

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

Before The Honorable Vince Chhabria, Judge

IN RE: ROUNDUP PRODUCTS )  
LIABILITY LITIGATION, ) NO. M. 16-02741 VC  
\_\_\_\_\_ )

San Francisco, California  
Wednesday, March 14, 2018

**TRANSCRIPT OF PROCEEDINGS**

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1 Wednesday - March 14, 2018

10:32 a.m.

2 P R O C E E D I N G S

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4 **THE CLERK:** Please be seated. Calling Case Number  
5 16-MD-2741, In Re Roundup® Products Liability Litigation.

6 Do you want appearances?

7 Counsel, please step forward and state your appearances  
8 for the Record.

9 **MR. LASKER:** Eric Lasker for Monsanto. And  
10 Joe Hollingsworth is with me, as well.

11 **THE COURT:** Good morning.

12 **MS. WAGSTAFF:** Good morning, Your Honor,  
13 Aimee Wagstaff for the plaintiffs. And I have David Wool,  
14 Robin Greenwald, Kathryn Forgie, Michael Baum,  
15 Pedram Esfandiary, and Brent Wisner.

16 **THE COURT:** Hi.

17 Okay. Mr. Lasker, maybe I'll start with you.

18 **MR. LASKER:** Yes.

19 **THE COURT:** Feel free to take a seat.

20 First of all, I wanted to mention I see these cameras are  
21 still out here. We are not recording this. The Order that I  
22 put out was to record the actual evidentiary hearings. I  
23 didn't include the oral argument, so just to let you know that,  
24 in case anyone was planning on doing any grandstanding in front  
25 of the cameras.

1           **MR. LASKER:** I combed my hair and everything.

2           **THE COURT:** Okay. So I think -- I think there are a  
3 couple of fairly easy questions, and then there's a hard  
4 question.

5           **MR. LASKER:** Okay.

6           **THE COURT:** I think the first easy question or the  
7 first easy issue is, you know: Does the IARC's conclusion that  
8 glyphosate is a probable carcinogen, you know, get the  
9 plaintiffs where they need to go?

10          Answer: No.

11          And that is one of, I think, the biggest problems with the  
12 plaintiffs' presentation -- right? -- is that for a good  
13 portion of it they have sort of assumed that because the IARC  
14 has concluded that glyphosate is a probable carcinogen, that  
15 means that that gets them over the general causation hurdle in  
16 this litigation. The problem is, of course, that although the  
17 IARC's conclusion is not entirely untethered from human  
18 experience, the IARC makes it very clear that what it is doing  
19 is reaching a conclusion about whether the chemical is capable  
20 of causing cancer; and that they -- that it will conclude that  
21 a chemical is a probable carcinogen or even a known carcinogen,  
22 even if human beings are not currently being exposed to the  
23 chemical at levels high enough to give them cancer. Right?

24          So the IARC's conclusion is not enough. And to suggest  
25 that the IARC's classification of glyphosate as a probable

1 carcinogen is enough is misleading. That's, I think, easy.

2       Number two. I think that the plaintiffs' experts'  
3 opinions are shaky.

4       I think that the evidence that glyphosate is currently  
5 causing non-Hodgkin's lymphoma in human beings at the levels of  
6 exposure they are currently experiencing is pretty sparse. And  
7 I do -- I admit that I have a difficult time understanding how  
8 an epidemiologist could conclude, in the face of all of the  
9 evidence that we heard and saw last week, that glyphosate is,  
10 in fact, causing non-Hodgkin's lymphoma in human beings.

11       I also question whether anybody could legitimately  
12 conclude that glyphosate is not currently causing non-Hodgkin's  
13 lymphoma in human beings.

14       I mean, it seems to me that, you know, there's at least a  
15 strong argument that the only reasonable conclusion one could  
16 draw right now is that we don't yet know.

17       So I actually think those two concepts are fairly easy;  
18 but you know, the problem is that -- the potential problem for  
19 you is that my role is not to decide whether glyphosate causes  
20 cancer.

21               **MR. LASKER:** Right.

22               **THE COURT:** My role is to decide whether the opinions  
23 offered by the plaintiffs' experts are, you know, for lack of a  
24 better term, within the range of reasonableness, you know. And  
25 the courts tell us that even a shaky opinion can be admissible,

1 because it will then be -- you know, that expert will then be  
2 subject to cross-examination. And the jury, you know, will get  
3 to hear all of the evidence, and decide who's right and who's  
4 wrong.

5 And so, you know, at least as applied to Dr. Ritz, I think  
6 I will say also that I think that for the most part, the  
7 plaintiffs and their experts don't get them where they need to  
8 go, because they -- because the opinions are too similar to the  
9 IARC conclusion. Right? And that doesn't -- you know, it's a  
10 different inquiry. And it doesn't get them, I think, where  
11 they need to go for the most part.

12 Dr. Ritz, however, did conduct an independent analysis.  
13 She didn't try to piggyback on the -- on IARC classification.  
14 And her focus, of course, was on the epidemiological studies.  
15 And she, you know, has reached this conclusion that I do think  
16 is dubious that, you know, glyphosate is currently causing NHL  
17 in human beings.

18 But is it outside the range of reasonable -- of reasonable  
19 scientific conclusions that epidemiologists can draw?

20 That's -- that, I think, is the hard question.

21 **MR. LASKER:** Well, if I could, Your Honor, last night  
22 I'd been focusing on Dr. Ritz. And what I'd like to do  
23 actually is walk you through --

24 And I have -- (indicating) for you, as well.

25 **MS. WAGSTAFF:** Thanks.

1 (Whereupon a document was tendered to the Court.)

2 **MR. LASKER:** -- a copy of the transcript of Day One,  
3 because I want to be as sort of concrete about this as I can  
4 with respect to Dr. Ritz's methodology, because I agree that is  
5 the relevant issue.

6 I would state sort of at the outset that with respect to  
7 Your Honor's role in this, it is important to keep in mind --  
8 and this is something that is stated, for example, in *In Re*  
9 *Bextra* -- that it's important to keep in mind the plaintiffs  
10 have the burden of proof. And, in fact, in the *Bextra* case the  
11 Court made clear the absence of evidence is not enough, simply  
12 stated. And, for example --

13 **THE COURT:** I understand that. Okay.

14 **MR. LASKER:** So what I'd like to do is walk through  
15 Dr. Ritz's testimony and actually proffer it in front of the  
16 Court, because I think it helps identify some of the  
17 methodological flaws in her analysis, and I want to be sort of  
18 as concrete about that as I can. So I'd like to start,  
19 Your Honor, with, again, the beginning of her direct  
20 examination. And at page 20 through 22, I guess, she is  
21 presenting her forest plot, if you'll recall.

22 **THE COURT:** The forest plot is ridiculous.

23 **MR. LASKER:** Okay.

24 **THE COURT:** You don't need to tell me about the  
25 forest plot. I understand that the forest plot is ridiculous.

1 And it causes one to question her objectivity. I understand  
2 that.

3 **MR. LASKER:** Well --

4 **THE COURT:** So you don't have to worry. If I rule  
5 that Dr. Ritz's testimony is admissible, it is definitely not  
6 going to be because of the forest plot.

7 **MR. LASKER:** Okay. The point, though, that I think  
8 goes with that is not only that it's ridiculous, but it talks  
9 about methodology. And the broader issue -- sort of forest  
10 plot identifies it, but it's not the only way it comes into her  
11 testimony -- is this issue of confounding with other  
12 pesticides.

13 And Dr. Ritz does not present and did not present, in this  
14 hearing or in her Expert Reports, an opinion that was  
15 predicated on the adjusted Odds Ratios. She repeatedly went to  
16 the unadjusted Odds Ratios as providing a basis for her  
17 opinions. So we don't have an opinion from her that is based  
18 upon the properly adjusted Odds Ratios.

19 And there is a long line of legal authority, Your Honor --  
20 and I can cite the cases, and I will try to do it slowly --  
21 that talk about the fact that an epidemiologist who relies upon  
22 confounded data is not presenting reliable expert opinion, and  
23 those opinions have been excluded.

24 The *In Re Bextra* case dealt specifically with this. And I  
25 would refer Your Honor to 524 F. Supp. 2nd at 1172, -73, and

1 1178, -79.

2 The *In Re Denture Cream* case, which we also cite,  
3 addressed that issue. It's an unpublished Westlaw cite. 2015  
4 Westlaw 392021. And the pinpoint cite there is 24.

5 **MS. WAGSTAFF:** Did you say "24"?

6 **MR. LASKER:** 24. Yes.

7 *Nelson v. Tennessee Pipeline.* 243 F. 3d. at 253.

8 And also the Reference Manual for Federal Courts on  
9 Scientific Evidence, Your Honor, at page 591 states, *It is*  
10 *critical to determine whether an association is causal or the*  
11 *result of confounding.*

12 And the issue is not only that Dr. Ritz presented  
13 confounded data, but her explanations for why she did that just  
14 did not hold up. And specifically, for example, on page 27 --  
15 and this is at line 15 through 18 -- this is where we're  
16 talking about the Eriksson Study. And as you will recall,  
17 there was an issue there about the phenoxyacetic --

18 **THE COURT:** I'm sorry. Did you say page 27?

19 **MR. LASKER:** 27, lines 15 through 18.

20 **THE COURT:** Okay. Thanks.

21 **MR. LASKER:** Actually, it's -- 15 and 16 is her  
22 testimony.

23 And if you'll recall, there was the issue of phenoxyacetic  
24 acid, and particularly -- particularly MCPA, and whether or not  
25 that was a confounder or a potential confounder in that study.

1           **THE COURT:** Mm-hm.

2           **MR. LASKER:** And when this issue first came up,  
3 Dr. Ritz's response was, *I don't see literature that told me*  
4 *that MCPA was truly an NHL risk factor.*

5           **THE COURT:** So one major problem with that is that  
6 you don't have to be told that it actually is a risk factor  
7 before you adjust for it. Is that correct?

8           **MR. LASKER:** I agree with that.

9           There's another major and even more concrete problem here.

10          **THE COURT:** That it is a risk factor?

11          **MR. LASKER:** Well, Dr. Ritz acknowledged in  
12 cross-examination -- and it's at page 153 in the transcript,  
13 when I took her -- she didn't have to look far. It was in the  
14 Eriksson Study, itself. So if you go to page 153 --

15          **THE COURT:** Uh-huh.

16          **MR. LASKER:** -- you will see that -- and it is on  
17 line 11 through 16. I am showing her, from the Eriksson Study,  
18 where the authors state that they have, through this study and  
19 prior work, confirmed that the phenoxyacetic herbicides are  
20 risk factors for NHL; and MCPA in particular yields the highest  
21 Odds Ratio.

22          And you may recall we also asked Dr. Weisenburger about  
23 this. And this is at page 230. And I don't have Day Two of  
24 the transcript, but Dr. Weisenburger also confirmed he had  
25 concerns about arsenic. But MCPA -- he said that's a risk

1 factor for NHL. We all know that.

2 And for this reason, you'll recall -- and you had asked a  
3 question to Dr. Weisenburger. And this was at page 237/238 of  
4 the transcript. *Would it be reliable for an epidemiologist to*  
5 *rely upon the confounded unadjusted Odds Ratio for Eriksson?*

6 And -- and he said, No.

7 I don't think I've ever seen exactly that question and  
8 answer in a *Daubert* hearing before.

9 And Dr. Neugut, at pages 395 and 396 at the end of his  
10 cross-examination, also agreed that, except for the  
11 multivariate Odds Ratio, which was the only one that attempted  
12 to adjust for other pesticides, all of the other Odds Ratios in  
13 those -- in that paper could not be relied upon. So he also  
14 stated, *You cannot rely upon this Odds Ratio.*

15 Dr. Ritz is the only one who, at least at some point --  
16 and it's not clear where she ended up on that, but at least  
17 initially stated that she would.

18 The -- the other key study -- the case-control study, as  
19 Your Honor knows, was the NAPP.

20 **THE COURT:** Before you get to that, let me -- I just  
21 want to go back to page 27 of her testimony --

22 **MR. LASKER:** Yes.

23 **THE COURT:** -- and determine: Is she really saying  
24 that it's appropriate to rely on the unadjusted Odds Ratio in  
25 Eriksson?

1       Yeah. Okay. All right.

2               **MR. LASKER:** And the next study, Your Honor, is the  
3 NAPP, which, as you'll recall, pools together all of the  
4 case-control studies. There was a lot of testimony about the  
5 fact that this study supersedes the earlier case-control  
6 studies, because it contains all of the data.

7               There's actually a case on point on how you handle that  
8 situation for epidemiologist under *Daubert*. It's *In Re Zoloft*,  
9 858 F. 3d. at 799. That had a very similar situation, where  
10 there were earlier studies that suggested an association; a  
11 subsequent pooled analysis. And that adjusted for potential  
12 confounders that did not. And the Court held that the expert  
13 was he unreliable because they were still trying to rely on  
14 those earlier studies.

15               **THE COURT:** That can't be true as a categorical  
16 matter. That's going to depend on the quality of the pooled  
17 analysis compared to how the individual studies were done.  
18 Right?

19               **MR. LASKER:** I think --

20               **THE COURT:** There can be a problem with the pooled  
21 analysis that causes an epidemiologist to say, *Well, I'm not*  
22 *going to rely on that. I'm going to rely on the underlying*  
23 *studies.* Right?

24               **MR. LASKER:** I would agree with that.

25               In this case, though, there was no testimony that the

1 pooling was a problem. So in this scenario, that doesn't  
2 exist.

3 And in fact, there's various points that go through this,  
4 where Dr. Ritz says the pooling was great. That helps to  
5 adjust for other confounders.

6 And, you know, while she states in her testimony at page  
7 28 --

8 And, you know, one of the things that was -- and this may  
9 be a minor point, but I think it's worth noting. As you were  
10 going through this with Dr. Ritz, she was always uncertain as  
11 to whether or not she was presenting the adjusted or the  
12 unadjusted Odds Ratio.

13 And, Your Honor, I went through the exact same exercise  
14 with her during her deposition. At her initial deposition -- I  
15 think you have a copy of that -- at page 155 through 157, I  
16 walked her through this. Our experts pointed it out. This was  
17 not new information to her; but again, for the NAPP Study she  
18 presented the unadjusted Odds Ratio.

19 And as a bit of context for Your Honor, at the time  
20 Dr. Ritz presented her initial Expert Report, she had not seen  
21 the adjusted Odds Ratios from the NAPP. She had not seen those  
22 slide decks. And she acknowledged that in her deposition at  
23 277, 278.

24 But when you -- when you asked her --

25 **THE COURT:** But that wasn't her fault she didn't --

1           **MR. LASKER:** No. I mean, it was available to her,  
2 but I don't know why she didn't receive it. We got it from  
3 Dr. Blair in his deposition months earlier.

4           But the issue is that she did know about it. After her  
5 Expert Report I deposed her on those data.

6           She then came into this court and presented her forest  
7 plot again. She actually changed it, because she added  
8 Andreotti. So it wasn't the exact same forest plot; but again,  
9 she continued to use the unadjusted Odds Ratios.

