Mercury, Autism and the Coming Storm

http://www.huffingtonpost.com/theblog/archive/david-kirby/mercury-autism-and-the-c_3184.html

David Kirby

Finally, the mercury-autism controversy is burning up the airwaves and keeping the bloggers busy. We have just witnessed the biggest week ever in the history of reporting on this high-stakes debate and, naturally, I could not be happier. A nationwide discussion about thimerosal and autism was my primary goal in writing "Evidence of Harm: Mercury in Vaccines and the Autism Epidemic," and at long last the conversation has begun.

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But this conflict, folks, is just getting started.

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As for myself, I went on Imus last Friday, talking about why no one was talking about this story (expect for Imus). On Tuesday, I appeared on the Montel Williams Show with Lyn Redwood, the main character in "Evidence of Harm," along with theory proponent Rep. Dave Weldon (R-FL), and others. And on Thursday, Ron Reagan and Monica Crowley invited me onto MSNBC's "Connected," along with Dr. Louis Cooper, former head of the AAP. Dr. Paul Offit, a leading pediatrician who dismisses the thimerosal theory, refused to appear live with me. Instead, at his request, he was interviewed separately.

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accepted the offer, and soon there will be that “debate” with the PhRMA rep on Imus in the Morning.

Also this week, I spent two days in Washington briefing powerful people on the many unanswered questions of this spiraling contretemps. I was there at the request of parents of autistic children who, more than Kennedy, Kirby or Imus, are responsible for keeping this story alive.

It was not my first visit to DC. In the past few weeks, several parents, researchers and I have met with Chairman Enzi and his staff, with the staff of Majority Leader Bill Frist and Senator Joe Lieberman (D-CT), who pledged his own support to look into this issue on (where else?) Imus in the Morning. We met Senators Obama and Durbin (D-IL) and briefed their staffs, who are likewise committed to examining these complicated and disturbing questions. We met for hours with top investigative attorneys of a leading Senate committee, and with a very high ranking and respectful official at HHS, who clearly recognizes that this story is about to explode.

All over Capitol Hill, we encountered thoughtful, intelligent, compassionate people – Republicans and Democrats – who seem truly committed to getting the difficult answers that the American people deserve. Call me naVve, but I have great confidence in their integrity and resolve.

Of course, it’s possible that this army of congressional investigators will determine that injecting organic mercury directly into newborn babies was a perfectly harmless thing to do, and did not trigger adverse reactions in a subset of children with a genetic predisposition to mercury sensitivity. They may declare that the synchronization of the autism epidemic and rising thimerosal exposures in the 1990s was merely an uncanny coincidence. They may find that a thorough review of a federal vaccine database, currently under lock-and-key, reveals zero evidence of an association. They may discover that removing mercury from autistic children yields absolutely no clinical benefits whatsoever. And, contrary to Mr. Kennedy’s assertions, they may conclude that everyone in the government and drug industry acted with nothing but the utmost forthrightness, untainted by malfeasance and conflicts of interest, openly sharing all that they knew about thimerosal’s toxicity with the American public.

If that happens, then maybe we can put this whole sordid tale behind us forever. But I don’t think that will happen. What will certainly happen is a much-needed airing of our nation’s public health laundry.

To the detractors who are incensed that these questions are even being asked, to those who decline to answer the questions in a face-to-face forum, and especially to all those unlucky people potentially implicated in this brewing summertime scandal, I have the following advice: Don’t complain to me, complain to the United States Senate -- preferably under oath. and keeping the bloggers busy. We have just witnessed the biggest week ever in the history of reporting on this high-stakes debate and, naturally, I could not be happier. A nationwide discussion about thimerosal and autism was my primary goal in writing “Evidence of Harm: Mercury in Vaccines and the Autism Epidemic,” and at long last the conversation has begun.

