you had to add these sort of.
* 00:51:35pseudo you already nuclear side analogues to make it so that the hammer and he didn't do that he never did that.
* 00:51:40And so, so really he I think that people like Caitlin Kericho and Drew Weissman and.
* 00:51:45I'm Barney Graham at NIH with those are really more the adventures, with the RNA technology for at least to make it a practical vaccine, in any case he's been pushing that notion, as has this man.
* 00:51:57By room brittle who said terrifying to research finds maxine spike protein unexpectedly in the bloodstream actually it's not unexpected.
* 00:52:05The protein is linked to blood clots heart and brain I was just notion that despite protein is damaging to and to feel yourselves with line blood vessels and therefore all organs that have a blood supply, which is pretty much all Oregon’s are at risk.
* 00:52:18If you try and find sort of where we're, at least initially, the people were looking to the paper that showed that it was this paper.
* 00:52:25which was published in circulation, research, and it was a study of mice that were knocking inoculated trivially.
* 00:52:32With an extraordinarily high quantity roughly 500 million platform, you know, to the pseudo virus called the secular stoma titus fires, which is in the rabies of family.
* 00:52:41of viruses that was expressing the source code to spike protein so this kind of study teaches you nothing I mean, first of all mice and men and it's.
* 00:52:50As David Weiner who's a researcher at.
* 00:52:53wistar says famously my sly and monkeys exaggerate you know they're the I think you know you really want to find out whether or not something is a problem in humans, ultimately, you have to put it in humans.
* 00:53:04But you know you're giving the spine abnormal route using a pseudo virus, you know, giving it a high quantities I you just learned nothing from this and I just really wish these kinds of papers.
* 00:53:13If they're going to get pet pig publish come with a huge caveat that we've learned nothing about the source COVID to spike protein, given the way that we did this study.
* 00:53:25The other is that, according to the vaccine adverse event reporting system, the coven 19 vaccines kill people I think if one wish, I would like to have.
* 00:53:32Is that we rename the vaccine adverse event reporting system, because if you look at that name and you're.
* 00:53:37you're you're a member of the general population, you would assume that vaccine adverse events are reported to the system but that's not true it's suspected vaccine adverse events which really should be.
* 00:53:50s fairs I think would be more helpful to understand so there's Tucker Carlson who said on fox news quote 3362 people apparently died after getting the COVID 19 vaccine. He apparently is vaccinated.
* 00:54:04 I understand you have to be vaccinated to appear on fox news or be a cameraman on fox news.
* 00:54:11That is a requirement for being in fox you have to be vaccinated. Nonetheless, I guess you're still allowed to scare people into not being vaccinated.
* 00:54:18So he said 3362 people apparently died after getting the COVID 19 vaccine more people according to them have died after getting the COVID 19 shot then from all the other vaccines so.
* 00:54:31there's about 750 deaths in the United States per hundred thousand per year, therefore, to people die per hundred thousand per day.
* 00:54:39By May the sixth 2021 when Tucker Carlson made that pronouncement 110 million people United States had been vaccinated therefore.
* 00:54:482200 people would have been expected to die within 24 hours of receiving the vaccine and 4400 within 48 hours, unless the vaccines confer immortality which they don't.
* 00:55:00They only prevent COVID they don't prevent everything else that happens in life, so the 3300 deaths that reclaimed by Carlson to have been caused by the vaccine.
* 00:55:09or exactly what one would have expected assuming that the vaccines killed, nobody I mean this came up with Hank Aaron dies, and both things baseball player.
* 00:55:18you're here was an 85 year old man who died of a stroke two weeks after getting a COVID t vaccine, and that was carried in a number of papers, as could this have been caused by the vaccine, but again.
* 00:55:28The vaccines are only this is the biggest problem with vaccines they're only designed to prevent vaccine preventable diseases, not everything else.
* 00:55:37Okay, then this one, this is my personal favorite that the vaccinated to student teachers are dangerous to students.
* 00:55:45So this was a private school in Florida, called the Center Academy, which was ironically named the brain school where.
* 00:55:55teachers were who had been vaccinated we're not allowed to come to school and the reason was is that the thinking was is that if you were vaccinated.
* 00:56:04That meant you were making SARS COVID to spike protein and SARS COVID to spike protein is dangerous and therefore you are going to be dangerous to your students.
