

UNITED STATES
COURT OF FEDERAL CLAIMS

IN RE: CLAIMS FOR VACCINE)
INJURIES RESULTING IN)
AUTISM SPECTRUM DISORDER,)
OR A SIMILAR)
NEURODEVELOPMENTAL)
DISORDER)
-----)

FRED AND MYLINDA KING,)
PARENTS OF JORDAN KING,)
A MINOR,)

Petitioners,)

v.)

Docket No.: 03-584V

SECRETARY OF HEALTH AND)
HUMAN SERVICES,)

Respondent.)
-----)

GEORGE AND VICTORIA MEAD,)
PARENTS OF WILLIAM P. MEAD,)
A MINOR,)

Petitioners,)

v.)

Docket No. 03-215V

SECRETARY OF HEALTH AND)
HUMAN SERVICES,)

Respondent.)

Pages: 1456 through 1692/1775

Place: Washington, D.C.

Date: May 16, 2008

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IN THE UNITED STATES COURT OF FEDERAL CLAIMS
OFFICE OF SPECIAL MASTERS

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Respondent.)

Courtroom 402
National Courts Building
717 Madison Place NW
Washington, D.C.

Friday,
May 16, 2008

The parties met, pursuant to adjournment, at
9:05 a.m.

1457

BEFORE: HONORABLE GEORGE L. HASTINGS, JR.
HONORABLE PATRICIA E. CAMPBELL-SMITH
HONORABLE DENISE VOWELL
Special Masters

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1458

C O N T E N T S

<u>WITNESSES:</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>	<u>VOIR DIRE</u>
<u>For the Petitioners:</u>					
Elizabeth Mumper	--	1460	1625	1669	--

E X H I B I T S

RESPONDENT'S

EXHIBITS: IDENTIFIED RECEIVED DESCRIPTION

Trial Exhibit:

2	1564	--	Letter from N.Y. Department of Health
3	1566	--	Letter from N.Y. Department of Heath, 2006

DR. MUMPER - CROSS (RESUMED)

1461

1 Q You testified in a case called Blackwell v.
2 Sigma Aldridge in Baltimore, is that right?

3 A That's correct.

4 Q And do you remember giving a deposition in
5 that case?

6 A Yes, I do.

7 Q And that was in January of 2007?

8 A Yes.

9 Q And you also testified at an evidentiary
10 hearing held in August of 2007, is that right?

11 A That's correct.

12 Q At the hearing, the evidentiary hearing, do
13 you remember being asked about laboratory results for
14 biomarkers that you look for in your patients to
15 determine if they are harmed by mercury?

16 A I'm sure that I was, but it's been so long
17 that I would appreciate it if you would flash the
18 testimony up.

19 Q We'd be happy to.

20 And do you remember testifying, or actually
21 why don't you just read the highlighted portion of
22 your testimony.

23 A "Probably the most helpful test to me now is
24 a porphyrin test, and the reason I like the porphyrin
25 test is that it actually looked at the impact of ethyl

DR. MUMPER - CROSS (RESUMED)

1462

1 mercury and other heavy metals on body biochemistry
2 and body physiology."

3 I realize now I should have specified the
4 impact of mercury because it does not distinguish
5 ethyl from other forms.

6 Q Is it now your testimony that the porphyrin
7 test is not the most helpful test for determining if
8 your patients are harmed by mercury?

9 A As the science as evolved, we have continued
10 to use other measures also. What we have now that I
11 didn't know about back then are also some inflammatory
12 markers in urine specimens that look for co-existing
13 inflammation, that, in addition, is very helpful, but
14 I do continue to use the porphyrins quite a bit, yes.

15 Q You mentioned testing for inflammatory
16 markers in urine. Who does that testing?

17 A Dr. Nataf's lab does that testing, but we
18 are also able to get it from Metamatrix and other labs
19 probably that I don't know of.

20 Q The porphyrin test is a test that you are
21 still ordering in your practice, is that right?

22 A That's correct.

23 Q And it's a test that you are still using to
24 make clinical decisions regarding your patients
25 treatment and care, is that accurate?

DR. MUMPER - CROSS (RESUMED)

1463

1 A Yes, using it in context with the most
2 important part, which is the history of the child and
3 the clinical appearance of the child.

4 Q You testified yesterday that you could not
5 tell me how long after an exposure you would still
6 consider the porphyrin test to be reliable.

7 A That's correct.

8 Q If you're using the test to make treatment
9 decisions, you must have some idea of when the test is
10 medically appropriate, wouldn't that be correct?

11 A When I use the test, I am looking at the
12 impact of a particular child with regard to impact on
13 a very crucial biochemical pathway at the time that I
14 get that child. I don't have the advantage of getting
15 him or her at a time that I can choose with regard to
16 any exposures, and often I am trying to figure out
17 what the exposures are.

18 So, I think we have already established that
19 I'm not a toxicologist, so I don't want to venture
20 beyond my area of expertise to speculate about how
21 that test is constructed in terms of the question that
22 counsel asked me. But I am still able to use it, I
23 think, as a clinically valuable tool as long as I use
24 it in the context of the individual patient, the
25 clinical history, and other supporting laboratory data

DR. MUMPER - CROSS (RESUMED)

1464

1 that might be consistent with what I see on the
2 porphyrin test.

3 Q You wouldn't order that test unless it was
4 medically appropriate or clinically indicated, is that
5 accurate?

6 A Unless my judgment was that that was the
7 case, yes.

8 Q And how long after an exposure, in your
9 judgment, would you personally not order a porphyrin
10 test based on a belief that it would no longer be a
11 reliable measure of, or reliable evidence that your
12 patient was harmed by mercury?

13 A I do not have that number and do not wish to
14 speculate about it.

15 Q So you are unwilling to provide me with a
16 timeframe on that question?

17 A No. I'm willing to provide you with any
18 information that I feel is within the realm of my
19 expertise as a clinician. It seems to me that I'm
20 being asked to venture into territory that we've
21 already established through DOJ's help is not my area
22 of expertise, i.e., toxicology and laboratory science.
23 So, I wish to be able to confine my testimony to areas
24 of clinical expertise.

25 Q But you do basic clinical decisions based on

DR. MUMPER - CROSS (RESUMED)

1465

1 your interpretation of the those test results, is that
2 right?

3 A That is correct.

4 Q Doctor, you included in your William Mead
5 report a paragraph that discussed neuroinflammation,
6 and this is on pages 7 to 8 of your report.

7 SPECIAL MASTER HASTINGS: In which case?

8 MR. JOHNSON: In the William Mead case.

9 SPECIAL MASTER HASTINGS: In the Mead case.

10 THE WITNESS: Can you tell me the bolded
11 title on that page because mine isn't paginated?

12 SPECIAL MASTER CAMPBELL-SMITH: Analysis of
13 William Mean's Clinical and Laboratory Evidence --

14 THE WITNESS: Thank you.

15 SPECIAL MASTER CAMPBELL-SMITH: -- With
16 Regard to the Medical Literature.

17 MR. JOHNSON: Thank you, Special Master.
18 That's it.

19 THE WITNESS: Okay. Thank you.

20 BY MR. JOHNSON:

21 Q All right. And in that paragraph you refer
22 to the Vargas article, correct?

23 A That is correct.

24 Q Okay, and that's Petitioner's Master List
25 No. 69.

DR. MUMPER - CROSS (RESUMED)

1466

1 You also cite to the Burbacher study in that
2 paragraph for a statement regarding persistent
3 inorganic mercury in the brain. Is it your opinion
4 that persistent inorganic mercury in the brain causes
5 neuroinflammation?

6 A It is my opinion that persistent inorganic
7 mercury has the capacity to cause neuroinflammation in
8 the brain.

9 Q Is it your opinion that persistent inorganic
10 mercury in the brain causes neuroinflammation?

11 A It's my opinion that persistent inorganic
12 mercury is consistent with causing neuroinflammation.

13 Q When you gave your deposition in the
14 Blackwell case you were asked about the Vargas
15 article. Do you recall that?

16 A Not specifically, but I'm sure that I was.

17 Q Okay. And at that time, in January of last
18 year, you testified that you did not rely on the
19 neuroinflammation work for your opinion, is that
20 correct?

21 A At that --

22 Q And right now for the record we are showing
23 you a page from your deposition, and the question that
24 you were asked was, "Do you rely in any way in any of
25 Dr. Zimmerman's work for your opinions in this case?"

DR. MUMPER - CROSS (RESUMED)

1467

1 Now, Dr. Zimmerman was a co-author on the
2 Vargas article, is that right?

3 A That's correct.

4 Q Okay. And if you could just read what your
5 answer to that question was.

6 A "I have read Dr. Zimmerman's work, so it
7 becomes a body of knowledge that I have used to
8 formulate my opinions." But I don't specifically
9 recall any particular thing that he has as an
10 individual contributed that I rely on for the opinion
11 in the Blackwell case, which was a very different type
12 of case.

13 I'm sorry. I should clarify for the Court.
14 The last clause that I said was clarification and not
15 reading directly from the record.

16 Q The Blackwell case did involve an allegation
17 that thimerosal-containing vaccines, among other
18 exposure, contributed or caused a child's autism, is
19 that right?

20 A That's correct.

21 Q And in fact in the deposition you were asked
22 if you disagreed with Dr. Zimmerman on any other
23 points, and you testified that you disagreed with his
24 conclusions, primarily his lack of concern with
25 environmental issues and thimerosal toxicity, is that

DR. MUMPER - CROSS (RESUMED)

1468

1 correct?

2 A First of all, at the time that I did that
3 deposition, I had relatively limited experience with
4 Dr. Zimmerman's body of work with regard to
5 neuroinflammation other than having read the Vargas
6 paper.

7 Secondly, I had met him at the Autism
8 Treatment Center and at the Autism Treatment Network
9 meeting, and at that time, based on a comment that I
10 had heard him say in the public forum, it did not seem
11 that he shared some of the concerns that my colleagues
12 and I did. I had very limited exposure to him so I
13 don't know, in fact, if that was really the case or
14 just my interpretation about what he said.

15 But as time has gone on I have re-read his
16 work. I had not re-read his work just prior to this
17 deposition since it was not part of the emphasis in
18 that particular case. So as is my practice, I was not
19 wanting to comment about details that I did not
20 recall.

21 Q Since hearing Dr. Zimmerman make the comment
22 that led you to believe that he didn't have concerns
23 about thimerosal causing autism, have you spoken to
24 Dr. Zimmerman since that time?

25 A Only a couple of weeks ago. One of my

DR. MUMPER - CROSS (RESUMED)

1469

1 patients who had been a normal baby up until is 18-
2 month shots had had a cardiac arrest and a seizure on
3 the day of the shots. He was air-lifted to the local
4 university and the parents were told that the cardiac
5 arrest and the seizures could not have had anything to
6 do with his immunizations.

7 He subsequently went on to develop autism
8 and a very recalcitrant seizure disorder for which the
9 neurologists at the University of Virginia were not
10 able to help him with. Ultimately he came to me for
11 management, and he had seizures that were so bad that
12 I had to put him on a vagus nerve stimulator, which
13 did decrease the amount of his seizures from several
14 hundred per day to a relatively smaller amount,
15 somewhere in the range of 10 to 25.

16 About three weeks ago, he died, and he tied
17 in his sleep, which I presume was due to perhaps an
18 unrecognized seizure that I had not been able to
19 control.

20 So I asked the family if they would consider
21 donating his brain for analysis, and because at that
22 time I had read Dr. Zimmerman's work, I had just
23 within the last few weeks read of his work in the
24 Polling case. I had had the opportunity to look at
25 his body of work and the folks at Hopkins in more

DR. MUMPER - CROSS (RESUMED)

1470

1 detail.

2 I called him and asked him if he would work
3 on Dillon's brain, and he said that what I should do
4 is to have the brain donated to the Autism Tissue
5 Brain Bank, and that he and his colleagues, as well as
6 other scientists who had interest in this area, would
7 be glad to work on it. That has actually been my only
8 conversation with Dr. Zimmerman since I saw him at the
9 Autism Treatment Network since, I think, 2004.

10 Q I take it the discussion did not involve Dr.
11 Zimmerman's thoughts on whether thimerosal causes
12 autism, is that accurate?

13 A The conversation I had about my dead
14 patient?

15 Q Yes.

16 A That is correct.

17 Q So you have heard nothing from Dr. Zimmerman
18 since the time that you heard him make the comment
19 that led you to believe that he does not have any
20 concerns about thimerosal causing autism, you're heard
21 nothing from him since that time that would cause you
22 to think that he's changed his mind on that issue, is
23 that right?

24 A I haven't heard anything from him directly,
25 no.

DR. MUMPER - CROSS (RESUMED)

1471

1 Q And you would agree that the Vargas article
2 you refer to does not mention thimerosal or mercury as
3 a cause of a neuroinflammation, is that correct?

4 A I would agree.

5 Q You have talked about neuroinflammation in
6 some of your talks at Defeat Autism Now conferences,
7 is that right?

8 A That's correct.

9 Q And according to your CV, you gave a talk in
10 Jacksonville, Florida, in late January 2007, and I
11 want to show you a cover slide from a presentation and
12 ask you if this is --

13 A Yes.

14 Q -- the presentation that you gave.

15 A Yes.

16 Q On the slide from that presentation titled
17 "Vargas Research" --

18 A I'm sorry. Can you tell me the date of that
19 lecture again?

20 Q I believe it was late January 2007. I can
21 be more specific.

22 A Okay. That's close enough. I just needed
23 to know the year.

24 Q It was about the same time that you gave
25 your deposition in the Blackwell case.

DR. MUMPER - CROSS (RESUMED)

1472

1 A Yes.

2 Q And you note on the slide titled "Vargas
3 Research" that the Vargas team "found evidence against
4 an immune response mounted primarily against brain or
5 agents within brain."

6 Does that mean they found evidence against
7 that autoimmune process?

8 A I'd like with the permission of the Special
9 Masters to expand a little bit on this slide.

10 The first point was no activation of
11 adaptive immunity, which is the sort of classic B or
12 T-cell infiltration or immunoglobulin deposition.

13 The second point is raising the possibility
14 that the innate immune response may have been mounted
15 primarily against brain or agents within the brain at
16 that time. That was some evidence against at that
17 point in time as science continues to march forward.

18 Q And I believe my question was, is it your
19 understanding that Vargas found evidence against an
20 autoimmune process and autism?

21 A No.

22 Q And then on a later slide in that same
23 presentation you indicate that neuroinflammation may
24 be secondary to GI inflammation. Is that right?

25 A That's correct.

DR. MUMPER - CROSS (RESUMED)

1473

1 Q So, at least when you gave this presentation
2 it was not your hypothesis that inorganic mercury in
3 the brain was causing neuroinflammation, is that
4 correct?

5 A The slides says there may be a link between
6 primary GI inflammation and secondary CNS immune
7 activation and tissue injury. I still believe that to
8 be the case. There is growing evidence to suggest
9 that toxicity through byproducts or intermediates of
10 diet and gut bacteria also play a role in abnormal CNS
11 function. I also believe that to be true.

12 Q But there you're referring to playing a role
13 in abnormal CNS function and you don't say
14 neuroinflammation, is that right?

15 A That is correct.

16 Q Have you changed your hypothesis since
17 January of 2007?

18 A I have continued to expand my knowledge
19 since January of 2007.

20 Q Have you adopted Dr. Kinsbourne's model as
21 to his mechanism that he's proposed in this case?

22 A I agree with Dr. Kinsbourne's model as
23 proposed in this case.

24 Q Did you adopt his model after reading his
25 report that he prepared for this case?

DR. MUMPER - CROSS (RESUMED)

1474

1 A I fear that there is a tendency to
2 oversimplify here, that we either have to believe (a)
3 or (b) or (c), and that they are all mutually
4 exclusive. My work as a clinician and my work with
5 these scientists relies on a model where
6 neuroinflammation may be a final common pathway that
7 can result from various mechanisms, depending on the
8 situation of the child, the vulnerability of the child
9 at the time of whatever the insult is.

10 I count myself among those who want to
11 remain open to the idea of following the science
12 wherever it goes, and as best we can determine, as my
13 colleagues from all these different fields --
14 gastroenterology, toxicology, immunology -- they each
15 contribute their body of information to inform this
16 body of work.

17 So, just as I hope that all of us will have
18 a better understanding of this in 2009 as we do now, I
19 think we have a better understanding of it in 2008
20 than I did at the time of this lecture.

21 Q Prior to reading Dr. Kinsbourne's report,
22 had you seen his specific model that proposes
23 persistent inorganic mercury in the brain causing
24 neuroinflammation leading to excess glutamate levels,
25 had you seen that model anywhere before reading his

DR. MUMPER - CROSS (RESUMED)

1475

1 report in this case?

2 A I had not seen that prior to Dr.
3 Kinsbourne's report as articulated by him.

4 Q And you would agree that Dr. Kinsbourne's
5 specific hypothesis as stated in his report has not
6 been published, is that correct?

7 A I'm not aware that that's been published.

8 Q And it has obviously then not been peer
9 reviewed, is that correct?

10 A I would assume that is correct.

11 Q And you would agree that it was generated
12 for purposes of litigation?

13 A No, I would not agree.

14 Q And why would you disagree with that
15 statement?

16 A Because I have no way of knowing what Dr.
17 Kinsbourne's mental processes were when he generated
18 that report. I would be surprised, based on my
19 limited knowledge of him which only began after this
20 trial, that he would be so motivated.

21 Q But you don't know one way or the other what
22 motivated --

23 A That's correct.

24 Q -- Dr. Kinsbourne?

25 And I believe you said that it is still your

DR. MUMPER - CROSS (RESUMED)

1476

1 opinion that gut inflammation can cause
2 neuroinflammation, is that right?

3 A I do think that in certain kids gut
4 inflammation can play a contributing role. There is
5 actually published science to support that.

6 Q And what science would that be?

7 A One of the papers is cited in my expert
8 report by Vojdani and colleagues looking at dietary
9 antigens. Another body of work is by Dr. DiNucci at
10 New Jersey Medical School looking again at dietary
11 antigens. Another body of work would be the work of
12 Paul Ashwood and his immunology colleagues at the MIND
13 Institute. Another body of work would be my clinical
14 patients who have been endoscoped in my practice by my
15 local gastroenterologist, and show evidence of
16 inflammation. Another body of work would be the Walsh
17 paper which looked at inflammation of the gut and
18 secondary effects on the brain. And on the spur of
19 the moment that is what I can give you.

20 Q Would Dr. Wakefield's work be included in
21 that body of science?

22 A I am influenced by Dr. Wakefield's work.
23 That is correct.

24 Q Is there a reason that you didn't mention
25 his work?

DR. MUMPER - CROSS (RESUMED)

1477

1 A He has ironically just returned from a very
2 intensive investigation, and I am in this courtroom
3 instead of being at the IMFAR meeting where some of
4 his current science will be presented on this very
5 day.

6 Q And since you bring up IMFAR, I noted that
7 you've mentioned that you're here instead of being
8 there, and I just wanted to say I hope you didn't miss
9 it on our account because we had actually agreed that
10 you could testify next week to allow you to go.

11 A And next week I'm in Chicago educating
12 doctors, but I do appreciate that. Thank you.

13 Q Sure. Doctor, what clinical evidence of
14 neuroinflammation can you point to in William Mead's
15 case?

16 A By the very definition, neuroinflammation
17 does not have good peripheral markers. This is the
18 biggest problem for us as clinicians because, to the
19 best of my knowledge, the body of work that looks at
20 neuroinflammation actually makes a point of saying
21 that peripheral markers are difficult to find, and
22 certainly clinically available peripheral markers are,
23 to my knowledge, nonexistent at this point. Let me
24 give you an example.

25 In the Vargas paper, they looked at CSF, and

DR. MUMPER - CROSS (RESUMED)

1478

1 all the tools that I would have available to me as a
2 clinician -- glucose levels, protein levels, cell
3 counts, culture -- would not be informative. The
4 things that they found that were abnormal are these
5 very exquisite immunologic markers that are not
6 typically available in community labs.

7 So, for example, they found that interferon
8 gamma was vastly, vastly increased. I want to say it
9 was like 200-fold increase, and so that was part of
10 what they used to look at the issue of innate versus
11 adaptive immunity, and so that in a clinical research
12 setting was very helpful to them, but I have no way of
13 getting that.

14 When we find high inflammatory markers, the
15 ones we have clinically available frequently don't
16 tell us where the inflammation is, and so I am left
17 with wondering if it's neuroinflammation or gut
18 inflammation or potentially other systems in the body
19 that are affected.

20 So, we are forced to try to help these
21 children without the lab evidence that would help us
22 determine if they do have neuroinflammation, and John
23 Green back in 2001 was even more hampered because the
24 laboratory evidence available for him then was even
25 more restrictive. That was seven years ago now. So

DR. MUMPER - CROSS (RESUMED)

1479

1 it's entirely true that we don't have good markers
2 peripherally to determine this, and that's one of the
3 big problems.

4 Q So the short answer to my question is that
5 you can't point to any clinical evidence of
6 neuroinflammation in William Mead's medical records,
7 is that right?

8 A That is correct.

9 Q And the same would be true for Jordan King,
10 is that correct?

11 A That is correct.

12 Q Doctor, your training is in general
13 pediatrics, is that right?

14 A That's correct.

15 Q And you do not have subspecialty training in
16 any particular area, is that right?

17 A That's correct.

18 Q You're not a neurologist?

19 A That's correct.

20 Q And do you have any formal training in
21 neurological disorders?

22 A No.

23 Q And you're not a clinical child
24 psychologist, is that right?

25 A That's correct.

DR. MUMPER - CROSS (RESUMED)

1480

1 Q Okay, and you're not a psychiatrist, is that
2 right?

3 A That's correct.

4 Q Your only board certification is in
5 pediatrics, is that correct?

6 A That's correct.

7 Q What training do you have in diagnosing
8 autism?

9 A The training that I have received as being a
10 general pediatrician, and the things I learned when I
11 was asked to write a book chapter for medical students
12 on developmental and behavioral pediatrics, which
13 included autism, and on immunology and allergies.

14 Q In your practice, what method do you use to
15 diagnose a child with an ASD?

16 A I actually request that patients are
17 independently diagnosed. My preference is that they
18 go to a place like the TEACCH Center in North
19 Carolina, which is not too far from me, or one of the
20 university centers, or to a neuropsychiatrist. My
21 preference is that they have an ADOS or an ADIR to
22 formally make the diagnosis, and that they undergo
23 speech evaluations and motor evaluations, and
24 psychological testing and intellectual testing.

25 Then in my practice I basically then just

DR. MUMPER - CROSS (RESUMED)

1481

1 determine by using the records that I am given to see
2 if those diagnoses seem to be appropriate.

3 Q So you do not independently diagnose ASDs,
4 you just confirm other professionals' diagnoses, is
5 that correct?

6 A That's correct, and then I go on to try to
7 take care of the kids medically.

8 Q What is your definition of regressive
9 autism?

10 A A case in which there is a clearly
11 documented time of normal development, followed by a
12 clear loss of developmental milestones, and then the
13 emergence of autistic symptoms.

14 Q Let's start with the period of normal
15 development. How do you confirm normal development
16 prior to regression?

17 A I look at records supplied by the primary
18 care physician, and I take a very careful history from
19 the parents, and I ask the parents to bring, when
20 available, baby books or other contemporaneous
21 documentation of their children's landmarks.

22 There are very clearly delineated month by
23 month developmental markers in language, gross motor,
24 fine motor, and social skills, and primary care
25 physicians, whether they are pediatricians or family

DR. MUMPER - CROSS (RESUMED)

1482

1 physicians, are taught to ask those questions at each
2 visit and do a record, so we are able to document
3 normal development in that way.

4 Q Do you ever use videos?

5 A In my clinical practice?

6 Q Yes.

7 A I am given videos by parents, but it is very
8 time-consuming for me to review the videos, so I
9 typically do not use that if I have all these other
10 measures that I've described.

11 Q Now I want to talk about the documentation
12 of regression. Are there objective measures that you
13 use to determine that a child actually regressed?

14 A One objective measure is whether or not they
15 lost words. Another objective measure is whether or
16 not they lost motor skills. Another objective measure
17 is whether or not they developed stereotypic
18 repetitive behaviors. Another objective measure would
19 be whether or not they lost social reciprocity.

20 Q Is that all?

21 A I think so.

22 Q Okay. Let's start with losing words.

23 A Okay.

24 Q First of all, how many words must a child
25 have had before the regression?

DR. MUMPER - CROSS (RESUMED)

1483

1 A I do not have a specific number. It
2 obviously depends on the age of the child and the
3 developmental stage of the child.

4 Q Let's assume a 15-month-old child. How many
5 words would you expect that child to have?

6 A Anywhere between eight and 15 typically, but
7 if there is a child who developed language late, and
8 only had three words, and then at some point in the
9 future lost all of those words, that would be very
10 concerning to me.

11 So again, I'm going to resist the idea that
12 we can on a clinical basis make a definition of
13 regressive autism by an arbitrary number.

14 Q How about for a 21-month-old child, how many
15 words would you expect that child to have?

16 A That's very variable. I would expect -- the
17 normal classic milestone is two-word phrases at 18
18 months of age. Some kids at 21 months have 50 to 100-
19 word vocabularies. Some kids may have 25 to 50-word
20 vocabularies.

21 Q Does it matter at all to you how the child
22 is using the words?

23 A Yes.

24 Q In what way?

25 A If a child is only using a word to repeat or

DR. MUMPER - CROSS (RESUMED)

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1 is doing it over and over and over, that is concerning
2 to me. A more normal pattern at 21 months would be a
3 child who is using words to name different objects.

4 Q And how many words must a child lose for you
5 to consider it a regression?

6 A I do not have a specific number of words.
7 Again, it depends on what their developmental status
8 was, and then that they lost words.

9 Q In terms of the other areas, the motor
10 skills, the stereotypic behaviors and the social
11 reciprocity, are you relying primarily on the parent
12 reports in order to determine their progress, the
13 child's progress in meeting those milestones and
14 engaging in those behaviors prior to the regression?

15 A I'm sorry. Could you say that again? I
16 missed part of your question.

17 Q Yes. In addition to the language, you have
18 identified motor skills, stereotypic behaviors and
19 social reciprocity as three other objective measures
20 that you look at to determine whether regression had
21 occurred. And my question was whether you were
22 relying primarily on parent reports of the child's
23 behavior prior to the regression to confirm that none
24 of that existed prior to the regression.

25 A I do place a huge amount of weight on the

DR. MUMPER - CROSS (RESUMED)

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1 parents' report, but we also have these
2 contemporaneously-generated documents by the
3 pediatrician, and typically when I get a referred and
4 have the pediatric records sent, I see a pattern where
5 the pediatrician is checking off, you know, coos,
6 babbles, jargons, saying mama, dada, has eight words,
7 putting two words together, and then at some point the
8 records start saying things like no words, lost words,
9 not talking the way he used to. That, to me, is
10 reliable evidence in addition to the parents' history.

11 Q And all those examples you just gave dealt
12 with language, and I was actually talking about the
13 other measures, the motor skills, the stereotypic --

14 A Oh, I'm sorry.

15 Q -- behaviors and the social reciprocity.

16 A So my -- sorry.

17 Q Are those things normally noted in the
18 medical records?

19 A That is correct.

20 Q Okay.

21 A So my same statements about language would
22 also apply to motor, and in fact with motor there are
23 two different streams of development. One would be
24 gross motor. One would be fine motor. So when you
25 look in the records, you will see things for gross

DR. MUMPER - CROSS (RESUMED)

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1 motor like rolled over at four months, set up and six
2 months, hold up at nine months, began walking around a
3 year. And for fine motor you will see things like
4 hands midline to mouth at four months, transfers
5 object at six months, pincer grasp at one year,
6 pointing around one year. So that is typically
7 recorded in the pediatrician's record, as well as
8 remembered fairly well by parents when their child is
9 young. It's more difficult, you know, years later.

10 So we did motor. Now the next one was
11 social reciprocity?

12 Q Sure.

13 A Okay. So social reciprocity at two weeks
14 the baby should smile at the mom and look at her --
15 I'm sorry -- should look at the mom in the eye. At
16 six weeks the baby should start smiling. There should
17 be interactive play that continues through the first
18 year of life, and later on it includes things like
19 picking up the hands when they see the mom walk into
20 the room so they can be picked up, and involves around
21 nine months of age to 12 months of age these
22 reciprocal games like peek-a-boo, for example.

23 So again, these are things most parent at
24 the time are able to tell you, and most doctors are
25 noting those signs in their records. So, you are

DR. MUMPER - CROSS (RESUMED)

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1 also, I think, able to document fairly clearly when
2 the doctor starts saying, you know, no longer looks at
3 mom, or eye contact with parent diminished, or not
4 using gesture to be lifted. Those are all signs of
5 social reciprocity.

6 Then I think the last thing --

7 Q Let me interrupt you. Does wanting to be
8 held, is that also a sign of social reciprocity?

9 A Wanting to be held is a tough one because
10 babies different in how much they like that. Most
11 babies do like to be held, but if you have a child
12 that likes being held and cuddled, and then quits
13 liking that, I would include that as a loss of that
14 behavior.

15 Q Okay.

16 A And then are we doing stereotypic or
17 repetitive next?

18 Q That's right, let's do that one.

19 A So, typically, even though infants will do
20 some things over and over when they are playing with a
21 toy. They typically have a broad range of interests.
22 So for example, a baby who is still lying on his back
23 and you put one of those little swing set kind of toys
24 where it dangles, the various objects, usually you're
25 able to get the baby to play with one, and then

DR. MUMPER - CROSS (RESUMED)

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1 another, and then go back to another one.

