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## The Panic Virus: The True Story Behind the Vaccine-Autism Controversy

John Russell:

Per CDC statistics autism affects one in 88 children. The last 20 years it sees immunizations implicated. The controversy's explored in the thoughtful book *The Panic Virus: The True Story Behind The Vaccine-Autism Controversy*.

We're joined on ReachMD Book Club by author Seth Mnookin, a contributing editor at *Vanity Fair*. So Seth, welcome to the show.

Seth Mnookin:

Thank you so much for having me on.

John Russell:

So usually when you hear someone talking about vaccines and autism someone really has a dog in the fight on this. How did you approach this? What was your take on the subject before you started your research?

Seth Mnookin:

So I actually came to this topic in a way that I think is a little bit atypical in that really the thing that prompted it was just conversations with my peers. At the time I started working on the book or the time I started my research, I was newly married but didn't have any kids. And my wife and I were not planning in the immediate future to have kids. But we noticed that a lot of our friends who were having children or who already had young children were very preoccupied with the question of vaccinations.

And I guess there were two things about that that surprised me. One was that it had never been something that I had ever really thought about in the same way that I never thought about needing to go to the dentist. I remember hating getting vaccinated as a child. But I never questioned whether I should or shouldn't get vaccinated.

And the other thing that really surprised me is when I asked my friends why it was...or how it was they were making these decisions ultimately, their answers surprised me in that a lot of them were saying well this decision just feels right to me. Either it just feels right to me to get my child vaccinated or it feels right to me to delay this vaccine or to skip this vaccine.

And I sort of wrestled with why that struck me for so long. And what I came up with eventually was that it really encapsulate for me an issue of how we as a society and as individuals sort of decide what counts as truth. You know when do we listen to experts and when do we kind of go with our gut, or go with intuition.

So at the time when I started out my research, I had no idea whose sides got instinct in terms of my friends was actually correct. You know it seemed totally plausible to me that there were some issues with vaccines. And it seemed plausible to me that this was not based in reality. But it didn't matter to me one way or another where the evidence ended up. In some ways that was almost secondary to the way that I got into the story.

John Russell:

So when was autism first described? And how has that definition expanded over the years?

Seth Mnookin:

So autism was first described by a doctor named Leo Kanner. And I believe the year was 1943. I can actually check that right now. But when it was described...and actually for most of its history it was defined fairly narrowly. And there were different reasons for this, but in Leo Kanner's paper that he published it was described in a way that I think we would think of today as sort of classical autism, people, primarily children with severe social disabilities, difficulty connecting with people.

And over time, by the time we got to the 60s, the 60s and 70s, there was a new kind of dominant kind of paradigm through which a lot of the medical community viewed autism that was really unfortunate. And I think colored the way that disease was treated for decades. And that was that autism was caused by emotionally frigid, ungiving mothers. And these women were termed refrigerator mothers. This is a term coined by Bruno Bettelheim meant to invoke the fact that they were literally too cold to bring warmth to their children.

And the reason why that is so incredibly damaging outside of the fact that it had no basis in anything and was obviously completely wrong is because you had a period of several decades where if you were a parent and there was something going on with your child you would do anything not to get a diagnosis of autism because that was indicative of a very serious failing on your part supposedly.

And it wasn't really until the 80s and the 90s that this finally fell out of favor and people realized both that it was a bogus theory and that there was nothing to back it up. But that stigma affected autism studies for decades and decades. And in some ways I think still kind of hangs over the debates that we have about the disease.

So and the second part of your question was how has that expanded over the years. And that's actually a whole other fascinating subject. And it's looking at the evolution of autism over time in the DSM.

So as I said when Leo Kanner first described the disease he described it fairly narrowly. And over time autism morphed into a category of diseases called Autism Spectrum Disorders, which at some point also included Asperger's Syndrome, and eventually came to also include a category of diseases called PDDNOS, Pervasive Developmental Disorder Not Otherwise Specified.

And one of the effects of the increase in the diagnostic criteria there is that if you look historically at the number of children who were diagnosed with autism you see these incredibly severe spikes. And if you don't dig a little bit deeper, I think a very rational conclusion from those spikes would be wow there must be something going on environmentally that is causing all of this.

And it's not until you both look at the lengths that people would go not to be diagnosed...not to have a child diagnosed with autism for a period of decades. And then very soon after that this incredible broadening of the diagnostic criteria that you begin to see that it's not that straightforward, that in fact if we use the criteria today 30 years ago, 20 or 30 years ago, the number of children being diagnosed with autism or autism spectrum disorders would have been much greater than it was at the time.

John Russell:

So for the vaccine part of it, how did thimerosal get into vaccines in the first place?

Seth Mnookin:

So thimerosal is a mercury based preservative and it was introduced into vaccines after one particularly horrible incident in Australia where because a vaccine was...because there was not a preservative in it, a number of children became incredibly sick and several died.

So for decades and decades preservatives have been used in vials of multidose vaccines. And thimerosal was one of those preservatives and was a very effective preservative. The issue with thimerosal is of course is that it's a mercury based preservative.