* 00:56:13That was the thing could be is actually it would it would be, it would be nice if that were true right if you could just stand next to somebody.
* 00:56:19who got an m RNA containing vaccines, it was making source COVID to spike protein and then you could get source COVID to spike protein, because that would work in a variety of settings right if you're.
* 00:56:27If you're like a diabetic you would just need to stand next to somebody who wasn't a diabetic.
* 00:56:32And then you could essentially passively get their insulin or if you had sickle cell disease, you could just stand next to somebody who's making normal hemoglobin and then you could have normally global unfortunately it doesn't work that way.
* 00:56:46And then there's the Miss information and popery that was planned DEMO this was a 26 minute black and white film that was released a.
* 00:56:56few months after the virus came into this country and many months before we actually had a vaccine, but it really did introduce a lot of the conspiracy theories that took hold.
* 00:57:07What this would this would this this movie did was it created order out of chaos it explained everything you wanted to have explained, for how this was all happening, and it was wrong, but you know I think that's.
* 00:57:19that's why conspiracy theories are so reassuring because they explained things, even if they explained wrong so.
* 00:57:24What what this this movie claim, this is the person the biochemist who was at the heart of this movie was a woman named Judy megabits.
* 00:57:33who claim that hydroxide Cork and cures coven 19 disorders COVID to was manipulated to create a pandemic strain.
* 00:57:40That because they're obviously has to be evil force this did this this list, according to Dr megabits was a product of man.
* 00:57:47Not a product that nature that influenza vaccine new and it was Rand Paul that actually pick that up when he then grilled Tony file tree at a series of committee meetings or subcommittee meetings over the past year.
* 00:57:58That influenza vaccine increases the chance of getting coven 19 that influenza vaccine contain SARS COVID to.
* 00:58:05That microbes in the ocean cure coven 19, so we should open the beaches were therefore you go in the ocean and get cured of your virus, instead of them.
* 00:58:13Having to just not go to the beaches they're wearing a protective masks activates ours COVID to Louis gomer tools as a republican Congressman from Texas believe that he got covert from wearing a mask.
* 00:58:24The Bill Gates created source COVID to pandemics, so that he could make money selling vaccines to prevent it, and in fact they were rallies in which people would say shout out kill Bill Gates and the coven 19 deaths statistics have been manipulated to control the public.
* 00:58:41So what do you do I mean, I think that when people harbor these conspiracy theories you can't do much with Neil degree is Tyson famously says you can't lose use logic and reason to convince someone out of an argument that they didn't use logic and reason to get into.
* 00:58:56Okay, the third obstacle, and this is arguably the biggest is the sort of claims to personal freedom.
* 00:59:02That it's my body it's bodily autonomy, I don't want the government to tell me that I have to be forced to get a vaccine.
* 00:59:10On that it's my personal liberty it's my civil liberty there's nothing new about this or said another way that it's my civil liberty to catch and transmitted potentially fatal infection.
* 00:59:22Again this isn't new this is from 1885 associated with smallpox vaccine.
* 00:59:27The notion that you're being forced to get a vaccine, that it is a violation of your personal liberty is certainly not new, so what is personal liberty look like.
* 00:59:37This is out of a long term care facility in Springfield Oregon showing that an outbreak that infected 64 people and killed five began with the unvaccinated employee who is expressing his right to not be vaccinated.
* 00:59:51This was in August of last year, well after vaccines were available to all were this teacher who was.
* 01:00:01Occasionally unmasked and infiltrated affected with the delta virus, who also wasn't vaccinated.
* 01:00:07Who then stood up in front of that classroom and in fact the 12 or 24 children in Marin county CC once again the disadvantages of sitting in the front row.
* 01:00:16So this is what personal freedom looks like so i'm going to stop there, that gives us plenty of time to to answer questions, and this is the URL at children's hospital foot off that really does trying to answer.
* 01:00:28All the questions you might have about coven as well as other Axion issues, so thank you for your attention.
* 01:00:36See I’m assuming you were attentive because I can't see I don't know that I’m assuming you do you're all still there, but I’m gonna wish escape there and see whether or not people are still there in my gallery view yeah.