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Comments

I am the mother of three children, the youngest of which just recieved his first round of "immunizations". I asked the doctor specifically about the mercury, as I had in 2000 when my newborn was injected with the Hepatitis B shot, at 24 hours old. I have been assured several times over that it is "safe" and that not getting the shots "put my child at greater risk". I look forward to, and will attempt to keep an unbiased view of the goings-on with this argument, respectfully and quietly (if need be) re-evaluating the risks in two months, when my infant will be due for yet another round of "needed" vaccines.

Posted by: Jennifer at June 25, 2005 02:26 AM

Hopefully, they will ask: Why did the President ask the DOJ to seal the records of the Thimerosol cases in the special vaccine court and attempt to hide the information from the public? Hmmm--
Could it be his ties to Eli Lilly? Maybe we will
finally get some legislators and some media with some guts to dig into that one------
I look forward to watching the officials
at the CDC and FDA squirm while they try to sell their lies under oath. Everyone in the room will see how bad mercury is and just stare at these people and think---Are you kidding? Once again, the fools will say--we believe it is safe--and mostly everyone in the room will say to themselves-just like Dan Burton did--Have we've all been sitting in the same room? Didn't you see what Thimerosol does to brain cells? Just like RFK, Jr. said on Scarborough Country--Is this all you've got? They have zero biological studies to back them up and flawed epidemiological studies---these people have
no defense---

Posted by: DavidT at June 25, 2005 04:36 AM

Question I hope you can answer then Mr. Kirby. The Dutch banned trimiserol in 92, and were mercury free in 95 so why have their autim occurrence rates been increasing on par with the US?

Secondly... what concentration of mercury could have been found in MMR in 97?

Posted by: bill at June 25, 2005 07:23 AM

Just because a few studies have yielded equivocal results and a few scientists remain skeptical about something doesn't mean the rest of the scientists are wrong to consider the matter settled or that they have formed a conspiracy of silence. Just because a lone scientist believes he's a hero--like Peter Duesberg who may still be saying that AIDS is caused by something other than HIV--doesn't mean a journalists should believe him and present him to the public as one...even if the journalist himself wants to be a hero.

Posted by: murky at June 25, 2005 08:34 AM

Also actually what's keeping some "bloggers busy" as you say
http://majikthise.typepad.com/majikthise_/2005/06/simpsonwood_thi_1.html
http://helpychalk.blogspot.com/2005/06/thimerosal-update.html
is arguing against a need for panic or even concern.

Posted by: murky at June 25, 2005 08:42 AM

Congratulations and thankyou for all you hard work exposing and combatting the elements that would harm or deceive us.

Posted by: Mr. Jones at June 25, 2005 10:20 AM

6/25/05
11:26am
Norwalk, CT Library

My son had a terrible reaction to a vaccine when he was an infant (he was born in 1991.) Since he is my 5th child, I knew that it was unusual and called the doctor. Of course there was nothing to be done about the high-pitched screaming that went on all night. I cried with him.
Adam was diagnosed autistic at the age of 2 and displayed all of the classic symptoms plus extreme hyperactivity. He was adorable and sweet and intelligent, I found, so I talked to him a lot, taught him songs (he could sing a song but not answer a question,) read to him, showed him how to play video games, gave him CDs (classical) to play, etc. I stayed home from work when he needed me and he received SSI.
Adam is doing great. He starts high school in the fall. I just attended his graduation from middle school.
Because I attended a conference about thimerosal and autistic children in Portland, Oregon (in 2000) I am sure that the vaccine played a role in the autism symptoms. Hasn't this been stopped yet?

Posted by: Shirley Ann Fisk at June 25, 2005 11:26 AM

Exciting and hopeful events are transpiring to give this issue public airing it needs.

Great news!

Posted by: suzanne michel at June 25, 2005 02:39 PM

Hi,

It seems unlikely that a toxic agent like thimerosol would show its effects narrowly but dramatically in autism. Other neuotoxins like lead have an array of different effects on brain development. Why shouldn't Thimerisol-exposed kids show a wide range of neurological and psychiatric diseases, the idea being that the systems that are affected in autism include brain structures that are shown to have pathology in other diseases?

