IN THE CIRCUIT COURT
TWENTIETH JUDICIAL CIRCUIT OF ILLINOIS
ST. CLAIR COUNTY

FRANCES E. KEMNER, et. al.	)	
	)	
Plaintiffs,	)	
	)	
VS.	)	NO: 80-L-970
	)	
MONSANTO COMPANY,	)	
	)	
Defendant.	)	

REPORT OF PROCEEDINGS

Before the HON. RICHARD P. GOLDENHERSH

JURY TRIAL

January 9, 1985

APPEARANCES:

Mr. Rex Carr
Mr. Jerome Seigfreid
On Behalf of the Plaintiffs;

Mr. J. William Newbold (a.m.)
Ms. Felicia Orth (a.m.)
Mr. Kenneth Heineman (p.m.)
Mr. Joseph Nassif (p.m.)
On Behalf of the Defendant.

Debra M. Musielak, CSR, CM

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EXHIBITS

Official Court Reporter

BE IT REMEMBERED, that on the 9th day of January, 1986, the same being one of the regular judicial days of said court, the above-styled cause came on regularly for hearing before the HONORABLE RICHARD P. GOLDENHERSH, one of the Judges at the St. Clair County Building, 10 Public Square, in the City of Belleville, County of St. Clair, State of Illinois. Whereupon the following proceedings were had:

COURT CONVENED:

THE COURT: Good morning.

DR. LOURENS ZANEVELD

(being called as a witness on behalf of the Defendant, having resumed the stand, having been previously sworn, continued to testify as follows)

RECROSS EXAMINATION

BY MR. REX CARR

Q. Dr. Zaneveld, you testified as to the table number II that was contained in the chapter in the book, that you contributed to that book, do you recall that, Plaintiff's Exhibit 1682, and you have a copy of that there?

A. No, I don't.

MR. CARR: And also we will need Monsanto Exhibit 1406, which is the Grant Lab for comprehensive semen

analysis.

A. I have a copy of that one.

Q. All right. He has a copy of that.

A. Yes, sir.

Q. Now, Doctor, I think you testified as to the Plaintiff's Exhibit 1682, that is a table number II from your chapter, is that you -- that that was up-dated at the time it was -- that it was current knowledge at the time it was published and that you subsequently changed values in accordance with what you learned thereafter, or an opinion that was changed thereafter and that your Grant chart, that is Monsanto Exhibit 1406 was prepared in 1985, and that it contained your current opinions and beliefs as to those normals, is that correct, sir?

A. Yes, sir.

Q. I'd like to have marked, if I might, this chart. It's 1716, Doctor, and, as you can see, it's a comparison of your Table II, 1977 values with your Grant 1985 values.

MR. NEWBOLD: May I see that, Mr. Carr?

MR. CARR: Yes, surely.

Q. And I'd like to ask you some questions relative to that. Can you see it that way, Doctor?

A. Closely, yeah, that's better, much better. Yes.

Q. All right. Doctor, the Table II values appear in

the left-hand column and the Grant 1985 values appear in the right-hand column, is that correct, sir?

A. Yes, I have a little -- I have a little trouble with your heading, but let me check that.

Q. Well, I'll go over each one individually.

A. Okay, fine, I thought you wanted me to check the chart.

Q. I ask -- I'm not asking you to agree to the values at this point, but I'll cover it with you. And if you would look to your Table II for your complete liquefaction time of five to twenty minutes, that is correct, isn't it, sir, in your Table II?

A. It was normal data.

Q. I'm sorry, could you look at Table II that you have before you and see if it's not entered there from your normal data that it was five to twenty minutes of complete liquefaction?

A. No, sir, your chart says normal average, not normal data.

Q. Well, didn't you testify that normal datum was in fact normal averages?

A. I don't -- I said what you usually find in the population, so I would not say that's an average per se, it's what you usually find. I don't know what the outlyers are.

What I explained --

Q. Doctor, I'm not asking for another explanation. You have explained it and you have used the term normal averages, have you not, sir?

A. I have used the term normal average in a Grant chart, yes, sir.

Q. And with respect to the liquefaction time, that would be your Table II, that would be what you would call your normal datum, correct, sir?

A. That's correct.

Q. In 1977 you expected that a normal semen sample would liquefy in five to twenty minutes?

A. Yes, sir, normal semen sample could liquefy within one hour, that's what I explained in the text.

Q. I'll get to that in a moment, but what you said in 19 -- your normal datum for liquefaction time was 5 to 20 minutes, was it not, sir?

A. That's correct, sir.

Q. Now, in Grant, in 1985, you changed that rather than 5 to 20 minutes, you now say that your normal, and you don't use the word normal averages as I will agree, but your normal is less than one hour, correct, sir, or equal to, less or equal to one hour?

A. May I clarify this, sir?

Q. If you could just answer my question.

A. No, sir.

Q. Have you not got complete liquefaction time in minutes to be less than or equal to 60 minutes?

A. That's correct, sir.

Q. All right. And to be completely correct, we should have entered here in that column equal to or less than, correct, sir?

A. That's correct, sir. Again that's not an average, that's a normal range. However, that's what I wanted to state.

Q. Doctor, if you don't mind, we will never finish with you if you volunteer answers where I haven't asked for. If I mislead you in any way, the Court will sit on me, Mr. Newbold will object, and Mr. Newbold can bring out that which I have misled you in. Do you understand that, Doctor?

A. Yes, sir.

Q. The -- I'll put here in parenthesis, so there won't be any misunderstanding about it, the language that you've used, normal datum?

A. Okay, yes, sir.

Q. All right, Doctor?

A. Yes, sir.

Q. Now, Dr. Zaneveld, so you did make, and you did

believe, that there was a change in what would be normal for complete liquefaction, you extended it in effect to about one hour, did you not, sir?

A. No, sir.

Q. Five to twenty minutes is less than an hour, isn't it, sir?

A. Yes, sir.

Q. But it's -- and you have -- you eliminated the five to twenty minutes in your Grant report, didn't you, sir?

A. You mean I did not state it?

Q. Sir?

A. You mean I did not state it in the Grant report?

Q. No, what I said, what you put in your Grant report you eliminated the reference to, or did not put in, five to twenty minutes, you said simply equal to or less than one hour, didn't you, sir?

A. That's correct, sir.

Q. And that is a modification, isn't it, sir?

A. From the previous table?

Q. Yes, that's what we are comparing it to.

A. Certainly.

Q. That is a modification?

A. Yes, but not in my opinion.

Q. Sir?

A. Not in my opinion.

Q. Doctor, I'm not asking you your opinion. Your counsel has the right to ask you your opinion. I'm simply asking you what you have published, not what you said in this courtroom, but what you have published for us to read, sir.

A. Okay.

Q. What you published for us to read, for the doctors to read, and the doctors at Grant to read, is the Chapter in the book and the Grant laboratory sheet, correct, sir?

A. Yes, sir.

Q. All right. Now, Doctor, the next thing that we have entered here is volume, and the volume in your Table II you report the normal datum for volume, well, you say it averages 3.5 milliliters, don't you, sir?

A. That's correct, sir.

Q. And in your Grant sheet, you say normal averages 3.5 milliliters?

A. That's correct, sir.

Q. So you are saying basically the same thing, aren't you, sir?

A. That's correct.

Q. The next item is the pH factor, is it not, sir?

A. That's correct.

Q. In your table you say the normal datum for the pH

is 7.2 to 7.8, did you not, sir?

A. That's correct, sir.

Q. And in your Grant table you say the normal average is 7.2 to 7.8, don't you, sir?

A. Yes, sir.

Q. You say the same thing with basically no change, did you not, sir? For your normal averages?

A. No, sir.

Q. Doctor, did you use the word normal average 7.2 to 7.8 in your Grant?

A. Yes, sir.

Q. 1406. And did you use the words normal datum, 7.2 to 7.8 in your Grant, in your Table II?

A. That's correct, sir.

Q. And Doctor, on sperm concentration, if you will, sir, in your table for sperm concentration, you have an averaging in your normal datum column of 90 million per milliliter, do you not, sir?

A. That's correct, sir.

Q. And, in your Grant table for your sperm count per milliliter, under normal average, in a -- you have 50 million per milliliter, do you not, sir?

A. That's correct, sir.

Q. So you have reduced your normal average in your

table from 90 million milliliters in 1977 to 50 million milliliters in 1985, have you not, sir?

A. That's correct, sir.

Q. Now, Doctor, over on the other side in your Grant table, do you have in a column marked normal, greater than or equal to 20 million sperm per milliliter, do you not, sir?

A. Yes, sir.

Q. And, Doctor, that is your reference for your expectation of fertility, isn't that correct, sir?

A. No, sir, normal infertility are not necessarily related. We have discussed that.

Q. We have discussed it, Doctor. Your greater than twenty -- greater or equal to 20 million milliliters per million sperm per milliliter is based upon the studies that you described earlier, that some 20 percent of men can get their wives pregnant having less, having equal to or less than 20 million milliliters, have you not, sir?

A. That was a primary reason, yes, sir.

Q. And that is the datum upon which that normal column entry is made, isn't it, sir?

A. Correct.

Q. But now that doesn't take away from the normal average for sperm count, concentration, does it, sir?

A. No, sir.

Q. You are describing two different things, aren't you, sir?

A. If you mean that one is a range and the other is the average, you are correct, sir.

Q. No, one is what you believe it would take to get someone pregnant, and the other is what you believe to be the normal average count of sperm per milliliter?

A. No, sir.

Q. Do you not use the word normal average, sir, for 50 million?

A. Yes, sir.

Q. And, isn't normal average the mean? You've described it earlier?

A. Yes, sir.

Q. And this is your interpretation of the data available to you, that the normal average sperm count is 50 million sperm per milliliter, isn't that correct, sir?

A. Absolutely correct, yes, sir.

Q. Yes, sir. And now, Doctor, the change that went from 90 million in your Table II, your 1977 table, to your 50 million count was based, if I understand you correctly, or at least it started you thinking, was the Nelson and Bunge report that you described earlier?

A. That was the first that had come to my attention,

yes, sir.

Q. And, Doctor, the next item that is entered here is the total count, you see that, sir? The total count in your Table II listed under the word or opposite the word sperm count was averaging 300 million per ejaculate, correct, sir?

A. That's correct, sir.

Q. And, in your Grant table, you dropped that sperm count down to a normal average of 90 million per ejaculate, did you not, sir?

A. That's correct, sir.

Q. And, Doctor, that is a significant drop, is it not, sir?

A. I would think so, yes, sir.

Q. There is no question about it. It went from 300 million in '77, to 90 million -- down to 90 million in '85. That is indeed a significant drop, isn't it, sir?

A. I would think so, yes, sir.

Q. Did you find from -- did you find up to the time in '77 when you published your chapter, that in fact the normal average sperm count was 300 million sperm per ejaculate? Was that a true statement that is put in your Table II in your exhibit, in the exhibit, Plaintiff's Exhibit 1682?

A. It had come to my attention --

Q. Excuse me, my question is, sir, was that a true

statement that you put in that Table II, that is that the ejaculate averaged 300 million sperm per ejaculate?

A. Based open the best of my knowledge at that time.

Q. Yes. Now, that was your best knowledge based upon -- and you have been an andrologist for how many years at that time in 1977?

A. Seven years.

Q. And before you ever heard of this case, before this case even occurred, right, sir?

A. Absolutely correct, sir.

Q. You had already written extensively and studied extensively and you considered yourself at that time an expert andrologist, knowledgeable in the field concerning sperm count, did you not, sir?

A. No, sir.

Q. You didn't consider yourself an expert at that time?

A. At that time I was -- at that time I was becoming an expert. I had not had as much clinical experience as I have today.

Q. Tomorrow you will have more experience than today, as well, but did you not have your Ph.D., were you not a professor, were you not teaching, and were you not a consultant, were you not being utilized, and did you not in

fact right write a book as an expert that other doctors not as expert as you can use and rely upon?

A. Um, you ask many questions all at once. Let me try to remember.

Q. Weren't all those things that I said true, sir?

A. I'm sorry?

Q. Wasn't it all true that I stated to you, sir?

A. Could I hear that restated just to make sure?

Q. Were you not considered an expert not only by yourself but by others in this field in 1977?

A. In the clinical field of adrology?

Q. In the field that you published in, this book that was accepted by your peers as authoritative?

A. Uh-huh.

Q. Were you not considered an expert in the field at that time, sir?

A. I guess so, yes.

Q. Doctor, do you really believe that they would accept your chapter for this book if they didn't think you were an expert in the field?

A. There are degrees, sir.

Q. Doctor, I know that there is all kinds of degrees of experts. We have seen different experts in this courtroom.

A. I already said --

Q. Experts with different knowledge. My question is quite clear and specific, Doctor, were you not a Ph.D. at that time? Did you not write a Chapter at that time that was accepted and published and recognized and taken to be authoritative?

A. Yes, sir.

Q. And did you not -- was it not your expert opinion in 1977 that the normal datum for sperm count, that it averaged 300 million per ejaculate?

A. Actually in 1976 when the chapter was written, that's correct, sir.

Q. And, Doctor, you dramatically and significantly changed that opinion in 1985, by 1985, did you not, sir?

A. That's correct, sir.

Q. You broke it down to less than one-third of what you had previously said was the sperm count, average sperm count, did you not, sir?

A. Yes, sir.

Q. And, Doctor, you had used at that time, for that new opinion, the material and publication that came out since the last time you had evaluated the average normal sperm count, did you not, sir?

A. Also some before that time, sir.

Q. Did you not, sir?

A. I used that, yes, used that as well.

Q. Yes, and did you not, based upon more recent, as well as your -- you had to use your earlier knowledge as well, did you not change your opinion, then, sir, in that intervening period of some six years?

A. Yes, that's correct.

Q. And, Doctor, was there anything that you are aware of that happened, or is it your opinion that in that period of time, as you have stated earlier before, that the psychological stress, or that the bald and assertive male, or that one of those other factors that we have gone through, was the cause of this dramatic drop in reported sperm count?

A. No, sir.

Q. You did not. You, in fact, considered that this was a real drop in sperm count, did you not, sir?

A. No, sir.

Q. You did not. You nevertheless reported it as such, did you not, sir?

A. What do you mean by real drop in sperm count?

Q. You said the normal average for the sperm that had been analyzed up to the data that you considered reliable and useful, the normal sperm count was 300 million per ejaculate as of 1977, but you changed your opinion and based on

subsequent datum and reanalysis of our datum -- data, you determined that the sperm count was no longer 300 sperm per ejaculate, but was now averaging 90, did you not, sir?

A. That's correct. It was not a real drop, real being of involving people.

Q. Doctor, did you examine any literature or anything else other than what we have discussed in this courtroom the last several days?

A. Yes, sir.

Q. And did you use some other figures to base that upon, sir?

A. Yes, sir. I gave you an entire stack of material --

Q. I know that. We discussed that material.

A. Not all of -- but not everything that's in there, sir. But I think a significant amount of the material we discussed in court with the exception of Steinberger in 1984, which we only discussed one page of, and probably Hommonai, DeCastro and Wyrobek, and a few people like that, we covered most of the others.

Q. Well, Steinberger 1984 was based upon a 1977 count, which we did discuss in Zukerman at some length?

A. Are you referring to sperm count only now, sir?

Q. That's what I'm referring to. That's the topic

here.

A. Well, you had not identified that. Okay. Yes.

Q. Isn't that right, sir? All right, now, Doctor, the next item on this list is the motility. In your chapter, in your book you put the motility at 70 percent in one hour, 35 percent in seven hours, did you not, sir?

A. Yes, I did.

Q. And in the Grant table you put 70 percent one hour, and you changed the -- no, you didn't, you said 35 percent at seven hours, did you not, sir?

A. That's correct, sir.

Q. Actually to be fair, what you said in your table wasn't that it would be 35 percent in seven hours but that it would be one half of original motility seven hours after ejaculation, did you not, sir?

A. That's correct, sir.

Q. And, of course, if the normal datum is 70 percent, one half of that would in fact be 35 percent?

A. That's correct, sir.

Q. So basically you made no change from 1977 to 1985 other than a method of expressing the same thing, isn't that correct, sir?

A. In the averages?

Q. That's what I'm talking about, sir. That's what

this exhibit is charted as averages, is it not, sir?

A. Yes, I just clarify this because sometimes things get confusing.

Q. Doctor, the only confusion that's going to be here is if you introduce it by volunteering statements I didn't ask you about.