10          And when I walked her through this -- and you actually  
11 jumped in, to sort of -- to get the final Q and A on this, at  
12 pages 138 and 139 of her testimony --

13           **THE COURT:** Okay.

14           **MR. LASKER:** And there was a long line of questions  
15 before this where I was getting at this point. And she was  
16 raising issues with the Agricultural Health Study and other  
17 issues she was identifying as possible issues for adjusting for  
18 pesticides in this study; but then you began asking her  
19 questions. And at page 138, line 11 through 15, you asked her,  
20 *Was it a good idea for the NAPP investigators to adjust for*  
21 *these confounders or possible confounders?*

22           And she said, Yes.

23           And then continuing through to lines 1 -- page 139 at line  
24 2 through 4, she even said, *I would recommend that you look at*  
25 *the adjusted Odds Ratios for the NAPP Study.*

1           And again, plaintiffs' other epidemiologist provided the  
2 same testimony -- Dr. Weisenburger -- at pages 239 -- at pages  
3 254 and 255. And as you'll recall, he was one of the  
4 authors/investigators in the NAPP. He agreed that the adjusted  
5 Odds Ratios were the proper Odds Ratios.

6           Dr. Neugut never looked at the NAPP, so I can't testify to  
7 what he would say specifically; but at page 367 he made clear  
8 his general view that you should adjust for pesticides in this  
9 analysis.

10           So Dr. Ritz, for some reason, knowing what the adjusted  
11 Odds Ratios showed, was raising a whole bunch of explanations,  
12 I guess, for why she wasn't showing that data, that then did  
13 not bear out. We actually looked at the analysis of what was  
14 done.

15           And I think another important point on this is you asked  
16 her, you know, *Why wouldn't you just adjust? What would happen*  
17 *if you don't? You know. What's the problem?*

18           And on page 26 --

19                   **THE COURT:** Give me a sec.

20                   **MR. LASKER:** Yep.

21                   **THE COURT:** Okay.

22                   **MR. LASKER:** And this is line 1. And then her answer  
23 goes through to page 15.

24                   **THE COURT:** You mean line 15?

25                   **MR. LASKER:** Sorry. Yeah. Sorry.

1           And what she explains here is if you adjust, you need to  
2 be careful, because the confidence intervals could widen. You  
3 lose precision. And this is exactly what Dr. Mucci testified  
4 to, as well, at page 937.

5           Now, what's important here is she's not saying that the  
6 Odds Ratio had moved; it's just the confidence intervals would  
7 widen in position. And that's something you would need to bear  
8 in mind. You could look at what happens when you adjust, but  
9 you're still going to have a point estimate.

10           And what happened in these studies, again and again, is  
11 that the point estimate went down. And the only thing she was  
12 able to say in connection with that is, *Maybe you're splitting*  
13 *the variance; that everything causes it, and so maybe*  
14 *everything causes a little bit*; but she didn't really explain  
15 why, given that, you don't present that data.

16           And if she had, Your Honor, presented the unadjusted Odds  
17 Ratios, and tried to make an opinion or present an opinion  
18 based upon that, then we'd have a different opinion that we'd  
19 be addressing here. I think there would be problems -- and  
20 we'll talk about that in a bit -- given the case law with that  
21 type of opinion as being viable; but the fact is she did not  
22 present that opinion to the Court.

23           So if we could continue, because there are other issues  
24 that come up in her testimony that also speak to the  
25 reliability and the consistency of her opinions, because that

1 was also sort of a recurring issue, certainly, for me in trying  
2 to respond to her opinions during the depositions and for  
3 various Expert Reports.

4 One thing that she also talked about and we also talked  
5 about quite a bit last week was latency; and the issue of  
6 latency, and how that impacts the earlier North American --  
7 particularly the U.S. -- case-control studies.

8 And in her Expert Report at page 17 --

9 And I don't know if you have that.

10 **THE COURT:** I've got it. Let me just pull it up real  
11 quick. You're talking about her original?

12 **MR. LASKER:** Her original Expert Report. I'm sorry.  
13 Her original Expert Report.

14 **THE COURT:** At what page?

15 **MR. LASKER:** It's at page 17, Your Honor. That's  
16 where I'm going to start.

17 **THE COURT:** All right.

18 **MR. LASKER:** And just for context, in her trial  
19 testimony at page 36 -- and this is line 23 to 24 --

20 **THE COURT:** Okay.

21 **MR. LASKER:** -- she is discussing latency here. And  
22 she's stating that for blood cancers, one year, two years could  
23 be a minimum latency we'd want to see.

24 And in her Expert Report in the first sentence, perhaps  
25 not completely contrary to this, but at sort of the seventh

1 line of -- on page 17, she's talking about: Typically, we  
2 would generally expect a five- to ten-year minimum latency  
3 between exposure and disease onset for blood system with  
4 cancers. And then she goes on to state, *In individual cases,*  
5 *maybe it would go down to one year, or as long as fifty-plus*  
6 *years.*

7         So perhaps that can be not completely -- but where it  
8 becomes a real problem with the methodology is on page 18 of  
9 her Expert Report, because at the very bottom of page 18 she's  
10 talking about the Cantor Study. And if Your Honor will recall,  
11 the Cantor Study was one of the individual case-control studies  
12 that was pooled into De Roos; and it was the largest. It was  
13 about 60 percent of the De Roos case.

14         And we walked through with Dr. Neugut a bit. We went back  
15 to -- there's a table in De Roos which shows which states the  
16 various cohort members' case-control observations came from.  
17 About 60 percent was from De Roos. There was another  
18 20 percent from another study. And 20 percent from --

19                 **THE COURT:** You mean 60 percent was from Cantor?

20                 **MR. LASKER:** Was from Cantor. Yes.

21         And the -- the Cantor Study -- and we didn't talk a great  
22 deal about this, but it's in -- it is in evidence, Your Honor.  
23 And I might have to find the exhibit number. Cantor is in  
24 evidence as Exhibit 635.

25         The issue for Dr. Ritz with the Cantor Study is that it

1 recorded a 1.1 Odds Ratio. It was not statistically  
2 significant. And you can look at the study to see how they  
3 analyzed that and came to that conclusion, but it was not an  
4 Odds Ratio that was helpful to the plaintiffs' case.

5 And Dr. Ritz, in her Expert Report, says, *Well, true, but*  
6 *this is not informative, because of the latency.* There's only  
7 6 to 10 years of possible time that could have elapsed in this  
8 study. And the issue, of course, is: Why would that same  
9 analysis not apply, then, to De Roos?

10 I asked her that in her deposition. And she didn't really  
11 give a very clear answer. She stated that there was people  
12 from Nebraska who could have had NHL, up until 1986. Provides  
13 a little more time. That's only about 20 percent of the  
14 population. And she never really responded to that question.

15 And, Your Honor, there isn't -- I'll state, at least, as  
16 far as I know -- a lot of case law on this issue of latency;  
17 but if you go to the Reference Manual of Scientific Evidence --  
18 and here, they are talking in the context of specific  
19 causation. But at page 601 one of the things they point out  
20 is: If your exposure is outside the latency period, that's  
21 sort of conclusive evidence against causation.

22 So that's a methodological issue. It's an issue about the  
23 reliability of her approach to this. You know. Consistency.  
24 And what, in the *In Re Zolof* case, the District Court referred  
25 to as situational science, where the scientific analysis

1 changes depending on what the result is of an individual study.

2       There are some other issues. And this is perhaps not, in  
3 and of itself, as big of a substantive deal, but I think also  
4 speaks to something that happened again and again in her  
5 testimony. And this is on page 40. And this is line 20 to 21.  
6 And she's talking here about the Eriksson Study. And, as  
7 you'll recall, there was an analysis of less than 10 days or  
8 greater than 10 days.

9       And everyone, at least, in this Record, including IARC,  
10 including plaintiffs' other experts -- you asked  
11 Dr. Weisenburger about this at page 181, 182. The study,  
12 itself, states that the analysis was cumulative days.

13       Dr. Ritz -- and this is the first time she offered this  
14 opinion. I didn't have any -- she'd never offered this opinion  
15 before -- all of a sudden starts argues that it's days per  
16 year. Again, this is minor, but there are various places in  
17 the testimony where she just sort of changes things.

18       And I can point to others; sort of a litany of situations  
19 like that, where things all of a sudden just change a little  
20 bit, with no basis in the actual study language or in the data.  
21 That can give one pause.

22               **THE COURT:** Yeah. Point them out. Point out the  
23 other ones.

24               **MR. LASKER:** Okay. I will.

25               **THE COURT:** That would be helpful.

1           **MR. LASKER:** I will continue to do that.

2           At page 42 she's talking about the -- whether or not the  
3 data there -- greater than 10 days or less than 10 days --  
4 shows a statistically significant difference. And she said she  
5 doesn't know, but there's patterns in the data. And this is at  
6 lines 13 through 22. She talks about, you know, *I teach my*  
7 *students to look at patterns in the data.*

8           And this also is consistent with some of the testimony she  
9 provided that was the basis for her forest plot, where she  
10 said, *You know, everything is to the right of the line. And so*  
11 *we look to see if there's a pattern -- a trend -- that would*  
12 *therefore be evidence of causation.*

13           And this issue has come up, Your Honor, in a number of  
14 cases under *Daubert*, as to whether or not there is a reliable  
15 methodology. And the courts repeatedly have --

16           **THE COURT:** When you say "this," let me make sure I  
17 understand what "this" is. Are you talking about a number of  
18 studies having an Odds Ratio of higher than one, but not  
19 statistically significant?

20           **MR. LASKER:** Correct.

21           **THE WITNESS:** Okay.

22           **MR. LASKER:** And if you look at -- and this also is  
23 Dr. Neugut's testimony, as you'll recall. He put a lot of  
24 stock in this, as well. If you look at *In Re Zolof*, 858 F.  
25 3d. at 797. If you look at *In Re Lipitor*.

1           **THE COURT:** Sounds like you like the *In Re: Zolof*  
2 case.

3           **MR. LASKER:** All of the seem to be pretty on point,  
4 Your Honor.

5           *In Re Lipitor* is 174 F. Supp. 3d. at 926.

6           *In Re Nexium*. I'm sorry. Hold on.

7           **THE COURT:** No. You can keep going. Thank you.

8           **MR. LASKER:** *In Re Nexium*. And this is an  
9 unpublished Ninth Circuit opinion, but it was published in Fed.  
10 App. -- Appendix -- 652, Fed. Appendix 528 at 530.

11           In all of those cases, the courts dealt with this exact  
12 issue of sort of a trend, you know, of non-significant  
13 findings, but they look in one direction; and is that a  
14 reliable methodology?

15           And in each of those cases the courts held it was not, and  
16 excluded the expert witnesses.

17           If we then move on to page 42 --

18           **THE COURT:** Okay.

19           **MR. LASKER:** And this is with respect to  
20 dose-response. And she's talking about the McDuffie Study.

21           And the testimony here was in support of the fact that  
22 McDuffie shows a dose-response. And this was the  
23 greater-than-two-times-per-day/less-than-two-times-per-day  
24 analysis. And she stated here that this was evidence of a  
25 dose-response.

1 I asked her about this in cross-examination at page 142,  
2 because they talk -- I asked her about this in her deposition,  
3 as well. And if you start at sort of the beginning of page  
4 141, you'll see we're talking about the McDuffie Study, and the  
5 analysis that they did.

6 **THE COURT:** Okay.

7 **MR. LASKER:** And I asked her about, as we go down  
8 that page. And then the question -- I read to her from her  
9 deposition testimony, starting at page -- line 16 on page 141.  
10 Her answer continues through line 5 on page 142. And I ask  
11 her, *At your deposition you stated this wasn't a dose-response,*  
12 *and that wasn't the intent of this analysis.*

13 And she agreed that it was not the intent of the analysis  
14 to provide a dose-response.

15 And the the reason that's important, Your Honor, is, you  
16 know, when you get to the Bradford Hill analysis -- and all of  
17 plaintiffs' experts at least purport to rely upon  
18 Bradford Hill -- dose-response is one of those factors. And  
19 we'll return to this in a little bit in some of her other  
20 testimony.

21 But Dr. Neugut --

22 **THE COURT:** But I think -- I mean, on that point, I  
23 mean, I wonder if you're being a little too nitpicky on that  
24 point, because she -- I took her to be saying that sort of  
25 routine user -- you know, distinguishing between routine users

1 and occasional users is a sort of reasonable proxy for  
2 dose-response.

3 **MR. LASKER:** Well, I think --

4 **THE COURT:** And why wouldn't it be?

5 **MR. LASKER:** Well, I think -- well, the issue, I  
6 guess, is: There are two analyses that were being presented.  
7 One is sort of the ever/never analysis. And that is -- you  
8 heard a lot about ever/never. And I think part of the issue  
9 there is if there's misclassification, maybe you're not exactly  
10 calculating ever/never. And that is -- for Bradford Hill,  
11 that's an important -- that's the first step. You have to show  
12 association.

13 The second issue under Bradford Hill, which is a separate  
14 evaluation, is dose-response.

15 And I think the issue here is whether or not McDuffie  
16 provides evidence of a dose-response or not, or how it does.

17 And Dr. Neugut actually testified at page 212 that the  
18 McDuffie data does not provide evidence of dose-response. And  
19 we'll get a little bit further on that actual page -- I'm  
20 getting to it -- where one of the issues that was raised, and  
21 I'd talked to Dr. Ritz about, as well, was the fact that  
22 greater-than-two-days-a-year/less-than-two-days-per-year is  
23 sort of an odd analysis, because it doesn't consider duration.

24 And she acknowledged later -- and we'll get to this --  
25 that that would create a possibility of misclassification for

1 dose-response if you have somebody who uses glyphosate ten  
2 years, but only once or twice a year; and somebody who uses it  
3 once, four times a year. You sort of have an issue, depending  
4 on how you look at this, of misclassification. And we'll get  
5 to that in a second.

6 But -- so there was -- there's other issues here that she  
7 acknowledges, but only on cross-examination when we discussed  
8 that.

9 If we could continue -- and this is, again, just sort of  
10 an inconsistency on page 46. Well, actually, let me back up,  
11 because -- no. I'll do this other -- I'll do it out of  
12 sequence a little bit, but on page 47 --

13 **THE COURT:** Mm-hm.

14 **MR. LASKER:** -- at line 8, through 48, line 5, this  
15 is actually the follow-up to what we were just talking about.  
16 And I raised this issue with Dr. Ritz. And she acknowledged,  
17 *Well, yes, there might be some misclassification because we're*  
18 *not accounting for duration.*

19 And then what she explains as you go through this is she  
20 states, *But this will likely be nondifferential, and so*  
21 *therefore that number we have for greater than two days is*  
22 *probably too low. If we were to account for duration, it would*  
23 *probably be higher.*

24 **THE COURT:** Mm-hm.

25 **MR. LASKER:** Sort of the import of her testimony

1 here.

2 A problem with that is we're not dealing in the abstract.

3 I'd asked her. There was a bit of question and answer,  
4 you might recall, when I asked her whether we should be looking  
5 at data rather than opinions. And she agreed we have the data,  
6 because the NAPP did this analysis. And we know from the NAPP  
7 that when you do actually look at duration and you look at  
8 cumulative days, these numbers don't -- aren't -- it's not  
9 higher; it's lower. And she knows that. She's seen that data.