The problem is, the media has looked toward epidemiology to show definitive linkage between environment and disease. However, epidemiology is insufficient to show the relationship between low-dose enivronmental exposures and complex disease -- consider cell phone use and brain cancer, high power line and cancer, low frequency navy transmitters, breast implants, animal hormone use and low sperm counts, diffuse pollution and the decline in frog population, etc. The missing link is a biological mechanism, and because autism is very hard for us to understand biologically, this link is difficult to develop.

I would suggest a line of experiments that could reflect the potential mechanism: in primate infants, inject equivilent amounts of thimerosal and measure concentrations in the primates' brains at intervals; this would give an idea of the concentrations present during ongoing brain development. Use these similar

concentrations in neuron migration and dendrite experiments -- this could reflect ongoing child brain development. Finally, do a series of experiemnts with other development models -- fish, worm, fly -- and look at brain development markers.

I think that an intelligent discussion of the matter is impossible until something like this is done and that any discussion now will be limited to a war of sound bites. Maybe this is a reason to let the IOM and other scientific bodies continue to debate the merits of the issue. Do you really think that this is the time to encourage congressmen, talking heads, the parents of autistic children and the PR reps of pharm companies battle this out? The studies done -- retrospective population-based epidemiology -- is the weakest and at best can only give a hint of where real research should go next. People who are not science-savvy aren't equipped to debate the merits of one type of study or science over another.

Finally, I would like to suggest that there are many scientists and epidemiologists who would love to be the first to report a definitive link between Thimerosal and autism -- it would make a scientist's career and earn them a cover of Nature magazine. I do not buy the conspiracy theories that the entire public health community has circled the wagons and is trying to undertake a vast conspiracy.

These are the 2 cents of a student, btw.
Thanks, Dan F

Posted by: DanF at June 25, 2005 07:39 PM

If it's not the mercury causing autism, someone PLEASE explain to me why my autistic son, who was recently featured in the WSJ (http://www.generationrescue.org/pdf/news/wsj.pdf by Amy Marcus - Winner of the 2005 Pulitzer Prize for Beat Reporting), was recovered with heavy metal chelation therapy?
Charlie Hoover

Posted by: Charlie Hoover at June 26, 2005 06:19 AM

The monkey studies have been done. Those who equate Thimerosal with environmental ethylmercury exposure, read it and weep:

http://ehp.niehs.nih.gov/members/2005/7712/7712.pdf

The parents who believe that an 'immature' immune system of infants and newborns are woefully misinformed. In developing their own esoteric vaccination schedule, the benefits of the vaccination (depending on which one we're talking about) may not be realized.

I've made these points here before, but I'll make them again: a) Those of you who have not vaccinated your children are simply benefitting from 'herd immunity,' the greatly diminished likelihood of disease (some diseases) exposure in a mostly immunized population, b) While epi studies are not 'controlled experiments,' we would expect to see the incidence of the disease increase when the suspected causal agent is introduced, and the incidence should decrease when the suspected causal agent is removed. Proponents believe they have evidence of the former, but there is no evidence of the latter. Moreover, in studies comparing Thimerosal-exposed to unexposed, the incidence of autism is the same, and c) while debate is good, this particular debate could threaten public health if vaccination rates fall below levels needed to maintain herd immunity. You have the luxury of debating this because we are living in a time when vaccinations have freed us from the spectre of childhood death and disability. Eliminate vaccinations and these diseases return, along with their sometimes deadly consequences. Somebody mentioned avoiding Hepatitis B vaccine in another post. Hepatitis B is a significant risk factor for liver cancer and early mortality.

Has anyone thought that perhaps the reason that autism was so rare in earlier times is because so many children died of infectious diseases that are now vaccine preventable? It's that way with Alzheimer's disease, too. It was pretty rare at the beginning of the century, but now it is much more common. My understanding is that 100 years ago people died long before the symptoms of Alzheimer's could manifest.