A. Okay. Yes, sir.

Q. I'm asking you about normal averages. That's what this chart is, sir. Doctor, the -- on the forward progression, you said in 1977 in your table that it should be 75 percent, should have moving sperm of forward progression, did you not, sir?

A. That's correct, sir.

Q. And in your Grant table you said it should be equal to or more than 75 percent, did you not, sir?

A. Would you clarify that, sir?

Q. Did you not say in your column percent of moving sperm with forward progression, and in your normal column did you not have the symbol for equal to or -- what did I say less than?

A. No. No.

Q. You have the symbol for equal to or more than 75 percent, did you not, sir?

A. That's correct, sir.

Q. That's basically the same thing as you said in '77, isn't it, sir?

A. The numbers are identical, yes, sir.

Q. Not just the numbers identical, Dr. Zaneveld, you are saying basically the same thing, aren't you, sir, more precise in 1985?

A. Yes, sir.

Q. The morphology in 1977 in your table, you say that there should be 30 to 40 percent abnormal forms expressed in a different way, it would be 60 to 70 percent would be normal forms, correct, sir?

A. That's correct, sir.

Q. And in your Grant table, you said that it should be equal to or more than 50 percent, isn't that correct?

A. That's correct, sir.

Q. And we need that equal to in this chart -- that's not in here, is it, sir? Now, Doctor, you testified at some length on redirect examination that you had made significant and substantial changes from 1977 to 1985 and in point of fact the substantial changes that you said in your normal averages you dropped the sperm concentration from 90 million to 50 million and you dropped the total count from 300 million to 90 million, did you not, sir?

A. You have a two-part question, sir, which part would

you like me to answer?

Q. Both, sir.

A. No, sir.

Q. That isn't correct? Did you, in fact, have any changes in your Grant normal average values as opposed to the Table II normal average value, sir, other than what I listed?

A. Okay, I forgot which one you listed.

Q. The 90 million per milliliter change had went down to 50 million per milliliter. The 300 million total count went down to 90 million?

A. That's correct, sir, as you stated now.

Q. Yes. And Doctor, -- well, we have already discussed the reason for those changes, have we not, sir?

A. That's correct, sir.

MR. CARR: Your Honor, I'd like to offer this exhibit into evidence, that's 1716.

THE COURT: Any objection?

MR. NEWBOLD: No objection.

THE COURT: Admitted without objection.

MR. CARR: Can I have another exhibit marker?

MR. NEWBOLD: Can I see that, please?

MR. CARR: 1717.

Q. (by Mr. Carr) Doctor, I'd now like to show you what's been marked Exhibit 1717, and as you can see, it's

captioned plaintiffs with less than normal averages in 1983 as set out in Grant lab values in 1985. I would like for you to take the conclusions where you have the data lined up.

A. Those -- my conclusions.

Q. Rather easy to use. Or you can use this sperm count exhibit right here that we -- that's in evidence, 1705.

A. Okay, that's even easier.

Q. Yes, it is easier to check whether or not the values put in the top board are correct.

A. Okay, you don't want me to eliminate Michael Burks or -- because he was too young, and --

Q. 1983 -- what's the age, Doctor, 16?

A. Under 18.

Q. Under 18. I thought you said yesterday if they were 16 they could go in there?

A. I said 16, 17, they are too young. The values we get at 19 they -- the sperm concentration will be normal again.

Q. Well, in any event whether what you have said is correct or not, it is true, and I'll certainly accept that you believe what you are saying, that it is your opinion it is true that those people are on this, had such a count, that is Michael Burks, correct, sir?

A. Okay. In -- okay.

Q. 1983?

A. 1983. That's correct. And James Vaught is abstinent for only one day.

Q. All right, in '83?

A. In '83, that's correct, sir. So now if -- that is your choice.

Q. In fairness to your testimony, let me put a mark by the ones that you challenge, all right?

A. Michael Burks and James Vaught.

Q. In both columns.

A. And James Vaught in both columns, 1983, correct.

Q. So there would be no question about that. I'll put a "Z" by it so later on we will know that you are the one that challenged it, all right?

A. Fine.

Q. All right. Now, Doctor, other than with those changes there, is it correct, sir?

A. I'm checking, sir. Okay. It's difficult for me to check the totals without the volumes.

Q. I'm sorry?

A. I can check the concentrations from this particular chart but not the totals, of course, because I don't have the volumes.

Q. Oh, all right. You are correct. You'll have to use your statistical analysis for that, because I don't think I've got an exhibit. I don't believe I've got an exhibit that sets out the totals, have I?

A. You had one, I thought. But, oh, then we had to make those changes in it.

Q. That's all right whether we changed it or not. No, I apparently don't have one. We have the percent but not the identifications?

A. I can look it up.

Q. Why don't you check that, if you can, for me.

A. Okay. The concentration, I believe, is correct. I'll check it at this point.

Q. On your count I would suggest the easiest way to do it is look at the ones that are above 90 rather than --

A. Right, I shall do so. In 1983. All right, Loren Alton was less --

MR. CARR: I'll tell you Jerry, 13 out of 21. It will be 13 out of 19, we are excluding two of them.

MR. SEIGFREID: 68.

MR. CARR: 68 percent? And then calculate for me, please, 16 out of 18. How many we got in 81, Doctor?

A. In '83, you mean? I got --

MR. CARR: We got 21. So it will be --

A. I had 22.

MR. CARR: You've got Kidwell and he's no longer a plaintiff in this case.

A. Okay.

MR. CARR: So we will have 16 out of --

A. 19.

MR. SEIGFREID: 84.

MR. CARR: 84?

MR. SEIGFREID: (indicates affirmatively.)

Q. (by Mr. Carr) Then is that chart correct as it is there, Doctor?

A. Yes, as a matter of fact.

Q. And it shows that of the plaintiffs in the 1983, Dr. Kulakauskas' assessment, 68 percent had less than the 50 million concentration per milliliter in the concentration that you set out in your latest -- your 1985 table as being the normal average, does it not, sir?

A. Yes, sir.

Q. And it also shows that 84 percent have less than the 90 million total count that you set out in 1985 as the normal average in the Grant laboratory, correct, sir?

A. Yes, sir.

Q. All right.

MR. CARR: Offer Exhibit 1717, Your Honor.

MR. NEWBOLD: No objection, Your Honor.

THE COURT: Admitted without objection. Thank you.

Q. (by Mr. Carr) Now, Doctor, I'd like to hand you -- after I get it marked. I hand you Plaintiff's Exhibit 1718, which we have discussed at some length earlier, which is the study from which the table, tables marked in Plaintiff's Exhibit 1681, I believe, is.

MR. SEIGFREID: 85.

Q. Yes, 1685 in which it was taken, correct, sir?

A. Correct.

MR. CARR: Offer Exhibit 1718 into evidence, please the Court.

MR. NEWBOLD: That's the big board?

MR. CARR: No, that's the original work.

MR. NEWBOLD: Object as to hearsay, Your Honor.

THE COURT: It's admitted over objection.

Q. (by Mr. Carr) Now Doctor, this MacLeod -- for the benefit of the jury, this exhibit is a long, oh, it runs 14 pages, does it not, sir, in length, article written by Dr. John MacLeod and an associate, Dr. Ying Wang?

A. Could you explain something? An objection, was that sustained or overruled? Can I look at the article, in other words?

THE COURT: Yes, you can look at the article.

A. I can comment on it.

THE COURT: Yes, you may.

A. I wasn't sure.

Q. I can't ask you any questions if you can't look at the article, Doctor.

A. Well, okay, 14 pages was your question? Yes.

Q. Written by Dr. MacLeod and Dr. Wang?

A. Yes, sir.

Q. And it was published in '79 in the authoritative journal called Fertility and Sterility published by the American Fertility Society, correct, sir?

A. That's correct.

Q. And MacLeod, rather, has been publishing in the area of fertility and been working in this area for, well, today it would be at least since 1945, apparently, when he first started collecting his data, be some forty years now he's been working in the field, correct, sir?

A. Yes, sir.

Q. And up to the time of this publication, it would have been some 39 years?

A. That's correct, sir.

Q. And he is probably, is he not, considered to be the most eminent andrologist in the field of fertility and

sterility?

A. No, sir.

Q. You don't think so?

A. Oh, no, sir.

Q. Well, is he one of the most?

A. No, he's well known for this particular work on semen analyses, per e, but not as an andrologist.

Q. Okay, I was too broad. All right. He is the premier world authority in the work that's exhibited here, that is semen analysis, is he not?

A. Could you define the word premier?

Q. Well, considered to be the top man, or at least the one that's done the most work?

A. No, sir, not even that.

Q. No on either of those?

A. He's a well-recognized person, I'll grant that.

Q. And that is as much as you are going to say for Dr. John MacLeod?

A. Yes, I think that is what most people would agree to.

Q. Doctor, do you know of any scientific paper in the field of semen analysis that does not use and rely upon work of Dr. John MacLeod?

A. You mean in 1951 data?

Q. This '79 data he talks about -- my question is pretty simple. Is there anybody, you, yourself, when you came to this courtroom -- this table, by the way, is one that -- this exhibit, by the way, is one that you pulled out and used. This is a blow-up of what you gave me?

A. That's correct. There were several tables from his article, yes.

Q. And you used more than one article by MacLeod to come to the opinions that you have given in this courtroom, did you not, sir?

A. I testified he was a well-recognized person in the field.

Q. But, Doctor, I wanted more than that. He is used and relied upon by anybody that does anything in this field of semen analysis?

A. No, sir, I can't say that.

Q. You can't say that, but you do know that you personally use him and rely upon him?

A. I certainly use him. He's one of the people I rely upon.

Q. Yes, all right. Now, Doctor, this work in '79, he analyzes the changes that others have said have taken place over the period of time and I think we have already gone into the article as to the significance of it. But he discusses

the changes and he talks about them and makes tables and analyzes them, and this article is a long analysis of purported changes in counts that have taken place since the 30's and the 20's, correct, sir?

A. That's correct, sir.

Q. And we have already seen that change in his article that we have discussed and used and relied upon it, and analyzed it as well, and even talked to Dr. MacLeod, correct, sir?

A. It appeared like it from his article, yes, sir.

Q. Yes. Doctor, the table that we have here, is it the largest -- the nine thousand men that were studied and referred to in this publication, 1979, is that the largest group that have ever been reported upon in one document?

A. Yes, sir.

Q. And, the 5,476 group that he also reports on in this document would be certainly the second largest group, wouldn't it, sir?

A. Yes, sir.

Q. And the combined total of fourteen thousand people that he reports on in this study, certainly several times larger than anybody else's group, isn't it, sir, anybody else's work?

A. Yes, sir.

Q. Yes. And, it is the latest in point of time of publication for any group of, oh, what 500 or a thousand or better? There is nothing later than this, is there, sir?

A. No, sir, not more than a thousand, no, sir, I don't think so.

Q. Even the work that's put in Dr. Steinberger's study that was published in 1984. He in fact uses a study that was published in 1977, doesn't he, sir?

A. That's correct, sir.

Q. Yes. So as far as large population analysis, the MacLeod and Wang study is the latest that we have, isn't it, sir?

A. That's I believe so, sir.

Q. Yes. All right, now, Doctor, there is a table there that -- where the doctor has put the -- he's got a mean and a median for his nine thousand people, hasn't he?

A. Yes, sir.

Q. He's got a mean count of 95.7 and he's got a median --

A. Correct.

Q. 76.5?

A. That's correct, sir.

Q. And you told us yesterday that you considered the median count of some -- well, you said it was better to use

it or would be of more value to use it than the mean, didn't you, sir?

A. I said more value when setting up your normal ranges.

Q. And we have the benefit of his very latest large population for that, don't we, sir?

A. You mean both the 9,000 and the 5,000 group?

Q. Well, the 9,000 is the one?

A. You wish to use the 9,000 one?

Q. Yes, that's the one he's described in his table as being infertile marriages and which he did himself. Somebody else did the semen examination in the other ones, so I want to use just the one that he -- I'd like to have this exhibit marked if you might. Doctor, handing you what's been marked Plaintiff's Exhibit 1719. The blow-up is 1719 a?

MR. CARR: Your Honor, I'll represent those figures on this exhibit are correct. If they are incorrect, I can take them back from the jury, but I'd like the jury to be able to go along with it as I examine the doctor as to the correctness of it?

THE COURT: Any objections?

MR. NEWBOLD: I'm sorry, I was reading this thing.

THE COURT: Do you have any objections to the admission of 1719?

MR. NEWBOLD: We haven't computed -- we are trying to compute the medians right now as fast as we can. I guess subject to its accuracy --

MR. CARR: That's what I'm saying.

THE COURT: All right, subject to its accuracy, it's admitted.

MR. CARR: We will pass it to the jury, Your Honor.

THE COURT: Yes, you may.

(Exhibit passed to the jury.)

A. May I -- not my turn.

Q. No, not yet. You'll have a chance momentarily.

MR. NEWBOLD: Your Honor, I have another objection to this, having looked at it. May I approach the bench?

THE COURT: Sure.

(The following Side Bar conversation was had outside the hearing of the jury.)

MR. NEWBOLD: It's really more. Let me get my thoughts straight before I start talking.

THE COURT: Don't get too close.

MR. NEWBOLD: It's an extension of my earlier objection where I objected to the article as being hearsay. And I'm further objecting to this exhibit being hearsay because what we are doing here is he's taking MacLeod, a man who has not testified and who is --

THE COURT: Because he's adopting the values that are established in there. Fine, I'll extend your objection to that and incorporate both your argument and your argument on the matter, and it will be a continuing objection.

MR. NEWBOLD: Okay. That we are using his values and he hasn't been on the stand. I haven't be able to cross examine. He hasn't been able to vouch for the values, compare the values with --

THE COURT: No, I understand that.

MR. NEWBOLD: Okay.

(The following proceedings were had in open court.)

Q. (by Mr. Carr) Now, Doctor, I'd like first of all to direct your attention to the sperm counts. Are the counts correct there, sir?

A. Didn't you ask me to assume that they were?

Q. Well, no, I'd like for you to be satisfied.

A. Would you like me to check them?

Q. Yes, I'd like you to also note that Michael Burks has been eliminated from the table as you have -- well, we don't agree with it, but for the purposes of this examination to do so. We have also, if you will note, because you did not use him in your table, I think 1416, 1417, you eliminated Gerald Vaught in one study, and you eliminated James Vaught in another.

A. Yes, that's correct, I noted that. I think that's good.

Q. You will note those two individuals have been eliminated from this table so that we have conformed this table to the parameters set out by you and Mr. Newbold for those purposes?

A. That's correct, sir. Okay, you rounded the values off and that's okay too, as compared to what I had here.

Q. Are the values correct, sir?

A. It will take some time to check them. I apologize for that. I can assume they are correct.

Q. If you are satisfied by now that we have put it down correctly, those values, and I represent to you that we have and there is, we certainly may be capable of making mistakes. As I pointed out yesterday, we are far from perfect, but Mr. Seigfreid did this and since he's a Dutchman he's more perfect than I.

A. In that case I don't need to check it.

Q. You better check it double, Dr. Zaneveld, check it twice. I didn't have time to check it this morning myself.

A. Okay, I checked the right-hand column and except for some decimal errors on George Rush, should be 120.8 and 16., 6 which don't have any significance.

Q. That's an error on George Rush?

A. I said except for some decimal, should be 120.8 instead of 120.0, which is a very minor.

Q. 120.8, that would make no difference for the purpose of this chart?

A. That's what I'm saying, making no difference, therefore, 1983 is right, I'm going to assume 1982 is right.

MR. NEWBOLD: Hold it, I'm not sure you should make that assumption. I want to check them myself.

A. Yes, sir, I'll check them then.

MR. NEWBOLD: Check Joe Robinson for 1982.

A. The values we had here were not always entirely accurate. Am I allowed to talk to --

MR. NEWBOLD: Not really.

THE COURT: I would prefer not to.

MR. NEWBOLD: Check Joe -- just check Joe Robinson '82, that's the one I have a question about.

A. I got a 106.8 in my chart. I'm not sure it's Joe or whoever it might be.

MR. NEWBOLD: That's what I have, too. What does the exhibit say?

A. 106.8 on Joe Robinson.

MR. CARR: You've got Joe Robinson in there twice, Jerry. That should be Tim Robinson.

MR. NEWBOLD: I've got Joe Robinson --

MR. CARR: Should be Gary Robinson. See, you are right, Mr. Seigfreid did make a mistake.

