

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

Before The Honorable Vince Chhabria, Judge

EDWARD HARDEMAN,)	
)	
Plaintiff,)	
)	
VS.)	NO. C 16-00525 VC
)	
MONSANTO COMPANY,)	
)	
Defendant.)	
_____)	

San Francisco, California
Wednesday, March 6, 2019

TRANSCRIPT OF PROCEEDINGS

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Official Reporters

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I N D E X

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PLAINTIFF'S WITNESSESPAGE VOL.WEISENBURGER, DENNIS (RECALLED)

(PREVIOUSLY SWORN)

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1 Wednesday - March 6, 2019

8:56 a.m.

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

3 ---000---

4 (Proceedings were heard in the presence of the jury:)

5 **THE COURT:** Good morning, everyone. We are ready to
6 resume with Dr. Weisenburger.

7 **MS. MOORE:** Thank you, Your Honor.

8 DENNIS WEISENBURGER,

9 called as a witness for the Plaintiff, having been previously
10 duly sworn, testified further as follows:

11 DIRECT EXAMINATION (resumed)

12 **BY MS. MOORE**

13 **Q.** Good morning, Dr. Weisenburger.

14 **A.** Good morning.

15 **Q.** I'm going to pick up where we left off yesterday; and I
16 think before we adjourned, we were about to go to the last
17 article that you wanted to highlight to the jury. And if you
18 could, turn to tab 1599 in your binder.

19 **MS. MOORE:** Permission to publish.

20 **MR. STEKLOFF:** No objection, Your Honor.

21 **THE COURT:** Go ahead.

22 **MS. MOORE:** Thank you.

23 **Q.** And if you can tell the ladies and gentlemen of the jury,
24 Dr. Weisenburger, what this article is. It is titled "The
25 Effect of Antiviral Therapy on T14;18 Translocation and

1 Immunoglobulin Gene Rearrangement in Patients with Chronic
2 Hep C Virus Infection."

3 **A.** Yes. So this is a study of patients with chronic
4 hepatitis C infection, some of whom were treated with antiviral
5 therapies and some of them who weren't. So there is a treated
6 group and a non-treated group or a control group, and some
7 patients with chronic active hepatitis C viral infection have
8 abnormal cells -- B cells in their blood. Some of them are
9 clonal. They have this -- what we call immunoglobulin gene
10 rearrangement.

11 **Q.** What is clonal?

12 **A.** Clonal means they all come from one cell, so they are --
13 they are descendants or they are -- I don't know -- children of
14 one cell. So they all look the same, okay. And some of them
15 have another abnormality called the T14;18 translocation. So
16 we have known this for a long time. We see the abnormal clonal
17 B cells in the blood of some patients with hepatitis C
18 infection, okay.

19 And it has been postulated that these cells are the ones
20 that are sort of like pre-lymphoma cells; that they are on
21 their way to becoming lymphoma cells, but they are not yet true
22 lymphoma cells. So they have some genetic abnormalities, but
23 they don't have all the abnormalities they need to become
24 malignant, sort of premalignant cells. So they are circulating
25 in the blood of some patients with hepatitis C viral infection.

1 Q. And what about this study that you wanted to point out to
2 the jury?

3 A. So, yes, in this study they had two groups of patients.
4 They had one group of patients with chronic active hepatitis C
5 where they found some of those cells in the blood, okay. And
6 they wanted to see what happened to those cells when they
7 treated the patient with antiviral therapies, did the cells
8 stay there or did they go away. And then they had a control
9 group that weren't treated, so they could see what happened to
10 those cells in the control group. So there is one table which
11 shows all of the data very nicely.

12 Q. I think we have that blown up.

13 MS. MOORE: Mr. Wolfe, it is table 3 which is on
14 page 1557 of the study.

15 BY MS. MOORE

16 Q. Dr. Weisenburger, if you want to come down, we have got a
17 blowup, if that's helpful.

18 A. Okay.

19 So this is a table that shows the treated groups. There
20 were 15 people in the treated group, and there were 14 people
21 in the non-treated group. And when they looked at the treated
22 group, there were nine patients with this immunoglobulin gene
23 rearrangement, which they call IGH positive. So it had this
24 gene rearrangement. So 9 of the 15 patients had this
25 abnormality, okay.

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1 And after treatment, seven of the nine lost the abnormal
2 cells, okay. And six of the seven were ones that had a
3 complete virologic response. So what this says is a complete
4 virologic response, not only does it get rid of the virus; but
5 it gets rid of the abnormal cells that are there because of the
6 virus because these cells need the virus to proliferate and
7 exist. So once the virus is gone, the cells die off, okay.

8 Now, there was one patient who had a partial response to
9 the treatment and the cells went away, okay. And then there
10 were the two other patients who had -- who had partial
11 responses to the treatment but the cells didn't go away. So
12 the story here is that, you know, if you have a complete
13 virologic response like Mr. Hardeman had, if he had these
14 abnormal cells in his blood, they would have gone away, okay.

15 Here is the control group for the same patients. So they
16 had eight patients with the same immunoglobulin gene
17 rearrangement abnormality. And, of course, these patients
18 weren't treated, so it was only lost in one of the patients,
19 and that was probably just a spontaneous loss, okay. Sometimes
20 the cells they -- sometimes they increase and sometimes they
21 decrease, and sometimes you can detect them and sometimes you
22 can't. But in the other seven patients they persisted, okay.
23 So what this says is that if you treat, the cells go away. If
24 you don't treat, the cells persist, okay.

25 And that's why these people are at increased risk for

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1 non-Hodgkin's lymphoma and these people are not, okay. And the
2 story is the same for the cells that had this 14;18
3 translocation. Again, if they weren't treated, there were six
4 patients, six of the 14 patients who had these cells. If they
5 weren't treated, they only went away on one patient, probably
6 again spontaneously as they go up and down. They couldn't
7 detect them. But the other five continued to have the abnormal
8 cells.

9 But if you look at the group that was treated, seven of
10 the 15 patients had these abnormal cells with this
11 translocation. And actually, it went away in six of the cells,
12 okay -- six of the patients. And here it says five, but
13 actually if you look at the data on table 2, all six of the
14 patients who had a complete virologic response, the cells went
15 away, okay. And there was one patient who still had the cells,
16 and that patient didn't have a complete virologic response.

17 So what the data says in this study -- and there is a
18 second study too -- which I'm not going to show you the data,
19 but it shows very similar results -- that if you are treated --
20 if you have chronic active hepatitis C and you are treated with
21 antivirals and you get a complete virologic response, then the
22 virus goes away and you are cured. And not only that, the
23 abnormal cells that were there also go away because they depend
24 on the virus to go and proliferate. So they won't live if the
25 virus isn't there; and this, I think, study shows that very

1 nicely.

2 **Q.** Let me ask you how that applies to Mr. Hardeman then.
3 Yesterday we had the flip chart. I guess I should write hep B
4 and hep C up here. I didn't do that yesterday.

5 Okay. So you talked yesterday about the rapid response
6 that Mr. Hardeman had within 12 weeks and then he was cured.
7 Is he still considered cured today of hepatitis C?

8 **A.** As far as I know, yes. The last time he was tested the
9 virus was negative in the blood.

10 **Q.** So once he was cured in 2006 of hep C, what happened to
11 any abnormal cells he may have had, based on the data here?

12 **A.** Well --

13 **MR. STEKLOFF:** Objection, Your Honor.

14 **THE COURT:** Overruled.

15 **THE WITNESS:** So they would have disappeared just,
16 like they did in the study, okay. They would be gone because
17 the abnormal cells depend on the presence of the virus. When
18 the virus is not there, the cells are not stimulated. They are
19 not infected and they die off, okay.

20 **BY MS. MOORE**

21 **Q.** So when someone has active hepatitis C -- when it is
22 active, what happens to the cells?

23 **A.** Well, what happens is the cells develop some genetic
24 damage like these cells, and eventually they get enough genetic
25 damage to where they become a lymphoma cell, a cancer cell.

1 And so -- and so that didn't happen in Mr. Hardeman, even
2 though he had been exposed to -- he had had this chronic viral
3 infection for almost 40 years. You know, so if he was going to
4 get the lymphoma, he should have got it while he had that
5 chronic infection, not nine years after he was cured of the
6 infection.

7 **Q.** And so in your opinion, Dr. Weisenburger, based on your
8 experience and your review of the literature, in Mr. Hardeman's
9 case then once he was cured in 2006, if he had any damaged
10 cells or abnormal cells as you called it, then what happened in
11 2006 to those cells?

12 **A.** Those cells would have died off during the antiviral
13 treatment.

14 **Q.** I guess I want to go back because you said that he had the
15 active virus, likely he had it for 40 years. Are you saying to
16 the jury that even though he had this active virus for 40
17 years, that any damage to those cells would have just gone away
18 once he had treatment?

19 **A.** Well, that's what the data shows; that the abnormal
20 cells -- the genetically abnormal cells which depend on the
21 presence of the virus, they go away. They die off once the
22 virus is gone from the system.

23 **Q.** All right. Now, are we ready to go to the differential,
24 back to that or is there anything else about --

25 **A.** No. I think we made our point.

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1 Q. All right. Let me switch places with you.

2 Let me pull up what you were working on yesterday and go
3 back to your process, Dr. Weisenburger. And when -- I think
4 you were talking yesterday about you had ruled -- ruled in four
5 different risk factors for Mr. Hardeman, right?

6 A. Right.

7 Q. And now based on -- yesterday you spent a lot of time on
8 this data about hepatitis C and hepatitis B. Can you tell the
9 jury then what conclusions that you drew from your review of
10 the literature and review of Mr. Hardeman's medical records in
11 your experience within the field for over 40 years?

12 A. So when you look at the potential risk factors for
13 Mr. Hardeman, we had Roundup, you remember. He had lots of
14 exposure to Roundup. He was overweight, which gives him a risk
15 of maybe 30 percent. And then he had this history of infection
16 with hepatitis C, and he probably had infection with
17 hepatitis B in the past because he was immune to it. We don't
18 know whether it was active infection or whether he just
19 recovered from it without much damage, okay.

20 And based on what I have told you and the studies I showed
21 you yesterday, it's my opinion that after he was cured from the
22 hepatitis C, he was no longer at risk for non-Hodgkin's
23 lymphoma, okay. You remember the curves all went back to the
24 normal background level after treatment.

25 And the same is true for hepatitis B because he was -- he

SIDEBAR

1 has been immune to hepatitis B all along throughout his entire
2 nine or ten years up to the time he developed lymphoma, and he
3 never had active infection. He was immune to hepatitis B, so
4 the hepatitis B would not cause his non-Hodgkin's lymphoma
5 either.

6 So basically I eliminated those two because I don't
7 believe that they could have caused his non-Hodgkin's lymphoma.
8 So then it leaves it between Roundup and obesity, and we know
9 that Roundup gives an -- people with high exposure to Roundup
10 have a significantly increased risk for non-Hodgkin's lymphoma
11 of at least twofold, okay.

12 **MR. STEKLOFF:** Objection, Your Honor.

13 **THE COURT:** Sustained.

14 **THE WITNESS:** I didn't write that, okay.

15 But they have an increased risk, a significant increased
16 risk. The risk with people who are overweight is a very small
17 risk, okay.

18 **THE COURT:** Why don't you take that chart down and
19 provide the rest of your analysis from the stand just verbally,
20 okay?

21 **MR. STEKLOFF:** Your Honor, may we approach?

22 **THE COURT:** Sure.

23 (The following proceedings were heard at the sidebar:)

24

25

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED] [REDACTED] [REDACTED]
6 [REDACTED]
7 [REDACTED] [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED] [REDACTED] [REDACTED]

11 (Sidebar ended.)

12 (The following proceedings were heard in open court:)

13 **BY MS. MOORE**

14 **Q.** Dr. Weisenburger, so I wanted to go back to your process.
15 And you were explaining to the ladies and gentlemen of the jury
16 about I think the next two risk factors that you were
17 considering was the obesity or overweight and Roundup. Can you
18 explain your process to the jury about what you considered with
19 respect to overweight, obesity and Roundup?

20 **A.** Right. So obesity is what I would call -- increases the
21 risk, but it doesn't increase the risk very much, probably at
22 most 30 percent. Whereas Roundup -- he was in a -- because of
23 his extensive exposure, he was at high risk for developing
24 non-Hodgkin's lymphoma. So in the end I decided -- based on
25 the whole story and all the things I have told you today and

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1 all the information I have read and all of my experience
2 that -- that the obesity or the overweight was a minor risk
3 factor, and the substantial risk factor in the case of
4 Mr. Hardeman was the extensive exposure to Roundup.

5 **Q.** And, Dr. Weisenburger, is there any kind of test that one
6 can do to determine the cause of non-Hodgkin's lymphoma, or is
7 this based on your experience and your review of the
8 literature?

9 **A.** Well, there is no real medical test you can do. I mean,
10 when I look at the slides, I can see the non-Hodgkin's
11 lymphoma, but I can't really say from looking at the slides
12 that it was caused by Roundup or even by any other cause.

13 **Q.** And as a pathologist, one of the things you do in your
14 role as a pathologist is look at slides, the tissue that is
15 taken from the patient; is that right?

16 **A.** Yes.

17 **Q.** And what -- when a pathologist is looking at tissue
18 slides, what is the main purpose of the pathologist doing that?

19 **A.** Well, the main purpose is to make a diagnosis so that the
20 clinical doctors know how to treat the patient, okay. So we
21 tell them what the disease is. In this case non-Hodgkin's
22 lymphoma. And then they know how to treat the patient, okay.

23 And sometimes we try to find a cause when there is a
24 possibility. So I mean, one of the things that was done in
25 Mr. Hardeman is that they did a stain for Epstein-Barr virus,

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1 which is one of the viruses we know causes non-Hodgkin's
2 lymphoma, and that stain was negative. So they were trying to
3 see if Mr. Hardeman's non-Hodgkin's lymphoma was due to
4 Epstein-Barr virus infection, and in this case the answer was
5 no.

6 So sometimes we do -- we have the ability to look for
7 causes, particularly infections, where we can do stains or
8 other tests to determine whether there is a cause; but in most
9 cases we can give the diagnosis but we can't give the cause.

10 Q. And can someone look at Mr. Hardeman's tissue slides and
11 say whether Roundup caused non-Hodgkin's lymphoma?

12 A. No.

13 Q. And did you review the pathologist report in this case?

14 A. Yes, I did. I reviewed the pathologist report. I read it
15 carefully. I looked at all the different tests and stains that
16 he did. And it seemed to all fit together. And, you know, so
17 I didn't have anything -- any reason to doubt the diagnosis of
18 the pathologist -- Mr. Hardeman's pathologist.

19 Q. At the time you rendered your expert report in this case,
20 had you had an opportunity to review all of the tissue slides
21 for Mr. Hardeman?

22 A. Well, I did review some slides. So I did review the
23 slides on the bone marrow, which did not show any evidence of
24 lymphoma. And I did review the slides from the first needle
25 aspiration, which just showed necrotic tissue, probably a

1 necrotic tumor; but you couldn't know what kind of tumor it
2 was.

3 **Q.** And when you say "necrotic," what does that mean?

4 **A.** Well, the tissue was dead. So the tissue was dead. And
5 sometimes when tumors grow fast, some of the tissue just dies
6 because it doesn't have enough blood supply, okay. So that
7 biopsy that I looked at was not diagnostic. It just showed
8 dead tumor cells, probably, okay.

9 And so then they did a third biopsy, and we tried to get
10 that biopsy before I wrote my report; but it was unavailable.
11 And so, you know, I had a deadline for writing my report. So I
12 wrote my report relying on the information from the original
13 pathologists who looked at the case, and we continued to try to
14 get the slides, and eventually we did a few weeks ago. And I
15 reviewed the slides and all the stains. And I agree with the
16 diagnosis of diffuse large B-cell lymphoma, which I don't think
17 is -- is an issue in this case.

18 **Q.** And did reviewing the tissue slides in any way change your
19 opinion in this case?

20 **MR. STEKLOFF:** Objection, Your Honor.

21 **THE COURT:** Overruled.

22 **THE WITNESS:** No.

23 **BY MS. MOORE**

24 **Q.** Now, going back to the differential, I noticed that you
25 didn't list in that first column on the known risk factors for

1 non-Hodgkin's lymphoma something called "idiopathic." Can you
2 tell the jury what idiopathic is and why you didn't have that
3 on your list?

4 **A.** Well, idiopathic is a big word that means we don't know
5 what caused the lymphoma, okay. So it means -- it is --
6 basically what it means, we don't know what caused the
7 lymphoma. So -- and that is true in many cases of lymphoma, we
8 don't know what the cause is. After we go through the complete
9 list of risk factors and known causes, the patient doesn't have
10 any of those. And so we ended up saying, Well, we don't know
11 what caused the lymphoma.

12 But that is not the case here in Mr. Hardeman because he
13 has one substantial risk factor that I think -- that in the
14 end, when you go through the list, it makes more sense to say,
15 Well, gee, if he has the lymphoma and he has a risk factor and
16 it is a substantial risk factor, that must be the cause more
17 likely than not.

18 I mean, it would be -- it wouldn't be logical to say,
19 Well, we know he has the substantial risk factor, but we really
20 don't know what caused his non-Hodgkin's lymphoma. That
21 wouldn't really make sense, right. It wouldn't really make
22 sense.

23 **Q.** Well -- and the jury has heard from Monsanto's attorney in
24 opening that, you know, most cases of NHL, the cause is listed
25 as unknown. Why didn't you just say you don't know the cause

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1 like in these other cases of NHL here for Mr. Hardeman?

2 **A.** Because we identified a cause.

3 **Q.** And that cause?

4 **A.** The cause is Roundup. More likely than not it is Roundup.

5 **Q.** And, Dr. Weisenburger, based on your 40 years of
6 investigating and researching the causes of non-Hodgkin's
7 lymphoma, your extensive literature review, your review of all
8 the data, your own publications -- I think there is over 40
9 about the causes of non-Hodgkin's lymphoma -- your review of
10 the medical records and your interview of Mr. Hardeman, please
11 tell the jury your opinion within a reasonable degree of
12 medical certainty what is the substantial factor in causing
13 Mr. Hardeman's non-Hodgkin's lymphoma.

14 **A.** I think it is Roundup.

15 **Q.** Do you have any doubt as to your opinion that Roundup was
16 a substantial factor in causing Mr. Hardeman's non-Hodgkin's
17 lymphoma?

18 **A.** No.

19 **MS. MOORE:** Thank you, Dr. Weisenburger. I pass the
20 witness at this point.

21 **THE COURT:** Okay.

22 **MR. STEKLOFF:** I'm going to pass out some materials,
23 Your Honor.

24 \\\

25 \\\

CROSS-EXAMINATION

1
2 **BY MR. STEKLOFF**

3 **Q.** Good morning, Dr. Weisenburger.

4 **A.** Good morning.

5 **Q.** I want to read something that you told the jury yesterday
6 about this differential that we just finished walking through,
7 okay. You said, So the methodology for doing this is the same
8 methodology we use when we are diagnosing and treating patients
9 in the hospital or the clinic.

10 Do you remember telling the jury that?

11 **A.** Yes, it's the same methodology.

12 **Q.** Okay. And then right now, I tried to write this down, you
13 said -- in talking about idiopathic, you said -- part of what
14 you said was, It is only idiopathic after we go through the
15 complete list of risk factors and known causes.

16 Do you remember just saying that two minutes ago?

17 **A.** Yes, if you go through all the known causes and you don't
18 find a cause, then by definition you don't know what caused it;
19 and you call it idiopathic.

20 **Q.** Okay. So you are suggesting to the jury that this
21 differential process that you go through is the same thing that
22 you do at the hospital, at City of Hope and at the University
23 of Nebraska; right?

24 **A.** Yes.

25 **Q.** Okay. Well, isn't it true, Dr. Weisenburger, that in your

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1 40 years of caring for patients for non-Hodgkin's lymphoma, you
2 have never used this differential method to determine the cause
3 of a patient's non-Hodgkin's lymphoma?

4 **A.** Well, it's true because pathologists don't -- the job of
5 the pathologist is not to go through this list. The job of the
6 pathologist is to look at the slides and to do stains or other
7 tests that might help, but we don't interview the patients. We
8 don't review all of their laboratory results. So that's the
9 job of the clinician, okay. That's the job of the clinician,
10 not the job of the pathologist.

11 **Q.** And you are not an oncologist, right?

12 **A.** I'm not.

13 **Q.** Okay. But you are the expert that is here to testify
14 about the specific cause of Mr. Hardeman's non-Hodgkin's
15 lymphoma; right?

16 **A.** Yes.

17 **Q.** And you have never used the method that you just used to
18 do that for non-Hodgkin's lymphoma patients in your 40 years of
19 treating patients, right?

20 **A.** I have not used that precise method. I have used the same
21 method when I was taking care of patients back during my
22 internship. This is the method we would use. A patient comes
23 in with a diagnosis of lymphoma -- of pneumonia, and you go
24 through all of the known causes of pneumonia and you do tests.
25 You try to find out what the cause is. And if you find a

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1 cause, then you treat for that cause. If you don't find a
2 cause, then you do some empiric treatment. This is the
3 methodology that physicians use when they make a diagnosis in
4 patients. It is called differential diagnosis.

5 Q. Right. When they make diagnoses, correct?

6 A. Right.

7 Q. Yeah. And my question is not about pneumonia. It is
8 about non-Hodgkin's lymphoma. I just want to be clear. Yes or
9 no, you have never used this method to determine the cause of a
10 non-Hodgkin's lymphoma patient's cancer, correct?

11 A. No, but I have done it in other cases where I have tried
12 to rule out causes. So, you know, I have done it -- I have
13 done it in other cases.

14 Q. But not to determine the cause of non-Hodgkin's lymphoma,
15 correct?

16 A. No, because it is not part of my practice.

17 Q. Okay. So let's talk about your practice a little bit.
18 You talked -- you spoke yesterday about the City of Hope
19 Hospital where you currently practice; right?

20 A. Yes.

21 Q. And you said that that's a cancer hospital that is
22 recognized by the National Cancer Institute; right?

23 A. Yes.

24 Q. And we can all agree it is an elite hospital in this
25 country for taking care of cancer patients, correct?

WEISENBURGER - CROSS / STEKLOFF

1 A. Yes.

2 Q. Okay. And when you are there -- I think you said just a
3 few months ago you stepped down as the chair of the pathology
4 group, right?

5 A. Yes.

6 Q. When you were the chair for several years, you were
7 overseeing 20 to 25 pathologists who work at this elite
8 hospital, City of Hope, right?

9 A. Yes.

10 Q. You were also working on a daily basis with elite
11 oncologists, correct?

12 A. Yes.

13 Q. And you were working with other doctors who were taking
14 care of patients who had non-Hodgkin's lymphoma, right?

15 A. Yes.

16 Q. And we can also agree that every single day there are
17 patients with non-Hodgkin's lymphoma at the City of Hope who
18 were there for care and treatment, right?

19 A. Yes.

20 Q. And you -- and to be clear, you agree that oncologists --
21 oncologists are the ones who are responsible for the treatment
22 of non-Hodgkin's lymphoma; right?

23 A. Yes.

24 Q. And you agree that oncologists would want to know that
25 glyphosate or Roundup caused their patient's cancer if that

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1 were true, right?

2 **A.** Well, I think they would want to know if, in fact, we knew
3 that.

4 **Q.** If a -- if a patient came in with non-Hodgkin's lymphoma
5 and it were true that Roundup or glyphosate caused his or her
6 cancer, the oncologist would want to know that, right?

7 **A.** Yes.

8 **Q.** Okay. And you, in your -- how many years have you been at
9 City of Hope, 12?

10 **A.** A little over six.

11 **Q.** Okay. A little over six.

12 In those six years you have never gone to a pathologist at
13 City of Hope and told him or her that you think that Roundup or
14 glyphosate causes cancer, correct?

15 **A.** To a pathologist, no, I have never told it to another
16 pathologist.

17 **Q.** Okay. And you have never gone to an oncologist at City of
18 Hope, who is taking care of patients with NHL every single day,
19 and told him or her that you that think Roundup or glyphosate
20 causes cancer, correct?

21 **A.** I haven't because it is not part of my practice. I have
22 published on it. You know, I was a coauthor on the *De Roos*
23 paper, the first *De Roos* paper, where we found glyphosate to
24 increase risk. And I'm actively involved in the NAPP study
25 where we looked at glyphosate and showed it was increased risk.

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1 So the way academic physicians communicate is through the
2 literature, by publishing so the rest of the world can know,
3 okay.

4 But in my practice, I don't speak to patients with
5 non-Hodgkin's lymphoma except in rare circumstances. So I
6 wouldn't know which patients with non-Hodgkin's lymphoma might
7 have been exposed to Roundup and which ones haven't, okay.

8 And frankly, the oncologists, they are more concerned with
9 treating the patient than trying to understand what happened 5
10 or 10 or 15 years ago that might have caused it. So patients
11 don't often even get asked about questions about pesticide use
12 or Roundup use unless it is volunteered by the patient, okay.

13 **Q.** And I agree that you have never told a patient, but we
14 will come to patients in a moment. I want to focus on the
15 doctors that you work with every day, okay.

16 Do you understand that's what I want to focus on right
17 now?

18 **A.** Yes, I have never told them because I don't interview
19 patients. I don't know which patients I have diagnosed have
20 exposure to Roundup. So how could I tell the doctor?

21 **Q.** You have never gone to a doctor and said, You should ask
22 your patient if he or she uses Roundup because it might help
23 you treat or care for them. You have never said that to an
24 oncologist, right?

25 **A.** I haven't, but I published it in -- I published it.