While debate is healthy and encouraged, we don't debate the pilot about how to fly the plane or whether we should all stop when the traffic light turns red. We trust in the expertise and professionalism of many people who have devoted their lives to the study and understanding of a particular problem. If you don't want to place trust in those people, then you should take the time to study the problem yourself and form your own conclusions. Listening to hearsay, far-fetched theories, rantings on web-sites, and 'I know a person who...' stories is not serious study. I believe that when I read these posts, I see more emotion and misinformation than informed critical thinking.

Posted by: Steve at June 26, 2005 03:26 PM

Danf,

What you suggest makes perfect sense. Unfortunately, the IOM report opines that there is no reason to fund any more studies regarding the possible link, and the pharmaceutical companies (who fund so much research) do not seem to be interested in funding any studies that could go a long way toward either proving or disproving the theory. Even if Congress appropriates research funding, which is currently proposed, who gets the funding will probably be in the hands of the CDC, NIH, or IOM, the same people who have been alleged to have been involved in a cover up. That will undercut the credibility of such studies even if, as is believed by others who have posted comments, the allegations are unwarranted. A new mechanism should be created for controlling the funding of the type of experiments you suggest, in order to assure everyone on both sides of the issue that there will not be a preordained result.

Posted by: Wade Rankin at June 26, 2005 04:32 PM

Also for the benefit of Danf,

There has been at least one experiment along the lines of what you suggest. Researchers at Columbia University bred a group of mice that would have a genetic predisposition to not excrete heavy metals. (This was intended to mimic the genetic predisposition that is believed to underlie thimerosal sensitivity in some human children, and the reason why all children are not affected.) The control group of mice seemed to excrete mouse-sized doses of thimerosal without difficulty, while the altered mice displayed bizarre behaviors, including some behaviors that seemed to mimic autism. The IOM chose to disregard this study because it involved mice and not humans (fair enough; after all, the government mandated removal of thimerosal in all animal vaccines years ago), and because some of the bizarre behavior (e.g., chewing through the crania of other mice) was not necessarily autistic. Your suggested primate studies would be a logical next step in the inquiry, but the experiments would have to account for genetic predisposition. And given the IOM's rejection of the Columbia study, I'm not sure the pro-thimerosal crowd will consider replication of the Columbia study as proof. After all, they have epidemiology on their side; why should they pay any attention to laboratory or clinical evidence?

Posted by: Wade Rankin at June 26, 2005 05:22 PM

Steve,

First, I would like to thank you for the respectful tone of your comments and the intelligence you bring to the debate. Further, it is a wonderful aid to the discussion that someone on the pro-thimerosal side is finally able to point to a laboratory study. Despite your advice to "read it and weep," however, I must report that my eyes remain dry after reading it. (Actually, my eyes would have remained dry no matter how valid I found the findings. Even though I have definite ideas as to why my son is autistic, I can accept a different idea if I see the proof.) Although I think the study you cited adds to the body of knowledge, it is not definitive in the least. First, the cadre was relatively small: just 41 subjects. Second, the sacrifice time was a little quick for what needs to be studied. Although my son was certainly damaged from the moment of exposure, his regression was not instantaneous. Rather, it occurred as part of a process, involving more than just the brain, that was triggered by the repeated exposure. Behavior in the test animals needs to be observed for a period longer than a maximum of 28 days. Finally -- and most importantly -- I did not see any attempt in the study to accont for the genetic predisposition that allows some children to be terribly

effected while most children excrete the mercury as did the test animals in the study. This study places the cart before the horse. The first logical step is to determine if there are primates with a natural glutathione deficiency similar to the deficiencies note in Dr. Jill James' study. If so, the test needs to be run on those primates, with a control group of "normal" primates. If no such deficiency exists naturally in primates, then some kind of genetic engineering will be in order. The failure of the experiment to account for the linchpin of the damage theory -- that some, but not all, children are particularly susceptible to mercury exposure -- severely limts its probative value.

Also, I wanted to remind you that very few, if any, people opposed to thimerosal are arguing that children should not be vaccinated. We can debate about the vaccine schedule, the timing, and the overall number of shots, but the main goal is to make vaccinations safe.