2 When you see the emergence of stereotypic
3 behaviors, the story I hear is, you know, I bought him
4 all these toys and he used to play with everything,
5 but now all he wants to do is line up his trains, or
6 you know, he used to love playing with his BRIO set,
7 but now all he wants to do is flip the light switch
8 off and on over and over and over, or we can't get him
9 to -- he used to eat with a fork and spoon. Now all
10 he wants to do is eat with his hands over and over and
11 over again. That's actually a little bit of a bad
12 example because it also includes motor, but you get
13 the point.

14 Q All right. I think that covers it.

15 Let me ask you this. In your practice do
16 you use the term "clearly regressive autism"?

17 A I do.

18 Q How is that distinct from just regressive
19 autism?

20 A Let me get some data for a second. I
21 essentially am using those terms in my clinic
22 interchangeably because when I say "regressive
23 autism", I want there to be a situation in my mind
24 where it was a clear regression as I've articulated,
25 and clearly that's a clinical judgment.

DR. MUMPER - CROSS (RESUMED)

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1 I think I mentioned yesterday that in my
2 population I actually see a lot of those patients
3 because of referral bias, but we also try to very
4 clearly document the kids who have no regression, and
5 that works out to be about 35 percent of my patients.

6 So, for me to call it regressive autism, I
7 really want it to be clear, and one of the reasons for
8 that is it helps me inform my judgments about how I'm
9 going to treat that child because a differential
10 diagnosis in my mind for a clear regression is quite
11 different from the differential diagnosis for
12 something that is either present from birth or there
13 is no clear regressions, so that the possibility at
14 least has to be entertained that maybe there were
15 signs that could have been missed by the parents
16 because they were understandably in a state of denial
17 that something bad could be happening to their baby.

18 Q So in any case or for any patient in which
19 the symptoms either appeared early or gradually, you
20 would not consider that a case of regressive autism,
21 is that right?

22 A That's correct.

23 Q Doctor, you testified that the DAN model
24 that you employ is collaborative, is that right?

25 A That's correct.

DR. MUMPER - CROSS (RESUMED)

1490

1 Q And the parents are involved in the process?

2 A That's correct.

3 Q And you testified, I believe, that you view
4 your particular expertise as in taking histories, is
5 that right?

6 A That's correct.

7 Q Prior to preparing your report in this case,
8 did you interview William Mead's mother or father?

9 A No, I did not.

10 Q And did you interview Jordan King's mother
11 or father?

12 A No, I did not.

13 Q So you did not take your own histories prior
14 to preparing your reports in these cases?

15 A That's correct, and that's why I was so glad
16 to have the opportunity to hear them here a couple
17 days ago.

18 Q Did you personally evaluate Will Mead prior
19 to preparing your report?

20 A No, I did not.

21 Q Did you perform a physical examination of
22 him?

23 A No, I did not.

24 Q And did you personally evaluate Jordan King
25 prior to preparing your report?

DR. MUMPER - CROSS (RESUMED)

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1 A No, I did not.

2 Q And I take it you did not perform a physical
3 examination of Jordan either, is that right?

4 A That's correct.

5 Q And I believe you said yesterday that you
6 didn't review any of the videos that the family
7 provided until last Thursday, is that right?

8 A That's right.

9 Q So would it be fair to say that your
10 opinions as stated in your report were based on a
11 review of the medical records?

12 A At the time I was asked to generate the
13 report, that is absolutely correct.

14 Q Okay. In the Blackwell case, you only
15 testified on the issue of general causation, is that
16 right?

17 A You know, I don't remember, to tell you the
18 truth.

19 Q You don't remember whether you offered an
20 opinion as to whether the plaintiff in that case,
21 whether his autism was specifically caused by mercury?

22 A You know, I'm sorry. I really don't
23 remember much of that day.

24 Q Okay. We can refresh your recollection.
25 We'll show you the portion of the transcripts from

DR. MUMPER - CROSS (RESUMED)

1492

1 your deposition where you were asked whether you would
2 be offering an opinion as to the plaintiffs, and if
3 you could just read what you answered to that
4 question.

5 A I said, "Not for a specific case because I
6 would never render such a specific opinion without the
7 opportunity to evaluate the child, interrogate the
8 parents, do a physical exam, and review the laboratory
9 data."

10 Q Doctor, what makes these cases different
11 than the Blackwell case?

12 A I guess part of the difference is that I
13 know John Green well and I understand how he
14 practices, and how careful he is, and he's actually
15 been doing this work longer than I have. So when I
16 see his physical exam and am able to read his notes,
17 and see how he's thinking, I am better able to make a
18 judgment.

19 And my understanding in this case is that I
20 was being asked to provide an expert opinion as
21 opposed to testifying as the treating physician. So I
22 thought that in the vaccine court that was a
23 distinction, and the role I was being asked to play
24 here was not that of the treating physician, but as an
25 expert in clinical pediatrics.

DR. MUMPER - CROSS (RESUMED)

1493

1 Q Do you believe that your opinions in these
2 cases are subject to a lower standard than what you
3 would apply in your clinical practice?

4 A Is there a way you can rephrase that
5 question?

6 Q The answer that you just provided was that
7 the reason that you didn't feel it was necessary to do
8 these things that you said in the Blackwell case, you
9 would be required to do in order to offer the opinion
10 that you've offered is that you weren't being offered
11 here as a treating physician but rather as an expert.

12 And so I'm asking if you believe that your
13 opinion as an expert is subject to a lower standard
14 than what you would apply in your clinical practice.

15 MR. POWERS: Just a clarification. Is it
16 the opinion in the reports or the opinion that she's
17 testified to?

18 BY MR. JOHNSON:

19 Q I wasn't aware that there was a distinction,
20 but let's start out with the report.

21 A It was my understanding in vaccine court the
22 idea was to make it a nonadversarial, family friendly
23 funded compensation mechanism to which I have been
24 contributing since the eighties in order to identify
25 and compensate children where there was biologic

DR. MUMPER - CROSS (RESUMED)

1494

1 plausibility that vaccines, some component might have
2 contributed to their health problems.

3 In a case like the Blackwell case, I
4 actually resisted for many years doing cases in the
5 other court system because that clearly is an
6 adversarial situation, and the stakes are very high.
7 So I would say that I was under the idea that there
8 was a different standard, not lower standard, I think
9 carries a disparaging tone, but I thought that vaccine
10 court and civil court were different situations.

11 Q Do you believe the decisions in vaccine
12 cases should be based on reliable science?

13 A I do.

14 Q You're relying on notations in the medical
15 records for your conclusion that William Mead and
16 Jordan King experienced regression, is that correct?

17 A I'm sorry. Say that again.

18 Q You're relying on notations in the medical
19 records for your conclusion that William Mead and
20 Jordan King experienced regression, is that right?

21 A At the time of the report, yes. At the time
22 of my testimony, I also have the advantage of having
23 heard the parents and seen the videos.

24 Q Okay. So you're now also taking into
25 consideration those other facts that were not

DR. MUMPER - CROSS (RESUMED)

1495

1 available to you when you prepared your report?

2 A That's correct.

3 Q In your opinion, when did William Mead's
4 regression occur?

5 A It appeared to emerge between 15 and 18
6 months of age.

7 Q And what are you relying on for that
8 calculation of the timeframe when regression occurred?

9 A The medical records that noted his
10 milestones and loss thereof.

11 Q When did, your opinion, Jordan King's
12 regression occurred?

13 A Emerging between 15 to 20 months.

14 Q And again if I could just ask you what you
15 were relying on for that calculation.

16 A At the time of this, the medical records.

17 Q Is there a specific record in either case
18 that you can point me to that you found particularly
19 compelling or conclusive on that issue?

20 A We showed, I thought, yesterday the records
21 from the pediatrician that showed before and after.
22 You know, before the skill was there, after it wasn't.
23 I also relied on Dr. Green's initial intake on both
24 children which I don't have the exact page reference
25 for, but I'm sure Scott could find it if we need to do

DR. MUMPER - CROSS (RESUMED)

1496

1 that.

2 Q Okay. And we don't need to. I was just
3 wondering off the top of your head if you knew.

4 Doctor, does it matter for your opinions in
5 these cases when the regression occurred?

6 A All the regressions that -- well, let me not
7 say "all" in medicine because there is always the
8 exception that proves the rules. The pattern that we
9 see clinically is that the regressions are typically
10 in the second year of life.

11 Having said that, I've also seen regressions
12 in children, and this is atypical for the diagnosis of
13 autism, but I have had children develop autistic type
14 behaviors after the age of three, but for purposes of
15 the classic picture I would say between -- somewhere
16 in the second year of life or thereafter.

17 Q For the children who develop autistic
18 behaviors after the age of three, would they be
19 diagnosed as autistic?

20 A No, they would not be able to be diagnosed
21 as autistic because the criteria as originally set out
22 require under the age of three, not over.

23 Q In your opinion, how much thimerosal would a
24 child need to be exposed to before it caused autistic
25 regression?

DR. MUMPER - CROSS (RESUMED)

1497

1 A It depends on a huge number of factors, so
2 I'm not able to give you a number.

3 Q Okay. Let's use the specific cases that
4 we've got available to us as examples, and we will
5 start with William Mead, and you state in your report
6 that he received 187.5 micrograms of ethyl mercury by
7 the time he was seven months old.

8 A Right.

9 Q And that is based on three Hepatitis B
10 vaccines, three DTaP vaccines, and two Hib vaccines,
11 is that correct?

12 A Yes.

13 Q Or I'm sorry, three Hib vaccines.

14 Do you know whether the Hib vaccines that
15 William Mead received were from single-dose vials or
16 multi-dose vials?

17 A Oh, actually that's a good point. I do not
18 know.

19 Q Okay, because --

20 A So it's possible that the numbers I
21 calculated are different. I mean, would have been
22 different had I had that information.

23 Q Because am I correct that single-dose vials
24 do not contain thimerosal, is that right?

25 A That is correct. So if there is evidence

DR. MUMPER - CROSS (RESUMED)

1498

1 with the Court's permission that -- it's unusual for
2 them to be single-dose vials, but if they were, I
3 would like the opportunity to revise the estimates
4 downward based on that new information.

5 Q And it would be revised downward by 75
6 micrograms, is that correct?

7 A Yes.

8 Q And did you hear Dr. Deth testify? I
9 believe you were here for his testimony the other day,
10 is that right?

11 A I was here for his testimony.

12 Q And did you hear him testify that he
13 believes there is a threshold concentration of
14 inorganic mercury in the brain necessary to cause
15 autism?

16 A Let me pull my notes on his testimony.
17 Actually, at this point in time we don't have a way, I
18 presume, of pulling the transcript up because it
19 hasn't been done yet, is that correct? Okay.

20 Okay, what I see are notes that for
21 neurologic symptoms, how much in brain concentration
22 dependant upon effects, sub-nanomoler. I don't know
23 if that was what you're referring to. Maybe you could
24 give me the sentence that he said.

25 Q Let's go at it this way. You've stated that

DR. MUMPER - CROSS (RESUMED)

1499

1 William Mead received 187.5 micrograms of thimerosal
2 by the time he was seven months old, is that right?

3 A That is correct.

4 Q And that you've testified that his
5 regression occurred between 15 and 18 months, is that
6 right?

7 A That's correct.

8 Q And he didn't receive any other thimerosal-
9 containing vaccines until he was 23 months, I believe,
10 is that right?

11 A I think that is correct.

12 Q Okay. So at the time that the regression
13 occurred according to you, he had received 187.5
14 micrograms of thimerosal.

15 A Or less.

16 Q Or less.

17 A Yes.

18 Q But let's assume that he received 187.5. In
19 your opinion, is that amount sufficient to cause
20 autistic regression?

21 A It depends on the amount of inorganic
22 mercury that resulted in his brain or affected as yet
23 undetermined systems. But to the best of my
24 knowledge, that amount would be sufficient because we
25 have no known or proven safe level of mercury, which

DR. MUMPER - CROSS (RESUMED)

1500

1 is a known neurotoxin and has other bad effects. So
2 yes, that would be a sufficient amount.

3 Q You say there is no safe level. Could one
4 thimerosal-containing vaccine expose the child to
5 enough ethyl mercury to cause repressive autism?

6 A I actually think that's theoretically
7 possible depending on the situation of the child at
8 the time. I'm concerned that if the child, for
9 example, had birth trauma or was ill at the time or
10 had oxidative stress or if you had a bunch of genetic
11 predispositions as Jill James has outlined with regard
12 to, you know, reduced folic carrier and transcavalimen
13 to enzymes or COMT enzymes or MTHFR, or if there were
14 other factors that we still don't even know about,
15 that the vulnerability of the child at the time to me
16 can play a huge role, and that's why I'm so reluctant
17 to pick some number. So, I think it is theoretically
18 possible that one TCV could harm a given child.

19 Q Am I correct that in the Blackwell case you
20 actually testified that even trace amounts of
21 thimerosal in vaccines could lead to autism, is that
22 right?

23 A I may have said that. I don't recall
24 specifically.

25 Q Do you believe that as you are sitting here

DR. MUMPER - CROSS (RESUMED)

1501

1 today?

2 A I am very concerned about trace amounts even
3 as I sit here today.

4 Q Are you aware of any studies that show that
5 trace amounts of thimerosal in vaccines cause any
6 neurological disorders?

7 A Examinations in children or animals --

8 Q Any studies at all.

9 A -- or anywhere?

10 Q In trace amounts.

11 A No.

12 Q And do you know of any medical organization
13 that would agree with the idea that trace amounts of
14 thimerosal could lead to autism?

15 A No.

16 Q Doctors, is your opinion in this case that
17 thimerosal-containing vaccines contribute to autism,
18 is that limited to regressive autism?

19 A I actually -- I actually don't know the
20 answer to that yet. I am still -- the pathology and
21 my clinical experience tends to make me think that
22 that's the case, but I'm also concerned about prenatal
23 exposures to thimerosal, and so I'm concerned that for
24 the kids whose mother got Baro, for example, with high
25 does of thimerosal, or who got flue vaccines in

DR. MUMPER - CROSS (RESUMED)

1502

1 pregnancy, that we may start seeing a shift in the
2 pattern where because of that exposure during fetal
3 development we also could be affecting children that
4 don't have a classic period of normal development.

5 But I think obviously the science is in its
6 infancy here, so I can't be sure about whether it's
7 just regressive or potentially also emerging symptoms
8 within the first year, or even at birth.

9 Q As you know, one of the factors that the
10 Special Masters are required to consider is whether
11 the onset of symptoms occurs in a medically
12 appropriate timeframe following vaccination.

13 A Yes.

14 Q In your opinion, what is a medically
15 appropriate timeframe for the onset of regressive
16 autism after a child receives a thimerosal-containing
17 vaccine?

18 A Yes, this is a difficult issue because as
19 the neuropathology as best we know at this point in
20 time shows the neuroinflammation increases over time,
21 and in a lot of the papers in animal models, which are
22 obviously limited, there can be neuroinflammation
23 documented and the animals aren't even particularly
24 symptomatic at that time.

25 So, it's a little bit different in my mind

DR. MUMPER - CROSS (RESUMED)

1503

1 from the classic vaccine injuries you all have had to
2 make decisions on in the past because then we were
3 looking at things like an acute pertussis reaction
4 where the onset was within seven days or so. Here our
5 concern is that the seed is planted, and that it's a
6 period of months or years, you know, as yet to be
7 undetermined.

8 If the neuropathology shows that the
9 inorganic mercury is going to last for decades, it's
10 very hard to put a very tight timeframe on this. One
11 of my concerns was when we originally evaluated
12 vaccines for safety we tended to do very short follow
13 ups looking for acute reactions, and unless there is
14 something that I'm not aware of I'm not aware of
15 studies that look beyond 21 days for acute reactions.

16 What we're concerned about is chronic
17 reactions that are emerging over time, and emerging in
18 different timelines, depending on the individual
19 child. So, I really have a hard time putting an upper
20 cap on the timeframe.

21 Q You just stated that it's your understanding
22 that the neuroinflammation increases over time. Did I
23 understand you correctly?

24 A Yes.

25 Q What's causing the neuroinflammation to

DR. MUMPER - CROSS (RESUMED)

1504

1 increase over time?

2 A I have no idea, or let me clarify that
3 response. That is for a neuropathologist to
4 determine, so I would defer to what is learned about
5 this subject by them as time marches on.

6 Q By neuropathologists?

7 A Right, or others who have expertise in that
8 field that goes beyond mine.

9 Q Doctor, in your report you discuss the
10 concept of genetic susceptibility.

11 A I did.

12 Q Do you believe there is a genetic
13 susceptibility to mercury?

14 A I believe there are many constellations of
15 genetic susceptibilities that would render a
16 particular individual more susceptible to mercury.

17 Q Does every child who has an ASD cause or
18 contributed to by thimerosal have a genetic
19 susceptibility to the effects of mercury?

20 A In the sense -- well, I actually don't know
21 the answer to that question because, first of all, we
22 have not obviously checked every child, and that's
23 reaching beyond the science. But the state of the
24 science at this point suggests some very intriguing
25 possibilities about genetic abnormalities in

DR. MUMPER - CROSS (RESUMED)

1505

1 biochemical pathways and enzyme function that would be
2 expected to render children at greater risk.

3 So what they are, I think, remains to
4 somewhat be determined. I try never to say, you know,
5 always or never in medicine, so I would not want to
6 say every child.

7 Q What markers do you look for to determine if
8 a child has a genetic susceptibility to mercury?

9 A There are indirect markers and it depends a
10 lot of the finances of the parents. One of the most
11 helpful ways to try to evaluate that very difficult
12 clinical problem is to look at methylation genomics.
13 That involves single nucleotide polymorphisms that
14 affect the biochemistry involving methylation and
15 transulfuration and glutathione production.

16 So, for the parents who are financially able
17 to afford the tests or who are interested in doing
18 those tests, we can look at things like
19 methylenetetrahydrofolate reductase enzymes or
20 methionine synthase-related enzymes, or the reduced
21 folate carrier enzymes, or the transcobalamin II
22 enzymes, or catecholamine O methyl transferase
23 enzymes, or glutathione S transferase enzymes. Those
24 all in that pathway that impact on the body's ability
25 to make glutathione and mobilize mercury and other

DR. MUMPER - CROSS (RESUMED)

1506

1 heavy metals.

2 So, as Dr. James' work has shown, various
3 combinations of those genetic predispositions will
4 lead to varying elevations in the odds ratio or the
5 risk factor for that particular child. So, you know,
6 sometimes it doubles the risk, sometimes it triples
7 the risk, sometimes it's even more, but this field is
8 really in its infancy, and I will much better be able
9 to answer that question after Dr. James does her
10 upcoming NIH study where she is able to look at huge
11 numbers of kids.

12 The things I've just mentioned are on, you
13 know, the population we have studied so far. That may
14 well change as we go into larger populations.

15 Q Now, you just mentioned a single nucleotide
16 polymorphisms, is that right?

17 A That's correct.

18 Q And in shorthand, those are referred to as
19 SNPs, is that right?

20 A That's correct.

21 Q So, I'm just going to call them SNPs because
22 it's easier.

23 A I'd love to do that too. Thank you.

24 Q Okay. You have not personally done any
25 research on SNPs, is that right?

DR. MUMPER - CROSS (RESUMED)

1507

1 A That is absolutely correct.

2 Q You're not a geneticist, is that correct?

3 A Absolutely correct.

4 Q So, you rely on the work of others for your
5 opinions regarding which SNPs may or may not be
6 associated with genetic susceptibility, is that right?

7 A I do.

8 Q You would agree that SNPs occur in a
9 significant percentage of the population, is that
10 right?

11 A I do.

12 Q They are not rare, is that right?

13 A We all have them, and that's what makes us -
14 - you know, I might be more susceptible to have
15 cancer, you might be more susceptible to have
16 hypertension. We all have them. That's exactly
17 right.

18 Q Okay. And specific SNPs vary across ethnic
19 groups, is that right?

20 A That's also true.

21 Q And autism has an equal prevalence among
22 ethnic groups or across ethnic groups, is that right?

23 A Is that true?

24 Q I'm asking you.

25 A I think there have actually been differences

DR. MUMPER - CROSS (RESUMED)

1508

1 across ethnic groups, and I can't recall the numbers,
2 but I was not aware that it was equal across ethnic
3 groups. I guess that's something we could put on our
4 list to try to find out.

5 Q And not every person with a SNP is autistic,
6 is that correct?

7 A Obviously correct.

8 Q You mentioned some studies that have been
9 done by Jill James. Are you aware that Jill James
10 recently published a study in which she looked at
11 polymorphisms on two different genes, the CPOX and the
12 ALAD gene?

13 A Oh, you know, I actually have not read that
14 one. When did that come out?

15 Q It just came out recently. It's
16 Respondent's Master List No. 430, and we can provide
17 you with a copy.

18 A Okay.

19 Q Are you aware that Jill James and the other
20 authors on the study looked at those genes because
21 polymorphisms and the CPOX gene had been associated
22 with elevated blood mercury levels, and polymorphisms
23 in the ALAD gene had been associated with elevated
24 blood lead levels, is that right?

25 A You know, I'm really very hesitant to

DR. MUMPER - CROSS (RESUMED)

1509

1 comment about a complex paper that I have not read.
2 Ordinarily, I would spend over an hour reading a paper
3 like this, so I don't know what the situation is when
4 I'm being questioned about a paper I haven't read, but
5 I would really rather not make opinions about it.

6 Q So you don't know --

7 A I don't know.

8 Q -- as you sit here that her hypothesis was
9 that a higher percent of autistic children would carry
10 both of those polymorphisms?

11 A I have not discussed this paper with her.
12 She is a great colleague of mine, but I have not
13 talked to her about this one so I don't know.

14 Q Okay. And you're obviously not aware that
15 her study found that the frequency of the ALAD
16 polymorphism was higher among autistic subjects but
17 the frequency of the CPOX polymorphism was actually
18 lower in autistic subjects than in controls.

19 A I did not know that but that does not
20 surprise me at all because one of the things that's
21 been so great about Jill is that she has always, as
22 she has talked to us, talked about the limitations of
23 small numbers, and the fact that the SNPs are found in
24 a lot of patients, and that only until she can get the
25 kind of NIH funding to do huge numbers will we be able

DR. MUMPER - CROSS (RESUMED)

1510

1 to make definitive comments about the genomics of
2 this.

3 Q And let me just direct your attention to the
4 highlighted portions, and the second one in
5 particular. Would you agree that at least in this
6 study the authors concluded that lead, and not
7 mercury, may be associated with autism?

8 A Oh, yeah. I would definitely acknowledge
9 that because part of my concern in these kids that I
10 tried to articulate in my report, and maybe did not do
11 a good job of, is our concern for synergistic
12 toxicities. It's clearly known that the lethal dose
13 of two toxins put together tends to be higher than the
14 individual lethal doses added linearly.

15 So, if you will recall in, I believe, both
16 of the patients that are under review in this hearing
17 they also were showing excretions of lead as well as
18 mercury. So the co-existence of other toxicities is
19 another risk factor in my mind, and so I maybe didn't
20 clarify it enough, but when we're working up children
21 for autism we also look at their lead history. We try
22 to evaluate them for lead toxicity, and the porphyrins
23 that we've talked about look for lead as well as
24 mercury. The provoked urines that we do help the
25 child excrete both lead and mercury, and the agent

DR. MUMPER - CROSS (RESUMED)

1511

1 that we usually start out with is the one that's FDA
2 approved for lead toxicity.

3 So, I have in no way in this hearing tried
4 to negate or diminish the importance of other
5 toxicities to neurologic impact on these children.

6 Q Doctor, you would agree that at this time
7 there are no established biomarkers for genetic
8 susceptibility to mercury, is that right?

9 A I would agree to that, yes. It's research
10 that we need to do and we desperately need to develop
11 biomarkers.

12 Q I want to talk now about the mercury testing
13 in both of these cases, and I apologize because we're
14 going to go through some of the same tests that you
15 referred to yesterday, but I think it's going to be
16 helpful to go through those again if you don't mind.

17 A Okay. For my preparation, will you have
18 them on the screen?

19 Q Yes.

20 A Okay.

21 Q Yes, we will.

22 First of all, let me just ask you what
23 testing methods do you believe reliably show mercury
24 levels in a person, in a human?

25 A I don't think that we have a great test to

DR. MUMPER - CROSS (RESUMED)

1512

1 reliably show the levels, and that's, I think, why we
2 do a combination of the porphyrin testing, which will
3 show us impact of heavy metals on that crucial
4 pathway, as well as trying to find the mercury or the
5 lead or whatever it is.

6 The problem is is that the easiest way to
7 find it, which would be a blood test, only works for
8 acute toxicities. So when you're looking at either
9 lead that is in the bones or mercury that is in the
10 brain, the kidney, the fat and the liver, you have to
11 use indirect measures, and the one that is useful is
12 to do the provoked specimens and see if you can
13 mobilize mercury to be excreted, implying that there
14 is a body burden. But to my knowledge, it's very
15 difficult to extrapolate from those tests to quantify
16 a body burden.

17 Q In the answer that you just gave you
18 referred to "we use these tests," and I was wondering
19 when you use the term "we", who are you referring to?

20 A Primarily me and my colleagues that are
21 affiliated with the Autism Research Institute.

22 Q So that doesn't include the general medical
23 community, is that correct?

24 A No. I'm fairly certain that except in areas
25 where naturopaths and holistic practitioners are

DR. MUMPER - CROSS (RESUMED)

1513

1 better accepted than they are in my conservative
2 community, it's not something typically in the general
3 medical community. That would be fair.

4 Q Haven't you stated in the past that blood,
5 hair and unprovoked urine testing are not reliable
6 tests for infantile exposure to mercury?

7 A Tell me that again.

8 Q Okay.

9 A Blood, yes.

10 Q Blood, hair and unprovoked urine are not
11 reliable tests for infantile exposure to mercury.

12 A That is my belief.

13 Q Okay. And that is also stated in the DAN
14 consensus statement, is that right?

15 A It may well be.

16 Q Okay.

17 A Again, it's been a long time since I worked
18 on that. I think that was five or six or seven years
19 ago.

20 Q Okay. So you helped write the consensus
21 statement, is that correct?

22 A I reviewed it and signed off on it.

23 Q Okay. And the consensus statement indeed
24 says that blood, hair and unprovoked urine tests are
25 not good methods for measuring mercury/metal toxicity

DR. MUMPER - CROSS (RESUMED)

1514

1 in autism, is that right?

2 A Yes.

3 Q And you testified just a moment ago that
4 blood testing is only reliable for acute exposures.
5 Is that right?

6 A That's correct.

7 Q So blood testing performed several weeks
8 after an exposure would no longer be a reliable
9 measure of the exposure, is that correct?

10 A That is my belief based on the studies of
11 Pichichero and others who have looked at the fact that
12 most seems to go away within about seven days, if I
13 recall the number correctly.

14 Q What is your opinion on fecal testing?

15 A I have mixed feelings about fecal testing.
16 One value is that theoretically you mobilize a lot of
17 mercury and excrete it in the feces, and so some
18 doctors will use that, and certainly back in the late
19 nineties and early two thousands that was one of the
20 only things that we had.

21 The more traditional way to look is through
22 the urinary testing. So again, I think it's a matter
23 of putting the various pieces of laboratory data,
24 realizing the inherent limitations in most of them and
25 putting it together with a clinical picture.

DR. MUMPER - CROSS (RESUMED)

1515

1 Q So there are limitations to fecal testing,
2 is that correct?

3 A Yes, I'm sorry. That would have been a
4 short way to say it.

5 Q Let's start and we'll switch up the order
6 since it always seems William Mead gets to go first,
7 we'll start with Jordan King's mercury testing.

8 A Okay. Just a second. Let me get his chart
9 open. Okay.

10 Q All right. And let's start with the Jordan
11 King Exhibit 1 at 46, and this is a hair test from
12 March 29, 2000, is that right?

13 A That is right, but I don't recall that I
14 used the hair test in my presentation because that is
15 something that I don't feel that I can rely on.

16 Q Okay. And that's correct, you did not refer
17 to this yesterday, and as you said, is that because
18 you do not think that the hair tests are reliable?

19 A That is correct.

20 Q Okay. Did you hear Dr. Aposhian testify?

21 A No, I'm sorry, I did not.

22 Q Okay. Have you reviewed his report in this
23 case?

24 A Gosh. Yeah, a long time ago back, probably
25 in the late fall.

DR. MUMPER - CROSS (RESUMED)

1516

1 Q You're aware that Dr. Aposhian believes that
2 there is a mercury efflux disorder that may be causing
3 certain children to have problems excreting mercury,
4 is that correct?

5 A That is correct.

6 Q Have you personally formed an opinion about
7 whether there is such a thing as a mercury efflux
8 disorder?

9 A I do think that there are kids that have
10 difficulty excreting and mobilizing mercury. The hair
11 tests that I think Vas was referring to there are baby
12 hair tests at time of first haircut, and that is a
13 totally different situation from the situation that I
14 had here where the child was already two.

15 I do think there is value in looking at the
16 infant hair test because they are often obtained at a
17 time when we have a documented ongoing exposure to
18 mercury through thimerosal-containing vaccines, and
19 some of the initial studies that have been done
20 initially by Dr. Holmes and Dr. Haley, and then
21 replicated at MIT were showing that there were some
22 infants that didn't seem to be able to mobilize
23 mercury into their hair, and yet they had this known
24 exposure, and they were able to mobilize other known
25 exposures like lead or antimony or arsenic or

DR. MUMPER - CROSS (RESUMED)

1517

1 whatever.

2 So, in that subpopulation of kids when
3 you're looking at that specific timing, I think that
4 hair analysis can be helpful, but not because mercury
5 is high. In that case it's helpful because the
6 mercury is low, and that, to the extent that hair is
7 an excretory organ, and you know, it's not a primary
8 excretory organ, so again that work has some
9 limitations on it also.