**Izzy Budnick**

01:00:46we're all still here, Dr out, but that was that was fantastic i'm going to give everyone a second to share their questions in the chat.

* 01:00:55Even met mentioned, maybe we'll see if folks have questions about the boosters but if there's anything kind of just in general they wanted to comment on.

**Paul Offit**

01:01:02yeah I was like I think that's been at the very least, confusing yeah.

* 01:01:08So um.
* 01:01:11The the issue of boosters brings us back to the question, what is it we want from this vaccine.
* 01:01:16If what we want from this vaccine is protection against serious on this these vaccines do that both the Mr amp a vaccine has given us two doses, and the kudos Johnson Johnson vaccine protect high.
* 01:01:27induce high frequencies of memory being T cells.
* 01:01:30Which is consistent with the fact that that all the epidemiological studies that have been done today either published or presented by the CD head ch should have shown in this country.
* 01:01:39right up until the present time, protection against the races these defined as hospitalization has held up.
* 01:01:45um but what has what we're I think we're we got seduced was with the phase three studies, about a year ago, in December.
* 01:01:53Because when we did those studies Pfizer Madonna December 10 December 17 and we looked at those studies i'm actually on the FDA vaccine advisory committee when you saw what you saw 95% protection against milestones.
* 01:02:06um I think we were seduced by that and the the reason that you saw such a high percentage of protection against mile illness.
* 01:02:14Is that those were three months studies, I mean most of the participants and that's only recently gotten a second dog, so therefore they had high tides of neutralizing any device that there's no way that was going to last that had to fade.
* 01:02:26neutralizing advise had to come down protection gets mild disease had to come down and we use the term fading immunity to describe that, which is unfortunate, I think we should have.
* 01:02:35Had people have a more realistic expectation of what to expect from this vaccine, which is a you're going to be protected against.
* 01:02:42serious illness, meaning have to go to the doctor have to go to the hospital have to go to the icu have to go to the morgue.
* 01:02:47Then mild illness and I think the other communications air and it's I have to go on CNN to actually one of the questions they're asking me to address is Dr lynskey statement.
* 01:02:56must have come up in the last 24 hours about how she's now working with a communications expert to try and figure out how to better communicate things from the CDC to the public, but I think.
* 01:03:06The other error, I think the biggest communications error, we made on this vaccine occurred on July 4 of last year.
* 01:03:13Where there was an outbreak in Provincetown Massachusetts thousands of men get together they're celebrating July 4 80% of them roughly are vaccinated 336 of those who are vaccinated.
* 01:03:26God coven of those 346 four or 1.2% were hospitalized great that's a vaccine that's working well.
* 01:03:34Of the remaining 342 they had either mild illness low moderate illness or asymptomatic infection and loss was introduced the term by the CDC.
* 01:03:46breakthrough on this that's not a breakthrough a breakthrough implies failure that's not a failure that's what you want, so now we're sort of setting up this notion.
* 01:03:55Where you're going to have to prevent mild illness and hence the current booster strategy, you know which was initially for people over 18 and became 16 and 17 and has a.
* 01:04:05What is today yeah yesterday, the day before today is Friday right so was a Wednesday we have this notion, now that.
* 01:04:11Everybody over 12 years of age and ease of boost which will provide short term immunity against milestones which will provide three to four months’ worth of protection against my illness.
* 01:04:22For a virus, it is likely over the next four to six weeks to dramatically decrease anyway, and it just I just think we scared people we continue to inadvertently Dan this vaccine I think when.
* 01:04:35When President Biden stood up on August 18 and said as of September 20 we're going to have a booster dose available for everybody over 16 what he just told people was that they're not protected with two doses.
* 01:04:46I think that's not true if you define protection in a reasonable way and so.

**David Peura**

01:04:51I just think we're.

**Paul Offit**

01:04:52we've been sort of fumbling.

* 01:04:53With this and it's been scary to people and they don't understand what do so, for example, on the one hand, you have the CDC saying.
* 01:04:59Now that everyone over 12 years of age should get a third dose but then you can consider yourself fully vaccinated with two doses so which is you know just confusing to people and so that's my take on boosters i'm I don't think boosters.
* 01:05:13Like like I don't think you're going to hurt their will cause some people to get, especially the 16 to 17 year old to have to cause a few more cases of micro titus.
* 01:05:22That will happen, but micro titus generally short live transit itself resolving, but I just.
* 01:05:26don't think we've defined what we expect from this vaccine very well, and if we were really trying to keep neutralizing anybody's high.
* 01:05:32Then we're going to be boosting every six months, I don't know if you saw that little Pfizer loyalty cards going around where it's like a Punch card we're after your age booster dough should get a free pizza I feel like that's where we're heading.
* 01:05:44it's not true, by the way you don't get a free pizza that's not true.