Posted by: Wade Rankin at June 26, 2005 10:45 PM

along the same lines:
Associated Press : U.S. Refused to Do Extra Mad-Cow Test ~~~

Let's see, the RepugnaCons will go to extreme lengths to force-keep a feeding tube in a comatose woman with a damaged brain who is in a long-term PVS (persistent vegetative state), but they won't do the tests that will help prevent millions of people becoming exposed to a disease that will turn their brains into spongy damaged mush which could will also likely lead them to becoming comatose in a PVS?

yeah, that makes sense....just like the repubs & all their youth who support the war but don't feel a need to sign up for military service...

And it's certainly okay to poison all those OTHER children, as long as theirs aren't affected.

yep, I think I'm beginning to see the logic at work here....

Posted by: PD at June 27, 2005 01:13 AM

To Steve--
Thanks for strengthening the argument for the Autism-Mercury connection--
In the monkey study you were referring to:
There was a much higher proportion of inorganic Hg in the brain of thimerosal infants than MeHg infants (up to 71% vs. 10%). Absolute inorganic Hg concentrations in the brains of the thimerosal-exposed infants were approximately twice that of the MeHg infants. Interestingly, the inorganic fraction in the kidneys of the same cohort of infants was also significantly higher following i.m. thimerosal than oral MeHg exposure
This study shows that injected Thimerosol (Ethyl-Mercury) is worse than ingested Methyl-Mercury (the kind you get from fish).
So, now we definitely know that Thimerosol
accumulates in the brain. And we know that Thimerosol kills brain cells.
It's kind of like that commercial---
Here's your brain--
Here is your brain on Thimerosol--
Any questions?

Posted by: DavidT at June 27, 2005 03:33 AM

The Columbia study injected baby mice at days that corresponded to the days an infant/toddler would get the same proportional amount of thimerosal, they were matched according to mouse and human brain

development.

But, there is a major flaw in this. The study didn't account for the fact that the shots are given to babies several months apart and the thimerosal has a chance to leave their systems in between shots. The researcher did not account for the half life of thimerosal in the mice or in human babies, or explain that the mice are getting chronic exposure because they are getting shots of thimerosal every 2 days. [4 doses over 9 days, or about one shot every other day]

The thimerosal was not leaving fast enough in between shots to be comparable to a human baby's experience.

While they could have cut up the mice brains and assayed the different parts of them for mercury content they didn't.

Even though they used 3 strains of mice and gave some of each group thimerosal and left some without thimerosal, they found no statistically signifcant differences in their behavior.

They were looking at a few behavioral measurements. One was a curiosity measurement, and one was how much they ran around and explored. Also, there were measurements on how much "stereotypical behavior" they engaged in. That would be a sort of repetetive up and down or side to side movement. They called a side to side movement an XY plane stereotypy and an up and down movement a Z plane sterotypy. She, that is Hornig, calls her most damaged mice the "SJL Thim mice" This is what she says about them:
"Within strains, SJL Thim mice had fewer total episodes of
XY and Z plane stereotypy behaviors, with significant
main drug effects rearing counts in SJL Thim mice (F¼5.332,
P¼0.0232), without sex effect (Figure 2a)."
Regarding their coordination, "..no thimerosal-related differences were observed in rotarod performance between or within strains on accelerating rod (20 rpm)." Scarcely evidence of ataxia as is seen in "acrodynia".
Autism is defined as having these features 1] problems with social interaction;2] problems with communication; and
3] restricted, repetitive, and stereotyped behavior, interests, and activities.

Did Dr. Hornig and colleagues find these in the most damaged mice [the SJL Thim]? No. They didn't try to measure communication, or social interaction, they did measure stereotyped behavior, and the SJL Thim mice had less of it, than the SJL mice that weren't injected with Thimerosal. Hornig et al only reported on three mice dissected mouse brains [only 3 SJL Thim mice] to look at their brains, this is really not many mice. They found statistically significant differences in their brains, but none of them match what is found in the brains of autisic brains.