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- 1 Q. We will talk about *De Roos*. You published *De Roos*, right?
- 2 A. Yes.
- 3 Q. NAPP is not published. We will get to that in a moment,
- 4 right?
- 5 A. It will be soon.
- 6 Q. We will talk about that in a moment.
- 7 You have never gone to a pathologist and said, We should
- 8 really consider whether or not our patients are using Roundup
- 9 or glyphosate because I think it causes cancer?
- 10 A. No, but it is not part of our practice. It is not what we
- 11 do, okay. It is not part of my work. It is part of my
- 12 research.
- 13 Q. Well, you agreed earlier that oncologists would want to
- 14 know what caused their patient's cancer if they could figure it
- 15 out, right?
- 16 A. Yes, it's true.
- 17 Q. Now, you also were on something at the City of Hope called
- 18 the Committee of Chair; is that right?
- 19 A. Yes.
- 20 Q. That was all the chairs of different practice groups:
- 21 Oncology, pathology, radiology, other practice groups, right?
- 22 A. Yes.
- 23 Q. And those meetings -- you would have regular meetings,
- 24 correct?
- 25 A. Right.

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1 Q. Including administrative meetings but also medical
2 scientific meetings, right?

3 A. No. Those were all administrative meetings. There really
4 wasn't any science presented at those meetings. Those are
5 meetings to manage the medical practice.

6 Q. And you never told any of the other chairs at those
7 meetings that you thought Roundup or glyphosate causes cancer,
8 right?

9 A. No, because it wouldn't have been appropriate. It was --
10 they were administrative meetings. They weren't scientific
11 meetings. They weren't meetings about what causes cancer.

12 Q. They were the meetings of the leaders of the practices at
13 the City of Hope, right?

14 A. Yes, and chairs.

15 Q. Including Dr. Levine, correct?

16 A. Yes, they organized the meeting.

17 Q. She was the chief medical officer, correct?

18 A. Yes.

19 Q. We will talk more about her later.

20 Now, you also mentioned yesterday that you were part of
21 these research groups, and I think you mentioned something
22 called InterLymph. Do you recall that?

23 A. Yes.

24 Q. And you described InterLymph as a group of epidemiologists
25 and other researchers who are trying to determine the cause of

1 lymphoma, correct?

2 **A.** Yes.

3 **Q.** You have never at a meeting of InterLymph told the other
4 epidemiologists or scientists that you think Roundup or
5 glyphosate causes cancer, correct?

6 **A.** I probably discussed it with some of them, but the
7 InterLymph -- the people -- the scientists in the InterLymph
8 who have done case control studies for the most part didn't ask
9 questions about pesticides and didn't ask questions about
10 Roundup. So we never, in the InterLymph, did a pooling project
11 because all the -- all the pertinent North American studies
12 were put into the NAPP, okay. And there weren't other studies
13 from other countries that really focused on pesticides. So the
14 InterLymph hasn't published a paper on pesticides, but there
15 are lots of other papers out there.

16 **Q.** But InterLymph is trying to determine the causes of
17 lymphoma, right?

18 **A.** Yes.

19 **Q.** And you have never told the other epidemiologists or
20 scientists associated with InterLymph that you think that
21 Roundup or glyphosate causes cancer?

22 **A.** Probably we have discussed it. I don't remember
23 specifically, but we probably have discussed it because we have
24 discussed multiple times about all the causes, including
25 pesticides. But the InterLymph didn't have the right data from

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1 the studies that were done to really do an analysis to look at
2 Roundup. And the North American Canadian studies were already
3 analyzed in *De Roos* and in *McDuffie* and now in NAPP. So other
4 people were doing it, okay.

5 Q. Dr. Weisenburger, you have some binders behind you, so if
6 you can look at the binder on the shelf that is labeled 3 of 3.
7 Do you see that?

8 A. Yes.

9 Q. You have a transcript from November 26th, 2018. So it is
10 tab 5, first tab.

11 MR. STEKLOFF: Your Honor, I would like to read
12 page 20, lines 1 through 5.

13 THE COURT: Okay. One moment.
14 Any objection?

15 MS. MOORE: No objection, Your Honor.

16 THE COURT: Go ahead.

17 BY MR. STEKLOFF

18 Q. Dr. Weisenburger, you have previously testified before,
19 right?

20 A. Yes.

21 Q. Under oath, correct?

22 A. Yes.

23 Q. And so you were asked on November 26th, 2018 at page 20,
24 line 1 through 5 -- and just tell me if I have read this
25 correctly -- Have you ever gone to the epidemiologists and

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1 other doctors associated with InterLymph and told them that you
2 believe that glyphosate is a cause of non-Hodgkin's lymphoma?

3 And your answer was No.

4 Correct?

5 **A.** I don't remember this case, John Adams versus Monsanto? I
6 never -- I was never involved in that case.

7 **Q.** Dr. Weisenburger, I'm just asking you if you -- if I read
8 that correctly. I mean, you can see on the first page of
9 this --

10 **A.** This is a deposition on a John Adams versus Monsanto. I
11 have never testified in that case, so I don't know whose --
12 whose testimony this is. If it's mine, I don't know what case
13 it came from.

14 **Q.** Have you ever heard of Gordon?

15 **A.** Gordon case, yes.

16 **Q.** And that's this deposition, okay.

17 **A.** Okay.

18 **Q.** And did I read the answer correctly?

19 Have you ever gone to the epidemiologists and other
20 doctors associated with InterLymph and told them that you
21 believe glyphosate is a cause of non-Hodgkin's lymphoma?

22 And your answer was one word, No.

23 Correct?

24 **A.** And part of that is because these people are studying in
25 the field. So they know about glyphosate. And if they are

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1 studying -- particularly if they are studying pesticides, okay.
2 If they are not studying pesticides, they might not know about
3 it. The only reason for me to do something like that would be
4 if somebody was designing a new study and they wanted to look
5 at pesticide use, then, you know, I would be happy to give them
6 advice and tell them the kinds of things that I would do if I
7 was designing a study, but there wasn't anybody during this
8 period of time that was designing a new study to look at
9 pesticide use. And so, you know, we never really discussed
10 glyphosate or other pesticides because the studies that they
11 had done had already been published and so there wasn't
12 anything more to do.

13 **Q.** Let's talk about another organization you are a part of.
14 It's called LLMPP. It is the Leukemia and Lymphoma Group --
15 Research Group?

16 **A.** Yes. Leukemia Lymphoma Molecular Profiling Project, yes.

17 **Q.** And it also involves epidemiologists, other researchers,
18 other clinicians trying to deal with the causes of lymphoma,
19 correct?

20 **A.** No. That group is basically more of a basic science
21 group, so there are no epidemiologists in that group. We are
22 looking more at the biology of different types of lymphomas.
23 So we would never talk about this in that group.

24 **Q.** That's my question. You have never gone to that group and
25 told them that you think that Roundup or glyphosate is a cause

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1 of non-Hodgkin's lymphoma, correct?

2 **A.** There would have been no reason to do so because they are
3 not doing that kind of research.

4 **Q.** Now, you also attend meetings of doctors that get
5 together, correct?

6 **A.** Yes.

7 **Q.** There are conferences basically?

8 **A.** Yes.

9 **Q.** So one of them, you are part of something called The
10 American Society of Hematology, right?

11 **A.** Right.

12 **Q.** That brings hematologists, oncologists, pathologists
13 around the country together to talk about medical and
14 scientific issues, right?

15 **A.** Yes.

16 **Q.** And you have never presented at that conference your
17 opinion that Roundup or glyphosate causes non-Hodgkin's
18 lymphoma, correct?

19 **A.** No. We -- we presented and published -- we presented our
20 research on glyphosate at other meetings. We didn't present it
21 at this meeting.

22 **Q.** You, yourself, have never presented at that meeting your
23 opinion that Roundup or glyphosate causes non-Hodgkin's
24 lymphoma, correct?

25 **A.** I have not.

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1 Q. You also have never told -- let's shift away from the
2 research groups you are a part of or meetings. You have never
3 told a patient that you think his or her Roundup was caused
4 by -- sorry, non-Hodgkin's lymphoma was caused by Roundup or
5 glyphosate, correct --

6 A. No, but that's not part of my practice. I don't see
7 patients routinely. It would be a very unusual case where I
8 would go see a patient.

9 Q. But it happens occasionally. It happened at the
10 University of Nebraska, right?

11 A. Once in a while, but I was going to ask them other things,
12 not ask them about pesticide use, okay.

13 Q. And then you do write, when you look at the slides that
14 you talked about, you do write pathology reports, correct?

15 A. Yes.

16 Q. And in a pathology report you have never written that the
17 cause of a patient's NHL was Roundup or glyphosate, correct?

18 A. That's because when you look at the slides, you can't know
19 what the cause is. So why would I -- it would be nonsensical
20 to try to do that.

21 Q. Well, you never made any effort to determine if a single
22 patient that you were diagnosing with non-Hodgkin's lymphoma
23 ever used Roundup in his or her life, right?

24 A. No, because it is not part of my practice, okay.

25 Q. So just to sum up, you have never told an oncologist that

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1 you believe Roundup or glyphosate causes non-Hodgkin's
2 lymphoma, correct?

3 **A.** That's correct.

4 **Q.** You have never told a pathologist, correct?

5 **A.** That's correct. There would be no reason to tell another
6 pathologist.

7 **Q.** You have never told the other chairs at the City of Hope,
8 correct?

9 **A.** There would be no reason to tell the other chairs, no.

10 **Q.** You have never told the other members of InterLymph,
11 correct?

12 **A.** I'm sure we have discussed it at InterLymph. But as I
13 told you, it wasn't a focus of InterLymph so we really
14 didn't -- we really didn't spend much time talking about
15 pesticides at InterLymph because we were looking at other
16 causes.

17 **Q.** You have never told a patient, correct?

18 **A.** It is not part of my practice, no.

19 **Q.** And you have never written it down in a pathology report,
20 correct?

21 **A.** No, because I wouldn't know to write it down. It is not
22 part of my practice.

23 **Q.** Now, you mentioned the NAPP, the North American Pooled
24 Project, right?

25 **A.** Yes.

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1 Q. So I want to talk to you about the NAPP.

2 MR. STEKLOFF: Your Honor, may I just grab the easel?

3 THE COURT: Sure.

4 MR. STEKLOFF: Your Honor, is this okay?

5 THE COURT: Fine with me.

6 MR. STEKLOFF: Am I blocking anybody? Will everyone
7 see if I write on this?

8 BY MR. STEKLOFF

9 Q. Dr. Weisenburger, let's just explain to the jury again
10 what the North American Pooled Project is. That is -- that is
11 this poster or this abstract that you described yesterday to
12 the jury that combines the data from *De Roos* 2003 with
13 *McDuffie*, correct?

14 A. Yes, that's correct.

15 Q. Okay. Now, that data that you showed yesterday, do you
16 recall, was from June 2015?

17 A. I think that's correct, yes.

18 MR. STEKLOFF: Actually, can I -- do you mind if I
19 just show -- remind the jury of the board that you displayed
20 yesterday about the NAPP?

21 MS. MOORE: That's fine.

22 BY MR. STEKLOFF

23 Q. Dr. Weisenburger, this is what you showed to the jury
24 yesterday about the NAPP, correct?

25 A. Yes.

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1 Q. You showed one table about frequency, number of days per
2 year of glyphosate handling and NHL risks, right?

3 A. Yes.

4 Q. And this is from June 2015, correct?

5 A. Yes.

6 Q. And this was part of your explanation for -- what you
7 called dose response, right?

8 A. Yes.

9 Q. Your argument -- sorry, your opinion was that this data
10 supports your view that the more Roundup you use, the higher
11 your risk is, right?

12 A. Yes.

13 Q. I'm going to write down June 2015. And that is almost
14 four years ago, right?

15 A. Yes.

16 Q. And to be clear, this data today is still not published in
17 a peer-reviewed journal, correct?

18 A. It's -- it's not currently published, but hopefully it
19 will be shortly. It has been sent to the journal. It has been
20 reviewed. They have asked for revisions. The revisions are
21 currently being made, and it will be resubmitted and hopefully
22 accepted in the next month or two.

23 Q. Right. And the numbers are actually changing, right?

24 A. The numbers do change some because they do additional
25 analyses. They -- you know, epidemiologists, when they are

1 doing these studies, try to do all of the adjustments so that
2 the data that they are presenting is the truest representation
3 of the data, and so numbers do change.

4 Often in abstracts you are giving preliminary numbers, and
5 then you go back and reanalyze the data and the numbers change
6 a little bit. This is very common practice in epidemiology.

7 Q. Okay. So these numbers were preliminary; is that right?

8 A. They were the earliest iteration.

9 Q. And we have heard -- the jury has heard some testimony
10 about peer review, but the peer review process for an article
11 in a journal is an important one, right?

12 A. Yes, it is important -- it is important, sure.

13 Q. You just told us that doctors go to peer-reviewed
14 literature to understand medical and scientific issues, right?

15 A. Yes.

16 Q. And let's show the jury this June 2015 presentation beyond
17 what you showed them yesterday, okay?

18 A. Okay.

19 **MR. STEKLOFF:** Ms. Melen, may I please have the ELMO?

20 I'm going to display Trial Exhibit 899.

21 May I publish, Your Honor?

22 **THE COURT:** Go ahead.

23 **BY MR. STEKLOFF**

24 Q. So this is that overall presentation. This is the -- this
25 was -- this is the unpublished data, correct?

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1 A. Yes.

2 Q. When you told the jury yesterday that there is some sort
3 of peer-review process to be able to present this at a
4 conference, that is different -- that is a different process
5 than peer review for an article in a journal, correct?

6 A. Well, it is a similar process, but it is probably not as
7 detailed and critical.

8 Q. Exactly.

9 And let's show the jury some of the data that you did not
10 show them yesterday. So first of all, you did not show them
11 from June of 2015 this page, correct?

12 A. That's correct.

13 Q. This is glyphosate use and NHL risks, right?

14 A. Yes, it's ever-never. So it's all -- it's all cases: Low
15 exposure, high exposure.

16 Q. Right. This is ever-never. So if someone -- this is
17 demonstrating the overall risk if compared to whether someone
18 ever used Roundup versus never used Roundup, right?

19 A. Yes.

20 Q. And that odds ratio for NHL overall was 1.22, not
21 statistically significant, correct?

22 A. That's correct.

23 Q. You didn't show that to the jury yesterday, right?

24 A. Well, I could have, but -- I was trying to show them -- I
25 was trying to keep the time short and show them the things that

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1 were really important, okay. There was the same finding in
2 *McDuffie*, and I showed that yesterday.

3 Q. Well, you were -- you are a part of this NAPP group,
4 right?

5 A. Yes.

6 Q. And you agree, you are obviously here to give truthful and
7 accurate testimony to the jury, right?

8 A. Yes.

9 Q. Well, you agree that part of giving truthful and accurate
10 testimony to the jury is giving them complete information,
11 right?

12 A. Well, we discussed it. I discussed it with counsel
13 whether we should -- whether we should show the whole NAPP
14 study, which would have taken me about 15 additional minutes.
15 I could have done that, but we didn't run through any of the
16 other studies in great detail. We showed what the most
17 important message was from the study. And so that's what I did
18 in this case. But I would have been happy to go through all of
19 the results with the jury if, you know -- I just didn't think
20 it was necessary.

21 Q. We are going to go through the results with the jury now.

22 A. Good.

23 Q. Okay. But you were involved in the decisions of what to
24 present to the jury yesterday, right?

25 A. I was.

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1 Q. Okay. And you did not present this slide, correct?

2 A. We decided not to present it, exactly.

3 Q. Okay. You can also see on this slide it actually breaks
4 out DLBCL. That is the type of non-Hodgkin's lymphoma that
5 Mr. Hardeman had, correct?

6 A. Yes.

7 Q. And that is also -- the odds ratio was 1.32, but also
8 because it is less than 1, not statistically significant,
9 correct?

10 A. Yes.

11 Q. Now, you showed frequency, which was number of days per
12 year, correct?

13 A. Right.

14 Q. Well, there are other ways that the NAPP group measured
15 dose response, correct?

16 A. Yes.

17 Q. Okay. So here is another way that the NAPP group in
18 June 2015 measured dose response, correct?

19 A. Right. This is another way.

20 Q. And I should point out -- and I should point out on the
21 last slide, this data here you can see -- you described this
22 yesterday -- is adjusted for other pesticides, use of 2,4-D,
23 use of dicamba, use of malathion, right?

24 A. Yes.

25 Q. Same with this duration slide. It is adjusted for those

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1 other pesticides, correct?

2 A. Yes.

3 Q. And now, what this shows is number of years. So your
4 group broke down users between zero and 3.5 years, right?

5 A. Right.

6 Q. And then greater than 3.5 years, correct?

7 A. Yes.

8 Q. And -- so this is dose response, right?

9 A. It is one way to look at dose response.

10 Q. It is one way you and your fellow scientists chose to look
11 at dose response in NAPP, correct?

12 A. Yes.

13 Q. And what it shows is that for users who -- this is overall
14 non-Hodgkin's lymphoma. For users who used it for less than
15 three and a half years, the risk ratio was 1.4 and not
16 statistically significant, correct?

17 A. Yes.

18 Q. But for users who used it for more than three and a half
19 years, the risk went all the way down to 1.02, still not
20 statistically significant, correct?

21 A. Correct.

22 Q. So this does not show dose response, right?

23 A. It does not.

24 Q. And you did not show this to the jury yesterday, correct?

25 A. I didn't, no.

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1 Q. And the same here for DLBCL, Mr. Hardeman's non-Hodgkin's
2 lymphoma. You can see here if it was less than three and a
3 half years, it was 1.77 and it actually was statistically
4 significant, correct?

5 A. Yes.

6 Q. But then for more than three and a half years -- so the
7 users in this pooled study who were using it for a longer
8 period of time when measured by number of years, the risk ratio
9 went all the way down to 1.03, not statistically significant,
10 correct?

11 A. Correct.

12 Q. You did not show this to the jury yesterday, right?

13 A. No, but I would be happy to explain it if you would let
14 me.

15 Q. Well, I would like you to just answer my questions. But
16 this -- you did not show this to the jury yesterday, right?

17 A. I did not.

18 Q. Okay. Now, let's look at another slide in this
19 presentation. Lifetime days.

20 So this is another way that your group chose to assess
21 dose response, number of years times days per year, correct?

22 A. Yes.

23 Q. And if you look again at overall -- so just to break this
24 down, this was less than seven. So if you took the number of
25 years and multiplied it by the days of year, there was a group

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1 that had less than seven and then a group that had more
2 exposure greater than seven, correct?

3 A. Yes.

4 Q. And so here the overall risk was 1.00 for the less than
5 seven but not statistically significant, correct?

6 A. Correct.

7 Q. And then it did go up to 1.19, but it was not
8 statistically significant when greater than seven, correct?

9 A. That's correct.

10 Q. And then same, look at DLBCL. It was actually below 1 for
11 less than seven by this formulation, right?

12 A. Right.

13 Q. Not statistically significant, correct?

14 A. Correct.

15 Q. And then 1.25 but not statistically significant here for
16 greater than seven, correct?

17 A. That's correct.

18 Q. And you didn't show this table to the jury yesterday,
19 correct?

20 A. No. The reason I didn't is because I don't think these
21 measures are as -- as important in pesticide use as what I
22 showed. And, you know, in some of my prior testimony
23 deposition --

24 **MR. STEKLOFF:** Objection to prior testimony,
25 Your Honor.

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1 **THE COURT:** Sustained. You shouldn't be talking about
2 any prior testimony you have given unless you are asked about
3 it.

4 **THE WITNESS:** Okay. Thank you, Your Honor.

5 **BY MR. STEKLOFF**

6 **Q.** Dr. Weisenburger, you and your group chose to measure dose
7 response in these different ways in this study, correct?

8 **A.** Yes, those are the standard ways that epidemiologists do
9 it.

10 **Q.** Okay. And you showed the one page of the June 2015 deck
11 that supported your dose response opinion, correct?

12 **A.** That's correct.

13 **Q.** And you did not show the other pages that did not support
14 your opinion, correct?

15 **A.** That's correct.

16 **Q.** You also didn't tell the jury that there were subsequent
17 presentations from NAPP, did you?

18 **A.** There were three presentations, yes.

19 **Q.** Okay. You didn't show either of the next two
20 presentations, right?

21 **A.** I didn't, no, because that would have taken an hour.

22 **Q.** Okay. Well, you were -- you testified for over three --
23 at least three, maybe four, hours, right?

24 **A.** Yes.

25 **Q.** And have you read -- did you review Dr. Ritz's testimony?

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1 A. I did not.

2 Q. You talked a little bit about what Dr. Ritz presented,
3 right, because you referenced that yesterday?

4 A. We didn't talk very much about it. I mean, I don't really
5 know for sure what she said.

6 Q. Okay. But you understand that Dr. Ritz presented some of
7 the same things that you presented, right?

8 A. Yeah, she probably did.

9 Q. Okay. And she did not present this NAPP data, that you
10 are aware of, correct?

11 A. I don't know.

12 Q. So this would have been new data for the jury yesterday if
13 you had shown it, right?

14 A. It would have, but I didn't know that she didn't show it.

15 Q. You didn't ask about that when you were considering
16 whether to show the NAPP data?

17 A. I didn't.

18 Q. So the next presentation was on August 31st, 2015,
19 correct?

20 A. I'm not sure. I will trust that you are correct.

21 Q. Well, if you look at your binder Number 1, Trial
22 Exhibit 1425.

23 Are you with me, Dr. Weisenburger?

24 A. Yes.

25 Q. You see that this is the next NAPP presentation,

1 August 31st, 2015?

2 **A.** Yes.

3 **MR. STEKLOFF:** Your Honor, permission to publish.

4 **THE COURT:** Any objection?

5 **MS. MOORE:** No objection, Your Honor.

6 **THE COURT:** Go ahead.

7 **MR. STEKLOFF:** Thank you.

8 Ms. Melen, may I continue to use the ELMO, please.

9 (Whereupon, a brief pause was had.)

10 **MR. STEKLOFF:** We might be able to do this by the
11 other technology, if it won't work.

12 **THE CLERK:** This has been known to happen when it just
13 stops working.

14 **THE COURT:** Should we do our morning break a little
15 bit early to try to get it fixed, or?

16 **MR. STEKLOFF:** I think, Your Honor -- I'm happy to
17 take a break or I'm happy to use the other technology.

18 **THE COURT:** Your preference. It is a little early to
19 take a break. We can keep going for a little while. So if you
20 want to use the other technology, that's fine.

21 **MR. STEKLOFF:** I'm happy to use the other technology,
22 if we can switch over.

23 **Q.** Okay. So this the jury can now see on the screen,
24 Exhibit 1425. Do you see that as well as, Dr. Weisenburger?

25 **A.** Yes.

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1 Q. In fact, your name is listed here, the second-to-last name
2 among the other scientists, correct?

3 A. Yes.

4 Q. And we can see that date below that August 31st, 2015,
5 correct?

6 A. Correct.

7 Q. And this also presented some of the data that you and your
8 colleagues were studying, correct?

9 A. Yes.

10 MR. STEKLOFF: And, Mr. Holtzen, if we can turn to the
11 page that is titled "Glyphosate Use and NHL Risks."

12 Q. We can see at the bottom of this page this is adjusted for
13 the three other pesticides, correct?

14 A. Correct.

15 Q. And you agree it is important to adjust for other
16 pesticides when possible, right?

17 A. Yes.

18 Q. Excuse me. And it is actually -- so there are two columns
19 here, and it is the column on the right with that little B
20 above it that shows the adjusted numbers, correct?

21 A. Correct.

22 Q. The column on the left is unadjusted for other
23 pesticides, right?

24 A. Correct.

25 Q. And so if we look again here at the overall risk, it is

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1 1.13, not statistically significant, correct?

2 **A.** Yes, this is for ever-never.

3 **Q.** This is for ever-never. And, in fact, those numbers have
4 actually changed since the June 2000 presentation that we just
5 looked at, right?

6 **A.** Yes, that's what happens when you re-analyze data and you
7 take other things into consideration. So it is not surprising
8 the data changed.

9 **Q.** It went down. In June of 2015 it was 1.22, not
10 statistically significant. Now, in August of 2015 it is 1.13,
11 not statistically significant, correct?

12 **A.** Yes.

13 **Q.** And when you presented the June 2015 numbers in that one
14 table yesterday to the jury, you didn't tell the jury the
15 numbers have been going down and changing since June 2015, did
16 you?

17 **A.** I did not.

18 **Q.** Now, this also shows DLBCL. And in that adjusted column,
19 it shows 1.23, but it is not statistically significant,
20 correct?

21 **A.** That's correct.

22 **Q.** And you did not show that to the jury yesterday, right?

23 **A.** I did not.

24 **Q.** That number --

25 **A.** Because I didn't show any data on ever-never yesterday.

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1 Q. And that number has also been going down since the June --
2 one month later or two months later this number is going down
3 as the numbers are re-analyzed, correct?

4 A. I don't remember what the odds ratio was for DLBCL in the
5 first ever-never number in the first analysis.

6 Q. Well, if I told you it was 1.32, we can agree it has gone
7 down here, correct?

8 A. Yes.

9 Q. Now, at the back of this presentation, there is a slide
10 titled "Proxy Versus Self-Respondents."

11 You see that, Dr. Weisenburger?

12 A. Going backwards, uh-huh.

13 Q. It is the second -- third-to-last slide.

14 And this is where you and your colleagues showed
15 adjusted -- adjusted dose response information, correct?

16 A. On this table?

17 Q. Yes.

18 A. I'm on the wrong table. Let's see.

19 Q. You can also look on the screen if it helps.

20 Are you with me?

21 A. Okay. Yeah, I see what it is.

22 Q. Okay. So let's just walk through for the jury what this
23 is. Well, let's make one thing clear. If you skim through the
24 rest of the presentation in Exhibit 1425, in this presentation
25 when you and your colleagues presented duration, frequency,

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1 lifetime days, on earlier slides, it was not adjusted for the
2 other pesticides, right?