MR. NEWBOLD: Never assume.

MR. CARR: Number 12 should be Gary Robinson. Makes absolutely no difference in the outcome.

A. I checked the right-hand column.

MR. NEWBOLD: Never assume.

MR. CARR: But it makes no difference.

THE COURT: Same number?

MR. CARR: Same number, just the names change and the names are meaningless for the purpose of this exhibit anyway, Your Honor.

MR. NEWBOLD: Let's check the rest of them.

MR. SEIGFREID: The jury should change theirs.

A. Okay, I will change it, also. Would it be okay to allow Mr. Newbold to check so that I don't have to do it?

THE COURT: Sure.

A. So when he's done then --

THE COURT: Mr. Carr, you may proceed.

MR. CARR: I want to confess something, Your Honor, for the sake of keeping the record straight, looking at some rough material that I gave Mr. Seigfreid, and in fact the error in the name is mine and not his. So I misled him. I gave him wrong data.

A. That speaks for Dutchmen, I guess. Back to that.

MR. CARR: I was hoping it wasn't that way. Mr. Seigfreid and I have something of a fued going on, but -- he's one up on me, now. Where were we, Dr. Z?

A. We were right here checking the chart.

Q. Are we all clear on those values?

A. I asked the Judge was okay for Mr. Bill Newbold to check the figures so you and I could continue.

Q. All right, fine. For 198 -- first of all, you will note that while the exhibits that you used to, more than one year to compare, you used the Moberly clinic results, and we have not used the Moberly clinic results. You see that, don't you, sir?

A. Yes, sir.

Q. And you have said, though, however, that the Moberly clinic did not -- or the Medical Center did not follow their protocol, didn't you, sir, in one or more?

A. That's correct, sir.

Q. They did not report liquefaction time?

A. That's correct.

MR. NEWBOLD: Object, Your Honor, repetitive.

MR. CARR: I want to establish this point.

THE COURT: I think it can be established in this area. Overruled.

Q. That they did not report the history for the last date of ejaculation?

A. Yes, sir.

Q. They gave no history, and that all their pH's are above the normal averages that you have listed for normal averages?

A. That's correct.

Q. All the pH results, except for one, which is way below, and that you have also said with regard to their sperm counts that such high sperm concentrations are hardly ever found in a regular population?

A. Yes, I said that, sir.

Q. All right. And so we have not used the Moberly clinic in arriving at those medians, and as the exhibit shows, we have, have we not, used both 1982 and 1983 results of Dr. Kulakauskas?

A. That's correct, sir.

Q. And as far as the median is concerned, the way we arrived at the median was to take the person who fell half way between the top and the bottom count and said that person, or if it was an even number of people, and in this case it would be in 1982, there is 18 -- so there would be 9 above and 9 below, falls right between Glen Rush and Delbert Curl, so we split the difference between those two values,

which would be 50?

A. That's correct, sir.

Q. All right. And use that as a median. And then for 1983, we took the person -- there is one more. There is an odd number in 1983, there is 19. So we took the value of that person, who was -- who fell in between, that is we took the value of person number 10, who was Loren Alton?

A. Okay.

Q. And using that as a median, is that the correct way to do it, sir?

A. That's perfectly satisfactory, yes, sir.

Q. So that we have a 1982 median of 50 million, this is total count per milliliter?

A. This is per milliliter.

Q. Per milliliter, all right.

Q. We have a 50 million per milliliter for 1982, 33.4 for 1983?

A. Yes, sir.

Q. If you take those two, put them together, divide them by two, we get the combined median, correct, sir, of 341.7?

A. Yeah. I don't know if you can actually divide medians by two. I'm not that good in that area, but we can do it.

Q. You did it for the -- in the tables that you put on for the means?

A. Means is different. There is actually figures, not numbers of people, but, okay.

Q. At least you understand?

A. I understand that point.

Q. What the word combined median means, did you not, sir?

A. That's correct, sir.

Q. And MacLeod -- and that's 41.7, and MacLeod and Wang table for infertile marriages, and we use the same that he used, certain aspects of semen quality in infertile marriage populations?

A. Uh-huh.

Q. He used the classification for -- he said 1938 to 1977, but in point of fact, what he used for that study of the figure that we used for that study was the 9,000 men examined in the ten-year per or eleven-year period from '66 through '76?

A. Yes, I understand that.

Q. Which the median is 76.5, correct, sir?

A. That's correct, sir.

Q. And we have listed that as the median here, correct, sir?

A. Yes, sir.

Q. So, in comparing the median between the Sturgeon plaintiffs and the 9,000 men examined by Dr. MacLeod and Wang, the medians are widely widely apart, aren't they, sir?

A. You mean they are much less or less than the --

Q. That's correct?

A. Yes, I would agree.

Q. And for instance in 1982, there are only seven plaintiffs who are above the Wang median, in 1983 there are only two plaintiffs that are above the MacLeod and Wang median, correct, sir?

A. In 1982 you said there was seven, let me count them.

A. Yes, that's correct. And in 1983 --

Q. Only two?

A. Only two, that's also correct, sir.

Q. So as far as this table is concerned, in comparing the men in infertile marriages with the plaintiffs in this case, the plaintiffs' median is much much lower than the 9,000 husbands in those infertile marriages?

A. Well, I wouldn't agree to much much lower. I would definitely agree to lower.

Q. Doctor, 76.5 is 35 decimal points higher than the 41?

A. 35 decimal points?

Q. Yes.

A. That would be .000 --

Q. No, 35 decimal points -- 35 places, I'm not -- not 35 places, percentage points is what I meant to say.

A. Oh, percentage points.

Q. Percentage points above the plaintiffs in this case?

A. That could be correct, sir.

Q. And those are infertile marriages, not fertile marriages but infertile marriages, correct, sir?

A. That's correct, sir.

Q. So according to this table, the plaintiffs are significantly lower than men who are in infertile marriages?

A. It is statistically significant or --

Q. Yes?

A. That I couldn't tell you.

Q. Statistical significance is ordinarily, isn't it Dr. Zaneveld? You say five percent different that statistically significant?

A. Well --

Q. Didn't you say that, sir?

A. 5 percent less, but it depends on the distribution curve, sir. When you do the statistical comparisons, when

you actually do your calculations --

Q. Doctor, I'll accept that, and I really want to get you off the stand. I promised that you would be on not significantly more than an hour. I'm trying to do that. Whatever it's called, it is a significant difference between those infertile marriage partners and the plaintiffs for medians, is it not, sir?

A. With significant meaning the more collquial term of -- usual term --

Q. Yes.

A. Okay, sir.

Q. As far as the mean is concerned, we got the 1982 mean by adding those values in 1982 and dividing by 18, and that is a proper method to get the mean, is it not, sir?

A. That's correct, sir.

Q. And in 1983 we did the same thing, we added those values in the 1983 and divided by 19 in that case, and that too is proper, is it not, sir?

A. That's correct, sir.

Q. And then we combined the two as we did before, got a combined mean that is an average of 50 million sperm per milliliter, did we not, sir?

A. Yes, sir.

Q. And as compared to the MacLeod and Wang 95.7,

that's nearly twice as much as the Sturgeon plaintiffs in those infertile marriages, isn't that correct, sir?

A. That's correct.

MR. CARR: Your Honor, that does conclude our recross examination, if I have offered those exhibits. I think I just asked permission that the jury could see them. I now offer exhibits --

THE COURT: They were admitted without objection.

MR. NEWBOLD: Over my objection.

THE COURT: They were both admitted subject to the mathematical accuracy. You are finished with recross?

MR. CARR: I am, Your Honor.

THE COURT: Mr. Newbold?

MR. NEWBOLD: I can't believe it. I've been sitting here waiting to go, now I've misplaced the pad that I need to start. Your Honor, this is Defendant's Exhibit 1418, which is one page of Delbert Curl's fertility testing for the year of 1982. I would move its admission and ask --

MR. CARR: It's already in evidence, Your Honor, as a Plaintiff's Exhibit. If you want the number I can give it to you. Certainly no point in making --

THE COURT: Whatever number we use it's without objection.

REDIRECT EXAMINATION

BY MR. J. WILLIAM NEWBOLD

Q. Dr. Zaneveld, the reason I gave you that --

MR. CARR: I object to the reason he gave it, Your Honor.

THE COURT: Would you rephrase that please?

Q. Directing your attention, sir, to what has been marked as Defendant's Exhibit 1418, have you reviewed that prior to today, sir? Do you recall Mr. Carr cross examining you about whether or not you knew whether Dr. Kulakauskas had used that speeding up technique to speed up liquefaction time of semen so that he could do a count at 30 minutes and one hour?

A. Yes, sir.

Q. And, looking at that, this page, can you show the jury where the liquefaction time is shown on the exhibit?

A. When you look -- take the sheet, look on the microscopic, it's number one, microscopic ejaculate investigation, listed are volume, liquefaction time and pH, B, liquefaction time. That's where it's listed.

Q. What was the liquefaction time for Delbert Cecil Curl?

A. Seventy-five minutes.

Q. If Dr. Kulakauskas had used this speedy, this speed

up for the liquefaction time, would this have said 75 minutes?

A. Not unless he used it after 75 minutes.

Q. Well, can you explain that for us?

A. Well, if he would have used a liquefying agent and he would have liquefied the sample before the 30 minutes that he did his motility examination, then he would have put down 29 minutes for liquefaction, or 25 minutes, or 15 minutes.

Q. So that by looking at this exhibit right here, can you tell whether or not Dr. Kulakauskas used this speed up method for liquefying the semen sample?

A. Not before 75 minutes, sir.

Q. Then in your opinion was the semen sample fully liquefied for a semen analysis for Dr. Kulakauskas and Dr. Carnow at 30 minutes?

A. Could not have been, sir.

Q. Could it have been fully liquefied at one hour?

A. No, sir.

Q. Using the exhibits that Mr. Carr has already questioned you about -- strike that. Do you recall Mr. Carr cross examining you over the fact that there were high sperm count reports in New York, like MacLeod and Wang, but low sperm count results in Iowa City and in Houston, Texas?

A. That's correct, sir.

Q. And using the literature that has already been provided to you and introduced into evidence, were there also any low sperm count reports coming out of New York City?

A. Definitely lower sperm counts than those in MacLeod, yes.

Q. What were they?

A. Rehan et al. published a median of 65 million sperm per millilier and a mean of 79 million sperm per milliliter. Santomauro reported a median of 40 million sperm per milliliter and a mean count of 50 million sperm per milliliter.

Q. In your opinion then have the reported values only fallen in Iowa City and Houston or have they also fallen in New York City?

A. The answer to that is that the reported values in general have decreased from those originally reported by McLeod and Wang or MacLeod and Gold. I have no idea why MacLeod and Gold in general have higher sperm concentration values than the rest of the country, but they do. In their repeat study in 1979 they again found higher values, much higher than most people in the rest of the country, including New York.

Q. Dr. Zaneveld, Mr. Carr cross examined you on Plaintiff's Exhibit 1717, which were plaintiffs with less

than the normal averages in 1983 as set out in your Grant Lab values in 1985, and the one column he has less than 50 million, which has to do with concentration, and less than 90 million, which has to do with total count. Do you recall that, sir?

A. Yes, sir.

Q. I hand you what has been marked as Defendant's Exhibit 1419 and ask you whether or not we did not do the exact same chart but including Moberly and excluding various plaintiffs for various reasons and containing an overall average for total count?

A. What is done here is you listed the percent of people that -- that's correct, the percent of people that are less than the 90 million per milliliter.

Q. In Carnow I, Carnow II and Moberly and overall, is that correct?

A. And overall, that's correct.

Q. And we -- and in Carnow I you eliminated Michael Dominguez, and why is that, sir?

A. Because he was too young too make a definitive diagnosis on him.

Q. And you also eliminated in 19 -- Carnow I, Gerald Vaught, why is that, sir?

A. In 1982 he was abstinent for only one day.

Q. And then in Carnow II you eliminated Robert W. Vaught, why is that, sir.

Q. In Carnow II?

A. He had no analyses at that time.

Q. Okay. And in Carnow II you also eliminated James Vaught, why is that, sir?

A. Because he had not been abstinent for more than one day.

Q. All right. And then in the Moberly results, you eliminated Gerald Vaught, why was that, sir?

A. Again, no analyses was made. He did not produce a sample.

Q. And in Moberly, you also eliminated James Vaught, why is that, sir?

A. He was abstinent for only one day.

MR. NEWBOLD: I would like to move the admission of Defendant's Exhibit 1419, Your Honor, and pass it to the jury.

THE COURT: Any objections?

MR. CARR: None, Your Honor.

THE COURT: It's admitted without objection.

(Exhibit passed to the jury.)

Q. (by Mr. Newbold) Now, Dr. Zaneveld, I'd like to hand you Defendant's Exhibit 1420, and ask you whether or not

you did the exact same thing for the other side of Mr. Carr's chart having to do with concentration and less than 50 million?

A. Yes, that's correct, sir.

Q. And that including Carnow I, Carnow II, Moberly had an overall average, is that correct?

A. Yes, sir.

MR. NEWBOLD: I would move its admission, Your Honor.

MR. CARR: No objection, Your Honor.

THE COURT: You said no objection? Admitted without objection.

(Exhibit passed to the jury.)

Q. (by Mr. Newbold) Now, Dr. Zaneveld, first directing your attention to concentration, and can you show the ladies and gentlemen which one of the two copies that they have would be concentration?

A. The one headed by concentration.

Q. Okay. And when you did your averages, deleting the people that you thought should have been deleted, what was the average for Carnow I?

A. I can remember it was 47 percent having less than 50 million sperm per milliliter.

Q. And do you consider that to be significant, Dr.

Zaneveld?

A. No. No. Not at all. The only reason why I'm hesitating somewhat is that I don't know exactly what you meant by significant. In what regard?

Q. Clinically significant insofar as reviewing sperm parameters?

A. No, particularly not because the 50 million is an average. In my clinical opinion, looking at people less than 50 million is not really what we do, we look at people above 20 million. 20 million is the cutoff point of normality. As long as the people fall above 20 million they are in the normal range and as long as the averages fall above 20 million in the normal range, the rest is looking at the smaller values, higher values, unless the groups are very very large. It is very difficult to compare such averages, but, in particular there were 47 percent, from that standpoint not significant.

Q. Now, Mr. Carr only had -- he doesn't have 1982 up here, all he has is 1983, and we have done 1983, too, and we agree with Mr. Carr's second number here, that 68 percent of the people fell below 50 million, is that correct?

A. That's correct, sir.

Q. And do you consider that to be clinically significant?

A. No, again not, sir.

THE COURT: Okay --

MR. NEWBOLD: I'd say two more minutes I'll have this one done.

THE COURT: Okay, go ahead.

Q. Now, Mr. Carr, did not include the Moberly analysis. We did include the Moberly analysis, is that not correct, sir?

A. That's correct, sir.

Q. And do you believe that even though the -- strike that. Do you believe that the Moberly analysis is valid insofar as sperm concentration is concerned?

A. That's correct, sir. As far as I understand, they were done on exactly the same conditions as the Carnow examination.

Q. And when you looked at the Moberly results, what percent of the people fell below 50 million in concentration?

A. None, sir, so --

Q. So that would be totally normal?

A. Absolutely.

MR. NEWBOLD: Good time for a break.

THE COURT: All right, fine. We will take a break at this point in time. I would remind you you are not to discuss this matter among yourselves, with anyone outside the

jury panel, or as of yet form any opinions about the matters and conclusions in the trial.

(Following a recess, these proceedings were had in open court.)

Q. (by Mr. Newbold) Now, Dr. Zaneveld, directing your attention to Defendant's Exhibit 1419, which is the total count, is that correct, sir?

A. That's correct, sir.

Q. And can you --

A. I think it was on the right-hand side of that.

Q. And Mr. Carr showed you Plaintiff's Exhibit 1717, which was total count of less than 90 million, is that correct, sir?

A. That's correct, sir.

Q. And that was for the 1983 averages, which is what we call Carnow II, is that correct, sir?

A. That's correct, sir.

Q. And we show that as 84 percent of the people who had less than 90 million total count?

A. Yes, sir. That's exactly what Mr. Carr showed, too.

Q. And, insofar as what Mr. Carr showed, Doctor, what clinical significance does it have insofar as normality or abnormality is concerned of those people?