**Izzy Budnick**

01:05:48We have a couple questions in the chat The first one is when do you perceive vaccines available for children under five.

**Paul Offit**

01:05:56Right so um when Pfizer did the trial and five to 11 year olds what they found was that that they got the same neutralizing antibody response.

* 01:06:05Whether you were five years of age 6789 1011 the same so by grouping them all together as one group, you had the same neutralizing antivirus bison when they did their study of roughly 2400 children, you had protected efficacy of around 91%.
* 01:06:20that's hasn't been true for the six month old to five year old, because when you find so so with the.
* 01:06:26taste of that everybody over 12 gets a 30 milligram dose people between five and 11 years of age, get a 10 micrograms so a third of that those.
* 01:06:34People six months to five years of age, get a three micrograms so attentive, though, so, so what you had a third for the five to 11 year old attempt for the six-month-old five years old.
* 01:06:44What they found Pfizer was that for the young child, like the one or two year old child they got X excellent titers of neutralizing identifies at that three microgram dose but that wasn't true for the three or four year old so.
* 01:06:57What there I don't know what their strategy is I mean I know as much as you do, I just read the the online or read newspapers, Mrs published but.
* 01:07:04My sense is that they're thinking about just giving a third dozy what you would have liked to have had happen.
* 01:07:09Is that this was all worked out in Phase one which are dose ranging studies, where you determine the dose and maybe we shouldn't have group them all into one group.
* 01:07:17And you determine the dos interval dosing dosing most ranging a dose interval and I just don't think that was done.
* 01:07:25Clearly, is my guest just reading the tea leaves but we'll see so I don't know when we're going to seeing the data, the Pfizer also presented at that list they see it meeting and said that they expected to be able to submit to the FDA vaccine advisory committee by April bubbles.

**Izzy Budnick**

01:07:41next question we have is i'm so getting a lot of questions about this from patients do people really need to be vaccinated after infection, how do you address that question or concern.

**Paul Offit**

01:07:52Anything the district did consider this when they when they start to push for mandates they didn't consider this was actually part of that meeting.

* 01:08:00Where can natural infection and count, I mean it said another way if you've been naturally infected, will you will you induce this sort of same frequency of memory and b amp T cells, which is what you really care about.
* 01:08:13As you would for vaccination and I think generally the answer that question is yes it's sort of split 5050 between the advisors.
* 01:08:23In terms of whether we thought natural affection 10 CAP, and I think that is reasonable, I think, where that gets where you get hung up on that is bureaucratically.
* 01:08:32So, so now you're saying to people, especially in situations of mandate that you have to show that you have been, naturally, in fact, which generally means that you have a piece of paper that shows that which you can buy on the Internet.
* 01:08:44I think that's part of the problem that we're getting hung up on the booster though story is that I mean children's hospital float it as a vaccine mandates.
* 01:08:52We require two doses of vaccines, the wistar institute cross the street also has a vaccine mandates where they require three doses of vaccines.
* 01:08:59um it's just confusing my future son in law goes to cornell he's getting his MBA there he has to go back on campus in a few weeks, and he has to get a third dose if he's going to be allowed back on campus I just think it's all confusing a little crazy.

**Izzy Budnick**

01:09:16and productive petri, what do you see as the future for Mr any vaccines rsv flu.

**Paul Offit**

01:09:24yeah certainly studies are being done, I mean the technology is not that new it's about 15 years old, so they are there was currently work looking to see whether or not that technology will be useful for.

* 01:09:33sake, say, a universal influenza vaccine or a malaria vaccine or a better tuberculosis vaccine or an HIV vaccine those studies are all on gone Bill C plus you know, obviously it has implications.
* 01:09:43For gene therapy for cancer therapies so we'll see, but I think.
* 01:09:48we've learned a lot to me, I think the biggest advantage right now is that you have an enormous amount of data on pregnant women, which is not usually true so, so I think that may be a value for an rsvp vaccine for venture capital vaccine for group you strip vaccine for pregnant women.