10 So the question, again, is: Why is she presenting an  
11 abstract hypothesis, instead of looking at the actual data that  
12 she had?

13 **THE COURT:** Well, but I guess I can -- I mean,  
14 there's no question that she was cherry-picking numbers to a  
15 degree, but I guess I can understand why -- at least, I can see  
16 an argument for focusing at least as much on the, you know,  
17 more than two times a year of use as the, you know, greater  
18 than -- you know, more than seven total days' exposure,  
19 because, as you know, one thing we all agree on is that  
20 glyphosate is ubiquitous. Right? And if you're farming,  
21 you're going to be using glyphosate.

22 So it would only be somebody who quit farming, I would  
23 think, that --

24 Or if you're farming particular -- you know, particular  
25 products.

1           If you're a farmer and you're using glyphosate, we can  
2 probably assume that you're continuing to use glyphosate.  
3 Right?

4           **MR. LASKER:** Well, no. Actually, Your Honor, I mean,  
5 we didn't talk a lot about farming; but as I think maybe  
6 Dr. Weisenburger explained, these case-control studies in  
7 particular were population studies. They weren't solely  
8 farming studies.

9           **THE COURT:** Right.

10          **MR. LASKER:** And glyphosate -- I expect you have it  
11 in your garage. Glyphosate is used for a variety of different  
12 purposes. I don't know if you've heard about it. There are a  
13 variety of different uses for glyphosate. It's not just  
14 agricultural. So that's not necessarily the case: The  
15 population-based study.

16          **THE COURT:** Okay.

17          **MR. LASKER:** And in any event, while I appreciate  
18 Your Honor identifying explanations for that and comparing one  
19 versus the other, that's -- you're not the expert here.  
20 Dr. Ritz, you know, could be presenting that. Again, she could  
21 have presented the adjusted Odds Ratios and explained why that  
22 was an important opinion, but that's not the opinion she  
23 proffered in this case.

24          If we could go back a bit to page 46. And this is on line  
25 20 to 25. And this is one of our favorite topics: Arsenic.

1 It sort of popped up in the litigation.

2 You will recall Dr. Weisenburger explained that you  
3 wouldn't want to adjust for arsenic, because we know it does  
4 not cause non-Hodgkin's lymphoma. And so it should not have --  
5 it should not really be associated in this study. It should  
6 have an elevated Odds Ratio. And that's why he testified there  
7 might be a problem with the multivariate adjustment in  
8 Eriksson.

9 Dr. Ritz had sort of the contrary approach to this. Her  
10 testimony was, *We know that arsenic does cause cancer. And*  
11 *therefore, since in a multivariate analysis the Odds Ratio goes*  
12 *down, there must be something wrong with a multivariate*  
13 *analysis --*

14 **THE COURT:** Huh.

15 **MR. LASKER:** -- which, again -- I mean, at one point  
16 Dr. Ritz said -- and I'll get here. Certainly at one point she  
17 says, *In my science, you're never right. Whichever way you do*  
18 *it, you're wrong.* That came up a lot in this litigation.

19 **THE COURT:** Well, I mean, you know, I've been  
20 pondering that a lot -- right? -- because I've sort of come to  
21 the same opinion about epidemiology. Right?

22 I mean, as often as Dr. Ritz tried to characterize it as a  
23 quantitative science, it doesn't seem like a correct  
24 characterization of epidemiology. I mean, it seems like a very  
25 highly subjective field, where there is a lot of room for

1 people, depending on their perspective, to, you know, pick  
2 which, you know, formulations they want to emphasize, and pick  
3 which -- you know, make decisions -- subjective decisions --  
4 about which, you know, adjustments are important, and which are  
5 not, and which studies are more flawed, and which studies are  
6 less flawed.

7 But how does that cut for you -- right? -- in this  
8 context?

9 Because, you know, if we assume that it's a bit of a  
10 loosey-goosey field -- epidemiology -- sort of means there's  
11 more room to operate within the field. And maybe Dr. Ritz,  
12 despite some of the problems with her testimony, is operating  
13 within the mainstream of the field. And may be that means it's  
14 for the jury to decide whether to buy her presentation, as  
15 opposed to me excluding her presentation.

16 **MR. LASKER:** Well, Your Honor, I think --

17 **THE COURT:** I mean, it's sort of weird to say. Like,  
18 the worse the science -- you know, the less precise the  
19 science -- you know, the more leeway an expert has to, you  
20 know, cherry-pick the data, or whatever.

21 But that -- that was my one big takeaway from last week,  
22 is that the science of epidemiology is not -- you know, is a  
23 very subjective science.

24 **MR. LASKER:** Well, if I could, I guess, provide more  
25 perspective on that, one of the points that Dr. Mucci tried to

1 make in her testimony was, you know, there are -- and  
2 epidemiologists are trained to criticize studies.

3 But as part of that -- and particularly this happened in  
4 the Agricultural Health Study -- rather than just having this  
5 abstract criticism, there are validation studies. There are  
6 Sensitivity Analyses that have actual data that are a way of  
7 sort of testing the criticism to see if it stands up to any of  
8 the various ways of looking at it.

9 And one of the things that was also continually  
10 problematic for Dr. Ritz is she never addressed -- she doesn't  
11 do it in her testimony. She didn't do it in her Expert Report.  
12 She never did it even in the Supplemental Expert Report after  
13 Andreotti. She never addresses any of the Sensitivity Analyses  
14 that were conducted that try to take out the imputed data or  
15 that cuts off the exposure date. She doesn't explain why. She  
16 just never addresses that.

17 And again, maybe an epidemiologist could come in and  
18 provide an opinion that provides an analysis -- and a reasoned  
19 analysis -- of why you would or would not consider those  
20 Sensitivity Analyses. And that would be a different opinion  
21 for Your Honor to be addressing, as to whether or not it's  
22 reliable, and meets *Daubert*; but that's not what Dr. Ritz did.  
23 That's not the opinion she proffered.

24 And I would also state, again, if you look at the case  
25 law, some of the cases that we cite -- the cases that dealt

1 with epidemiologic evidence -- the courts don't throw up their  
2 hands with epidemiology. They look at the various specific  
3 issues we have been discussing.

4 Does the expert address confounding?

5 Does the expert rely upon nonstatistical findings to sort  
6 of do a trend analysis?

7 And when those characteristics are found in the expert's  
8 opinion, those are the methodologies the expert proffers, the  
9 courts have repeatedly thrown those opinions out; held they  
10 don't meet *Daubert* standards.

11 So I think you have at this point a pretty solid body now  
12 of case law under *Daubert* that makes it clear that the Judge's  
13 role with epidemiology is not to throw up his hands and say  
14 "It's subjective"; but to look to see if the expert did the  
15 various things you would expect the expert to do in proffering  
16 their opinion.

17 And in this case -- and as we continue to go through  
18 this -- repeatedly documents that it does not.

19 If we could go on, this is somewhat making the same point,  
20 but I think it's informative. Again, at pages 49 to 50, and  
21 sort of starting at line 15 on page 49, she presents --  
22 Dr. Ritz presents another -- again presents a forest plot.  
23 This, as I recall, was for the subtypes of non-Hodgkin's  
24 lymphoma. And this was after, obviously, Your Honor had walked  
25 her through and asked her about confounded versus unconfounded

1 data. We'd had a lot of discussion about whether you adjust  
2 for pesticides, or not adjust for pesticides. And she presents  
3 this data again these Odds Ratios.

4 And when my colleague, Mr. Griffis, talked to  
5 Dr. Weisenburger and brought -- showed him this exact same  
6 forest plot, Dr. Weisenburger acknowledged these are not  
7 adjusted for other pesticides.

8 Dr. Ritz never states that anywhere here. They sort of  
9 present this data. And again, if she wanted to explain why she  
10 was relying upon that data, she could have; but she didn't.  
11 She just sort of presented these numbers as if these are the  
12 numbers that everybody would look at. And that's -- that's not  
13 reliable.

14 And again at page 51, this goes back to line 14 through --  
15 I guess it continues. Her answer continues on page 52.  
16 Starting at line -- page 51, line 14, she's talking about --  
17 they're talking about this methodology, if everything is on the  
18 right side of the 1; if that is sort of a standard methodology  
19 for reaching an opinion.

20 And again, this is the same sort of analysis we talked  
21 about before that a number of cases have rejected. This is  
22 sort of methodology. If it's all to the right of the 1, that's  
23 also informative of causation.

24 And the courts have rejected that methodology repeatedly.

25 There was testimony -- I don't know that I need to go

1 through this, because I think Your Honor recognized this --  
2 where she was explaining why the AHS questionnaire wouldn't be  
3 reliable. And she basically started talking about how the  
4 farmers just didn't care.

5 And again, she has no basis for -- for that opinion.  
6 She's offering speculation.

7 And it's one thing to say, Well, she's offering  
8 speculation. Your Honor, that's wrong.

9 But the other is: Why is she doing that? Why is --  
10 instead of -- when we had the Blair 2002 Study, which, as  
11 you'll recall, tested as 4,000 questionnaires, before and  
12 after. We have that data. There's an actual study on this.  
13 Why is she instead just sort of offering up these hypotheses  
14 and speculation, instead of looking at the actual studies?

15 And that, I think, again, speaks to her methodological  
16 approach here in how she was looking at this data.

17 And another sort of perhaps minor point, but sort of  
18 illustrative of how she was trying to present the data in ways  
19 that are not really consistent with what she, I think,  
20 understood were the facts is on page 58. And this is line 4 to  
21 line 8.

22 **THE COURT:** Okay.

23 **MR. LASKER:** And she's talking about the size of the  
24 Ag Health Study. And she's trying to make a point that it's a  
25 small study. They only have 575 NHL cases. The case-control

1 studies start with 500 subjects -- sort of suggesting AHS is  
2 just a small study compared to the case-control studies.

3 And when I asked her on page 114 in my cross -- and this  
4 is at line 14 to 16 -- what is the more relevant point, as far  
5 as power of an epidemiologic study, which is, *How many exposed*  
6 *cases were there that you could do an analysis on?* -- she  
7 agreed that the 2018 *JNCI* study had more exposed cases than all  
8 of the case-controlled studies combined.

9 **MS. WAGSTAFF:** Would you tell me what page that was  
10 again? I missed it.

11 **THE COURT:** Page 114, lines 14 through 16.

12 **MR. LASKER:** And again, maybe, you know, there are  
13 issues. And you could talk about why the number of people  
14 going into a study is also a relevant factor. It doesn't  
15 translate -- I mean, I think it was fairly clear in the  
16 testimony that while the plaintiffs' experts had concerns about  
17 the *JNCI* study, at various points they acknowledged that it was  
18 the most powerful study. It was the largest study to address  
19 this question.

20 Why is Dr. Ritz saying things that to the contrary?

21 If we go, then, to -- and I touched on this a bit -- line  
22 66 --

23 **THE COURT:** Page 66?

24 **MR. LASKER:** Page 66. Thank you.

25 **THE COURT:** Okay.

1           **MR. LASKER:** And this is starting at line 17 through  
2 line 25. And plaintiffs' counsel raises the issue of  
3 Sensitivity Analyses and validation studies. And at this  
4 point, I was expecting Dr. Ritz then to go through all of the  
5 studies and all of the Sensitivity Analyses that were done that  
6 Dr. Mucci walked us through, that I walked Dr. Ritz through  
7 during her deposition.

8           And as you read through this -- and she has a long answer  
9 here -- she refers in general to the biomonitoring studies --  
10 and I'll come back to that in a moment -- but that's it. She  
11 doesn't mention any of the other --

12           And she had -- again, maybe there is a reliable opinion  
13 that could be proffered that would address those validation  
14 studies and address those Sensitivity Analyses, and explain  
15 why, that don't show what the investigators thought they showed  
16 or what the authors of the *JNCI* study thought that they showed;  
17 but she doesn't address it, at all. She just sort of lets it  
18 go. And again, that's not sound epidemiologic methodology.

19           On page 69, line 17 --

20           And this is, again, sort of a not -- perhaps not a major  
21 substantive point, but it was an interesting point. This map  
22 that you put up -- we never saw it before. It was not in her  
23 earlier Expert Reports. And what immediately struck me when  
24 she put the map up -- well, there are two things.

25           The first thing was that in her Rebuttal Report -- and

1 this is at page 11 -- she criticizes one of Monsanto's experts,  
2 Dr. Fleming, because in his Expert Report he used these maps.  
3 And his maps were -- one was NHL incidence over time; and the  
4 other was where glyphosate is found. And -- very similar to  
5 her prevalence map.

6 And he was sort of using maps to make a broader point  
7 about what that might show with respect to glyphosate, and  
8 whether or not it was associated, or the timing sort of  
9 matched.

10 They were using maps for different reasons. I don't want  
11 to suggest it was the same reason. But it was just odd to see  
12 her now using a map, where -- without sort of explaining why,  
13 in this situation, it was okay to do that.

14 And it was also sort of telling, I think, was that she  
15 used a map for 2014. And if you'll recall the NCI study, not  
16 only was it that the exposure data went through 2005, but they  
17 did a Sensitivity Analysis where they brought it back to 2005,  
18 so that 2005 to 2014 wouldn't matter.

19 And she doesn't sort of explain that. She doesn't show a  
20 map for 2005. And the map was sort of hard, at least, for me  
21 to understand, anyway. It was just lot of colors. And okay.  
22 You know. I don't know. I -- she sort of suggested that  
23 everybody in Iowa uses glyphosate, and everyone in Iowa is  
24 all --

25 There's actually data on that.

1 This didn't get into evidence, so I believe it's in the --

2 **THE COURT:** Well, but so let me just ask you. I  
3 mean, are there -- let me ask you. I mean, I think I can sort  
4 of get the thrust of your overall critique of her testimony.  
5 Are there any other kind of big points you want to make about  
6 sort of analytical issues with her testimony --

7 **MR. LASKER:** Yeah. Let me just see --

8 **THE COURT:** -- before I turn to the other side?

9 **MR. LASKER:** Right. Let me see if there are any  
10 others. And there are a number here -- but for analytical.

11 So I would also take you to her Bradford Hill analysis.  
12 This is at page 85 --

13 **THE COURT:** Yeah.

14 **MR. LASKER:** -- to 86.

15 And there were a couple of issues with Bradford Hill; with  
16 the use of Bradford Hill in this case. And again, if you look  
17 at -- I'll give you -- it's another *In Re*, Your Honor; but  
18 *In Re Lipitor*, 174 F. Supp. at 924 to 926. And that cites a  
19 number of cases that also addressed Bradford Hill in context of  
20 *Daubert* and expert testimony.

21 The Reference Manual at 598, 599 also discuss how you are  
22 supposed to apply Bradford Hill. And one point that they both  
23 make is, you know, there's a threshold step of statistically  
24 significant unbiased associations before you get to the other  
25 factors.

1 Dr. Ritz doesn't address that, although I guess with her  
2 presentation she would present unadjusted Odds Ratios, and  
3 maybe some of those she thought, since they were statistically  
4 significant, allowed her to get there.

5 But then when she walks through the Bradford-Hill  
6 Criteria, there is one of the criteria that is generally viewed  
7 as pretty significant among that list, which is strength of  
8 association. That's on a standard list.