A. Well, as we testified yesterday, many of those people -- most of those people still have above 50 percent, I'm sorry, above 50 million sperm total, which is the cutoff point for normality and abnormality. However, as a group, and as I stated in my preliminary conclusions, 84 percent of the men having below 90 million sperm per milliliter is a bit askewed, and therefore, not as usual as one would normally find in a large population. We have to consider this is relatively small population, however, but I would say 84 percent of less than 90 million per milliliter is a bit unusual in this particular case, but not meaning that it's clinically abnormal.

Q. Now, we also looked at what percentage of men, not only in 1983 Carnow II, but we looked at it at Carnow I, did we not, sir?

A. That's correct.

Q. And what percentage is that for Carnow I?

A. That's 37 percent, which means that 63 percent of the Carnow I examined people were above normal, so more than half were above the average range, which was again perfectly normal or better than normal.

Q. We also looked at the Moberly, did we not, sir?

A. That's correct.

Q. What did the Moberly data tell us about total

count?

A. The Moberly total count and the Carnow total count on the average was very similar, however, the Moberly total count only 12 percent of the men fell below 90 million per milliliter, so that 88 percent of the men were above in normal average of 90 million per milliliter, which is the large majority of the men.

Q. Then when you look at all three, not just one, but look at all three semen analysis, what is your opinion insofar as total count is concerned?

A. Well, since two out of three are better than average, I would consider this normal.

Q. Okay. Now, Doctor, I want to talk about medians briefly. Dr. Zaneveld, I hand you what has been marked as Defendant's Exhibit 1421, which is really, is the same chart as 1419 except on that chart we figured what the Moberly median is and the overall median, is that correct, sir?

A. Yes, sir.

Q. What is the Moberly median?

A. It's 126, sir.

Q. And what is the overall median?

A. The average of the various media, which as I said we take them with a bit of grain of salt, is 70.

Q. Now, on Plaintiff's Exhibit 1719 Mr. Carr set out

some medians from MacLeod and Wang of infertile marriages of 76.5, and then MacLeod and Wang of infertile marriages of 95.7, you recall that, sir?

A. That's correct, sir.

Q. Now, is there other literature that is already in evidence that would indicate much lower medians?

A. That's correct, sir.

Q. And what are they?

A. Well, first of all, the medians which actually are of fertile people, if I remember, all we have to remember that the infertile marriages means half of the men is still fertile, doesn't mean all the men are infertile, only half the list on the bottom group. If you look at only the fertile population, of course, the population consists of infertile and fertile people. Looking only at fertile population, Nelson and Bunge --

Q. Right here on this big chart?

A. That's correct, sir. Reported a medium of 38.

Q. Right here?

A. That's correct.

Q. Okay. Rehan et al. from New York reported a median of 65.

Q. Okay, that's right here?

A. That's correct. Right there And, then Sobrero,

Rehan, same authors, reported a median of 68. Okay. And, of course, Smith and Steinberger reported a median of 50.

Q. Okay. Is that data indicated on the exhibit that you have before you?

A. Yes, sir.

Q. And those medians are much lower than the MacLeod and Wang medians of 76.5 and 95.7, is that correct, sir?

A. Yes, sir. I would also like to point out when MacLeod and Wang in a study of 5,40000 men, their own study, sent out the analysis by another -- by other people, they obtained only a median of 55 million sperm per milliliter rather than the 76.5. It appears their clinic is high in their sperm concentration estimates, for whatever reason, I would not know why.

MR. NEWBOLD: Your Honor, I would like to move into evidence Exhibit 1421 and pass copies to the jury.

THE COURT: Any objections?

MR. CARR: No objection, Your Honor.

THE COURT: Admitted without objection.

(Exhibit passed to the jury.)

Q. Now, Mr. Carr's -- strike that. The median as shown in 1982 for Carnow II is 50, and we agreed with that, did we not?

A. Yes, we agreed with that.

Q. And how does that 1952 median compare with the Nelson and Bunge median?

A. It was higher.

Q. And is that normal? Is that what it should be?

A. Yes. Yes. Actually better than normal, if you want to consider normal the average.

Q. Okay. And how does the 1982 median that Mr. Carr shows on his chart, 1719 A, compare with Smith and Steinberger?

A. It's the same.

Q. Exactly the same. Mr. Carr has a median in 1983 of 33.4, and that does fall below the MacLeod and Wang and the Nelson and Bunge -- oh, no, it doesn't.

Q. How does the 1983 median of 41, of 43.4, compare to the other medians that you've set forth in your exhibit?

A. It is somewhat lower than the lowest value that is reported. I should remark, however, that it's not lower than the lowest value reported on this particular chart that you had up.

Q. Was there another median that's even lower than the ones I've listed?

A. Yes, sir.

Q. What is that?

A. If you look on the bottom of that chart on the

Smith and Steinberger, Houston, you see a median of 17 percent.

Q. Oh, I see.

A. 70 million per milliliter. That's for people in infertile marriages.

Q. Are Smith and Steinberger a well recognized andrology group or is Steinberger a well-recognized andrologist?

A. As I've testified, I consider him the best in the United States.

Q. You consider him to be better than MacLeod and Wang?

A. That's correct, sir.

Q. So that if we used Steinberger's median of 17 percent, instead of MacLeod and Wang's, then the 1982 median and the 1983 median --

A. Would be high.

Q. Would be higher, is that correct?

A. That's correct.

Q. Okay. Now we have also calculated what the Moberly median would be, and that's on the exhibit that the jury has. What would the median be?

A. 126.

Q. And, of course, that's above any of the medians

that we have set forth here, is that correct, sir?

A. That's correct, sir.

Q. Now, we have also taken a look at all three of the test results and did an overall median, and what is that?

A. That came out to 70. It is the mathematical average of all three calculations.

Q. And if we have an overall median of 70 for all three exams, not just one but all three, is that better than the Nelson and Bunge median?

A. Yes.

Q. Better than Rehan et al. median?

A. That's correct, sir.

Q. Is it better that Sobrero and Rehan?

A. Slightly, yes, sir.

Q. Better than the Smith and Steinberger median?

A. That's correct, sir.

Q. If you are looking at medians, is it better to look at all three or just the two that Mr. Carr has up here?

A. Well, any time you have information, you need to take all the information into consideration.

Q. Now, finally, Dr. Zaneveld, when you are making a determination about fertility, do medians and means really mean anything at all?

A. No. When you try to determine that a group falls,

is normal or abnormal, one does not look at the average only, particularly not of the group as relatively small. What you look for is if the group as a whole in a majority of the individuals fall into a normal range.

Q. And have you looked at this group as a whole?

A. Yes, as we presented yesterday the --

MR. CARR: Your Honor, this is all repetition and I object to it. If I have to go into recross of the doctor on what he's saying now, we will --

MR. NEWBOLD: I'll withdraw the objection and close my re-redirect.

THE COURT: Okay. It's withdrawn. Did you have any recross?

MR. CARR: Yes, I do.

RECROSS EXAMINATION

BY MR. REX CARR

Q. Doctor, with regard to the Kulakauskas exhibit on Delbert Curl, your Defendant's 1418, you can do a quickie analysis, can you not, by taking a portion that has already liquefied and analyze it without adding a lytic agent?

A. Well, you can do it.

Q. Or as a matter of fact, what you can do, also you can take a portion of that ejaculate that is still solid and

liquefy it, can you not, sir, and look at that portion, can you not do that, sir?

A. It's very difficult. It can be done.

Q. It can be done, but experienced people can do that, can they not, sir?

A. I don't know of any clinic that does that. If Dr. Kulakauskas does it --

Q. Are you familiar with what the Cook County Clinic is capable of doing?

A. No, sir.

Q. Now, Doctor, you either have to conclude -- you have here, do you not, a definite statement for the world to see that complete liquefaction took place in 75 minutes, correct, sir?

A. That's correct, sir.

Q. And there is no question about that. He could have put down complete liquefaction in 30 minutes, couldn't he, sir, if he wanted to? Nobody is looking over his shoulder?

A. That's correct, sir.

Q. And you accept that as a real value of 75 minutes, don't you, sir?

A. Yes, sir.

Q. But now you accept that as a real value but you reject the total count as a real value -- you reject the

activity as a real value, don't you, sir?

A. No, I did not reject the total count as a real value; the activity, I did.

Q. Yes. And, Doctor, because you said, well, how could he possibly know the activity if it's not liquefied yesterday, correct, sir?

A. That's correct, sir.

Q. So what you are doing, you are saying Dr. Kulakauskas made up that data, aren't you, sir?

A. No, sir, I'm not saying that.

Q. That's what you are implying?

A. No, I said his measurement was not valid.

Q. In point of fact, though, he could do it, in his experience, by taking a portion of it for the purpose of making that 30 minute observation if someone wanted him to make that 30 minute observation, could he not?

A. Not a valid one, sir.

Q. Doctor, would it be -- you don't need that value for the -- what about the hour?

A. What hour?

Q. The hour valuation, he could not make a valid one for that either, is that what you are saying?

A. That is correct.

Q. Dr. Kulakauskas could in fact take a drop of the

semen and liquefy it, could he not?

A. That's correct.

Q. Or he could in fact take a drop of the semen that had already liquefied, couldn't he, sir?

A. Yes, but neither one would be valid observations.

Q. By your judgment?

A. No, by anybody's judgment. I don't know of a clinic that would do that.

Q. Doctor, you have put in your book that you can do a quickie?

A. I didn't say quickie. I say you can quickly --

Q. No, you put in your book that you could have a quickie analyses by taking the semend and looking at it.

A. I never used the term quickie analysis, I think, but if I did, it doesn't matter because the point is taken that you can liquefy a semen sample.

Q. What you said, Doctor, was you could do -- "A quickie method may be performed where a drop of semen is placed," you used quickie not me on Page 154, "where a drop of semen is placed on the slide."

A. After it's liquefied, sir.

Q. Doctor, a portion of it is liquefied, isn't it, sir?

A. But that would be a biased portion of the sample.

You cannot do a valid analysis that way.

Q. Doctor, it might be invalid by your standards, might be valid by Dr. Kulakauskas if he knows someone wants a report on that. You either have to assume that Dr. Kulakauskas lied when he gave those activities, or he performed an analysis on a portion that was liquefied, one way or the other, isn't that correct, sir?

A. Either he lied or performed --

Q. Either he lied or he did in fact perform an analysis on a liquefied portion of this ejaculate?

A. No, there is one other option.

Q. What's the other option?

A. That a portion was not liquefied. He looked at a sperm moving within that coagulated portion.

Q. Well, can you do that?

A. Yes, you can do that.

Q. Is it valid to do that?

A. No, sir.

Q. One of those three things he did, correct, sir?

A. That's what I would assume.

Q. A person looking at this, knowing that the liquefaction time is clearly set out, a person would know that he did one of those three things, wouldn't he, sir?

A. Yeah, I can't think of anything else that it could

be.

Q. And, Doctor, the next thing I'd like to ask you about is the testimony that you gave relative to Plaintiff's -- Defendant's Exhibit 1419 and 1420, do you have those in front of you, sir?

A. 1719 you mean?

Q. 1419 and 1420.

A. I'm sorry, I got 1419 and 1420.

Q. Defendant's, sir?

A. Okay.

Q. When did you do those tables, Doctor?

A. They were done last night and this morning.

Q. And were they done at your request?

A. No, they were done at a lawyer's request, but also my suggestion.

Q. You did those, did you not, sir?

A. I'm sorry?

Q. You did those, did you not, sir?

A. That's correct.

Q. And you apparently considered significant because you used the normal averages, didn't you, sir?

A. That's correct, sir.

Q. And you used the normal averages because you and Mr. Newbold believe that it has a bearing on this case, did

you not, sir?

MR. NEWBOLD: Object, Your Honor, may we approach the bench?

THE COURT: Sure.

(The following Side Bar conversation was had outside the hearing of the jury.)

MR. NEWBOLD: I object, Your Honor. This is totally misleading to ask this witness what I think has a bearing on this case. The reason we prepared those things is because Mr. Carr used normal values during his presentation. Obviously if he used normal values, I was going to use them in mine. But he has no right to question this witness as to what I think is going to happen or what is or isn't significant. That's totally improper.

MR. CARR: I don't think it's improper to asking if the witness and Mr. Newbold consider something significant. He can make an admission by his actions by the questions that he asked, as well as making a statement in front of a jury, by what he does in front of the jury. What counsel does can be considered significant. He is a representative of Monsanto here.

MR. NEWBOLD: Absolutely.

MR. CARR: If they take the position --

MR. NEWBOLD: The only reason that we prepare --

MR. CARR: Whatever reason makes no difference.

MR. NEWBOLD: Mr. Carr thought they were significant, makes all those charts for the jury that were misleading.

THE COURT: I'll overrule the objection. You can take your position in redirect if you wish.

MR. NEWBOLD: Well --

(The following proceedings were had in open court.)

Q. (by Mr. Carr) Doctor, you did use the terminology, did you not, or used the symbol which stands for normal averages, didn't you, sir?

A. Yes, sir, that's correct.

Q. And you prepared those charts using the words normal averages before the plaintiffs ever used that terminology, isn't that correct, sir?

A. Before the plaintiffs --

Q. Before the plaintiffs prepared anything or even asked any question about normal averages, sir?

A. Plaintiffs, you mean yourself?

Q. That's correct.

A. That's correct, sir.

Q. So the first time before the word normal average had been used by the plaintiffs in this case, you and Mr. Newbold prepared those exhibits using normal averages as

criteria, did you not, sir?

A. That's correct, sir.

Q. And, therefore, you came to the judgment, you and Mr. Newbold jointly came to the judgment, that normal averages did have some significance insofar as the plaintiffs in this case were concerned, did you not, sir?

A. Yes -- well --

Q. Now, the exhibits that we had here, sir, the first time we referred to the words normal averages -- the normal averages appeared, by the way, the first time we saw the words normal averages, when you brought to the courtroom the exhibit with the Grant Hospital standards using the words normal averages, isn't that correct, sir?

A. I don't know when you first saw it, sir, but I think that's when we first --

Q. When we first saw it was when you produced it here three or four days after you started on the stand.

A. Is that the first time you saw it?

Q. That's indeed the first time.

A. Correct, sir.

Q. And, the normal averages then which you consider in the way that you have, and point of fact, the values that you found compared against your normal averages was exactly the same as set out in our chart for 1983, was it not, sir?

A. I believe so, sir.

Q. Yes, and the normal averages set out in the -- we don't use the word normal averages in the MacLeod and Wang table, but there is no doubt in your mind but when those normal averages of 50 million per milliliter in less than 90 million total are the normal averages that's referred to on Defendant's Exhibit 1419 and 1420, isn't that correct, sir?

A. Yes, sir.

Q. And insofar as the exhibit is concerned, 47 percent of the plaintiffs in 1982 had less than the normal average, isn't that correct, sir, of sperm concentration?

A. That's correct, sir.

Q. And, when you combine those two, that would be approximately 58 percent had less than the normal average, won't that be correct?

A. If you combine Carnow I and Carnow II?

Q. That's correct.

A. That's correct, sir.

Q. So we could write in your chart for those two, for the combined of 58 percent, couldn't we, sir?

A. Yes, sir.

Q. And when you combine the total sperm count, we come to about 62 percent, that's below your normal average when you combine those two, don't we, sir?

A. That's correct, sir.

Q. Now, Doctor, what that means is from the normal average samples that you use as a standard for those normal averages at the Grant Hospital, 58 percent of those plaintiffs on those combined Carnow tests would have abnormal results in one instance and 62 percent in the other instance, isn't that correct, sir?

A. No, sir.

Q. Didn't we --

A. He used the term abnormal results and that's incorrect.

Q. Abnormal the way you and Mr. Newbold used it. I thought you just got through saying if you use the words normal averages as being normal, I wrote you down correctly, I thought. If you use the normal averages as normal. Exactly what you said, sir.

A. Well, that was referring --

Q. In response to Mr. Newbold's question, isn't that correct, sir?

A. I can't remember anymore what I said, but I can explain what I meant.

Q. If the normal average is normal, then something other than the normal average is abnormal, isn't it, sir?

A. No, sir.

Q. Or subnormal?

A. No.

Q. Or not normal?

A. No, sir. Not at all.

Q. Doctor, if it's not normal, it isn't normal, is it, sir, by definition?

A. Is your question strictly that question, not relating to anything else? If it's not normal, is it not normal? Yes, sir, I would agree with that.