**Izzy Budnick**

01:10:06So from Dr Mathers I have some concerns with the data, but the slight change in alteration mental cycling and coding vaccine may be misused by anti vaccine groups any thoughts on combating this concern.

**Paul Offit**

01:10:18Right, so there was just recently, a study that looked at that, and there are some differences with.

* 01:10:22menstruation again i'm not sure how well the studies have been performed but it's not from nowhere that that comes we're cycles can be heavier or can be missed, but the.
* 01:10:31least the overall conclusion of that study was that things settle down and you go back to normal fairly quickly, so you know, can it be misused by taxing people sure it's what they do that's what that's their defining characteristic.

**Izzy Budnick**

01:10:49got a question for one of our great ID fellows Maria gave us so she says wonderful talk, thank you, Dr often I’ve heard from some.

* 01:10:56That have brought up a concern about autoantibodies autoimmune diseases and b cell lymphoma is associated with vaccinations Is this a real concern is there any evidence to support these periods.

**Paul Offit**

01:11:08Not not from vaccination I do worry about what's going on with natural infection, I mean with natural infection, it does appear, I mean I think what learn more about exactly what the pathogenesis of missy is.

* 01:11:22With the pathogenesis of my card, it says when you're naturally infected or when you have missy.
* 01:11:27So I think there are autoantibodies that are induced by natural affection, to the extent that they're induced by vaccination I don't see any great evidence for that.
* 01:11:35will learn in time, but you know you have this that this is the biggest vaccine program in the world's history of, there are three and a half billion people on this planet.
* 01:11:45Who are already fully vaccinated against this this virus and 9 billion who've received at least one dose of vaccine total so you know we'll learn a lot and we'll have.
* 01:11:57A whole lot of different backgrounds and ethnic backgrounds racial backgrounds, you know co-morbidities etc to learn about this.
* 01:12:04Then I’m sure will continue to learn things that are surprising, we already have, I don't think anybody would have anticipated.
* 01:12:10myocarditis as a consequence of Mr in a vaccines, I don't think anybody would have predicted thrombosis with rob aside a PDF syndrome as consequence of the vector of virus vaccine, so you know I do think we learn as we go that's always true I you know.
* 01:12:24The the there's always a human price for knowledge.
* 01:12:27That is always strikes and wrote a book about this recently called you bet your life which, basically, that is the point so now I just told you, the point of that book, which is there's always a human price for knowledge, and it will have to read it, but.
* 01:12:39that's that book.

**Izzy Budnick**

01:12:41Get I’ve got a question here from my co chief.

* 01:12:45Just curious more of like a application of some of the stuff he talked about.
* 01:12:48I'm from a part of the country that's been very hesitant to uptake vaccines and there's just a lot of radical anti vax mentality that you mean i'm just curious what's your approach when you're.
* 01:12:58Actually approached by someone about this with one of these kind of off handed reasons for not getting vaccinated like it kills people or.
* 01:13:04any of the other example you gave what's your approach for talking to them, or do you just kind of assume that there's some amount of these people, who were just never going to convince and leave it at that.

**Paul Offit**

01:13:14know if I get questions, a lot on both by email and phone um, I can tell within 30 seconds where there's any real chance of convincing somebody.