3 **A.** That's correct. That's one of the reasons I didn't show
4 the data.

5 **Q.** Okay. But this data is adjusted for other pesticides,
6 right?

7 **A.** It is, yes.

8 **Q.** So you could have shown the jury this data, right?

9 **A.** We could have. I don't know why we didn't. I don't
10 remember why we didn't.

11 **Q.** But you were part of that decision?

12 **A.** I knew about the decision. I didn't make the decision.
13 It was a group decision.

14 **Q.** Okay. So now you don't -- you are not taking
15 responsibility for not presenting this data?

16 **A.** I'm not.

17 **Q.** Okay. So let's first explain to the jury what it means
18 proxy versus self-respondents because I don't think we have
19 talked too much about that, okay?

20 **A.** Well, so --

21 **Q.** I'm going to ask questions.

22 Proxy. In some of the studies that were part of *De Roos*
23 or *McDuffie*, there were phone calls to family -- to people who
24 were part of the study to try to determine what pesticides they
25 had used, correct?

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1 A. Yes.

2 Q. And in some instances, either because the person with
3 non-Hodgkin's lymphoma was deceased or they just weren't
4 available to pick up the phone, the questions were asked to
5 what is called a proxy, right?

6 A. Yes.

7 Q. And that is a family member or other person in the
8 household. So you are not getting the information directly
9 from the person who was using Roundup or other pesticides. You
10 are getting it from someone else in their household, right?

11 A. Yes. It is usually the spouse, but that's correct,
12 someone who lives there and has knowledge of it.

13 Q. And you agree that is a limitation of these case control
14 studies that you discussed, correct?

15 A. Well, it can be a limitation. It can be.

16 Q. Okay. And then self-respondents, that is obviously where
17 you were able to directly reach the person who was using the
18 other pesticides, right?

19 A. Correct.

20 Q. Okay. And so this table breaks down the combination of
21 proxy and self-respondents and then self-respondents only,
22 correct?

23 A. Right.

24 Q. That's the two --

25 A. It gives you the data -- the entire data and then it gives

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1 you the data just for the self-respondents, yes.

2 Q. Okay. And all of these numbers in this table are adjusted
3 for the other pesticides, right?

4 A. Yes.

5 Q. So let's look at -- we already walked through in this
6 August 2015 presentation never-ever -- but let's look at the
7 three dose response metrics: Duration, frequency and lifetime
8 days. For duration it shows that either -- whether it is proxy
9 and self-respondents or self-respondents only, the more years
10 that people were using pesticides and using Roundup, the
11 numbers actually went down, correct?

12 A. Yeah. So the data is consistent between the entire group
13 and the self-respondents that -- the results are pretty much
14 the same.

15 Q. And it shows they are at least, by that metric of
16 duration, there was no dose response, correct?

17 A. Using that metric, that's true.

18 Q. And there is none of these numbers -- in duration, all
19 four, none of them are statistically significant, correct?

20 A. They are not.

21 Q. Okay. Now, in frequency, the numbers do go up and number
22 of days per year. If it was more than two days per year, the
23 number on the left is 1.73, statistically significant, correct?

24 A. Yes.

25 Q. And the number on the right is 1.77, barely not

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1 statistically significant, correct?

2 **A.** It is borderline, but it is the same -- it is the same
3 number, okay. It is the same number.

4 **Q.** Right. Now, lifetime days, that was the other metric that
5 you and your colleagues chose to use, correct?

6 **A.** Yes.

7 **Q.** And that shows that it went up, but from below 1 to above
8 1 on both sides -- slightly above 1, 1.08 and 1.06, correct?

9 **A.** Yes.

10 **Q.** Not statistically significant, correct?

11 **A.** Correct.

12 **Q.** And 1 -- if it is at 1, that means there is no risk,
13 right?

14 **A.** Correct.

15 **Q.** And none of this data -- you didn't present any of this
16 data to the jury yesterday, right?

17 **A.** I presented data on frequency by number of days. So, you
18 know, I did present some of this data, but the numbers are
19 slightly different. I presented the data for proxy and
20 self-respondents.

21 **Q.** But not in the August 2015 presentation of these numbers,
22 correct?

23 **A.** No, but the numbers are still statistically significant,
24 okay.

25 **Q.** For the one metric?

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1 A. For the one metric, yes. Probably the most important
2 metric.

3 Q. Okay. Out of one, two, three, four, five, six -- out of
4 12 metrics, one metric was statistically significant?

5 A. And one was a borderline significant.

6 Q. Okay. And that's the one -- the one metric that was
7 statistically significant is the metric that you showed the
8 jury yesterday, right?

9 A. Yes, because I think it is the most important one. And I
10 hope, if you don't ask me that, Ms. Moore will ask me in cross,
11 okay, why I think it is the most important.

12 Q. Okay. Now, there was a third presentation that we have
13 discussed -- that you have mentioned existed in June of 2016,
14 correct?

15 A. Again, I don't remember the date. There was a third
16 presentation, yes.

17 Q. Well, in your binder, Dr. Weisenburger, is Trial
18 Exhibit 1424.

19 A. Okay.

20 Q. Do you see that this presentation -- again, not a
21 published article in a journal, but this poster presentation or
22 abstract presentation occurred in June 2016?

23 A. Yes.

24 Q. And you also didn't present this information to the jury
25 yesterday, correct?

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1 A. I didn't, because then it would have taken me an hour to
2 show all three of these.

3 Q. Okay.

4 A. And it would have been frankly redundant.

5 Q. Okay. The jury will determine that.

6 MR. STEKLOFF: Your Honor, may I publish Exhibit 1424
7 please?

8 THE COURT: Any objection?

9 MS. MOORE: No objection, Your Honor.

10 THE COURT: Go ahead.

11 BY MR. STEKLOFF

12 Q. So we can see here on the front page, again, your name is
13 listed here, Dr. Weisenburger. We can see that?

14 A. Yep.

15 Q. We can see the date, June 2016. So this is a year later,
16 correct?

17 A. Yes.

18 MR. STEKLOFF: And if we can turn, Mr. Holtzen, to the
19 page that is titled "Glyphosate Uses and Risks of NHL Overall."

20 Q. So -- in this table a year later the information is
21 presented differently, correct, Dr. Weisenburger?

22 A. Yes, it is a different format.

23 Q. It doesn't give the specific numbers. It is just showing
24 the p-trend; is that right?

25 A. Well, it does give the numbers on the left side, but it's

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1 hard to know exactly what they are.

2 Q. Right. It is a little --

3 A. Whether it has increased or not increased or decreased.

4 Q. It is a little oddly presented, right?

5 A. It is what?

6 Q. A little oddly presented.

7 A. It is a different way of presenting things.

8 Q. You can't tell the exact numbers. I mean, you can see
9 that there is a 1.0, but you can't tell the exact numbers,
10 correct?

11 A. Correct.

12 Q. And you, on the chart yesterday, actually explained
13 briefly p-trend to the jury. Do you remember that?

14 A. Yes.

15 Q. So if we look here, you were emphasizing that there were
16 two p-trends that were statistically significant, correct?

17 A. Correct.

18 Q. And that is because they were at .02, right?

19 A. Yes.

20 Q. So when we are talking about p-trend, which is comparing
21 the two numbers using a statistical method, if it is .05 or
22 lower, it is statistically significant, correct?

23 A. Yes, if you use that as your parameter.

24 Q. .05 or .04, .03 or .02 or .01, right?

25 A. Yes.

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1 Q. And you actually called out these two numbers here, .02,
2 that these demonstrated a trend for these two columns that were
3 statistically significant that supported your opinion that
4 there is a dose response, right?

5 A. Yes.

6 Q. Let's look at what the p-trends are in the data that was
7 presented in June of 2016 that you didn't show to the jury
8 yesterday.

9 First of all, this has all the same metrics ever used. So
10 that is ever-never, whether someone ever used it compared to
11 never used it, correct?

12 A. Correct.

13 Q. And then it has duration, number of years. So we have now
14 seen that, right?

15 A. Correct.

16 Q. Frequency, number of days per year, correct?

17 A. Yes.

18 Q. And lifetime days, number of years times number of days
19 per year, correct?

20 A. Yes.

21 Q. And it is the orange data that is adjusted for other
22 pesticides. You can see that on the bottom, right? It says
23 ORB, adjusted for variables and ORA, and the use of 2,4-D,
24 dicamba and malathion, right?

25 A. Correct.

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1 Q. So let's look at the data that is adjusted for other
2 pesticides, starting with duration per years. That p-trend,
3 .87, is not statistically significant, correct?

4 A. That's correct.

5 Q. The next one, frequency of number of days per year, .23,
6 not statistically significant, correct?

7 A. That's correct.

8 Q. Next one, .92, not statistically significant, correct?

9 A. That's correct.

10 Q. And then if we turn to the next page, frequency of
11 glyphosate use in NHL risks, this is the one that you think is
12 the most important, right? That's what you have told us?

13 A. It's been a long time since I have looked at this, so I'm
14 trying to sort of understand it again.

15 Q. But that's not my question, Dr. Weisenburger. I'm asking
16 of the three dose response ways to measure, you say that
17 frequency is the most important, right?

18 It's frequency, duration and lifetime days are the three
19 ways that dose response is measured, right?

20 A. Right. So frequency would be days per -- days per year,
21 that's correct.

22 Q. Okay. And so in this, all five numbers that are adjusted
23 for other pesticides -- .23, .89, .16, .24 and .38 -- for the
24 different types of non-Hodgkin's lymphoma are not statistically
25 significant, correct?

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1 A. So where are you looking? I'm sorry.

2 Q. You can also look on the screen if it helps,
3 Dr. Weisenburger. I'm looking at the frequency page, and I'm
4 looking at the p-trend where the data is adjusted for other
5 pesticides. All of those numbers are not statistically
6 significant; correct?

7 A. That's correct, although diffuse large B-cell lymphoma
8 again is borderline.

9 Q. Okay. But it's not statistically significant; correct?

10 A. That's true.

11 Q. And if we go to --

12 A. But you can see how the numbers change.

13 Q. That's not my question, Dr. Weisenburger. They're not
14 statistically significant; correct?

15 A. Correct, but epidemiologists look at the numbers and look
16 how the numbers change. So sometimes you see important
17 information that isn't statistically significant, and here you
18 see that it does change. The odds ratios do go up with greater
19 number of days per year. In this analysis it's not
20 statistically significant, but it's borderline.

21 Q. Okay. And yesterday when you were emphasizing the
22 importance of that one slide, you emphasized the importance of
23 statistical significance in the p-trend; right?

24 A. Yes.

25 Q. Okay. Now, if you look at duration on the next page,

1 again, all of the adjusted numbers are not statistically
2 significant; correct?

3 **A.** That's correct, but they weren't in the previous analyses
4 either.

5 **Q.** Okay. And then if you look at the next one, "Lifetime
6 days of glyphosate use and NHL risks," none of the data
7 adjusted for other pesticides is statistically significant;
8 correct?

9 **A.** That's correct.

10 **Q.** Okay. So in this chart, we actually have 15 measures,
11 depending on whether it's NHL overall, follicular lymphoma,
12 diffuse large B-cell lymphoma, which is the type of lymphoma
13 that Mr. Hardeman had, SLLL or other subtypes, and regardless,
14 across the board, all 15 metrics are not statistically
15 significant; correct?

16 **A.** Correct, but you can see on frequency of glyphosate use,
17 that in each of the curves, the frequency goes up with a higher
18 dose. Okay? So there's -- you can see -- you can see the
19 trend. It's unmistakable when you look at it. It just
20 doesn't -- it isn't statistically significant. Okay? So it's
21 consistent with what I showed before.

22 **Q.** I mean, you didn't show this, though; right?

23 **A.** I didn't.

24 **Q.** And you told us yesterday if something's not statistically
25 significant, it could be because of chance or other

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1 confounders, other things that might complicate the data;
2 right?

3 **A.** It's possible.

4 **Q.** And that's why yesterday you were emphasizing the data
5 that was statistically significant that supported your
6 opinions; right?

7 **A.** Yes.

8 **Q.** Now, Dr. Weisenburger, let's actually move away from NAPP.

9 **THE COURT:** Since we're moving away from NAPP, I think
10 now is probably a good time to take a break.

11 Why don't we take a ten-minute break, and we'll resume at
12 25 after the hour. Thank you.

13 **THE CLERK:** All rise.

14 (Proceedings were heard out of the presence of the jury:)

15 **THE COURT:** You can step down, Dr. Weisenburger.

16 **THE WITNESS:** Thank you.

17 **THE COURT:** Anything anybody needs to discuss?

18 **MS. WAGSTAFF:** No, Your Honor.

19 **THE COURT:** No? Okay. Thank you.

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

21 (Recess taken at 10:15 a.m.)

22 (Proceedings resumed at 10:26 a.m.)

23 (Proceedings were heard out of the presence of the jury:)

24 **THE COURT:** Okay. Bring the jury back in.

25 (Proceedings were heard in the presence of the jury:)

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1 **THE COURT:** Okay. You can resume.

2 **MR. STEKLOFF:** Thank you, Your Honor.

3 **Q.** So, Dr. Weisenburger, I want to talk about a few of the
4 studies that you showed to the jury yesterday.

5 And may we publish, please, 1066.

6 **MS. MOORE:** No objection.

7 **THE COURT:** Go ahead.

8 **BY MR. STEKLOFF:**

9 **Q.** Dr. Weisenburger, do you remember discussing this study by
10 Dr. Bolognesi and others yesterday with the jury?

11 **A.** Yes, I do.

12 **Q.** And this is one of the studies that you discussed where
13 there was aerial spraying to try to eliminate cocaine in
14 Colombia; is that right?

15 **A.** Yes.

16 **Q.** Okay. And you discussed this in supporting your opinions
17 on genotoxicity; is that right?

18 **A.** Yes.

19 **Q.** Okay. If we could turn, please, to page 995. This is one
20 of the studies -- or this is a page that you did not show to
21 the jury in this; is that correct?

22 **A.** I didn't show them this page, no.

23 **Q.** Okay. And if we can go in the left-hand column about less
24 than halfway down, there's a sentence that starts "Evidence
25 indicates." Do you see that? It will be on your screen as

1 well.

2 A. (Witness examines document.)

3 Q. Are you with me, Dr. Weisenburger?

4 A. Yes.

5 Q. And so in this study that you said supports your opinion
6 on genotoxicity, the authors wrote (reading):

7 "Evidence indicates that the genotoxic risk
8 potentially associated with exposure to glyphosate in the
9 areas where the herbicide is applied for eradication of
10 coca and poppy is of low biological relevance."

11 Right?

12 A. That's what they say.

13 Q. And then if we go to the right-hand column, there's a
14 paragraph that starts "Given the situation." Do you see that?

15 A. Yes.

16 Q. And in the second sentence the authors wrote (reading):

17 "Based on the applicable *Bradford Hill* guidelines" --
18 That's something you discussed yesterday with the jury,
19 the *Bradford Hill* guidelines; correct?

20 A. Yes.

21 Q. And one of the guidelines, one of the criteria is
22 something called causality; right?

23 A. Yes. That's why you do the *Bradford Hill* analysis.

24 Q. And so what the authors wrote based on their review of the
25 data from this study is (reading):

1 "Based on the applicable *Bradford Hill* guidelines" --
2 then they cite back to 1965 when we've heard about Sir
3 Bradford Hill -- "it is not possible to assign causality
4 to the increases in frequency of BNMN" -- those are the
5 chromosomal changes that were happening -- "observed in
6 our study."

7 Right?

8 **A.** Yes, but it doesn't really make any sense, that statement.

9 **Q.** Okay.

10 **A.** Because you wouldn't take one parameter and apply the
11 *Bradford Hill* analysis. So it doesn't really make any sense.

12 **Q.** But that's what the authors wrote; right?

13 **A.** That's what they wrote.

14 **Q.** And you did not show that to the jury yesterday; correct?

15 **A.** No, because it doesn't make any sense.

16 **Q.** Okay. So I'd also like to turn to a new study. Do you
17 remember also discussing the Paz-y-Miño study?

18 **A.** Yes.

19 **Q.** Okay. And you showed the jury a Paz-y-Miño study from
20 2007, which is Exhibit 1438.

21 **MR. STEKLOFF:** May I publish, Your Honor?

22 **MS. MOORE:** No objection, Your Honor.

23 **THE COURT:** Go ahead.

24 **BY MR. STEKLOFF:**

25 **Q.** And so this is the study that you discussed in part called

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1 "Evaluation of DNA Damage in an Ecuadorian Population Exposed
2 to Glyphosate"; correct?

3 **A.** Yes.

4 **Q.** And this is where both of these studies are where you were
5 talking about real human data that proves, in your opinion,
6 genotoxicity; right?

7 **A.** Yes.

8 **Q.** Not that it was in a petri dish, but these were real
9 people and you emphasized that yesterday; right?

10 **A.** Yes.

11 **Q.** Now, what I'd like to show you -- you're aware that
12 Paz-y-Miño did a follow-up on this same group of people a few
13 years later; right?

14 **A.** Yes.

15 **Q.** You did not show that to the jury; correct?

16 **A.** I didn't.

17 **Q.** Okay. So let's, please, pull up that exhibit.

18 **MR. STEKLOFF:** And I apologize, Your Honor. It may
19 take me a moment to figure out what exhibit number that is.

20 (Pause in proceedings.)

21 **MR. STEKLOFF:** Yes, 1437. And may I publish 1437,
22 Your Honor?

23 **THE COURT:** Any objection?

24 **MS. MOORE:** No objection.

25 **THE COURT:** Go ahead.

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1 **BY MR. STEKLOFF:**

2 **Q.** Okay. So, Dr. Weisenburger, this is 1437. We can see the
3 title "Baseline determination in social, health, and genetic
4 areas in communities affected by glyphosate aerial spraying on
5 the northeastern Ecuadorian border"; correct?

6 **A.** Yes.

7 **Q.** You can see the first author is Dr. Paz-y-Miño. You agree
8 the same group of scientists looking at the same group of
9 people; correct?

10 **A.** Yes.

11 **Q.** And the last article we looked at was published in 2007;
12 right?

13 **A.** Yes.

14 **Q.** And this article we can see at the top was published in
15 2011; correct?

16 **A.** Yes.

17 **Q.** And if we look in the abstract on the first -- on the
18 front page of this article, the bottom of the abstract, what
19 the authors explained was starting at the bottom "In
20 conclusion" (reading):

21 "In conclusion, the study population did not present
22 significant chromosomal and DNA alterations."

23 Do you see that?

24 **A.** Yes. That's -- that's -- that was the result I think four
25 years later or four years or more later, yes.

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1 Q. Right. Four years or more later they went back --
2 actually two years later, it just took them -- they published
3 it four years later, but two years later they went back to see
4 if the participants in this study had undergone chromosomal or
5 DNA alterations; correct?

6 A. Yes.

7 Q. And this was their conclusion; right?

8 A. Yes, but it wouldn't be surprising for the abnormalities
9 to go away because the body fixes the vast majority of genetic
10 abnormalities. And so four years later, if they hadn't been
11 exposed, the abnormalities might go away. So I didn't find
12 it -- I didn't find it to be really relevant to the point I was
13 trying to make.

14 Q. Okay. So when a person stops using Roundup, in your world
15 where it causes abnormalities, you agree, even in your opinion,
16 those abnormalities can go away when a person stops using
17 Roundup?

18 MS. MOORE: Objection.

19 THE WITNESS: They often go away, yes.

20 THE COURT: Overruled.

21 BY MR. STEKLOFF:

22 Q. Now, let's turn to page 50, the last page of this article.
23 At the bottom of the left-hand column there's a paragraph that
24 starts "Several research studies." Do you see that,
25 Dr. Weisenburger? And it says (reading):

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1 "Several research studies related to glyphosate
2 exposure have been conducted in Colombia by Bolognesi" --
3 That's what we just looked at; right?

4 **A.** Yes.

5 **Q.** (reading)

6 -- "Sanin, and Solomon."

7 So those are two other studies; correct?

8 **A.** Yes.

9 **Q.** And what the authors here say is (reading):

10 "Those other research studies state that the studied
11 populations have low genotoxic risk associated with
12 glyphosate."

13 Correct?

14 **A.** That's what he -- that's what these authors say, yes.

15 **Q.** And then it goes on to say (reading):

16 "Regarding our study -- our study -- "we obtained
17 results showing no chromosomal alterations in the analyzed
18 individuals."

19 Right?

20 **A.** Yes. More than two years later.

21 **Q.** Okay. You did not show this to the jury yesterday;
22 correct?

23 **A.** No, because the point of what I was showing is that if you
24 have exposure to the chemical in high doses, you get genotoxic
25 damage.

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1 Q. Now, Dr. Weisenburger, I want to turn to talk about some
2 of the epidemiology that you discussed with the jury yesterday.

3 MR. STEKLOFF: And, Ms. Melen, may I briefly have the
4 Elmo, please?

5 THE CLERK: Cross your fingers.

6 MR. STEKLOFF: It looks like it's working.

7 Your Honor, may I publish Trial Exhibit 1569, which was
8 used with Dr. Weisenburger?

9 MS. MOORE: No objection.

10 THE COURT: Go ahead.

11 BY MR. STEKLOFF:

12 Q. So, Dr. Weisenburger, this was one of the articles that
13 you discussed yesterday, and it is titled "Lymphoid
14 Malignancies in Nebraska: A Hypothesis"; correct?

15 A. Yes.

16 Q. This is something -- this is -- a hypothesis is sort of --
17 is like a theory, correct, that needs to be tested?

18 A. Right.

19 Q. And you published this in the *Nebraska Medical Journal* in
20 August of 1985; right?

21 A. Yes.

22 Q. And you described for us yesterday how when you moved to
23 Nebraska, you were very interested in the increased amount of
24 non-Hodgkin's lymphoma that you were seeing; right?

25 A. Yes.

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1 Q. Okay. And so I want to show you one of the pages -- one
2 of the things you wrote in this paper. It might be --
3 hopefully my highlighting doesn't make it too hard to read, but
4 this is one of the things you wrote. You said (reading):

5 "The markedly increased risk of leukemia, 80 percent,
6 and lymphoma, 70 percent, in young farmers in Nebraska and
7 Wisconsin respectfully suggests that exposure to one or
8 more agricultural chemicals first introduced and used in
9 significant quantities in the late 1940s and early 1950s
10 may be important in the etiology" -- that's causation,
11 determining causation -- "of lymphoid malignancies in
12 farmers."

13 Correct?

14 A. Yes. Yes.

15 Q. And so when you started looking at this issue in 1985, you
16 were focused on what you called "agricultural chemicals" but
17 pesticides that were introduced in the 1940s and 1950s; right?

18 A. Yes, because I was thinking that there has to be a latency
19 in order to really see effects.

20 Q. And you previewed my next question, which is that you also
21 discussed yesterday that the average latency for pesticides is
22 20 years; right?

23 A. That's a guess.

24 Q. Well, it's not a guess. You showed us a blowup yesterday
25 with two curves, and you walked through and you said the

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1 average latency is 20 years; right?

2 **A.** I said it was an idealized curve, and I thought that
3 chronic exposure to pesticides like Roundup would have a curve
4 very similar to what we -- what we see for low-dose chronic
5 exposure to solvents. Okay?

6 We don't really ask -- we don't really know what the
7 median latency is for Roundup so, you know, we can only -- we
8 can only surmise from what we do know what it might be.

9 **Q.** And what you surmised yesterday when you were offering
10 opinions to the jury was 20 years; right?

11 **A.** 20 to 25 years, yes.

12 **Q.** 20 to 25 years.

13 And so -- I mean, earlier you said -- you used the phrase
14 "more likely than not"; right? Do you remember using that
15 phrase?

16 **A.** You'd have to tell me how I used it. I don't remember how
17 I used it.

18 **Q.** All right. We'll come back to that "more likely than not"
19 phrase later.

20 But 20 to 25 years average latency. That's what you think
21 is -- that's your best opinion about the latency associated
22 with Roundup or glyphosate; right?

23 **A.** Yes.

24 **Q.** So I want to walk through now the case-control studies
25 that you are relying on to form your opinion. Okay?

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1 **A.** Okay.

2 **Q.** All right. So let's start with McDuffie, which was
3 published in 2001; correct? Well, we can look at the exhibits.

4 This is -- I'll try to use the version that was used
5 yesterday. And it's in your binder. It's in your -- it should
6 be in that first binder TX447. Okay?

7 **MR. STEKLOFF:** And permission to publish the McDuffie
8 study, Your Honor.

9 **THE WITNESS:** What number is it?

10 **MR. STEKLOFF:** 447.

11 **THE WITNESS:** 447.

12 (Witness examines document.) Okay.

13 **MS. MOORE:** No objection.

14 **THE COURT:** Go ahead.

15 **BY MR. STEKLOFF:**

16 **Q.** Okay. So this is McDuffie. And if we turn to McDuffie,
17 and we'll pull this up on the screen for you, but they explain
18 the years of diagnoses of non-Hodgkin's lymphoma for the
19 patients that were studied in this study; correct?

20 **A.** Yes. You mean when the cases were accrued, when they were
21 diagnosed?

22 **Q.** Correct. So that's true in all of the case-control
23 studies, they went and they found people who had non-Hodgkin's
24 lymphoma; right?