10 But to the extent to which it functions to
11 excrete mercury, having a low hair mercury in an
12 infant at the time of a known exposure would be
13 informative. These values, to me, later I don't feel
14 like I can really rely on to make a judgment.

15 Q So any of the hair tests in either one of
16 these cases you feel adds no support to your opinions
17 in these cases?

18 A I think that would have to be true, yes.

19 Q Following this test, and we're now going to
20 look at Jordan King Exhibit 12 at page 1, this is a
21 blood test from April 24, 2000, and it revealed that
22 his mercury levels were within the reference range, is
23 that correct?

24 A Since we've already established my ability
25 with math and birth dates, can someone tell me how old

DR. MUMPER - CROSS (RESUMED)

1518

1 the child was here? Birth date on Jordan was in '98,
2 September/October? Okay, September '97 to August
3 2000, so two years and -- two and six-twelfth years,
4 okay. Now I'm ready.

5 Q Okay. You did not discuss this test result
6 in your testimony yesterday, is that right?

7 A Yes, and the reason I did not is that the
8 mercury levels in blood are so transient.

9 Q The next test that we were able to locate in
10 the records is from May 1, 2000, and this is Jordan
11 King Exhibit 1 at 45, and this is a post-provocation
12 challenge, and you did discuss this result yesterday,
13 and you noted that his results were high, is that
14 right?

15 A That's correct. And tell me the date on
16 this, did you say May 2000?

17 Q May 1, 2000.

18 A Okay.

19 Q Did Jordan have a pre-provocation baseline
20 test done the previous day?

21 A I don't recall.

22 Q And this was a test that was ordered by Dr.
23 Green, is that right?

24 A That's correct.

25 Q And Dr. Green is a member of the Defeat

DR. MUMPER - CROSS (RESUMED)

1519

1 Autism Now, he's a DAN doctor?

2 A Yeah, we actually don't use the term "DAN
3 doctor" anymore for reasons that I articulated
4 yesterday, but he is a member of our consortia, our
5 group.

6 Q Okay. Doesn't the consensus statement say
7 that for a post-provocation test a baseline should be
8 done?

9 A And I suspect that what happened here is
10 that a clinical decision was made in the context of
11 clinical management not to continue to have the family
12 have such high expenses. One of the great
13 difficulties we have in trying to utilize these labs
14 is that they frequently are out-of-pocket expenses for
15 the family, and there are many, many times when we
16 would prefer to have more laboratory information, but
17 if the parent is buying supplements to restore the
18 nutrition of their child, and buying medications, and
19 having frequent doctor visits, in many states autism
20 is carved out as a psychiatric diagnosis.

21 So that if you go to a doctor and you're
22 autistic, you have much difficulty getting
23 reimbursement for seeing the doctor, even if you went
24 in because of, you know, diarrhea or, you know,
25 whatever the case. If it's not coded very carefully,

DR. MUMPER - CROSS (RESUMED)

1520

1 it's a huge financial burden on the family.

2 So knowing John the way that I do, I would
3 guess that he was trying to spare the family more
4 expense.

5 Q And my question was actually whether the
6 consensus statement --

7 A I'm sorry.

8 Q -- recommends that a baseline be done before
9 a post-provocation test.

10 A We do recommend that.

11 Q And doesn't the fact that a baseline test
12 was not done make the post-provocation results less
13 reliable?

14 A It is suggested that a baseline urine sample
15 be collected, followed by a provoked sample. This
16 allows one to directly compare. Comparing with an
17 unprovoked urine also helps if the person has abnormal
18 creatine levels, and creatine is often found to be
19 marginal, and low creatine can skew the urine analyte
20 results to high levels.

21 So, I guess my question would be were there
22 other times that Dr. Green had done a pre- and post-
23 provocation such that he already had a pattern and was
24 using this as more of a marker for his follow up to
25 the therapies he was providing in order to see if he

DR. MUMPER - CROSS (RESUMED)

1521

1 was getting effective excretion. That is how I would
2 interpret that.

3 Q You've reviewed Dr. Green's records, is that
4 correct?

5 A I have.

6 Q Did you see any such test in his records?

7 A My memory is that he did do a pre-
8 provocation and a post-provocation specimen. I think
9 we presented that yesterday as an example of how this
10 process works, but I'll rely on Scott to help sort
11 that out.

12 Q But at this point in time for this
13 particular test had he up to this time performed a
14 baseline sample test?

15 A I am not able to answer that without
16 referring to the records. Perhaps we can find that
17 during the break and I can address it later?

18 Q Sure. Okay, let's look at the next test and
19 this is Jordan King Exhibit 1 at page 36, and this was
20 a provoked fecal test done on May 2, 2000, and I
21 believe this is one that you did discuss yesterday, is
22 that right?

23 A Yes.

24 Q Are there other values that are elevated on
25 this test besides mercury?

DR. MUMPER - CROSS (RESUMED)

1522

1 A Yes.

2 Q And what are they?

3 A Arsenic and lead and thallium and tungsten.

4 Q Are those values at all significant to your
5 opinions?

6 A When we see other elements -- well, first of
7 all, I don't usually use fecal testing in my personal
8 practice, so I am talking a little bit out of scope of
9 my clinical experience, and so I would like to do that
10 with that caveat.

11 I'm sorry. I think I may have said lead was
12 elevated, and it looks like it's actually nickel.

13 We look for potential environmental sources
14 when we see things that are in the elevated range, and
15 I rely, since I'm not a toxicologist, with the report
16 that comes with the tests, to go through an
17 environmental history with the family and say, do you
18 have your child exposed to these potential sources.

19 We have not as yet identified, to my
20 knowledge, thallium or tungsten or nickel as areas of
21 potential concern, and I think the point here is that
22 our feces are one of the ways that we get rid of
23 environmental exposures, and so it's not unusual to me
24 that we would find other elements in the stool.

25 Q Is it normal for children to be excreting

DR. MUMPER - CROSS (RESUMED)

1523

1 elevated levels of arsenic, nickel, thallium and
2 tungsten?

3 A Is it normal? I imagine that children
4 weren't doing that as much before they were exposed to
5 grocery store chicken that had arsenic in it, or some
6 of the other environmental changes that have occurred
7 with industrialization. It probably is very common in
8 normal children. I would say it is not an ideal state
9 that we were necessarily meant to live in.

10 Q Did you see anything in Jordan King's
11 medical records that suggested to you any exposures
12 that might explain elevated arsenic, nickel, thallium
13 or tungsten?

14 A I can't recall now. In looking through
15 John's records, I think that he personally would have
16 probably asked about arsenic exposures, but I don't
17 recall if that was recorded.

18 Q Okay, let's move to the next test which is
19 Jordan King Exhibit 12 at 37, and this was a random
20 urine test taken on May 23, 2000, is that right?

21 A I can't see the date but I'll be glad to
22 take your word for it.

23 Q We'll try to blow it up for you.

24 A Yes. Yeah, no, it's fine. I take your word
25 for it.

DR. MUMPER - CROSS (RESUMED)

1524

1 Q Okay. And this was not a test that you
2 discussed yesterday, is that correct?

3 A That's correct.

4 Q Is there a reason that you didn't discuss t
5 his test?

6 A I was told that we were trying to present a
7 tight case and that we would have limited number of
8 slides, so I didn't choose to include it because it
9 says no reference range was established. It didn't
10 seem that it would be informative.

11 Q But the test results were essentially
12 normal, is that correct?

13 A Yes, it is listed in the normal column.

14 Q And the next test that we can look at is
15 Jordan King Exhibit 1, page 43, and this is a provoked
16 fecal test done on June 19, 2000, is that right?

17 A Yes.

18 Q Okay. And you did not discuss this test
19 result yesterday, is that right?

20 A I actually don't recall. We initially had a
21 larger number of these tests and we ended up not
22 showing all of them because, as you sat through it,
23 some of my testimony was repetitive, so I honestly
24 don't recall.

25 Q So this may have been on that you decided

DR. MUMPER - CROSS (RESUMED)

1525

1 just wasn't important enough to include in the scaled
2 down presentation, is that right?

3 A Perhaps. Yes.

4 Q Okay, let's look at the next test that we
5 found in the records, and this is at Jordan King
6 Exhibit 1, page 42, and this is another provoked fecal
7 test. It's done on September 11, 2000, is that right?

8 A Yes.

9 Q Okay. And where the previous test was
10 elevated, this test is no longer elevated, is that
11 right, for mercury?

12 A That's correct.

13 Q Okay. And this was again a test that you
14 didn't discuss in your presentation yesterday?

15 A And so I'm happy to do it now. There are a
16 number of reasons that that could be the case. One
17 possibility would be that at that particular point in
18 time whatever Dr. Green had done was effective in
19 decreasing the child's mercury burden.

20 Another possibility is that this was
21 provoked, correct, Mr. Johnson?

22 Q Yes, it was.

23 A Another possibility was that the agent he
24 chose at that particular time wasn't being effective.
25 So, our pattern tends to be one where at times there

DR. MUMPER - CROSS (RESUMED)

1526

1 is excretion, other times there is not. I wish I
2 could say that it correlated well with our rational
3 approach to the children, but in my experience that's
4 actually not even necessarily the case because
5 sometimes some combination of things that we are doing
6 seems to work better and we can't identify why.

7 One of the difficulties of us having
8 scientific studies in our practice is is that we're
9 trying to work on getting the kids better, so we're
10 not as good at isolating the various factors.

11 Q All right, let's look at the next test.
12 This one, I believe, is one that you discussed
13 yesterday.

14 A Correct.

15 Q And this is a provoked urine test on
16 December 19, 2000, and the cite is Jordan King Exhibit
17 1 at page 35?

18 A That's correct.

19 Q Okay. And this was a post-provocation test,
20 is that right?

21 A Yes.

22 Q And again was any baseline performed prior
23 to this test?

24 A I'm not certain, but since you're asking the
25 question I'm thinking maybe it was not.

DR. MUMPER - CROSS (RESUMED)

1527

1 Q And on this test Jordan's tin level was
2 elevated, is that right?

3 A That's correct.

4 Q Does the elevated tin level concern you at
5 all?

6 A When we see elevated tin, we look for
7 environmental exposures like whether they are getting
8 it from juice boxes or toothpastes. I don't know much
9 about tin toxicology, and I'm not aware that tin in
10 itself has been demonstrated to be a huge problem in
11 children, but just from a standpoint of trying to
12 optimize the environment, that is usually the only
13 intervention I do in my practice. Perhaps that will
14 ultimately be proven correct, or I could be wrong.

15 Q Do you know how much toothpaste it would
16 take to reach tin levels at this level?

17 A I really don't. I'm sorry.

18 Q And any idea how many juice boxes a child
19 would need to consume to get this much tin?

20 A Absolutely no idea.

21 Q Okay. Let's look at the next test, which is
22 at Jordan King Exhibit 7, page 36, and this is a hair
23 test, correct?

24 A It is.

25 Q Okay. And as you testified earlier, you

DR. MUMPER - CROSS (RESUMED)

1528

1 don't find hair tests particularly reliable, is that
2 right?

3 A At the older ages, that is correct.

4 Q All right, the next test that we found was
5 at Jordan King Exhibit 9, page 35, and this was from a
6 different lab. The prior lab was [Lab name redacted],
7 I believe, and this is Great Smokies.

8 A Yes.

9 Q And this is another hair test, is that
10 right?

11 A It appears to be so, yes.

12 Q Okay. So again the reason that you didn't
13 discuss it yesterday was because you don't find the
14 hair test to be reliable?

15 A That's correct.

16 Q Okay. Let's look at the next test, which is
17 at Jordan King Exhibit 1, page 55.

18 A Okay.

19 Q And I believe this is one that you discussed
20 yesterday.

21 A I did.

22 Q Okay. And this is a provoked urine test
23 from [Lab name redacted], is that right?

24 A Yes.

25 Q And the date on this is February 12, 2003,

DR. MUMPER - CROSS (RESUMED)

1529

1 correct?

2 A Yes.

3 Q I believe in relation to this test you noted
4 that seven times -- that the mercury was at seven
5 times the top of the reference range. Is that right?

6 A That's right, and I hope I did the math
7 right, yes.

8 Q Okay. And again no baseline was conducted
9 before this test, is that correct?

10 A That's correct.

11 Q And here the amount of tin excreted was 20
12 times the top of the reference range, is that right?

13 A Yeah.

14 Q Okay. But do you have any concerns about
15 that tin level?

16 A Well, as I just testified, I'm not aware of
17 biologic mechanisms about tin that concern me at this
18 point in time. They may be there and I could be
19 overlooking an area where I should be intervening with
20 the kids, but I have not -- other than trying to
21 control the environment, I have not been addressing
22 tin in our patients.

23 Q Okay. The next test is at Jordan King,
24 Exhibit 17, page 9. This is one from July 28, 2003,
25 is that right? We just lost it. There we go.

DR. MUMPER - CROSS (RESUMED)

1530

1 A Yes, it appears to be so.

2 Q Okay. And this was actually a pre-
3 provocation urine test, is that right?

4 A On the left pre, and on the right post.

5 Q Okay. So we've got the post-provocation
6 urine test on the right, is that correct, and that was
7 from the next day?

8 A That's correct.

9 Q Okay. The pre-provocation test, mercury was
10 in the reference range, is that right?

11 A That's correct.

12 Q And in the post-provocation test, the
13 mercury levels were actually below the detection
14 limit, aren't they?

15 A That's correct.

16 Q So they were lower after provocation?

17 A Yes.

18 THE WITNESS: And if I could ask the Special
19 Masters, could I go off the record for a moment to
20 discuss this?

21 SPECIAL MASTER HASTINGS: I'm not sure why
22 we would want to discuss something off the record.
23 Let me first, before we get to that, you've got two
24 exhibits on two pages of the exhibit on the screen.

25 MR. JOHNSON: That's correct.

DR. MUMPER - CROSS (RESUMED)

1531

1 SPECIAL MASTER HASTINGS: Is that page 9,
2 the pre-test, and page 16, the post-test?

3 MR. JOHNSON: Yes.

4 SPECIAL MASTER HASTINGS: Can you tell us,
5 Doctor, what you're thinking, why you want to go off
6 the record? I guess I don't understand.

7 THE WITNESS: Because I have some concerns
8 about the reliability of this test, and since I am
9 concerned about on the web and in an official document
10 being perceived as saying something potentially
11 uncomplimentary about a business, I am concerned about
12 the legal consequences of me doing so for my
13 organization.

14 SPECIAL MASTER HASTINGS: Well, I appreciate
15 that concern. On the other hand, we have got evidence
16 in an important court case here, and the government
17 may be relying upon this evidence --

18 THE WITNESS: Okay.

19 SPECIAL MASTER HASTINGS: -- to disprove
20 your theory.

21 THE WITNESS: Okay.

22 SPECIAL MASTER HASTINGS: I think we can't
23 rely on any evidence if we were to go off the record
24 and you were to talk to us.

25 THE WITNESS: Okay.

DR. MUMPER - CROSS (RESUMED)

1532

1 SPECIAL MASTER HASTINGS: I couldn't rely on
2 that anyway. It wouldn't do you any good. So if you
3 think that this test thing is unreliable --

4 THE WITNESS: I didn't say that.

5 SPECIAL MASTER HASTINGS: -- I think you
6 should tell us on the record.

7 THE WITNESS: Okay. In that case, it is my
8 best medical judgment that this particular laboratory
9 testing is unreliable.

10 BY MR. JOHNSON:

11 Q Does that include all testing from this
12 laboratory?

13 A No. I would not say all testing from this
14 laboratory.

15 Q Which tests from this laboratory would you
16 find reliable?

17 A I'm not sure at this point in time. We are
18 currently taking a split sample reliability approach
19 to replication of these results. So until I have that
20 data, I really cannot answer the question.

21 Q So Great Smokies is one of the labs that you
22 have included in the research project that is ongoing
23 in your practice? Is that what I'm hearing you to
24 say?

25 A That's correct.

DR. MUMPER - CROSS (RESUMED)

1533

1 Q And at this time, based on the lack of
2 results that you've got at this point, you wouldn't be
3 comfortable relying on any testing from Great Smokies,
4 is that right?

5 A Not in a matter of this much importance,
6 that's correct.

7 Q Thank you. So that was all of the test
8 results that we were able to find for Jordan King, and
9 it appears that out of all of the tests you cited for
10 that were supportive of your opinion, is that correct?

11 A Correct.

12 Q Okay, let's talk about William Mead's
13 mercury testing.

14 THE WITNESS: Could I ask the Special
15 Masters if this might be an appropriate time to take a
16 break since we're moving from one child to another?

17 SPECIAL MASTER CAMPBELL-SMITH: It is about
18 20 of roughly, 18 minutes before 11. It's a little
19 earlier but because you're the one who is going to be
20 doing the chatting, we are happy to go ahead now if
21 that makes sense, and I guess we will give ourselves
22 until 11:00.

23 THE WITNESS: Thank you so much.

24 SPECIAL MASTER CAMPBELL-SMITH: Okay, we are
25 in recess.

DR. MUMPER - CROSS (RESUMED)

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1 (Whereupon, a short recess was taken.)

2 SPECIAL MASTER CAMPBELL-SMITH: We are back
3 on the record. Please be seated.

4 There have been some comments and
5 observations about the warmth of the courtroom. I
6 personally am enjoying it, but I understand --

7 (Laughter.)

8 SPECIAL MASTER CAMPBELL-SMITH: -- Special
9 Master Hastings has demonstrated that we will invite
10 counsel to remove your jackets if you are in danger of
11 heat exhaustion, with that invitation and those others
12 who are here.

13 I also understand that Mr. Mead is leaving
14 this morning at 11:30, and I want to take the
15 opportunity, as has been said a number of times during
16 this proceeding, to thank you for your participation,
17 for sharing your experience with us. I understand
18 that Ms. Shirley will be here with us through the day,
19 but we do want to thank you again for permitting your
20 son's case to go forward in such a public way.

21 MR. MEAD: Thank you.

22 SPECIAL MASTER CAMPBELL-SMITH: With those
23 preliminary matters, we will resume where we were
24 which I believe is the cross, and with particular
25 focus on William Mead.

DR. MUMPER - CROSS (RESUMED)

1535

1 MR. JOHNSON: That's correct, Special
2 Master.

3 SPECIAL MASTER CAMPBELL-SMITH: Thank you.

4 BY MR. JOHNSON:

5 Q Dr. Mumper, we'll start with the first test
6 that we were able to locate in the medical records for
7 William Mead, and this is William Mead Exhibit 5 at
8 page 5, and this is a blood test, correct?

9 A That is correct.

10 Q Okay. And this test is out of the reference
11 range for mercury, is that right?

12 A That is correct.

13 Q Okay. And I believe this was the test that
14 you referenced yesterday during your testimony, is
15 that right?

16 A That is correct.

17 Q Now, this test was taken on January 8, 2001,
18 is that right?

19 A Right.

20 Q And William's last vaccination containing
21 thimerosal was on April 12, 2000, which was
22 approximately eight months earlier, is that right?

23 A Right.

24 Q Since you've testified that mercury or that
25 ethyl mercury from thimerosal only stays in the blood

DR. MUMPER - CROSS (RESUMED)

1536

1 for a matter of weeks, is it your position that this
2 test reflected a more recent mercury exposure?

3 A That would be my concern, and that was one
4 of the reasons that I included in my reports the
5 concern about ongoing environmental toxicities. It is
6 known that in the Pacific Northwest there are concerns
7 about environmental mercury exposures, so it leaves
8 the door open for environmental exposures.

9 Q And what specific environmental exposures
10 are you referring to? From what source?

11 A Coal-burning power plants would be one
12 potential source; being located next to a mercury mine
13 would another potential source.

14 Q Okay. And those would not be ethyl mercury,
15 is that right?

16 A Right.

17 Q Okay, so --

18 A I think that -- at least I intended to
19 testify that when these tests say "mercury" they are
20 not specie specific.

21 Q Okay. And I guess I want to make sure that
22 your opinion in this case is that is it the ethyl
23 mercury that's causing the problem or is it the
24 inorganic mercury that is causing the problem?

25 A My concern is the inorganic mercury that is

DR. MUMPER - CROSS (RESUMED)

1537

1 in the brain and in other tissues of the body.

2 Q Okay. So this test being eight months after
3 the most recent thimerosal-containing vaccine in your
4 opinion would not be a reliable measure of mercury
5 from the vaccination. Is that a fair statement?

6 A Yeah. To the best of my knowledge, I think
7 that is probably true.

8 Q Let's look at the next test, which is
9 William Mead Exhibit 5, page 3, and this is a post-
10 provocation urine test from January 22, 2001, is that
11 right?

12 A Yes.

13 Q And this indicates that mercury was out of
14 the reference range, correct?

15 A That's correct.

16 Q Okay. Was there a baseline test performed
17 prior to this post-provocation testing?

18 A I don't recall.

19 Q In the medical records, it indicates that
20 William's parents referred to this test and said that
21 William's test demonstrated extremely high amount of
22 mercury in his system for which he will require
23 chelation.

24 My question is, would you in your practice
25 rely on a single post-provocation urine test where no

DR. MUMPER - CROSS (RESUMED)

1538

1 baseline was performed to determine that a child
2 required chelation?

3 A I am not as experienced in chelation as John
4 Green is, and I actually tend to do many more things
5 first than more experienced environmental doctors. So,
6 I probably would not have even gone to chelation quite
7 that early in the course of William's care. But I
8 would yield to Dr. Green's greater level of
9 experience.

10 Q Does the fact that William excreted a large
11 amount of mercury after his first post-provocation
12 test indicate that he did not have any problems
13 excreting mercury?

14 A Did the fact that he excreted it with
15 provocation indicate that he does not have problems
16 excreting it, is that the correct --

17 Q On the first provocation, the very first
18 time that he had a post-provocation test done he
19 excreted a large amount of mercury according to the
20 records that we have, is that correct?

21 A That's correct.

22 Q Does the fact that after the very first test
23 he excreted a large amount of mercury, does that
24 indicate that he did not have problems excreting
25 mercury?

DR. MUMPER - CROSS (RESUMED)

1539

1 A That tells me that with an agent designed to
2 mobilize mercury he was able to excrete it. To my
3 knowledge, that doesn't really inform us about his own
4 innate capabilities.

5 Q In Dr. Green's records, he makes a
6 statement, and this is at William Mead Exhibit 5, page
7 89, and Dr. Green states that, "William excreted no
8 mercury with challenge while he clearly has a mercury
9 load to deal with."

10 Is that consistent with the post-provocation
11 test result?

12 A Okay.

13 Q And this is from a record dated --

14 A February 12th.

15 Q Right. And the test that was done was
16 January 22, 2001.

17 A Okay, and the January '01 was the one that
18 did show a lot of mercury on provocation, the one we
19 just discussed, is that correct?

20 Q Yes.

21 A Okay. You know, I'm not sure what he means
22 by that. Could you flip the other lab back up for
23 just a second?

24 Oh, I'm sorry. Now I understand -- well, I
25 don't exactly understand what he meant, but one thing

DR. MUMPER - CROSS (RESUMED)

1540

1 that makes this difficult to interpret as flashed is
2 that John has made a note that this is a spot urine
3 and not a 24-hour urine, and I apologize for not
4 seeing this a moment ago.

5 So, John is saying that because that
6 particular specimen, and you can imagine how difficult
7 it is to get urine from these kids, was not obtained
8 in a 24-hour fashion. I think he's saying that he
9 can't rely on it, sorry, as showing the kind of
10 excretion that they were saying, because they
11 corrected it for creatinine and volume, and I
12 apologize to the Court because I had talked about the
13 issue that when you have the creatinine out of the
14 normal range, the markers are done in order to
15 compensate for your creatinine.

16 So, if you are compensating for it, assuming
17 it's a 24-hour urine, and it's indeed a spot urine,
18 you can't apply those same standards.

19 Q So would spot urine samples generally not be
20 reliable for showing mercury levels?

21 A They're limited. You know, we try to get as
22 long samples as we can, but understandably we are
23 limited by what the parents are able to collect. Yes,
24 they are limited utility.

25 Q Thank you. Let's look at the next test

DR. MUMPER - CROSS (RESUMED)

1541

1 which is William Mead Exhibit 5, page 34, and is this
2 a blood test?

3 A This is a -- erythrocyte mean red blood
4 cell, so this is a test of the blood done in June '01.

5 Q All right. And was this a test result that
6 you discussed yesterday?

7 A I don't recall. Can you tell me if I did?

8 Q I believe it was.

9 A Okay, thanks.

10 Q And I was wondering if you could tell me
11 what you view as the significance of this result.

12 A Actually, you've just covered up the part
13 that I viewed as significant. I believe that I was
14 using this to talk about the low essential elements
15 and how we use these blood tests to monitor the safety
16 of chelation so that we can use them for replenishing
17 supplements.

18 I also may have pointed out the low zinc and
19 the low selenium which we pay particular attention to
20 when we're replenishing, and I may have made a comment
21 that since the mercury was not in the very elevated
22 range, that I would not see evidence of ongoing high
23 mercury exposures.

24 Q Now, explain for me why in this test you
25 don't find the mercury results particularly

DR. MUMPER - CROSS (RESUMED)

1542

1 significant whereas for the first test we looked at,
2 the January 8, '01, test, you did the mercury level
3 that was elevated there significant?

4 A Can you put them side by side? They were
5 both red blood cells done by the same laboratory, is
6 that correct?

7 Q I believe so. That's Exhibit 5 at 5. And I
8 asked a vague question and let me try to be a little
9 bit more specific.

10 A Right.

11 Q You found the mercury levels when they are
12 elevated significant, but you didn't really find the
13 ones where they were normal as significant, and I'm
14 wondering how those relate to your opinion in this
15 case that thimerosal and vaccines cause William Mead
16 to have autism.

17 A Okay, now I understand.

18 When we red blood cell essential elements
19 test that also includes the toxic elements at the
20 bottom, we are primarily using it for the top half of
21 the test, the part that looks at the essential
22 elements. The only thing that the toxic elements part
23 at the bottom tells me is whether there is concern
24 that there is a potential ongoing exposure.

25 Red blood cells typically only live about

DR. MUMPER - CROSS (RESUMED)

1543

1 120 days, and obviously we don't know for any
2 particular cell, you know, what day of their life we
3 were measuring them on here, so we use a rough
4 estimate. When we look at the toxic part of the red
5 blood cell essential elements, we use a rough estimate
6 that it's telling us something about potential
7 exposures within the previous or surrounding three-
8 month period max.

9 We specifically are not using the red blood
10 cell test to try to estimate body burden, and this
11 ties to the fact that we believe that blood tests that
12 look at mercury are only valuable for acute
13 toxicities, which is not what we're alleging here.
14 We're not alleging acute toxicity from mercury
15 poisoning, and here, even though the level initially
16 was at the 97th percentile, we're not alleging that
17 that is evidence of this child having a body burden of
18 mercury that's above the 99th percentile. We're only
19 using the bottom part of this test to look at the
20 possibility of ongoing exposures.

21 Q And you during that explanation used the
22 term "we" a number of times, and again is "we"
23 referring to your colleagues at the Autism Research
24 Institute?

25 A Yes. Thank you. I'm sorry.

DR. MUMPER - CROSS (RESUMED)

1544

1 Q Let's look at the next test, which is
2 William Mead Exhibit 15, page 98, and this was after
3 William had been on and off chelation for almost a
4 year at this point, and this is an unprovoked fecal
5 metals test, correct?

6 A Actually, would you mind blowing up the
7 bottom? Yes, that's correct.

8 Q And here mercury was in the reference range,
9 correct?

10 A That is correct.

11 Q And the date of this was December 26, 2001?

12 A Yeah. I believe you.

13 Q Okay. I don't believe you discussed this
14 test result yesterday, and I was wondering if it was
15 at all significant to your opinions.

16 A I tried to make the point that there is a
17 wide ebbing and flowing of various excretions of
18 mercury both in the stool and in the urine, and that
19 we expect to see that and that we expect to see it
20 fluctuate. So the fact that this was in the normal
21 range at this point in time does not deter me from my
22 overlying opinion, no.

23 Q Okay. The next test is William Mead Exhibit
24 12, page 8, and this was, I believe, a hair test on
25 May 8, 2002, is that correct?

DR. MUMPER - CROSS (RESUMED)

1545

1 A That's correct.

2 Q Okay. And just for the record, as you've
3 testified earlier, you don't find hair tests
4 particularly reliable, is that right?

5 A That's correct. Again, the best technology
6 available back in the year 2000s, but we know now not
7 as valuable as we would like.

8 Q Right. And just to be clear, I think you
9 said that it's not reliable based on the age; that for
10 infants it might be reliable but not for older
11 children, is that right?

12 A Exactly.

13 Q The next test that we found in the records
14 was at William Mead Exhibit 15, page 97.

15 A Yes.

16 Q And I believe this is a test that you
17 discussed yesterday.

18 A Yes.

19 Q This is an unprovoked urine test on July 10,
20 2002, is that correct?

21 A Correct.

22 Q And here the mercury was within the
23 reference range, is that right?

24 A That's correct.

25 Q Okay. Was a baseline test performed prior

DR. MUMPER - CROSS (RESUMED)

1546

1 to this test? Do you know?

2 A I'm sorry. Didn't we decide this one is
3 non-provoked, so wouldn't that be the baseline?

4 Q Absolutely. Thank you for correcting me.

5 A Okay.

6 Q So this was the unprovoked urine test, and
7 then was there a provoked test performed after this?
8 Do you know?

9 A I don't recall.

10 Q Okay. Because the next test that we were
11 able to find in the records was on August 14, 2002,
12 and this is at William Mead Exhibit 15, pages 87 to
13 88.