9 And Dr. Neugut, at page 313, acknowledged that even if you  
10 looked at the epidemiological data before NAPP and before  
11 Andreotti, where they had those earlier meta-analyses about  
12 1.3, 1.4 -- even though he had sort of pluses -- and that was 2  
13 plus -- he said that's not really very -- it's not really very  
14 powerful for strength in the Bradford Hill.

15 Dr. Ritz doesn't mention strength, at all. She talks  
16 about statistical significance instead, on line 9, which I  
17 think --

18 **THE COURT:** In her testimony --

19 **MR. LASKER:** In her testimony.

20 **THE COURT:** -- not in her report.

21 **MR. LASKER:** In her report I think she probably  
22 points to some of the unadjusted Odds Ratios. I'd have to go  
23 back to that.

24 **THE COURT:** But that actually leads me to a question,  
25 which is: We have, you know, the transcript of her testimony

1 and the other experts' testimony at the hearing. And we have  
2 the reports. And in some cases, you know, the testimony at the  
3 hearing was different from what was in the report, or there was  
4 a supplement to what was in the report, or there are different  
5 points of emphasis, or whatever.

6 Am I to be sort of analyzing the totality of Dr. Ritz's  
7 presentation: Her testimony at the hearing, her report, her  
8 Rebuttal Report, all of that stuff?

9 **MR. LASKER:** I think that's right, Your Honor.

10 **THE COURT:** Okay.

11 **MR. LASKER:** But I also, with that, think that you  
12 need to be looking at the consistency of the opinions. I mean,  
13 so it's a large part of the issue here.

14 **THE COURT:** I understand. Yeah.

15 **MR. LASKER:** And Your Honor asked me -- and I don't  
16 know if we want to get to this, but there is another  
17 illustration in her Expert Reports where she changes her  
18 statement of the evidence from her Rebuttal Report to her  
19 Supplementary Report, sort of. And I can point you to that, if  
20 you want.

21 **THE COURT:** Sure.

22 **MR. LASKER:** And this goes to the issue of whether or  
23 not the -- the data in the initial questionnaire was reliable;  
24 and second, to whether the imputation was reliable.

25 **THE COURT:** Okay.

1           **MR. LASKER:** So in her Rebuttal Report -- and this is  
2 at page 3. And this was at the point in time where we had the  
3 unpublished 2013 analysis of the AHS data. So the issue of  
4 imputation had arisen, although we didn't have the 2018 study  
5 yet. And sort of towards the bottom of that paragraph in the  
6 rollover paragraph, she talks about the fact that the original  
7 AHS enrollment preceded the tremendous increase in agricultural  
8 use of glyphosate, and was never captured in the members of the  
9 cohort who now responded to the follow-up. So that was her --  
10 the point she was trying to make in her Rebuttal Report.

11           In her Supplemental Report she had a different take on  
12 this. And it's at page 5 through 6.

13           **THE COURT:** Okay.

14           **MR. LASKER:** And if you go to the last paragraph on  
15 page 5 and read through on to page 6, her opinion here is that  
16 actually, the increase happened in the middle of Phase 1, and  
17 so therefore you have a misclassification problem during that  
18 first phase.

19           Now, maybe both of these are -- either of these are  
20 arguments; analytically sound arguments.

21           But both of them -- they're not the same argument. And  
22 they're making claims about the data that are different.

23           And, you know, the Benbrook Study -- Benbrook Paper  
24 actually answered the question, but answered it only one way.  
25 And I -- again, it's in evidence. And there's actually tables

1 you can look at if you're so inclined, but the point here is:  
2 She's changing her characterization of the data, you know, from  
3 one report to the next, to try and make different points to  
4 support whichever argument she's trying to present, which is  
5 not, you know, again, what you would want.

6 I would also -- and I know I'm going to leave stuff out,  
7 but I think you've gotten the point in any event.

8 But I would also refer Your Honor to another case that's  
9 not an "In Re" case. It's *Pritchard versus Dow Agro Sciences*.  
10 It's interesting because it is a pesticide/NHL case dealing  
11 with chlorpyrifos, and it's dealing with the Agricultural  
12 Health Study. And in that case the expert tried to rely upon a  
13 positive but non-significant finding in the AHS for  
14 chlorpyrifos, and the Court excluded that as not being a  
15 reliable opinion.

16 The last point I'd make, although there's some document in  
17 my head I'm forgetting -- it's driving me crazy -- but the  
18 *In Re Bextra* case, if you'll recall, the Court in that case was  
19 looking at 20 milligrams, I think, dose level; the lower dose  
20 level. And they said, *There's a series of experts here who*  
21 *have not given the type of testimony you would need to rely*  
22 *upon. They have equivocal testimony.* And one of them was --

23 You know, he sort of goes through -- the Court goes  
24 through the testimony that those experts provided. One of them  
25 said, *It would be harder to make a case with the lower dose.*

1 And some said, *I'm excluding it*, but it's not quite as strong.

2 Now, Your Honor went through with a number of the experts  
3 and asked them, you know, *Does the epidemiology provide you the*  
4 *data you need?*

5 And they -- there was a variety of different answers.

6 I think Your Honor's probably correct that Dr. Ritz, of  
7 the experts, was sort of the closest to saying that the  
8 epidemiology is strong enough, but she didn't say that.

9 **THE COURT:** Well, I mean, I don't think she -- I  
10 don't think she has to say that. I mean, I don't think that  
11 there's a requirement that the epidemiology, alone, be the  
12 basis for the expert opinion.

13 I mean, but what I do think is that, you know, what the  
14 IARC does is not enough. And nor -- it's not that it's not  
15 enough. I think what the IARC does is actually quite good and  
16 useful. And -- but --

17 Oh, I just saw my ridiculous presentation on the poster  
18 board over there.

19 But you need -- and I take for granted -- I mean, we could  
20 bicker a lot about the animal studies and the mechanistic data.  
21 And I think you have some good criticisms of that data, too.  
22 But the way I'm approaching this is I sort of take as a given  
23 what the IARC says about the mechanistic data. And I take as a  
24 given what the IARC says about the animal data; and that it is  
25 carcinogenic in animals. And I take it as a given what IARC

1 says about the epidemiological data, which your expert does  
2 also, by the way; but I think it's just not enough. And what  
3 you need to get past the general causation hurdle in this case  
4 is more epidemiology, I think.

5 **MR. LASKER:** Right.

6 **THE COURT:** And so that's really the question:  
7 Whether there is more epidemiology.

8 There is -- you can get more out of the epidemiology, but  
9 I don't -- I think it's -- the question that I was asking those  
10 experts, I think, probably was not a good one, because I don't  
11 think it -- you would have to limit them to epidemiology.

12 **MR. LASKER:** Well, Your Honor, I would put to the  
13 side, sort of, the *Daubert* issue there; but again I think you  
14 have to focus on the testimony of the individual expert, and  
15 how they presented that.

16 Dr. Ritz did talk about genotox studies -- genotoxicology  
17 studies, sort of, in general; but she didn't actually provide  
18 any analysis of how she applied that data to humans. She just  
19 sort of stated that.

20 And so I would state that even if it is the case that an  
21 expert can sort of pool all of that data together, you have to  
22 explain how you're doing that or why you're doing that. You  
23 can't just state it.

24 One final issue that I wanted to raise, because it comes  
25 up in her deposition but did not come up in the hearing -- it

1 relates to the chart here (indicating) -- which is this issue  
2 of the math for nondifferential misclassification. And  
3 Dr. Ritz, during her deposition -- it was her supplemental  
4 deposition at page 129 to 132 -- was discussing this  
5 possibility of random error. And she acknowledged -- and we  
6 recited in our briefs -- that, as a general matter, you're not  
7 expected to cross the line, but with random error sometimes it  
8 will happen. And that is --

9           **THE COURT:** It's different from what your expert  
10 said, which is that it's mathematically impossible.

11           **MR. LASKER:** I agree with that.

12           **THE COURT:** So do you agree that she's wrong when she  
13 says that?

14           **MR. LASKER:** No. I think Dr. Ritz is wrong.  
15 However, Dr. Ritz's testimony is not --

16           **THE COURT:** You believe that it is mathematically  
17 impossible to cross the line?

18           **MR. LASKER:** Given the size of the study.

19           **THE COURT:** That's not mathematically impossible,  
20 though. I mean --

21           **MR. LASKER:** Well, I think what Dr. Mucci said is  
22 that it's just -- with that size study, it's not how you get  
23 there.

24           **THE COURT:** Okay, but that's different from  
25 mathematical impossibility; isn't it?

1           **MR. LASKER:** I don't know that Dr. Mucci said  
2 impossible or just extremely unlikely.

3           **THE COURT:** She said "impossible."

4           **MR. LASKER:** I will yield to the Record on that.

5           But the issue, again, is: Plaintiffs have the burden of  
6 proof here. And what Dr. Ritz is relying upon is something  
7 that she acknowledges is not likely as a basis for dismissing  
8 the Ag Health Study; and not only that it's unlikely, but she  
9 then doesn't consider all of the validation studies, all of the  
10 Sensitivity Analyses. And, you know, in her deposition she  
11 said, *I'd give it no weight, whatsoever.*

12           And it's -- again, that's not --

13           **THE COURT:** That's pretty --

14           I mean, to give weight to the Eriksson Study, and not to  
15 the AHS, is pretty amazing.

16           Okay. I get -- I think I get where you're coming from.

17           Why don't we take a quick five-minute break, and then  
18 we'll turn to the plaintiffs.

19           **MS. WAGSTAFF:** Your Honor, could we take a break  
20 until -- for about 15 minutes, just so that we can check some  
21 of the things that Mr. Lasker said, and --

22           **THE COURT:** I -- you can have your people checking it  
23 at counsel table while we're arguing; but unfortunately my time  
24 is somewhat limited, so I don't think that would be a good idea  
25 for you to take that long a break.

1           **THE CLERK:** Court is in recess.

2 (Recess taken from 11:45 a.m. until 11:50 a.m.)

3           **THE COURT:** Sorry. I think I might have come in a  
4 little bit early.

5           **MS. WAGSTAFF:** That's okay. I have a couple of  
6 things for you. So I'm going to hand you what is in the Record  
7 as Exhibit 31.

8 (Whereupon a document was tendered to the Court.)

9           **MS. WAGSTAFF:** Are you ready?

10          **THE COURT:** Yep.

11          **MR. WISNER:** I don't have 31.

12          **MS. WAGSTAFF:** That's okay. Got it.

13           So I think we appreciate Your Honor's comments.

14          **THE COURT:** And let me just say, you know, I mean,  
15 you're free to try to talk me out of the idea that, you know,  
16 the IARC's classification of glyphosate as a probable  
17 carcinogen does not get you there, because it does not -- the  
18 IARC is conducting a very different inquiry than the one we're  
19 conducting here; and the IARC inquiry is much less connected to  
20 actual exposure in humans; and the IARC's conclusion is not  
21 that glyphosate is probably causing cancer -- causing NHL in  
22 humans today; rather, it's that it's kind of more of a probable  
23 carcinogen in general, in the abstract.

24           If you want to try to talk me out of that, go ahead; but I  
25 will tell you that I think, you know, what you need -- the main

1 thing that you need to accomplish here is to convince me that  
2 Dr. Ritz's opinion gets you that extra distance --

3 **MS. WAGSTAFF:** Sure.

4 **THE COURT:** -- that the IARC classification does not  
5 take you.

6 **MS. WAGSTAFF:** Sure.

7 How do I roll that (indicating) up?

8 **MR. WISNER:** Where do you want to go?

9 **MS. WAGSTAFF:** All right. So first I will spend just  
10 a minute on the IARC question that you have. And I think that  
11 the confusion is in the definition of what a hazard assessment  
12 was. And I think Dr. Jameson and Dr. Portier, to a certain  
13 extent, as well, handled this issue quite well.

14 And what Dr. Jameson testified to --

15 -- who has been on, I believe, around 14 IARC panels; and  
16 Dr. Portier has been on some, as well.

17 -- is that the IARC definition of what they were doing is  
18 to consider all chemicals. And it's a broad, encompassing  
19 definition. Right?

20 And so you have some chemicals that you will look at that  
21 do not have epidemiology. And so therefore it would be  
22 impossible to classify them as a probable carcinogen, if they  
23 do not have --

24 **THE COURT:** But that's not what the IARC says. What  
25 the IARC says is that the distinction between a hazard and risk

1 is important; and what we are doing is hazard assessment. And  
2 when the monographs identify cancer hazards -- excuse me. And  
3 the monographs identify cancer hazards, even when the risks are  
4 very low at current exposure levels, because new uses or  
5 unforeseen exposures could engender risks that are  
6 significantly higher.

7 So it may be that Dr. Jameson and others offer an  
8 additional opinion, above and beyond what IARC gives us; but  
9 the IARC makes very clear that it's conducting a hazard  
10 assessment. And it can classify something as a probable  
11 carcinogen or even a known carcinogen, even if it might not be  
12 causing cancer in humans currently.

13 **MS. WAGSTAFF:** Sure. I appreciate that.

14 **THE COURT:** And by the way, Dr. Jameson effectively  
15 confirmed that during his testimony.

16 **MS. WAGSTAFF:** Okay.

17 And I would just point you to Exhibit 149, where, as  
18 you -- I don't know if you know or not, but Monsanto has  
19 brought the Monograph 112 under attack. And so in response,  
20 the IARC Director issued a statement two months ago:  
21 Exhibit 149. I don't know if you have it in front of you.

22 **THE COURT:** I have it right here.

23 **MS. WAGSTAFF:** But I would just point you to the part  
24 where it talks about -- that they do take into account, quote,  
25 "real-world exposure."

1           **THE COURT:** I understand it has a connection to  
2 real-world human experience to the extent it relies on  
3 epidemiology, but again, in this response to Monsanto's  
4 attacks, they make clear that they see a qualitative difference  
5 between hazard identification and risk assessment. And they  
6 make clear that what they're doing in hazard identification is  
7 simply identifying whether something is a hazard.

8           And then they say, in contrast to hazard identification,  
9 *The specific exercise of risk assessment typically involves*  
10 *extrapolation beyond the observed data, employs a variety of*  
11 *statistical models, and is based on anticipated levels of*  
12 *exposure and background cancer incidence rates that are often*  
13 *specific to a population or a region.*

14           And they say that our -- they explain -- I mean, they do a  
15 good job of explaining why what the IARC does is very  
16 important. It's very important to identify hazards. And the  
17 reason it's important to identify hazards is because, as they  
18 put it, it's a necessary first step in risk assessment and  
19 management. It should be a red flag to those charged with  
20 public health.

21           I assume all of that is true. I assume the IARC's  
22 classification that -- of glyphosate as a probable carcinogen  
23 is legitimate, based on the definition that they provide, based  
24 on the description that they provide of what they are doing  
25 with their classification and what they are not doing with

1 their classification; but as they say, it's a necessary first  
2 step.

3 But to get past general causation, you need to take a  
4 second step. And so how do you get to that second step? How  
5 does Dr. Ritz get you to that second step?

6 **MS. WAGSTAFF:** Sure. And so let's move -- let's move  
7 to the point of confounding, which seems to be on topic today.