This 2004 Hornig study [Neurotoxic effects of postnatal thimerosal are mouse strain dependent] doesn't say a thing that can be applied to autism. In spite of the media quotes that said it did. I don't know how anyone could turn this into something that supports autism-is-caused-by-thimerosal.

I have looked and not found any study that discusses the mice that Hornig says were doing really bizarre stuff. The mice that chewed through the skull of it's cage mate while grooming it isn't anywhere in the scientific literature. Autistics don't over groom themselves. Hornig said that the SJL Thim mice had fewer stereotypical movements, and certainly that would include endless self- or other-grooming.

The fact that the mice were chronically exposed to thimerosal might mean that only single doses of thimerosal would have to be used in any future studies, but that wouldn't replicate the former human experience of multiple shots months apart. So far autistic behavior has never been seen in a monkey, to my knowledge not even in those injected with thimerosal as infants. I will stand corrected if anyone has a paper that describes it.

Posted by: Credenza at June 27, 2005 03:44 AM

Once again, David Kirby has utterly failed to respond to the observation that populations that have removed thimerosol from vaccines in California, Denmark, Canada, UK, etc. continue to experience incidence of autism at the similar rates.

The continued incidence of autism in thimerosol-free populations just blows the thimerosol-autism thesis out of the water.

Posted by: Craig in California at June 27, 2005 09:17 AM

Steve,

I read the monkey studies and on page 18 it states:

The large difference in the blood Hg half-life compared to the brain half-life for
the thimerosal-exposed infants (6.9 days vs 24 days) indicates that blood Hg may not be a
good indicator of risk of adverse effects on the brain, particularly under conditions of
rapidly changing blood levels such as those observed following vaccinations. The blood
concentrations of the thimerosal-exposed infants in the current study are within the range
of those reported for human infants following vaccination (Stajich et al 2000). Data from
the current study predicts that while little accumulation of Hg in the blood occurs over
time with repeated vaccinations, ACCUMULATION of Hg IN THE BRAIN of infants will occur.
Thus, conclusion regarding the safety of thimerosl drawn from blood Hg clearance data
in human infants receiving vaccines MAY NOT BE VALID, given the significantly slower halflife
of Hg in the brain as observed in the infant macaques.
There was a MUCH HIGHER proportion of inorganic Hg in the brain of thimerosal
infants than MeHg infants (up to 71% vs. 10%). Absolute inorganic Hg concentrations in
the brains of the thimerosal-exposed infants were APPROXIMATELY TWICE that of the MeHg
infants. Interestingly, the inorganic fraction in the kidneys of the same cohort of infants
was also SIGNIFICANTLY higher following i.m. thimerosal than oral MeHg exposure
(0.71±0.04 vs. 0.40±0.03). This suggest that the dealkylation of ethylmercury is much
MORE EXTENSIVE than that of MeHg.

Posted by: Rick at June 27, 2005 12:04 PM

Fantastic post. I look forward to the trajectory of this story soaring to new heights. This story has vast and important implications for the entire world, even those who are personally unaffected by the trauma of autism in the family. Transparancy when studying the effects of harmful substances is of paramount importance as technology advances into the 21rst century.

Posted by: Mr Blifil at June 27, 2005 12:27 PM

Kirby is quoted in the following NY Times article, which I think is required reading for everyone who has commented on this page:

http://www.nytimes.com/2005/06/25/science/25autism.html?pagewanted=print

The result: No thimerisal and autism link. Sorry.

Posted by: CB at June 27, 2005 03:35 PM

Charlie Hoover,

It is wonderful that your son is okay. I know of a similar child who was diagnosed at 2. He also had intensive behavioral therapy and within 2 years you would never know he had had his original diagnosis. He however did not have chelation. Whether it was the ABA or he was just going to improve no one can

say. Same with your son. Again, you are a lucky guy.

Posted by: Webster at June 28, 2005 09:37 PM