14 A Yes.

15 Q And this is a provoked urine test, is that
16 right?

17 A Actually, I'm having trouble finding where
18 it says -- yeah, information regarding pre- or post-
19 provocation was not provided. I thought that I had
20 discussed that.

21 Q You did.

22 A Oh, okay.

23 Q So am I correct that the test, the
24 unprovoked test on 7-10-200, July 10th of 2002, that's
25 not a normal -- the fact that the post-provocation

DR. MUMPER - CROSS (RESUMED)

1547

1 test was done over a month later, that's not the
2 normal protocol, is that correct?

3 A Okay. First of all, do we know that this
4 was provoked or unprovoked because I think I can't
5 know that.

6 Q Okay. So you don't know one way or the
7 other?

8 A Right.

9 Q Okay.

10 A Right.

11 Q But assuming that it were a provoked test,
12 the fact that an unprovoked test was performed a month
13 prior, that is not consistent with the recommendation
14 in the consensus statement, is that right?

15 A Well, let me clarify that the recommendation
16 in the consensus statement, as I recall, says it is
17 suggested, and the issue at that point in time, and I
18 can't remember when the norms were tightened up, but
19 the concern at that point in time had to do with this
20 issue of normalizing for creatinine.

21 So if I could call your attention to the
22 very top of the chart, this one is comparing it as a
23 ratio to grams of creatinine. So whereas when we
24 wrote the consensus statement in like '99 or 2000, we
25 wanted to make sure that that happened.

DR. MUMPER - CROSS (RESUMED)

1548

1 I think that the labs that we rely on had
2 since -- well, I shouldn't say that because I don't
3 know when they started doing that, but my point is
4 that we were trying to deal with the creatinine issue.
5 This seems to deal with the creatinine issue.

6 Q Ma'am, when you say "this seems to deal with
7 the creatinine issue" --

8 A Doing the test such that it's reported out
9 as in relationship to the creatinine as opposed to,
10 for example, if I had a urine test and the lab
11 reported back to me that the mercury level was, you
12 know, 860, it would mean nothing to me until I knew
13 what units of measurement they were talking about, and
14 what it was in relation to creatinine. They do that
15 here.

16 Q Okay. Are there any other metals out of the
17 reference range on this test?

18 A Cadmium, cecum, chromium, copper,
19 tetalinium, lithium, manganese, which may have been
20 related to supplementation, maliptium, molybdenum,
21 possible nickel, and can you scroll back up to show
22 the name of the laboratory? Yes.

23 So based on what I said earlier, you
24 understand that we are doing ongoing reliability
25 testing.

DR. MUMPER - CROSS (RESUMED)

1549

1 Q So this test, William Mead Exhibit 15, pages
2 87 and 88, at this time it's not a test that you might
3 rely on, is that correct?

4 A That would be fair.

5 Q The next test that we found was at William
6 Mead Exhibit 15, page 77, and this is a November 7,
7 2002, provoked urine test, is that correct?

8 A Yes.

9 Can you tell me if this is one that I showed
10 yesterday or not?

11 Q I don't believe that you did discuss this
12 one yesterday.

13 A Okay.

14 Q Was a baseline test performed prior to this
15 one?

16 A I don't know but I think that the reason
17 that I may not have included that is because I didn't
18 think that it would be informative based on the
19 reasons I have already stated.

20 Q And remind me what those reasons are again.

21 A That I find that there are other
22 laboratories that seem to have more specialized
23 expertise in the toxicology area.

24 Q Okay, so it's the lab and not the test?

25 A Right.

DR. MUMPER - CROSS (RESUMED)

1550

1 Q The next one that we found was from
2 September 8, 2003, and this is William Mead Exhibit 15
3 at 67. This is not in the same lab, correct?

4 A Yeah. And [Lab name redacted], at least
5 based on my evaluation, seems to have a very good set
6 of toxicologists on board, so at least to the extent
7 that I as a general pediatrician can judge the
8 competence of the toxicologists, Dr. Quig has been able
9 to answer every question I've ever asked him about
10 toxicology. So I have relatively more faith in this
11 lab's expertise.

12 Q This test, I believe, was one that you did
13 not discuss during your presentation yesterday. Is
14 there a reason why you did not find it significant?

15 A I think that it was probably that it was yet
16 another urine toxic metals from the same lab that shows
17 an elevated mercury, and I thought that we had sort of
18 established that as a pattern.

19 Q And do you know whether a baseline test was
20 performed prior to this test?

21 A No. Since you have this up here though, I
22 will say that one of our concerns about thimerosal-
23 containing vaccines has to do with the co-existence of
24 aluminum which we regard as a potential synergistic
25 toxicity. So, one of the things that I do when I see

DR. MUMPER - CROSS (RESUMED)

1551

1 a high aluminum, again it's just an environmental
2 measure, is to talk to the parents about whether they
3 use aluminum-containing cookware, whether the child is
4 taking a lot of aluminum-containing antacids, or
5 whether they are using a lot of aluminum foil.

6 Q And when you say "we", I believe that there
7 is a synergistic relationship between aluminum and
8 mercury, who are you referring to?

9 A I'm talking about those of us that work with
10 ARI and Defeat Autism Now.

11 Q Okay. And has ARI done any studies to
12 determine whether there is in fact such a synergistic
13 relationship?

14 A I'm not sure if we had, but I would be
15 surprised if we used our limited resources to do that
16 because that is something that's been very well
17 documented in numerous papers throughout the
18 toxicology literature. So I think we would regard
19 that as a question that's already been addressed
20 scientifically.

21 Q The next test that we were able to find was
22 at William Mead Exhibit 15, page 120.

23 A Yes.

24 Q And this is a post-provocation urine test
25 from February 10, 2004, correct?

DR. MUMPER - CROSS (RESUMED)

1552

1 A Yes.

2 Q And I believe this is another one that you
3 discussed during your testimony yesterday, is that
4 correct?

5 A Yes.

6 Q And do you know whether a baseline test was
7 done prior to this testing?

8 A I don't recall, but again, because the
9 results are being reported by a lab that I trust in a
10 way that reports the results in ratio to creatinine,
11 it essentially obviates the concern that we expressed
12 in the paper that we wrote back in '99.

13 Q Is there no other reason to perform a
14 baseline test other than to deal with the creatinine
15 issue?

16 A You know, actually, I don't know the answer
17 to that not being a toxicologist.

18 Q The next test that we found was, I believe,
19 another one that you discussed. This is William Mead
20 Exhibit 15 at page 118.

21 A Yes.

22 Q And this is a test dated December 6, 2004,
23 is that right?

24 A Yes.

25 Q Okay. And is this a post-provocation test?

DR. MUMPER - CROSS (RESUMED)

1553

1 A It appears to be so.

2 Q Okay. And just if you know, was a baseline
3 test performed prior to this test?

4 A I do not know.

5 Q And the next test that we were able to find
6 was at William Mead Exhibit 15, page 116, and this is
7 a November 12, 2005, test, is that correct?

8 A Yes.

9 Q And here lead and mercury were high, is that
10 correct?

11 A That's correct.

12 Q Okay. Is this a post-provocation test?

13 A Yes, it is.

14 Q And to your knowledge, was any baseline
15 performed prior to this test?

16 A I do not know. Again, I would be surprised
17 if John would continually do that because each of the
18 tests would have been out-of-pocket costs for the
19 families, and I don't understand why he would feel the
20 need to do it repetitively since his results were
21 being reported out norm to creatinine.

22 Q Would the test be more reliable if a
23 baseline had been done?

24 A Would the test be more reliable? You would
25 expect the baseline to either show that the child was

DR. MUMPER - CROSS (RESUMED)

1554

1 not excreting or may be excreting. To my knowledge,
2 the ones that we have seen have shown benefit with a
3 provocation challenge.

4 So, I actually don't think that for the
5 purposes Dr. Green was using this test it would have
6 enhanced the reliability significantly in the clinical
7 situation to have to compare it to pre-provocation.

8 Q If the pre-provocation test showed that the
9 child was excreting mercury, then that might indicate
10 that there was no need for chelation, wouldn't it?

11 A Perhaps.

12 Q The next test that we were able to find was
13 Petitioner's Exhibit 15 at 114, and again this was a
14 post-provocation urine test, is that correct?

15 A Yes.

16 Q And here mercury was in the reference range,
17 is that right?

18 A That's correct.

19 Q Okay. And then the next test that we were
20 able to find, and this is actually the last one that
21 we were able to find, was William Mead Exhibit 15 at
22 page 112, and this is a test from February 22, 2007,
23 and to your knowledge, was a baseline test performed
24 prior to this test?

25 A I do not recall.

DR. MUMPER - CROSS (RESUMED)

1555

1 Q What kind of chelation results would you
2 expect to see in a person without heavy metal
3 poisoning?

4 A I don't know that I know the answer to that
5 question. Not being a toxicologist, I am concerned
6 that we all do have body burdens of various
7 substances. So one of the areas of research that
8 perhaps would be informative would be to do such a
9 study.

10 Q And I believe you testified yesterday, and
11 alluded to again this morning, that there is really
12 not a standard pattern that you can identify for these
13 kinds of test results, is that correct?

14 A That is correct.

15 Q And I think you testified yesterday that
16 sometimes you get lead when you administer DMPS, is
17 that correct?

18 A Occasionally, more typically you see more
19 lead with DMSA, but --

20 Q Because DMSA is actually more associated
21 with excreting lead, isn't that correct?

22 A Right. Right.

23 Q Okay. And DMPS is actually what you would
24 administer more specifically for mercury, is that
25 right?

DR. MUMPER - CROSS (RESUMED)

1556

1 A That's correct.

2 Q And sometimes you see tests where you've
3 administered DMPS, and you would expect to see more
4 mercury, but you get more lead, is that right?

5 A Right, and one of my questions about that
6 has to do with the other things we're doing for the
7 child at the time. So I think I mentioned yesterday
8 that I tend not to use chelation very much at all, but
9 work more on the body's own mechanisms that are
10 naturally intended to do that.

11 So, I think the thing we have may have lost
12 sight of here is that at the time that Dr. Green was
13 trying to use various chelating agents to the best of
14 his ability, he was also doing the much more
15 fundamentally important work in my mind, which was
16 providing the co-factors for the body's methylation
17 and transulfuration biochemistry.

18 By giving supplements, specifically things
19 like magnesium, or pyridoxal biphosphate, or methyl
20 calabamin, or folate, all of those things are working
21 on potentiating, to use the DOJ's favorite word,
22 methylation biochemistry and sulfation.

23 And so we can't possibly control for how
24 much of the body excreting lead or mercury at any
25 given time is going to be a direct correlation of what

DR. MUMPER - CROSS (RESUMED)

1557

1 agent we picked because there is so many other factors
2 that are going on with the body, and John Green was
3 doing so many other fundamentally very important
4 things in these children that I think it's very
5 misleading to try to make too much from a pattern that
6 fluctuates over time with different chelating agents
7 when so much else was also being done to try to heal
8 him, if that makes sense.

9 Q And, Doctor, just for the record, potentiate
10 was your word. That's not the DOJ word.

11 A No, it was a bad joke. Sorry.

12 Q Doctor, since there is no standard pattern
13 and we've seen with both William Mead and Jordan King
14 that their results fluctuated, is there any pattern
15 that you can imagine that you would interpret as not
16 being supportive of mercury toxicity?

17 A I have told that to parents on the basis of
18 their test results, and again I'm really hesitant to
19 try to layout some quantifiable pattern because the
20 science is still evolving, and I don't have it clearly
21 established to be able to make a generalization.

22 So, what I can say is that when I have taken
23 a thorough history, examined a child, looked at the
24 symptoms, suspected that mercury or lead or other
25 toxicities might be an issue, and then I get labs that

DR. MUMPER - CROSS (RESUMED)

1558

1 come back and don't seem to support that hypothesis,
2 then what I do is move on to other possibilities or
3 move that down lower on my list and move other things
4 up higher on my differential diagnosis. So, it very
5 much depends on the other labs that are involved.

6 Q Doctor, as you know, there are approximately
7 5,000 of these cases in this program, and the evidence
8 that's being introduced into this proceeding is going
9 to be applied to those other cases.

10 Are you saying that there is no pattern that
11 you can identify that you would not interpret as not
12 being supportive of mercury toxicity?

13 A No. I was saying that -- I thought you were
14 asking me to make a judgment based on patterns of
15 excretion related to chelation. Was that correct?

16 Q That is correct, and I'm wanting to know if
17 there is a pattern that you would find to be not
18 supportive of mercury toxicity.

19 A Patterns in which the children were able to
20 show that they had good oxidative stress markers at
21 the time of thimerosal-containing vaccines,
22 glutathione working well, methylation biochemistry
23 working well, those kinds of things. I think there is
24 very limited utility for me as a pediatrician to
25 propose a toxicological benchmark for your upcoming

DR. MUMPER - CROSS (RESUMED)

1559

1 decisions. So, I think that you will need to rely on
2 the toxicologists to try to help identify that, and I
3 would have to take myself out of the running as being
4 not the person to deal with that part of the case.

5 Q But, Doctor, these are clinical tests,
6 aren't they?

7 A Yes, and by very definition clinical means
8 that I'm using them in context with the history and
9 the responses of the child.

10 Q And so you would still leave it to the
11 toxicologists to testify as to the pattern that would
12 be not supportive of mercury toxicity?

13 A I thought that your question to me was what
14 pattern would I propose as a general pediatrician,
15 based on my clinical experience, that the government
16 and others should use to decide 5,000 cases, and that
17 is what I'm saying I don't want to do on the stand in
18 this kind of a hearing. I think that that requires
19 much more input and thought.

20 Q You do understand that these are test cases,
21 correct?

22 A I do.

23 Q In fact, I believe you were the one who was
24 actually responsible for selecting the test cases, is
25 that right?

DR. MUMPER - CROSS (RESUMED)

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1 A That is correct.

2 Q Did you not have an understanding when you
3 were doing that that this evidence that was introduced
4 into these test cases would be applied to the other
5 5,000 cases in the program?

6 A I did understand that. This is my first
7 time testifying. I honestly did not anticipate that I
8 would be asked to propose the kind of pattern that
9 you're asking me to on the stand. And if that's part
10 of my responsibility, I would be -- I cannot do that
11 on the spur of the moment.

12 Q Okay. Doctor, a number of the tests that we
13 looked at and that you relied on were from the lab [Lab
14 name redacted], correct?

15 A That's correct.

16 Q And that was the lab that you said that
17 based on your experience you had a particular amount
18 of confidence in, is that right?

19 A That's correct.

20 Q And do you send samples in from your own
21 practice to [Lab name redacted]?

22 A I do.

23 Q How important is it to you that the labs
24 that you rely on use reliable scientific techniques to
25 test samples?

DR. MUMPER - CROSS (RESUMED)

1561

1 A It is important to me.

2 Q And when you consider the reliability of a
3 lab, how important is it to you that the lab uses
4 consistent reference values when reporting lab
5 results?

6 A It doesn't matter to me if they use
7 consistently the same reference ranges as long as on
8 any given test they are telling me what the normal
9 reference ranges are. I think that there are
10 indications over time when by virtue of a change in
11 the technique in the lab the reference ranges might
12 change. That happens with lab core all the time,
13 well, not all the time, but you know, not unusually.
14 So what would be important to me would be that the
15 reference ranges are defined.

16 Q How important is it to you that a lab avoids
17 contamination of both samples and controls?

18 A I would that would be important.

19 Q And how important is it to you that a lab
20 uses sterile solutions such as saline?

21 A Sterile saline. It would be important.

22 Q And how important is it to you that a lab
23 replaces the saline if it known to be non-sterile?

24 A That would be important.

25 Q And how important is it to you that a lab

DR. MUMPER - CROSS (RESUMED)

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1 uses uncontaminated assays?

2 A That would be important.

3 Q And how important would it be to you that a
4 lab replaces unexpired reagents?

5 A That would be important.

6 SPECIAL MASTER VOWELL: Is it unexpired?

7 THE WITNESS: Oh, I'm sorry. I substituted
8 expired in my mind. Sorry.

9 MR. JOHNSON: Sorry. I misspoke.

10 THE WITNESS: Thank you.

11 BY MR. JOHNSON:

12 Q If [Lab name redacted] has problems with all
13 of these areas and others, would you still trust their
14 lab results?

15 A I would want to know the details about that
16 and the timing. I have only really been evaluating
17 them in the last several years on the basis of what I
18 can judge as a clinician.

19 Q And do you do any hair testing in your
20 practice? I know you said you don't rely on them, but
21 do you send out hair samples?

22 A No. The only time I send it out is if I had
23 parents coming in for intakes who had saved baby hair
24 samples, and in that case I would send them based on
25 the work that was initially done by Holmes and

DR. MUMPER - CROSS (RESUMED)

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1 replicated at MIT. Other than that, I don't think
2 I've ever sent a hair sample that didn't fit into that
3 category.

4 Q And would you send the hair samples to [Lab
5 name redacted]?

6 A You know, I honestly can't remember if the
7 hair samples we sent went to [Lab name redacted] or
8 another lab. But I would have no reason that I know of
9 now not to send it to [Lab name redacted].

10 Q Okay. I want to show you a report from the
11 New York State Department of Health, which inspected
12 [the] Lab.

13 A Okay.

14 Q This is a letter from --

15 SPECIAL MASTER CAMPBELL-SMITH: Pardon me.
16 Are you planning to introduce this as a trial exhibit?

17 MR. JOHNSON: Actually, yes, Special Master,
18 we will. We can go and do that now.

19 SPECIAL MASTER CAMPBELL-SMITH: Okay, if we
20 could have copies, that would be great. And this
21 would be Trial Exhibit 2, the first of which was Dr.
22 Kinsbourne matter.

23 //

24 //

25 //

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1 (The document referred to was
2 marked for identification as
3 Respondent's Trial Exhibit
4 No. 2.)

5 SPECIAL MASTER CAMPBELL-SMITH: Thank you.
6 (Pause.)

7 BY MR. JOHNSON:

8 Q Have you had a chance to review the letter?

9 A I'm halfway through the last paragraph.

10 Q Take your time.

11 (Pause.)

12 A Okay, I think I have the gist of it.

13 Q Okay. Doctor, this letter is in response to
14 a request made by [Lab name redacted] to perform
15 multi-hair analysis on patient specimens collected in
16 New York State, and the Department of Health denied a
17 similar request in 1986, and in this 1999 letter, it
18 noted, "The Center's 1986 decision was based primarily
19 on concerns about external specimen contamination and
20 lack of good reference values. These concerns
21 persist."

22 And then further down, "Well defined
23 reference intervals are an essential component of
24 properly validated procedures. Our attempt to
25 ascertain the derivation of [the lab's] reference

DR. MUMPER - CROSS (RESUMED)

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1 intervals has been confounded by the inconsistency of
2 reference intervals posted on the lab's webpage and
3 those reported in publication reprints purportedly
4 supporting the use of diagnostic hair analysis."

5 Have you seen this letter before?

6 A No.

7 Q Does this letter change your opinion in any
8 way regarding the reliability of [Lab name redacted]
9 lab results?

10 A Well, actually, I'll point out a couple of
11 thoughts that I have.

12 First, the concerns seem to be primarily
13 related to external specimen contamination, and to my
14 recollection [Lab name redacted] does send out
15 information about avoiding certain kinds of shampoos
16 and external contamination, et cetera, et cetera, in
17 the time period when I would have sent the baby hair,
18 which is many years after this letter.

19 Secondly, the concerns to my read seem to be
20 primarily with reference ranges where you would be
21 dealing with an argument about what the upper ranges of
22 normal are and not using it in a situation in which you
23 were looking for lack of excretion.

24 So, I had read some stuff in the literature
25 about hair analysis which led me to decide not to use

DR. MUMPER - CROSS (RESUMED)

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1 it for looking for high levels. I don't know that
2 this would impact using it on baby hair because with
3 the baby hair study what you are looking for is that
4 the child doesn't show mercury, and so the levels are
5 very, very low.

6 So, if anything, I think that these alleged
7 difficulties would actually cause me to have more what
8 would be a false/positive in the sense of a false
9 indication that my baby was able to excrete mercury as
10 opposed to not being able to excrete mercury. So, I
11 really don't see -- even though I'm distressed to see
12 this -- how it impacts on the way that I would use my
13 hair analyses.

14 Q Doctor, we're now going to show you a 2005,
15 actually it's a 2006 report from the New York State
16 Department of Health, and we'll go ahead and mark this
17 as a trial exhibit as well.

18 SPECIAL MASTER CAMPBELL-SMITH: That would
19 be Respondent's Trial Exhibit 3.

20 (The document referred to was
21 marked for identification as
22 Respondent's Trial Exhibit
23 No. 3.)

24 BY MR. JOHNSON:

25 Q I would like to draw your attention to a

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DR. MUMPER - CROSS (RESUMED)

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1 particular finding in this report.

2 MR. POWERS: Excuse me. Dr. Mumper, do you
3 have the paper copy?

4 THE WITNESS: I do not, but if they -- or I
5 don't think I do, but if they blow it up for me. Did
6 you give it to me? I'm sorry.

7 BY MR. POWERS:

8 Q This is on page 10 of the report.

9 A Okay.

10 Q Blow that up for you.

11 SPECIAL MASTER HASTINGS: Is that page 10 of
12 the exhibit?

13 MR. JOHNSON: Yes, Special Master. Sorry.

14 BY MR. JOHNSON:

15 Q And it states, "There is no system to
16 monitor the technical competency of the assays. This
17 is noted for bacteriology proficiency testing where a
18 score of 100 percent has not been received for five
19 events. For two events, expected organisms were
20 reported. Their remedial action was noted as
21 unsterile saline being used, yet the saline was not
22 cultured or replaced. Actual organisms were also
23 noted on internal proficiency testing with no remedial
24 action performed. On two events, expected organisms
25 were not reported. There was no remedial action."

DR. MUMPER - CROSS (RESUMED)

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1 Doctor, based on this document, does this
2 cause you to have any concerns about [the lab]?

3 A It does cause me to have concerns with the
4 caveat that we're reading one paragraph out of a
5 multi-page document, and with the other caveat that I
6 don't know upon lab review what the standards are for
7 corrective measures and those kinds of things. But
8 this is very concerning, and I had not seen this
9 before.

10 Is this my copy to keep, by the way?

11 Q Sure, you can have that.

12 A Okay. Go ahead.

13 Q Okay. I would now like to talk a little bit
14 about some of the facts specific to William Mead's
15 case, and some of the support that you provided in
16 your report in particular about William Mead.

17 The first thing I want to ask you is that
18 when you reviewed the record, and we'll start with
19 William Mead's case, was there a certain profile that
20 you were looking for to determine that the child's
21 autism was caused by thimerosal from vaccines?

22 A I've not yet identified such a profile other
23 than to say that with the understanding we have of the
24 chronic inflammation I tend to think of it more in
25 kids that I identify patterns in which they might not

DR. MUMPER - CROSS (RESUMED)

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1 be able to handle a thimerosal-containing vaccine.

2 Sometimes it's kids who seem to be sick at
3 the time that they get their shots or have chronic
4 illnesses. Sometimes it's kids where the parents seem
5 to report bad reactions to the shots. But I really
6 don't have a standard kind of clinical profile.

7 Q Is there a test that you consider to be
8 conclusive evidence of thimerosal-related autism?

9 A No.

10 Q Is there a key piece of evidence in William
11 Mead's case that you rely on for your opinion?

12 A I think that the -- well, there are a number
13 of things that I relied on, and again because I'm a
14 clinician and because I don't have a good marker, it's
15 difficult for me to isolate a key piece. But the way
16 that I thought of this case as I read it was that this
17 is a child that I would expect not to have well
18 operating oxidative stress and methylation markers on
19 the inferential, indirect, incomplete and having
20 improved over time since then. But given the evidence
21 that John Green had when he was trying to manage this
22 case, it seemed to construct a story of a child who
23 would not be able to mobilize the mercury due to
24 oxidative stress issues.

25 And then when Dr. Green looked for mercury,

DR. MUMPER - CROSS (RESUMED)

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1 he found it, and when he started working on the
2 child's medical problems the child's autism got
3 better. So it would seem to me that we then have to
4 include thimerosal in a list of potential
5 environmental factors because if this was purely
6 genetically-related autism it's difficult for me to
7 explain why it would switch on at 15 to 18 months, and
8 then, you know, seemingly get better after
9 interventions.

10 I will be the first to acknowledge that not
11 being the treating physician it's hard for me to know
12 which intervention might have really helped him the
13 most. My suspicion is that since we deal with the
14 whole child and take a systems approach, that it's a
15 combination of what we do that gets the kids healthier
16 and gets them better.

17 So, I have to go back to for me I think the
18 key is the parents' story, the child's history,
19 putting it together with the absence of physical exam
20 findings that would be suggestive of other causes of
21 autism, and then the biologic plausibility of damage
22 from the injection of something that we know contains
23 ethyl mercury which we know breaks down to inorganic
24 mercury, which we know persists in the brain for as
25 yet undetermined years or decades.

DR. MUMPER - CROSS (RESUMED)

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1 And so as a clinical I have to go back to
2 that kind of careful synthesis as opposed to
3 identifying one isolated factor.

4 SPECIAL MASTER CAMPBELL-SMITH: Counsel, let
5 me just ask. Dr. Mumper, you did state that this was
6 a child that you would expect would not have good
7 oxidative stress markers. Is this the type of child,
8 as you indicated earlier in your patterns, based on
9 William's ear infections, his series of ear infections
10 and upper respiratory infection?

11 THE WITNESS: That is correct.

12 SPECIAL MASTER CAMPBELL-SMITH: Okay. Thank
13 you.

14 THE WITNESS: Thank you.

15 BY MR. JOHNSON:

16 Q What is your strongest evidence that William
17 Mead's autism was caused by thimerosal from vaccines?

18 A Well, I apologize if I have misspoken, but I
19 think I always try to be very careful not to say that
20 it was the cause, but to say things like it was a
21 substantial contributing factor, or I thought that it
22 exacerbated his problems, or I thought that it was in
23 my best medical judgment contributing.

24 So, my strongest piece of evidence would be
25 the demonstration that he excreted a body burden of a

DR. MUMPER - CROSS (RESUMED)

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1 substance that is known to after injection into
2 infants bypass the normal protective mechanisms of the
3 gut, go across the blood-brain barrier, be broken down
4 such that to me a very scary fraction persists as
5 inorganic mercury, and that the best available
6 evidence of what we understand about the impact of
7 thimerosal, not on direct neurotoxicity, direct
8 killing or acute toxicity at all, but our best
9 available evidence about how it affects things like
10 calcium channel signaling and redox ratios and
11 neuronal communication with disruption of inhibitory
12 neurotransmitters and exacerbation of excitatory
13 neurotransmitters. I think that is my best available
14 evidence.

15 Q So the post-provocation testing is your
16 strongest evidence, is that correct? Is that what you
17 just said? That's what it sounded to me what you just
18 said.

19 A No, no.

20 Q Okay.

21 A We're back to this bigger picture of
22 utilizing indirect evidence, i.e., post-provocation
23 urines, the laboratory data that I showed yesterday
24 about him having metabolic acidosis which applies
25 association with oxidative stressers, the evidence

DR. MUMPER - CROSS (RESUMED)

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1 that we have by history and exam of his difficulty
2 utilizing nutrients, the clinical picture related to
3 his reported failure to thrive, those things taken
4 together point to a child where we know that he
5 received a substance that, at least based on animal
6 models, converts to inorganic mercury in the brain,
7 and we know from in vitro testing that thimerosal has
8 adverse effects on the crucial enzymes in his
9 methylation pathway on glutathione also in the
10 methylation pathway on calcium channel signaling and
11 on crucial neurotransmitters.

12 So, I am only using the post-provoked urines
13 as one piece of the puzzle that helps develop this
14 bigger picture. So, I guess my strongest piece of
15 evidence I'll have to say is those things that I
16 determine on the basis of reviewing a comprehensive
17 record that I, to the best of my knowledge and
18 understanding, believe put him in a situation of
19 oxidative stress and poor redox status at a time that
20 he received vaccines known to convert to inorganic
21 mercury.

22 Q If there were no evidence of oxidative
23 stress, would you be able to reach the same opinion in
24 this case?

25 A No, because we are acknowledging right up

DR. MUMPER - CROSS (RESUMED)

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1 front that the vast majority of children that did get
2 these thimerosal-containing vaccines do well with
3 them, and you know, I'm a pediatrician. I have given
4 thousands of vaccines in my life.

5 So, the problem is that we didn't have the
6 markers back in 2001 that are as good as they are now
7 for oxidative stress. For example, you know, I would
8 have loved to have seen an early on fasting
9 glutathione in John Green's records, but you know, we
10 didn't really have that then. I would have loved to
11 have seen urinary neopterin biotron, but we didn't
12 have that then.

13 The methylation markers that Jill James has
14 done work on for three or four years still aren't
15 commercially available. They would be wonderful to
16 have but we don't have that then.

17 So, I don't think that it's fair to penalize
18 the kids that were born at a time, or develop symptoms
19 at a time when we couldn't sort all this out, and we
20 couldn't have great lab markers. I think that we can
21 be informed by what we've learned about other kids in
22 the meantime where we have been able to do the
23 measurements, and in my clinic about 80 percent of the
24 regressive autism cases that I see, when I look for
25 those methylation abnormality markers they have them,

DR. MUMPER - CROSS (RESUMED)

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1 and so I use that clinical experience to extrapolate
2 and I only do this because I don't have the markers
3 available to me that I've seen the story over and over
4 where the kids have multiple ear infections, they have
5 chronic diarrhea, and when I send methylation by
6 chemistry markers on those kids it tends to come back
7 abnormal.