8 And first, I think it should be understood by the Court  
9 that Dr. Ritz did consider the adjusted Odds Ratios. They are  
10 in her report. They are in her deposition testimony.

11 **THE COURT:** Show me where. Let's look at it in her  
12 report.

13 **MS. WAGSTAFF:** Okay. The adjusted Odds Ratios in her  
14 report.

15 **THE COURT:** Because that was -- that was something  
16 that I was concerned about, actually, is that.

17 **MS. WAGSTAFF:** Sure.

18 **THE COURT:** Did she -- and I hadn't thought of that,  
19 but did she actually offer an opinion that if you look at all  
20 of the data with the adjusted -- properly adjusted or  
21 better-adjusted ratios, it points to the conclusion that, to a  
22 reasonable scientific certainty, glyphosate causes  
23 non-Hodgkin's lymphoma in humans, based on current exposure  
24 levels?

25 (Discussion off the record.)

1           **MS. WAGSTAFF:** Yeah. So yeah. So she -- okay. So  
2 she -- throughout her report she -- she --

3           **THE COURT:** Are you looking at her initial report?

4           **MS. WAGSTAFF:** Yeah.

5           **THE COURT:** Okay. What page?

6           **MS. WAGSTAFF:** Okay. Okay. Page 19, and then on to  
7 her Supplemental Report, as well.

8           **THE COURT:** All right.

9           **MS. WAGSTAFF:** Throughout her report she discusses  
10 the different Odds Ratios.

11           **THE COURT:** Where are you pointing me to on page 19?

12           **MS. WAGSTAFF:** Page or -- she's discussing De Roos  
13 '03, which is adjusted Odds Ratios.

14 (Discussion off the record.)

15           **MS. WAGSTAFF:** Right. And she's discussing the  
16 confounding issue throughout.

17           **THE COURT:** Okay. I see where she --

18           **MS. WAGSTAFF:** And also on page --

19 Oh, sorry.

20           **THE COURT:** I was just going to say I see where she  
21 says that De Roos reported an increased risk with glyphosate  
22 use.

23           **MS. WAGSTAFF:** And also if you'll turn to page 18,  
24 Your Honor, the middle paragraph. Tell me when you're there.

25           **THE COURT:** I'm there.

1           **MS. WAGSTAFF:** Talking about, *Pesticides sometimes*  
2 *exert stronger health risks when mixed with other pesticides*  
3 *than when used alone.*

4           She's discussing confounders there. If you --

5           **THE COURT:** Okay, but where is her -- where is her  
6 opinion that the fully adjusted or properly adjusted Odds  
7 Ratios and confidence intervals show that glyphosate is causing  
8 non-Hodgkin's lymphoma in people?

9           **MS. WAGSTAFF:** Sure. If you go to her Supplemental  
10 Report on page 9, it starts with, *Similarly, the issue of*  
11 *confounding control is raised --*

12           **THE COURT:** Wait. Hold on.

13           **MR. LASKER:** Where on page 9?

14           **THE COURT:** Her Supplemental Report.

15           **MS. WAGSTAFF:** Yeah.

16           **THE COURT:** And page 9 and where?

17           **MS. WAGSTAFF:** Subparagraph B, where it says,  
18 "Similarly," comma.

19           **MR. LASKER:** Subparagraph B?

20           **THE COURT:** I don't see a subparagraph B on page 9 of  
21 the Supplemental Report.

22           **MR. WISNER:** It starts with B. Sorry.

23           **MS. WAGSTAFF:** Sorry. It starts with, *In terms of*  
24 *meta-analysis*, about halfway down. There's a "B." Do you see  
25 it?

1           **THE COURT:** I think I've got a different document  
2 than you do.

3           **MS. WAGSTAFF:** Okay. They just told me this is her  
4 Rebuttal Report. Sorry. We have a lot of cooks in the  
5 kitchen.

6           **THE COURT:** Too many cooks in the kitchen.

7           **MS. WAGSTAFF:** Yeah. Rebuttal Report.

8           **THE COURT:** Okay. Her Rebuttal Report; not her  
9 Supplemental.

10          **MS. WAGSTAFF:** Yeah.

11          **THE COURT:** Okay. Okay. Page 9.

12          **MS. WAGSTAFF:** Yeah. And if you --

13          **THE COURT:** Okay. I see it.

14          **MS. WAGSTAFF:** I've got it like (indicating). So  
15 that's where she discusses the confounding issue. And she  
16 discusses it in her deposition, as well. And I think that  
17 what's important here. And I've handed Your Honor and opposing  
18 counsel Exhibit -- well, 31.

19          **THE COURT:** But what she seems to be saying here in  
20 her Rebuttal Report --

21          **MS. WAGSTAFF:** Mm-hm.

22          **THE COURT:** -- is that we shouldn't be considering  
23 these confounders, which -- I mean, if that's what she's saying  
24 in her Rebuttal Report, she's clearly wrong.

25           I mean, that's -- I don't think that's -- I don't think

1 that's debatable. I mean --

2 **MS. WAGSTAFF:** No. Right.

3 **THE COURT:** And to the extent that she's arguing we  
4 shouldn't be adjusting for other pesticides, that is junk  
5 science, if that's what she's arguing.

6 **MS. WAGSTAFF:** Right. I don't think she's saying  
7 that.

8 If you look at the sentence where it says, *Rather, the*  
9 *question would be how strong a confounder we would need to*  
10 *change the results --*

11 **THE COURT:** Okay.

12 **MS. WAGSTAFF:** -- *we observe, and in what direction*  
13 *this change would be, and what variables would qualify as*  
14 *confounders, I think she's saying, along the lines of what*  
15 *Your Honor was saying earlier, with quantitative and*  
16 *qualitative, there is probably aspects of both.*

17 The quantitative nature is, you know, trying to decide how  
18 big of a change each confounder has. And that's the  
19 quantitative part. Right?

20 And so that's what she's saying in here in her opinion, is  
21 that you do consider confounders, but you need to consider the  
22 effect they have on the study.

23 I don't think --

24 **THE COURT:** Okay. So she's saying she's  
25 acknowledging that you need to consider confounders, but where

1 is her opinion -- you know, either in any one of her three  
2 reports or in her hearing testimony, where is her opinion that  
3 when you adjust for other pesticide use, these studies show to  
4 a reasonable degree of scientific certainty that glyphosate  
5 causes cancer?

6 **MS. WAGSTAFF:** Sure. Well, I think that when she --  
7 when you asked her about the epidemiology, and she said that  
8 she can't unlearn what she already knows -- right? And De Roos  
9 2003 is fully adjusted. And it shows a statistically  
10 significant Odds Ratio.

11 Now, I don't think necessarily --

12 And the case law with that case, alone, if you look at  
13 *Bextra* --

14 **THE COURT:** But I'm -- sorry to interrupt.

15 **MS. WAGSTAFF:** Sure. Yeah.

16 **THE COURT:** But I want to see if I can get an answer  
17 to my question.

18 **MS. WAGSTAFF:** Sure.

19 **THE COURT:** You know, I remember what she said about,  
20 you know, *I can't unlearn what I already know*. And she is said  
21 that in a different context from what you're describing right  
22 now. She said that in response to, you know, questions about  
23 whether you could reach the same conclusion, taking away the  
24 animal studies and the mechanistic data.

25 But my question to you is: Show me in her --

1           And I'll ask this of your entire team. You know. Please  
2 spend the next 45 minutes looking through her reports and her  
3 hearing testimony, and show me where she offers an opinion that  
4 the data, adjusted for pesticides, shows to a reasonable degree  
5 of scientific certainty that glyphosate causes non-Hodgkin's  
6 lymphoma, because I think that if all she offered was an  
7 opinion that the data not adjusted for other pesticide use  
8 shows that glyphosate causes non-Hodgkin's lymphoma, you have a  
9 real problem. So I would urge you to spend these 45 minutes  
10 not listening to anything else I discuss with your co-counsel,  
11 and just finding that opinion if it's in there. Okay?

12           **MS. WAGSTAFF:** All right. And, Your Honor, you know,  
13 as we do this, I just want to caution all of us from atomizing  
14 the scientific data, and pulling one case out or another;  
15 because as you know, and as all of our experts testified,  
16 Dr. Ritz did look at all of the epidemiological data. And she  
17 did consider all of the toxicology data, and the mechanistic  
18 data.

19           And what I believe that she said was that the multivariate  
20 or the adjusted Odds Ratios continued to be elevated. Right?  
21 And so that shows a trend or a continued elevation that shows  
22 that when you couple it with everything else, that gets you  
23 sort of to causation.

24           And so I think that pulling out that specific opinion,  
25 where she's asked, *If you look at these cases in isolation -- I*

1 don't think that's the right question to ask.

2 **THE COURT:** Yeah. But you have to look --

3 I mean, the concern I have with Dr. Ritz is that, you  
4 know, you're supposed to look at the totality of it.

5 **MS. WAGSTAFF:** Right.

6 **THE COURT:** And, you know, she gave us this forest  
7 plot, which sort of was the centerpiece of her conclusion  
8 that -- or appeared to be the centerpiece of her conclusion  
9 that glyphosate causes non-Hodgkin's lymphoma.

10 **MS. WAGSTAFF:** Mm-hm.

11 **THE COURT:** And I believe all of the data that she  
12 put on there was not -- was unadjusted; unadjusted for other  
13 pesticide use, I believe.

14 **MS. WAGSTAFF:** Well --

15 **THE COURT:** And I just -- I don't see how any -- if  
16 that's all she's offering us --

17 **MS. WAGSTAFF:** Right.

18 **THE COURT:** -- I don't see how any responsible  
19 scientist could reach that conclusion.

20 **MS. WAGSTAFF:** And that's not all she's offering us.  
21 And maybe that was a bad decision on our part to offer that  
22 forest plot. And I asked her this morning when I spoke to her  
23 again why she just included the univariate.

24 First of all, she did have adjusted Odds Ratios on there.  
25 She had the De Roos 2003; and she had the NAPP on at least one

1 of them; and she had the AHS, I believe, as well.

2 And she said that she was she was trying to show -- it was  
3 just a demonstrative exhibit. It doesn't replace her opinions.

4 **THE COURT:** Okay. And defending the forest plot is  
5 not going to get you anywhere.

6 **MS. WAGSTAFF:** Right. And I don't want to spend a  
7 lot of time doing that.

8 I just saying that the Court should not consider that to  
9 be the cornerstone, end-all be-all of her --

10 I mean, if you want to strike the forest plot, which it  
11 sounds like you might want to do, that's fine. That doesn't  
12 change at all her opinions. And that doesn't change the fact  
13 that she did, in fact, rely on the multivariates.

14 What she was trying to do is just show an illustrative  
15 demonstrative, where she was kind of comparing apples to  
16 apples. Okay? And so we don't have to spend a lot of time on  
17 the forest plot, but what I'd like you to --

18 **THE COURT:** But considering the multivariates, I  
19 mean, how -- I mean, let's consider the multivariates. Okay?

20 **MS. WAGSTAFF:** Okay.

21 **THE COURT:** I mean, there's still this lingering  
22 issue of whether this is contained in Dr. Ritz's opinion or any  
23 of your experts' opinion; but putting that aside for the  
24 moment --

25 **MS. WAGSTAFF:** Okay. Which one do you want to look

1 at?

2           **THE COURT:** Let's -- okay. So let's -- so the  
3 NAPP Study.

4           **MS. WAGSTAFF:** Okay.

5           **THE COURT:** So one set of numbers we have from the  
6 NAPP -- is from the NAPP Study. And the NAPP Study, which, as  
7 you know, is a pooled analysis of all these North American  
8 case-control studies, shows that overall there is a  
9 statistically -- it shows that the data is statistically  
10 insignificant. The Odds Ratio is statistically insignificant.  
11 It's a 1.13 Odds Ratio, with a confidence interval of .84 to  
12 1.51.

13           And you take from the NAPP Study the Odds Ratio for people  
14 who have used or been exposed to glyphosate more than seven  
15 times in their life, and the Odds Ratio actually goes down. I  
16 don't think it matters that it goes down, because it's  
17 statistically insignificant; but the Odds Ratio is 1.06, with a  
18 confidence interval of .62 to 1.81. Okay?

19           And then you have the -- the figure from the NAPP Study  
20 of -- that touches on people who use --

21           **MS. WAGSTAFF:** Your Honor, are you on the June or the  
22 August one?

23           **THE COURT:** This is -- I believe this is the August  
24 one.

25           **MS. WAGSTAFF:** Okay.

1           **THE COURT:** People who use glyphosate more than two  
2 days per year, or used glyphosate more than two days per year.  
3 That is --

4           Yes, this is from the August one, because I remember that  
5 the August one was barely under statistically significant.

6           **MS. WAGSTAFF:** Mm-hm.

7           **THE COURT:** Right? Because the confidence interval  
8 was .99 to 3.17, if you use the June data. If I'm recalling  
9 correctly, it's slightly above -- it's barely statistically  
10 significant.

11           Let's give you that one. Let's say that one is  
12 statistically significant.

13           **MS. WAGSTAFF:** Okay.

14           **THE COURT:** Let's say the Odds Ratio is 1.77, and the  
15 confidence interval is -- the Odds Ratio is statistically  
16 significant, barely.

17           Then you have the Andreotti Study. And the Andreotti  
18 Study shows that with low dose -- low -- people in the lowest  
19 quartile of exposure, the Odds Ratio is .83; statistically  
20 insignificant.

21           And the people in the highest quartile of exposure, the  
22 Odds Ratio is .87; statistically insignificant.

23           And then the two middle quartiles, the Odds Ratio is  
24 similarly in the high eights; statistically insignificant.

25           And then you have the meta-analyses: The IARC

1 meta-analysis, and Chang, and Delzell. And I think those are  
2 barrel statistically significant; but of course, those are  
3 meta-analyses of the same data that the NAPP Study is  
4 examining.

5 **MS. WAGSTAFF:** Mm-hm.

6 **THE COURT:** In the face of all of those numbers, how  
7 can you just take -- how can you just pick the one, basically,  
8 the -- you know, from the NAPP Study -- the 1.77 Odds Ratio for  
9 people who use glyphosate more than two days per year -- and  
10 say -- how can you --

11 I mean, let me put the question a different way.

12 **MS. WAGSTAFF:** Sure.

13 **THE COURT:** You've got all of these numbers, the vast  
14 majority of which are statistically insignificant. And how can  
15 you focus on that one number and conclude that, to a reasonable  
16 degree of scientific certainty, glyphosate is causing  
17 non-Hodgkin's lymphoma in human beings? That sounds highly  
18 questionable at best, highly shaky at best, and may be junk  
19 science.

20 **MS. WAGSTAFF:** Okay. So first of all, you know,  
21 Dr. Ritz and all of our experts looked at all of the data. And  
22 they looked at all of the numbers that you've just mentioned,  
23 except obviously Dr. Neugut didn't consider NAPP, for reasons  
24 he explained on the stand.

25 **THE COURT:** As a side note, are you still relying on

1 Dr. Neugut, or are you withdrawing his testimony and opinion?

2 **MS. WAGSTAFF:** I believe we're still relying on him.