25 **A.** Yes.

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1 Q. And then they tried to ask them questions to see whether
2 they had used pesticides in the past or not; right?

3 A. Yes.

4 Q. And so the year that -- they also recorded the years that
5 the patients were diagnosed with non-Hodgkin's lymphoma;
6 correct?

7 A. Yes.

8 Q. And so what I want to do now is in each of the studies,
9 the four studies that you are relying on to support your
10 opinion, tell the jury the years of the diagnoses. Okay?

11 A. Correct.

12 Q. Okay. And so in McDuffie, if we turn to page 1156, it
13 shows us that the patients were diagnosed between
14 September 1st, 1991, and December 31st, 1994; correct?

15 A. Yes.

16 Q. So if we went back 20 -- let's just say 20 years, not even
17 25 years, we would be talking 1971 to 1974; correct?

18 A. For what?

19 Q. For the average latency of these patients.

20 A. Well, that's not a proper way to look at things. I mean,
21 we should -- I mean, you can't subtract the latency from when
22 they were diagnosed. It's a median latency.

23 Q. Right. You said yesterday and today it's the average
24 latency; right?

25 A. Right.

WEISENBURGER - CROSS / STEKLOFF

1 Q. So the average latency for these patients if it's 20 years
2 would take you back to 1971 to 1974; correct?

3 A. Yes, but you can calculate actually how many years --
4 potential years they could have been exposed to glyphosate by
5 subtracting 1975 from 1991. So there was a potential for 16
6 years and then it goes to 19 years. Okay?

7 So, as I explained yesterday, you don't have to
8 necessarily -- in case-control studies you don't necessarily
9 have to meet the median latency because you already have cases.
10 So as I showed yesterday, that people in De Roos and all the
11 other studies had adequate time to be exposed to Roundup and to
12 develop non-Hodgkin's lymphoma. They were on the up slope of
13 the curve; right?

14 Q. You're saying that just conveniently every person in all
15 of these studies, their latency was less than 20 years; right?
16 That's basically what you're telling the jury now; right?

17 A. Well, that's one way to explain it if, in fact, the
18 latency -- the median latency is 20 years. It could be 15
19 years. I don't know what it is. It's long rather than short.

20 Q. Okay. And you, who wrote a paper about this that we saw
21 yesterday in 1992, to the best of your opinion, as someone who
22 has focused on this issue in your research, have told us that
23 your best opinion about the average latency for Roundup use
24 would be 20 to 25 years; right?

25 A. I didn't say that in my paper. Those were idealized

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1 curves and we just talked about chronic low-dose exposure and
2 high-dose exposure. The word "Roundup" never appears in that
3 paper.

4 Q. I agree the word "Roundup" never appears in that paper. I
5 think my question is a little different so I'll try to rephrase
6 it. Okay?

7 You have written about latency --

8 A. Right.

9 Q. -- and you published a paper about latency in 1992;
10 correct?

11 A. Yes.

12 Q. And you developed those curves that you showed to the jury
13 yesterday; right?

14 A. That is idealized curves to make a point. To make a
15 point.

16 Q. Right. And when you were making the point yesterday, you
17 said 20 to 25 years; right?

18 A. That's my best guess, 20 to 25 years, but I -- but we
19 really don't know what the median latency is for round up.

20 Q. Okay. But if you're right about 20 to 25 years, if you
21 went back 20 years, these patients would have been exposed to
22 pesticides starting between 1971 and 1974; correct?

23 A. No. They could have been exposed anytime in there.

24 Q. Including starting between 1971 and 1974; right?

25 A. Well, they were probably exposed to some pesticides during

1 that time, but they weren't exposed to Roundup during that
2 time.

3 Q. I agree because Roundup didn't even come on the market
4 until 1974; right?

5 A. Right.

6 Q. And we've heard from both you and Dr. Ritz that the
7 increase in Roundup use didn't happen until the mid-'90s;
8 right?

9 A. Well, it started -- it was on the market in 1975 and the
10 marked increase occurred in approximately 1995-'96 --

11 Q. Right.

12 A. -- right.

13 Q. Okay. Now, let's talk about the next study, which is the
14 De Roos study. Okay? And that is Exhibit 451.

15 **MR. STEKLOFF:** Permission to publish, Your Honor.

16 **MS. MOORE:** No objection, Your Honor.

17 **THE COURT:** Go ahead.

18 **BY MR. STEKLOFF:**

19 Q. So De Roos is the paper that you were a part of. We can
20 see your name right there on the front; right?

21 A. Yes.

22 Q. And I'll write "De Roos 2003."

23 And De Roos is actually one of the authors that is part of
24 the AHS as well; right?

25 A. Yes.

1 Q. The Agricultural Health Study; right?

2 A. Correct.

3 Q. And in the De Roos paper, you and your colleagues combined
4 data from three separate studies in different states; right?

5 A. Yes.

6 Q. Okay. And so if we turn to page 1 to 2, we can actually
7 see how that breaks down; right?

8 So it describes here (reading):

9 "The three case-control studies had slightly
10 different methods of subject recruitment."

11 Do you see that?

12 A. Yes.

13 Q. And part of that actually goes back to that proxy
14 question. Some of the studies relied more on proxy responses
15 than others; right?

16 A. Yes. Some studies used proxies and some studies didn't.

17 Q. And then some of the studies out of these three studies
18 also mailed out questionnaires; correct?

19 A. I think that's correct.

20 Q. And actually only received, say in some instances, less
21 than 70 percent of the questionnaires returned; right?

22 A. I don't -- I don't remember -- recall that.

23 Q. Okay. We can find that.

24 But that is -- if so, if they were only getting part of
25 the questionnaires in return, that's a limitation of these

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1 studies; right?

2 **A.** Well, it could be because it could lead to some selection
3 bias, but I'd like to look at the data I have. I don't
4 remember the data and I haven't reviewed those old papers for a
5 long time, the individual papers.

6 **Q.** Okay. Well, let's first talk about the dates here. The
7 first study that we can see was done in Nebraska. That was the
8 one that you were a part of directly; correct?

9 **A.** Nebraska was the last study actually.

10 **Q.** Right. But it's the first one referenced here; right?

11 **A.** Yeah.

12 **Q.** Okay. So Nebraska was between July 1983 and June 1986;
13 right?

14 **A.** Right.

15 **Q.** And if you went back 20 years from that, you'd be in 1963
16 to 1966; correct?

17 **A.** I would never do such a calculation because it doesn't
18 make any sense.

19 **Q.** But mathematically that's the correct calculation?

20 **A.** If you want to do it, fine, but it doesn't make any sense
21 to me.

22 **Q.** Okay.

23 **A.** Because, as I explained yesterday, these people in this
24 study also had sufficient time to be exposed on that up slope
25 of the curve.

WEISENBURGER - CROSS / STEKLOFF

1 Q. Right. They were -- the people who were being studied
2 about their Roundup use did use Roundup sometime after 1963 or
3 1966; right? They reported using Roundup; right? That's why
4 they're part of the Roundup analysis --

5 A. Right.

6 Q. -- correct?

7 A. Right.

8 Q. So they did use Roundup, but they also -- if they were
9 using pesticides back in the '60s, would have been using other
10 pesticides; right?

11 A. Yes.

12 Q. And that's why it's so important to adjust for other
13 pesticides in these studies; correct?

14 A. That's correct.

15 Q. Because if you don't adjust for the other pesticides, you
16 might not be able to identify what the real data is about
17 Roundup or glyphosate; correct?

18 A. Yes.

19 Q. So then after the -- not in order but part of the Nebraska
20 group there was also a study that was done in Iowa and
21 Minnesota; is that right?

22 A. Yes.

23 Q. And that was from 1981 to 1983?

24 A. Yes.

25 Q. And understanding that you don't like the value of this,

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1 20 years before that is 1961 to 1963; correct?

2 **A.** I'll take your word for it.

3 **Q.** Okay. And then the third study that was combined in the
4 De Roos study was in Kansas, and that was actually studying
5 non-Hodgkin's lymphoma diagnoses between 1979 and 1981; right?

6 **A.** Yes.

7 **Q.** And these were largely farmers being studied; right?

8 **A.** Yes.

9 **Q.** So they were likely using pesticides for many years;
10 correct?

11 **A.** Yes.

12 **Q.** And so these people in this study were clearly using
13 pesticides before 1979; right?

14 **A.** Yes, probably they were.

15 **Q.** And the average latency is 20 years; right?

16 **A.** Yes.

17 **Q.** Okay. So 20 years before this is 1959 to 1961; right? Is
18 that math correct?

19 **A.** I guess it's correct. I don't -- I don't understand what
20 you're doing, but I guess it's correct.

21 **Q.** Okay. Let's look at the next study, which is the
22 Hardell study, and that is Exhibit 499.

23 **MR. STEKLOFF:** Permission to publish, Your Honor.

24 **THE COURT:** Any objection?

25 **MS. MOORE:** No, Your Honor.

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1 **THE COURT:** Go ahead.

2 **BY MR. STEKLOFF:**

3 **Q.** And if you look at page -- well, first of all, let's just
4 see. This is the Hardell study. This is the second
5 Hardell study; right? Because I think we heard from Dr. Ritz
6 there were two --

7 **A.** Yes.

8 **Q.** -- because they were both small so they needed to get more
9 numbers; right?

10 **A.** Correct.

11 **Q.** And this was published in 2002; correct?

12 **A.** Yes.

13 **Q.** And if you look at page 1044 in the bottom left, it shows
14 that the diagnoses of NHL occurred between 1987 and 1990;
15 right?

16 **A.** Yes.

17 **Q.** And the math on that takes you from -- 20 years before
18 that is 1967 to 1970; right?

19 **A.** Yes.

20 **Q.** And then the last study that you rely upon is the Eriksson
21 study; correct?

22 **A.** Yes. That's the last -- I mean, there were a couple other
23 studies too, but that's one of them.

24 **Q.** Right. The other studies were Cocco and Orsi. You were
25 much less focused on those; right?

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1 **A.** Yes, because they're small and they were not -- and the
2 results were not significant.

3 **Q.** Right. And you're less -- I'll stop there.

4 Let's look at the Eriksson paper, which is Exhibit 452.

5 **MR. STEKLOFF:** And permission to publish, Your Honor.

6 **THE COURT:** Go ahead.

7 **MS. MOORE:** No objection.

8 **BY MR. STEKLOFF:**

9 **Q.** And the Eriksson paper, if we look at page 1657, shows us
10 that the diagnoses there were between 1999 and 2002; correct?

11 **A.** Yes.

12 **Q.** And 20 years, just as a pure mathematical statement,
13 20 years before that is 1979 to 1982; right?

14 **A.** Yes.

15 (Pause in proceedings.)

16 **MR. STEKLOFF:** One moment, Your Honor.

17 (Pause in proceedings.)

18 **BY MR. STEKLOFF:**

19 **Q.** So let's look at -- can we go back, please, to Hardell,
20 which is Exhibit 499?

21 Permission to publish.

22 And if we look at page 1044 in the Hardell study.

23 Dr. Weisenburger, we talked about this issue of questionnaires,
24 and do you see in the section there's a section called

25 "Assessment of Exposure"?

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1 A. Yes.

2 Q. And it talks about that a questionnaire was mailed out to
3 the recipients?

4 A. (Witness examines document.) Yes.

5 Q. And can you look through the study and tell me the
6 percentage -- oh, if you look on the next page, in this study
7 it shows that 91 percent and 84 percent of the people who were
8 sent the questionnaire returned the questionnaire; correct?

9 A. Yes. That's pretty good.

10 Q. That is pretty good. In some of the other studies do you
11 recall that it's actually lower?

12 A. I don't recall.

13 Q. Okay.

14 A. I'm sure you're going to show me.

15 Q. If I can find it, I'm going to show you. I know it
16 exists.

17 And in De Roos, that's one of the papers -- that's the
18 paper that you were an author on, it also breaks down the proxy
19 respondents; is that right? Do you recall that?

20 A. I'm sure it does. I don't have it handy.

21 Q. Okay. So look at Tab 451.

22 MR. STEKLOFF: And permission to publish, Your Honor.

23 THE COURT: Go ahead.

24 MS. MOORE: No objection.

25 \\\

WEISENBURGER - CROSS / STEKLOFF

1 **BY MR. STEKLOFF:**

2 **Q.** At Table 2 it breaks down among the cases and the controls
3 how many proxy respondents there were. Cases, that's the
4 people diagnosed with non-Hodgkin's lymphoma in Table 2 at the
5 bottom. It shows that of the cases, 37 percent the questions
6 had to be answered by proxies; correct?

7 **A.** (Witness examines document.) So proxies made up, it looks
8 like, 7.5 percent of the cases and 3.2 percent of the controls.

9 **Q.** Well, if you look on your screen, maybe we're looking at
10 different numbers, do you see it says "Respondent Status,"
11 "Self-Respondent," "Proxy Respondent."

12 **A.** Oh, I see. I see.

13 **Q.** So it was 37 percent, 37.4 percent in the cases, and
14 45 percent in the controls; right?

15 **A.** Yes, that's correct.

16 **Q.** Okay. And you told us before that's the potential
17 limitation of this study; right?

18 **A.** It is a potential limitation. We looked at it in the
19 NAPP, and it really didn't -- the numbers didn't change between
20 proxy and self-respondent.

21 **Q.** Right.

22 **A.** So, you know, it's always a consideration, but that's why
23 it was adjusted for in the NAPP.

24 **Q.** So I want to talk to you briefly, Dr. Weisenburger, about
25 the Agricultural Health Study. Okay?

WEISENBURGER - CROSS / STEKLOFF

1 In the Agricultural -- ah, thank you.

2 Okay. So before we do that -- I knew there was another
3 questionnaire -- let's look at the McDuffie study.

4 **MR. STEKLOFF:** Before we publish, permission to
5 publish, Your Honor, Exhibit 447.

6 **MS. MOORE:** No objection.

7 **THE COURT:** Go ahead.

8 **BY MR. STEKLOFF:**

9 **Q.** And on that one, if we look at Table 2, it shows the
10 percentage of questionnaires that were returned under -- sorry,
11 not Table 2 -- under "Results," and what it told us in this
12 study, McDuffie -- this is one of the ones that you used in the
13 NAPP combining data; correct?

14 **A.** Right.

15 **Q.** And it says that data from -- so this study, McDuffie in
16 Canada, used postal questionnaires; correct?

17 **A.** Correct.

18 **Q.** And of the 517 NHL cases, only 67 percent, still okay, but
19 67 percent returned the questionnaires; right?

20 **A.** Yes.

21 **Q.** And 48 percent of the control group returned the
22 questionnaires?

23 **A.** Yes.

24 **Q.** And that also, you told us earlier, could result in bias;
25 right?

1 A. It's possible.

2 Q. And do you know -- you haven't reviewed Dr. Ritz's
3 testimony to know if she told the jury anything about these
4 limitations?

5 A. I don't.

6 Q. Okay. So let's briefly talk about the Agricultural Health
7 Study. I think we heard some of your criticisms of the
8 Agricultural Health Study yesterday; right?

9 A. Yes.

10 Q. And the jury has seen the Agricultural Health Study in
11 2005. It reported that there was no association between
12 glyphosate and non-Hodgkin's lymphoma; correct?

13 A. Yes.

14 Q. And in 2018, after more years, it reported same thing, no
15 association between glyphosate and non-Hodgkin's lymphoma;
16 correct?

17 A. That's correct.

18 Q. And just to be clear, you respect the researchers and
19 doctors who are associated with the National Cancer Institute;
20 right?

21 A. Yes.

22 Q. And even more specifically, you respect the doctors and
23 researchers that are part of that 2018 Agricultural Health
24 Study publication; right?

25 A. Yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. Okay. So let's -- I'm going to shift gears away from the
2 epidemiology and talk a little bit about some of the topics
3 that you finished up with this morning on direct, which is
4 specifically what you do as a pathologist. Okay?

5 THE COURT: Mr. Stekloff, let me ask you, about
6 roughly how much longer do you have? I'm wondering if we
7 should take another quick break this morning.

8 MR. STEKLOFF: Overall, Your Honor?

9 THE COURT: Yes.

10 MR. STEKLOFF: That's such a dangerous question. I
11 have at least --

12 THE COURT: I won't hold you to it.

13 MR. STEKLOFF: I have at least 45 minutes to an hour I
14 would say.

15 THE COURT: Okay. Why don't we go ahead and take
16 another five-minute break. People can grab their coffee if
17 they need to or anything like that, and we'll be back in five
18 minutes.

19 THE CLERK: All rise.

20 (Recess taken at 11:03 a.m.)

21 (Proceedings resumed at 11:07 a.m.)

22 (Proceedings were heard out of the presence of the jury:)

23 THE COURT: We'll wait one more minute for plaintiff's
24 counsel to come in.

25 (Pause in proceedings.)

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1 **THE COURT:** Dr. Weisenburger, you can go ahead and
2 have a seat.

3 Go ahead and bring in the jury.

4 (Proceedings were heard in the presence of the jury:)

5 **THE CLERK:** Please be seated.

6 **THE COURT:** Okay. You can resume.

7 **MR. STEKLOFF:** Thank you, Your Honor.

8 **Q.** So, Dr. Weisenburger, I want to talk to you a little bit
9 about pathology. There was very little about it on your
10 direct, and I just want to follow-up. Okay?

11 **A.** Okay.

12 **Q.** So as a pathologist, in your clinical care, both at the
13 University of Nebraska and at City of Hope, your focus is on
14 diagnosing different conditions; correct?

15 **A.** Yes.

16 **Q.** And so what happens, just so the jury understands, is
17 that, for example, when a biopsy is taken, you are able to
18 slice a piece of that biopsy and then review it under a
19 microscope; correct?

20 **A.** Yes.

21 **Q.** There are different stains so you as a pathologist can --
22 and your colleagues -- can use different stains to look for
23 different characteristics; right?

24 **A.** Yes.

25 **Q.** And then based on that, looking through a microscope, you

WEISENBURGER - CROSS / STEKLOFF

1 will be able to make -- or potentially be able to make a
2 diagnosis of a condition; right?

3 **A.** Yes.

4 **Q.** And so when we're talking about non-Hodgkin's lymphoma,
5 that's what happens? Let's just use Mr. Hardeman. That core
6 biopsy was sent to a pathologist who stained it and looked
7 under a slide and diagnosed Mr. Hardeman with non-Hodgkin's
8 lymphoma; correct?

9 **A.** Yes.

10 **Q.** And I think you told us earlier that's why typically
11 you're not involved in speaking to patients; right?

12 **A.** Correct. We work -- our work is mainly in the laboratory
13 behind the scenes.

14 **Q.** Yes. And you're also, then, not responsible for treating
15 patients. So once that diagnosis of non-Hodgkin's lymphoma
16 happens, the patient is then treated by an oncologist; correct?

17 **A.** Yes.

18 **Q.** Maybe in consultation with other types of doctors
19 depending on the specifics of the patient; right?

20 **A.** But often what we tell them determines how they treat the
21 patient. So in many ways, they treat the patients based on
22 what we tell them.

23 **Q.** Exactly. So you have an important role in the treatment
24 of patients with non-Hodgkin's lymphoma; right?

25 **A.** Yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. Okay. And when you look through any tissue on a slide,
2 you cannot tell whether someone used Roundup; correct?

3 A. You cannot, that's correct.

4 Q. There is no what's called a biomarker, there's no marker
5 in a slide, in a cell, that says "This person used Roundup as
6 compared to another person"; correct?

7 A. Yes.

8 Q. Yes, correct; right?

9 A. Yes, that's correct.

10 Q. Okay. And there's no test that you can use, there's no
11 stain, there's no other test in any way that you can use to
12 tell whether a patient used Roundup or not; correct?

13 A. Yes, that's correct.

14 Q. And that's all true with respect to Mr. Hardeman as well;
15 correct?

16 A. Yes.

17 Q. There's nothing in any of his -- in his biopsy -- sorry --
18 from his biopsy, from that tissue that would tell a pathologist
19 or anyone else looking at that tissue whether or not he used
20 Roundup; correct?

21 A. Yes. And that's the reason why I don't try to tell
22 oncologists those kind of things because I don't have that
23 information.

24 Q. Right. But you also don't tell them to seek out that
25 information; correct?

WEISENBURGER - CROSS / STEKLOFF

1 **A.** I don't because they -- it's not important to them.
2 They're interested in treating the patient, not trying to
3 figure out what happened 10 or 20 years ago.

4 **Q.** I mean, Dr. Weisenburger, I don't want to redo everything
5 we did this morning, but you told us this morning oncologists
6 would want to know the cause of their patient's NHL if they
7 could; right?

8 **A.** If it's obvious.

9 **Q.** Only if it's obvious?

10 **A.** Yeah, because they wouldn't know otherwise.

11 **Q.** They would know if they ask; right?

12 **A.** They might not even know if they asked.

13 **Q.** Okay. Now, Dr. Weisenburger, you're not able to look at
14 anything in Mr. Hardeman's slides -- all the questions that I'm
15 asking about non-Hodgkin's lymphoma, they also apply to diffuse
16 large B-cell lymphoma; correct?

17 **A.** Yes.

18 **Q.** It doesn't matter -- I mean, whether you have diffuse
19 large B-cell lymphoma or any other type of non-Hodgkin's
20 lymphoma, there's nothing a pathologist can do to see that a
21 patient used or did not use Roundup; correct?

22 **A.** That's correct.

23 **Q.** And so if you had two different patients, two different
24 tumors with diffuse large B-cell lymphoma and I told you one
25 used Roundup, the other didn't use Roundup, when you're looking

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1 through the slides, you couldn't tell which was which; right?

2 **A.** That's correct.

3 **Q.** You would have no idea which one used Roundup; right?

4 **A.** I wouldn't.

5 **Q.** Okay. And I think you talked a little bit about this this
6 morning, but that's, in fact, why you didn't review

7 Mr. Hardeman's -- the slides where you were able to make a

8 diagnoses of non-Hodgkin's lymphoma, you didn't have those and

9 you didn't review those before completing your opinions in this

10 case; right?

11 **A.** Yes. I try to do that before I complete my opinion, but I
12 wasn't able in this case.

13 **Q.** Okay. And you reviewed the pathology report from
14 Mr. Hardeman's doctor back in 2015; correct?

15 **A.** Yes.

16 **Q.** You also know that Dr. Arber, an expert for Monsanto,
17 reviewed those slides; correct?

18 **A.** Yes.

19 **Q.** And you respect Dr. Arber; right?

20 **A.** Yes, I do.

21 **Q.** You, I think, know him because I think you run in the same
22 circles; right?

23 **A.** Yes.

24 **Q.** And you see him at conferences, for example; correct?

25 **A.** Yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. And he's a well-respected pathologist; right?

2 A. Yes, he is.

3 Q. Doctor -- oh, I also want to ask you while we're on this
4 topic, Dr. Levine, she's a very well-respected oncologist;
5 right?

6 A. Yes, she is.

7 Q. She, in fact, hired you at City of Hope; right?

8 A. Yes, she did.

9 Q. She also until recently was the chief medical officer;
10 correct?

11 A. Yes.

12 Q. So she in some ways oversaw all of the oncologists, all of
13 the pathologists, and all of the elite doctors who practice at
14 City of Hope; right?

15 A. That's correct.

16 Q. And you respect her and her opinions; correct?

17 A. Yes, for the most part I do.

18 Q. You disagree with her on some opinions to be clear, but
19 you respect her?

20 A. Yes.

21 Q. Okay. Now, let's talk about idiopathic. You used that
22 word toward the end of your direct. Do you recall that?

23 A. Yes.

24 Q. And before we do that, let's talk about what a risk factor
25 is as compared to a cause because I don't think that's been

1 made very clear. Okay?

2 **A.** Okay.

3 **Q.** So on your chart for your differential, you had known risk
4 factors; right?

5 **A.** Yes.

6 **Q.** And a risk factor is something that statistically
7 increases a person's likelihood of developing a disease; right?

8 **A.** It predicts it, yes.

9 **Q.** Okay. It doesn't mean that it automatically is the cause
10 of the disease. It just statistically predicts a greater
11 likelihood that the person might develop the disease; right?

12 **A.** Yes, that's correct.

13 **Q.** Okay. So if I write "increases likelihood of disease," is
14 that a fair characterization?

15 **A.** Yes.

16 **Q.** Now, a cause is something different; right? The way
17 you're using cause in this courtroom; correct?

18 **A.** Yes. I have -- I consider there are risk -- there are
19 risk factors that are noncausative. We talked about that
20 yesterday. And then there are risk factors that are actually
21 causes of non-Hodgkin's lymphoma.

22 **Q.** Well, that's -- but that's a different question. Let's
23 talk about that.

24 First of all, you can't point me to any peer-reviewed
25 literature that differentiates between a causative risk factor

1 and a noncausative risk factor; right?

2 **A.** Probably not.

3 **Q.** Okay. But regardless of whether you view something as a
4 causative risk factor -- so let's just use an example.

5 Hepatitis B you agree is, in your words, a causative risk
6 factor; right?

7 **A.** Yes.

8 **Q.** For non-Hodgkin's lymphoma --

9 **A.** Yes.

10 **Q.** -- correct?

11 **A.** Yes.

12 **Q.** If someone had a history of active hepatitis B, it
13 increases their likelihood of developing non-Hodgkin's
14 lymphoma; right?

15 **A.** No. If they have chronic active hepatitis at the time
16 they're diagnosed with large B-cell lymphoma, then it's likely
17 the cause.

18 **Q.** Okay.

19 **A.** But just having a history of it doesn't really increase
20 risk.

21 **Q.** Okay. You don't think that there are studies that show
22 that you're at an increased risk if you have a history of
23 hepatitis B?