And what happened...and this is getting a little bit into kind of the political back story here but in the late 1990s in this country, there was a bill that had nothing to do with medicine or vaccines, a bill just about mercury in the environment generally. But one of the effects of that bill was that the government had to tally up the maximum amount of thimerosal that a child could potentially receive if that child got all of the possible thimerosal containing vaccines.

And when that number was added up it turned out that it was greater than what was considered safe for a different type of mercury, and that in fact no one had run the data or done studies on what safe levels were for this type of mercury. That's a distinction that I think for the greater public seems somewhat academic. For anyone involved in science and medicine you know the difference between ethyl alcohol and methyl alcohol is quite real. And in this case we were dealing with ethyl mercury versus methyl mercury.

So as a result of this realization in the late 90s, the CDC in conjunction with the AAP made a decision to recommend taking thimerosal out of vaccines immediately before any studies had been done. And their rationale was...and this is a direct quote...to make safe vaccines even safer. I think that was a spectacularly poor piece of communication on the CDC's part because if you're a parent and there's something that you're being told to give to your child and you're told that it's safe, I think generally you don't hear that and think okay what they mean is there's a gradation of safety and I'm about to learn that it's not as safe as some other variation of this.

So the immediate effect of that in the late 90s was the launch of what remains a very vocal movement ascribing blame to a number of different diseases and disorders, autism being one of the prime ones, to mercury in vaccines. One of the things that's so interesting about that is mercury has now been gone from all standard childhood vaccines for a decade with the exception of some variations of the flu vaccine.

So if in fact mercury, the thimerosal in vaccines had been leading to this increase in autism, then when it was removed you would assume that there would have been a sudden decrease. And that has definitely not been the case. The diagnostic rates for autism and autism spectrum disorders have continued to go up in the years since thimerosal was removed from pediatric vaccines.

John Russell:

You're listening to ReachMD Book Club. We're speaking with Seth Mnookin, author of *The Panic Virus: The True Story Behind The Vaccine-Autism Controversy*. Seth, who was Andrew Wakefield? And how has he contributed to this controversy?

Seth Mnookin:

So Andrew Wakefield is a British gastroenterologist. And in 1998 he was the lead author on a study in *The Lancet*, a case series study of 12 children. And in the paper he claimed to have identified a potential link between the measles virus, and the measles vaccine by extension, and a particular type of gut disorder. And then this gut disorder and autism.

The paper from the outset was incredibly controversial. It was rejected the first time it was submitted to *The Lancet*. When *The Lancet* did finally accept it, they only ran it on the condition that it appear under a heading of early report, so to make clear that this was not definitive data by any stretch of the imagination.

*The Lancet* also invited two CDC scientists to comment on the paper. And anyone who reads medical or science journals knows that typically when a journal invites a commentary about a study it's to say what an incredible study that was. This commentary in 700 incredibly lacerating words essentially said this is one of the worst studies that had ever been published.

So that was the sort of background to the study that Wakefield published. Then even after it was published he went much further than that and went on this sort of press blitz where he was telling reporters and anyone who would listen that parents should not give their child the three in one measles, mumps, rubella vaccine, that the government owed it to its citizens to pull the vaccine off the market until a full safety review could be conducted.

The effect of this in the UK was an immediate drop in MMR uptake grades. And the UK does not have mandatory vaccine school age requirements the way the United States does for the most part. They usually have recommendations. And so the MMR vaccine uptake in the UK went from the low 90s to the high 70s. And not surprising to anyone who knows anything about virology or has dealt with measles, measles epidemics started to occur. And in the years since then there have actually been deaths in the UK from measles, which is pretty shocking when you think about it.

In the years since then Wakefield has kind of thrown his lot in wholeheartedly with a very rabid anti-vaccine crowd. I think one of the reasons that is is because he has been so totally debunked by mainstream science and mainstream medicine that he has nowhere else to go.

As an example of this it turned out that the 12 children that he wrote about that he claimed were consecutively referred to his clinic, were in fact referred...some of them were referred by a lawyer who was working with parents who were thinking about suing vaccine manufacturers. It also turned out that Wakefield was receiving money from this lawyer.

It also was discovered later that Wakefield had taken out a patent for an alternative measles vaccine right before his paper was published. So essentially at the very moment that he was telling the press don't give your child the MMR vaccine, he had a patent on an alternative measles vaccine, which would be just the type of thing that parents would want if they thought the MMR vaccine was not safe.

He also was shown to have fabricated some of the data in his papers. So essentially what started out as something considered one of the worst papers ever published even before anyone knew that there were any problems with it, was shown to be an almost complete and total fraud. That paper has since been retracted by *The Lancet*. Andrew Wakefield has lost his medical license in the UK. But he remains somewhat of a hero to anti-vaccine groups.

John Russell:

Thank you so much for being on the program.

Seth Mnookin:

My pleasure.

John Russell:

This is Dr. John Russell. If you missed any or part of this discussion, please visit [ReachMD.com](https://ReachMD.com) to download the podcast and learn more about this series. Thank you for listening.