8 So, I just -- I feel very bad that we're
9 limited by what was known then in trying to make
10 decisions about kids that were born when they were
11 born, and are coming before us.

12 Q Do you look for the biomarkers you were just
13 discussing in your non-autistic patients?

14 A No, and we acknowledge that we have not yet
15 had good comparisons between normal kids and kids with
16 autism. The labs that we use we hope are norming them
17 accordingly based on normal populations. But one of
18 the things we hope to do, and we've recently committed
19 some of our very small resources into doing controls
20 with the studies that we are doing.

21 We are going to find out, I feel quite sure,
22 that there is going to be some overlap, and so that's
23 when the whole picture and clinical judgment comes in.
24 There may well be normal children who have some
25 abnormal markers, but it's a matter of how many things

DR. MUMPER - CROSS (RESUMED)

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1 are wrong with any given child, and how well that
2 child is able to compensate. So, we are trying to do
3 those studies. We just do not have very much funding
4 to do them.

5 Q You state in your report in William Mead's
6 case that low zinc levels compromise the ability to
7 excrete metals. What is your support for that
8 statement?

9 A I was taught by -- I can't recall who in
10 toxicology lecture, it was one of the people that
11 comes to the think tanks that zinc is one of the
12 things that complexes with metallothionein in order to
13 take mercury out of the body. My memory is that it's
14 four molecules of zinc that's necessary to take one
15 unit of mercury out, but I would not want to hang my
16 hat on that number.

17 Q So, your support for that statement was a
18 talk that was given by someone at -- is that an Autism
19 Research Institute think tank?

20 A Yes.

21 Q You would agree that low zinc levels can be
22 caused by diet. In fact, I think you testified about
23 that, is that right?

24 A Yes.

25 Q Could low zinc levels also be caused by

DR. MUMPER - CROSS (RESUMED)

1577

1 chronic infections?

2 A Yes.

3 Q And William Mead in this case had persistent
4 bronchitis and other infections as a child, is that
5 correct?

6 A Right.

7 Q And could rapid growth also cause low zinc
8 levels?

9 A Yes, I'm recognizing a number of these from
10 one of my slide presentations.

11 Q You state in your report that low plasma
12 amino acids documented at Massachusetts General
13 Hospital, and you may have actually discussed these or
14 shown these test results yesterday.

15 A Right.

16 Q You cite these as support for your opinion.
17 Can you explain the significance of those test
18 results?

19 A I'm going to go back to the paper because I
20 worded that very carefully.

21 SPECIAL MASTER CAMPBELL-SMITH: Just for my
22 own reference and the record, this is page 5 of Dr.
23 Mumper's expert opinion in the Mead matter.

24 MR. JOHNSON: Thank you.

25 THE WITNESS: All I see that I said in that

DR. MUMPER - CROSS (RESUMED)

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1 report was that one of the things I listed as
2 laboratory evidence of impairments was low plasma
3 amino acids documented at Mass. General Lab. I had
4 tried to be very careful when I discussed these
5 yesterday to acknowledge that it did not show any kind
6 of classic pattern of in-born error of metabolism.

7 In looking at the particular amino acids
8 there, I had gotten -- there is a biochemistry chart
9 that I brought with me that I use when I'm trying to
10 look at laboratory values, and it hangs in my clinic,
11 and what I do is look at the pathways that are
12 affected in those particular cases and see if can tie
13 it into what we do know about autism pathology.

14 So, in looking at these particular markers,
15 there were several of them that -- the concept here is
16 that if you've got one thing, substance A, and you're
17 trying to make substance C, but you need something to
18 drive that reaction, that something might be an
19 enzyme, a nutrient, a co-factor.

20 So when you see low levels of a substance,
21 that makes me want to look back in the pathway and see
22 what would have had to happen in order to take the
23 precursor to the amino acid that was at a low level,
24 and you know, one possibility is always diet, that the
25 child is not eating protein enough to make the amino

DR. MUMPER - CROSS (RESUMED)

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1 acid, but another possibility is that that co-factor,
2 which in some cases is the conversion of ATP, or in
3 some cases is a cellular mineral like zinc or
4 magnesium, if I can discern any patterns.

5 And here the cysteine and the cystathionine
6 are one of the things that is pretty consistently now
7 implicated in the methylation biochemistry that we're
8 concerned with, and I may be misrecalling the numbers
9 but I thought that the cystathionine at the Mass.
10 General Lab was actually reported as zero, although
11 the reference ranges were a little confusing in that
12 it was marked as less than three would be the
13 reference range.

14 So, in terms of looking at those labs in a
15 functional way as opposed to a way of looking for an
16 in-born error of metabolism, those impairments I was
17 able to tie directly to either the methylation
18 biochemistry or the glutamate pathway. So that's why
19 I tried to word this very carefully to say that it was
20 a laboratory evidence of impairment, but not to try to
21 overinterpret it anymore.

22 BY MR. JOHNSON:

23 Q And these tests were not typically used to
24 determine mercury toxicity, is that right?

25 A That is correct.

DR. MUMPER - CROSS (RESUMED)

1580

1 Q You also state in your report that William
2 had dramatically low digestive enzymes, is that right?

3 A Yes.

4 Q Can you explain to me how that is related to
5 autism?

6 A It will be a little bit of a longer
7 explanation, but yes.

8 One thing that we're concerned about is that
9 there is an enzyme called DPP-4, which stands for
10 diopeptidyl peptidase 4. There was evidence, I think,
11 as early as the early eighties, that certain toxins,
12 such as organophosphates and mercury, inhibit the
13 function of that enzyme, of DPP-4.

14 DPP-4 is one of the things that the body
15 usually uses to breakdown gluten and casein. So one
16 of our possible mechanisms by which children with
17 autism can benefit from a gluten-free, casein-free
18 diet, as both of these children did, is that they no
19 longer have to process a food that they lack the
20 enzymatic ability to digest.

21 So, there is concern about mercury and other
22 toxins effect on that enzyme, but my understanding is
23 that that's somewhat beyond the scope of what we're
24 presenting primarily, but nonetheless we're dealing
25 with the full child.

DR. MUMPER - CROSS (RESUMED)

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1 The other way that that's related to autism
2 is that there are lots of neurotransmitters in the
3 gut. I think something like 70 or 35 percent of
4 serotonin is actually in the intestine, and serotonin
5 is one of the more well known neurotransmitters
6 because it's what Prozac and Zoloft and all those
7 things are working on the SSRIs.

8 The test that was done at Mass. General, to
9 the best of my knowledge interpreting it, showed very,
10 very low digestive enzymes prior to a secretin
11 infusion. After the secretin was infused the child
12 had a dramatic increase in -- I believe it was
13 trypsin, amylase and lipase. This has been reported
14 in a small subset of children to be remarkable in
15 restoring their former normal neurodevelopment, and
16 the mechanisms of that are all worked out, but it's
17 undeniably true that there are children that
18 dramatically benefit from this.

19 The most remarkable example was a child that
20 was going in, who happened to be autistic, went into
21 Dr. Horvath's lab at University of Maryland sometimes
22 in the late nineties, and had a secretin infusion
23 which was purely at that point designed to try to
24 figure out how his gut disease -- you know, what was
25 going on with his chronic diarrhea, and I can't recall

DR. MUMPER - CROSS (RESUMED)

1582

1 the details of how non-verbally was or if he only had
2 a few words, but he essentially started talking in
3 sentences, and what happened then was that there was a
4 big rush in this country for everybody to use
5 secretin, and many parents paid a lot of money and
6 were very disappointed that their child didn't have
7 similar results.

8 So, I use this as an example of how there
9 may be many contributing factors to autism, and for
10 then when we tested secretin in the alleged, you know,
11 good trial, the effects washed out, and what happened
12 was that there was a small population of kids that did
13 great and improved dramatically. Then there were
14 other kids who didn't improve. So that when you
15 looked at the results all together it showed that
16 there was no improvement.

17 So, in William, my understanding was that
18 Dr. Green was using that very dramatic information
19 from Mass. General to inform a rational treatment plan
20 by providing digestive enzymes to the patient. So,
21 that's the first part of the answer, which is that it
22 may be affected by mercury when the normal pancreatic
23 enzymes are low, and when we give secretin the child
24 improves.

25 There is another more complicated answer

DR. MUMPER - CROSS (RESUMED)

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1 which is that the use of digestive enzymes tends to
2 not only improve the gut status of the children in
3 terms of helping them absorb their nutrients, because
4 one of the issues that concern me about William Mead
5 when I saw that he had virtually undetectable levels
6 of the enzymes that would have made him break down
7 proteins and fats and carbohydrates was that
8 essentially he had been operating with his tank empty
9 for quite awhile, and he wasn't able to turn those
10 food stuffs into his body part, so by definition that
11 was another piece of evidence that caused me to
12 conclude that he was under chronic oxidative stress.

13 So, the second part of it is above and
14 beyond treating the child so that they can absorb
15 their food and utilize their amino acids and their fat
16 correctly, there is also the issue of how if you lack
17 digestive enzymes you're likely to be presenting with
18 chronic GI symptoms, and I am one of those that's
19 concerned, based on what parents have told me over and
20 over, that when the child's gut is not good the child
21 has more autistic symptoms, and all those mechanisms
22 remain to be worked out, but there is a body of
23 literature looking at how that happens.

24 Welch, for example, did a study in animals
25 in which she actually gave them gut inflammation, and

DR. MUMPER - CROSS (RESUMED)

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1 looked at their brains, and the gut inflammation did
2 impact on neurologic function.

3 So, that is my best and shortest answer
4 about the relevance of looking at digestive enzymes in
5 children with autism.

6 SPECIAL MASTER CAMPBELL-SMITH: Before you
7 go on for my own reference and I'll ask you to do this
8 perhaps beforehand, the reference that you had to page
9 6 of Dr. Mumper's report.

10 MR. JOHNSON: Sure, Special Master.

11 BY MR. JOHNSON:

12 Q Doctor, you mentioned the secretin study.
13 Isn't it true that in that study that that was a
14 placebo double-blinded trial, correct?

15 A Right.

16 Q And isn't it true that in that study it was
17 actually the children who received the placebo that
18 showed more improvement?

19 A That was not my understanding. My
20 understanding that there were either one or two
21 dramatic responders in the treated group whose
22 responses were wiped out when the data was analyzed in
23 a way that would show the overall effect on the whole
24 population.

25 And the reason that I'm pretty sure about

DR. MUMPER - CROSS (RESUMED)

1585

1 this is that we've used this as more impetus to try to
2 develop biomarkers for subpopulations or symptom
3 constellations for subpopulations so that when we do
4 clinical research we're not putting apples and oranges
5 and cantaloupes and bananas together in treating all
6 those differences with one single treatment.

7 I don't deny that the placebo response is
8 real.

9 Q And the result of that study and the
10 conclusion of that study was that secretin was not
11 effective in treating the symptoms of autism, is that
12 correct?

13 A That is correct as I've just explained.

14 Q Your discussion of the digestive enzymes and
15 the issues with the gut, does that relate to -- I'm
16 trying to find a page reference for the Special
17 Masters -- does that relate to your reference to
18 intestinal dysbiosis? And this is on page 6 of the
19 William Mead report.

20 A Again, I don't have the pagination so can
21 you tell me what the bolded title is?

22 Q It's "Clinical Evidence Compatible With
23 Damage from Mercury".

24 A Yes. Not directly, no.

25 Q What do you mean by intestinal dysbiosis?

DR. MUMPER - CROSS (RESUMED)

1586

1 A In children who have received multiple
2 antibiotics, especially if they were given in the very
3 early period of time as with Jordan King where his
4 mother got antibiotics during pregnancy, during
5 delivery and then she also got them while she was
6 breast feeding, that interferes with the process
7 called immune modulation.

8 The gut is actually a very important part of
9 modulating the immune system. Normally what happens
10 is that the baby is populated with things like
11 lactobacillus and bifida bacteria from the mother's
12 breast milk, and those are so-called good flora that
13 do things for us like making vitamins and
14 demethylating mercury, for example, methyl mercury
15 here primarily, not ethyl.

16 And so if you have a situation in which
17 because of early antibiotic use, and those of us at
18 ARI are concerned even about one or two courses of
19 antibiotics when given very early on in infancy, you
20 can see a pattern where the good bacteria are wiped
21 out and that interferes with the normal balance in the
22 gut where the good bacteria and the good yeast are
23 trying to fight out and live in symbiosis with
24 organisms which might otherwise become pathogenic.

25 So, we look for intestinal dysbiosis to look

DR. MUMPER - CROSS (RESUMED)

1587

1 for low levels of these good bacteria so that we can
2 potentially use probiotics to elevate the good
3 bacteria. One of the reasons that we like to do that
4 is that when you do that in early infancy you actually
5 have less incidence of asthma and allergies as the
6 child ages as shown in a large European study. So, we
7 look for that and treat it in the context of treating
8 the whole child.

9 Q Now, you're not a gastroenterologist, is
10 that correct?

11 A That's correct.

12 Q And this concept of intestinal dysbiosis and
13 the involvement of the gut, did that originate with
14 Dr. Wakefield's research?

15 A I do not think so. I think that that
16 concept had been around before Dr. Wakefield, but he
17 certainly also agrees that that is an important part,
18 so he's certainly talked about that, and I have to say
19 I agree with him that it is an important factor.

20 Q And Dr. Wakefield's research involved the
21 measles component of the MMR vaccine, is that correct?

22 A That's correct.

23 Q Okay. Do you believe that the MMR vaccine
24 was a substantial contributing factor to William
25 Mead's development of autism?

DR. MUMPER - CROSS (RESUMED)

1588

1 A You know, I don't really know. I am worried
2 about it. I'm concerned about triple live virus
3 vaccine being presented to a potentially oxidatively
4 stressed child with prior antibody cues. I don't have
5 a way of knowing with certainty to what extent MMR may
6 have contributed, but my understanding was that in
7 this particular case my task was to look at the
8 thimerosal-containing components, and that there were
9 other cases that were going to examine MMR alone, or
10 potentially even MMR and TCV in combination.

11 Q So you just didn't look at the MMR, is that
12 what you're saying?

13 A No. I looked at it and I believe that I
14 listed when he got it, which as I recall -- let me
15 make sure -- he got it at the so-called usual time, 12
16 months. He also received Varivax on the same day.

17 Q And so you included it in your different --

18 A Yes.

19 Q Okay. And you ruled it out?

20 A No.

21 Q Let's now move on to Jordan King and talk a
22 little bit about your report in his case.

23 A Okay.

24 Q On page 4 of that report, and it's actually
25 under the section that begins on page 3, "Clinical

DR. MUMPER - CROSS (RESUMED)

1589

1 Evidence", you note a number of other potential
2 exposures for Jordan, including pesticides,
3 fungicides, toluene, and tuna.

4 A Yes.

5 Q What role do those exposures play in your
6 causal analysis?

7 A At the time that I was writing this report I
8 was developing a differential diagnosis in which I was
9 trying to see any possible contributors. Our work at
10 ARI has led us to be concerned about fungicides, some
11 of which contain mercury and many of which were taken
12 off the market because of their mercury content.

13 Pesticides are in our differential diagnosis
14 of what can be harmful to some children with autism.
15 A lot of that work has been looked at by Paul Shattuck
16 and others.

17 The toluene that went on the deck, I wasn't
18 sure at the time that I wrote this report whether or
19 not the child was playing on the deck or playing in
20 the yard at the time that it was applied, and so I
21 wanted to raise that as a potential co-existing or
22 exacerbating toxicity.

23 Since then I'm actually less concerned about
24 it because I was able to interview Mrs. King and find
25 out that she actually took her son to the park and the

DR. MUMPER - CROSS (RESUMED)

1590

1 museum that day because she was very environmentally
2 savvy mom who did not want him to be exposed.

3 Then the tuna is a potential source of
4 methyl mercury, and especially in a child who has
5 chronic diarrhea where his normal gut mechanisms or he
6 has low selenium so that his ability to excrete other
7 sources of mercury might be impaired. I thought it
8 was only fair to include things in my report that
9 could be possible contributing factors to his autism.

10 Q You've addressed the toluene. Were you able
11 to rule out the pesticides as a potential contributing
12 cause?

13 A I really don't know how to rule out the
14 pesticides or fungicides as a contributing cause based
15 on the medical records that I have. No.

16 Q And you noted in your report that Jordan ate
17 a lot of tuna which could also contribute to the total
18 mercury load, is that correct?

19 A That is correct.

20 Q Is it part of your opinion that Jordan
21 suffered from glutathione deficiency?

22 A I don't think that we have direct evidence
23 of that, but based on evaluating many children similar
24 to him and looking at John Green's clinical
25 decisionmaking and also taking into consideration the

DR. MUMPER - CROSS (RESUMED)

1591

1 fact that the parents report improvements with therapy
2 that we design in order to make glutathione work
3 better, specifically the methyl cobalamin injections
4 which provide the precursors to make more glutathione,
5 and if I'm not confusing the cases, I believe Mrs.
6 King testified that even now she can tell if a day
7 goes by when he doesn't get his MB12 shots.

8 So given the fact that I'm trying to
9 evaluate a child who was presenting in 2001-2002, all
10 of those are consistent to me, although indirectly and
11 inferentially, with glutathione deficiency, yes.

12 Q I want to direct your attention to -- it's
13 actually mentioned in your report, but the actual
14 record cite is Jordan King Exhibit 1 at 3, and we'll
15 pull that up for you. This is a note that indicates
16 that Jordan is doing amazingly well with B-12 and
17 glutathione, is that correct?

18 A Yes, and it says "incredible difference,
19 just wanted you to know."

20 Q And this appears to be perhaps one of the
21 parents who called in. It looks like MyLinda King who
22 called in and reported that, is that correct?

23 A That's correct.

24 Q Okay. And the date that this was called in,
25 this is April 19th, it looks like 2001, is that right?

DR. MUMPER - CROSS (RESUMED)

1592

1 A I think so, yes.

2 Q Looking at the records, it appears that, and
3 this is Jordan King Exhibit 8 at pages 21 to 22, let's
4 pull the date up on this. So this is a few months
5 later, it says that, "Jordan demonstrates a high level
6 of distractibility. He is able to maintain a sitting
7 posture, demonstrates dynamic mobility but without
8 purposeful attention to anyone passed."

9 Does that indicate that glutathione and B-12
10 were making him improve?

11 A You are drawing one aspect of a record that
12 demonstrates he's not doing well, and asking me to
13 make a judgment about one particular therapy given
14 many months before. I would have to in that situation
15 know more information about what Mrs. King was
16 thinking and specifying when she said "doing amazingly
17 well." She may have meant that he was attending to
18 task more, or she may have meant that he was talking
19 more, or she may have meant that's when he started
20 showing more affection to her, or playing with his
21 sister or any other number of other things.

22 Q In your practice, what do you typically look
23 for to see whether therapy such as B-12 or glutathione
24 are causing improvements? Is there any one particular
25 thing?

DR. MUMPER - CROSS (RESUMED)

1593

1 A We have a 145 question questionnaire that we
2 use. When we do methyl cobalamin injections, we do a
3 five-week period of time in which the parent is asked
4 not to start any different interventions or not to
5 start any new therapy. We ask the parents to fill out
6 the questionnaire but we also ask the parents to keep
7 all the therapists blinded, all the relatives blinded
8 as to the intervention.

9 We bring the family back five weeks later,
10 and the parents have filled out this behavioral
11 questionnaire, so in that piece of it there is
12 inherent reporting bias and the potential for placebo
13 effect, which I acknowledged up front. But we also
14 asked for notes from the therapists.

15 It's ideal if we can get like the number of
16 words he was saying in speech therapy before the B-12
17 and then the number he was saying at the five-week
18 point and compare that to his previous trajectory of
19 progress.

20 So whereas we expect that children will
21 improve over time, what we're looking for is a change
22 in the trajectory of that improvement, and in my
23 experience having done this now in at least 200 kids,
24 if not more, our experience is that we find
25 demonstrable behavioral, language, et cetera,

DR. MUMPER - CROSS (RESUMED)

1594

1 improvements in a substantial subset, probably greater
2 than 50 percent in my experience.

3 The other thing that we know that we're
4 doing though, even in the absence of clinical
5 improvements in speech or repetitive behaviors or
6 social interactions or the so-called autistic
7 stereotypic behaviors is that if we have a child who
8 has demonstrated to us that he does not have
9 glutathione in adequate amounts or that he has low
10 methionine and therefore has that crucial methylation
11 biochemistry disrupted such that he's not making good
12 cell membranes, he's not regulating his genes
13 appropriately, he's not making normal
14 neurotransmitters, I feel that there is justification
15 in fixing that biochemistry and the improvements in
16 the autism symptoms are nice for the families and a
17 wonderful bonus, but not the only reason to do the MB-
18 12, if that makes sense.

19 Q Okay, let me ask you this. In the William
20 Mead case, you testified that if there was no evidence
21 of oxidative stress, you would not be able to reach
22 the same opinion.

23 In Jordan King's case, is oxidative stress
24 essential to your opinion that his autism was
25 substantially contributed to by thimerosal-containing

DR. MUMPER - CROSS (RESUMED)

1595

1 vaccines?

2 A You know, I have a little bit different
3 formulation on him because I think that he has more
4 evidence, at least for the potential of environmental-
5 mediated synergistic toxicities. I think he has a
6 different pattern in that he got antibiotics very
7 early on but not continuously. You know, once he was
8 born, he never really got the antibiotics himself, so
9 my issues with risk factors in him are related to gut
10 issues also.

11 I do think that he had times at which he was
12 under oxidative stress. I just don't have a marker
13 retrospectively for quantifying that at the time of
14 receipt of his thimerosal-containing vaccines or at
15 the time he was trying to process those.

16 Q And again, I apologize. I'm trying to find
17 a page cite. Maybe you can help me. This is where
18 you comment on Jordan's immunoacid analysis and
19 indicate that it demonstrated impaired xenobiotic
20 detoxification.

21 A By the language, I am assuming that that was
22 one of the functional labs that had a chart and again
23 this is looking at function and not in-born errors of
24 metabolism. They have looked at the biochemistry and
25 made assessments of clinical clues on the basis of the

DR. MUMPER - CROSS (RESUMED)

1596

1 analities that would be suggestive of xenobiotic
2 toxicity, and so that is relevant in that we include
3 that in our differential diagnosis.

4 Q And when you were reviewing the records, did
5 you see records from a Dr. Anadiotis? That's
6 A-N-A-D-I-O-T-I-S.

7 A I think so because I think that we talked
8 about it yesterday.

9 Q Okay. And if we look at Jordan King Exhibit
10 12, page 21.

11 A Yes.

12 Q Dr. Anadiotis noted that Jordan never had
13 true metabolic testing and that he was struck by the
14 differences in the laboratory values assumed to be
15 abnormal by the treatment centers versus those
16 reference values that I know he knew are used in
17 academic institutions across the country, is that
18 correct?

19 A That's correct.

20 Q And as a result of that, Dr. Anadiotis
21 recommend that Jordan receive standard immunoacid
22 testing?

23 A Yes, a standard plasma immunoacid and a
24 urine organic acid study, and I did not see that in
25 his record, so I do not know if that was done.

DR. MUMPER - CROSS (RESUMED)

1597

1 Q Was that not testing that was done at Oregon
2 Health Sciences on September 27, 2001? I can show
3 those to you.

4 A Oh, I'm sorry. Maybe so.

5 Do you have the previous page that would
6 show the analities.

7 Q We're showing that up now.

8 A Okay.

9 Q Is it your understanding that this is the
10 testing that was recommended by Dr. Anadiotis?

11 A Yes.

12 Q Okay. And do you agree that the conclusion
13 of that test was that there were no diagnostic
14 findings?

15 A Yes. Can I see the first page back again
16 though? I'm sorry.

17 Again, the standard utilization for that
18 test is to look for in-born errors of metabolism. The
19 thing that might potentially be informative in this
20 case again has to do with methylation biochemistry in
21 that there was a low sistine. Without it up now, I
22 think it was like 13 when the normal was 22 to
23 something. Even on the standard university test was
24 showing up and that's an area that we're particularly
25 concerned with our methylation biochemistry cycles.

DR. MUMPER - CROSS (RESUMED)

1598

1 So again, a functional isolated inferential
2 suggestion that there may be problems in the pathway,
3 and that's all I can really get from that, and I
4 totally acknowledge that the university test is not
5 showing in-born errors of metabolism.

6 Q Doctor, would it be fair to say that your
7 opinions in this case that are primarily or in large
8 part based on your belief that certain treatments that
9 were provided to both William Mead and Jordan King
10 were effective?

11 A In some part, yes.

12 Q Okay. And that's also based on your own
13 clinical observations for your practice, is that
14 correct?

15 A That's correct.

16 Q But you have not published any control
17 studies based on your patient population except for,
18 or you haven't published any control studies, have
19 you?

20 A No.

21 Q Okay. You said that you were slow to come
22 around to chelation but you do actually chelate
23 children in your clinic, is that correct?

24 A I do now, yes.

25 Q Okay. What happens biochemically when you

DR. MUMPER - CROSS (RESUMED)

1599

1 chelate a child?

2 A It depends somewhat on the agent, but the
3 basic idea is that you're trying to use an agent to
4 grab on like a claw is where the word "chelate" goes
5 to, and escort the offending agent, whether it's lead
6 or mercury, out of the body, frequently largely in the
7 stools and urine.

8 Q And I believe that you testified that it's
9 your understanding that chelation does not remove
10 mercury from the brain, is that correct?

11 A That's correct.

12 Q Do you chelate your patients with the
13 oversight of an institutional review board?

14 A No.

15 Q Would you agree that the Defeat Autism Now
16 consensus statement says with relation to the
17 therapies that no well controlled outcome studies have
18 yet been performed?

19 A Yes.

20 Q Is that still true today?

21 A Yes, that is true. We were hoping to get
22 that done through NIH, and I was working with Sue
23 Swedo but the project got stalled. That was about a
24 year ago.

25 Q Is DMSA approved by the FDA for treating

DR. MUMPER - CROSS (RESUMED)

1600

1 mercury toxicity?

2 A No, but it is approved for lead toxicity,
3 and I typically start with the FDA-approved agents and
4 typically use DMSA first. Most of my patients have at
5 least history consistent with and some evidence of
6 lead when I do that.

7 Q Do you also use the gluten-free, casein-free
8 diet in your practice?

9 A Yes, I do.

10 Q How does the gluten-free, casein-free diet
11 treat thimerosal-related autism?

12 A I'm not at all sure that it does.

13 Q So if a child showed improvements on the
14 diet, that wouldn't really be supportive, in your
15 opinion, of mercury toxicity?

16 A In terms of directly, no.

17 Q Do autistic children who haven't received
18 biomedical intervention ever improve?

19 A Yes.

20 Q Dr. Mumper, we asked you earlier whether you
21 were the one that was responsible for selecting Jordan
22 King's and William Mead's cases as test cases for this
23 proceeding, is that correct?

24 A Yes.

25 Q Why did you choose those two cases as test

DR. MUMPER - CROSS (RESUMED)

1601

1 cases?

2 A Well, it was a complex set of decisions.
3 One was that they were kids that we had some evidence
4 of mercury excretion on them. Secondly, we wanted to
5 put forward some instructive cases and I conceived of
6 these cases differently. I didn't want to bring
7 forward, you know, the first three test cases that all
8 essentially had the same history.

9 So these cases represented to me clinical
10 patterns that I see in my practice, and William Mead
11 represented to me the kids that have a lot of
12 antibiotics, ear infections, respiratory infections,
13 plus or minus asthma and allergies, and Jordan King
14 represented to me a child where the potential
15 vulnerability probably happened earlier on with his
16 mother's antibiotic use during pregnancy, and also
17 raised the issue of synergistic toxicities.

18 In both case, I thought that there was very
19 good evidence that they weren't classic autism cases
20 from either a chromosomal standpoint or the children
21 with autism who seem to be abnormal from birth. So
22 their pattern of initially being developmentally
23 normal, being exposed to an agent that could breakdown
24 to inorganic mercury in their brain, and then having a
25 subsequent regression with loss of milestones and then

DR. MUMPER - CROSS (RESUMED)

1602

1 emergency of autistic behaviors seemed to provide two
2 patterns that will need to be tested in the system.

3 It would be nice if we could take kids who
4 had more laboratory data, but one of the things that I
5 ethically felt bound by was this idea that we should
6 test some cases for the kids that weren't able to get
7 the million dollar workup, and where we would be
8 forced to rely on things like clinical histories and
9 the reports of the parents.

10 So of the six or seven cases that I was
11 given to review, those are the reasons that I can
12 recall that I ended up choosing these two.

13 Q Can you now tell us without talking about
14 specific cases, but some specific reasons that you
15 decided not to choose the other cases that you
16 reviewed?

17 A In many of them, I had such little
18 informative laboratory data that I didn't think that I
19 would be able to make a strong enough case because I
20 do want this process to be given by the science, and I
21 was concerned that if we didn't have at least some
22 type of biomarkers to present, that there was a
23 possibility that the parents' stories might continue
24 to receive less than the respect that I think that
25 they deserve.

DR. MUMPER - CROSS (RESUMED)

1603

1 Q And when you say the lab testing, what
2 particular lab testing was not present in those cases
3 that caused you to think that you would not be able to
4 form an opinion?

5 A Well, I honestly don't remember because I
6 was reviewing these in September, October, and since
7 then I've seen a lot of patients and given a lot of
8 lectures, but what I would have been looking for would
9 be something that could tie it to some type of
10 footprint for mercury or some type of footprint for
11 methylation and transulfuration abnormalities, and so
12 it was a relative value strength type of judgment.
13 And I'm sorry, and clear documentation of regression
14 was also an important criteria for me.