24 **A.** If you look carefully at the studies, it's the people who
25 have chronic active hepatitis either B or C that get

1 non-Hodgkin's lymphoma. If people are immune to the
2 hepatitis B or hepatitis C and they don't have active chronic
3 infection, they're not at increased risk for non-Hodgkin's
4 lymphoma.

5 **Q.** We're going to talk about hepatitis B and hepatitis C, so
6 I'll rephrase my question.

7 If you have active hepatitis B, it increases your risk of
8 developing non-Hodgkin's lymphoma; correct?

9 **A.** Yes.

10 **Q.** If you have active hepatitis B, you still could never
11 develop non-Hodgkin's lymphoma; right?

12 **A.** Yeah. The chances are that you wouldn't.

13 **Q.** Exactly.

14 And if you have active hepatitis B, just because you have
15 active hepatitis B, it doesn't mean automatically that that is
16 the cause of your non-Hodgkin's lymphoma; correct?

17 **A.** Well, you'd have to look at all the other causes. You'd
18 have to -- you'd have to do an analysis like I did.

19 **Q.** Okay. Just because you had exposure to a causative risk
20 factor does not automatically mean that causative risk factor
21 is, in fact, what caused your non-Hodgkin's lymphoma; right?

22 **A.** That's true.

23 **Q.** So that's why it's important to distinguish between a risk
24 factor and a cause because you can be exposed to a causative
25 risk factor and it still may not be the cause of your

1 non-Hodgkin's lymphoma; right?

2 **A.** That's possible.

3 **Q.** Okay. So a cause is something different, and I want to
4 focus on a cause in an individual like Mr. Hardeman.

5 A cause is something you are saying was the thing that
6 actually more likely than not led to the development of
7 non-Hodgkin's lymphoma; right?

8 **A.** Yes.

9 **Q.** Without that, in your opinion, he probably wouldn't have
10 developed non-Hodgkin's lymphoma; right?

11 **A.** It would certainly be less likely.

12 **Q.** Okay. So cause equals -- can I write the thing that led
13 to non-Hodgkin's lymphoma?

14 **A.** Yes.

15 **Q.** But you agree with me, Dr. Weisenburger, that there is a
16 difference between a risk factor and the actual cause of a
17 person's non-Hodgkin's lymphoma; right?

18 **A.** Yeah. Well, risk factors I think that increase risk and
19 then, you know, usually there's one thing or -- one thing that
20 causes the non-Hodgkin's lymphoma but sometimes you don't have
21 any risk factors, and in those cases you say, "Well, gee, I
22 don't know what caused it. It's idiopathic."

23 **Q.** We're going to talk about that in a moment.

24 And just to be clear, when you're talking about cause
25 using your differential method that you used in this courtroom,

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1 you're saying to the jury, and you used these words, more
2 likely than not it's Roundup that led to his NHL; right?

3 **A.** Yes.

4 **Q.** And more likely than not is 50.1 percent; correct?

5 **A.** Anything above that.

6 **Q.** Yeah. And in your clinical practice -- well, let's
7 actually use peer-reviewed journals.

8 In peer-reviewed journals, the standard is not
9 50.1 percent; right?

10 **A.** No. That's a legal standard, 51 -- 50.1, that's a legal
11 standard. It's not a medical standard.

12 **Q.** Okay. Also, if you have patients, if something is
13 50.1 percent, you don't go tell them, "This is the cause of
14 your non-Hodgkin's lymphoma"; right?

15 **A.** I don't do this in my clinical practice, but if --

16 **Q.** Well, let me ask a different question about cause. You do
17 make diagnoses; right?

18 **MS. MOORE:** Excuse me, Your Honor. He was in the
19 middle of a word when he interrupted him.

20 **THE COURT:** Sustained.

21 You can finish your answer.

22 **THE WITNESS:** I lost my train of thought.

23 **BY MR. STEKLOFF:**

24 **Q.** You were saying that in your clinical practice, you
25 don't -- I think you were saying you don't --

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1 **A.** So I'll give you a hypothetical. So what if a patient has
2 pneumonia or let's say what if the patient has lung cancer.
3 Okay? And I look at the lung cancer and I say, "It's lung
4 cancer." And the patient has a 40-year history of smoking
5 three packs a day. You know, it's more likely than not that
6 the smoking caused the lung cancer because we know smoking is a
7 strong risk factor for lung cancer.

8 So it's the same kind of -- it's the same kind of logic.
9 Okay? We can't be absolutely sure that smoking caused the
10 cancer, but it's more likely than not that it did cause the
11 cancer. In fact, it's very likely that it caused the cancer.

12 **Q.** Right. Higher than 50.1 percent; right?

13 **A.** Yeah, probably higher than 51 percent -- 50.1 percent.

14 **Q.** Okay. And what you do focus on in your clinical care is
15 making diagnoses; right?

16 **A.** Yes.

17 **Q.** When you are making a diagnosis, if it is 50.1 percent,
18 you don't go tell the other doctors this is the diagnosis. You
19 run other tests, right?

20 **A.** For making diagnosis we have to be much more sure than
21 that, absolutely.

22 **Q.** Let's now talk about idiopathic. Idiopathic means the
23 cause is unknown, correct?

24 **A.** Yes.

25 **Q.** And you in your career have diagnosed and been involved in

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1 the treatment of thousands of patients with non-Hodgkin's
2 lymphoma; is that fair?

3 **A.** Yes.

4 **Q.** And is it fair to say that probably at least 70 percent of
5 the cases of non-Hodgkin's lymphoma that you have diagnosed
6 have been idiopathic?

7 **A.** Well, that's a guesstimate that I made when asked. You
8 know, it's -- it is a guesstimate. I never sat down and tried
9 to figure that out but, you know, if you look at all the
10 causes, it's probably a good guesstimate.

11 **Q.** Right. But what I want to be clear about is that means
12 that 70 percent, guesstimate, of the patients that you have
13 been -- treated, the doctors were not able to tell the patient
14 what the cause of his or her non-Hodgkin's lymphoma was, right?

15 **A.** Yes, that's true. But that is often because they don't do
16 a very detailed history and analysis to try to figure out what
17 it is. So, you know, it might be less if they did a very
18 detailed history and, you know, asked about occupations and
19 exposures and all those things. It might -- it might be less,
20 but, you know, I think in today's practical world, it is
21 probably about 70 percent.

22 **Q.** You agree, though, that the cause of a patient's
23 non-Hodgkin's lymphoma is unknown in most cases, right?

24 **A.** Yes.

25 **Q.** And in the other approximately 30 percent, just to be

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1 clear, it is things like Epstein-Barr or HIV or the other
2 autoimmune diseases or viral infections or hepatitis, right?

3 **A.** Yeah, the things that are obvious when you examine the
4 patient and take the history.

5 **Q.** It is not Roundup or glyphosate, correct?

6 **A.** What is not Roundup or glyphosate?

7 **Q.** In the other 30 percent when your patients -- where it
8 hasn't been idiopathic, it has not been --

9 **A.** No. Because as we said, physicians don't ask about
10 Roundup. They don't even often ask about pesticides. Unless
11 it is a farmer and he volunteers it, they might ask about it.
12 So often that's the reason physicians don't know what the
13 causes are because they don't pursue it in detail.

14 **Q.** Of the 70 percent that are idiopathic, you agree that
15 those patients still have some risk factors in many of those
16 cases for developing non-Hodgkin's lymphoma, right?

17 **A.** Sure. We know their age and their sex and their race, so
18 those are some risk factors that we do know. We know their
19 weight; but after that, we sometimes don't know anything more
20 than that.

21 **Q.** Well, they may have had a history -- let's not talk about
22 hepatitis. But they may have had a history of some other
23 autoimmune disease or viral problem or immunosuppression
24 problem that may have increased their risk, but they are still
25 considered idiopathic, correct?

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1 **A.** No. If you know they have a factor that would have
2 increased their risk and it is a real causative factor,
3 obviously you would have to take a detailed history and look at
4 the timeline and know the whole story; but, you know, if they
5 had rheumatoid arthritis and they were being treated and then
6 developed non-Hodgkin's lymphoma, you would probably attribute
7 that non-Hodgkin's lymphoma to the rheumatoid arthritis or the
8 treatment for rheumatoid arthritis. You wouldn't say that was
9 idiopathic.

10 **Q.** Let's say someone had a history of chronic inflammation
11 but that wasn't current. You wouldn't know whether it was the
12 chronic -- you wouldn't say that that was the cause. It was a
13 risk factor, but you wouldn't go tell that patient that was the
14 cause, right?

15 **A.** I mean, you would have to investigate it more clearly.

16 **Q.** Okay. Now, in people who are idiopathic -- who have
17 idiopathic cancers, where you can't identify the cause, they
18 still have genetic mutations that occur that lead to the
19 development of non-Hodgkin's lymphoma, right?

20 **A.** Yes.

21 **Q.** And it is just unexplained in some situations why those
22 genetic mutations occurred, right?

23 **A.** Yes.

24 **Q.** And even people who use Roundup could have unexplained
25 genetic mutations that occur, correct?

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1 **A.** It's possible. I don't -- I don't know. We don't know
2 the answer to that question.

3 **Q.** Okay. To the best of your knowledge the vast majority of
4 patients with non-Hodgkin's lymphoma never were exposed to
5 Roundup, correct?

6 **A.** I think -- yes, I think that's correct.

7 **Q.** To the best of your knowledge, the vast majority of
8 patients with diffuse large B-cell lymphoma were never exposed
9 to Roundup, correct?

10 **A.** I don't really know the answer to that. My guess is that
11 most of them wouldn't have been exposed, at least at high doses
12 like Mr. Hardeman.

13 **Q.** And 70 percent of those patients by your estimate you
14 can't tell what the cause is. It was idiopathic, right?

15 **A.** Yes, more or less.

16 **Q.** And, in fact, using your differential, had Mr. Hardeman
17 never been exposed to Roundup, you would say his NHL was
18 idiopathic, right?

19 **A.** Well, I would probably say, Well, he's obese. Maybe that
20 was the cause, but I wouldn't be very sure, okay, because
21 everybody has some risk for developing non-Hodgkin's lymphoma,
22 even people with no risk factors.

23 **Q.** Can you please turn to your binder 3, and there is a
24 tab -- I will tell you what tab it is. This is your
25 December 20th testimony.

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1 **A.** Volume 3?

2 **Q.** Yes, Volume 3, Dr. Weisenburger. And this is tab
3 Number 9. And I'm looking at page 96 lines 20 through 25.

4 **A.** Page 96?

5 **Q.** Yes, Dr. Weisenburger.

6 **MR. STEKLOFF:** Your Honor, I would ask for permission
7 to read page 96, lines 20 through 25.

8 **THE COURT:** Any objection?

9 **MS. MOORE:** No, Your Honor.

10 **THE COURT:** Go ahead.

11 **BY MR. STEKLOFF**

12 **Q.** So you were asked, Dr. Weisenburger: So if you have a
13 patient that has the same background as Mr. Hardeman but no
14 Roundup exposure, I should say, what caused his non-Hodgkin's
15 lymphoma?

16 And your answer was: We wouldn't know. It would be
17 considered idiopathic.

18 Correct?

19 **A.** Yeah, I would still stand by that.

20 **Q.** Okay. So you agree that Mr. Hardeman could have been
21 diagnosed with the exact same diffuse large B-cell lymphoma
22 without exposure to Roundup, correct?

23 **A.** It's possible, not as likely but it is possible.

24 **Q.** Let's look at that same deposition, page 93, lines 1
25 through 5.

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1 **MR. STEKLOFF:** Permission to read, Your Honor.

2 **THE COURT:** Any objection?

3 **MS. MOORE:** No, Your Honor.

4 **BY MR. STEKLOFF**

5 **Q.** And you were asked: And you would agree that Mr. Hardeman
6 could have been diagnosed with the exact same diffuse large
7 B-cell lymphoma without exposure to Roundup, true?

8 And your answer was: It's possible.

9 Right?

10 **A.** It is possible.

11 **Q.** So I want to talk about your -- going into the risk
12 factors in your -- in the differential that you used here in
13 the courtroom, okay?

14 **A.** All right.

15 **Q.** We agree that age is a risk factor, right?

16 **A.** Yes.

17 **Q.** You agree that diffuse large B-cell lymphoma -- developing
18 diffuse large B-cell lymphoma is a function of age, correct?

19 **A.** Yes. The older you get, the higher your risk.

20 **Q.** Okay. And Mr. Hardeman was 66 when he was diagnosed with
21 diffuse large B-cell lymphoma, right?

22 **A.** Yes.

23 **Q.** And being above 60 puts him at an increased risk of
24 developing it, right?

25 **A.** Yes.

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1 Q. Developing --

2 A. Yes.

3 Q. Okay. But you, under your differential, would never say
4 that age is the cause of someone's non-Hodgkin's lymphoma,
5 right?

6 A. I would not.

7 Q. You agree that weight can be a risk factor for developing
8 non-Hodgkin's lymphoma, correct?

9 A. Yes.

10 Q. And you agree it was a risk factor for Mr. Hardeman,
11 correct?

12 A. Yes.

13 Q. And you said that gave him a 30 percent chance of -- an
14 increased risk of 30 percent of developing the diffuse large
15 B-cell lymphoma that he developed, correct?

16 A. Yes.

17 Q. But you ruled that out based on the 30 percent, right?

18 A. No. I thought it was a minor risk factor.

19 Q. So it may have had a minor contribution to his development
20 of diffuse large B-cell lymphoma?

21 A. It is possible.

22 Q. Okay. Now, gender is a risk factor, right?

23 A. Yes.

24 Q. But you would never say -- if you are male, you are more
25 likely to develop non-Hodgkin's lymphoma, right?

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1 A. True.

2 Q. But you would never say that that was the cause, correct?

3 A. I wouldn't.

4 Q. Clearly there are things about being a male as compared to
5 a female that increase your chance of developing some genetic
6 mutation, correct?

7 A. It must be, but we don't know what it is.

8 Q. Same with age, right? The longer you live, the more
9 likely you are to develop a -- to have a genetic mutation that
10 leads to non-Hodgkin's lymphoma, correct?

11 A. That is probably one of the reasons, yes.

12 Q. Okay. And same with race, that is another thing you
13 mentioned yesterday, right?

14 A. Yes.

15 Q. But you would never consider age, gender or race the cause
16 of someone's non-Hodgkin's lymphoma, correct?

17 A. I wouldn't tell them that that was the cause, no.

18 Q. Right. It would be idiopathic, correct?

19 A. Yes. It would be idiopathic, if there were no other risk
20 factors.

21 Q. But in Mr. Hardeman's case, all of those things -- his
22 age, his gender and his race -- statistically increased his
23 chances of developing diffuse large B-cell lymphoma, right?

24 A. Yes, compared to people who don't have those
25 characteristics.

WEISENBURGER - CROSS / STEKLOFF

1 Q. So let's talk for a moment about hepatitis B. Hepatitis B
2 is a risk factor for the development of non-Hodgkin's lymphoma,
3 right?

4 A. Yes, chronic active infection with hepatitis B is a risk
5 factor.

6 Q. And you agree that hepatitis B infection is also a -- is
7 also a causative risk factor, right?

8 A. Yes.

9 Q. So from -- well, let's talk about how hepatitis B works.
10 People can be exposed to hepatitis B, correct?

11 A. Right.

12 Q. And then at some point it may be active in their
13 bloodstream, right?

14 A. Right. So they get exposed to hepatitis B, and they can
15 have a mild illness or no illness and become immune to it,
16 okay. That's probably the most common scenario or they can get
17 a chronic active infection in their liver, which leads to
18 hepatitis and cirrhosis.

19 Q. Well, with hepatitis B, while it is active -- if it is
20 active, it can cause genetic mutations, correct?

21 A. If you have a chronic active infection with hepatitis B,
22 yes, that's true. If you just have an infection and recover
23 from it and you become immune to it, it's highly unlikely.

24 Q. And you told us yesterday that Mr. Hardeman was exposed to
25 hepatitis B in 19 -- I think you said 1966, right?

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1 A. We don't really know, but that's the best guess, yes.

2 Q. Sometime in the mid 1960s is the best guess.

3 A. Probably. He didn't really find out until 2005 that he
4 had hepatitis B or C. So it is just a guestimate going
5 backwards, but that is probably the best guess.

6 Q. Right. And you don't know during that period from 1966 to
7 2005 if, at any point, it was an active infection impacting
8 him -- his liver and the rest of his body, right?

9 A. With what.

10 Q. With hepatitis B?

11 A. We don't know.

12 Q. And if it was, it could have been causing genetic
13 mutations during that time period, correct?

14 A. Yes, it could have.

15 Q. Okay. And now you told the jury that the fact that in
16 2005 it was not active meant that he was immune to it, correct?

17 A. All the -- we don't know what the actual test results
18 were, but his physicians did testing for hepatitis B and
19 hepatitis C, and they told him that he was immune to
20 hepatitis B. So they focused on hepatitis C.

21 Q. But with both hepatitis B and hepatitis C, those
22 conditions, even if they are not apparent on a test that is
23 run, they can still be in low levels in your bloodstream but
24 undetectable, right?

25 A. That's true.

WEISENBURGER - CROSS / STEKLOFF

1 Q. So even with hepatitis C after you go through that
2 antiviral therapy and then you get a negative test on the tests
3 that we -- that you showed yesterday, there still could be
4 hepatitis C that is sort of on very low levels undetectable in
5 the bloodstream, right?

6 A. Yes, or in the liver, yes.

7 Q. Okay. And that's exactly why in Mr. Hardeman's case the
8 doctors in 2015 wanted to make sure it didn't come back, right?

9 A. Yes.

10 Q. That's why they treated him so his hepatitis B wouldn't
11 come back after his diagnosis, correct?

12 A. Yes.

13 Q. And that's why they tested him for his hepatitis C, to
14 make sure issue it didn't come back, right?

15 A. Yes.

16 Q. So, in fact, when you tell the jury that he is immune,
17 that's not completely accurate, right, because it may have
18 still been there and it may have returned, correct?

19 A. Well, by immune I don't mean that it went away. What you
20 mean by immune is that the body keeps the virus in check and
21 doesn't allow it to expand or cause disease. So that's the way
22 it is with viruses. Sometimes they persist at low levels in a
23 latent state kind of hiding in certain cells in the body, and
24 the immune system keeps them there, and it doesn't allow them
25 to cause disease. And that's true of hepatitis B and

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1 hepatitis C.

2 Q. So that's what you mean by immune?

3 A. That's what I mean by immune.

4 Q. So -- that wasn't clarified either yesterday or today,
5 right?

6 A. I'm happy we clarified it.

7 Q. Okay. I'm happy we clarified it as well.

8 So going back to hepatitis B, you agree that someone who
9 has, at some point, an active hepatitis B infection, it can
10 cause genetic mutations, correct?

11 A. Yes.

12 Q. You can't rule out that at some point between 1966 and
13 2005 Mr. Hardeman had an active hepatitis B infection, correct?

14 A. I can't. We don't know -- we don't know.

15 Q. And so you can't rule out that if he had an active
16 hepatitis B infection at any point between 1966 and 2005 it may
17 have caused genetic mutations, right?

18 A. It may have, yes.

19 Q. And people with a history of hepatitis B who have never
20 been exposed to Roundup do, in fact, develop non-Hodgkin's
21 lymphoma, right?

22 A. I'm sorry. Ask that question again.

23 Q. No problem. People with a history of hepatitis B who have
24 never used Roundup do, in fact, develop diffuse large B-cell
25 lymphoma, correct?

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1 A. Yes, people who have an ongoing active chronic infection
2 of hepatitis B, they can develop non-Hodgkin's lymphoma due to
3 hepatitis B.

4 Q. Let's talk about hepatitis C. First of all, you agree
5 that active chronic hepatitis C is a risk factor for the
6 development of non-Hodgkin's lymphoma, correct?

7 A. Yes.

8 Q. And same thing with hepatitis B, your best estimate is
9 that Mr. Hardeman was exposed to hepatitis C in 1966, correct?

10 A. Yes.

11 Q. And, in fact, at one point in the 1980s you saw a record
12 that demonstrates that he had increased liver enzymes, correct?

13 A. Yes, in 1980.

14 Q. So that tells us that at least before 1980 he had active
15 hepatitis C that was impacting his liver, correct?

16 A. Yes, yes.

17 Q. And we also know that in 2005 he was diagnosed with liver
18 cirrhosis, correct?

19 A. Yes.

20 Q. And you agree that his liver cirrhosis was the result of
21 his history of having hepatitis C, correct?

22 A. Most likely, yes.

23 Q. So he most likely had active hepatitis C, chronic
24 hepatitis C, between the mid-1960s and 2005, so 39 years
25 approximately, correct?

WEISENBURGER - CROSS / STEKLOFF

1 A. It's certainly possible.

2 Q. And that hepatitis C was in his bloodstream, and it led to
3 the development of cirrhosis, correct?

4 A. Yes.

5 Q. And hepatitis C, just like hepatitis B, can cause genetic
6 mutations, right?

7 A. Yes.

8 Q. It can cause genetic mutations that ultimately lead to the
9 development of non-Hodgkin's lymphoma, right?

10 A. Yes.

11 Q. And so it is possible you can't rule out -- that in
12 Mr. Hardeman specifically -- during that 39- or 40-year period
13 he had genetic mutations that were caused by his active
14 hepatitis C, correct?

15 A. Certainly possible.

16 Q. And so it is certainly possible that the hepatitis C
17 caused genetic mutations in Mr. Hardeman in the 1960s, correct?

18 A. It is possible.

19 Q. 1970s?

20 A. Yes.

21 Q. 1980s?

22 A. Yes.

23 Q. '90s?

24 A. When was he treated?

25 Q. 2005.

WEISENBURGER - CROSS / STEKLOFF

1 A. 2005, yeah, the '90s.

2 Q. And then between 2000 and 2005?

3 A. Yes.

4 Q. He was treated between 2005 and 2006, correct?

5 A. Yes.

6 Q. So he had active hepatitis C that can lead to genetic
7 mutations that can lead to cancer for 39 years, right?

8 A. Probably, yes, it probably was that long.

9 Q. Okay. So I want to show -- then you showed the jury
10 yesterday and this morning the series of studies that you say
11 demonstrate that if you are treated, your risk goes down -- of
12 developing non-Hodgkin's lymphoma goes down to zero, right?

13 A. It goes down to the background rate of what his risk would
14 be if he hadn't had hepatitis C. It doesn't necessarily go to
15 zero.

16 Q. I wanted to ask you that. One of the studies -- if we can
17 pull up Exhibit --

18 MR. STEKLOFF: Ms. Melen, if I can please use the
19 ELMO. I can just use the ELMO.

20 MS. MOORE: Which number?

21 MR. STEKLOFF: 918.

22 MS. MOORE: No objection.

23 THE WITNESS: Which number? Which volume?

24 BY MR. STEKLOFF

25 Q. This would be in the volume that you used yesterday, if

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1 you have the -- it might be the white binder behind you,
2 Dr. Weisenburger. It is 918.

3 This is one of the studies that you discussed with the
4 jury yesterday, right?

5 **A.** Yes.

6 **Q.** And it is titled "Early antiviral therapy reduces the risk
7 of lymphoma in patients with chronic hepatitis C infection,"
8 correct?

9 **A.** Yes.

10 **Q.** And it is important to consider in these studies how soon
11 someone is given antiviral therapy as compared to when they
12 were exposed to hepatitis C, correct?

13 **A.** Well, what happens is like Mr. Hardeman, people have the
14 disease for a while and they don't know it. They could have it
15 for a long time, just like he did; and then there is a
16 diagnosis made. And at that point, like in Mr. Hardeman, they
17 gave him antiviral therapy.

18 So the principle is that you want to treat the disease as
19 soon as you make the diagnosis. You don't want to wait another
20 two, three, four, five or ten years to treat because during
21 that whole time he would be at risk, right.

22 **Q.** Exactly.

23 **A.** So early treatment after the diagnosis is what should be
24 done.

25 **Q.** Right. But early treatment after the exposure is also an

1 important consideration, right?

2 **A.** Well, with the exposure you don't know what is going to
3 happen. As I said, he might just have the exposure and the
4 body might fight the virus off and put the virus into a latent
5 state, and he would be immune and he -- you would never have to
6 treat it because he has already treated it himself, right?

7 **Q.** But that didn't happen with Mr. Hardeman and hepatitis C,
8 correct?

9 **A.** In Mr. Hardeman's case it didn't happen, but what I'm
10 trying to say is you wouldn't -- you wouldn't treat everybody
11 who got exposed to hepatitis C. You would treat those who
12 actually have disease due to hepatitis C.

13 **Q.** Right. But the longer -- in these studies, the timing of
14 the treatment as compared to how long they had active
15 hepatitis C that may have been impacting their body is
16 relevant, correct?

17 **A.** Well, it is, but, you know, if you go for 40 years and you
18 don't develop non-Hodgkin's lymphoma and then you get treated,
19 then your risk basically goes down to the baseline of what the
20 background rate would be for somebody who never had
21 hepatitis C.

22 **Q.** Well, I want to show you in this study this column
23 table 1. Are you with me?

24 **A.** Okay.

25 **Q.** And this left-hand column that says, Peg IFN/RBV, those

WEISENBURGER - CROSS / STEKLOFF

1 were the patients who were treated, correct?

2 **A.** Yes.

3 **Q.** If you go all the way to the bottom, even though those
4 patients were treated and had sustained viral response, 28 of
5 them still developed non-Hodgkin's lymphoma, correct?