Q. No doubt about it, is there, sir?

A. That's correct.

Q. And 62 percent of those plaintiffs in the one instance and 58 percent in the other instance on both Carnow examinations had those not normal samples, did they not, sir?

A. No, sir, not at all.

Q. According to what you told Mr. Newbold, if you consider the normal average normal, isn't that correct, sir, if you consider the normal averages as normal, as you just responded to Mr. Newbold, then what I suggested to you on those percentages is true given that, isn't that correct, sir?

A. You taking my statement to --

Q. I am taking your statement --

A. -- to Mr. Newbold totally out of context and --

Q. The jury has heard it. I've heard it. What you said was if you used normal averages as normal, then this is so.

A. Could I --

Q. I'm asking you the same thing. If you used the normal averages as normal, this is so, isn't it, sir?

A. Could I ask the Court Recorder to see exactly what I said? We are arguing over terminology.

Q. No, we simply don't have time, Dr. Zaneveld. If you don't agree with it just say so.

A. I don't agree with it, sir.

Q. You don't agree that you used that terminology with Mr. Newbold?

A. I don't remember that, sir.

Q. Well, we will leave it up to the jury to decide whether you did or did not say that. All right. We will pass to something else.

A. But I will not say that anything less than the average is abnormal. I've never said that.

Q. I know that, Doctor. I'm not suggesting that you did.

A. Yes, you did, sir.

Q. What I'm saying to you is that when you responded to Mr. Newbold's questions about normalcy, that if you use

the normal averages as normal, then this is so, X, Y, and Z. That's what you said. So I'm saying if you used the average normal averages as normal, then 52, 58 percent of the plaintiffs in the one instance and 62 percent in the other instance have what could be termed normal by that, not normal results by that definition, isn't that correct, sir?

A. No, sir.

Q. Well, that's what the figures show, isn't it, sir, if you assume that?

A. No, sir. You are using --

Q. Are you assuming, sir, that not having a normal average is not normal? Are you making that assumption as I gave it to you?

A. That's correct.

Q. All right, if --

A. Wait a second. I misunderstood what you said there.

Q. Are you assuming for the sake of my question, so that we don't need to go back and quarrel on this all day, are you assuming, as I asked you, that what you said was if the normal average is not normal then this percent would be thusly so, so I would like for you to assume that you did say in fact, sir --

A. I never said that anything below the normal average

is not normal.

Q. I haven't asked you that, sir.

A. Yes, you did.

Q. Not yet I haven't asked you that.

A. Oh, okay.

Q. Assume, if you will, sir, that --

A. Assume.

Q. That the normal average is the same as saying normal. Will you assume that, sir?

A. My understanding is --

Q. Would you?

A. I must assume the things you ask me to assume, okay, we will assume that the normal average is normal.

Q. Assuming that to be true, that 62 percent --

MR. NEWBOLD: Your Honor, may we approach the -- I think I can say this from here. May the jury be instructed that the witness is under court orders by normal procedure that he must assume that when the attorney --

MR. CARR: Your Honor, the jury knows that better than we do.

THE COURT: I've stated to the jury a number of times, it goes for questioning both by plaintiffs' counsel and defense counsel that when someone is ordered to assume something, and assuming that, and given the fact if there is

an objection, that the objection has been overruled, that they are to assume it. That is from either counsel, plaintiff or defense.

Q. If you assume that to be the case, Dr. Zaneveld, 62 percent of the Kline-Carnow results in one instance and 58 percent of the Carnow results in another instance did not have normal count nor concentration, isn't that correct, sir?

A. May I ask for clarification?

Q. Surely.

A. One more point, if I assume that a normal average, which we agreed upon was 50 million per milliliter is the only normal value, does that mean anything above it or below is considered not normal then?

Q. Doctor, I think my question is pretty clear.

MR. NEWBOLD: I think he has a right to have that clarified. That's really a simple question.

THE COURT: Objection is overruled. I think it's clear.

Q. If you assume as the Court has directed you to assume, that normal average means normal, then 62 percent of the plaintiffs do not have that normal count, do they, sir, in the combined totals?

A. That's correct, sir.

Q. And in the case of the concentration, 58 percent do

not have that normal concentration, do they, sir?

A. That's correct, sir.

Q. All right. Now, Doctor, with regard to the Moberly results that you put down, Doctor, when you look at the concentration, taking Exhibit 14 -- Defendant's Exhibit 1420, if you will, sir, and the Moberly results.

A. That was the concentration one, yes, sir.

Q. According to the Moberly results, not a single plaintiff had less than 50 million sperm per milliliter, isn't that correct, sir?

A. I'm sorry. That's correct, sir.

Q. And did not have the -- what you have described as the normal average amount, all of those plaintiffs, not a single one had that average count, they all had much in excess of the normal count, didn't they, sir?

A. Yes, sir.

Q. As a matter of fact, the mean on the Moberly count, the average sperm count for the Moberly analysis is 134 million milliliters per -- million sperm per milliliter, isn't it, sir?

A. I believe so.

Q. Now, Doctor --

A. It's in that range.

Q. Now, Doctor, that's 230 percent higher than a

normal average, isn't it, sir?

A. That's correct, sir.

Q. Doctor, wouldn't you consider it very strange if in your laboratory in walked seventeen people in a row and not a single one had an average or a normal average concentration?

A. As I stated in my conclusions --

Q. Excuse me, wouldn't you consider that very very strange.

MR. NEWBOLD: Object, this is repetitive. This was covered, almost the same question about being very strange.

MR. CARR: Not at all.

THE COURT: I don't believe so. I don't think it is repetitive.

A. Yes.

Q. Wouldn't you think that very very strange?

A. It's unusual.

Q. So strange, Doctor, have you ever seen it occur that 17 people in a row came in that had so much higher than the normal average, normal sperm count copncentration?

A. I personally have never checked.

Q. You've never seen it in your entire career, have you, sir?

A. I can't say that, sir. I've never checked. We normally don't worry about those things. They happen to come

in, they come in.

Q. Doctor, as a statistician, what would be the odds of you taking a random sample of people, who are all supposed to be average, or were all supposed to be within the average parameters, and there is going to be some higher and some lower, and you come in with every single -- not a one of them below the average, not a single one. The closest you'd get to the average is one that's 72, what is that, 46 percent higher than your normal average, the one that even comes closest? Wouldn't you consider that the odds of that occurring to be astronomical?

A. Again, I could not comment on that, but I think it is --

Q. Doctor, my question is you can't comment that the odds of this occurring in real life being astronomical?

A. No, of course not.

Q. Doctor, the -- not a single one of those people according to Moberly is average. You must -- if you were to conclude, if you had just that sample to look at and you know that we are involved with dioxin here, you could come to a conclusion if you wanted to build a case on it, come to a conclusion that dioxin assists in making spermatozoa, couldn't you, sir.

MR. NEWBOLD: Object, Your Honor. May we approach

the bench?

THE COURT: Sure.

(The following Side Bar conversation was had outside the hearing of the jury.)

MR. NEWBOLD: Your Honor, this is totally outside the line of any redirect, recross, or anything that's ever been gone into. We could be here for another three weeks. Those Moberly results --

MR. CARR: You brought in those Moberly exhibits. You are the one that brought them in.

THE COURT: One at a time.

MR. NEWBOLD: I object. This is totally outside the line of direct, cross, redirect, recross, re-redirect, or anything.

THE COURT: What is your position?

MR. CARR: He's talked about he's considered those results normal, combined them all, taken them separately. Asked every question in the book in his redirect examination.

THE COURT: Okay. Objection is overruled.

(The following proceedings were had in open court.)

Q. (by Mr. Carr) Doctor, could you make a case that dioxin has contributed to the sperm, spermatozoa construction and concentration, of those plaintiffs if you just looked --

A. No, sir, because the total sperm count in Moberly

and Carnow I are identical or very similar.

Q. I'm talking about just the Moberly group, if you wouldn't mind. Could you?

A. Yes.

Q. So we can finish this, I'm talking about the Moberly people that have come in, sir?

A. So do I, sir.

Q. Well, you didn't, because you added Carnow in. We have asked you about Carnow before. I want to ask about Moberly, Doctor, if you would permit me.

A. You asked me if dioxin made sperm and I'm commenting.

Q. Doctor, my question to you, if someone wanted to make a case and had just the Moberly results to look at --

A. Uh-huh.

Q. One might indeed make a case that dioxin promotes spermatogenesis, could they not?

A. No, sir, because the total sperm count is not -- it is high, but apparently for this group --

Q. Let's look at the total sperm count, Doctor, because I was asking about concentration and my question again, looking at just the concentration, sir, one could make a case that dioxin assists in the formation of sperm, could they not, sir?

A. No, sir, can't do that from the concentration, because that included volume. Concentration is an average in the course of volume. Spermatogenesis --

Q. Now you are going to total sperm count, aren't you, sir?

A. To answer your question, I would have to do that because you asked sperm production.

Q. Doctor, I'll go to the total sperm count, if you would like. If you look at that one, sir, the total sperm count, the mean is 236, sir, for the Moberly group, how many, there is only two people in the entire Moberly group that has the average sperm count and one of those is not a value given. It's a value that you put in there. There wasn't any 87, approximate, you put that in there, did you not, sir?

A. I'm sorry, let me --

Q. Defendant's Exhibit 1419.

A. All I got is concentrations here all of the sudden, ah, here it is. Okay, there was an estimation, that's correct.

Q. Indeed it was. Doctor, is it scientific for you to estimate that somebody has got a normal sperm count?

A. When you qualify it as we did, same as we did with motility and the morphology --

Q. Doctor, we are now looking at the sperm count, if

you will. You put in a figure that didn't even exist, didn't you, sir?

A. That's correct, sir.

Q. Did you see Dr. Kulakauskas do that in any exhibit that you saw? Did he report figures that in fact existed?

A. I don't remember Dr. Kulakauskas making up any exhibits, sir.

Q. The sperm count you saw made by Dr. Kulakauskas, you saw all those results, sir?

A. That's correct.

Q. Did he ever put in approximately, or an estimate, or I guess? He put in what was the count, didn't he, sir?

A. That's correct.

Q. But you put in here something that didn't exist, didn't you, sir?

A. That's what I did, sir.

Q. Yes, sir. Now, Doctor, eliminating that one that doesn't exist, you've got a single -- no, you have one --, you've got one person Michael Dominguez who at that time was indeed 16, 17 years of age, who has the normal sperm count. Every other plaintiff that is listed here has above your normal sperm count, do they not, sir?

A. You are referring strictly to the Moberly?

Q. That's what I'm referring to, sir.

A. That's correct, sir.

Q. Doctor, wouldn't you think it passing strange that every single person that comes in and has above the average sperm count?

A. Not so much so because a year ago they had a similar thing.

Q. Doctor, please eliminate the reference to the year ago, would you, sir, so that I can pass on?

A. Well, when you --

Q. Doctor -- Your Honor, would you direct the witness to answer the questions in confines to the question I'm asking so I don't get --

MR. NEWBOLD: Object. Object. May we approach the bench?

THE COURT: Yes, you may.

(The following Side Bar conversation was had outside the hearing of the jury.)

MR. NEWBOLD: The question was whether he thought it was passing strange to find this and his answer was no because the same thing was found by Carnow I.

THE COURT: No. No. No, the whole context of the last five minutes has been with Moberly and Moberly alone. I think it's perfectly clear.

MR. NEWBOLD: Your Honor --

THE COURT: Just wait a second.

MR. NEWBOLD: Sure.

THE COURT: I think it's perfectly clear that all of those questions were restricted to consideration of Moberly and Moberly alone. He was drawn back to Moberly alone, within that period of time, he tried to explain his answer to include the Carnow, one of the Carnow --

MR. NEWBOLD: Carnow I examinations.

THE COURT: And it is obvious that this entire line of questions that were in there is based on Moberly and Moberly alone. I think that the request for the admonition is absolutely proper.

MR. NEWBOLD: Let me say this. If you ask a witness what you think something is strange, what he did, what you think is passing strange --

MR. CARR: I said in the people that walk in.

MR. NEWBOLD: In Moberly.

THE COURT: Right.

MR. NEWBOLD: Okay. He has the right to say no because one year ago they found the same thing.

THE COURT: Without the context, that's correct. Within the context, not at all. Objection is overruled.

(The following proceedings were had in open court.)

THE COURT: Doctor, you have to confine your answer

to the question that's asked. The question has been restricted to the Moberly group.

Q. (by Mr. Carr) We know your point about the prior examinations, you've made it several times, but my question is this: Would you consider it strange to find 17 people, well, in this case would be 16 people, come in and only one, and that being a young boy, who would have a total sperm count of below what you consider the average?

A. No, sir.

Q. You don't?

A. No, sir.

Q. Then your definition of average doesn't mean, sir, does it, average?

A. Yes, sir.

Q. Now, Doctor, with regard to this total sperm count, if you took the total sperm count including the one that you estimated, you'd have a mean of 236, wouldn't you, sir?

A. No, sir.

Q. Doctor, you take 4,016 divided by 17 you get 236, don't you, sir?

A. We did not, sir.

Q. What did you get, sir?

A. 230.6.

Q. 230.6. I won't quarrel with that. You get 230

then, wouldn't you?

A. I would round it off to 231, sir.

Q. Well, then 231, won't quarrel with that. That is how many times the average sperm count, sir?

A. I'm calculating, sir --

Q. Doctor, it's approximately 250 percent higher, isn't it, sir?

A. I would have to calculate it also, sir. It's about 20.5 -- well, I think you are correct. It's about 200 percent higher.

Q. Well, 180 would be 200 percent. This is 230. It's about 250 percent higher, isn't it, sir?

A. Yes, sir.

Q. 90 being average?

A. Yes, sir.

Q. Doctor, the mean, or the median rather, in the case of the count is George Rush and that is 224, isn't it, sir?

A. Is the question the median George Rush, and is it 224? I would have to see exactly where the median was, but that is probably correct, sir.

Q. And, Doctor, in the case of the sperm concentration, 125 is the median there, is it not, sir? That would be the case of Felix Dominguez.

A. I would again have to check, sir. I don't know

exactly.

Q. And --

A. I will assume I if you would like me to.

Q. Please, sir, that's two and a half times higher than the normal sperm concentration, isn't it, sir?

A. That's correct, sir.

Q. Now, Doctor, I'd like to direct your attention to the Defendant's Exhibit 1421, which you have testified with reference to.

A. That's correct, sir.

Q. The values that you've used for Nelson and Bunge is an extrapolated value, isn't it, sir, for your median, not a value reported by Nelson and Bunge, is it, sir?

A. No, it was --

Q. Again, it's one that was extrapolated because there were no values given, isn't that right, sir?

A. No, sir, values were given, just no median value.

Q. No value given for the mean or the median?

A. For the median, that's correct, sir.

Q. And, Doctor, the same thing is true for another one that you've got, Smith and Steinberger, that is another extrapolated value, isn't it, sir?

A. Yes, sir.

Q. So, Doctor, what you did, and you didn't tell this

jury that this was a calculated or extrapolation, did you, sir, so the only two that you've got lower than the plaintiffs' in this case happened to be two extrapolated values, isn't it, sir, the Nelson and Bunge and Smith and Steinberger count, isn't that right, sir?

A. You want me -- you will need to clarify that question.

Q. Doctor, what I want you to do is answer the question, you used extrapolated values, didn't you, sir?

A. I used values that were extrapolated by others, that's correct, sir.

Q. And, Doctor, the values that we use, we could have taken, Doctor, if we had wanted to in the exhibit that we have given you before, we could have taken extrapolated values because they are right there, aren't they, sir?

A. That's correct, sir.

Q. And Doctor, the Santomauro results that you discussed, the plaintiffs in this case have a median, and the Santomauro result is New York, which is a median of 40 and a mean of 50, correct, sir?

A. In this chart, that's correct, sir.

Q. And our plaintiffs -- and that's in an infertile population, isn't it, sir?

A. No, sir.

Q. Doctor, does it appear in the table, "Certain Aspects of Semen Quality in Infertile Marriage Populations?"

A. Yes, sir.

Q. Then it is an infertile marriage population, isn't it, sir?

A. No, sir.

Q. Does the table so describe it?

A. Yes, sir.

Q. Do you have any first-hand knowledge that this is incorrect, sir?

A. Yes, sir.

Q. What is your first-hand knowledge?

A. Santomauro article itself, sir.

Q. Doctor, then you are differing with the way Dr. MacLeod and the way Dr. Wang interpreted that article, is that right, sir?