15 Q Doctor, you are a member of the American
16 Association of Pediatrics, is that correct?

17 A The American Academy of Pediatrics?

18 Q Yes.

19 A Correct.

20 Q I'm sorry. Have you ever served on any
21 committees for the American Academy of Pediatrics?

22 A Yes.

23 Q Okay. What committees?

24 A The School Health Committee back many years
25 ago, and currently we're actually being sought out by

DR. MUMPER - CROSS (RESUMED)

1604

1 the American Academy of Pediatrics for our opinions on
2 these issues. I was invited to meet in March with the
3 current president, the upcoming president, the head of
4 mental health for the AAP, the executive director and
5 a couple of other people that I'm forgetting, and we
6 made plans for them to sit down with 15 or so of the
7 so-called senior clinicians and researchers in DAN,
8 Defeat Autism Now, who will -- we hope to have a
9 brain-storming session and interchange where we try to
10 teach them of some of which we know, and they
11 represent the importance of, you know, vaccines for
12 public health reasons, and we come to some kind of
13 plan for how to make vaccines safer.

14 Q Is that a formal committee?

15 A No, not yet, but it will be a formal brain-
16 storming session think tank, potentially a ad hoc
17 committee. I'm not sure where the plans will lead.

18 Q So the one committee on school health back
19 many years ago, that's the only committee you've
20 actually served on with the American Academy of
21 Pediatrics?

22 A To the best of my recollection yes.

23 Q Have you ever served on any NIH committees?

24 A No.

25 Q Are you a member of any NIH councils?

DR. MUMPER - CROSS (RESUMED)

1605

1 A No.

2 Q Have you ever received a research grant from
3 NIH?

4 A No, nor have I applied.

5 Q Have you ever served on an editorial board
6 for a scientific journal?

7 A Yes, but only once.

8 Q And which journal was that?

9 A American College of Physicians and Surgeons.

10 Q And you were actually on the editorial board
11 of that --

12 A Oh, oh, I'm sorry. I may have misunderstood
13 the question. I did misunderstand the question.

14 I was not on the editorial board. I was
15 asked to be a reviewer.

16 Q And how many articles did you review for
17 that journal?

18 A Only two or three. I'm primarily a
19 clinician, so it's really without -- you know, outside
20 the scope of a typical clinician to even do clinical
21 research, write papers, you know, review them, et
22 cetera.

23 Q When was the last time that you reviewed an
24 article for the Journal of American College of
25 Physicians and Surgeons?

DR. MUMPER - CROSS (RESUMED)

1606

1 A Between two and three years ago, I would
2 guess, but I'm fuzzy on the date.

3 Q In the past few year, it appears that most
4 of your professional involvement has been with the
5 Autism Research Institute and Defeat Autism Now. Is
6 that a fair statement?

7 A That is a fair statement.

8 Q And I believe you have a position with
9 Autism Research Institute?

10 A Yes, I am their medical director.

11 Q Is that a paid position?

12 A I get a stipend for organizing the
13 conferences twice a year. We plan them over a six-
14 month period. I'm gone away from my practice for six,
15 no, I'm sorry, eight days, and the stipend is either
16 16 or 18 thousand dollars for that meeting.

17 Q You mentioned that when you were a member of
18 the faculty at the University of Virginia that you
19 received a student -- oh, an award --

20 A Resident.

21 A -- voted on by the students. Did you
22 receive any awards that were decided by the faculty?

23 A No.

24 Q It appears from your CV that you left UVA or
25 stopped teaching at UVA about the same time that you

DR. MUMPER - CROSS (RESUMED)

1607

1 got involved with the Autism Research Institute, is
2 that correct?

3 A I need to clarify what my situation was
4 there. I was not actually teaching at the UVA campus.
5 I was teaching in a residency program for family
6 physicians that was affiliated with the University of
7 Virginia, so I was actually leaving Central Hospital
8 and the residency program, and not leaving the UVA
9 campus.

10 Q When was the last time or how long ago was
11 it when you last taught a student from UVA?

12 A I think about three years ago I had a
13 student in the nurse practitioner school at UVA for a
14 year.

15 Q Are you sure it wasn't more like 2000 that
16 you last taught a student at UVA?

17 A Are you talking about a medical student from
18 UVA?

19 Q Yes, a medical student.

20 A Okay. Well, around 2000, I would have been
21 teaching medical students through the residency, and
22 I'm trying to remember if any of the medical students
23 that I had post-2000 were from UVA. I don't think
24 that they were. I think they were all from other
25 places.

DR. MUMPER - CROSS (RESUMED)

1608

1 Q And isn't it true that in 2005 the
2 university actually decided to terminate your position
3 because you hadn't taught any students for a number of
4 years?

5 A That's correct.

6 Q You mentioned during your direct examination
7 that in your practice you have about --

8 A Oh, I'm sorry. Can I modify my last answer?

9 The letter that I received that they weren't
10 going to renew my position teaching residents because
11 I had not taught them for many years. I actually did
12 get my appointment renewed for several years after I
13 left the residency, so I'm concerned about the
14 connotation of the word "termination" versus not
15 renewing my clinical appointment.

16 Q Doctor, you testified during your direct
17 examination that you had medical records for about
18 2,000 patients in your clinic, is that correct?

19 A Two thousand total patients. That includes
20 general pediatric patients.

21 Q How many of those patients do you follow
22 upon on an ongoing basis?

23 A I really don't have a good way of estimating
24 that. I'll tell you that I see patients typically
25 three and a half to four days a week, and that it's

DR. MUMPER - CROSS (RESUMED)

1609

1 usually about 35 patients a week.

2 Q How many of the 2,000 patient files that you
3 have in your office were consultations from other
4 physicians?

5 A I would suspect about 100 because the vast
6 majority of those 2,000 files, you understand, are
7 primary care pediatric patients that, you know, the
8 parents choose me out of the phone book or by word of
9 mouth or whatever, but I think probably about 100.

10 Q Okay, and I believe you testified that about
11 four to five hundred of your patients are your autism
12 patients, is that correct?

13 A I think that's correct, but it's difficult
14 for me to nail down the exact number because of the
15 way my records are set up.

16 Q And the 100 files, or around 100 files that
17 think are consultation files, are those autism
18 patients that have been referred to you?

19 A Some of them are. I actually also get
20 consultations from other doctors for things like
21 chronic diarrhea, chronic failure to thrive, food
22 allergies, situations in which the referring doctor
23 might perceive that the parents are concerned about
24 chronic illnesses that the referring pediatrician
25 doesn't have either the time or interest to be able to

DR. MUMPER - CROSS (RESUMED)

1610

1 address in a busy pediatric practice.

2 Q So, four to five hundred, I guess, is your
3 best estimate for your autism patients?

4 A Correct.

5 Q For how many of those four to five hundred
6 patients have you concluded that a thimerosal-
7 containing vaccine caused or contributed to their ASD
8 diagnosis?

9 A I have no way of knowing that.

10 Q I mean, Doctor, they are your patients, and
11 I assume that you've reviewed their records, right?

12 A Right.

13 Q And you've performed an examination.

14 A Right.

15 Q And you've taken histories from their
16 parents, correct?

17 A Right.

18 Q So you actually have more information about
19 those patients than you had when you prepared your
20 reports in these cases, so it seems to me you would
21 have to be able to ballpark the number of those
22 patients that you believe their autism was contributed
23 to thimerosal-containing vaccines.

24 A Okay. So I do know that based on the review
25 of my last 156 patients, only about 50 percent of them

DR. MUMPER - CROSS (RESUMED)

1611

1 were clearly regressive. So, one could postulate that
2 the number from which I would draw the thimerosal-
3 containing vaccine contributed patients would be half
4 of four to five hundred, so 200 to 250. So, I would
5 say somewhere less than 200 patients, somewhat more
6 than one.

7 Q So between one and 200 of the four or five
8 hundred you would estimate their autism or ASD was
9 contributed to by thimerosal-containing vaccines?

10 A It's very difficult to work out the subset.
11 Yeah, obviously, this has not been well studied, and
12 again I really resist the idea of trying to give a
13 number to the clinical work that I do.

14 Q You believe there is an epidemic of autism,
15 correct?

16 A I do believe that there is an epidemic of
17 neurodevelopmental disorders. The best numbers are
18 that one in six children in this country now has a
19 neurodevelopmental disorder. That comes right from
20 the American Academy of Pediatrics, and the CDC
21 reports one in 150 children now with autism.

22 Q And in fact you've stated in the past that
23 in Virginia where you practice there was an eleven-
24 fold increase in autism cases since 1988, is that
25 accurate?

DR. MUMPER - CROSS (RESUMED)

1612

1 A That's based on DOE data, Department of
2 Education data, and that obviously is subject to the
3 idea that there is potentially some ascertainment bias
4 and all those things that have been looked at. But
5 yes, those were the number that I was given.

6 Q And you mentioned the notion of
7 ascertainment bias. What percentage of the increase
8 would you attribute to ascertainment bias?

9 A I don't know, but I think that it is real,
10 so somewhere between 15 to 40 percent perhaps. It's a
11 matter of some subject. I don't believe that there is
12 diagnostic substitution. I do think that the term
13 "ASD" may be used more broadly now, but you recall
14 that the reason that I went into this work is that I
15 perceived there was a qualitative change in children,
16 and so before I ever knew the DOE numbers, I was
17 seeing something in my practice, and that was,
18 frankly, before I had even thought about thimerosal or
19 toxin-induced autism, or you know, any of those
20 issues.

21 Q And that leads to my next question. What
22 percentage of the eleven-fold increase that you saw
23 since 1988 did you attribute to thimerosal-containing
24 vaccines?

25 A I don't know. I don't know.

DR. MUMPER - CROSS (RESUMED)

1613

1 Q Do you have any guess at all?

2 A You know, I really don't. I don't want to
3 be tied down to a number for something that's not been
4 well studied.

5 Q The amount of thimerosal that children
6 receive through vaccines increased from the 1980s to
7 the 1990s, is that correct?

8 A That is correct.

9 Q Okay. When did you the schedule change?

10 A To the best of my recollection, Hib vaccine
11 was added around 1988, and actually now that I think
12 about it, you had asked me if I had participated in
13 any control studies, and I did participate in the Hib
14 vaccine trial in my clinical practice back then.

15 In the early 1990s, Hepatitis B vaccine was
16 introduced at birth, and then prevnar somewhat later.
17 So there were changes over a period of five to seven
18 years.

19 Q What amount of thimerosal did a child
20 receive in 1985 if he or she received the full
21 schedule of vaccines?

22 A I would think that at that point it would
23 have been five DPTs, which would have been 25
24 micrograms, so that would be half of 125, which is
25 62.5 if I did my math right.

DR. MUMPER - CROSS (RESUMED)

1614

1 THE WITNESS: Tom, did you check my math?

2 MR. POWERS: I did not.

3 THE WITNESS: Thanks a lot.

4 MR. JOHNSON: It sounds right.

5 BY MR. JOHNSON:

6 Q When the schedule changed, and I believe
7 that was around 1994, is that correct?

8 A Well, there were a series of changes. Hib
9 was '88-89. Hep B was '90-01, somewhere in there, and
10 prevnar in the '94 range, if I'm remembering right.

11 Q So by 1994, if a child received the full
12 schedule of vaccines, what amount of thimerosal would
13 that child receive?

14 A Counting or not counting the preschool
15 boosters?

16 Q Not counting.

17 A I think it would have been 37.5 micrograms
18 after the initial infancy series, including the Hib
19 and the DPT boosters, but not including the four-year-
20 old DPT boosters.

21 Q Was there a corresponding increase in the
22 number of autism cases after 1984 - 1994?

23 A My memory of the charts is that the increase
24 started in the -- the dramatic increase started in the
25 late eighties and then continued throughout the

DR. MUMPER - CROSS (RESUMED)

1615

1 nineties and early 2000s.

2 Q And thimerosal was taken out of vaccines in
3 2001, correct?

4 A Thimerosal, I take issue with that
5 statement. In 1999, the decision was made to phase
6 out the use of thimerosal. Between '99 and 2001,
7 efforts were made to manufacture vaccines without
8 thimerosal. It was never taken off the shelves. So
9 in looking at my patients who present to my clinic and
10 looking at the lot numbers of their vaccines and
11 trying to trace back whether or not it was thimerosal-
12 containing or not, we had at least one patient in 2003
13 that received thimerosal-containing vaccines.

14 The other thing that happened that involves
15 a continuing exposure to thimerosal is about the same
16 time that we were getting the thimerosal out of the
17 infant-containing vaccines, the recommendation was
18 made to give thimerosal-containing flu vaccine to
19 pregnant women, and in my community I order
20 thimerosal-containing flu vaccine, and I typically run
21 out by the end of October because 93 or so percent of
22 the flu vaccine in this country still contains
23 thimerosal.

24 So, the question becomes how do you factor
25 in the potential vulnerability for thimerosal given in

DR. MUMPER - CROSS (RESUMED)

1616

1 pregnancy at a time when some would argue the fetus
2 might even be more vulnerable, and the fact that the
3 recommendation was made that children receive
4 thimerosal-containing -- or flu vaccines, the vast
5 majority of which is thimerosal-containing at six
6 months, 12 months, and then every year thereafter.

7 So, one of the calculations that has been
8 done is that even by taking away the thimerosal from
9 the infant series if you have a situation in which the
10 pregnant woman gets flu vaccine and the child gets flu
11 vaccine, and it continues throughout early childhood,
12 that your thimerosal load actually in the current
13 system can be as much as 50 percent or so, the
14 thimerosal that the kids got in the '90s. It's just
15 time shifted and different distribution.

16 Q Doctor, you would agree that the number of
17 autism cases has continued to increase since 2001?

18 A Yes.

19 Q And is it your testimony here today that
20 that has because of the flu vaccine and maternal
21 vaccinations?

22 A No. I think that there are many, many
23 factors that as yet we need to look at.

24 Q Doctor, you're familiar with the Institute
25 of Medicine, correct?

DR. MUMPER - CROSS (RESUMED)

1617

1 A Yes.

2 Q And you're aware that the IOM looked at the
3 alleged link between thimerosal-containing vaccines
4 and autism?

5 A I am. I was there.

6 Q It first conducted an investigation in 2001,
7 correct?

8 A Yes, I was not there for that one.

9 Q And the IOM looked at the issue again in
10 2004, and that's the one you were involved in?

11 A That's the one I attended.

12 Q You actually submitted a letter to the IOM
13 and --

14 A I did, an impassioned letter.

15 Q And in 2004, the IOM concluded that the
16 evidence favored rejection of a causal relationship
17 between thimerosal-containing vaccines and autism,
18 right?

19 A That's correct.

20 Q And you already mentioned that you're a
21 member of the American Academy of Pediatrics, correct?

22 A That's correct.

23 Q And you're aware that the AAP has taken a
24 position with respect to thimerosal-containing
25 vaccines and autism?

DR. MUMPER - CROSS (RESUMED)

1618

1 A Yes.

2 Q And would you agree that the AAP's position
3 is that no scientific data linked thimerosal use as a
4 preservative in vaccines with any pediatric
5 neurological disorder?

6 A Yes.

7 Q Doctor, you're familiar with the World
8 Health Organization?

9 A Yes.

10 Q And you're aware that the WHO has issued a
11 position statement on the alleged link between TCVs
12 and autism?

13 A Yes.

14 Q And am I correct that the WHO has recently
15 stated, "In the latest review by the committee at its
16 meeting of 6 to 7 June, 2006, the conclusion
17 previously reached was reaffirmed that there is no
18 evidence of toxicity in infants, children or adults
19 exposed to thimerosal in vaccines." Is that correct?

20 A I was not aware that they had met in '06,
21 but I certainly take your word for that.

22 Q Okay. And you are familiar with the CDC?

23 A Yes.

24 Q And you are aware that the CDC has taken a
25 position on this issue?

DR. MUMPER - CROSS (RESUMED)

1619

1 A Yes.

2 Q And you would agree that the CDC supports
3 the IOM's conclusion?

4 A That's correct.

5 Q Are you aware or familiar with the Public
6 Health Agency of Canada?

7 A No.

8 Q Okay. Are you aware that the Canadian
9 National Advisory Committee on Immunization has taken
10 a position on the issue of thimerosal-containing
11 vaccines and autism?

12 A I wouldn't be surprised if they have.

13 Q Okay. Would you be surprised to know that
14 they concluded that the weight of the evidence to date
15 clearly refutes an association between thimerosal and
16 neurodevelopmental disorders?

17 A I am surprised that they used the word
18 "clearly refutes".

19 Q But you have no reason to dispute that that
20 was their conclusion?

21 A No.

22 Q Are you familiar with the European Agency
23 for the Evaluation of Medicinal Products?

24 A Not very, but I know of them.

25 Q Okay. And were you aware that that agency

DR. MUMPER - CROSS (RESUMED)

1620

1 has taken a position on this issue?

2 A No, but I would not be surprised.

3 Q All right. Would it surprise you to know
4 that they concluded that the latest epidemiological
5 studies show no association between the vaccinations
6 of TCVs and specific neurodevelopmental disorders?

7 A Not at all because I don't think that we
8 will ever be able to show an association if we rely
9 upon epidemiology. It is our contention that this
10 affects some as yet undetermined subset of children,
11 and that they will not show up in epidemiology as the
12 studies have been done to this point.

13 Q And you would acknowledge that there have
14 been numerous epidemiological studies in the United
15 States, Canada, and Europe that have looked at this
16 issue?

17 A I will, and I will have to tell you that
18 even as a pediatrician I perceived flaws in a number
19 of those epidemiologic studies. I do not think that
20 they have addressed the relevant question here.

21 Q And you're not an epidemiologist, correct?

22 A Obviously not.

23 Q Doctor, as recently as this year the
24 American Academy of Pediatrics and the American
25 Academy of Family Physicians reaffirmed their position

DR. MUMPER - CROSS (RESUMED)

1621

1 on this issue in response to a television show that
2 aired, were you aware of that?

3 A I heard of it. I actually don't think I've
4 read the document.

5 Q All right. And the American Academy of
6 Family Physicians issued a statement saying,
7 "Scientific data overwhelmingly show that there is no
8 evidence between vaccines and autism," is that right?

9 A That's correct.

10 Q And the American Academy of Pediatrics
11 issued a statement indicating that "No scientific link
12 exists between vaccines and autism," is that correct?

13 A Yes, but please blow that up again.

14 The AAP said, "No mercury is used as a
15 preservative and routinely offer childhood vaccines."
16 That has led many of my patients to make the
17 assumption that since flu vaccine is now included on
18 the schedule of recommended vaccines, that their
19 children's flu vaccine does not contain thimerosal.

20 Now, whatever the science shakes down on
21 this in the years to come, whether this hypothesis is
22 refuted or affirmed, I am very concerned that the
23 American Academy of Pediatrics would make that
24 statement because families are taking their kids in
25 for flu shots thinking that they are avoiding

DR. MUMPER - CROSS (RESUMED)

1622

1 thimerosal, and it is often not the case, and I have
2 expressed that concern to the president of the AAP --
3 I presume it was Rene Jenkins that wrote that letter.
4 Could you get it back up? I'm sorry, please -- that I
5 would like for them to be very careful, yes, about
6 their language.

7 Q Doctor, do you believe that your opinion
8 that thimerosal can contribute to autism is generally
9 accepted in the medical community?

10 A No, it is not generally accepted.

11 Q And would you agree that for most members of
12 the medical community the case is closed on the
13 alleged link between vaccines and autism?

14 A Sadly, I think that is the case.

15 MR. JOHNSON: Thank you. I have no further
16 questions.

17 SPECIAL MASTER CAMPBELL-SMITH: Thank you,
18 counsel.

19 It is now 1:15. I anticipate Petitioner's
20 counsel has some redirect.

21 MR. POWERS: Yes, ma'am.

22 SPECIAL MASTER CAMPBELL-SMITH: Would you
23 like to take a lunch break?

24 SPECIAL MASTER HASTINGS: Do you have any
25 idea how long you're talking about?

DR. MUMPER - CROSS (RESUMED) 1623

1 SPECIAL MASTER CAMPBELL-SMITH: I was going
2 to ask that.

3 MR. POWERS: I think it will be long enough
4 that we ought to take a lunch break. It's hard to put
5 a time number on it, but it won't be the 15-20-minute
6 redirect. So having a chance for a lunch break, and
7 particularly for the witness, if there is going to be
8 any re-cross. I think the witness, in particular,
9 needs a full lunch break.

10 SPECIAL MASTER CAMPBELL-SMITH: Okay. I
11 think an hour? An hour?

12 THE WITNESS: That would be great. Thank
13 you.

14 THE WITNESS: I'm sorry. You weren't asking
15 me.

16 SPECIAL MASTER CAMPBELL-SMITH: The witness
17 agrees that she needs an hour. Let's return at 2:15.

18 SPECIAL MASTER HASTINGS: Before we break
19 though, I just wanted to say one thing. I see Ms.
20 King is on her way out the door. I understand that
21 you need to fly out this afternoon, so I just wanted
22 to thank you very much, Ms. King, for being here with
23 us this week. We really appreciate you coming here.
24 Thank you, again.

25 MS. KING: Thank you.

DR. MUMPER - CROSS (RESUMED)

1624

1 SPECIAL MASTER HASTINGS: We are adjourned
2 for the afternoon, I guess.

3 SPECIAL MASTER CAMPBELL-SMITH: For lunch.

4 SPECIAL MASTER HASTINGS: For lunch.

5 (Laughter.)

6 (Whereupon, at 1:17 p.m., the hearing in the
7 above-entitled matter was recessed, to reconvene at
8 2:15 p.m. this same day, Friday, June 16, 2008.)

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DR. MUMPER - REDIRECT

1626

1 Q You recall a line of questions about some of
2 the research that you were conducting. Do you
3 remember those questions?

4 A Yes.

5 Q And questions about hyperbaric therapy and
6 lab reliability testing?

7 A Right.

8 Q Why is it that you were conducting those
9 tests in the first place, or conducting that research
10 in the first place?

11 A Our perception is that some of the research
12 efforts that have been going on in the field of autism
13 have not been directed as much as we would like toward
14 potential treatments and therapies and assessment
15 methods that would actually lead fairly soon to taking
16 better care of these children.

17 Classically, the resources have been
18 directed to a lot of work in classic genetics, and we
19 wanted to look at the treatment strategies that we had
20 developed with our collective clinical wisdom and make
21 sure that they were safe, ultimate evaluate efficacy
22 in a more rigorous fashion, and to refine our use of
23 laboratory assessments.

24 It came to our attention that a number of
25 parents were renting hyperbaric chambers and we wanted

DR. MUMPER - REDIRECT

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1 to make sure that they were not posing a risk to the
2 children. So, we wanted to look at the methylation
3 biochemistry and the oxidative stress markers.

4 So, the initial study, which was just a
5 pilot study, was intended not to be so much a rigorous
6 assessment of efficacy as it was the first step, which
7 would be to prove safety, so that's why we chose to
8 look at the methylation biochemistries, and since we
9 were doing the study we also looked at therapeutic
10 response, but the primary issue there was safety.

11 With our lab split sample study, our primary
12 concern is that we are in a situation where we have
13 found value in using so-called functional laboratory
14 assessments. Many traditional laboratory assessments
15 are targeted more toward the detection of disease as
16 opposed to the detection of suboptimal function in the
17 period of time leading to frank expression of disease.

18 So, we wanted, as best we knew, as best we
19 could, to know that those functional assessments we
20 were utilizing are replicable or to sort out which
21 laboratories would not have reliability on split
22 sample testing. So, ARI ended up budgeting over
23 \$30,000 of a pretty meager budget to essentially do
24 the lab split sample study, and that will ultimately
25 become known. It's certainly possible that some of

DR. MUMPER - REDIRECT

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1 the labs we have relied on are stronger in some areas
2 than others, and that's why we need to sort those
3 issues out.

4 Q Excuse me. Dr. Mumper, would it be your
5 intent then with hyperbaric study and the lab
6 reliability study, if there are findings that you find
7 significant would you then be integrating those into
8 the Defeat Autism Now recommendations and protocols?

9 A Yes. We shared some preliminary data on
10 split samples for allergy testing at the think tank
11 that we held in April, and our plan is to also review
12 at the think tank the split sample reliability for the
13 other types of tests that we anticipate having
14 statistically analyzed by then.

15 Q So these safety and efficacy studies aren't
16 for your sort of proprietary use, but they are
17 actually designed to be pushed out into the treatment
18 community, is that correct?

19 A Oh, exactly. That's entirely the purpose,
20 yes.

21 Q Are there any other research projects you're
22 doing with that same general goal, that is, looking at
23 the safety and the efficacy of various treatments that
24 you employ?

25 A Well, I've actually just hired a clinical

DR. MUMPER - REDIRECT

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1 research director since I am primarily a clinician and
2 a medical educator. I want to continue to participate
3 in clinical research studies, but I wanted to have
4 someone who could help me design them and carry out
5 the protocols, so I hired someone that has had
6 training in that arena so that when we do clinical
7 trials and research at the Rimland Center that will
8 not be under my -- limited by my relative lack of
9 expertise, but we can actually continue to do higher
10 quality and more complicated studies.

11 One of the things that I'm very eager to do
12 is what's called single subject, multiple baseline
13 studies, and the reason that I'm so interested in this
14 is that our anecdotal impression is that what we can
15 do to recover Johnnie might be totally different from
16 what we can do to recover Suzie. And so we need to
17 figure out what is working for specific kids, and what
18 is it about those kids that makes that strategy of
19 treatment more effective.

20 So, when you group a bunch of kids together
21 and do the classic placebo controlled double-blind
22 study, that works great for evaluating a drug in
23 patients that have the same symptom. It doesn't work
24 as well for a situation in which you've got complex
25 multi-system involvement, and so a way of doing that

DR. MUMPER - REDIRECT

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1 is to adapt some research from the behavioral world
2 where they look at a single subject and document
3 behaviors over time, and then do interventions and
4 look at the change in the subject.

5 Ted Carr is one of the people who has
6 published a fair amount using this type of research
7 protocol, and he's actually contacted me. We have a
8 phone conference call next week because he would like
9 to do some of that type of research in our clinic,
10 utilizing not just behavioral measures but also
11 wedding it to biomarkers biomedically.

12 So, I hope that my colleagues at ARI and I
13 can lead the way in looking at well-respected research
14 models that we can apply to individuals as opposed to
15 always thinking about research having to be done in
16 broader groups.

17 So another thing that we plan to do, I
18 mentioned that we've met with the American Academy of
19 Pediatrics. My job that I'm a little behind on due to
20 this trial was to provide the AAP with our sort of
21 wish list for research projects. We want to go after
22 what we think of as the low hanging fruit. The
23 studies that we can do that can be completed
24 relatively quickly so that the results can be utilized
25 to help children.

DR. MUMPER - REDIRECT

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1 So, we are going to try to encourage
2 research on treatment protocols and especially on
3 identifying biomarkers that help us subtype each of
4 these types of autism, because our perspective is that
5 the evolving model that we have regards a combination
6 of genetic and environmental components, and perhaps
7 lots of autisms, with an "s", this is language that's
8 actually been adopted by the MIND Institute, and what
9 it implies is that there may be a number of different
10 ways that children are affected in ways that they
11 ultimately exhibit autistic-type behaviors. So there
12 may be a number of pathways that are affected to give
13 us this constellation of behavioral symptoms.

14 Q And, Dr. Mumper, is it typical or atypical
15 that a general practice pediatrician in a small town
16 like Lynchburg would bother to hire a clinical
17 research director?

18 A I think that would be very atypical because
19 it's a severely financially unwise thing to do.

20 Q If it's a financially unwise thing to do,
21 then why are you doing it?

22 A Because I think it's the right thing to do.
23 I've thought about that question a lot, and I think
24 one thing that influenced me on this is that when I
25 was a child my house had a community swimming pool

DR. MUMPER - REDIRECT

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1 just behind our back yard, and at that time, which was
2 in the sixties, they would not allow people of color
3 to come and swim in the swimming pool.

4 So my father and my family took the stand
5 that we would then not participate, and so for all the
6 summers of my childhood I would play in the back yard
7 hearing the splashing from the swimming pool, and it
8 in a way that was reenforcing over and over told me
9 that my parents thought it was important that I stood
10 up for what I thought was right.

11 So, there have been significant personal and
12 professional disadvantages to speaking up in such a
13 lone voice when there are clearly so many agencies
14 that don't have the same concerns as I do, but I do
15 think it's important to do what you think is right
16 even if there are some sacrifices involved.

17 Q What do you do to keep up with the science?
18 I mean, do you follow the literature? How do you keep
19 engaged with the science that's happening out there?

20 A Yeah.

21 Q Because you were asked about some of this,
22 about what articles you read and what articles you
23 rely on, and how you form your opinions. Can you
24 describe to the Special Masters what you do to keep
25 apace of that?

DR. MUMPER - REDIRECT

1633

1 A It's quite a challenge because I think I
2 mentioned I typically go to my office at 7:30 and
3 leave about six, and most of that time is devoted to
4 clinical practice. But in my job at ARI, one of my
5 roles is to decide what literature we teach to the
6 clinicians that we're teaching in the clinician
7 seminars. So in order to make that distinction, I
8 feel that it's necessary to try to keep up with the
9 literature.

10 So, I have a couple of list serves that send
11 me articles based about autism or related subjects,
12 and I, you know, certainly can't read all of those
13 articles, but I try to read as much as I possibly can.

14 Another impetus I have is that I'm the
15 director for the clinical part of the think tank for
16 the Autism Research Institute, so the scientists and
17 clinicians have to submit their abstracts to me, and
18 I'm the one that makes the judgment about what science
19 they can present and what doesn't meet, you know, our
20 expectations for presentation, so that helps me keep
21 abreast of the science.