6 **A.** That's correct, but you would expect some of them to get
7 it because they would get non-Hodgkin's lymphoma -- they would
8 be at risk for the background rate of non-Hodgkin's lymphoma
9 that everybody else is at risk for, right. You are not going
10 to completely prevent non-Hodgkin's lymphoma by treating
11 hepatitis C because there are all kinds of other causes of
12 non-Hodgkin's lymphoma, including cases which are idiopathic.

13 **Q.** But, Dr. Weisenburger, these studies that you showed the
14 jury -- I think you said there were eight or nine studies --
15 they are comparing people with -- who were treated with --
16 treated for hepatitis C, with people who had hepatitis C who
17 were not treated, right? That's the comparison?

18 **A.** Yes, and people who had hepatitis -- and people who had
19 hepatitis C who were not treated and people who never had
20 hepatitis C.

21 **Q.** Well, that's what I want to ask you because there are
22 studies that show people who were treated for hepatitis C and
23 compared to just the background rate of people who never had
24 hepatitis C, and they show an increased risk, correct?

25 **A.** I don't know. You would have to show me the studies. I

PROCEEDINGS

1 don't think that's correct, but you will have to show me the
2 studies.

3 Q. Okay. Well, the first study I want to show you --

4 **THE COURT:** Before we get to that, I think we are at
5 lunchtime now. So why don't we resume -- take lunch and resume
6 at 12:30. Remember all my admonitions about communicating and
7 all that. Thank you.

8 (Proceedings were heard out of presence of the jury:)

9 **THE COURT:** You can step down, Dr. Weisenburger. And
10 a reminder to everybody in the courtroom, you have to stay here
11 for five minutes before you leave.

12 **MR. STEKLOFF:** And, Your Honor, can Dr. Weisenburger
13 be instructed not to discuss the subject of his testimony with
14 counsel?

15 **THE COURT:** Yes, you are instructed not to discuss the
16 subject of your testimony --

17 **THE WITNESS:** Okay. Thank you.

18 **THE COURT:** -- with either counsel.

19 **THE WITNESS:** Thank you.

20 (Recess taken at 11:47 a.m.)

21 (Proceedings resumed at 12:35 p.m.)

22 **THE COURT:** Go ahead and bring in the jury.

23 (Proceedings were heard in the presence of the jury:)

24 **THE COURT:** Okay. You can resume.

25 **MR. STEKLOFF:** Thank you, Your Honor.

WEISENBURGER - CROSS / STEKLOFF

1 **BY MR. STEKLOFF**

2 **Q.** Good afternoon again, Dr. Weisenburger.

3 **A.** Good afternoon.

4 **Q.** So I would like to just walk through a few additional
5 studies on hepatitis C with you, okay?

6 **A.** Yes.

7 **Q.** So the first is Exhibit 1348.

8 **THE COURT:** Which binder is that from?

9 **MR. STEKLOFF:** It is binder 1 of 3, Your Honor.

10 **THE COURT:** Okay. I assume all of these can be
11 published?

12 **MS. MOORE:** Yes, Your Honor.

13 **THE COURT:** Okay.

14 **MR. STEKLOFF:** Thank you. If we can publish Exhibit
15 1348, please.

16 **BY MR. STEKLOFF**

17 **Q.** You can see -- you are familiar with this paper, correct,
18 Dr. Weisenburger?

19 **A.** Yes, I am.

20 **Q.** By Dr. Mahale and others, correct?

21 **A.** Yes.

22 **Q.** It is entitled "The effect of sustained virological
23 response on the risk of extrahepatic manifestations of
24 hepatitis C virus infection," correct?

25 **A.** Yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. And if you look at the first page where they have a
2 conclusions section, I would like to read that. And what they
3 said in this study was that, the risk of several EHMs -- so
4 let's just take a moment to explain to the jury what EHMs are.
5 The EHMs were the diseases that were being studied here,
6 correct?

7 If you need to, Dr. Weisenburger, you can look in the
8 version you have in front of you under Introduction. It
9 defines EHMs on the first page.

10 A. Right. These are medical effects outside of the liver.

11 Q. Right. Extrahepatic manifestations, correct?

12 A. Yes.

13 Q. And one of those in this study that they were assessing
14 was non-Hodgkin's lymphoma, correct?

15 A. Yes.

16 Q. And what they say is: The risk of several extrahepatic
17 manifestations of HCV -- that is hepatitis C viral infection,
18 correct?

19 A. Yes.

20 Q. -- are reduced after antiviral therapy with sustained
21 virological response, correct?

22 A. Yes.

23 Q. But then they go on to say, However, early initiation of
24 antiviral therapy may be required to reduce the risk of three
25 conditions including non-Hodgkin's lymphoma, correct?

1 A. Yes.

2 Q. Okay. And if we turn to page 555, in the right-hand
3 column under Risk of EHMs by treatment status, they -- in the
4 bottom paragraph of that section, they explained their
5 conclusion about how soon the antiviral therapy needs to be
6 initiated to reduce the risk of non-Hodgkin's lymphoma,
7 correct?

8 A. Yes.

9 Q. And what they write in the sentence that starts, The aHRs.
10 So the aHRs were significantly protective only when antiviral
11 therapy was initiated.

12 And then if you skip ahead it says, And after the HCV
13 index date and one year for non-Hodgkin's lymphoma, correct?

14 A. Correct.

15 Q. So what they are saying here is that to see a reduction in
16 the risk of developing non-Hodgkin's lymphoma, the antiviral
17 therapy needed to start within a year, correct?

18 A. Within a year of diagnosis, yes.

19 Q. Right. And -- but that makes sense, right? The earlier
20 that you treat someone with antiviral therapy, the more likely
21 it is to reduce the risk of developing non-Hodgkin's lymphoma,
22 correct?

23 A. Yes.

24 Q. And in this study, to be clear, they were studying
25 patients who at most -- and you can look at study design and

1 study population -- had hepatitis C, active RNA between
2 October 1999 and August 2009, correct?

3 **A.** Yes.

4 **Q.** So these patients were being treated -- at most they were
5 being treated -- they had active hepatitis C for ten years and
6 then were being treated with antiviral therapy, correct?

7 **A.** I don't -- where is that? I'm sorry.

8 **Q.** Sure. Let's go on the page before, 554, the study design
9 and study population. Let's blow that up.

10 And it says that they conducted a retrospective cohort
11 study using data, and they included individuals who had a
12 positive test for hepatitis C RNA -- that is the active
13 virus -- in plasma between -- using different assays between
14 October 1999 and August 2009, correct?

15 **A.** Yes.

16 **Q.** Then they had other criteria?

17 **A.** That just means that they had their diagnosis of
18 hepatitis C virus and active virus infection during that
19 ten-year period.

20 **Q.** Right. And also their treatment during that ten-year
21 period, correct?

22 **A.** Yes.

23 **Q.** So many of them may have been treated within a year or two
24 or -- of the diagnosis of hepatitis C, correct?

25 **A.** Well, some of them probably were, yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. And the results of the study showed that there was only a
2 decreased risk of developing non-Hodgkin's lymphoma if you were
3 treated within a year of diagnosis, correct?

4 A. No, I don't think that's what it shows. It's a bit of a
5 confusing paper, but I don't think that's what it shows.

6 Q. You didn't show this paper to the jury yesterday, right?

7 A. I didn't.

8 Q. Okay. And you agree that Mr. Hardeman had active
9 hepatitis C for approximately 39 years, correct?

10 A. Right, right.

11 Q. And he certainly wasn't treated during that 39-year
12 period, right?

13 A. He wasn't, but -- can I explain what this paper shows or
14 will we do that on cross?

15 Q. You understand that Ms. Moore will ask you questions when
16 I sit down, correct?

17 A. Yes, because I think -- your interpretation of the paper
18 is wrong so I will be happy to clarify that.

19 Q. What the paper says, Dr. Weisenburger, is that the aHRs
20 were significantly protective, only when the antiviral therapy
21 was initiated after one year for non-Hodgkin's lymphoma,
22 correct?

23 A. Within the first year.

24 Q. That's what the paper says, right?

25 A. Yeah, but it's -- it's a bit misleading. I will be happy

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1 to explain it.

2 Q. Okay. Now, let's look at the next paper, which is
3 Exhibit 1146. You are familiar with this paper by
4 Dr. de Sanjose as well, correct?

5 A. Yes.

6 Q. If we go to the methods -- so first of all, let's just
7 read the title. "Hepatitis C and non-Hodgkin's lymphoma among
8 4,784 cases and 6,269 controls from the International Lymphoma
9 Epidemiology Consortium."

10 Do you see that?

11 A. Yes, this is the InterLymph I was talking about.

12 Q. Exactly. This is the InterLymph that you are a part of,
13 correct?

14 A. Yes.

15 Q. That group published this paper discussing the
16 relationship between hepatitis C and the development of
17 non-Hodgkin's lymphoma, correct?

18 A. Yes.

19 Q. So you would agree that would be a reliable paper, right?

20 A. Yes.

21 Q. Okay. So let's look at the next page, page 2, under Study
22 Population, okay?

23 A. Which reference is this?

24 Q. Sorry. Thank you. This is Exhibit 1146 in your binder.

25 Okay. So in this paper they collected data from a group

1 of papers, correct?

2 **A.** Yeah. It was a pooling project, uh-huh.

3 **Q.** And if you look five lines down, it says, Studies were
4 required to have used the third generation enzyme-linked
5 immunosorbent assay test for HCV, correct?

6 **A.** Yes.

7 **Q.** So that means that the patients who were included in
8 this -- or the studies that were included in this, the patients
9 were not required to have active HCV, correct?

10 **A.** For this study they weren't. They were just supposed
11 to -- they were just -- to get into the study, they had to have
12 the antibody to hepatitis C. So some of them had active
13 hepatitis C, and some of them were immune to hepatitis C.

14 **Q.** Exactly. So there were people in this study that did not
15 have active hepatitis C, correct?

16 **A.** Yes.

17 **Q.** Okay. So let's look at the discussion on page 5 and look
18 at their conclusions. And the first paragraph, it says, The
19 pooled analysis to explore the association between HCV
20 infection and risk of NHL subtypes included mostly countries
21 with low background HCV prevalence, with the exception of
22 Italy. Our results show increased risk of DLBCL, and then
23 other types of non-Hodgkin's lymphoma associated with HCV
24 infection.

25 Correct?

WEISENBURGER - CROSS / STEKLOFF

1 A. Yes.

2 Q. And then it says, These risk estimates were particularly
3 robust for diffuse large B-cell lymphoma with a twofold
4 increased risk overall and statistically significant increased
5 risk observed in three of the seven studies.

6 Correct?

7 A. Yep.

8 Q. Okay. So let's look at the last study I want to show you,
9 which is Exhibit --

10 A. We will need to clarify this, too, because, again, this is
11 misleading. So we will need to talk about this in cross, okay.

12 Q. I'm sure you will cover it.

13 Let's look at Exhibit 1132. 1132 is a paper titled
14 "Hepatitis C virus and risk of lymphoma and other lymphoid
15 neoplasms: A meta-analysis of epidemiologic studies."

16 Correct?

17 A. Yes.

18 Q. And this is by Dr. Dal Maso, and another doctor,
19 Franceschi, right?

20 A. Yes.

21 Q. You are familiar with this study as well, correct?

22 A. Yes.

23 Q. And if we look on the second page, page 2079 of the study,
24 they also explain what was required to be included --what type
25 of patients who had hepatitis C were included in the study,

1 right?

2 **A.** Okay.

3 **Q.** And do you see that in the second paragraph it says, The
4 presence of HCV RNA is the best marker for hepatocellular
5 carcinoma risk.

6 That is not the type of NHL that Mr. --

7 **A.** Can he highlight it so I can find it?

8 **MR. STEKLOFF:** Sure. Under Assessment, can we please
9 call up the second paragraph, under assessment of study
10 quality.

11 **THE WITNESS:** Okay.

12 **BY MR. STEKLOFF**

13 **Q.** Do you see that it says in the -- about six lines down,
14 The presence of HCV RNA -- that is active virus, right?

15 HCV RNA refers to active virus?

16 **A.** Right.

17 **Q.** -- is the best marker for hepatocellular carcinoma risk,
18 correct?

19 **A.** Correct.

20 **Q.** But that is not the type of non-Hodgkin's lymphoma that
21 Mr. Hardeman had?

22 **A.** No, but the same is true for non-Hodgkin's lymphoma.

23 **Q.** Okay. Well, let's read the rest. It says, Whether
24 detection of HCV RNA in addition to anti-HCV antibodies is a
25 requirement in the association between HCV and NHL is still

1 unclear.

2 Right?

3 **A.** That's what they say.

4 **Q.** That's what these authors say, correct?

5 **A.** But that was back in, when, 2000 --

6 **Q.** This is from 2006.

7 **A.** 2006, yeah. So that was a long time ago.

8 **Q.** Okay. The -- it was more recent than the case control
9 studies you are showing, right?

10 **A.** That's a whole different subject.

11 **Q.** Okay. Then it goes on to say, The availability of HCV RNA
12 findings was not there for the prerequisite for inclusion in
13 the present study.

14 Correct?

15 **A.** That's correct. This is a method to do an epidemiologic
16 case control study. So I would be happy to explain this on
17 cross and why this, again, is misleading.

18 **Q.** Okay. My question, Dr. Weisenburger, is that there were
19 people included in this study who developed non-Hodgkin's
20 lymphoma that did not have active hepatitis C, correct?

21 **A.** Probably true, yes.

22 **MR. STEKLOFF:** Okay. And so let's turn to page 2081,
23 and look at the results.

24 If we can blow up the first -- the two paragraphs, so the
25 section in the middle there, please. Thank you.

1 **BY MR. STEKLOFF**

2 **Q.** And if you look, it says, Similarly positive associations
3 with HCV positivity was seen for all NHL histologies examined.
4 In particular relative risk was 2.7, 95 percent confidence
5 interval, 1.9 to 3.7.

6 So that is statistically significant, correct?

7 **A.** I'm a little behind you here.

8 Okay.

9 **Q.** You agree that -- bless you -- they had a relative risk of
10 2.7 with a statistically significant confidence interval for
11 diffuse large B-cell lymphoma in this study?

12 **A.** Yes.

13 **Q.** Then it goes on to say -- and it talks about other
14 subtypes of non-Hodgkin's lymphoma, right?

15 **A.** Yes.

16 **Q.** Then the next sentence on the other side says,
17 Heterogeneity between studies was present only for diffuse
18 large B-cell.

19 Correct?

20 **A.** Yes.

21 **Q.** Okay. Now, this was another study you are familiar with,
22 right?

23 **A.** Yes, I referenced it. It is one of the studies that shows
24 that hepatitis C virus causes non-Hodgkin's lymphoma.

25 **Q.** Okay. Now, I think -- I just want to be clear. This

WEISENBURGER - CROSS / STEKLOFF

1 morning you ruled out hepatitis C as a potential cause of
2 Mr. Hardeman's non-Hodgkin's lymphoma, right?

3 **A.** I did.

4 **Q.** You said it was -- it had played absolutely no role
5 whatsoever in his development of non-Hodgkin's lymphoma,
6 correct?

7 **A.** That's correct.

8 **Q.** Okay. But isn't it true, Dr. Weisenburger, that it could
9 have played a role?

10 **A.** It is highly unlikely.

11 **Q.** Isn't it true that while he may have had a markedly
12 decreased risk, you can't be absolutely certain that the
13 hepatitis C didn't contribute to his non-Hodgkin's lymphoma?

14 **A.** I can't be absolutely certain, but I can be certain to at
15 least more likely than not.

16 **Q.** Okay. Isn't it true that hepatitis C very well could have
17 played a role in Mr. Hardeman's development of non-Hodgkin's
18 lymphoma?

19 **A.** It is highly unlikely.

20 **MR. STEKLOFF:** Your Honor, I would like to use -- read
21 from his December 20th deposition, page 73, lines 11 through
22 25, which in volume 3 is tab 9.

23 **THE WITNESS:** You will have to say that over for me so
24 I can find it.

25 **MR. STEKLOFF:** Yes, Dr. Weisenburger. It is tab 9.

WEISENBURGER - CROSS / STEKLOFF

1 And I'm looking at page 73, lines 11 through 25.

2 **THE COURT:** Any objection?

3 **MS. MOORE:** No, Your Honor.

4 **THE WITNESS:** What page? I'm sorry.

5 **BY MR. STEKLOFF**

6 **Q.** Page 73.

7 **A.** Okay.

8 **Q.** So at your deposition you were asked this question about
9 Mr. Hardeman specifically and -- and this was your answer --
10 and you would agree that you cannot rule out the role that the
11 25 to 40 years of chronic hepatitis C infection played in his
12 diffuse large B-cell lymphoma.

13 **THE COURT:** Can I just ask you to present that again,
14 because it sounded like you were saying that that was his
15 answer --

16 **MR. STEKLOFF:** Sorry.

17 **THE COURT:** -- and you were reading the question, so
18 if you could present that again.

19 **MR. STEKLOFF:** Yes, Your Honor. Thank you.

20 **BY MR. STEKLOFF**

21 **Q.** Dr. Weisenburger, this is the question you were asked
22 specifically about Mr. Hardeman. Tell me if I read this
23 correctly: And you would agree that you cannot rule out the
24 role that the 25 to 40 years of chronic hepatitis C infection
25 played in his diffuse large B-cell lymphoma.

WEISENBURGER - CROSS / STEKLOFF

1 That's what you were asked, right?

2 **A.** Right.

3 **Q.** And this was your answer under oath: It could have played
4 a role. It could have played a role. You know, it is my
5 position that the fact that he was treated, he was in a
6 sustained virologic remission for nine or ten years would have
7 markedly decreased this risk, but I can't be absolutely certain
8 the hepatitis C didn't contribute to his non-Hodgkin's
9 lymphoma. It very well could have.

10 That was your answer, right?

11 **A.** That's my answer, yes.

12 **Q.** So I want to wrap up with just one more topic, which is
13 when you were ruling out -- you said, I think yesterday, when
14 you were ruling out the risk factors, you have to go through a
15 very thorough analysis to determine whether the risk factors
16 that were in Mr. Hardeman played a role or not. That was your
17 testimony, right?

18 **A.** Correct.

19 **Q.** Okay. And that should be true with respect to Roundup as
20 well, right?

21 **A.** Repeat the question again? I'm sorry.

22 **Q.** Which question --

23 **A.** The prior question.

24 **Q.** Yeah.

25 **A.** I missed the first question.

WEISENBURGER - CROSS / STEKLOFF

1 Q. Okay. You explained that Mr. Hardeman had four risk
2 factors for non-Hodgkin's lymphoma hepatitis B, hepatitis C --

3 A. Right.

4 Q. -- his weight and Roundup, right?

5 A. Right.

6 Q. And you told the jury that you need to go through a very
7 thorough analysis of each of those risk factors to see if they
8 should be ruled out as the cause, correct?

9 A. Correct.

10 Q. And that should include Roundup, right?

11 A. Yes.

12 Q. Okay. But isn't it true, Dr. Weisenburger, that absent
13 extreme examples of very minimal use of Roundup or that someone
14 is wearing like a suit where they never have any skin exposure
15 ever to Roundup, if you have a patient as part of your
16 methodology who was exposed to Roundup and developed
17 non-Hodgkin's lymphoma, in every one of those cases you are
18 going to say more likely than not Roundup was a substantial
19 contributing factor?

20 A. No. I would have to -- each -- I would have to weigh each
21 case individually, just like I did Mr. Hardeman, and look at
22 how much exposure there was and make a decision in each case.
23 So that's the way I would approach it.

24 Q. Okay. So what I said is inaccurate?

25 A. I think it is inaccurate, yes.

WEISENBURGER - CROSS / STEKLOFF

1 Q. So I would like you to turn binder 3, the same binder that
2 you have. And please look at your deposition from
3 November 26th, 2018, tab 5, page 226, line 15 through 25.

4 A. What page? I'm sorry.

5 Q. Page 226.

6 A. Is it -- the document is Number 5?

7 Q. Yes, sir, tab 5.

8 THE COURT: Any objection to reading that?

9 MS. MOORE: No, Your Honor.

10 THE COURT: Okay.

11 BY MR. STEKLOFF

12 Q. Are you there, Dr. Weisenburger?

13 A. Page 226.

14 Q. Yes, 226, line 15 through 25 at the bottom of the page.

15 A. Okay.

16 Q. This was again under oath, correct?

17 A. Yes.

18 Q. I asked you this question: That's my question. In any
19 case absent extreme examples of very minimal use or Tyvek suits
20 where there was never any skin exposure ever, if you have a
21 patient who was exposed to Roundup and developed NHL, in every
22 one of those cases you are going to say that Roundup was more
23 likely than not a substantial contributing factor to that
24 patient's NHL, correct?

25 Did I read that question correctly?

WEISENBURGER - CROSS / STEKLOFF

1 **A.** Yes. I want to read through it again myself.

2 **MR. STEKLOFF:** Tell me when you are ready.

3 (Whereupon, a brief pause was had.)

4 **THE WITNESS:** Well, I think -- I agree, it is more
5 likely than not, if there was a substantial exposure. But in
6 each case, in each case I would look at the degree of exposure
7 and weigh it. And if it was infrequent, if it was low
8 exposure, I would have to really consider that.

9 So you are drawing very extremes here and getting me to
10 commit to something -- and, you know, I don't want to -- I
11 don't want to -- I agree with my statement, but I would like to
12 qualify it that I would carefully look at every case and not
13 just make a black-and-white, yes/no statement, which is what
14 you are asking me to do.

15 **BY MR. STEKLOFF**

16 **Q.** Let me just read the question and the answer that you
17 gave, okay?

18 **A.** Okay.

19 **Q.** You were asked: That's my question. In any case absent
20 extreme examples of very minimal use or Tyvek suits where there
21 was never any skin exposure ever, if you have a patient who was
22 exposed to Roundup and developed non-Hodgkin's lymphoma, in
23 every one of those cases you are going to say that Roundup was
24 more likely than not a substantial contributing factor to that
25 patient's NHL, correct?

WEISENBURGER - REDIRECT / MOORE

1 And your answer was: More likely than not.

2 Right?

3 **A.** Yes, more likely than not if there was a substantial
4 exposure, okay.

5 **Q.** So you are changing your testimony?

6 **A.** Well, I'm clarifying my testimony.

7 **Q.** Changing it, right?

8 **A.** Well, I'm changing it and I'm clarifying it, for you and
9 for the jury.

10 **MR. STEKLOFF:** No further questions, Your Honor.

11 **THE COURT:** Okay. Any redirect?

12 **MS. MOORE:** Yes, Your Honor.

13 **REDIRECT EXAMINATION**

14 **BY MS. MOORE**

15 **Q.** Dr. Weisenburger, I'm going to pick up right where
16 Mr. Stekloff left off. And I'm going to ask you to turn the
17 page in that deposition.

18 **A.** Back or forward?

19 **Q.** To the next page, page 227.

20 And I believe what you were just telling this jury was
21 that you would have to look at every case, right?

22 **A.** Yes.

23 **Q.** And do your own differential?

24 **A.** Yes.

25 **Q.** What did you tell the attorneys who were taking your

WEISENBURGER - REDIRECT / MOORE

1 deposition in the Gordon case back in November after that
2 question was asked of you?

3 **A.** I don't remember.

4 **Q.** What does it say on the next page?

5 **A.** What was the question?

6 **THE COURT:** Well, hold on. Hold on a second. You
7 need to -- if you want to use prior testimony, as I have said a
8 number of times in this trial, you need to request permission
9 to read the prior testimony.

10 **MS. MOORE:** I'm sorry, Your Honor. May I have
11 permission to read the prior testimony in order for him to
12 clarify his -- in order to follow up on the testimony -- or the
13 questions asked by Mr. Stekloff?

14 **THE COURT:** Any objection?

15 **MR. STEKLOFF:** Can we clarify which page and line?

16 **MS. MOORE:** Sure. Page 227, lines 5 through 14.

17 **THE WITNESS:** Right. So here --

18 **THE COURT:** Hold on a second.

19 **THE WITNESS:** Oh, I'm sorry.

20 **THE COURT:** Any objection?

21 **MR. STEKLOFF:** I have no objection.

22 **THE COURT:** Go ahead.

23 She has asked you to read it. So you need to wait. She
24 will read it, and then she will ask you a question about it if
25 she wishes. Okay?

WEISENBURGER - REDIRECT / MOORE

1 **THE WITNESS:** Okay. I see, Your Honor.

2 **BY MS. MOORE**

3 **Q.** So the question that -- right after the one that defense
4 counsel asked you, Dr. Weisenburger, reads: Sir, before you
5 can make an opinion on -- an expert opinion about whether or
6 not Roundup caused someone's cancer, do you have to evaluate
7 that person's case?

8 And you answered: Yes.

9 **A.** Yes.

10 **Q.** Is that -- is that still your testimony?

11 **A.** Yes, I would look at each case individually.

12 **Q.** Okay. And then the next question that was not read to you
13 a minute ago was: So he has asked you about every future case.
14 That's in the context after you have done a full differential
15 diagnosis, an etiological examination?

16 And your answer was: Yes.

17 **A.** Yes.

18 **Q.** Can you explain what you mean by that?