3 **THE COURT:** Okay. I just wanted to check.

4 **MS. WAGSTAFF:** Okay. And so secondly, the ever/never  
5 analysis -- the analyses are weighted by our experts, which  
6 they testified to in different ways. Right? And the  
7 ever/never analysis is a very low-weighted analysis, I would  
8 say, by our experts, because if you have one day's use, you're  
9 now a user. Right?

10 And so we are not suggesting that anybody who just was  
11 exposed one time in their life, which takes them out of the  
12 "never," would get non-Hodgkin's lymphoma. Right? I mean,  
13 plaintiffs even agree there is some threshold that you probably  
14 need to be exposed to. And one -- the ever/never, therefore,  
15 has really lower value and weight than the other tests.

16 And if we could look at -- I just wanted to make sure that  
17 Your Honor and I are on the same page with the effect that the  
18 multivariate has on the numbers, and why a lower  
19 nonstatistically significant Odds Ratio still is an indicator  
20 for our experts, from what they testified to.

21 So if we can just look at the Eriksson, do you have that  
22 in front of you?

23 **THE COURT:** You mean the actual Eriksson Study, or  
24 the numbers from it.

25 **MS. WAGSTAFF:** Well, the actual -- I mean, I'm going

1 to use the numbers from this little chart.

2 **THE COURT:** Okay. Let me pull it up.

3 **MS. WAGSTAFF:** I think -- I don't want to say for  
4 certain, but I think probably almost every expert has testified  
5 to this.

6 **THE COURT:** Oh, the one with the arsenic. The famous  
7 arsenic.

8 **MS. WAGSTAFF:** Yeah.

9 **THE COURT:** Let me just pull up the study. Hold on.  
10 (Discussion off the record.)

11 **MS. WAGSTAFF:** And while you're doing that, my  
12 sous-chef just pointed out something to me that is a good point  
13 here. You know, you mentioned the NAPP numbers, and you ran  
14 through some of the numbers. And as we all know, there's a  
15 June PowerPoint, and there's an August PowerPoint. Right?

16 **THE COURT:** Mm-hm.

17 **MS. WAGSTAFF:** And they have different numbers, and  
18 they were presented for different reasons.

19 And, you know, this NAPP Study is not yet published.  
20 Right?

21 **THE COURT:** What do you mean: They were presented  
22 for different reasons?

23 **MS. WAGSTAFF:** Well, they were -- one was presented  
24 two months after the other one.

25 **THE COURT:** But I --

1           **MS. WAGSTAFF:** One was in Brazil, and one was in  
2 Canada. I maybe don't attach significance to --

3           **THE COURT:** I didn't understand what you meant by  
4 "reasons."

5           **MS. WAGSTAFF:** Well, different presentations.

6           **THE COURT:** Right.

7           **MS. WAGSTAFF:** But what we can agree on is that after  
8 both of those presentations, there was a draft manuscript,  
9 which is September '15. So it's after both of them. It  
10 supersedes both drafts. Right?

11           And it's of the -- it's Exhibit 106. And in that, on page  
12 12, the authors conclude that there's an increased risk of NHL  
13 in association with glyphosate exposure. So the authors also  
14 state -- wasn't there a conclusion?

15           **THE COURT:** Where's -- I want to see if I have that  
16 on my -- go to that.

17           **MR. LASKER:** It's Exhibit 1277, Your Honor, if that  
18 helps.

19           **MS. WAGSTAFF:** At 106.

20           **MR. WISNER:** 106 yeah.

21           **MR. LASKER:** Or 106.

22           **THE COURT:** Okay. I'm not sure.

23           **MS. WAGSTAFF:** And it's -- it's -- date of last  
24 revision: September 21st of '15. 106 is the exhibit -- is the  
25 *Daubert* hearing exhibit.

1           **THE COURT:** Okay.

2           **MS. WAGSTAFF:** On page 12, under the "Discussion  
3 Group," there are four paragraphs on that page. The second  
4 paragraph says, *This report confirms previous analyses*  
5 *indicating increased risks of NHL in association with*  
6 *glyphosate exposure.*

7           And then it states in the next paragraph, *Our results are*  
8 *also aligned with findings from epidemiological studies of*  
9 *other populations that found an elevated risk of NHL for*  
10 *glyphosate exposure with greater number of days per year of*  
11 *glyphosate use, as well as a meta-analysis of glyphosate use*  
12 *and NHL risks. From an epidemiological perspective, our*  
13 *results were supportive of the IARC evaluation of glyphosate as*  
14 *a probable 2A carcinogen for NHL.*

15           So these numbers -- and relying on the numbers in NAPP --  
16 is anything but junk science. It's -- I wouldn't even say that  
17 it's shaky ground.

18           And although this hasn't been published, this is the most  
19 updated, recent, from the authors and investigators,  
20 themselves -- independent people who aren't being paid by any  
21 party to opine. And that's what they opine.

22           **THE COURT:** Is there anybody left out there who's not  
23 being paid by either party?

24           **MS. WAGSTAFF:** Well, that's a good question.

25           **THE COURT:** But let me ask you a question, though,

1 about that paper.

2 **MS. WAGSTAFF:** Sure.

3 **THE COURT:** It's not just a question about that  
4 paper. It's also a more general question about the NAPP data.  
5 Right?

6 **MS. WAGSTAFF:** Mm-hm.

7 **THE COURT:** Which is -- I mean, it sounds like you're  
8 kind of agreeing with me. Maybe I'll take a step back, and ask  
9 a prefatory question.

10 **MS. WAGSTAFF:** Don't trick me.

11 **THE COURT:** It sounds like you're agreeing with me  
12 that that NAPP data -- that's, like, your best number. Right?

13 The people who use glyphosate or are exposed to glyphosate  
14 more than two times per year have -- there's a statistically  
15 significant -- let's use the June numbers, and say there's a  
16 statistically significant increased risk. And it's 1 point --  
17 the Odds Ratio is 1.77.

18 **MS. WAGSTAFF:** Well, I don't want to say it's our  
19 best, because we're not atomizing the science; but it's a  
20 strong piece of evidence for us, yes.

21 **THE COURT:** So do the -- that's fair enough.

22 So in that paper do they talk about the latency issue? Do  
23 they talk about the fact that the majority of people studied in  
24 this pooled analysis could not have been exposed to glyphosate  
25 more than eight or so years? I don't remember what the exact

1 numbers are, but -- could not have been exposed to glyphosate  
2 more than seven or eight years before developing NHL?

3 **MS. WAGSTAFF:** Okay. We'll look at that in just a  
4 minute.

5 But with respect to latency, Your Honor, plaintiffs  
6 brought in --

7 **THE COURT:** We'll look at what? Whether the paper  
8 discusses that?

9 **MS. WAGSTAFF:** He's finding -- sorry. I was talking  
10 to him. I didn't mean to say it in the microphone.

11 **THE COURT:** No worries.

12 **MS. WAGSTAFF:** So with respect to latency,  
13 Your Honor, plaintiffs brought in the Dr. Nabhan. You remember  
14 Dr. Nabhan from Friday morning, who testified that, as early as  
15 .4 years, you could start developing sort of the unregulated  
16 cell division -- right? -- because cancer's not like --

17 **THE COURT:** Yeah, but he was talking about when you  
18 go through organ transplants or when you go through  
19 chemotherapy. And he tried to sort of elide the distinction  
20 between getting non-Hodgkin's lymphoma from chemotherapy or  
21 organ transplants on the one hand, and getting it from  
22 glyphosate exposure on the other. And I think that was  
23 preposterous, frankly. I mean --

24 **MS. WAGSTAFF:** Sure. And --

25 **THE COURT:** I mean, I couldn't believe my ears when

1 he tried to analogize getting NHL from organ transplants and  
2 chemotherapy, to getting NHL from glyphosate.

3           **MS. WAGSTAFF:** Sure. And I think the point of that  
4 was that NHL and cancer is not like a heart attack. Right?  
5 You can't say you had this event on February 14th, or something  
6 like that. Right? It is a progressional [sic] event.

7           And so what happens is you have a triggering event --  
8 right? -- that starts sort of the unregulated cell division.  
9 That's what cancer really is in its most general concept.

10           And so his analogies were not necessarily that it was --  
11 an organ transplant and exposure to glyphosate are one-on-one.  
12 He was using it to say it was a triggering event; and this  
13 triggered this cause here.

14           **THE COURT:** Right. When you have a triggering event  
15 like organ transplants or chemotherapy, you can come down with  
16 non-Hodgkin's lymphoma in six months, perhaps; as soon as six  
17 months.

18           But how that is relevant to, you know, glyphosate exposure  
19 and non-Hodgkin's lymphoma, I don't understand.

20           **MS. WAGSTAFF:** Sure. Okay. And so I've handed you  
21 Exhibit 31. I don't know if you've had a chance to look at it,  
22 but this we would like to move into evidence. And what  
23 Exhibit 31 is, is --

24           **THE COURT:** It didn't come in already?

25           **MS. WAGSTAFF:** It may. I don't know if it is or not,

1 actually.

2           **THE COURT:** I think it did.

3           **MS. WAGSTAFF:** But if it's not, we'd like to put it  
4 in.

5           **THE COURT:** Okay. Any objection?

6           **MR. LASKER:** No, Your Honor.

7           **THE COURT:** Okay. It's admitted.

8 (Trial Exhibit 31 received in evidence.)

9           **MS. WAGSTAFF:** And so what this article is -- and  
10 Your Honor can read it more at your leisure when you have more  
11 time, but this is an article by Dr. Blair. And if you will  
12 look at it, if you look at -- if you go to page 205, just to  
13 point you to the Conclusions section -- all right? And the  
14 Conclusions section says, *We believe of the two -- We believe*  
15 *of the two* -- there's a typo in that sentence, or I'm just  
16 reading it wrong -- *the two major methodological issues raised*  
17 *in epidemiologic studies of occupational exposures* -- which is  
18 what we're doing right now. Right? -- *that is, confounding and*  
19 *exposure misclassification, the latter is of far greater*  
20 *concern, which means exposure misclassification.*

21           Then it says, *It's rare to find substantial confounding in*  
22 *occupation studies or in the other epidemiological studies, for*  
23 *that matter, even by risk factors that are strongly related to*  
24 *the outcome of the interest. On the other hand, exposure*  
25 *misclassification probably occurs in nearly every*

1 *epidemiological study.*

2       So I think when you read this article, you'll see that  
3 while -- you know, I think that the main point of what we were  
4 doing here last week and what we're doing here today is to  
5 determine if our experts looked at sort of the touchpoints of  
6 what's important in epidemiology, and they accounted for them  
7 one way or the other. And this article, I think, will give a  
8 little bit of background as to -- as to why it's -- why  
9 confounders were properly accounted for here.

10           **THE COURT:** But -- so are you citing this to make the  
11 point that it's not a big deal to rely on the unadjusted  
12 numbers; the numbers that are not adjusted for other pesticide  
13 exposure?

14           **MS. WAGSTAFF:** Yeah, but what's important that I hope  
15 Your Honor realizes is that --

16           **THE COURT:** Because the IARC -- I mean, this is by  
17 Dr. Blair -- right? -- who's the head of the IARC Working  
18 Group.

19           **MS. WAGSTAFF:** Right.

20           **THE COURT:** And if you read through the  
21 IARC Monograph, they focus on the studies that are adjusted for  
22 pesticide use.

23           **MS. WAGSTAFF:** Sure. And what I hope that Your Honor  
24 understands and -- is that you're using the word "rely."

25           And our experts considered both adjusted and unadjusted --

1 all of them did -- when they were doing their epi --  
2 epidemiological analysis.

3 And so it's not as if Dr. Ritz looked at the unadjusted --  
4 the unadjusted numbers, and said, *That's the end-all be-all,*  
5 *and I'm not going to consider the adjusted numbers.* Right?

6 And what's -- what's -- why I've offered this article is  
7 to show you: This is where you go into the quantitative part  
8 of epidemiology. Right? How big of an issue is this?

9 And one thing that I found interesting, as well -- and  
10 Your Honor had no way of knowing this, because you're fortunate  
11 enough not to be dealing with sort of our outside  
12 discoveries -- is you know we asked Monsanto these issues in  
13 discovery back in April of '17, before discovery closed.

14 We -- we -- they -- you know, if you look at this --

15 **THE COURT:** What issues? What issue?

16 **MS. WAGSTAFF:** I'll explain to you. If you look at  
17 this chart in Eriksson on page 2 -- and I think you were  
18 pulling it up. Right?

19 **THE COURT:** Yeah. I was pulling it up, and then I  
20 got distracted. Hold on a sec. I did pull it up. Okay.  
21 Here. Yeah.

22 **MS. WAGSTAFF:** Okay. So, you know, if we're looking  
23 at this --

24 **THE COURT:** This is the one on --

25 **MS. WAGSTAFF:** With the MCPA. 2,4-D.

1           **THE COURT:** Page 1661?

2           **MS. WAGSTAFF:** Yeah. Chart 7.

3           **THE COURT:** Yeah.

4           **MS. WAGSTAFF:** Okay. So, you know, we talked a lot.  
5 At different times we've talked about arsenic. We've talked  
6 about MCPA.

7           But one of the ones we didn't really talk about was 2,4-D  
8 at length. Monsanto's counsel seems to be focusing on the  
9 other ones. And maybe that's because in April of 2017 --

10           So Monsanto actually manufactures 2,4-D. And we asked  
11 them in their discovery, in some requests for admission, to  
12 admit that 2,4-D causes or contributes to non-Hodgkin's  
13 lymphoma. We asked them. It's right here.

14           And their response was, *Monsanto objects to this request*  
15 *because 2,4-D is a non-glyphosate-containing herbicide. And in*  
16 *this phase, which is limited to general causation, the Court*  
17 *will decide only whether there is sufficient admissible*  
18 *evidence that glyphosate and/or Roundup® is capable of causing*  
19 *cancer -- specifically, non-Hodgkin's lymphoma -- in humans.*  
20 *Monsanto objects to this request, because the herbicide 2,4-D*  
21 *is irrelevant to the matter before the Court, and exceeds the*  
22 *bounds of possible discovery.*

23           So until we got to recently, this was an irrelevant issue  
24 to Monsanto; and they refused to answer discovery about it. So  
25 I don't know if you want to call this "situational litigating"

1 or whatever, but it is -- it is a concern for us that these  
2 tactics are going on outside of the Court's knowledge. And so,  
3 you know, we have watched this confounding issue --

4 **THE COURT:** But I guess I don't understand how that  
5 discovery response that you just read to me is relevant to what  
6 we have to work on here today, which is: Are your experts --  
7 did your experts offer opinions about the link between  
8 glyphosate and NHL that are admissible?

9 **MS. WAGSTAFF:** And so why it's relevant is -- I'll  
10 tell you -- is that our experts did consider confounding. Each  
11 one of them considered confounding. Each one of them  
12 considered the unadjusted and the adjusted Odds Ratios.

13 Monsanto has spent the entire week, or maybe the past year  
14 leading up to this, trying to convince the Court that  
15 confounding is the end-all be-all issue, and that plaintiffs  
16 did not -- plaintiffs' expert did not meet their burden for  
17 doing that; but they, in fact, did.