22 The other thing is that I get invited to
23 speak in this country and overseas about these topics,
24 and I like to be able to answer the questions when
25 they're asked, and so I try to have a good grasp of

DR. MUMPER - REDIRECT

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1 the scientific literature in addition to my clinical
2 experience so that I can field those questions from
3 the audience.

4 Q Now, in this sort of monitoring and ongoing
5 review of the literature, is it your experience that
6 in the field of autism there is significant new
7 science that comes out in an evolving way?

8 A I have seen it explode exponentially, and I
9 think that can be actually objectively validated by
10 looking at the number of autism articles, and there is
11 a big curve up over the last decade or so.

12 The thing I also really like is that since I
13 am the medical director for ARI, I frequently will get
14 prepublication confidential drafts of upcoming science
15 with requests from the authors to make suggestions, I
16 mean, obviously from my perspective as a clinician, on
17 the way that they have written the papers or any
18 aspects of the paper that I would critique or make
19 suggestions on.

20 Q Now, I want to focus a little bit on some of
21 the questions that you were asked about the content of
22 your reports, and again focusing first on yesterday
23 afternoon.

24 A Okay.

25 Q Do you recall questions about the article

DR. MUMPER - REDIRECT

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1 that was published in Medical Hypotheses?

2 A Yes, I do.

3 Q And do you recall questions that suggested
4 you were relying on that article to bolster an opinion
5 that mercury as contained in vaccines was neurotoxic
6 or that it was somehow being cited in support of your
7 ultimate opinion and causation? Do you remember that
8 line of questions?

9 A Yeah, and I actually don't think I
10 appreciated at the time perhaps the intent of the
11 question. I was thinking that the intent of the
12 question was to point out that it wasn't a referee
13 peer-reviewed journal and that it had been submitted
14 by people who were not scientists.

15 But the way that I cited the article, and I
16 think that I tried to make it very clear in my report
17 was that it was to point to it as an example of
18 mercury having myriad toxicities, and that it raised
19 the issue of biochemical individuality in the patients
20 because it specifically talks about things like route
21 of excretion and individual variability and those
22 types of issues.

23 So, I certainly did not ever in any aspect
24 of my testimony here before this Court mean to imply
25 that I was equating autism with direct mercury

DR. MUMPER - REDIRECT

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1 toxicity. I would certainly agree that that is not
2 the case. I would be embarrassed to put that
3 hypothesis forward.

4 Our concerns is a much more complicated one
5 having to do with a much more chronic condition
6 resulting after low-dose exposures. Having said that,
7 if you look at the actual sheet that's printed about
8 thimerosal, there are side effects listed that are
9 consistent with what some of these children have.
10 They list anorexia, for example, as a known effect of
11 thimerosal. They list nausea and vomiting. They list
12 fetal loss, and so I think that one thing that has
13 been lost in this arena is the idea that we expect all
14 drugs to have side effects, and we would expect that
15 in vaccines there are going to be some children that
16 have problems with them, hence the reason for this
17 Court.

18 Q But certainly not cited for the proposition
19 that autism, as you said, is the functional equivalent
20 of acute mercury toxicity?

21 A No, that is not my thesis at all.

22 Q Now, another article that you had in your
23 report that was discussed yesterday the first author
24 is Stajich, and I never know if I'm pronouncing that
25 right.

DR. MUMPER - REDIRECT

1637

1 A I can't do it either.

2 Q Okay. So we will trade pronunciation skills
3 and math skills, but Scott, if you could put just the
4 --

5 MR. MATANOSKI: Actually we don't believe
6 that we discussed that article. That's what I was
7 informed.

8 MR. JOHNSON: I didn't ask any questions
9 about that article.

10 BY MR. POWERS:

11 Q Well, put it this way, the article was cited
12 in your report.

13 A Right.

14 Q And you were asked questions about why it
15 made sense to rely on articles in your report.

16 A Right.

17 Q And why did you rely on the Stajich article
18 in your report?

19 A Because it showed an outlier. They looked
20 at a small number of children, I believe it was about
21 20, and in that one of the children had a level of
22 23.6 micrograms per liter, I think, and my point in
23 including it in my report was that, even in those 20
24 kids, one of them was high enough to meet the criteria
25 for acute mercury toxicity.

DR. MUMPER - REDIRECT

1638

1 That does not mean that I think that the
2 child had acute mercury toxicity. It was just to say
3 that there is a wide variation in how individual
4 children response.

5 So if in that group of 20 we see one child
6 who is that high, what would happen if we looked at
7 bigger populations and consider the possibility that
8 there will be some children that are outliers and for
9 whatever reason develop higher blood levels, and
10 therefore potentially higher brain levels.

11 I also want to make it clear that I'm not
12 concerned about what's in the blood. I'm concerned
13 about what ultimately goes to the brain and other
14 target tissues.

15 Q Now you were asked questions about the
16 Berman article. Do you recall those questions?

17 A Well, I think the way, if I'm remembering
18 right, that that happened was that they asked me about
19 an article that was reported to have refuted the
20 Hornig article.

21 Q That's correct.

22 A Is that the one that's I'm remembering?

23 Q That's correct.

24 A So, I had not read that article, but I did
25 read it early this morning.

DR. MUMPER - REDIRECT

1639

1 Q And having reviewed that article and then
2 thinking back to the questions where that article was
3 being cited to refute Mattie Horning's article that
4 you had cited in your report --

5 A Right.

6 Q -- what do you think is significant in your
7 review relevant to that line of questioning that you
8 heard yesterday?

9 A Well, I actually found it very interesting
10 to read the article because that particular article
11 was looking at acute toxicity, and in fact they were
12 not doing any kind of measures of neuroinflammatory
13 markers. They didn't speciate the mercury. They were
14 looking at mice, which is a good model and it's what
15 Mattie used, but they were not using probably the best
16 model, which would be primates, and they also didn't
17 say anything about inorganic mercury in the brain.

18 What they did look at was, you know,
19 behaviors of the animals, and so whereas I acknowledge
20 that it didn't find the same thing that Dr. Hornig
21 did, we don't expect that in science, and it really
22 doesn't impact in any way on making my opinions any
23 less strong.

24 Q Now, you mentioned the issue of mice or
25 rodents generally is not a good surrogate for human

DR. MUMPER - REDIRECT

1640

1 exposure.

2 A Right.

3 Q You were also asked questions specifically
4 about Dr. Burbacher and Clarkson's 2005 infant monkey
5 study. Do you remember that line of questions?

6 A I do.

7 Q Okay.

8 MR. POWERS: And Scott, if we could put the
9 coverage of that article up, I would appreciate it,
10 and just zoom in on the title. I just want to make it
11 for the record so that everybody knows what we're
12 talking about here.

13 BY MR. POWERS:

14 Q This the op cite at Petitioner's Exhibit 26,
15 and we're looking at the cover page. Do you see that
16 on the screen there, Dr. Mumper?

17 A Yes.

18 Q Your recollection of your cross-examination
19 yesterday, this is the article that would have been
20 referred to when they were talking about the infant
21 money study, correct?

22 A Yes.

23 MR. POWERS: Okay. We can pull that down
24 now, Scott. I just wanted to make sure that we're all
25 talking about the same document.

DR. MUMPER - REDIRECT

1641

1 BY MR. POWERS:

2 Q Now, that study, Dr. Mumper, involved
3 primates, correct?

4 A Right.

5 Q What's the significance of primates in that
6 study?

7 A Well, primates are an excellent model to
8 look at what might happen to humans, and can be used
9 experimentally, and primates are much, obviously
10 closely related to us than mice and rodents.

11 I had the opportunity to hear Dr. Burbacher
12 present this, perhaps for the first time it was
13 presented publicly, I'm not sure, but it was at NIEHS
14 in August of 2005, and we discussed at that symposium
15 how it was very interesting the way that this was
16 presented in the press because it was actually spun in
17 the lay press as good news because ethyl mercury was
18 shown to clear the blood very quickly, and what all of
19 us who are clinicians and scientists took away from
20 the paper was a much more dire kind of take home
21 message, which was that it cleared from the blood but
22 ethyl mercury went to the brain, and ultimately led to
23 inorganic mercury that was in the glial cells.

24 Q And now the 2005 paper, did it say that the
25 inorganic mercury actually ended up in the glial cells

DR. MUMPER - REDIRECT

1642

1 or just that it was inorganic mercury that entered the
2 brain?

3 A That perhaps it entered the brain. I'm
4 sorry.

5 Q Now, the Burbacher paper that you was the
6 subject of questioning yesterday, you remember a bunch
7 of questions about blood levels?

8 A Yes.

9 Q And there was a line of questions that
10 involved the relative blood clearance levels in this
11 2005 paper --

12 A Right.

13 Q -- between methyl and ethyl, correct?

14 A Right.

15 Q Is the distinction between blood clearance
16 rates between ethyl and methyl, is that why you
17 thought this paper was important and included it in
18 your report?

19 A No. No.

20 Q Why did you include it in your report?

21 A Because of the issue of the inorganic
22 mercury being in the brain, and the fact that with
23 ethyl mercury there was a significantly higher
24 fraction from ethyl that got converted to inorganic
25 mercury.

DR. MUMPER - REDIRECT

1643

1 And the other thing that I remember getting
2 chills up and down my spine about was listening to Tom
3 present how when they looked at the half-life of the
4 inorganic mercury, that they were projecting that it
5 would be in terms of decades, and that because of the
6 way the mercury went into the brain and was converted
7 to inorganic, they thought that there was clear
8 evidence for the possibility of accumulation of
9 inorganic mercury over time as repetitive thimerosal-
10 containing vaccines were administered.

11 They also made a point in their paper which
12 I thought highly of because it agreed with my opinion
13 that they found it very hard to understand how the
14 Institute of Medicine could have concluded, in 2004,
15 that no further science should be done on thimerosal
16 since it was clear that we did not have good models
17 for protecting about the pharmacokinetics of
18 thimerosal.

19 So, one of the points in the paper that was
20 discussed yesterday was that there are limitations to
21 applying methyl mercury kinetics to thimerosal
22 kinetics, but the concerning thing about that, when I
23 heard him present this, is that it made me even more
24 worried about ethyl mercury because of the very long
25 half-life of the inorganic mercury and the relatively

DR. MUMPER - REDIRECT

1644

1 higher fraction of ethyl mercury that was converted to
2 inorganic versus methyl mercury, if that makes sense.

3 Q Now, is it also fair to say that the
4 significance of the 2005 Burbacher/Clarkson study is
5 related to other work that involves mercury speciation
6 and neuroinflammation which is obviously a key part of
7 your opinion in these cases?

8 A Yeah, and I'm actually distressed to find
9 out over the years how long ago this information was
10 known because there has been a lot published about
11 mercury in the last several decades, and I think it
12 was the mid-nineties that Clarkson did his work on
13 methyl mercury. That was in adult monkeys, I believe.

14 Q And are you talking Dr. Clarkson or Dr.
15 Burbacher and Charleston and Vahter?

16 A Oh, I'm sorry. Not Clarkson. Yes, you're
17 right, Charleston, not Clarkson. I apologize.

18 Q And I raise that because other witnesses --

19 A Right.

20 Q We've got so many monkey studies going,
21 we've got to keep them straight, and some of the
22 authors are shared.

23 A Right.

24 Q If I could just use the shorthand, we're
25 talking about the adult monkey studies in the mid-

DR. MUMPER - REDIRECT

1645

1 nineties?

2 A Yes.

3 Q Okay.

4 A Yes.

5 Q And you cite Dr. Charleston's work in your
6 paper?

7 A That's correct.

8 Q In your report.

9 A And I realize that that paper was about
10 methyl mercury and not ethyl mercury, but the reason
11 that I thought it was important is because it
12 demonstrates this idea of conversion to inorganic
13 mercury and then the fact that there was
14 neuroinflammation in the adult monkey brains and that
15 we are so concerned about the neuroinflammation that
16 we believe to be happening in these kids.

17 Does that make sense?

18 Q Yes. So would it be fair to say that the
19 adult monkey studies establish that methyl mercury --

20 A Right.

21 Q -- gets inorganic mercury into the brain?

22 A Exactly.

23 Q And that inorganic mercury in the brain goes
24 to glial cells?

25 A Yes.

DR. MUMPER - REDIRECT

1646

1 Q And that having glial cells contain a lot of
2 mercury is evidence of neuroinflammation?

3 A Right.

4 Q And then you then transition into the 2005
5 Burbacher/Clarkson paper where they talk about, just
6 as was the case with methyl, you have ethyl that dumps
7 inorganic mercury into the brain, is that correct?

8 A That is correct.

9 Q We talked about the 2005 Burbacher paper as
10 if it was the whole study, but is it one paper or does
11 it represent the entire study as far as you know?

12 A Yeah, I think that Tom has said that they
13 have a whole series of ongoing studies on this. And
14 when you read the paper very carefully, you will see
15 that in the 2005 study that I heard him present at
16 NIEHS they had just used half the brains.

17 So, my understanding is that there are
18 further studies being conducted on the other half of t
19 hose brains that I hope will be informative as to
20 whether or not that replicates perhaps the adult
21 findings with regard to neuroinflammation. We have to
22 wait and see. That's part of the evolving science.

23 Q Okay. Now, you also recall a line of
24 questionings about a deposition that you gave in the
25 Blackwell case in Maryland. Do you remember those? I

DR. MUMPER - REDIRECT

1647

1 think those questions might have been today rather
2 than yesterday.

3 A Yes, that was today.

4 Q Okay. I'm going to direct your attention if
5 we can pull it up to a page from that deposition
6 transcript, and this is on the deposition it's page
7 158.

8 MR. POWERS: And, Scott, if you could under
9 the question "By Ms. Elliott", if you could highlight
10 the rest of the page there, please.

11 BY MR. POWERS:

12 Q Now, Dr. Mumper, during that deposition,
13 which was in January 2007, you were asked what it
14 meant to have a -- it says, "What does it mean to be a
15 neurotoxin, in your mind?"

16 A And I said, "It means that the substance has
17 either direct or indirect effects on some aspect of
18 the nervous system, either directly on cells that are
19 neurons, astrocytes, microglia, or whatever, or
20 indirectly with regard to enzymes that it affects that
21 in fact then affect the nervous tissue or in other
22 ways interferes with functioning of neurologic
23 capacity."

24 Q Okay. I'm going to interrupt you there. So
25 would it be fair to say that neurotoxin, in your mind,

DR. MUMPER - REDIRECT

1648

1 doesn't necessarily mean cell death? Is that a fair
2 summary?

3 A That's exactly correct.

4 Q Because what you're talking about is
5 functional toxicity explicitly.

6 A Exactly.

7 Q Correct?

8 A Yes.

9 Q And when you talk about neurotoxicity in
10 your opinion in this case, both your testimonial
11 opinion and in your report, are you also talking about
12 functional toxicity primarily?

13 A I am talking functional primarily, yes.

14 Q The statement that astrocytes, microglia are
15 involved in the neurotoxic process involving
16 thimerosal-containing vaccines, what is that informed
17 by? What was your basis then for saying that those
18 particular cell types were involved?

19 A At that time I had already had the
20 opportunity to speak with both Tom Burbacher and Diana
21 Vargas about their works, so I was specifically
22 thinking of their papers related to, for Dr.
23 Burbacher, the monkey study, and for Dr. Vargas, the
24 inflammation neuroglial activation paper that was
25 published at Hopkins.

DR. MUMPER - REDIRECT

1649

1 Q And having been reviewing this information
2 back in January of 2007, you then had that information
3 to rely on when you considered Dr. Kinsbourne's report
4 that you reviewed about a month ago, correct?

5 A Yes, and in addition, I would say that on a
6 number of occasions since I first heard the Vargas
7 paper and the Burbacher paper I've had the opportunity
8 to teach that in my clinician training because we
9 really have regarded those as very seminal papers in
10 our concept of what we need to teach clinicians about
11 taking care of these children.

12 Q There is a further question there that asks,
13 and Scott, you will need to bump down to the next page
14 in a moment. The question is at the very bottom and
15 it says, "Are you offering an opinion that thimerosal
16 is toxic to the immune system as well?"

17 So you see the question there and let's look
18 at the answer. What is your answer to that question?

19 A "I do believe that to be true, so I'm giving
20 that as an opinion, yes."

21 Q And the question was about the immune system
22 being implicated here. Would your answer include the
23 brain's innate immune system also?

24 A Yes, it certainly would. One of the things
25 that we teach a lot about in our Defeat Autism Now

DR. MUMPER - REDIRECT

1650

1 physician trainings is the importance of modulation of
2 the immune system, both cell-mediated immunity and
3 antibody immunity, but also the primitive innate sort
4 of first response system.

5 So, we're really not talking in the
6 neuroinflammatory model, we're specifically not
7 talking about evidence of an adaptive response. We're
8 talking about evidence of this early innate, more
9 primitive type of immune response, and that's best
10 probably characterized by the microglia who act as
11 macrophages to go in initially and try to mop up the
12 toxins much like peripheral macrophages would.

13 Q Okay, and we can be done with that page.

14 So, Dr. Mumper, I now want to move on and
15 talk about some of the questions that came later
16 during the day today. Do you remember questions about
17 how you diagnose autism? Do you remember that line of
18 questioning?

19 A Yes.

20 Q And do you remember questions particularly
21 about regressive autism?

22 A Yes.

23 Q In diagnosis autism spectrum disorders, are
24 there domains of symptoms that you look at in making a
25 diagnosis?

DR. MUMPER - REDIRECT

1651

1 A Yes. We look in areas such as communication
2 and stereotypic behaviors as well as social
3 reciprocity.

4 Q And those would be the three primary domains
5 or categories?

6 A That's correct.

7 Q Within the communication category, what
8 would be included in there?

9 A There is speech and then there is language,
10 and language has a broader implication about being
11 able to communicate. Language doesn't necessary have
12 to be speech. It could be gestures. It could be sign
13 language. It could be using a picture system, those
14 types of communication would also be involved.

15 Q Because, as I recall, and correct me if I'm
16 wrong, the question seemed to focus on word counts --

17 A Yes.

18 Q -- at particular ages. Do you remember that
19 line of questioning?

20 A Yes, and I was very resist to giving typical
21 word counts, if you will recall, because as I tried to
22 make clear by talking about things like babbling and
23 jargoning and gesturing, there are ways that children
24 can communicate pragmatically without using words.
25 For example, if you have a child who is able to point

DR. MUMPER - REDIRECT

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1 to an object or tug on the mother and point to the
2 juice in the refrigerator, that child is essentially
3 using gesture to communicate pragmatically.

4 So, I think it is very realistic to make the
5 argument that if you have a child who progresses to a
6 stage where they are using pragmatic language in that
7 way to get their needs met, and then they lose that
8 ability, that's also losing language in the sense of
9 pragmatic language even if it's not implying that they
10 lose actual words.

11 So, any mother will tell you that their
12 babies can communicate with them in ways that do not
13 involve words, and I think it would be a significant
14 disservice to the children whose cases will come
15 before this Court if we are led down a path that
16 falsely uses standardized word counts as the only way
17 of assessing whether or not children are losing their
18 ability to communicate.

19 Q And that's in just one domain. There is,
20 again, a lot of focus on word count in just that one
21 domain.

22 Following up on the questions about
23 regressive autism and in these cases, are there social
24 interaction skills that you observed in these two boys
25 that they had and then lost?

DR. MUMPER - REDIRECT

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1 A And to say that I observed it in the boys,
2 it would be by virtue of video tape as I have -- you
3 know, as we've established, have not met the children.
4 But I did see very age-appropriate expressions of
5 social interaction in both of the boys early on, and
6 the most striking thing was that they both early on
7 exhibited a lot of looking directly at the camera, and
8 a lot of being responsive with their faces lighting up
9 with different events going on around them.

10 In both of them, I appreciated a qualitative
11 change in their demeanor. Again, at the time I kept
12 myself blinded as to the supposed onset of the
13 regression, but you could see the qualitative change
14 in their faces as they looked past people instead of
15 engaging with them, or they withdrew from social
16 interaction whereas previously they had sought it out.

17 So, I think there is clear evidence of
18 impairments in those domains and a loss of previous
19 skills.

20 Q And you just used the word "qualitative
21 assessment" when you were describing some of those
22 skills. Flipping back again into the communications
23 domain.

24 A Yes.

25 Q Would it be as fair within that domain to

DR. MUMPER - REDIRECT

1654

1 say that that is a qualitative assessment rather than
2 a raw quantitative assessment based on word count?

3 A Exactly, because I'm very interested in how
4 the kids used the words, and sometimes if you have
5 very rote, repetitive use of words, which we call
6 echolalia, that is actually a very bad sign, and one
7 of the signs that's recognized autistic behaviors.

8 So, we're not just looking at a list of
9 words. A good example would be a child who could say
10 "cat", "dog" and "pony" would not be exhibiting as
11 high a level of function qualitatively as one who
12 could, as Jordan did, point to the cat on the
13 wallpaper border and say "meow", or point to the dog
14 and say "ruff". That's an example of the kinds of
15 qualitative aspects of language and communication that
16 I really hope that we evaluate as we go forward.

17 Q And in these cases in particular then, would
18 it be your testimony that in the communication realm
19 both of these boys acquired communication skills and
20 then lost them at a later point in life?

21 A That is my testimony.

22 Q Would it also be your testimony, to a
23 reasonable degree of medical certainty, that they
24 acquired behavioral skills and lost them later in
25 life?

DR. MUMPER - REDIRECT

1655

1 A That is correct.

2 Q Would it be your further testimony, to a
3 reasonable degree of medical certainty, that they had
4 social reciprocity skills that they lost later in
5 life?

6 A It would be my testimony, yes.

7 Q Would it also be your testimony that
8 combining all those three discrete opinions that they
9 were clear cases of regressive autism?

10 A That is my best medical opinion, yes.

11 Q Now, I want to talk also about progress over
12 time now. If a child is one year old -- this is a
13 little bit of a hypothetical. Say a child is one old.

14 A Okay.

15 Q And maybe is at the low end of the normal
16 number of words, so that even if we're looking at a
17 quantitative analysis there are three ways that child
18 could go in the future. They could ether catch up to
19 the norm.

20 A Yes.

21 Q Actually, there are four ways. Make
22 progress but below the norm.

23 A Right.

24 Q Plateau or lose what they have, correct?

25 A Right, or did we talk about even doing

DR. MUMPER - REDIRECT

1656

1 better than the normal? That's number five.

2 Q You know, being gifted would be wonderful,
3 so let's include that as the fifth.

4 A Okay.

5 Q So beginning at that starting off point,
6 there are five possible outcomes.

7 A Right.

8 Q And how many of those outcomes would you
9 describe that child's progress as symptoms of
10 regression?

11 A Now I'm totally lost you on the last part of
12 the question.

13 Q Yes. Put it this way. Only one of those
14 outcomes would represent regressive autism, correct,
15 that's that drop off?

16 A Oh, yes. I'm sorry. Yes.

17 Q Okay.

18 A I am talking about dropping off the --
19 actually, I'm talking about actually losing words that
20 they had, so that is a clear dropping off, yes.

21 Q Right. There were questions about single-
22 dose versus multi-dose vials this afternoon. Do you
23 remember those questions?

24 A Yes.

25 Q And the question was posed to you as a fact

DR. MUMPER - REDIRECT

1657

1 that single-dose vials do not contain thimerosal. Do
2 you recall that statement?

3 A I do recall that implication.

4 Q Do you believe that statement to be true?

5 A No.

6 Q Why don't you think it's true?

7 A Because there were no requirements that all
8 single-dose vials be thimerosal free. One of the
9 advantages of having single-dose vials is that you
10 typically are able to get by with less preservatives,
11 but to my knowledge, there was no mandate in that
12 regard.

13 Q In fact, the only mandate is that multi-dose
14 vials must have a preservative, correct?

15 A That's correct.

16 Q And single-dose vials could have a
17 preservative and it was not prohibited, correct?

18 A To the best of my knowledge, that is
19 correct.

20 Q There was also a series of questions about
21 other environmental exposures that might contribute to
22 the emergence of autism, particularly regressive
23 autism. Given other exposures that may be there, and
24 let's not assume whether they are or not, but if they
25 are there what do you believe, if any, about the

DR. MUMPER - REDIRECT

1658

1 potential contribution of thimerosal-containing
2 vaccines in the presence of those other possible
3 exposures, in general?

4 A In general, I am very concerned about the
5 concept of synergistic toxicities. This is the
6 concept where any given substance has the potential to
7 be more toxic if it's given in combination with other
8 substances known to be toxic.

9 So, the classic example is when you look at
10 the LD-50, for example, the lethal dose that would
11 kill 50 percent of whatever you're studying for a
12 single toxin and then another toxin, when they get
13 those two things together, it just doesn't double
14 their risk of dying. It frequently increases it by
15 many orders of magnitude.

16 So, one of my concerns, since we've polluted
17 our planet so much, is that children who might
18 otherwise be exposed to lead toxicity or perhaps coal-
19 burning power plants, or live next door to a
20 agricultural farm that uses pesticides, and also gets
21 thimerosal-containing vaccines, that that child would
22 be subject to the possibility of synergistic
23 toxicities. That's one of the reasons that I find it
24 so difficult for any given child to come up with a
25 dose of ethyl mercury given by TCVs that is going to

DR. MUMPER - REDIRECT

1659

1 be safe for every kid because the synergistic
2 toxicities are going to vary, depending upon whether
3 the child is living in a lead-infested ghetto in the
4 inner city, or whether it's the child of a farmer who
5 is using organic pesticides, those types of issues.

6 Q And generally with those kind of exposures
7 information is not available, including how much got
8 into --

9 A Right.

10 Q -- a person's body, correct?

11 A Right.

12 Q When it got in there. Exactly what the
13 chemical formulation was you often don't know that.

14 A Right.

15 Q You don't know what dose entered the body.

16 A Right.

17 Q You don't know exactly where in the body the
18 dose might have gone.

19 A Right.

20 Q Now, with thimerosal-containing vaccines,
21 there is better information on the exposure, isn't
22 there?

23 A Yes.

24 Q And where does that information come from?

25 A From the label on the vial or on the box.

DR. MUMPER - REDIRECT

1660

1 Q So you know what the chemical of interest
2 is.

3 A Right.

4 Q You know how much was there.

5 A Right.

6 Q You know the dose.

7 A Yeah.

8 Q You know when it was administered.

9 A Yeah.

10 Q You know the timing of the symptoms after it
11 was administered, correct, just in terms of somebody
12 who then develops symptoms.

13 A Yes.

14 Q If the got the shot in a day and the
15 symptoms later, you can tell if there whether there's
16 a gap.

17 A Yes. Yes.

18 Q And based on the peer-reviewed scientific
19 literature that's been discussed, you know something
20 about the specific pharmacokinetics of the compound?

21 A That's correct.

22 Q Knowing all of that as opposed to other
23 exposures, does that make it more likely, in your
24 opinion, that thimerosal-containing vaccines can be
25 part of a differential diagnosis in the etiology of

DR. MUMPER - REDIRECT

1661

1 regressive autism?

2 A Yes. That makes it quite clear that it
3 should be in my differential diagnosis.

4 Q And that is also in review of Dr. Aposhian
5 and Dr. Deth and Dr. Kinsbourne's opinions, correct?

6 A Yes. I very much rely on them to inform me
7 about matters of toxicology, neuroinflammation. I
8 have to be able to rely on colleagues that I trust to
9 educate me in those areas.

10 Q And if we think of the mechanism of injury,
11 there were some questions about exposures and exposure
12 levels. The exposure that one gets through the
13 administration intermuscularly of a TCV --

14 A Right.

15 Q -- in terms of the mechanism of injury is
16 that ultimately the exposure that's of interest to you
17 and that informs your opinion?

18 A Tell me that again, Tom.

19 Q Yes. The initial exposure and how much
20 is --

21 A Oh, no, no. I'm not concerned about the
22 initial exposure or the initial blood levels. I'm
23 concerned about what happens potentially a great deal
24 of time later as this process that we've discussed
25 where ethyl mercury has entered the brain, converts to

DR. MUMPER - REDIRECT

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1 inorganic mercury, and then causes potentially to
2 varying degrees disruption of cellular biochemistry,
3 neurotransmitter function, interference with crucial
4 neuronal signaling, those types of functional jobs
5 that those cells are tasked to do.

6 Q So just to explore the details then of your
7 opinion in these cases, what you know in these cases
8 is that both boys were exposed to thimerosal-
9 containing vaccines, correct?

10 A Right.

11 Q And based on the review of the literature
12 and reliance on other experts, you have reached a
13 conclusion about where that thimerosal breakdown
14 product ends up, correct?

15 A Correct.

16 Q And it triggers a process in the developing
17 brain, correct?

18 A Correct.

19 Q What is that process that you believe, to a
20 reasonable degree of scientific certainty, is involved
21 here?

22 A Conversion to inorganic mercury and
23 neuroinflammation.

24 Q And the neuroinflammation that's triggered,
25 is that consistent with the model describe by Dr. Deth

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1 again that you relied on in reaching your expert
2 conclusions here?

3 A Completely, in my opinion, yes.

4 Q Is it your belief, to a reasonable degree of
5 scientific certainty or probability, excuse me, that
6 Dr. Kinsbourne's model of the overactivated brain
7 resulting for neuroinflammation, do you believe that's
8 what happened in Jordan King's case and in William
9 Mead's case?

10 A I do believe that that's what happened to
11 these children. I also believe that that Dr.
12 Kinsbourne's model is consistent with what I see in my
13 patients, and I think, in particular, one of the most
14 egregious examples of that was the little boy I
15 presented earlier today who had seizures for 18 years
16 before he died several weeks ago.