* 01:13:22You know I think if you can sort of see very quickly, see the conspiracy theorist.
* 01:13:27versus the non-conspiracy theorists I mean there were a number of people who do call really do want to be reassured.
* 01:13:32I mean the virus is scary you'd like to be reassured by this and you like your doctor to like you, so I think.
* 01:13:39That you can tell them to reassure well, I mean that they're so, so I think there are people who are ratio, but I do think.
* 01:13:44that's The other thing it's just a big just sort of continue my rental booster dosing.
* 01:13:49I think you know and listening to the SAP meeting on Wednesday, and people are talking about you know we have a hammer now and we can nail this this oma crime down, and if you keep that's all we talk about.
* 01:13:59is like further protecting people who are already largely protected, I mean you know for the who look at the 12 to 15 year old 50% or vaccinate if you look at the five to 11 year old.
* 01:14:09About 23% of accident or said another way roughly 85% five to.
* 01:14:1311 year olds aren't vaccinated and 50% of 12 to 15 year olds are vaccinated I think you guys and I’m.
* 01:14:20Certainly, to a children's hospital of Philadelphia when we see children over 12 years of age coming into the hospital we don't lament that they didn't get a third dose We lament the fact they haven't gotten any doses.
* 01:14:29I mean it's really, this is a problem with the unvaccinated, we have to figure out a way to vaccinate the unvaccinated and I continue to hold out hope, although.
* 01:14:37I am a Philadelphia eagles fan, so you should sort of put that in context, but you know if you look at it, for example in Philadelphia, we have Dr Ayla Stanford who I don't know if you've been following her story, but she's a.
* 01:14:48A a pediatric surgeon an African American pediatric surgeon who goes into into the she's attempt on she goes into the North Philadelphia Community West Philadelphia community.
* 01:14:57And, and with a consortium of another couple hundred doctors or she brings along with it gets 4000 people to be vaccinated.
* 01:15:03So I think this all has to happen locally, I think we have to find who the influencers are locally and get them in there, we can do all we can only go so far with days, we can only go so far with education, I think we have to this has to happen on the ground.
* 01:15:15Locally where we convince people go into the Amish Community you know and and here in Lancaster county and talk to them through physicians that they trust, etc, I think it's doable I just think it requires this enormous grassroots movement to do it.

**Izzy Budnick**

01:15:33Thank you, great yeah we're gonna have someone unmute and.

* 01:15:37ask you a direct question.

**lou**

01:15:41and

* 01:15:43yeah hi.
* 01:15:44This is Lou Hammer show, I have a question about.
* 01:15:51cellular immunity, I mean we all know that cellular immunity is for likely protects us if they are vaccinated or the from serious disease in most cases, but still we don't know as much obviously about that, as we know about.
* 01:16:08antibodies for, for obvious reasons, so I was just wondering whether you know what your opinion on how whether the cellular immunity is gonna last forever if you're vaccinated and also what about adding.
* 01:16:24Other components into to them on a, for instance, for example, such as nuclear capsule that doesn't care as much to boost that that part of the immune system.

**Paul Offit**

01:16:36Right, so the I think that a good to predict that that the given the data we have on at least eight months after.

* 01:16:46Vaccination with two doses of mmr vaccine the frequencies remain high, therefore, I expected that would be true for years, probably not decades, but I think that would be true for years.
* 01:16:57It the good news about for all the anguish about Omicron having you know.
* 01:17:0232 mutations in the in the despite protein, mostly in the receptor binding domain, I think it is reassuring that at least the cto and T helper sell appetizer largely conserved that's good.
* 01:17:14I mean you're right, I mean there are seats Elf gnomes from nuclear protein as well, so would that be a value.
* 01:17:20And, which is why you can make the argument that in some ways, natural picture, maybe better than vaccination because you're getting used to be responsible for proteins and not just the source code be to spike protein.
* 01:17:29So I think I think it will last you're looking now at, for example, the.
* 01:17:36The Walter reed a group now has this The Ferret and carrier, you know you have it's like a soccer ball there's 24 faces and you can put them in.
* 01:17:45A variety of SARS COVID to spike proteins representing different variants on that as well if you can, in theory, put other proteins as well, other.
* 01:17:52stars can be two proteins, as well the other protein so we'll see how this plays out I think we're going to continue to learn novavax apparently has finished their trial, they say they've submitted.
* 01:18:02For for approval to the to the FDA so and I know that they've asked day the FDA has asked us to vaccinate advisory committee.
* 01:18:09To set aside dates in January in February, so I think we are going to be looking at probably Novak’s data soon, and the more the merrier I, although we have plenty of vaccine for people in this country, the problem is.
* 01:18:19Right now, we just can't get people to take it, but I do think that.
* 01:18:22The more information you have with different faxing strategies in terms of safety and efficacy for various groups, the better, so I think we're going to continue, and you know, think about it we're gonna.
* 01:18:32You know why do we vaccinate with polio every year in this country we haven't had had a polio in this country since the 1970s, we continue to vaccinate children for polio polio still exists in the world.
* 01:18:41still exists in Pakistan is still exist in Afghanistan this virus is going to be circulating in the world for a while we're going to need a highly.
* 01:18:48Protected population for a while, which was probably the strongest argument you can make for vaccinating children, I mean children grow up.
* 01:18:54they're going to need to be protected against as far as when parents say to me yeah but children are.
* 01:18:58Infected less frequently and less really true that is true, actually, but they're going to grow up in a world that still has SARS COVID to in it so get the.
* 01:19:06vaccinate them now, so that they're protected now so that they're protected when they're older because they're going to need to be protected, for years, if not decades.