19 **A.** Well, it means that I would take each case individually
20 and evaluate it. So just because someone was exposed to
21 Roundup doesn't necessarily mean that they have a high risk for
22 non-Hodgkin's lymphoma. So as you saw in some of the
23 epidemiology studies, if the patient had low exposures -- few
24 exposures, their risk was not much increased. But people who
25 had very extensive exposures had increased risk. So that's

SIDEBAR

1	[REDACTED]	[REDACTED]
2	[REDACTED]	
3	[REDACTED]	[REDACTED]
4	[REDACTED]	[REDACTED]
5	[REDACTED]	
6	[REDACTED]	[REDACTED]
7	[REDACTED]	
8	[REDACTED]	[REDACTED]
9	[REDACTED]	
10	[REDACTED]	[REDACTED]
11	[REDACTED]	[REDACTED]
12	[REDACTED]	
13	[REDACTED]	[REDACTED]
14	[REDACTED]	[REDACTED]
15	[REDACTED]	
16	[REDACTED]	[REDACTED]
17	[REDACTED]	[REDACTED]
18	[REDACTED]	
19	[REDACTED]	
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21	[REDACTED]	
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SIDEBAR

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The sidebar contains 25 rows of redacted text. Each row is represented by one or more black bars of varying lengths and positions. Row 1 has two bars. Row 2 has three bars. Row 3 has three bars. Row 4 has two bars. Row 5 has two bars. Row 6 has one long bar. Row 7 has one short bar. Row 8 has two bars. Row 9 has two bars. Row 10 has one long bar. Row 11 has one long bar. Row 12 has one long bar. Row 13 has four bars. Row 14 has two bars. Row 15 has one long bar. Row 16 has two bars. Row 17 has two bars. Row 18 has four bars. Row 19 has one long bar. Row 20 has one long bar. Row 21 has two bars. Row 22 has two bars. Row 23 has one long bar. Row 24 has six bars. Row 25 has four bars.

1 [REDACTED]

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8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 (Sidebar ended.)

12 (The following proceedings were heard in open court:)

13 **THE COURT:** Different chart.

14 **MR. STEKLOFF:** Sorry.

15 **BY MS. MOORE**

16 **Q.** Dr. Weisenburger, yesterday, if you will recall, when I
17 first started asking you questions about the epidemiological
18 case control studies, I referenced --

19 **MS. MOORE:** Your Honor, would it be okay if he came
20 off the stand so he could --

21 **THE COURT:** Of course.

22 **BY MS. MOORE**

23 **Q.** I referenced -- I started by saying that the jury had
24 heard from Dr. Ritz extensively about all these studies that is
25 on Exhibit 904. And so we had asked you for -- to testify in a

WEISENBURGER - REDIRECT / MOORE

1 summary fashion on that.

2 Do you recall that question yesterday?

3 **A.** Yes.

4 **Q.** Okay. And counsel made reference about the NAPP this
5 morning, and he was asking you questions. And do you see the
6 NAPP on this chart?

7 **A.** Yes, it's right here.

8 **Q.** Okay. If you will come over here, I will let you stand on
9 this side.

10 And you were asked a series of questions about the
11 different odds ratios from the NAPP, and there was some asked
12 of you on cross about the 1.22 and then the 2.49; and that's
13 all on this chart, correct, that the jury saw last week?

14 **A.** Right. So I didn't show you this odds ratio but Dr. Ritz
15 did.

16 **Q.** Okay. And -- if you want to go back up to the stand, we
17 will go through that real quick.

18 What you showed was the frequency chart. And,
19 Dr. Weisenburger, can you tell the jury why you wanted to show
20 the frequency chart to -- to them yesterday?

21 **A.** You mean the number of days per year?

22 **Q.** Yes.

23 **A.** The frequency chart?

24 Yes. So, well, I mean, I could have showed all the data,
25 but I knew that -- I knew that Dr. Ritz had shown you some

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1 things, and we didn't want to repeat everything that Dr. Ritz
2 said. So I sort of truncated my presentation to really what
3 was important. That's why I just showed you the one slide.
4 But the importance of this slide, it shows you that people who
5 have relatively low exposure to Roundup, don't have an
6 increased risk, okay. And that's why the overall odds ratio is
7 elevated but not statistically significant.

8 But if you look at the people who had the higher number of
9 days per year, they had a more intense exposure. They had a
10 significantly elevated risk. And so I felt like that was the
11 most important data to show because, you know, when you are
12 talking about pesticide exposures, I think intensity of the
13 exposure, which is best reflected in number of days per year,
14 is a much better reflection of overall exposure than number of
15 years.

16 And, in fact, we had the same finding in our Nebraska
17 study when we looked at 2,4-D. The number of years of exposure
18 to 2,4-D didn't really predict for an increased risk; but the
19 number of days per year that people were exposed, telling you
20 that they had an intense exposure over a shorter period of
21 time, did significantly elevate the risk. So I think the
22 intensity of the exposure is a better surrogate marker of
23 exposure.

24 Q. And would it be fair to say that repeated exposure at
25 those levels over time is indicative of an increased risk more

WEISENBURGER - REDIRECT / MOORE

1 so than someone just saying I used it once?

2 **MR. STEKLOFF:** Objection. Leading.

3 **THE COURT:** Sustained.

4 **THE WITNESS:** Yes.

5 **THE COURT:** That answer will be stricken; question
6 will be stricken.

7 **MS. MOORE:** I will rephrase, Your Honor.

8 **THE COURT:** I will just remind you when you hear
9 someone make an objection --

10 **THE WITNESS:** Pause.

11 **THE COURT:** I know it is hard. It is much different
12 from normal people having normal conversations, but you have to
13 pause when you hear an objection --

14 **THE WITNESS:** Yes.

15 **THE COURT:** -- and allow me to rule on it. And if I
16 say "sustained," that means you should not answer the question.

17 **THE WITNESS:** Yes. Thank you. I should know that by
18 now.

19 **MS. MOORE:** I will rephrase.

20 **Q.** Dr. Weisenburger, what is never-ever or ever-never?

21 **A.** So ever-never basically means if you used glyphosate once,
22 then you used it. So you are in the ever rather than the
23 never. So -- basically it includes anyone who is exposed to
24 glyphosate one time or two times or 200 times.

25 **Q.** And what is the difference between an ever-never analysis

WEISENBURGER - REDIRECT / MOORE

1 versus a frequency of the number of days year, like what you
2 showed to the jury?

3 **A.** Well, usually an ever-never analysis is only positive if
4 it's -- if it's a very potent carcinogen where maybe one or two
5 exposures could cause cancer, but there aren't very many things
6 like that. So it's much more important to look at dose
7 response and especially look at the individuals who have -- who
8 have higher exposures or have more intense exposures, and
9 that's what is reflected on this table.

10 **MS. MOORE:** And, Your Honor, may he step down?

11 **THE COURT:** Sure.

12 **MS. MOORE:** Great.

13 **Q.** Dr. Weisenburger, I want you to come back down.

14 And you referenced dose-response, and can you point out to
15 the jury, then, on this chart the day and the years drawn from
16 the NAPP where the dose-response is?

17 **A.** Sure. So for NHL overall, these are the people who
18 weren't exposed at all, so their risk is set at 1. Okay?
19 These are the people who have relatively few exposures, less
20 than two days per year, and you see that their odds ratio is
21 about the same as 1. And so there's really no increased risk
22 for two or fewer days per year.

23 It's only the people who have more exposure, more days per
24 year, that have the increased risk of -- almost twofold
25 increased risk, statistically significant; and there's a

1 statistical difference between these two numbers, and so the
2 trend analysis is positive.

3 So this just shows you the dose-response. Looking at --
4 looking at large numbers of patients -- of people who have very
5 low doses, probably you'd need thousands and thousands to
6 really see an increased risk because there isn't much increased
7 risk or even any increased risk here.

8 So you need to look at the people who have -- who have
9 higher exposures just like in the mouse studies. The mice who
10 get the highest number of tumors are the ones who got the
11 highest dose, and it's the same in the epidemiology studies.
12 You see a communicable dose-response here for overall NHL, for
13 diffuse large B-cell lymphoma, and you see it actually in the
14 other subtypes too.

15 **Q.** Now, you were asked some questions about -- this is a
16 slide from the presentation of the NAPP results in June of
17 2015; right?

18 **A.** Right.

19 **Q.** Okay. Then you were asked some questions about a
20 different presentation given a couple months later in August.
21 Do you recall those questions?

22 **A.** Yes.

23 **Q.** And I want to put up on the screen -- if I may publish,
24 Your Honor, just for comparison -- 1425. It's the August --
25 no, you can stay here for a second.

WEISENBURGER - REDIRECT / MOORE

1 May I publish? Thank you. 1425.

2 And if you can keep -- Mr. Wolfe, if you can keep
3 flipping.

4 Tell Mr. Wolfe -- Dr. Weisenburger, I want to compare
5 apples to apples. So on the presentation in August, let's get
6 to the same slide so we can look and see apples to apples here.

7 Keep on going. You can just tell him when to stop.

8 **A.** We're getting there.

9 **Q.** It's a long presentation.

10 **A.** This one.

11 **Q.** Okay. Now, I don't think Mr. Stekloff showed this slide a
12 few minutes ago, and so I wanted to ask you about this. Is
13 this the same type of slide in August that was shown in June?

14 **A.** It's the same type of slide, yes, but the difference is
15 that this one is not adjusted for the use of other pesticides.
16 So I thought this was more relevant because adjustment to
17 mitigate confounding needs to be done. So I thought this was a
18 more important one to show than that one.

19 **Q.** Okay. And, in fact, on the one in August that's
20 nonadjusted for other pesticides, what is the odds ratio for
21 DLBCL?

22 **A.** Well, it's even higher. It's even higher, and that's what
23 you'd expect because it hasn't been adjusted for other
24 pesticides that might have caused NHL.

25 **Q.** And so what's the significance to you, Dr. Weisenburger,

WEISENBURGER - REDIRECT / MOORE

1 that the August presentation, the odds ratio is at 2.83 when
2 it's not adjusted for other pesticides versus the odds ratio
3 when it's adjusted for other pesticides at 2.49?

4 **A.** Well, this is the more important data because this is the
5 one that's been adjusted. Okay? So showing you that one, you
6 know, wouldn't be as valid as showing you this one because that
7 one is unadjusted for other pesticides and this one is.

8 **Q.** And is that why you showed the jury this slide --

9 **A.** Yes.

10 **Q.** -- versus the one in August?

11 **A.** Yes.

12 **Q.** Thank you. You can have a seat.

13 Dr. Weisenburger, the jury has heard about the De Roos
14 2003 study -- and I'm not going to go through all that again --
15 and it was published, you know, 2003. That data was collected
16 at what point?

17 **A.** Well, the cases were accrued starting in 1979 through, I
18 think, 1986.

19 **Q.** Okay. It takes several years to get something published,
20 doesn't it?

21 **A.** Yes. It can take a long time.

22 **Q.** Okay. And it's your understanding that the NAPP is going
23 to be published?

24 **A.** Yeah. This year for sure.

25 **MR. STEKLOFF:** Objection. Leading. Speculation.

WEISENBURGER - REDIRECT / MOORE

1 **THE COURT:** Sustained. That response will be
2 stricken.

3 **BY MS. MOORE:**

4 **Q.** What is your understanding as far as the NAPP being
5 published?

6 **A.** Later this year.

7 **Q.** Okay. You were asked a series of questions about who
8 you've told and when you've told people about whether Roundup
9 causes cancer or causes non-Hodgkin's lymphoma. Do you
10 remember those questions?

11 **A.** Yes.

12 **Q.** Okay. Can you explain to the ladies and gentlemen of the
13 jury, as a researcher, as a medical professional, what is the
14 way that scientists communicate with one another as to their
15 findings?

16 **A.** So we do it by publication -- by presenting our results at
17 national meetings and international meetings to our peers, and
18 also by publishing it in journals that are read by other
19 doctors. And that's exactly what we did with the De Roos study
20 of 2003 and that's exactly what we're doing with the NAPP
21 study. So that's how professionals and researchers communicate
22 their findings to the rest of the world.

23 **Q.** And then you were asked some questions about the two
24 studies that I asked you about yesterday where there was aerial
25 spraying in South America, the Bolognesi study and the

1 Paz-y-Mino. Do you remember those questions this morning?

2 **A.** Yes.

3 **Q.** Okay. And there was some questions asked about short-term
4 exposure. Explain to the ladies and gentlemen of the jury,
5 when you have short-term exposure to Roundup, does that lead --
6 what does that lead to as far as the DNA damage? How long
7 would you expect the DNA damage to last?

8 **A.** So for the kind of damage that occurred in those two
9 scenarios, if the exposure -- so they were exposed heavily to
10 aerial spraying of Roundup but once the spraying stopped, by
11 and large, a lot of those cells would just die off because the
12 genetic abnormalities might be bad for them.

13 And then the other thing that happens is the body has a
14 vigorous repair mechanism where it will repair the genetic
15 damage. So either though cells will be repaired or die off.
16 That's the usual situation.

17 So if you looked two years later and tried to find those
18 abnormal cells, they would have -- they would probably be gone
19 because either they died off and so those abnormalities weren't
20 passed off to the cells that came from them, or the
21 abnormalities were repaired by the normal repair mechanisms
22 that we have to repair our genetic damage.

23 **Q.** And if we could, let's go to 1066 and we'll go -- and this
24 is the Bolognesi.

25 **MS. MOORE:** Sorry. May I publish, Your Honor?

WEISENBURGER - REDIRECT / MOORE

1 **THE COURT:** Sure.

2 **MR. STEKLOFF:** No objection, Your Honor.

3 **MS. MOORE:** Okay. And we'll flip over to page 991,
4 Mr. Wolfe.

5 **Q.** And the jury will recall this graph that we showed them
6 yesterday at the bottom. And, Dr. Weisenburger, does that
7 graph represent what you were just explaining to the jury on
8 short-term exposure?

9 **A.** Right. So if you just look at the last three to the
10 right, those are the ones that were sprayed with the aerial
11 glyphosate. And what she's marked is the measurement of DNA
12 damage just before the glyphosate was sprayed. Okay?

13 And then within five days after the glyphosate was
14 sprayed, they did the same test again, which is the next bar.
15 And you can see that the DNA damage went up in each of those,
16 and it was a statistically significant increase.

17 **Q.** And what does that tell us?

18 **A.** That tells you that the glyphosate that was sprayed was
19 the reason why, in a very consistent way, the level of damage
20 increased.

21 **Q.** And, Dr. Weisenburger, you said "glyphosate." I just want
22 to make sure we're clear because --

23 **A.** Roundup.

24 **Q.** Okay. And so from this study, from the Paz-y-Mino study,
25 the other aerial spraying study, what conclusions are you able

1 to draw?

2 **A.** Well, from the other study, the DNA damage actually stayed
3 up longer because they measured the -- they did the test for
4 DNA damage anywhere from two weeks to two months after the
5 spraying, and there still was DNA damage.

6 So what that said is it doesn't go away right away. It
7 may take weeks for it to be healed or for those cells to die
8 off.

9 **Q.** And what happens when your body is exposed to Roundup
10 repeatedly, so the frequency is more than this one aerial
11 spraying? What happens to the body's DNA in those
12 circumstances?

13 **A.** Well, in those kind of circumstances --

14 **MR. STEKLOFF:** Objection.

15 **THE WITNESS:** -- your --

16 **MR. STEKLOFF:** Objection, Your Honor.

17 **THE COURT:** Hold on.

18 **THE WITNESS:** Sorry.

19 **THE COURT:** Overruled.

20 **BY MS. MOORE:**

21 **Q.** You can go ahead.

22 **A.** So in those kind of situations, the exposure to the
23 Roundup overcomes the ability to the body to fix those genetic
24 abnormalities, and so they begin to accumulate in cells and
25 some cells develop a second abnormality as well. And so you

WEISENBURGER - REDIRECT / MOORE

1 get a cumulative increase in genetic damage if the body can't
2 repair it or if the cells don't die off.

3 And so that's what we saw in the first study; that, you
4 know, at least out by two months there was still people who had
5 elevated genetic damage. But when they looked at two years
6 later, those cells had either healed or died, and they didn't
7 find any abnormalities.

8 Q. And was there continued or repeated exposure during that
9 two years' time to Roundup?

10 A. No.

11 Q. You were asked a series of questions about latency --

12 A. Yes.

13 Q. -- with respect to the case-control studies, and at one
14 point on the flip chart that Mr. Stekloff was using, he had put
15 down a number of years and then he put some years in orange. I
16 think he was subtracting 20. Do you remember that?

17 A. Yes.

18 Q. Okay. And you said that it didn't make any sense to you,
19 and you were wanting to explain that. I wanted to give you an
20 opportunity to explain to the jury why subtracting 20 from the
21 collection dates didn't make sense to you.

22 A. Yeah. Well, because 20 is the median latency. So some
23 people are --

24 Q. Did you want your bell curve?

25 A. I don't think -- well, you can put it up if you like,

WEISENBURGER - REDIRECT / MOORE

1 sure.

2 But the 20 years is the median latency, but half of the
3 people who get the cancer get it in the first half of the curve
4 as you can see there. So for some of the studies, for some of
5 the early studies, as I explained to you yesterday, there was 4
6 to -- in the De Roos, 4 to 11 years of potential exposure to
7 Roundup in those studies.

8 And, of course, that is short but, as you can see, there
9 are cases that occur relatively soon after exposure, and I
10 think those are the cases that we're measuring.

11 And just to take the 20 and subtract it doesn't make any
12 sense. It's -- it just doesn't make any sense.

13 **Q.** And, Dr. Weisenburger, I'll ask you to come down here for
14 a second. If you could point out on your bell curve chart
15 where you believe that the individuals from McDuffie and
16 Eriksson and the three pooled cases from De Roos 2003 would
17 fall on the bell curve and which bell curve are you referring
18 to.

19 **A.** So I'm referring to this bell curve (indicating) that we
20 talked about yesterday. And from the De Roos, it would be in
21 the early part of the curve. McDuffie is later. I can't
22 remember the chronology, but the only one that had a relatively
23 short latency period was De Roos. The other ones had later and
24 later ones, more proximating and surpassing the median. So all
25 of the studies were performed on this part of the curve

1 (indicating). Okay?

2 Q. So all the studies that were on that flip chart that you
3 were just asked questions about, do they all fall within the
4 bell curve?

5 A. They do. They were all performed -- we have to talk about
6 temporality again -- they were all performed after glyphosate
7 came on the market. So people who used glyphosate used it
8 after it came on the market and before they got their
9 non-Hodgkin's lymphoma.

10 Q. And in your opinion, then, because those fall within the
11 bell curve, are the conclusions you can draw from those studies
12 valid?

13 MR. STEKLOFF: Objection. Leading.

14 THE COURT: Sustained.

15 THE WITNESS: I accepted them as valid.

16 THE COURT: Sustained. So that answer is stricken.

17 The question is stricken.

18 MS. MOORE: I'll rephrase, Your Honor.

19 Q. In your opinion, Dr. Weisenburger, the conclusions, the
20 results of those case-control studies regarding the Eriksson
21 and De Roos, what is your opinion as to what you can draw from
22 those conclusions given where they fall on the bell curve?

23 A. Well, I think they're valid studies. I think their
24 conclusions are meaningful, and the IARC and the EPA and the
25 European communities --

WEISENBURGER - REDIRECT / MOORE

1 **MR. STEKLOFF:** Objection, Your Honor.

2 **THE WITNESS:** -- all observe those, evaluated them --

3 **THE COURT:** Hold on a second.

4 The objection is sustained. That question and answer will
5 be stricken.

6 **MS. MOORE:** All right. I'll do it one more time,
7 Your Honor.

8 **Q.** In your opinion, Dr. Weisenburger, what significance can
9 you draw from the conclusions of McDuffie, Eriksson, and
10 De Roos in relation to the bell curve?

11 **A.** Well, I accepted the studies as valid studies, and they
12 show statistically significant increases in the risk of
13 non-Hodgkin's lymphoma associated with Roundup. So that was my
14 conclusion.

15 **Q.** Thank you. You can have a seat.

16 All right. Last topic. You were asked several questions
17 about hepatitis and I wanted to go back to that. And there
18 were about three articles or three studies that you were shown
19 that you had asked if you could explain a little bit more about
20 that, and so I want to give you an opportunity to do so now.

21 And why don't we turn to the -- I don't know if this is in
22 the right order, but I'm going to hit all three,
23 Dr. Weisenburger -- 1132.

24 **MS. MOORE:** And permission to publish.

25 **MR. STEKLOFF:** No objection to any of these studies

1 being published, Your Honor.

2 **THE COURT:** Okay. Go ahead.

3 **BY MS. MOORE:**

4 **Q.** And is this one of the ones that you were asked about by
5 Monsanto's counsel?

6 **A.** Yes, it is.

7 **Q.** And are you familiar with this study, Dr. Weisenburger?

8 **A.** Yes. It's a meta-analysis of studies of people with a
9 history of hepatitis C infection.

10 **Q.** All right. And you were asked some questions.

11 And if we could go to page 2, Mr. Wolfe, please.

12 And what conclusions can you draw from this study,
13 Dr. Weisenburger?

14 **A.** Well, the conclusion that I drew is that hepatitis C is a
15 risk factor for non-Hodgkin's lymphoma. Okay? And they used
16 studies because most of the epidemiology studies used the
17 antibody to hepatitis C, anti-C, to find people who had -- who
18 had active hepatitis C infection or people who have had the
19 infection and now were immune. Okay?

20 And if -- so the way it works is you've got a bunch of
21 patients, all of these patients that either have active
22 hepatitis C or are immune to hepatitis C. And if enough -- if
23 enough of the patients have active hepatitis C, you're going to
24 see a positive result. Okay? And so that's what happened in
25 both these studies. Although they didn't measure it, that has

1 to be what happened.

2 And if we go and look at the Nietters study, I can show
3 you real data -- okay -- which proves my point.

4 **Q.** Is this hypothetical?

5 **A.** No. This is just a methodology that epidemiologists use.
6 They wanted to find all the cases they could of people who had
7 current or past hepatitis C, and they wanted to see was there
8 an increased risk of non-Hodgkin's lymphoma, and the answer is
9 yes. Okay?

10 But it's -- but if you want to look at the actual viral
11 DNA in the blood, it's much more expensive and much more
12 tedious, and most of the studies didn't do it. Okay? These
13 are what I would call sort of more quick-and-dirty and less
14 expensive studies. And, in fact, even using those kind of
15 methodologies, it was positive.

16 **Q.** And what does that mean?

17 **A.** Well, it means that -- what the study showed is that if
18 you have or have had hepatitis C infection, you're at increased
19 risk, but it's misleading because you've really got two
20 different things in there. Right?

21 So if we go to the Nietters study, I'll show you the way
22 it was done there and it illustrates my point.

23 **Q.** Okay. If you can turn to -- and this is -- it's in the
24 binder that you had yesterday, Dr. Weisenburger, so I don't
25 know if you have that in front of you. I can pull it up on the

1 screen.

2 It's 1413, Mr. Wolfe.

3 And this study, the Nietters study, Exhibit 1413,
4 Dr. Weisenburger, the title is "Hepatitis C and Risk of
5 Lymphoma: Results of the European Multicenter Case-Control
6 Study EPILY" -- oh, I guess "EPILYMPH." Sorry. And what about
7 this study did you think was important to discuss today?

8 **A.** Well, the nice thing about this study is they did the same
9 thing as the other two studies. They looked at the antibody --
10 they looked for the antibody first to find all of the cases
11 that had active chronic hepatitis or had become immune to
12 hepatitis C, and then they went ahead in this study and
13 actually looked for the viral RNA. And what they found was
14 most of the people who had the hepatitis C antibody also had
15 the viral RNA. So those were the chronic active hepatitis.

16 And when they then looked at the difference, it was only
17 the ones who had the chronic active hepatitis that had the
18 increased risk, and those that were immune didn't have the
19 increased risk.

20 And I actually showed you a slide yesterday that made that
21 same point. I don't know if you remember, but I showed you a
22 slide yesterday that made that same point.

23 **Q.** Is that the Gianelli?

24 **A.** No.

25 **Q.** This one (indicating)?

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1 A. No. It was one of the ones that we -- I think we showed
2 on the screen.

3 Q. Oh. Okay. Let me grab this. I'll bring it back up here
4 and make sure I understand.

5 Let me flip over. And it was one of the tables from
6 yesterday, Dr. Weisenburger?

7 A. Yes. It was I think the second one when we were talking
8 about hepatitis C.

9 Q. Okay. If you want to go to --

10 A. I mean, do you want to look on here and actually see where
11 it says that on this one?

12 Q. That would be great. Okay.

13 A. So it's the bottom of page 1880.

14 Q. And is that under the results?

15 A. Yeah, at the very bottom of the page where it says "HCV
16 infection" and going to the next page. No, not the table.

17 Yeah, there. There you go. Good.

18 Q. Great. Thanks.

19 A. So what their finding was that HCV infection defined --
20 was defined by a positive test for anti-HCV or HCV RNA. Okay?

21 Q. What does that mean?

22 A. Well, it means that they combined those two groups
23 together, and it was associated with an increased risk for
24 non-Hodgkin's lymphoma of 1.42. Okay? But it wasn't
25 statistically significant but it was close.

1 But then the next paragraph is really important because it
2 says (reading):

3 "A statistically significant association between HCV
4 infection and lymphoma was seen only" -- that's a big
5 word -- "only in those subjects with detectable HCV RNA
6 were considered."

7 Okay? (reading)

8 "The presence of this marker of persistent and
9 actively replicating HCV was associated with an odds ratio
10 of 1.82, almost a twofold increased risk and is
11 statistically significant."

12 Let's go to the rest of what comes after. Oh, no. I
13 guess that's it.

14 So when they looked at the ones that didn't have the --
15 that were positive for the antibody but didn't have the
16 circulating RNA, they didn't find an increased risk. Okay?
17 And the other -- if the other studies had done the same thing,
18 they would have found the same thing.

19 **Q.** And is that why when you were asked questions about the
20 Mahale study, which is in the binder that's marked as 1348 and
21 you had an exchange with Monsanto's counsel about the
22 interpretation of that study, is that one of the reasons why?