A. That's correct, sir.

Q. And, you have the right, of course, to differ, but it is treated in this table that you pulled out, that you considered authoritative, that you put in your list of documents as in the infertile marriage population, isn't it, sir?

A. That's correct, sir.

MR. CARR: Yes. I have no further questions.

THE COURT: You have any further questions?

MR. NEWBOLD: Yes, I would. I'll be as quick about this as I can.

REDIRECT EXAMINATION

BY MR. J. WILLIAM NEWBOLD

Q. Dr. Zaneveld, insofar as extrapolated values, those studies, those medians that you used, that you used on your exhibit that Mr. Carr characterizes extrapolated values, you admitted they were, isn't that correct?

A. That's correct.

Q. Are they valid?

A. Yes, sir.

Q. And those studies came out of this exact exhibit that Mr. Carr introduced with those extrapolated values?

A. Yes.

MR. CARR: I suggest that counsel is suggesting --

MR. NEWBOLD: May we approach the bench, Your Honor?

THE COURT: Sure.

(The following Side Bar conversation was had outside the hearing of the jury.)

THE COURT: That was a leading question. You really should rephrase it.

MR. NEWBOLD: Okay. I'll rephrase it.

(The following proceedings were had in open court.)

Q. (by Mr. Newbold) Where did you obtain the median value numbers that you placed on your exhibit? Where did you get the numbers?

A. Which exhibits are you referring to, the one --

Q. Where we did our medians.

A. I obtained that from this particular chart.

Q. From Plaintiff's Exhibit 1685?

A. That's correct, sir.

Q. Okay. Insofar as Mr. Carr's cross examination about those high total counts in the Moberly clinic, you recall that?

A. Yes, sir.

Q. How do those high total counts in the Moberly clinic compare with the total counts done by Dr. Kulakauskas in Carnow I?

A. They are very similar, sir.

Q. They are pretty high, too -- strike that. Doctor, insofar as normal and abnormal is concerned, but above it or below it, does it mean anything insofar as the fertility of those plaintiffs are concerned?

MR. CARR: Your Honor, this is all repetition.

THE COURT: Objection is sustained.

MR. NEWBOLD: No further questions, Your Honor.

THE COURT: Do you have any further cross examination?

MR. CARR: Yes, Your Honor, in view of what the witness said.

RECROSS EXAMINATION

BY MR. REX CARR

Q. Doctor, could you look at the Dwayne Embree results in the Carnow I, or strike that. Start out with John Dominguez. Look at the John Dominguez results and then the Moberly results.

A. Yes, sir.

Q. John Dominguez in Carnow I is 50 and Moberly is 241, isn't it, sir?

A. I'm sorry, I was looking at concentration. You meant the total count chart?

Q. Yes.

A. John Dominguez?

Q. Yes.

A. That's correct.

Q. 50 and 241, a significant difference there, isn't there?

A. Yes.

Q. Dwayne Embree is 89 in Carnow I and Moberly is 254, isn't it?

A. Yes.

Q. Bill Kemner is 230 in Carnow I and Moberly 378 isn't it, sir?

A. That's correct.

Q. Gary Mason is close to the same. Joe Robinson -- well, Joe Robinson you've estimated the Moberly so we don't really know. Gary Robinson is close to the same. Tim Robinson is 51 and Moberly is 164, isn't it, sir?

A. That's correct.

Q. George Rush we have the contrary. We have Carnow I 296 and Moberly 224, don't we, sir?

A. That's correct.

Q. Glenn Rush 280 and Carnow I and Moberly 115?

A. Yes, sir.

Q. Robert W. Vaught in Carnow I is 56 and the Moberly got him down for 615, doesn't he, sir?

A. Yes, sir.

Q. Is that anywhere close together, sir?

A. No, sir.

Q. And, Doctor, look at the concentrations, if you will.

A. Yes, sir.

Q. Greg Ballard 24 in the Carnow I and Moberly 89, correct, sir?

A. Yes, sir.

Q. Larry Bolles 92.

MR. NEWBOLD: Objection, Your Honor. May we approach the bench, I didn't cover this, I covered total count.

THE COURT: Come on up.

(The following Side Bar conversation was had outside the hearing of the jury.)

MR. NEWBOLD: I covered total count. I compared the Moberly one with Carnow I in total count. Which he has the right to go back over. Now we are going into concentration, which I did not cover.

MR. CARR: I think I have the right because you have made the inference Moberly and Carnow are the same.

MR. NEWBOLD: Insofar as --

MR. CARR: That's trying to take something out of context and make it mislead the jury.

THE COURT: He used total counts. I think the inference was in totality they are the same, I think.

MR. NEWBOLD: My goodness, I said total counts to him, how much clearer can I be?

THE COURT: Wait a second. You said that they are

the same and you used the example of total counts.

MR. NEWBOLD: I said --

THE COURT: I don't think.

MR. NEWBOLD: Cross examining you about total counts in Moberly. That's exactly what I said. You remember Mr. Carr cross examining --

MR. CARR: Your Honor, doesn't make any difference, he has made the inference --

MR. NEWBOLD: I know I did.

THE COURT: I interrupted you, I'm sorry.

MR. CARR: He made the inference that Moberly and Carnow results were the same and he's made that implication.

MR. NEWBOLD: I talked about the total counts. I know I did. Has to be on your notes. Do you remember Mr. Carr questioning you about the total counts.

THE COURT: My notes indicate my impression was similarity to two

(The following proceedings were had in open court.)

Q. (by Mr. Carr) Doctor, I don't know where we were, but at Larry Bolles 92 in Kulakauskas I and Moberly 153. They are not together, are they, sir?

A. No, sir. You talking about concentration now?

Q. Sir?

A. Concentration?

Q. That's correct. Larry Burks was 32 at Carnow I and 103 at the Moberly. That's not close, is it, sir?

A. No, sir.

Q. Delbert Curl was 47 in Carnow I and 72 in Moberly. That's not close, is it, sir?

A. Not really.

Q. Felix Dominguez was 86 in Carnow I and 125 at Moberly -- 125 at Moberly. That's not close?

A. What do you mean by not close? Figuratively speaking?

Q. The 125 is 50 percent higher than the 86, isn't it, sir?

A. So you mean mathematically close?

Q. Yes.

A. That's correct.

Q. John Dominguez 14.6, Moberly 161?

A. That's correct, sir.

Q. And Dwayne Embree 42 at Carnow I and 127 at Moberly, correct, sir?

A. Yes, sir.

Q. Bill Kemner 88 and Moberly 126?

A. Yes, sir.

Q. Gary Mason 58 at Carnow and Moberly 120?

A. Yes, sir.

Q. Joe Robinson 106 and Moberly 175?

A. Yes, sir.

Q. Is that correct?

A. Yes.

Q. 37 for Gary Mason at Carnow and 109 at Moberly, and on down the list they are all dissimilar, aren't they, sir?

A. They are all dissimilar, that's certainly true, sir.

Q. And Robert W. Vaught again 8.6 at Carnow I and 123 at Moberly. Now, Doctor -- well, that's all the questions I have.

MR. NEWBOLD: I have no further questions, Your Honor.

THE COURT: Okay. Doctor, you may step down. Thank you. Ladies and gentlemen, I appreciate your patience and cooperation. As far as I explained to you earlier, there are some matters that we have to take up outside the presence of the jury. So, as far as your attendance, we are going to adjourn at this time. We will resume again Monday morning at 9:30. I want to remind you that you are not to read, listen to, or watch anything about this case in particular or subject matter in general in any of the media. Thank you for your attention and cooperation this week. We will see you Monday morning. Court is adjourned.

Q. Now, Dr. Kimbrough, are you familiar with the findings in the original Nitro employees who were exposed in the accident in '49, did they not have neurotoxic syndrome?

A. In the workers that were in the explosion?

Q. Yes.

A. Yes. Dr. Suskind reported that also.

Q. Now, you didn't mention that, did you, ma'am?

A. No, I --

Q. Or do you know in this case that there are neurotoxic syndromes reported in this case?

A. No.

Q. Are you familiar with the Suskind morbidity study as to what he reported there?

A. I read the study, yes.

Q. Now, Dr. Kimbrough, I got somewhat aside there. On the Lysol content, what was your understanding the level of the Lysol contaminant was with TCDD?

A. The concentrations were very low.

Q. Well, that doesn't help me, ma'am. You've said that already.

A. I don't remember.

Q. Were you told by anybody in behalf of Monsanto that their 2,4-dichlorophenol also was found to contain TCDD?

A. Yes.

Q. And at what levels do they tell you the 2,4-dichlorophenol contained?

A. I think it was also in parts per billion.

Q. Was the first time that you learned that Monsanto had products that it was selling commercially containing TCDD -- was the first time you learned it when counsel for Monsanto told you that fact?

A. When there was a lot of publicity about TCDD, the EPA decided to look at production processes --

Q. I wonder if you could answer my question.

A. No, it wasn't the first time that I was aware --

Q. When did you first learn that Monsanto products contained, that is 2,4-dichlorophenol or Lysol or some other Monsanto product, other than 2,4,5-T, which is well known, contained TCDD?

A. I first learned that those types of products can contain trace amounts of TCDD some time in the past, maybe a year ago or so.

Q. About a year ago?

A. Uh-huh.

Q. And from whom did you learn that?

A. It was from the EPA.

Q. You know where they learned it?

A. They asked the manufacturers to give them

information on production processes and in what production processes you might have contamination with those types of compounds.

Q. Now, do you know whether or not Monsanto, other than telling you, has ever told anybody associated with the government that their products are coming out of the Sauget, Illinois, plant contained TCDD?

A. I don't know.

Q. Did Monsanto's representatives, any of them, ever tell you that they had notified the government, the FDA, or the EPA, or the CDC, or any other governmental agency that their products that they were producing here at Sauget, Illinois, contained TCDD?

A. They would not have any reason to tell me.

Q. That may be or may not be, Dr. Kimbrough, but that isn't what I asked you.

A. I would imagine they tell the EPA, but --

Q. Again, I didn't ask you for imagination. I asked you, did they tell you that they ever told anybody?

A. No.

Q. All right.

A. No.

Q. Did any representative of Monsanto, including Dr. Roush, ever tell you that they considered one part per

billion in their Santophen, which is -- do you know what Santophen is?

A. It's a germicide.

Q. Well, it's the base that goes in to make the Lysol?

A. Uh-huh.

Q. Same thing?

A. Uh-huh.

Q. And did they ever tell you that they considered one part per billion in the Santophen as medically acceptable?

A. No.

Q. Have you ever attempted to make a determination as to what amount of the, 2,3,7,8-TCDD, not just TCDD, but 2,3,7,8 would be medically acceptable in Lysol?

A. No.

Q. Do you have any judgment as you sit there as to what levels would be, if any, medically acceptable in Santophen or in Lysol.

MR. HEINEMAN: Your Honor, object, beyond the scope of the direct examination.

THE COURT: Overruled.

A. Not for this particular product, but I did for hexachlorophene.

Q. And what was the level for hexachlorophene that you determined would be medically acceptable for 2,3,7,8-TCDD?

(Following a recess for the lunch period, the following offer of proof was made outside the presence of the jury.)

RENATE KIMBROUGH

(being called as a witness on behalf of the Defendant, having been previously sworn, continued to testify as follows)

CROSS EXAMINATION

BY MR. REX CARR

Q. Dr. Kimbrough, you understand that you need not be resworn today, that your oath carries over to today's testimony as well, do you not?

A. I do.

Q. Doctor, we have been given some information just recently that Dr. George Roush from Monsanto visited you relative to this case, is that correct?

A. No, he actually wanted to visit Dr. Vern Hauk who is my supervisor and, he wanted to discuss with him medical records from the Nitro plant, and Dr. Hauk had some -- Dr. Hauk asked me then to meet with Dr. Roush and Dr. Hauk, but, Dr. Hauk had another commitment and had to go -- sent me over to another part of the Centers for Disease Control, so it ended up that Dr. Hauk and Dr. Paul Stair who is also a scientist at the Centers for Disease Control met with Dr. Roush at CDC. I don't remember exactly when the date was to

discuss those records.

Q. And are you saying that you did not meet with Dr. Roush?

A. Yes, I did.

Q. And when did you meet with Dr. Roush?

A. At the -- it was -- I can't remember the exact date. It was a few months ago.

Q. Was it about the time that you agreed to participate, be a witness in behalf of Monsanto?

A. I'm not sure whether the request preceded -- I would have to check my records about the dates. I can't really answer. It was about the time, but I may have agreed first and then Roush may have come and visited. It may have been the other way around. I just don't know.

Q. Would you check your records, please?

A. I would have to do that once I get back to Atlanta.

Q. You did not bring any records?

A. No -- I mean, I didn't know that was a question that was going to be asked of me.

Q. Well, your best judgment it would have been in the fall of this year?

A. Um, yeah.

Q. And was that the first time that you discussed any of the facts about this case with any Monsanto employee,

attorney, or representative?

A. I didn't discuss this case at all. He came -- he has collected, and I guess because of some of the litigation that took place with the Nitro workers, he now has records, medical records, of all of the workers, and he wanted to find out whether we would be interested in those records, because he didn't really have anything that he could do with them, nor did he have anyplace to put them. And he wanted to know whether, because we were in Missouri and were doing studies there, whether we would be interested in getting those records and having them made available to us so that we could examine the details of the medical findings and whatever else was in those records to get a better idea of what the toxicity of TCDD might be.

Q. And you did not discuss that. That is only inferentially connected or remotely connected with this case. But you did not discuss this case at all with Dr. Roush?

A. That wasn't the purpose of his visit.

Q. That may be, but my question is did you discuss this case with Dr. Roush?

A. I didn't discuss this case. I have -- I have previously at meetings and so on prior to that mentioned the fact that I did those rabbit ear tests and things like that.

Q. What I'm interested not so much when you said to Dr. Roush, but what was the subject matter and what was discussed with Dr. Roush with you?

A. We only --

Q. Was this case mentioned during that conversation?

A. Not that I can remember. We were talking about the medical records and I pointed out to him that I would have to talk to NIOSH about it since we are really responsible for environmental health and not for occupational health.

Q. Dr. Kimbrough, if you don't mind I understand that you have a limited amount of time here, I would, if at all possible -- if you've got an unlimited amount of time it may be different. While I don't want this examination to go on forever, if it would be at all possible for you to listen to my question and try to answer my question as best you can, so that we could move on. My question is, did you discuss this case with Dr. Roush? By that I mean the medical facts, the physical facts, the occurrence facts, or any facts connected with this case with Dr. Roush at the time you met with him?

A. No.

Q. Were you ever advised or did you ever discuss Dr. Bertram Carnow with Dr. Roush?

A. Not as far as this -- he may have mentioned his name or -- but, no, didn't have a discussion about him.

Q. Did Dr. Roush -- and subsequent to that meeting, how long first of all did that meeting take place Dr. Kimbrough?

A. He was there for part of the afternoon.

Q. It would take a couple of hours perhaps?

A. Maybe. Maybe not even that much.

Q. Well, I'd like to have your best judgment.

A. Maybe a couple of hours.

Q. And during that period of time you discussed only the issue of whether or not the CDC would take over the Nitro health records?

A. In the condition --

Q. Is that correct?

A. Yes.

Q. And did you, following that meeting, have another meeting with Dr. Roush?

A. No, I just had a telephone conversation with her.

Q. In that telephone conversation did you discuss this case or any of the facts and the medical problems associated with this case with Dr. Roush?

A. No, we discussed the, again, the previous problem, the records and the Nitro workers.

Q. Records about Nitro?

A. Yes.

Q. All right. Now, have you had -- and is it only the two conversations, the one in person and the one by telephone you've had with Dr. Roush?

A. During this time I knew Dr. Roush previously.

Q. Well, have you been in the past, from '83 up to the present time, discussed any of the facts of this case or any of the medical problems or medical conditions associated with this case with Dr. Roush?

A. Not that I can remember, not specifically.

Q. Have you had such conversations with anybody else associated with, working for, or employed by Monsanto?

A. I'm not quite sure what you mean by those discussions. I did not specifically. I have come several times to St. Louis and to other places and given talks, and I -- people from Monsanto were in the audience and they have sometimes asked me questions, but, I have not had any private discussion.