18 And why I showed you that was because --

19 **THE COURT:** So show me where -- I mean -- and maybe  
20 this is a good time to ask you again. Where in Dr. Ritz's  
21 reports or in her testimony last week did she offer an opinion  
22 that, you know, *Based on my review of the adjusted number, I*  
23 *conclude that the adjusted numbers show to a reasonable degree*  
24 *of scientific certainty that glyphosate causes NHL?*

25 **MS. WAGSTAFF:** Sure. And I think we have to get

1 there in steps. Right? I mean, you know that that's her final  
2 opinion. She's stated that that's her opinion. And in --

3 **THE COURT:** I don't know that she has, because  
4 there's all this forest plot with all of these unadjusted  
5 numbers. And there's -- you know, there was a lot -- you know,  
6 there was a very unsatisfying answer that she gave regarding  
7 this chart that you just asked me to look at, Table 7, in  
8 Eriksson --

9 **MS. WAGSTAFF:** Mm-hm.

10 **THE COURT:** -- where it -- my impression from the  
11 answer that she gave was that she thought it was not a good  
12 idea to look at the multivariate numbers.

13 **MS. WAGSTAFF:** Okay.

14 **THE COURT:** I know that it's really hard for you to  
15 listen to me when your co-counsel is --

16 **MS. WAGSTAFF:** You are way more important, too.

17 **THE COURT:** Well, I don't know about that. If you  
18 want to take a time-out and huddle --

19 **MS. WAGSTAFF:** Can we have 30 seconds?

20 **THE COURT:** That's fine. I think it's never a good  
21 idea when a Judge is trying to ask something of somebody to be  
22 whispering in their ear. Then they can't hear the Judge's  
23 question.

24 **MR. WISNER:** I was telling her let's take a break.

25 **THE COURT:** Go ahead.

1 (Discussion off the record.)

2 **MS. WAGSTAFF:** All right. I'm going to put on  
3 earplugs.

4 All right. So do you have Dr. Ritz's report in front of  
5 you?

6 **THE COURT:** Let me pull it up.

7 **MS. WAGSTAFF:** And also --

8 **THE COURT:** The initial report?

9 **MS. WAGSTAFF:** Yes, sir.

10 **THE COURT:** Give me one sec. Okay.

11 **MS. WAGSTAFF:** And so if you look at page 16 of her  
12 report, she talks about -- well, let me actually -- yeah.  
13 We'll start with page 16 in the last paragraph, where it talks  
14 about the IARC Working Group's monograph on glyphosate. Do you  
15 see that paragraph?

16 **THE COURT:** Yeah.

17 **MS. WAGSTAFF:** Okay. If you --

18 They're talking about highly adjusted estimates -- she  
19 is -- also known as, quote, *Fully adjusted models* --

20 Are you following me on that?

21 **THE COURT:** Yeah.

22 **MS. WAGSTAFF:** -- *are the estimates that adjust for*  
23 *as many confounding variables as possible, such as adjusting*  
24 *for age, sex, race, and also sometimes other pesticide*  
25 *exposures.*

1 Right?

2 So she introduces the concept of confounders.

3 **THE COURT:** Okay.

4 **MS. WAGSTAFF:** And then the next sentence, I think,  
5 is important. It talks about why there's a proper and good  
6 thing to do. Right?

7 **THE COURT:** Okay.

8 **MS. WAGSTAFF:** And then if you look at -- if you turn  
9 to pages 18, and then we'll get to 19, where she talks about  
10 when she's -- she's kind of doing a paragraph per study,  
11 almost. On the -- where it says "the Canadian studies."

12 **THE COURT:** Mm-hm.

13 **MS. WAGSTAFF:** McDuffie and whatever.

14 **THE COURT:** Yeah.

15 **MS. WAGSTAFF:** She's listing in there. She lists the  
16 adjusted and unadjusted Odds Ratios and data, to sort of  
17 illustrate to the Court that she did, in fact, consider those.

18 And it goes down to the next paragraph, where she lists,  
19 also, adjusted and unadjusted data.

20 And then if you move on to page --

21 **MR. LASKER:** Which paragraph? The one -- the --

22 **MS. WAGSTAFF:** Yeah, yeah.

23 **MR. LASKER:** Thank you.

24 **THE COURT:** And then if you move on to page 19, with  
25 the paragraph starting "De Roos 2003" -- and this is sort of

1 what we'd already talked about. Yeah. And then if you -- that  
2 lists those adjusted numbers.

3 And then if you go to page 20, she talks about De Roos  
4 2005, which bleeds on to page 21, and has sort of the adjusted  
5 Odds Ratios, as well.

6 And then if you couple that with page --

7 **THE COURT:** Hold on. Can you give me one second to  
8 glance at that?

9 **MS. WAGSTAFF:** Oh, sure. Look at the last sentence,  
10 right before that pictograph --

11 **THE COURT:** Okay.

12 **MS. WAGSTAFF:** -- where it says that they were  
13 adjusted for age demographic, lifestyle factors, and other  
14 pesticides.

15 **THE COURT:** Okay.

16 **MS. WAGSTAFF:** And then if you look at page 152 of  
17 her deposition --

18 **THE COURT:** I don't think I have her depo with me.  
19 You can go ahead and quote it.

20 **MS. WAGSTAFF:** Okay. No. Didn't you give it? Oh,  
21 no. That was the *Daubert*. Okay. I'll give it to you.  
22 Where's that?

23 **THE COURT:** What page did you say it was?

24 **MS. WAGSTAFF:** It's on 152. And this is her original  
25 deposition that was taken on September 18th, 2017.

1           And it's -- I believe it was Mr. Lasker taking this. 152,  
2 line 8, through 153, 18.

3           She talks about -- that it's relevant. It says, *You state*  
4 *in the second sentence that the most highly adjusted estimates,*  
5 *also known as 'fully adjusted models,' are the estimates that*  
6 *adjust for as many confounding variables as possible, such as*  
7 *adjusting for age, sex, race, and also other pesticide*  
8 *exposure. Correct?*

9           She says, Yes.

10          And then she's asked, *And then you state this is relevant*  
11 *because these fully adjusted models give the reader confidence*  
12 *that the findings are most likely due to glyphosate/Roundup®*  
13 *exposure, instead of other potential causes that act as*  
14 *confounders. Correct?*

15          Correct.

16          And on page 14 of your Report you present what's called a  
17 *'forest plot' of the various Odds Ratios or Rate Ratios in some*  
18 *of the epidemiological studies for glyphosate. Correct?*

19          And it just talks a little bit about her forest plot. And  
20 *it says, In your visual depiction of the results from different*  
21 *studies, you do not provide or list the most highly adjusted*  
22 *Odds Ratios or Risk Ratios from the studies. Correct?*

23          Not correct. *De Roos 2003 is very highly adjusted for 43*  
24 *different pesticides.*

25          And what I think that shows is that she considered the

1 concept of confounding. She listed that in her -- in what she  
2 considered. It's in her reliance list as the data considered.  
3 And then her ultimate conclusion comes after that.

4 And if we can just sort of -- maybe we could just withdraw  
5 the forest plot. And -- because that's really just a  
6 demonstrative exhibit. It wasn't meant to be the end-all  
7 be-all of her conclusion on that. And this shows the  
8 underlying considerations that she had.

9 You know, in her -- on page 25 of her Report she even  
10 states the epidemiological studies, as a whole, support an  
11 increased risk of NHL.

12 **THE COURT:** Okay. So can I -- okay. So that may  
13 be -- maybe that's enough.

14 The next -- I guess the next question is, since, you know,  
15 the De Roos 2003 number or the -- or the number from, you know,  
16 NAPP that is kind of similar to the De Roos 2003 number -- is,  
17 you know, one of the -- if not the best number for you, one of  
18 the best numbers for you, I guess what I want to ask again is  
19 -- you know, the latency issue seems to be a big problem with  
20 those numbers.

21 So, like, if you look at all of the studies, as the  
22 epidemiologists seem willing to admit, there's never a perfect  
23 study. There are flaws, problems, potential problems in every  
24 study.

25 But the latency problem for NAPP seems to be qualitatively

1 a really significant problem.

2 And if that -- and just to kind of try to restate the  
3 problem, you know, we know that farmers had elevated NHL  
4 numbers before glyphosate ever came on the market. Farmers had  
5 increased incidence of NHL before glyphosate ever came on the  
6 market. And we know that glyphosate came on the market in,  
7 like, 1975 or 1976. Did I get that right?

8 **MS. WAGSTAFF:** Something like that. Yeah.

9 **THE COURT:** And we know that a lot of these --  
10 there -- seems there is a significant possibility that a lot of  
11 people in this study in the NAPP data got non-Hodgkin's  
12 lymphoma from something other than glyphosate, because the --  
13 because they hadn't been exposed to glyphosate for longer than  
14 a few years: Five years; six years; seven years; something  
15 like that.

16 And so my concern is that if that's your best number -- if  
17 that's Dr. Ritz's best number -- then to focus on that to give  
18 such great weight to that compared to the weight that  
19 you/Dr. Ritz give to the other studies -- that's a real  
20 problem. That seems to me to be a real problem.

21 And so what is Dr. Ritz's response to this concern; this  
22 "latency concern," as we've been calling it, with the NAPP  
23 numbers?

24 **MS. WAGSTAFF:** Sure. And so, Your Honor, I think at  
25 one point we're getting pretty close to starting to weigh the

1 evidence, as far as what's more important, than something else,  
2 which is obviously --

3 **THE COURT:** Maybe, but if she didn't consider that at  
4 all --

5 **MS. WAGSTAFF:** Sure.

6 **THE COURT:** I mean, if an epidemiologist is weighing  
7 different studies --

8 **MS. WAGSTAFF:** Yeah.

9 **THE COURT:** -- and fails to consider, at all, a very  
10 significant concern with one of the studies --

11 **MS. WAGSTAFF:** Mm-hm.

12 **THE COURT:** -- then that, I think, is a problem.

13 And so does Dr. Ritz have a good answer for this latency  
14 problem? Because, as Mr. Lasker pointed out, at -- there  
15 were -- there were other points at which she was criticizing  
16 data that was not helpful to her opinion because of this  
17 latency issue.

18 **MS. WAGSTAFF:** Yeah.

19 **THE COURT:** And -- and so the question is: Does she  
20 similarly take the latency issue into account for the NAPP  
21 data; and if so, how does she address it?

22 **MS. WAGSTAFF:** Yeah. So this Cantor -- the Cantor  
23 Study. as you probably know, is incorporated into the  
24 NAPP Study. And if you look at page 18 of her Expert Report --

25 **THE COURT:** Initial?

1           **MS. WAGSTAFF:** Initial. Yep.

2           **THE COURT:** Okay.

3           **MS. WAGSTAFF:** And it goes over to 19.

4           **THE COURT:** Right. That's my point, is that when  
5 she's talking about the Cantor Study, she says it's less  
6 informative because only six to ten years could have elapsed  
7 between a potential first glyphosate exposure, and NHL  
8 diagnosis.

9           **MS. WAGSTAFF:** Right.

10           **THE COURT:** So only six -- what she says in her  
11 opinion is when only six to ten years could have elapsed  
12 between initial glyphosate exposure and NHL diagnosis, that's  
13 less helpful. Okay?

14           But the primary number that you are relying on and that  
15 she seems to be relying on is a number that is generated from a  
16 significant number of NHL cases where the exposure -- the  
17 initial exposure to glyphosate was six to ten years from the  
18 diagnosis.

19           **MS. WAGSTAFF:** Sure. And, Your Honor, just to be  
20 clear, we are looking at -- and by "we" I mean our experts --  
21 are looking at sort of the totality of the evidence. I mean,  
22 that's the first line of her expert conclusion. So to say that  
23 there's this one study, and sort of pick apart --

24           **THE COURT:** Okay, but she places great weight on

25 NAPP --

1           **MS. WAGSTAFF:** Sure.

2           **THE COURT:** -- and on De Roos. She places great  
3 weight on that.

4           **MS. WAGSTAFF:** Sure.

5           **THE COURT:** And the one question about her  
6 methodology is: How can she place great weight on that,  
7 without considering this latency issue that she has invoked to  
8 criticize other studies?

9           So where does she explain why this latency issue is not a  
10 big deal, or why it's appropriate to place such great weight on  
11 this study notwithstanding this latency issue?

12           **MS. WAGSTAFF:** I'm going to let Mr. Wisner answer  
13 this, who is our latency gentleman.

14           **THE COURT:** Sure.

15           **MR. WISNER:** Your Honor.

16           **THE COURT:** Have you ever been called a "latency  
17 gentleman" before?

18           **MR. WISNER:** Not to my knowledge.

19           Your Honor, I believe one of the big confusions that  
20 happened during the testimony this week was a conflation of  
21 cohort and case-control studies. And the reason why that's  
22 important is in a case-control study you start off with people  
23 who are already sick.

24           So in De Roos '03 --

25           **THE COURT:** She's not talking about the -- put aside

1 the cohort study for a moment.

2 **MR. WISNER:** Sure.

3 **THE COURT:** She's not talking about the cohort study  
4 here when she identifies the latency concern. She's talking  
5 about a case-control study.

6 **MR. WISNER:** Precisely. And -- and --

7 **THE COURT:** In Eriksson -- when she talks about  
8 Eriksson, she's talking about a case-control study.

9 **MR. WISNER:** Yes. And exactly with Cantor,  
10 Your Honor, it's specifically included in NAPP.

11 **THE COURT:** Okay.

12 **MR. WISNER:** So her criticisms of Cantor are included  
13 in NAPP. So she did consider this issue of latency, clearly;  
14 but NAPP was a pooled analysis, so it's not just Cantor. So  
15 you actually have --

16 **THE COURT:** But if I recall correctly, it's this  
17 latency concern exists with respect to, like, 60 or 70 percent  
18 of the people who are part of the NAPP analysis. Right?

19 **MR. WISNER:** That's correct, but the remaining  
20 percentages have exposures upwards of 20 years.

21 **THE COURT:** Okay.

22 **MR. WISNER:** Okay. So when you have a case-control  
23 study, and you're looking backwards based upon people who are  
24 sick, what they did in De Roos is they actually controlled for  
25 everything else that could be causing it. Okay? They

1 literally just looked at those people who were only exposed to  
2 glyphosate, and there was still an elevated risk.

3 So what you have to --

4 **THE COURT:** What do you mean: Only exposed to  
5 glyphosate?

6 **MR. WISNER:** So when you're doing the adjustments for  
7 confounding, you are removing people who are exposed to both.  
8 So you're looking at -- okay -- if you had dicamba, you're out.  
9 If you had 2,4-D, you're out. And then all you're left with,  
10 then, are the people were just us exposed to glyphosate, and  
11 nothing else.

12 And in that fully adjusted model, there's still an  
13 elevated risk. So you say, *Well, it seems like something else*  
14 *is causing this risk of cancer in De Roos '03.* Well, that's  
15 fine, but then you have to explain: What is that one thing  
16 that is only affecting farmers that only use glyphosate?

17 And you can come up with some hypothesis or some weird  
18 ideas, but ultimately in the end what we have a correlation  
19 that can't really be explained with numbers. Just -- there's a  
20 risk there, and there's nothing we can say about it.