23 **A.** No. It's a different reason for that one.

24 **Q.** Oh, okay.

25 **A.** It's 13 -- what is it? 13?

1 Q. 1348 is the Mahale study.

2 A. Yeah. It's in a different binder, I guess.

3 Q. It's in the black binder.

4 A. Okay.

5 Q. It's actually, I think, in your binder as well.

6 A. Okay. So why don't you pull up Figure 2 on page 559.

7 Q. Do you want the one that has non-Hodgkin's lymphoma?

8 A. Yeah. Number D.

9 So this, I think, illustrates it. And so what the paper
10 is saying is that once you diagnose -- once you make a
11 diagnosis of active hepatitis C viral infection, in order to
12 get adequate protection and prevention of non-Hodgkin's
13 lymphoma, you should treat it right away. Okay? We treat it.
14 And what they found is if you treat it within the first year,
15 the risk ratio is lower and you're protected. Okay?

16 And you see that here in the curve. If you can see the
17 curve, the -- where it says "1," so the -- yeah. So 1 means
18 that they were treated within the first year. Okay?

19 And the risk of non-Hodgkin's lymphoma is lower than
20 1 here -- okay? -- which means they're protected. One would be
21 the people who have active chronic hepatitis. Okay? So
22 they're comparing the ones that had a sustained virologic
23 response, like Mr. Hardeman, to those that weren't treated.

24 And you can see that if they were treated within the first
25 year, they're protected. Okay? But if you wait till the

1 second year, which is 2, you see less protection. If you wait
2 till the third year, there's less protection. If you wait till
3 the fourth year, there's almost no protection. And by the
4 fifth year, they have the same rate of non-Hodgkin's lymphoma
5 as people who are untreated.

6 Well, what you've done is you've left them untreated for
7 five years, so it's not surprising that they would get
8 non-Hodgkin's lymphoma during those five years because they're
9 at increased risk.

10 **Q.** So I want to bring us back to Mr. Hardeman. Is that what
11 happened with Mr. Hardeman?

12 **A.** Well, Mr. Hardeman would have been in the first group who
13 was protected because as soon as his diagnosis was made, he was
14 treated. Okay? So he would actually be in the first group
15 here, and you can see that there is protection and the risk is
16 markedly lower. And I showed you yesterday a number of curves
17 that the risk goes down to what is the background general risk
18 in the general population.

19 **Q.** So you were asked a series of questions this morning and
20 this afternoon about hypotheticals about what happens when
21 someone who had active hep C versus someone who's been treated,
22 and I just want to ask you about what the evidence shows us in
23 the facts of this case.

24 Can you explain to the jury in the facts of this case what
25 happened with Mr. Hardeman with respect to the hepatitis C and

1 whether that has anything to do with his diagnosis of
2 non-Hodgkin's lymphoma?

3 **A.** Well, I'll reiterate what we said yesterday. He was
4 treated in 2005. He was cured. The virus was eradicated from
5 his system, and he lived for nine years until he got the
6 non-Hodgkin's lymphoma. So it couldn't have been the virus
7 that caused it. Okay?

8 So defense raised the issue of: Well, could there have
9 been some virus still there? Well, there was some virus still
10 there. Could there have been abnormal cells still there from
11 that early 40 years? Well, it's possible there could have been
12 but, in fact, when you look at the actual data, there's no
13 evidence that there's an increased risk even if there are a
14 small amount of those infected cells still there.

15 So in the end, you have to believe the data and not focus
16 on some hypothetical that may or may not be true, and that's
17 what I tried to do. I tried to show you the data yesterday
18 that made my point.

19 **Q.** Okay. And based on your opinions that he was cured and
20 that the abnormal cells were killed off, did you come to a
21 conclusion, an opinion, within a reasonable degree of medical
22 certainty as to whether hepatitis C was a cause of
23 Mr. Hardeman's non-Hodgkin's lymphoma?

24 **A.** I don't believe it was a cause, and I don't believe
25 hepatitis B was a cause either for the same -- for similar

1 reasons.

2 **Q.** Okay. So can I mark through hepatitis B and C?

3 **A.** Yes.

4 **Q.** All right. Almost done, Dr. Weisenburger.

5 And on hepatitis, again, what percentage of people who
6 have active hepatitis C -- not the people who have been cured,
7 but the people who have active hepatitis C -- what percentage
8 of those people are even going to develop non-Hodgkin's
9 lymphoma? What's the evidence show us?

10 **A.** The evidence shows us it's really a small number. It's
11 probably less than 1 percent. There was one study that found
12 that it was a 10th of 1 percent at 10 years. Now, it would be
13 more than that going out further, but I think the data shows
14 that even people with chronic active hepatitis B -- hepatitis C
15 have a risk of getting non-Hodgkin's lymphoma of less than
16 1 percent. They have a much higher risk, 10- to 25-fold
17 increased risk of getting liver cancer than they do
18 non-Hodgkin's lymphoma.

19 **Q.** And going back to a hypothetical, okay, we'll move from
20 the facts for a second, but in a hypothetical situation, if
21 what the defense is saying, that maybe there's some abnormal
22 cells that stayed behind after he was cured, in your opinion if
23 that was true, what would those abnormal cells be doing to
24 Mr. Hardeman, if anything?

25 **A.** Well, they would be in a latent state hiding in a few

1 B cells and liver cells and held in check by the immune system.
2 So they wouldn't be -- they wouldn't be causing any disease,
3 and --

4 **Q.** And how do we know -- I'm sorry, Dr. Weisenburger.

5 How do we know they're being held in check by the immune
6 system?

7 **A.** Well, because they don't -- they don't reactivate later
8 and get real disease unless you immunosuppress the patients in
9 some way that knocks out the normal immunity and then allows
10 the virus to come out and cause disease.

11 **Q.** So let's go back to the evidence. We know Mr. Hardeman
12 had to go through chemotherapy; right?

13 **A.** Yes.

14 **Q.** And what happened with respect to hepatitis C when he went
15 through chemotherapy?

16 **A.** It didn't reactivate. It didn't reactivate. So that was
17 a good test, that if it was there, it should reactivate and it
18 didn't.

19 **Q.** And that's the evidence, not a hypothetical; right?

20 **A.** Yes.

21 **MR. STEKLOFF:** Objection.

22 **THE COURT:** Sustained. The answer is stricken.

23 **BY MS. MOORE:**

24 **Q.** The fact that he --

25 I'll rephrase, Your Honor.

WEISENBURGER - REDIRECT / MOORE

1 The fact that we know Mr. Hardeman went through
2 chemotherapy and the hepatitis C, he was checked for it and it
3 never came back -- that was this chart we showed yesterday,
4 Exhibit 940, this one, Dr. Weisenburger --

5 **A.** Yes.

6 **Q.** -- what does that tell us?

7 **A.** Well, that tells us that in clinical terms he was cured of
8 his hepatitis C infection; that once he responded to the
9 antivirals, the virus was largely eradicated from his system
10 and there was no continuing liver damage; and even when he was
11 immunosuppressed during his chemotherapy, it didn't reactivate.

12 So either it wasn't there or the immune system was strong
13 enough to keep it in check even through the chemotherapy, but
14 that was a real test.

15 **Q.** And is that one of the other reasons why you were able to
16 eliminate hepatitis C as a cause of Mr. Hardeman's
17 non-Hodgkin's lymphoma?

18 **A.** Yes.

19 **Q.** You were asked some questions about I think you had used
20 the phrase "more likely than not," and I wanted to ask you,
21 Dr. Weisenburger, before I sit down, your testimony and your
22 opinions that you've given to this jury today and yesterday,
23 are those given within a reasonable degree of medical
24 certainty?

25 **A.** Yes, they are.

WEISENBURGER - RECROSS / STEKLOFF

1 Q. Okay. And within a reasonable degree of medical
2 certainty, can you tell the ladies and gentlemen of the jury,
3 after all of the literature you've reviewed, all the
4 publications you've shown them, in your 40 years of studying
5 and investigating the causes of non-Hodgkin's lymphoma, in your
6 opinion, what was the substantial factor in causing
7 Mr. Hardeman's non-Hodgkin's lymphoma?

8 A. It was the Roundup exposure.

9 MS. MOORE: Okay. Thank you so much for your time.

10 THE COURT: Mr. Stekloff, how much time do you
11 anticipate having? I'm trying to figure out if we should take
12 a break.

13 MR. STEKLOFF: Two minutes.

14 THE COURT: Okay.

15 MR. STEKLOFF: Ms. Melen, may I please have the Elmo?

16 THE CLERK: Yes.

17 MR. STEKLOFF: Your Honor, I'm just going to publish
18 Exhibit 1413, which is the study that was just shown to
19 Dr. Weisenburger?

20 THE COURT: Okay.

21 MS. MOORE: No objection.

22 RECROSS-EXAMINATION

23 BY MR. STEKLOFF:

24 Q. And, Dr. Weisenburger, this is the Nietters study that you
25 said was an expensive study that you wanted the jury to see;

WEISENBURGER - RE CROSS / STEKLOFF

1 right?

2 **A.** It was an expensive study.

3 **Q.** You said the other ones weren't that expensive. This one
4 was expensive. You wanted the jury to see this; right?

5 **A.** Yes.

6 **Q.** Okay. So I want to show you here what the authors say on
7 the third page of this study. They say (reading):

8 "Diffuse large B-cell lymphoma was the lymphoma
9 subtype most clearly associated with indicators of HCV
10 infection. The presence of anti-HCV" --

11 That means the virus was not active; correct?

12 **A.** Well, it detects both the ones that are immune and the
13 ones that are active.

14 **Q.** It says (reading):

15 "The presence of" --

16 Well, no. It says (reading):

17 "The presence" --

18 I'm just asking you about anti-HCV. That means those
19 people are not active; correct?

20 **A.** No. The anti-HCV identifies all the patients who have
21 active infection and the patients who don't have it but are
22 immune. So it includes all the patients.

23 **Q.** Okay. Fair enough. But it includes patients who aren't
24 active; right?

25 **A.** Who are inactive?

1 Q. Who are not active. It includes those?

2 A. Yes, it does.

3 Q. And it says (reading):

4 "The presence of anti-HCV and HCV RNA were both
5 associated with a statistically significant 2.2-fold and
6 3.3-fold increased DLBCL risk."

7 Correct?

8 A. That's what it says but, again, it's mainly being driven
9 by the ones who have the chronic active infection. If you go
10 up to the quote above, it said it was only the individuals who
11 had the HCV RNA, the active infection, those are the ones who
12 had the increased risk. The presence of the antibody alone
13 without the RNA did not give any increased risk so the people
14 who were immune did not have an increased risk. That's what
15 this paper shows.

16 Q. Okay. I read correctly what the paper says; right?

17 A. Well, you read correctly, but -- but it needs to be
18 clarified because otherwise it can be very misleading.

19 Q. Okay. And then on the back page it says (reading):

20 "The most important finding of this study" -- "of
21 this large study is the significant association of HCV
22 infection with DLBCL."

23 Correct?

24 A. Yes.

25 MR. STEKLOFF: Okay. No further questions,

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1 Your Honor.

2 **THE COURT:** Okay. Now will be a good time for a
3 break. We'll resume at 2:00 o'clock sharp. Thank you.

4 **THE CLERK:** All rise.

5 (Proceedings were heard out of the presence of the jury:)

6 **THE COURT:** You may step down.

7 **THE WITNESS:** Thank you.

8 (Witness excused.)

9 **THE COURT:** Okay. So if I remember correctly, you
10 said you have about 55 minutes of video to play?

11 **MS. MOORE:** Yes, Your Honor.

12 **MS. WAGSTAFF:** Yes, Your Honor. We have a five-minute
13 Farmer clip that we're going to play first, and then I think
14 the Reeves clip is 55 minutes.

15 **THE COURT:** Okay. So an hour total. So let's go --
16 so you can play that stuff until 2:30 or a little bit after
17 2:30, find a good break time there, and then we'll send the
18 jury home until Friday.

19 **MS. MOORE:** Okay. Thank you, Your Honor.

20 **MS. WAGSTAFF:** Okay.

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

22 (Recess taken at 1:54 p.m.)

23 (Proceedings resumed at 2:01 p.m.)

24 (Proceedings were heard out of the presence of the jury:)

25 **THE COURT:** Okay. Go ahead and bring them in.

PROCEEDINGS

1 **MR. STEKLOFF:** If I need to repeat it at the end of
2 their case, I will.

3 **THE COURT:** Yes.

4 (Proceedings were heard in the presence of the jury:)

5 **THE COURT:** Okay. Welcome back. There's going to be
6 some more video --

7 **THE CLERK:** Please be seated.

8 **THE COURT:** Sorry.

9 There's going to be some more video testimony for you, and
10 we've identified a good stopping point at about the 40-minute
11 mark. So we will keep you a little bit later than 2:30 today.
12 Go ahead.

13 **MS. WAGSTAFF:** Your Honor, plaintiffs call Monsanto
14 through William Reeves, Dr. William Reeves.

15 **THE COURT:** Go ahead.

16 (Video was played but not reported.)

17 **THE COURT:** Okay. Is that it for today?

18 **MS. MOORE:** Yes, Your Honor.

19 **THE COURT:** All right. So we're done for today. We
20 will resume on Friday at 8:30 sharp. I told you about the
21 scheduling change for Friday. I thank you for paying such
22 close attention.

23 Remember all my admonitions, and we'll see you on Friday
24 morning. Thank you.

25 (Proceedings were heard out of the presence of the jury:)

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1 **THE COURT:** Okay. So, again, reminder, everybody is
2 required to stay in the courtroom for another five minutes
3 while the jurors clear out.

4 And, then, so for scheduling -- people can sit down -- we
5 have about another 15 minutes or so of testimony from the
6 plaintiffs, and then the plaintiffs will rest their case;
7 right?

8 **MS. MOORE:** Correct, Your Honor.

9 **MS. WAGSTAFF:** That's right, Your Honor.

10 **THE COURT:** And then Dr. Mucci is the first witness on
11 Friday, or are you switching order?

12 **MR. STEKLOFF:** I think we're keeping the same order,
13 Your Honor, but I -- you know, we're a little bit behind where
14 we were. I'm almost certain Dr. Levine cannot be here on
15 Tuesday because that's a major clinical day for her so we need
16 to get her here on Monday. So I think we can go back and
17 reassess, but our -- my current expectation is that Dr. Mucci
18 will be first on Friday.

19 **THE COURT:** Okay. And so what do -- obviously we
20 can't anticipate cross, but what is your anticipation on how
21 long Dr. Mucci will take?

22 **MR. STEKLOFF:** An hour and a half.

23 **MS. MATTHEWS JOHNSON:** I don't think it will be that
24 long. We were just discussing feasibility of getting it done,
25 yes.

PROCEEDINGS

1 **MR. STEKLOFF:** I would guess maybe an hour and a half
2 or so of the direct. I would guess. Maybe less.

3 **THE COURT:** Okay. And then what about Arber and
4 Levine?

5 **MR. STEKLOFF:** I think Arber will be 45 minutes or
6 maybe an hour, and I think Levine will be an hour to an hour
7 and 15 minutes if I had to guess. Maybe an hour and a half.

8 **THE COURT:** Okay. So, I mean, do you have a sense
9 now -- just for planning next week, I mean, do you have a sense
10 of how long -- I know it's hard to guess and you're not held to
11 anything, but do you have a sense of how long the crosses will
12 be for these people?

13 **MS. WAGSTAFF:** I mean, it really depends on the direct
14 examination, but --

15 **THE COURT:** Okay. It looks like it is at least
16 possible, based on what you're describing, and you never know
17 how it's going to go, but it looks like it's at least possible
18 that the evidence could be wrapped up at the end of the day on
19 Monday.

20 And so you should plan on doing your closings on Tuesday,
21 and what I would say is that even if a little bit of the
22 evidence bleeds over into Tuesday, you should still plan on
23 doing your closings on Tuesday because almost all the evidence
24 will have been in over the weekend, and you'll have a chance to
25 assess, and then that final -- almost all the remaining

PROCEEDINGS

1 evidence will come in Monday, and you'll have a chance to
2 prepare your closings on Monday night.

3 So, you know, if, for example, we were to do, you know, an
4 hour of testimony on Tuesday morning, I would not want to send
5 the jury home and have them come back Wednesday morning for
6 closings. I would want closings to happen on Tuesday. Okay?

7 **MR. STEKLOFF:** Yes, Your Honor.

8 **THE COURT:** Have you given thought to how long
9 closings will be? Probably not yet.

10 **MS. WAGSTAFF:** Not yet, Your Honor.

11 **THE COURT:** Okay. So the two things I want to do for
12 closings, and we should talk about jury instructions too in a
13 second, but the two things I want to do for closing, I want to
14 see both sides' slides. So that will be Tuesday morning, I
15 guess, I will review -- I will come in quite early, and I will
16 review both sides' slides. I think it will probably be
17 difficult for you to get me your slides the night before. So
18 on Tuesday morning I want to review both sides' slides.

19 I also think we should have a discussion -- given what
20 happened in the openings, I think we should have a discussion
21 of certain issues that you're concerned might be raised during
22 closing arguments that you think would be inappropriate, and we
23 can try to -- we can make an effort to get sort of an advance
24 ruling on some of those issues. Of course, you're free to
25 offer those as well.

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1 **MS. WAGSTAFF:** Thank you, Your Honor.

2 **THE COURT:** One thought -- one example could be, and I
3 don't know if this is an example, but one example could be, you
4 know, issues about the Parry evaluation being concealed from
5 the public or something like that. I'm not sure that would be
6 appropriate, and I got a sense that that may be sort of part of
7 the theme. Maybe it would be appropriate. I'm not prejudging
8 that, but that's an example of the kind of thing that maybe we
9 should be talking about in advance.

10 And then for jury instructions, I'm trying to decide when
11 we should talk about jury instructions. I'll get back to you
12 on that. You may get an e-mail tonight telling you when we
13 want to talk about jury instructions. I have to think about --
14 probably we'll file them tonight I think. So I've got a couple
15 other things I'm thinking about, so we'll let you know on that.

16 **MR. STEKLOFF:** Okay.

17 **MS. MOORE:** Thank you, Your Honor.

18 **MR. KILARU:** Your Honor, if I could, just one brief
19 point on --

20 **THE COURT:** Yes.

21 **MR. KILARU:** -- Dr. Arber's testimony.

22 **THE COURT:** I know you filed some questions.

23 **MR. KILARU:** I was not going to raise that, but if you
24 want to talk about it --

25 **THE COURT:** No. I haven't looked at those questions

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1 yet, so I will do that.

2 **MS. WAGSTAFF:** Your Honor, we filed a response to the
3 questions as well.

4 **THE COURT:** Okay. All right.

5 **MR. KILARU:** I was actually going to raise a different
6 point, which is when we spoke about Dr. Arber's testimony on
7 Monday, you had indicated that the scope of Dr. Weisenburger's
8 testimony could potentially open some doors to things that
9 Dr. Arber might talk about, and we think that a very small
10 aspect of the testimony you excluded from Dr. Arber should be
11 back on the table in light of what Dr. Weisenburger said.

12 So specifically Dr. Weisenburger offered as one of his
13 bases for ruling out the hepatitis C as a cause that there was
14 this gene translocation that's associated with hepatitis C and
15 when someone gets into sustained virological response that gene
16 translocation basically goes away. There was a chart, it was
17 the Gianelli chart, that was displayed.

18 And then he testified today -- that was yesterday.

19 He testified today, first, that he looked at the pathology
20 from Mr. Hardeman, and he talked a little bit about what he saw
21 on that pathology; and then he testified that that particular
22 translocation wasn't present in his blood because of the
23 treatment that he received.

24 So we're not saying -- and I understand your position on
25 this, Your Honor -- we are not trying to have Dr. Arber testify

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1 that hepatitis C was a more likely cause as a result of any
2 gene mutations, but we do think that the door has been open for
3 him to point out that Mr. Hardeman had this BCL6 translocation
4 and that that translocation is associated with hepatitis C
5 based on some published literature. That would be the extent
6 of the testimony.

7 But I think that today Dr. Weisenburger gave the jury the
8 impression, based on looking at the pathology and looking at
9 the literature, that any mutation that might have been present
10 as a result of hepatitis C was gone as a result of treatment,
11 and I think there's literature and evidence suggesting that's
12 not the case based on the pathology that both sides had a
13 chance to review.

14 **THE COURT:** But what I understood Arber's testimony to
15 be, and again I'll have to go back and look at it, but you
16 can't link any translocation to any particular thing.

17 **MR. KILARU:** Well, I don't believe he said that in
18 particular in the report, Your Honor. I believe that --

19 **MS. MOORE:** Are you talking about Dr. Weisenburger or
20 Dr. Arber?

21 **THE COURT:** Arber.

22 **MS. MOORE:** Oh, Arber. Sorry.

23 **MR. KILARU:** I don't believe he talked about that one
24 way or another in the report. I can go back and look to be
25 100 percent sure. We could submit something on that if you'd

PROCEEDINGS

1 like.

2 I believe the issue that prompted the exclusion of the
3 testimony we had suggested is that he said in the report that
4 he can't say that hepatitis C -- that one cause is more likely
5 than another as a result of the pathology, but I think that's
6 different from pointing out that there's something in the
7 pathology that in the literature is associated with hepatitis C
8 if he doesn't take the extra step of then saying something
9 about cause based on that.

10 And I think given that these exact types of gene issues
11 have come up through Dr. Weisenburger and that he's commented
12 on translocations that are either present or absent in the
13 pathology, we should have an opportunity to respond to them.

14 **THE COURT:** Okay. And so I guess there are a couple
15 things about that. One is that you should file something
16 tonight pointing me to the testimony that you're talking about
17 because I don't have a good enough memory of it right now --

18 **MR. KILARU:** Yes, of course.

19 **THE COURT:** -- to have a full understanding of what
20 you're talking about.

21 And, number two, it's going to depend whether that was --
22 something was pulled out of Dr. Weisenburger on cross versus
23 offered during direct I would think, and you seem to be saying
24 that he sort of introduced this concept on direct.

25 **MR. KILARU:** Yes.

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1 **THE COURT:** But, you know, if you sort of pulled
2 something out of him in an effort to open the door to something
3 that you want Arber to say, then I don't know if that would be
4 appropriate.

5 **MR. KILARU:** No, I understand that, Your Honor. We'll
6 file. It was on direct. The issue came up on direct, and we
7 actually didn't cross-examine on it.

8 **THE COURT:** Okay.

9 **MS. MOORE:** And, Your Honor, we just want an
10 opportunity to respond to that.

11 And there wasn't --

12 **THE COURT:** So why don't you file something by
13 7:00 p.m., and why don't you file a response by 10:00 p.m.
14 tonight. Okay?

15 **MS. MOORE:** Great. Thanks, Your Honor.

16 **MR. KILARU:** Sure.

17 **MS. MOORE:** Sorry.

18 **MR. KILARU:** The only slight --

19 **MS. MOORE:** I was planning to --

20 **THE COURT:** Well, actually, you know what? We have
21 the day off tomorrow --

22 **MS. MOORE:** Thank you.

23 **THE COURT:** -- so I don't need to push you on that.

24 **MS. MOORE:** Thank you, Your Honor. I'd like to sleep
25 tonight.

PROCEEDINGS

1 **MR. KILARU:** I also would just like to make sure we --
2 I know the court reporters are working really hard -- I just
3 want to make sure we have the transcript. And we get them very
4 quickly, but 7:00 might be a little --

5 **THE COURT:** Yes. So let's change that for both of
6 you.

7 **MS. MOORE:** Okay. Thank you, Your Honor.

8 **THE COURT:** Why don't you file something by
9 9:00 a.m. -- the defendants file something by 9:00 a.m. and the
10 plaintiffs file something by 11:00 a.m. tomorrow.

11 **MR. KILARU:** Sure.

12 **MS. MOORE:** Your Honor, that means they have multiple
13 hours to get their paper together and I have two. I mean, can
14 they file theirs tonight and I'll file mine in the morning? I
15 mean, I don't want to be nit-picky, but --

16 **THE COURT:** You can have till noon to file.

17 **MS. MOORE:** Thank you, Your Honor. Thank you. I
18 appreciate it.

19 **THE COURT:** Okay. And then are people -- if I want to
20 get together on jury instructions tomorrow, would people be
21 available?

22 **MR. KILARU:** Sure.

23 **THE COURT:** Yeah? So that's one possibility. My law
24 and motion calendar tomorrow -- let's see -- I mean, we could
25 potentially do like 11:00 o'clock or something like that.

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1 **MS. MOORE:** Your Honor, can we do it after our brief
2 is due, or is that --

3 **THE COURT:** Oh, yeah. Right.

4 **MS. MOORE:** Thanks.

5 **THE COURT:** Well, I'm not sure we can. Anyway, I'll
6 get back to you on --

7 **MS. MOORE:** Okay.

8 **THE COURT:** -- I'll get back to you on that.

9 All right.

10 **MS. MOORE:** Thank you, Your Honor.

11 **MR. KILARU:** Thank you, Your Honor.

12 **THE COURT:** In the courtroom people are free to go.

13 (Proceedings adjourned at 2:53 p.m.)

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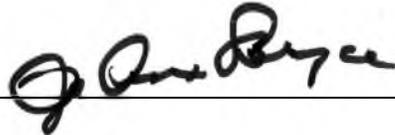
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CERTIFICATE OF REPORTERS

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

DATE: Wednesday, March 6, 2019



Jo Ann Bryce, CSR No. 3321, RMR, CRR, FCRR
U.S. Court Reporter



Marla F. Knox, RPR, CRR
U.S. Court Reporter