Q. I mean any conversation where you had directly with Monsanto people about this case or the facts of this case?

A. (indicates negatively.)

Q. Ma'am?

A. No.

Q. Were you never asked -- when were you first asked to appear in this case or to give testimony in this case?

A. As far as I recall, I was just recently asked. I was told this morning that apparently I was asked previously.

Q. You say you were told this morning? Somebody from Monsanto told you that they have signed an affidavit or have represented to the Court that you were contacted at some earlier time, is that correct?

A. Yes, but I don't remember.

Q. You have no memory of it yourself, is that correct?

A. No.

Q. The first memory you have of any contact with reference to this case would have taken place in the fall of 1985, is that correct, ma'am?

A. Yes.

Q. Were you ever asked, to the best of your knowledge at any time including the fall of 1985, to give a deposition relative to this case?

A. What I normally do, and I get --

Q. Excuse me. Could you answer that question, Dr. Kimbrough I'm really not interested in what you normally do. I want to know what you know.

A. I was asked, I guess, whether I would either testify or give a deposition. I don't really remember.

Q. That was in the fall of this year?

A. Yes.

Q. Did you -- and you have no memory, and I take it you brought no -- since you have no memory you would have no records of any such meeting, telephone conversation or any contact by Monsanto before September of 1985 relative to this case, is that correct?

A. That's correct. I don't make any of those records.

Q. All right. Now, Dr. Kimbrough, have you given depositions in other matters before administrative hearings, for use in administrative hearings or in trials in the past?

A. Just in general or in connection with Monsanto?

Q. No. No. In general. Not in connection with Monsanto?

A. Yes.

Q. And how does one go about getting you to testify by way of deposition?

A. Usually they -- we have a legal counsel, and if somebody calls me, I send that person to our legal counsel. I usually tell them that I don't testify in private litigation but they can take it up with our legal counsel and then whatever else they want to do they should go through them. Simply because it would take an awful lot of my time if I would have to deal with that, and also because they would be the ones that would decide whether I should testify or not.

Q. Well, have you ever expressed to the counsel for the health department that you had no objection to or would in fact testify in particular so-called private litigation?

A. No, I have not specifically said that.

Q. But you have given such depositions in the past. How many cases have you given such depositions?

A. It's usually when it involves the Federal Government in some way. There have been several.

Q. Well, have you given deposition litigation where the Federal Government is not involved?

A. For instance I gave a deposition in Missouri concerning the riding arenas and the contamination of the horse arenas because we had done all of the --

Q. When did you give that?

A. That was maybe '74, '75.

Q. And that was in a private litigated matter, was it not?

A. Yes.

Q. Yes. And did the -- was there any problem in the persons that wanted your deposition, did they encounter any problems in getting your deposition?

A. I don't know. I was told by our lawyer to appear for this deposition which was held at CDC.

Q. Do you know whether or not a subpoena was, CDC does

honor subpoenas, does it not?

A. Yes.

Q. Do you know whether or not were you ever served in this case with a subpoena to give an evidence deposition?

A. In this particular case here?

Q. Yes.

A. No.

Q. Have you been served with a subpoena in other cases to give depositions?

A. Yes.

Q. And have you always honored those subpoenas?

A. I think at one point a subpoena was -- what you call that, squashed?

Q. Quashed?

A. Yeah.

Q. And somebody filed a motion to quash a subpoena because it was not regular, and it was quashed, is that correct?

A. Yes, but I don't remember the details.

Q. All right. But other than that, to the best of your knowledge, any type of subpoena to give an evidence deposition has been served upon you, or the health department, or the CDC relative to your testimony, you have honored that subpoena, have you not?

A. I haven't -- I haven't -- except in a murder case, I haven't been served a lot of subpoenas. That wouldn't be private litigation, I guess.

Q. Well, really, not so much -- the subpoena isn't so much served on you as it is served upon the department. My question is really not directed to you personally as such, but as to the department. So far as you know, has the department of health always honored subpoenas and obeyed subpoenas when proper and served on you or the appropriate personnel in the health department?

A. I couldn't answer that question. You would have to ask our legal counsel.

Q. Well, you have always responded when you've been so advised by the legal counsel, are you not?

A. Yes, but I've always done that on their --

Q. I'm sorry.

A. I've always done that on their advice and I have never paid any attention to all this other stuff.

Q. In any event, to your knowledge, no such subpoena was ever served upon the department in this case, in 1982 or '83, is that correct?

A. Not as far as I know.

Q. All right. Now, ma'am, back to the conversations that you have had with Monsanto personally, have you had,

after the two that you mentioned with Dr. Roush, have you had conversations relative to this case with other Monsanto employees, agents, or attorneys up to the time you are testifying here today?

A. I was visited by the -- by Mr. Heineman and by Jane Rudolph.

Q. And was the visit by Mr. Heineman and Ms. Rudolph the first contact that you had other than the ones you've mentioned to Doctor, with Dr. Roush by Monsanto or of Monsanto employees, agents, or attorneys?

A. Jane Rudolph called me.

Q. When did she first call you?

A. That was some time in the fall.

Q. Of this year?

A. I just unfortunately don't have any dates.

Q. The date isn't important, just so that it's this fall, is all that -- I have some letters that -- and other dates, so I don't need that. And that contact was the first contact with Miss Rudolph that you had, is that correct?

A. Yes.

Q. Now, did she advise you at that time as to some of the facts or some of the circumstances of this case?

A. She asked me whether I would testify and I told her to get in touch with Martin Siegel.

Q. Did she give you any of the facts at that time?

A. I cut her short because very often --

Q. Dr. Kimbrough, all I really want to know whether she gave you any facts at that time?

A. Not really.

Q. All right. Now, when did you first get some facts from either Miss Rudolph or Mr. Heineman or somebody else connected with this case?

A. That was during the visit.

Q. All right. That would be when Mr. Heineman and Mrs. Rudolph came to see you?

A. Uh-huh.

Q. You were never told by that time about any of the possible health problems of the people of Sturgeon, plaintiffs in this case?

A. No.

Q. And you were never told by Mr. Rudolph or Mr. Heineman about the level of dioxin contaminant that was involved in this case?

A. That was discussed during the visit, but of course it was also -- most of the information, what information I had, was in the memos that we had written in our staff, and I went back and read that.

Q. I understand that, but I'm trying to isolate the

information given to you by Heineman, Rudolph, or others at Monsanto. I have all the letters and reports that you brought, that you sent out. I have those already and I've read those, Dr. Kimbrough. I'd like to direct your attention to the conversations that you had with people from Monsanto and what they told you.

A. I haven't really had any such conversations.

Q. My question is did they tell you the level of dioxin in the tank car?

A. Only what the levels that we discussed were the levels that were in the memos and what was talked about here when I gave my direct examination.

Q. I know, but I want to know when were you given that information that you testified about in direct examination, about the levels in the tank car?

A. Not quite sure what levels in the tank car we have talked about, but the only time we talked about levels in soil and in the OCP-crude product was at the meeting when the Monsanto attorneys came to CDC to visit me.

Q. What did they tell you was the level of TCDD contamination in the tank car?

A. They told me that there was one measurement with the OCP, in the OCP-crude which contain 45 parts per billion. It was also a measurement of, I think, 67 parts per

billion and there was --

Q. Who did they tell you measured it at 67 parts per billion?

A. To be honest, I don't remember. One of the measurements was done by Monsanto themselves, and the EPA tried to do a measurement and they couldn't find anything at first.

Q. Now, Monsanto told you that there were two measurements contained in the car, one was 45 parts per billion and another was 67 parts per billion, is that correct, Dr. Kimbrough?

A. I think those were the numbers.

Q. All right. Now, when did they tell you that the 45 part per billion contaminant was discovered by them?

A. I don't think they specifically said.

Q. Did they tell you who reported it or who found it?

A. It was a chemist at Monsanto.

Q. Dr. Rappe, does that ring a bell with you, Doctor Christopher Rappe?

A. Yeah, they mentioned him also.

Q. Now, who did they tell you -- when did they tell you they discovered the 67 parts per billion in the tank car?

A. I don't know whether they didn't say or I just don't remember. I don't know.

Q. I'm sorry -- and did they tell you that it was a Monsanto chemist that found the 67 parts per billion of TCDD?

A. I don't remember.

Q. Did you make notes of that conversation?

A. No.

Q. Did you get from them any kind of report or summary or factual statement about this case in writing?

A. No.

Q. And what you are giving us today is your best memory of what you were told at the time of this visit, is that correct?

A. Yes.

Q. And it is not reflected by any kind of memo that you may have in your possession either here or back at Atlanta, is that correct?

A. Yes.

Q. All right. What did they tell you as far as the health effects of the plaintiffs in this case were concerned?

A. We didn't discuss the health effects.

Q. They didn't advise you of any findings by the immunologists, or by Mayos, or by SmithKline, or by anybody else?

A. No.

Q. And is the testimony that you gave on direct

examination completely with no knowledge as to what laboratories may have found, and what doctors may have related as their opinion as to the medical conditions of those plaintiffs?

A. Yes.

Q. Is that correct?

A. Yes.

Q. Were you told by Doctor -- by Mr. Heineman or Miss Rudolph that the plaintiffs had been examined by Dr. Carnow?

A. They may have mentioned that.

Q. Do you know Dr. Carnow?

A. Not personally.

Q. And do you know of his reputation?

A. I have heard his name.

Q. Well, my question is do you know of his reputation?

A. Not really.

Q. Did Mr. Heineman or Miss Rudolph make any remarks to you about Dr. Carnow?

A. They may have said that Dr. Carnow was involved in testifying, and so on.

Q. You mean they may have said -- you have no memory, Dr. Kimbrough, whether they did or not?

A. Not specifically. We primarily discussed the work that CDC had done, and that they wanted to use that as

evidence.

Q. And what work was that?

A. Those were the -- partly the memos that were written, the advice that I had given, the other -- other government officials in the discussions, the rabbit ear tests. The whole thing.

Q. As far as what had been discovered about the toxicological effects of the TCDD in Sturgeon or are claimed to have been discovered, you know nothing about that, is that correct, ma'am?

A. Yeah.

Q. All right. And the approximate date of the Heineman and Rudolph visit was what, Dr. Kimbrough?

A. It was before I went to China, which --

Q. Before you went to China?

A. Yeah, which would have put it probably in October. But Mr. Siegel, our legal counsel, would be able to give you those dates.

Q. I know, but he isn't here.

A. I'm sorry, he was the one. He was also at this meeting.

Q. Your best judgment as to the time, ma'am?

A. Of this visit? It could have been the beginning of October.

Q. Now, did you ever have any contact from some person not employed by Monsanto but intervening for, or speaking for, or interceding for, or in behalf of Monsanto?

A. Not that I specifically remember. I get an awful lot of telephone calls and people wanting me to do all sorts of things.

Q. And it is -- does the name Dr. Wayland Hayes mean anything to you?

A. Yes, he used to be my supervisor.

Q. And did he talk with you about Monsanto's needs and necessities or desires in this case?

A. It's possible, but I don't remember.

Q. You don't have any memory of any conversations in the past where Hayes asked you to testify in behalf of Monsanto?

A. (no response)

Q. If you don't, it's all right, Dr. Kimbrough.

A. I just don't. I mean --

Q. Now, how about Colonel Young, did you ever discuss your appearance or possible appearance here with Colonel Young with the Air Force?

A. He called me recently and asked me whether I had any problems with testifying in court in general and whether I was completely against doing -- giving testimony, and I

told him I wasn't.

Q. I'm sorry?

A. I told him I was not.

Q. You were not. Did he tell you why he was asking whether or not you had any problems of that nature?

A. He was-- he mentioned the Monsanto litigation and the fact that we had information at CDC which should be part of the evidence.

Q. He mentioned that to you?

A. Yes.

Q. And, is that one of the reasons you've agreed to testify here in behalf of Monsanto, because of that contact?

A. No.

Q. All right. Now, at any meetings that you had from your first contact with Dr. Roush up to the time you testified today, has Monsanto advised you of the dioxin content of other chlorinated phenols other than the orthochlorophenol-crude which you have mentioned already?

A. They told me that their Lysol contained trace amounts of 2,3,7,8-tetrachlorodibenzo-dioxin.

Q. And who was it that told you that?

A. The attorneys at this same meeting in Atlanta.

Q. And when they described trace amounts, did they tell you at what levels, parts per billion?

A. They did, but they were low parts per billion and --

Q. I'm sorry?

A. They were low parts per billion. They were lower than what's in hexachlorophene, or parts per trillon, I'm not --

Q. What's the level?

A. The highest that has ever been measured was 20 parts per billion.

Q. And they told you that it was lower than 20 parts per billion?

A. Yeah, but --

Q. Of course you know that hexachlorophene has been taken from the market?

A. But not because of the TCDD, because it has -- it's not toxic in itself. I did that work.

Q. Didn't the TCDD add to the toxicity of the hexachlorophene?

A. No.

Q. Ma'am?

A. No.

Q. How did you establish that?

A. Because the effect that was caused by hexachlorophene is entirely different, and the two are

unrelated.

Q. They may be unrelated but you can get disability from two separate sources, may you not?

A. In this case, the neurotoxicity was definitely caused by the hexachlorophene itself.

Q. Well, can you -- do you know that no neurotoxicity is caused by the TCDD?

A. Not this type of neurotoxicity.

Q. You know that TCDD has caused neurotoxicity in the past in others? You know that, don't you, ma'am?

A. TCDD effects the, if it does anything, it affects the sensory nerves at high dosage levels. In this case, it was the motor nerves and the white matter of the brain that was affected by hexachlorophene.

Q. Now, Doctor, upon what did you make your statement that TCDD affects only the sensory nerves?

A. Because the only thing that has been described in the literature and has been found in workers has been an effect on the sensory nerves.

Q. Well, I'm asking you what literature or what study is it upon which you base that opinion?

A. Part of that -- those are reports that came out of Germany and then the I did some of this really by extrapolation from another compound which is closely related.

Q. Well, Doctor, the extrapolation I'm not -- what was the other compound?

A. It's -- those are the chlorinated dibenzo-furans.

Q. Well, the furans are indeed closely related. And you have worked with furans?

A. I have not done any specific work on it.

Q. Well, you said you extrapolated from work that you did on -- maybe I'm jumping to conclusions when I say that you did on furans, is it work that others have done on furans?

A. Yes. I'm referring to the poisoning in Japan and Taiwan.

Q. You are dealing with the food poisoning case there?

A. Yes.

Q. Well, you haven't done any independent research of your own?

A. No, but I've seen those patients.

Q. I'm sorry?

A. I have seen the patients.

Q. Well, you can see somebody with their legs cut off, doesn't mean a thing, does it, Dr. Kimbrough?

A. That's true.

Q. Have you done any research in the case of the Japanese people that were damaged by the substance in

question?

A. No.

Q. All right. And, the German work, was it from BASF or was it the Czechoslovakian work, Jirasek, Pazderova?

A. I simply reviewed the literature, the German literature, and that was in part the BASF --

Q. And other than BASF literature, did you see associated with neurotoxicity or lack of neurotoxicity of TCDD from Germany?

A. There are a number of old reports in the literature and --

Q. Such as?

A. There is one paper about Baur, and there is a paper of Kimmig, and those were really different plants.

Q. Well, part of BASF, are they not?

A. No. No, some of those some of that was in Rheinland-Westphalen.

Q. Pardon me?

A. I'm sorry, that's a German -- I don't know how to pronounce that in English.

Q. I have -- I don't have trouble with the pronunciation. I have trouble hearing your voice, ma'am.

A. In Rheinland-Westphalen. There was also a plant in Hamburg.

A. I never determined that something was medically acceptable, but I felt it would not add or contribute to the body burden that people were getting anyway.

Q. When did you decide that people were getting a body burden of TCDD?

A. A few years ago and then --

Q. Well, a few years ago is how many, Dr. Kimbrough?

A. In the late '70's, the early '80's.

Q. Well, your hexachlorophene decision was made when?

A. I was asked that question around that time whether that could appreciably contribute to tissue levels that we were finding in adipose tissue, and then I calculated what the dose might be that somebody would get by using things like Phisohex or the --

Q. I'm sorry?

A. Things like Phisohex or Dial soap that also had hexachlorophene in it and decided that because of the diluton factor that you would get, and the amount you would use it, would not appreciably contribute to the body burdens that people were getting.