**Izzy Budnick**

01:19:16we've got just a few more minutes of your time question is there a good source to understand how the different vaccines affect the immune system and response.

**Paul Offit**

01:19:28A single source.

* 01:19:31Not that comes to mind um it was a lot, I mean I think an era where most of the information you get you get from like you know press releases.

**Paul Offit**

01:19:43you're just happy to get something in a preprint for right.

* 01:19:46And in fact this is the first time I’ve ever actually seen papers published, where they will reference pretty Prince I’ve seen papers published, will the reference a Twitter from you know, a tweet from a reputable lab.
* 01:19:58 pretty soon it's going to be like you know something I heard on the bus on the way to work.
* 01:20:03I mean we're just dealing with a different I mean you know there's roughly 4000 papers published before this published per day in the in the.
* 01:20:12Medical and scientific literature there's now another 4000 papers that are out there with government per day, I mean it's just it's a mess it's hard to keep up and.

**Izzy Budnick**

01:20:22Just as a kind of a follow up question is that have you had any thoughts on, you know that this kind of.

* 01:20:28The how much information is being shared, not even in preprint, but in the press release form and things like that data that was that early like interim data that was shared on mobile nipper there.
* 01:20:39It was kind of a bit of a firestorm I thought, because it was the interim data shared through just a press release, which generated so much buzz and it wasn't until.
* 01:20:47I have a true I think either the preprint or the actual like full analysis came out.
* 01:20:52That you know, we had a better understanding that it seems like this is maybe kind of accelerating practice or even uptake in ways that you know we're not really constitutes and that's not usually how we consume new.

**Paul Offit**

01:21:04Though it's been an end we're all comfortable I mean I think when the FDA gave us authorization pride Roxy Cortland back last April.

* 01:21:12For a product that had never been shown to treat or prevent this disease and then, when it was found not only to not work, but also to cause us, including fatal arrhythmias.
* 01:21:20Then they went through that a few months later that looks bad I you know I think you have to have some evidence that things were going, I think.
* 01:21:26Vaccines work by this because vaccines were also approved under emergency us authorization but unlike hydroxide Cork winner frankly convalescent plasma.
* 01:21:34There was a an enormous amount of data showing that the vaccines work and we're saying, the only real difference in those trials that the size of the trials with the same as any pediatric adult backseat draw the only difference was late to follow up for that was really.

**Izzy Budnick**

01:21:48All right, well last question here from Dr Mike Nelson so Paul enlightening and practical talk is always good to see you again outside of our service on.

* 01:21:56Your PC your current thoughts and another beer into taming the pandemic being the absence of consensus correlates of protection.

**Paul Offit**

01:22:06 I'm sorry say that again I missed that.

**Izzy Budnick**

01:22:09You know another barrier being that we don't really have a consensus for correlative protection.

**Paul Offit**

01:22:14Right, we have the time what we mean by protection, I think, as part of it, I mean if you're talking about protection and smiles on this, I think we would agree generally that hydration neutral logic analyzer valuable there, I think, for.

* 01:22:24For you know for serious protection and serious illness, I think we're talking more about memory, but the memory so but you're right, I mean it's not.
* 01:22:32Horizontal connections are hard, I mean because there's sort of mechanistic correlates of protection and just sort of you know correlates that are.
* 01:22:39are not met non mechanistic correlates I think it is, it is confusing, I agree, I think the way we've tried to just explain this vaccine has been really confusing to people.
* 01:22:50i'm section on fox news, the other day, I mean, which I think is the biggest what happened since the beginning of the end for me, I think you know when you're embraced by the right it's over for you, but.
* 01:22:59I think it's because I questioned booster dosing which sudden how somehow may be popular among the right so, so I think pretty soon you're gonna see me getting selfies with Ted Cruz, I see that happen just kidding but.
* 01:23:10um you know I think you know it's confused, they were confused by poster business, etc.

**Izzy Budnick**

01:23:20awesome great well it's one o'clock we really appreciate it so much, that was really fantastic.

**Paul Offit**

01:23:29All right, take care.