21 The fact that the latency is so short and you see that  
22 risk is actually the strength of De Roos, because what you're  
23 saying is, *Notwithstanding the fact we don't have so much time*  
24 *to look at cancer accumulations, we're still seeing this risk.*  
25 And I think the real explanation to this is, because De Roos is

1 looking in those early years, what we have are the early  
2 adopters of glyphosate. Right? These are the people who  
3 decided to use it right from the get-go. And that is a unique  
4 population, because we know after the '90s and all of these  
5 other studies, it's ubiquitous. And so De Roos actually gives  
6 an insight into some more reliable, stable data. It's one of  
7 the few case-controls that just has glyphosate, and allows us  
8 to really see: What is glyphosate, by itself, doing?

9 And in the face of that particular study -- and I think  
10 the *Bextra* analysis and in the *In Re Silicone* analysis was  
11 quoting. It says, *If you do have an epidemiological study, and*  
12 *it's controlling for confounders, it's statistically*  
13 *significant* -- all these of those things fit De Roos '03 -- you  
14 *overcome the general causation hurdle.*

15 I'll submit, Your Honor. I hope I have explained that  
16 latency issue as well as I could.

17 And ultimately, Your Honor, latency's a bell curve. All  
18 right? And so what the median latency year is, we don't know.  
19 It could be 10 years. It could be 20. But it doesn't mean you  
20 won't get it early. Right? It doesn't mean you won't get it  
21 late.

22 And so if you're cutting off the bell curve really early  
23 in the analysis, you're actually reducing your ability to see a  
24 risk. So if you're reducing your ability, and still see a  
25 risk, that's very powerful evidence. And that's actually what

1 Dr. Ritz says repeatedly in her deposition and during -- during  
2 her testimony, to the best of my recollection.

3 **THE COURT:** But isn't it weird that -- that the --  
4 you know, the studies that focus on the people who have shorter  
5 period of exposure to glyphosate produce the -- quote,  
6 unquote -- "best numbers" for you?

7 I mean, whereas you have this -- you know, you have -- I  
8 know all of your criticisms of the AHS -- of AHS, of the cohort  
9 study. I understand those criticisms. And they seem, on some  
10 level, valid. I'm not sure if it's as big a problem as this  
11 latency problem, but you know -- whereas those, you know,  
12 don't -- you know, they don't have that latency problem, and  
13 the numbers are lower.

14 **MR. WISNER:** But what we have in those later studies  
15 is misclassification of exposure. We have the ubiquitous  
16 proliferation of glyphosate as it ramps up in the late '80s and  
17 the '90s and so forth. So what you will see is an attenuation  
18 of risk estimates, as the noise-to-signal ratio decreases. So  
19 that's the answer to that.

20 And that's one of -- the greatest weakness that people  
21 keep saying with De Roos '03 is, in some ways, actually its  
22 greatest strength. It's the most accurate, highly specific  
23 data of glyphosate-only exposure.

24 And to answer the "why" that we're seeing that, it just  
25 might be that the early adopters used a lot of it. And that

1 exposure to glyphosate over a couple of years of heavy exposure  
2 -- not just one or two days or one week, but I'm talking about  
3 repeated exposures over time, which is what the two days per  
4 year shows us. That's how we understand cancer, anyway.  
5 Right? If I get exposed to one potential carcinogen one time,  
6 my immune system can recover. It's the repeated insults to the  
7 immune system that allows for the mutation to occur that leads  
8 to cancer later on.

9       So there are scientifically biologically plausible reasons  
10 to explain this issue. And I believe Dr. Nabhan and some other  
11 testimony helps support that, Your Honor.

12           **THE COURT:** Could I ask you another question. We've  
13 focused a lot on the Expert Reports. We've focused a lot on  
14 the testimony that was given last week. We've focused some on  
15 the deposition testimony.

16       There are also a lot of papers written by people who  
17 didn't do the studies. Right? And we haven't focused so much  
18 on those yet; like, you know -- such as the Blair Paper.

19       Maybe -- I won't put you on the spot and ask you to do  
20 this now, but what I'd like you to do is, by the end of the day  
21 today I would like you to file a list of your -- of the five  
22 published papers that you want to make sure that I read. Your  
23 top five. Can you give me even the top 10? All right? Both  
24 sides. The top 10 published papers that are not the studies  
25 that we've already looked at, not the Expert Reports, not

1 the -- but just published papers talking about this issue, just  
2 to make sure that I've read those.

3 **MR. WISNER:** Can I throw in something there,  
4 Your Honor?

5 **THE COURT:** Sure.

6 **MR. WISNER:** Can we highlight them for you, as well?  
7 Instead of arguing, we'll just see this slide, because --

8 **THE COURT:** Sure that's fine.

9 **MR. WISNER:** There was a lot of stuff happening  
10 yesterday or last week. There was a lot of discussion about  
11 the Blair validation study; about how accurate it was.

12 **THE COURT:** Mm-hm.

13 **MR. WISNER:** We kept reading the footnote of Table 2.  
14 And I was sitting here, going crazy at counsel table, because I  
15 said, *Look at Table 2. It says that --*

16 **MS. WAGSTAFF:** Let's look at that.

17 **MR. WISNER:** You know, for duration it's 50 percent  
18 off. For number of days of exposure, it's 50 percent off. And  
19 that's rampant misclassification exposure. And the entire AHS  
20 is built on the stratification of exposure.

21 And we also know from De Roos '05 that the people who were  
22 exposed and unexposed at the beginning of the study are socio-  
23 and economically different. They're less educated. They have  
24 different age ranges. They have different propensities for  
25 cancer.

1           And so that's why in De Roos '05 for the AHS, they  
2 actually didn't compare the unexposed. They compared the lower  
3 exposed. And that was to avoid what they call "residual  
4 confounding." And that's actually in the Record. And Judge --  
5 and I'm sorry. Not "Judge." Dr. Ritz explained that at  
6 length.

7           And so I just wanted to point that out. So I want to  
8 highlight the portions that we think were sort of avoided  
9 during that testimony.

10           **THE COURT:** I guess one last question that I have.  
11 And then you can feel free to wrap up anything you want to make  
12 sure I hear. What is it -- what do the experts mean when they  
13 say, to a reasonable degree of scientific certainty, that  
14 glyphosate is causing -- is currently causing non-Hodgkin's  
15 lymphoma in human beings?

16           **MS. WAGSTAFF:** So what our -- so this is a general  
17 causation proceeding. Right? So they haven't looked at any  
18 medical records. They haven't looked at the specific causation  
19 or dosing of a particular plaintiff.

20           And I don't know if you recall, but when we were having  
21 these bifurcation proceedings -- gosh -- I was in front of you  
22 before the MDL, with Plaintiff Hardeman.

23           And then I think when we did it again -- I can't remember  
24 when the date was, but I know it was me standing up here and  
25 saying, *Can we at least attach some plaintiffs to this, so that*

1 we can get some, you know, like, dosing? And it was -- it  
2 was -- it was opposed, and not ordered.

3 So what they are saying is that it can cause non-Hodgkin's  
4 lymphoma, and that it is causing non-Hodgkin's lymphoma, and  
5 that they believe that, based on the methods that they used.  
6 And, you know, some of that is legal jargon that you have to  
7 put in there, but that's --

8 **THE COURT:** So is "reasonable degree of scientific  
9 certainty" legal jargon? Is that what you're saying?

10 Because I -- I'm gathering that maybe that's not actually,  
11 like, a phrase that's scientists use in their work. Like, they  
12 just use it when they come to court?

13 **MS. WAGSTAFF:** Yeah, that's probably correct.

14 **THE COURT:** All right. So -- but what does it mean?  
15 Is it just -- is it just some -- is it just some fancy words to  
16 sound impressive to a jury? Or, like, what does it mean?

17 **MS. WAGSTAFF:** It means -- I mean, we could have  
18 asked them when they were here, but I would say that it means  
19 more likely than not that it causes -- you know, that their  
20 statement's that exposure to glyphosate causes non-Hodgkins  
21 lymphoma based on the methodologies they used. Yeah. And it's  
22 based on valid scientific methodologies.

23 **THE COURT:** Okay. Anything else you want to say  
24 in -- sort of to wrap up?

25 **MR. WISNER:** I've been asked to say one quick thing

1 for the Record.

2 **THE COURT:** Sure.

3 **MR. WISNER:** The first thing is in regard to the  
4 other experts we haven't really been discussing today, it's one  
5 thing to exclude, for example, a person's opinion that it  
6 causes NHL; but within those opinions are a very detailed  
7 subset opinions. So, for example --

8 **THE COURT:** It causes -- it's carcinogenic in  
9 animals. I get that.

10 **MR. WISNER:** And so if there are going to be any  
11 rulings on exclusions, we'd like the Court to carefully dissect  
12 those issues --

13 **THE COURT:** I get that.

14 **MR. WISNER:** -- because if you strike an entire  
15 opinion, that's a problem.

16 The other thing is Dr. Portier specifically has a lot  
17 about epidemiology. And he takes it from a statistical  
18 perspective that we haven't discussed here. And we didn't  
19 present that, because we just, frankly, didn't have the time.  
20 His reports were very lengthy.

21 But I think one principal point that I think has been lost  
22 this week -- and that is: Calculating the probability that you  
23 would be seeing all of these estimates when there's really no  
24 risk, because what we think of when there's really no risk is  
25 you see it hugging the null on both sides. Some spurious

1 chance results to the left. Some to the right. Some to the  
2 left. Some to the right.

3 And what we see consistently is --

4 **THE COURT:** Well, no. It's what we see consistently  
5 only when we take out the studies that you guys don't like. We  
6 actually do see the studies are hugging the null, except when  
7 we take out the studies that you guys don't like: AHS. And  
8 then we see studies and that mostly fall on the -- on the right  
9 side of 1.

10 **MR. WISNER:** I don't think that's accurate,  
11 Your Honor. I think that you're right that AHS is lower. I  
12 mean, AHS -- just for what it's worth, the newest one says that  
13 it is protective, essentially -- although you can't rule out  
14 chance -- for every cancer. I mean, it should be taken with  
15 our eggs in the morning as a vitamin supplement.

16 That's -- I mean, obviously, I don't think anyone's saying  
17 that; but I mean you have to look at that with that rubric. So  
18 that's to the left.

19 **THE COURT:** No, it's not saying that. It's --

20 **MR. WISNER:** I know. I know. We can't rule out  
21 chance.

22 **THE COURT:** It's saying that it's statistically  
23 insignificant Odds Ratio.

24 **MR. WISNER:** I agree. I agree. I don't want to  
25 misstate that. You're right, Your Honor.

1 But if you actually include AHS -- and what we have done  
2 in several of the forest plots -- and we're not -- Dr. Ritz  
3 isn't the only one who does that. Portier does, as well. They  
4 include all of the adjusted numbers, and they include all of  
5 those. And it's still to the right. We still see it to the  
6 right.

7 And the probability -- if you just look at the six main  
8 studies, Your Honor, that Portier discusses, he did a  
9 probability calculation. And we all agree that they're  
10 written. And the authors, themselves, who are closest to the  
11 data -- they say it's to the right.

12 Now, some of them aren't statistically significant -- I  
13 appreciate that -- but they're all to the right.

14 The likelihood of that happening is 1.6 percent. Right?  
15 Two out of -- one out of fifty, basically. And that's a pretty  
16 powerful piece of evidence when you're trying to look at it  
17 from a holistic perspective.

18 In any event, I just wanted the Court to pay attention  
19 that Dr. Portier does a very sophisticated epi analysis. And  
20 he really understands this stuff. Unfortunately, we didn't  
21 have time to get into it during testimony. I'd like the Court  
22 to consider that in ruling out any of his epidemiological  
23 opinions.

24 **THE COURT:** Okay.

25 **MS. WAGSTAFF:** And lastly, just based on a comment

1 that you made at the beginning, I'd like to reiterate that  
2 Dr. Jameson and Dr. Portier, while they were at the IARC  
3 meeting, they did, you know, rely on the underlying data and  
4 the underlying studies, and not just what the IARC did.

5 In fact, Dr. Jameson went back and read some more data  
6 that wasn't considered by IARC in full detail. And so his --  
7 while you can't separate him from IARC, because he was there,  
8 he -- he definitely did re-look at or look at more data and all  
9 of the epidemiological data.

10 And I would request that the Court look Seroquel opinion,  
11 which is 2009 Westlaw 38064.

12 **THE COURT:** How do you spell that? What is it?

13 **MS. WAGSTAFF:** S-e-r-o-q-u-e-l. 2009 Westlaw  
14 3806435.

15 **MR. LASKER:** 3806 --

16 **MS. WAGSTAFF:** 38065435 -- where the Court was  
17 considering an epidemiologist who didn't look at data that was  
18 adjusted for confounders, and found that that was not the  
19 reason for exclusion in that case.

20 And do you have any other questions for us?

21 **THE COURT:** I mean, we could spend the whole weeks on  
22 this. And by the way, as I, you know, continue to look at it,  
23 you know, I may put out questions, or I may ask for briefing on  
24 something if there's some hole -- important hole in what has  
25 been presented so far.

1           **MS. WAGSTAFF:** One thing that's probably important  
2 that Your Honor appreciates is that the two epidemiologists  
3 differ on the effect of adjusting on Odds Ratios. Mr. Lasker  
4 said this morning that, you know, if you adjust, it doesn't  
5 affect the Odds Ratio; it just affects the confidence interval.  
6 And that's just not the case. If you figure just doing a --

7           **THE COURT:** No. It affects both. It affects both.

8           **MS. WAGSTAFF:** Okay. All right.

9           **THE COURT:** Okay.

10          **MS. WAGSTAFF:** Excellent. Thank you.

11          **THE COURT:** Thank you.

12          **MR. LASKER:** Your Honor, a few clarifications. We  
13 may not need them, but I just wanted to make some factual  
14 clarifications for the record on a few points.

15          **THE COURT:** Just two minutes --

16          **MR. LASKER:** Two minutes is all it will take.

17          **THE COURT:** -- or less.

18          **MR. LASKER:** The NAPP manuscript on page 12 that  
19 plaintiffs' counsel pointed you to has a 1.13 Odds Ratio on  
20 that page for adjusted for pesticides, so I wanted that to be  
21 clear on the record.

22           Two. McDuffie, which plaintiffs' counsel stated Dr. Ritz  
23 provided adjusted data for -- McDuffie did not adjust for other  
24 pesticides. The adjustment was for something else.

25           And, third, with respect to the claim that De Roos 2003

1 adjusted for every possible other cause of NHL, so only  
 2 glyphosate was left -- Dr. Nabhan, at page 826 in the hearing  
 3 testimony, testified that 70 percent of all cases of  
 4 non-Hodgkins lymphoma have unknown causes.

5 That's it.

6 **THE COURT:** Great. Thank you.

7 **THE CLERK:** Court is adjourned.

8 (At 1:02 p.m. the proceedings were adjourned.)

9 I certify that the foregoing is a correct transcript from the  
 10 record of proceedings in the above-entitled matter.

11

12 *Lydia Zinn*

13 \_\_\_\_\_ March 15, 2018

14 Signature of Court Reporter/Transcriber Date  
 15 Lydia Zinn

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