17 His clinical presentation is precisely what
18 I would expect to see in a child who had increased
19 excitation and decreased inhibition. Throughout the
20 time I took care of him, despite my best efforts, he
21 was constantly in a state of anxiety. He had a lot of
22 stimming behaviors, and as we mentioned, he had such
23 severe seizures that we actually had to implant a
24 vagus nerve stimulator in him to decrease the number
25 of seizures by 100 or so per day.

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1 And so as I've gone on this journey
2 everything that I've learned along the way has been
3 evaluated in terms of my clinical experience, and I
4 embrace those mechanisms, those scientific findings
5 that I can in some logical way always tie back to what
6 I'm seeing as a clinician because that is primarily
7 what I am.

8 Q And if you saw evidence that you thought
9 significant that would change your opinion in either
10 Jordan King's case or William Mead's case, would you
11 in fact change your opinion?

12 A I would have to do that because I think I
13 have vowed to tell the truth and the whole truth, and
14 I want to maintain my credibility because I'm going to
15 be held accountable for my opinions.

16 I may turn out to be wrong. One of the
17 things that believe me I've thought about is why am I
18 up here when the WHO and the CDC and the AAP, and all
19 those other organizations that were listed obviously
20 disagree with my conclusions. So I may well be wrong,
21 and would take it on the chin if that's the case, but
22 so far as the science accumulates it seems like I am
23 more right, and time will tell.

24 Q You were also asked questions about whether
25 you could identify one key piece of evidence of one

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1 most important piece of evidence, you were asked
2 essentially the same question but in several different
3 ways.

4 What do you think is the key evidence that
5 you rely on in support of your opinion in each of
6 these cases? I mean, is there one lab result or is it
7 something else?

8 A You know, I really can't identify one lab
9 result. I wish it were that easy, believe me. It
10 would make my job day to day -- you know, I could get
11 home a lot earlier, but this is a tedious process of
12 using a combination of clinical history, many labs
13 together.

14 I perhaps should take a chance for those of
15 you who are not clinicians to explain that we teach --
16 we, ARI, teach that the child is the best lab. We use
17 objective measures because we're trying to put a story
18 together, but we have to look at labs in context.

19 I am trying to think of a simple example,
20 but in addition to being differential diagnoses for
21 disease states or symptoms, there are also
22 differential diagnoses for laboratory values.

23 So when you see an analyte that's high, you
24 should intellectual think about what potential things
25 could be causing that analyte to be elevated. And if

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1 the same child has another analyte over here that also
2 has a differential diagnosis, you should think about
3 what things could cause that analyte to be elevated
4 and on and on.

5 So, as we look at our labs what we're trying
6 to do is to look at the thing that seems likely as the
7 differential cause of that elevation in relationship
8 to the other analities so that if you just have one
9 thing that might suggest metabolic acidosis or in this
10 case mercury toxicity, you know, that's on your list
11 of differential.

12 But if you find other things that are
13 consistent with that, then you move that up to the top
14 of the list, and it's a dynamic process. It also is
15 informed by the state of the child at the time, and I
16 don't know how to make that really simple. I really
17 wish I did.

18 Q And it sounds like certainly you can't do a
19 ranking like your top 10 things that you would be
20 looking for, is that correct? Just in general, if
21 you're looking at all of the things you would consider
22 in a differential, you don't have some neat little
23 checklist?

24 A No. I have a checklist of, you know, labs
25 that we find to be informative in certain patients,

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1 and I don't order every lab in every patient because
2 part of what happens in the history is to help you
3 rule out the need for some labs based on the clinical
4 story. But I don't have a top 10 list.

5 Q And using the Respondent's words that they
6 used on cross-examination, key evidence, is it key
7 evidence in both cases here that these boys, in your
8 opinion, suffered a clear autistic regression?

9 A Yes.

10 Q Is that key evidence?

11 A Yes.

12 Q Is it key evidence in these cases that both
13 of these boys received the full on-schedule TCV
14 exposure?

15 A Yes, with the caveat that I think that there
16 may be some children who by virtue of their state at
17 the time of shots would not necessarily have to get
18 the full complement in order to have a problem.

19 Q Understood, but I really want to focus on
20 these two particular cases --

21 A Okay.

22 Q -- and not in the more global. So the
23 question again would be, is it significant evidence to
24 you that both Jordan and William received the full
25 complement to TCVs on the pediatric schedule?

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1 A Yes, that is key.

2 Q Is it significant evidence to you that you
3 have ruled out through the medical records and the
4 videos and talking to the parents any family history
5 of autism?

6 A Yes.

7 Q Is it significant to you that neither one of
8 the siblings of Jordan or William exhibits any
9 developmental problems, delays or symptoms?

10 A Yes.

11 Q Is it key evidence to you that these boys
12 have been found to have no genetic aberrations that
13 are typically associated with autism, autistic
14 symptoms?

15 A Yes.

16 Q Is it also key evidence that there is no
17 sign that either of these boys received exposures to
18 other known causes of autism, such as terbutaline,
19 valproic acid and other agents?

20 A Yes.

21 Q So all of that is key evidence to you?

22 A Right, and a lot of what you've just
23 described is what I mean when I say evaluating the
24 kids individually and taking the history.

25 Q And the history being an entire history that

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1 we've just described?

2 A Yes. Yes.

3 MR. POWERS: I have no further questions.

4 SPECIAL MASTER CAMPBELL-SMITH: Thank you.

5 Re-cross?

6 RE-CROSS-EXAMINATION

7 BY MR. JOHNSON:

8 Q Doctor, you were asked some questions about
9 why you do the research that you do, and I believe why
10 you employ a research director, and you mentioned that
11 you did so because you believe it is the right thing
12 to do, is that correct?

13 A Yes, that is correct.

14 Q And remind me again, what is the name of
15 your clinic?

16 A The Rimland Center.

17 Q Okay, and did you at one time have a clinic
18 called Advocates For Children?

19 A Yes, I actually still have that. The
20 Rimland Center now has three different arms to it.
21 Advocates For Children is my typical pediatric
22 practice where I see ear aches and sore throats and
23 well babies.

24 Advocates For Families is the part of the
25 practice where I see the children with autism or a few

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1 kids that have ADHD or other behavioral problems that
2 are more of a consulting basis, and those tend to be
3 the patients that have traveled from far away.

4 Then the Rimland Center is kind of over
5 those two, and that is the center that was established
6 to be a mentoring center.

7 So, one of the things that we recognized at
8 ARI was that we wanted to provide some on-site
9 training for physicians, and since I had the
10 background and medical education for 11 years
11 previously, designing curricula at the residency and
12 teaching other doctors, and because I really loved to
13 do that, I decided to start the Rimland Center so that
14 we could invite clinicians.

15 And I announced my intention to do it last
16 spring. I bought a building in June. I renovated it
17 from July 27th to September 17th, and we opened on
18 September 17th.

19 Since then we have had a doctor from Italy
20 bring four to six patients over several times, and
21 spent several weeks mentoring with me. We've had a
22 clinician from Australia come, and we've had several
23 people from around the country, and I'm excited about
24 the fact that I'm getting requests by classically
25 trained developmental pediatricians to come and see

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1 what we do, you know, perhaps out of curiosity, but
2 the tendency, or the feedback that we've gotten so far
3 is that when you first look at what we're doing it
4 might --

5 Q Doctor, I'm sorry to interrupt.

6 A Sorry.

7 Q The question really was just do you have a
8 clinic called Advocates For Children.

9 A Yes, I do.

10 Q Okay. Do you feel that you're an advocate
11 for autistic children?

12 A Yes.

13 Q Because you administer thimerosal-containing
14 vaccines for a number of years as a pediatrician, do
15 you feel complicate in the epidemic of autism?

16 A Yes, I do.

17 Q And do you feel that you have a debt to
18 repay?

19 A Yes, I do.

20 Q Doctor, you talked a little bit about your
21 role as deciding what literature to teach and that you
22 do a thorough review of the literature in order to
23 determine what literature to teach to the people in
24 your clinic, is that correct?

25 A As thorough as I can given the limitations I

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1 explained.

2 Q Okay. And you had not seen the Jill James
3 CPOX article that I referenced on my cross-
4 examination, is that correct?

5 A Yes. Remind me when that came out.

6 Q I believe it was within the last year.

7 A I was thinking was even newer than that, but
8 no, I had not seen that.

9 Q And you had not seen the Berman article that
10 tried to replicate the Hornig study, correct?

11 A That's correct.

12 Q Okay. And on the topic of the Berman
13 article, the purpose of that study was not to look for
14 neuroinflammation, is that correct?

15 A That's absolutely correct.

16 Q Okay. The purpose of that article was to
17 try to replicate the Hornig study, correct?

18 A That's correct.

19 Q And the Berman study was not able to
20 replicate the Hornig study, is that your understanding
21 of the article?

22 A That is correct.

23 Q You were shown some testimony from the
24 Blackwell case in which you testified that you were
25 offering the opinion that thimerosal is toxic to the

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1 immune system, and then you -- it wasn't in your
2 testimony but you qualified here today that that would
3 include the immune system and the brain. Do you
4 remember that testimony?

5 A That's correct.

6 Q You are not an immunologist, correct?

7 A That's correct.

8 Q And you're not a neuroimmunologist, correct?

9 A That's even more correct.

10 Q And you're not a neurologist?

11 A That also is true.

12 Q And you're not a neuropathologist?

13 A That also is true.

14 Q You were asked some question about the issue
15 of whether single-dose vials did or did not contain
16 the thimerosal. Do you remember that testimony?

17 A Yes.

18 Q Are you aware that certain manufacturers
19 included thimerosal in single-dose vials and certain
20 manufacturers may not have?

21 A I delegate that task in my office actually
22 to my nurses. They're instructed to order thimerosal-
23 free vaccines. So I'm actually a very poor source of
24 information about which manufacturers have thimerosal
25 in versus out versus trace amounts.

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1 Q So that's an issue you just didn't look into
2 for the purposes of forming your opinions in this
3 case, is that accurate?

4 A I will say that when I saw the shot records,
5 I did in my mind make perhaps an unwarranted
6 assumption that it had come from multi-dose vials.

7 Q And in any event, the amount of thimerosal
8 really isn't particularly important to you, is that
9 correct? You believe that a single thimerosal-
10 containing vaccine could contribute to autism, is that
11 correct?

12 A I stated that as a hypothetical to
13 illustrate the issue of individual variability, but I
14 would not characterize it as saying that the amount is
15 not important to me. For me, the less the better.

16 Q But even with less you would still in
17 certain cases be willing to render the opinion that a
18 single thimerosal-containing vaccine contributed to a
19 child's autism?

20 A I don't know that I can support the idea
21 that the ones who supposedly only have trace amounts,
22 I just don't know that science. I just don't know
23 scientifically where we can draw that line.

24 I partially base that opinion on children
25 who did not -- who came to my clinic who had not

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1 received thimerosal in their initial series of
2 vaccines got flu vaccine, and then the parents
3 reported an autistic regression that was temporally
4 seemingly related to that, but that is way far from
5 being well studied.

6 Q You were asked some questions about
7 synergistic toxicities. Do you remember those
8 questions?

9 A Yes.

10 Q And in your report, I believe, that the
11 article that you cite is the Schubert article, and
12 this Petitioner's Master List No. 520. Does that
13 article look familiar?

14 A Yes.

15 Q And am I correct that this article looked at
16 the combined effects of certain metals and actually
17 determined that in some cases there was a protective
18 effect when certain metals were combined, is that
19 correct?

20 A Absolutely.

21 Q And this paper did not look at the issue of
22 neuroinflammation as the result of the combined toxic
23 effects of these substances, correct?

24 A That's correct.

25 Another paper that I did not list was

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1 published by Boyd Healy that did look specifically at
2 thimerosal and its combinations with testosterone,
3 neomycin and aluminum, and perhaps I should have cited
4 that as being more informative in hindsight.

5 Q But you did not cite it, correct?

6 A But I did not, right.

7 Q And then you were asked a number of
8 questions about neuroinflammation and the adult monkey
9 studies that Charleston did, and you were asked a
10 series of questions about how those informed your
11 opinion.

12 A Right.

13 Q Now, again, your belief that
14 neuroinflammation is caused by inorganic mercury, that
15 essentially came to you through Dr. Kinsbourne's
16 report, is that correct?

17 A The first part of that was that the adult
18 monkey study showed that, so I didn't see Dr.
19 Kinsbourne's report until -- I don't know -- maybe two
20 months ago or one month ago, and the time that I had
21 the opportunity to talk to Dr. Burbacher was August
22 2005, I think. So no, it did not come to me after
23 reading Dr. Kinsbourne's report.

24 Q However, the precise model that Dr.
25 Kinsbourne is describing came to you through is

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1 report. That was the first time you had seen that
2 model, is that correct?

3 A That's probably correct. We've talked a lot
4 at ARI about the issues that he raises with regard to
5 glutamate toxicity, increased excitation and
6 inhibition, and the result of reactive oxygen species
7 as detailed by both him and Dr. Deth. But the way
8 that he put it together for his report, and so in the
9 sense that you're calling it a model, I agree with
10 that model because it's consistent with what I believe
11 to be true in my study of those same issues.

12 Q We can call it a hypothesis and so that was
13 the first time you had seen that hypothesis?

14 A As articulated by Dr. Kinsbourne, yes.

15 Q Right. And you were shown some testimony
16 from the Blackwell case in which you were describing
17 some effects that mercury might have in the brain, and
18 you mentioned neurons and microglia and astrocytes.
19 You didn't describe the hypothesis that Dr. Kinsbourne
20 has put forth when you testified in Blackwell, is that
21 correct?

22 A That is correct.

23 Q Do you know what happened in the Blackwell
24 case? Do you know how that case has been resolved?

25 A I know that what happened was is that the

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1 expert witnesses participated in something that I
2 think was called a Frye hearing or maybe a Daubert
3 hearing, and after that the Judge ruled that the case
4 would not go forward; that he would not accept the
5 expert testimony as we had put forth.

6 Q We being the plaintiffs?

7 A Yes.

8 MR. JOHNSON: Thank you. That's all I have.

9 MR. POWERS: We have nothing further.

10 Rather than doing re-redirect, I don't think I have
11 anything else for Dr. Mumper.

12 SPECIAL MASTER CAMPBELL-SMITH: Thank you.

13 Any questions?

14 I think this is it, and thank you very much,
15 Dr. Mumper.

16 THE WITNESS: Thank you.

17 SPECIAL MASTER CAMPBELL-SMITH: It appears
18 that, Mr. Powers, Petitioner's case-in-chief, you're
19 ready to rest, at least with your witness testimony
20 here?

21 MR. POWERS: That's correct, Special Master.
22 We're prepared to rest our case-in-chief with our
23 witness testimony, understanding, obviously, there is
24 plenty of work to still do on the case moving forward
25 potentially as far as July. However, we do rest our

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1 case-in-chief at this point.

2 MR. MATANOSKI: I just want to have
3 clarification of that. The moving forward to July is
4 to take testimony of Dr. Clarkson and Dr. Magos.

5 MR. POWERS: And a potential third test
6 case.

7 MR. MATANOSKI: Oh, I understand. Fact-
8 specific, your case-in-chief in fact-specific test
9 case is --

10 MR. POWERS: And rebuttal.

11 MR. MATANOSKI: And rebuttal. I just want
12 to clarify that you weren't talking about continuing
13 your case-in-chief in July.

14 MR. POWERS: No, we are not --

15 MR. MATANOSKI: On general causation.

16 MR. POWERS: We are not continuing our case-
17 in-chief on general causation into July. So I will
18 just be very clear. In terms of moving forward, we
19 mean that we have a third test case that will be
20 identified and assigned to Special Master Vowell. We
21 will present case-specific evidence in that third test
22 case. We anticipate that rebuttal, since Respondent's
23 case is going to be open at least until July on
24 general causation with Dr. Magos and Clarkson, that we
25 will then have some rebuttal to do after that.

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1 SPECIAL MASTER VOWELL: That week?

2 MR. POWERS: I sure hope it's that week, but
3 I am just expecting, Special Master, in time, I'm just
4 saying the sequence would be after Drs. Magos and
5 Clarkson, which will be the conclusion of
6 Respondent's --

7 SPECIAL MASTER VOWELL: Let me make sure. I
8 understand what you're proposing. You're proposing
9 that third week -- that week in July to have rebuttal
10 evidence for Drs. Magos and Clarkson, or rebuttal
11 evidence in general?

12 MR. POWERS: Precisely. We are proposing
13 rebuttal evidence on general causation after the
14 conclusion of their case. If there is any case-
15 specific for Jordan King and William Mead, we would
16 obviously have to put that on before we are done next
17 week.

18 MR. MATANOSKI: That's not my understanding
19 of how this was going to transpire. My understanding
20 was the last two days of the third week were for
21 rebuttal for the case-in-chief. The record was open
22 concerning the testimony of two toxicologists, Dr.
23 Clarkson and Magos, and we understood that if rebuttal
24 testimony was going to come in as to those two
25 witnesses, it would come in thereafter.

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1 MR. POWERS: The big concern there is with
2 those two witnesses, given the subject of their expert
3 report, we might then have to bring all of our general
4 causation witnesses back. So if we have general
5 causation witnesses coming back say late in the third
6 week of this proceeding, and then have to bring them
7 back again, in terms of efficiency and cost I don't
8 know if that's the best approach.

9 MR. MATANOSKI: To testify as to what? If
10 they are not a toxicologist, they would be unqualified
11 to testify as to the matters that Dr. Clarkson and Dr.
12 Magos will be testifying to.

13 If Dr. Clarkson and Dr. Magos testify
14 outside of their area of expertise, it obviously is
15 subject to being objected to by opposing counsel. So
16 if they are testifying within their areas of
17 expertise, then the rebuttal should be limited to that
18 area of expertise.

19 SPECIAL MASTER CAMPBELL-SMITH: It is
20 difficult to understand, Mr. Powers, how you couldn't
21 introduce rebuttal testimony to what we hear in these
22 three weeks at the conclusion of these three weeks for
23 these witnesses.

24 MR. POWERS: Yes, I think the issue is that
25 the idea that we would have to have -- I hate to have

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1 people come back because what Dr. Clarkson and Dr.
2 Magos actually talks about isn't purely the
3 toxicology. I think Dr. Aposhian would be involved
4 with both of those experts, but I think Dr. Kinsbourne
5 would be too.

6 So again, the Petitioners just don't -- I
7 mean, the Clarkson body of work and the
8 neuroinflammation issues raised in his body of work
9 are issues that clearly are central to Dr.
10 Kinsbourne's opinion and testimony. So having
11 potentially Dr. Aposhian and Dr. Kinsbourne come back
12 next week, then, you know, we're closed on general
13 causation, but then we hear something in Drs. Magos
14 and Clarkson, and have to bring them both back again.

15 SPECIAL MASTER VOWELL: That's an if. It's
16 probable that you may want to put on more rebuttal, is
17 that what you're telling us.

18 MR. POWERS: Oh, you mean even on this
19 round? Yes, it's probable.

20 SPECIAL MASTER VOWELL: Exactly.

21 MR. POWERS: It is probable that we will
22 want to put on rebuttal.

23 SPECIAL MASTER VOWELL: And it is possible
24 that you will have rebuttal have Dr. Clarkson and Dr.
25 Magos testifies?

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1 MR. POWERS: That is true, and then the
2 issue again is just hearing the entire case, in order
3 to offer rebuttal and offer rebuttal that's coherent,
4 the need to hear the full case.

5 MR. MATANOSKI: I have to object. Not only
6 is this new as far as the procedure, not within the
7 understanding obviously of Respondent, and I believe
8 from what I'm hearing now of the Court, but we are
9 talking about toxicology, and I understand, and I'm in
10 agreement that if Dr. Aposhian wants to come back and
11 talk about toxicology, that's fine, and that would be
12 fine rebuttal.

13 I'm understanding from some comments now
14 that perhaps Dr. Kinsbourne would come back and talk
15 about what? Toxicology? Because my whole line of
16 questioning whenever, whenever I ask Dr. Kinsbourne
17 about a matter that was toxicological, he said,
18 "Outside my area of expertise. I defer to the
19 toxicologists," which would be Dr. Aposhian.

20 I don't understand why there would be
21 rebuttal to Drs. Magos and Clarkson from a neurologist
22 who said, "I have to defer to a toxicologist on
23 toxicology matters." If Dr. Clarkson and Magos step
24 outside their area of expertise, it's subject to
25 objection.

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1 MR. POWERS: And just a substantive issue.
2 When one looks at these studies, one of them -- I
3 mean, there are issues in the monkey studies, for
4 example, particularly the adult monkey studies, that
5 get into what regions of the brain certain
6 toxicological events -- what regions of the brain, and
7 whether that's significant or not, the types of cells
8 that are involved. It's not pure toxicology. These
9 figures really do deal with the intersection of
10 pharmacokinetics and toxicology with brain function in
11 terms of the inflammatory process, and where these
12 processes occur, and we've heard lines of questions
13 from Respondent directed to Dr. Kinsbourne that was
14 apparently important enough to inquire what regions of
15 the brain were affected.

16 MR. MATANOSKI: And that was because Dr.
17 Kinsbourne seemed to be stepping outside of his area
18 of expertise when he talks about monkey studies, and
19 have to do with the effect of mercury on the brains of
20 monkeys. Nevertheless, and every time I ask him a
21 question about that that was specific to toxicology,
22 he would defer.

23 This entire theory of neuroinflammation was
24 sprung on Respondent three weeks before trial, and at
25 this point for Petitioners to be asking for the

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1 opportunity to come back later and work this case up
2 further because they don't have it ready for trial,
3 they had ample opportunity if they want to explore
4 this theory before now. They are trying to explore
5 this theory through this trial. We've had nothing but
6 new evidence for the first two days of trial. This
7 has got to stop. This whole proceeding is just
8 expanding and is just going to be endless at this
9 point.

10 They had a clear deadline of when they had
11 to file their expert reports. That came and went
12 without hearing this theory. This theory was, again
13 it came up after Respondent's reports came in. I
14 think an assumption that can be made or an implication
15 or inference that can come from that is that
16 Petitioners put on one theory. They saw Respondent's
17 response to it. They understood the problems with
18 that theory, and there were many.

19 And then they went out, as you heard from
20 Dr. Kinsbourne, and asked him for an opinion. After
21 they had seen Respondent's case, they tried to come up
22 with a new theory because they knew that the theory
23 they were presenting on was not sufficient to carry
24 the burden, and then three weeks before trial, before
25 trial we prepared for for six years, this is six years

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1 in coming, the Petitioners come up with this theory.

2 I think this theory has no merit, and I
3 think you will see that. I would submit you already
4 have seen that. However, there has to be an end to
5 this record. There has to be an end to this
6 proceeding. I know that this can come up in another
7 case. We might see it again. I think it will be
8 ended right now, this theory of neuroinflammation. I
9 think there is nothing to it, and I believe that at
10 the end of this trial you will believe that too.

11 However, the notion that because we have two
12 toxicologists coming in, in July, that this is going
13 to be an extension of time for the case-in-chief of
14 the Petitioners has to be resisted. There is nothing
15 that Drs. Clarkson and Magos can be talking about that
16 Dr. Kinsbourne can address within in area of
17 expertise, and vice-versa.

18 To the extent Dr. Clarkson and Dr. Magos
19 venture out of their area of expertise, you are not
20 going to be giving it any weight, obviously, and it's
21 going to be objected to. I submit that when Dr.
22 Kinsbourne stepped outside his area of expertise and
23 talking about toxicology, that should be given no
24 weight too.

25 SPECIAL MASTER HASTINGS: Let me ask a

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1 particular question. Have you and counsel talked any
2 further about exact schedule for that week in July
3 exactly when Dr. Magos and Dr. Clarkson are going to
4 testify? We talked about generally the Thursday and
5 Friday.

6 MR. MATANOSKI: No, sir.

7 SPECIAL MASTER HASTINGS: Nothing further?

8 MR. MATANOSKI: No, sir.

9 SPECIAL MASTER HASTINGS: So what exactly, I
10 want you to be as specific as possible, what are you
11 specifically asking us to do or rule, Mr. Matanoski?

12 MR. MATANOSKI: I'm asking you to stay on
13 the same procedural schedule that we had, which is
14 that in that time frame Drs. Clarkson and Magos will
15 come in. Rebuttal to that toxicological evidence will
16 come in thereafter.

17 SPECIAL MASTER HASTINGS: So you are asking
18 us to limit any rebuttal that come in after Magos and
19 Clarkson to only rebuttal of their testimony?

20 MR. MATANOSKI: That's correct.

21 SPECIAL MASTER HASTINGS: You're asking that
22 the Petitioners, if they have any rebuttal to the rest
23 of the government's case, that they bring that in at
24 the end of the third week of this trial?

25 MR. MATANOSKI: That's correct, sir.

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1 SPECIAL MASTER HASTINGS: Did you want to
2 respond?

3 MR. POWERS: Yes. The same position that we
4 had taken before, which is that to do all the rebuttal
5 at once and to do all the rebuttal at the end of Magos
6 and Clarkson.

7 SPECIAL MASTER HASTINGS: So you're saying
8 right now you're going to foreswear any rebuttal week
9 after next. You don't want to do any then. You want
10 to save it all until after Magos and Clarkson?

11 MR. POWERS: Again, we are not talking case-
12 in-chief. As I said from the outset, case-in-chief,
13 we are done. I have already said that we are done.
14 I'm not proposing extending our case-in-chief except
15 for the one individual test case. So it's not new
16 evidence that we are proposing at any point in support
17 of our case-in-chief. It's rebuttal, and rebuttal
18 makes sense to have it come in after their entire
19 case, just as Drs. Clarkson and Magos will be coming
20 in now after the conclusion of our case so that we
21 don't have to have the position where there is is --
22 bringing people back for split rebuttal.

23 MR. MATANOSKI: Your Honor, again, this is a
24 change in the procedure, and it actually may have
25 affected, because this late change in the procedure,

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1 whether we would even call those witnesses or not. We
2 want to be at an end of this proceeding.

3 SPECIAL MASTER HASTINGS: That's a good
4 point. I mean, almost a year ago we agreed on these
5 three weeks, and both sides knew it, and we were
6 certainly hoping everything would be done during these
7 three weeks. It was the government that needed to
8 extend beyond these three weeks.

9 MR. MATANOSKI: I understand.

10 SPECIAL MASTER HASTINGS: I know it wasn't
11 your fault, and I don't recall that we ever
12 specifically talked about this specific issue. I'm
13 sure we are not going to rule on it this minute. I'm
14 sure we'll be talking before we rule on what you're
15 presenting to us now.

16 MR. POWERS: Nothing further. You asked
17 what our position was and I'm hoping I --

18 MR. MATANOSKI: In fact, sir, one other
19 thing that I should caveat as you rule on this or
20 consider this, maybe this is a matter we will need to
21 take up next week, whether Respondent's position about
22 whether the late filing, three weeks before trial, of
23 an entirely new theory of the case may have been
24 different had this been presented, this proposal by
25 Petitioners' Steering Committee had been presented at

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1 the time, we may not have ever agreed to have this
2 proceeding go on with this new theory thrust upon us
3 three weeks before trial when we had been preparing
4 for an entirely different case.

5 SPECIAL MASTER CAMPBELL-SMITH: I think what
6 we'll do is take this matter under advisement, to
7 revisit it. We obviously need to confer, and we will
8 take this matter under advisement, and we will return
9 and have conversations with counsel again next week.
10 We can anticipate commencing on Monday with
11 Respondent's case at 9 a.m., and I understand
12 Respondent will keep us apprised if there is a
13 schedule shift during one of the days next week so for
14 those who are listening at home they can adjust their
15 schedules accordingly, and that's possible midweek for
16 Dr. Rust. Am I correct with that?

17 MR. MATANOSKI: That's correct, ma'am.

18 SPECIAL MASTER CAMPBELL-SMITH: Thank you.

19 MR. POWERS: And aside from a potential
20 shift, not the day but the timing I understand on Dr.
21 Rust's testimony Wednesday. At this point it's
22 Petitioner's understanding that there are no other
23 plan changes in the order of witnesses and the
24 appearance schedule that has been shared with us
25 already.

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1 MR. MATANOSKI: That's correct.

2 MR. POWERS: So that does leave, depending
3 on what you all decide, there are still the two -- the
4 Thursday and Friday, if they, (a) are still available,
5 for spillover, but whatever is available those days,
6 if you direct us to, would be available for rebuttal.

7 SPECIAL MASTER CAMPBELL-SMITH: Thank you.
8 And before we conclude, I do want to thank William
9 Mead's mom for being here with us today, the last
10 parent in one of the two cases. We appreciate, again,
11 as I expressed to William Mead's dad earlier, we
12 appreciate very much your willingness to go public
13 with this case for the same of the omnibus autism
14 proceeding.

15 Dr. Mumper, you're excused. Thank you for
16 being very patient there.

17 (Witness excused.)

18 SPECIAL MASTER CAMPBELL-SMITH: I think that
19 with that we have concluded with a robust piece of
20 business that we will address next week, and we are
21 adjourned for the afternoon.

22 MR. MATANOSKI: Thank you.

23 (Whereupon, at 3:43 p.m., the hearing in the
24 above-entitled matter was recessed, to reconvene at
25 9:00 a.m. on Monday, June 19, 2008.)

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REPORTER'S CERTIFICATE

DOCKET NO.: 03-584V, 03-215V
CASE TITLE: In Re: Claims for Vaccine Injuries
HEARING DATE: May 16, 2008
LOCATION: Washington, D.C.

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the United States Court of Federal Claims.

Date: May 16, 2008

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