Q. And, Doctor, when did you first determine that there was a body burden of 2,3,7,8-TCDD in adipose tissue?

A. I decided that once we -- the chemical methods were going to be able to detect smaller and smaller amounts that

we would eventually find it, and then the first time it was reported was in some adipose tissue samples that the veterans administration had taken both from Viet Nam veterans but also from some control people.

Q. You are talking about the Gross, Dr. Gross work from University of Nebraska?

A. That was some of it, yes.

Q. Well, is there anything other than that?

A. Well, since then, Dr. Rappe has done -- has conducted some analysis with tissues. We are doing adipose tissue analysis at the Centers for Disease Control.

Q. And are you basing -- well, that's recently you are doing that. My question is when did you decide what the body burden was, and is your answer that all you did was read Dr. Gross' report on the veterans and the controls and the veterans?

A. No, I -- that's not the only -- that was not the only reason why I felt that there would be body burdens -- I predicted that, in other words.

Q. I'm looking for knowledge. What knowledge did you have, Doctor, as to the levels of TCDD in adipose tissue in addition to Gross' work?

A. I can't really remember when that came out, but at about -- at about the same time several things happened. One

was that the methodology was improving so you could detect lower levels.

Q. Doctor, I'm trying to accelerate your appearance here, and if you could just answer my question. I know the methodology came out. I'm interested in knowing what your knowledge was and when you had it.

MR. HEINEMAN: Objection, the witness was trying to answer that question and he interrupted her.

THE COURT: Overruled. Not responsive.

Q. (by Mr. Carr) Do you understand my question, Dr. Kimbrough?

A. I'm trying to answer it and it's -- there was some information that those materials were in the environment that came out in the middle and late '70's, and so I assumed if you have something that's very -- that's present in the environment, people would have occasion to be exposed. And I predicted in a paper which I wrote in the '70's that we would probably be able to detect those levels at very low concentrations, and then pretty soon people started publishing and showing those.

Q. There are only two publications we know of, one from Canada, Kingston and Ottawa, the people living in that area around the Great Lakes, and the Viet Nam study by Dr. Gross, is there another study published.

A. There are papers by Rappe, who is a Swedish --

Q. I know who Rappe is. But his papers did not mention levels of TCDD in the fat.

A. He mentions --

Q. He mentions it in the combustion?

A. No, he also -- he presented, I think, a paper at the last Banbury -- one of the Banbury conferences --

Q. That may be, and has that been published?

A. The Banbury conference has been published.

Q. Okay. Doctor, I don't want to spend a lot of time on that. Is that the extent of the knowledge of adipose tissue?

A. And our own results, which we haven't published.

Q. You haven't brought those results here?

A. No.

Q. And you have not furnished those to us ahead of time?

A. No.

Q. And could you produce those for us?

A. No, we haven't finished our analysis.

Q. But you've used the knowledge you've gained there in your testimony you are giving here, have you not, ma'am?

A. I haven't really used it.

Q. I'm sorry?

A. I haven't -- I expect -- I mean that's -- I expected that.

Q. Expected what?

A. That if you started analyzing fat tissue of humans --

Q. That isn't really what I asked you. You have used the knowledge you've gained in those studies in the testimony that you will not or cannot bring to us in your testimony, have you not, ma'am?

A. You asked about my experience, yes.

Q. And, Doctor, insofar as you mentioned in your direct examination testimony, studies that were ongoing as to health effects, I think you mentioned birth defects, and I made a note somewhere if I can find it, you worked with porphyria, screened populations, birth defects, and you had a number of programs going on relative to TCDD, you recall that, ma'am?

A. Some of those statements are made in respect to what you find normally in the general population, rather than any specific study with TCDD.

Q. I understand that, ma'am, but you mentioned that you have done a number of studies screening people, things of that sort. Are those -- and birth defects. Are those ongoing studies at the CDC? Are those studies that have

already been done?

A. The Centers for Disease Control did a birth defect study in Viet Nam veterans and that's been published in the Journal of American Medical Association.

Q. All right, but I'm interested in your -- are there any other surveys CDC is doing relative to birth defects?

A. Not at the moment.

Q. Are there any that you've done in the past that have not been published?

A. Is this only in relation to TCDD now? We have a birth defects program.

Q. I would only be interested if it's knowledge that you have used in your testimony or in coming to your opinion about the toxicity of the TCDD and its health effects. That's all I'm interested in.

A. No, except for the study that's been published by Dr. Eriksson, which is the study on the Viet Nam veterans.

Q. Well, that's been published?

A. Yes.

Q. All right. But there are no other CDC ongoing programs dealing with that?

A. No.

Q. Birth defects and TCDD?

A. No, but we do have this broad birth defects

surveillance program.

Q. And are the results of that program available?

A. Of the birth defects surveillance program?

Q. Yes.

A. Yes.

Q. And you didn't bring any of that with you?

A. No.

Q. What about the other studies you mentioned, you had something ongoing on screening for porphyrias, porphryia cutanea tarda, hematic porphyria?

A. We have looked, for instance, at people in Michigan in connection with other exposures, where we have measured porphyrins in urine.

Q. Now, is that study available?

A. It hasn't been published yet.

Q. Is it available?

A. It's not in a form where it would be -- in other words, it has not been summarized, but there was a report made by a Dr. Robert Hill in a conference, and that has been published in Environmental Health Perspective.

Q. What about work that you've done? Are you working with TCDD now, ma'am?

A. No.

Q. Have you done any TCDD work other than your -- the

one article that you published, and I think you wrote, not a chapter, but at least an article for a book relative to occupational exposure to TCDD, anything besides that?

A. That was -- I also edited that book. Yes, I have recently written a review for a book that will be published to the Veterans Administration.

Q. Is it dealing with TCDD?

A. Yes.

Q. Is it available for us?

A. Yes.

Q. Have you -- did you bring it with you, ma'am?

A. No.

Q. Did Monsanto advise you that any documents or material that you were going to use for opinions that you were going to express in this case, did they advise you that those must be produced to us?

A. No, I mean this is all my --

Q. I'm sorry?

A. This is all my information and my knowledge and my experience. But any papers that you want, I'll be glad to send you.

Q. But were you advised that we should have that before you testified? Were you given any information at all by Monsanto as to what to bring, what documents to bring,

what documents not to bring?

A. No.

Q. All right. Doctor, you have in your CV a large number of papers that you've done, as well as reviewed, and talks given, couple hundred of both things, I suppose, put together, have you not, that are related to toxic substances and the effect of toxic substance upon human populations?

A. Yes, animal studies.

Q. How many thousands of pages would you reckon you've written in the area of effect of toxic substances on things that may be associated with human health?

A. I don't really know.

Q. Well --

A. If you have a hundred papers and you have fifteen pages a paper, that would be 1,500 pages.

Q. And none of those -- we got your CF on the day you testified, I think, came here to testify. None of those publications have been brought to us, have they, ma'am?

A. No.

Q. And, there is probably 20 lectures or -- they are all listed as lectures on starting out with halogenated compounds in February of '83 down to October the 2nd, '85, lecture of hazard of chemicals in indoor air. All of those are lectures that you have given in the past two years,

ma'am?

A. Yes.

Q. And many of them, if not -- well, the dominant majority of those lectures that we have given involve dioxin or polycyclic, polyhalogenated materials, do they not, ma'am?

A. Yes.

Q. And, are those -- can we get those in the public area or must we get those from you if we needed to review those to cross examine you?

A. Most of them are not available in any form.

Q. You have copies of all of those, though, did you not?

A. No. You see, I don't write any talks. I just go and give them.

Q. Well, do they take -- do you know what you say, ma'am?

A. No. I think I gave one in St. Louis that was taped and then later published.

Q. Ma'am, in any event, the works that you have written and spoken in the past on the subject, some are available and some are not, is that correct?

A. Yes, but the background information would be available in articles that I have also written.

Q. I understand that, ma'am, but you understand what I

maybe don't understand, but when we undertake to cross examine someone, we like to have, in advance of the time we see them, the work that they have done that we can get either from them when we take their prior deposition or order of Court to produce them so that we can cross examine intelligently on your views on particular subjects. None of that material you have brought here in this case, isn't that correct, ma'am?

A. No.

Q. That is correct, isn't it?

A. Yes. I'm sorry.

Q. I thought that's what you meant. Now, Dr. Kimbrough, with regard to the Missouri Health Study you did, I think you testified that you designed, or at least participated in the design of the Missouri Pilot Health Study, did you not?

A. Yes.

Q. And you have in your possession at CDC or available to you the original health records and questionnaires that were a part of that study, did you not, ma'am?

A. That is located at the Missouri State Health Department.

Q. Well, as one of the participants in the study, it is available to you, is it not, ma'am?

A. Yes.

Q. And if the Court were to order you to bring in the raw data, all of those laboratory reports, you could do so, could you not, ma'am?

A. This would be -- would have to be checked with the Missouri State Health Department, because even though we were involved in the study, it is the State Health Department Study. You see, we gave the funding and some technical expertise, but it is a -- the Missouri State Health Department Study. It's not a CDC study.

Q. Well, you understand that most of the reports given in that, in the published or reported results of the Missouri Pilot Health Study, most of the lab reports were in the nature of means and not actual values, you know that, don't you, ma'am?

A. Yes.

Q. And in order to really know what people had, you would need to see the lab reports themselves, wouldn't you?

A. Yes.

Q. Just, for instance, you could have a hundred people who had abnormally high results in given tests and other people who had abnormally low results in a given test and your mean would come out in the normal range, would it not, ma'am?

A. If you had very high and very low --

Q. Could you answer that question, Dr. Kimbrough?

A. Yes, but if you also give the range, then that would give you some idea.

Q. All you've got is a range. You could have one high, one very high and one very low, you've got the range, doesn't tell you at all what the actual values were, does it, ma'am? All you'd have is a range?

A. But it would tell you the extent of the distribution.

Q. But that wouldn't tell me whether people are sick or not, would it, based upon a laboratory result? All it would give me is you would have a range of 500 parts at the high and another range of five parts at the low, and all cluster either high or low under that range, and you would come up with a normal, if normal were halfway between the 5 and the 500, would you not, ma'am?

A. Yeah, but if you had this very high value and that was extremely abnormal, that would tell you that that person was sick. If you have a range, it would give you the extent of the distribution of all of the values.

Q. But all it would give you is there is one -- if you've got the range, all you'd get is that there is one high, which could well be a variant, an outlyer, and you've

got one low, which very well could be a variant or outlyer. The point that I'm making, ma'am, is that to properly assess whether you and others connected with that Missouri Health Study did in fact evaluate the lab results properly, one has to see the lab results, doesn't one?

A. Not necessarily, but one could do that, though, and could review them. Now, whether they are available would be something you would have to discuss with our legal department.

Q. I know, ma'am, but what you have here and testifying, I'm sure you understand, you have an advantage in that you've seen those lab reports. If you wanted to, you could see them, if you haven't seen them, and when you testify here, you say my opinion is thus and so. If I don't have the material upon which you base your opinion, I've got no option but to accept what you say, isn't that correct, Dr. Kimbrough?

A. I've also had training and experience.

Q. Excuse me, Dr. Kimbrough, could you answer that question for me, please?

A. Yes, and I also have training and experience.

Q. Of course you have. No question about that, Dr. Kimbrough, but, when you as a scientist go in and want to find out the truth, you look, or try to discover the facts

leading up to truth, don't you, ma'am?

A. Yes.

Q. And part of the facts leading up to the truth, you don't necessarily -- well, I know you are famous for it, you don't necessarily accept what someone else says, even though they may be trained and experienced, do you, ma'am?

A. Yes.

Q. Isn't that correct?

A. Yes, that's right.

Q. You dig into it because you know that even though, most best-intentioned people can misinterpret results, there are biases, aren't there, ma'am, that can color somebody's conclusions or opinions and interpretations of particular tests, you know that, don't you?

A. The tests themselves may be biased, doesn't necessarily mean how you took it, though.

Q. That's another element. You have to see the test in order to see how it is biased, isn't that true, ma'am? Now, in the case just for example for the Missouri Pilot Health Study, you've given on direct testimony that those people weren't sick, haven't you, ma'am?

A. I didn't say they weren't sick, I said that we didn't find anything that we could associate with exposure to TCDD.

Q. No, and that's because you looked at a group of people that all of whom were exposed to some extent, isn't that correct, Dr. Kimbrough?

A. We had really two groups of people --

Q. Could you answer that question, please?

A. No, I didn't.

Q. Doctor, did you not take 800 questionnaires as -- and separate those people in those questionnaires into the high-risk group and the low-risk group?

A. Yes.

Q. And did you not send those questionnaires to the people that live in the vicinity of the contaminated sites?

A. That lived in that area, yes.

Q. And by living in that area, isn't there a possibility of exposure, albeit low, in some instances?

A. The possibility that the low-risk group would have had any --

Q. I wonder if you would answer my question, Dr. Kimbrough.

A. It's very remote.

Q. Dr. Kimbrough, you took people that live in Times Beach, and put some of those people in your low-risk group, did you not, ma'am?

A. We evaluated the possibility --

Q. Could you answer my question, ma'am?

A. I would have to go back and I can't answer that question right now. I would have to go back and --

Q. Doctor, the questionnaires that you received back in response were all from people who lived in the contaminated -- who had addresses in the contaminated area, isn't that correct, ma'am?

A. I can't answer that question.

Q. Aren't you familiar with this study that you sent the questionnaires to people that lived in those areas?

A. We did, but I would have to -- I would have to check with Richard Hoffman who was actually the one who was conducting the study.

Q. Doctor, what you are saying now in point of fact you don't know whether you did or did not have exposed people in your low-risk group, is that what you are saying, if you have to check?

A. We discussed the --

Q. I know you discussed it, but could you answer my question?

A. The low and high-risk group, I don't recall that the addresses of the people.

Q. Doctor, you do know that the 800 questionnaires from which the high-risk group and the low-risk group were

selected -- well, strike that. You do know that your high-risk group and low-risk group were selected from those 800 questionnaires that were received, did you not, ma'am?

A. Yes.

Q. And you do know that those questionnaires were sent to people who responded to media announcements if you live in an area, one of those contaminated, alleged to be contaminated areas and want to participate in this study, please give us your name and address. You know that's the way you got the people, you know that, too, don't you, ma'am?

A. Yes, but not all of the questionnaires and not all of that information that was collected was actually used for the studies. There have been a number of effort --

Q. Doctor, please, we know that you didn't study 800 people. You selected a high-risk group from the 800 and a low-risk group from the 800, did you not, ma'am?

A. Yes, we selected a high and low-risk group.

Q. But they were all from people who responded to your public announcements if you lived in one of those contaminated area, please let us know your identity, and if possible, participate in this study, isn't that correct, ma'am?

A. The --

Q. Could you answer that question?

A. No, that's not quite correct.

Q. Well, how is it incorrect?

A. In that there were two efforts ongoing. One was to simply have a registry of, and register all of the people that had had exposure. And that is what some of us collection of people and so on, that was done by the Missouri State Health Department and then in addition to that we specifically tried to get two groups of people for the studies, and we did the same thing with Quail Run. In other words, one is simply a registry -- a registry of all of those people.

Q. Yes.

A. That's one event which is separate from the studies.

Q. All right. Go ahead.

A. And the people that were selected for the studies were from the area with the highest contamination at Times Beach, and then we tried to match them with controls from an area that had really no contamination.

Q. Oh, now, Dr. Kimbrough, you did not send questionnaires to areas that were not contaminated, did you, ma'am?

A. Well, this is not -- the -- this is not the -- the study of the small group of people where we also picked

controls.

Q. Doctor, did you not -- could you give Monsanto Exhibit 55 to the witness. Could you turn to Page 26, Dr. Kimbrough?

MR. HEINEMAN: Excuse me, is 55 the right --

MR. CARR: Yes, Monsanto Exhibit 55. Are you ready?

MR. HEINEMAN: No, I'm not.

MR. CARR: Missouri Pilot Health Study.

Q. (by Mr. Carr) Page 26. Does it describe the medical cares and methods used?

A. Yes.

Q. And does it say in the middle of that paragraph, "We administered the questionnaire to the individuals (or nearest relatives) believed to be at risk of exposure based on residence near, occupation at, or frequent activities in proximity to contaminated sites."

A. Yes.

Q. And did you in fact do that?

A. Yes.

Q. And now, Doctor, the high-risk group is described on the next page, is it not, that you --

A. I would like to continue reading the end of this.

Q. You would like to read it for yourself or --

A. Yes.

Q. Or for some other purpose?

A. Well, in order to be able to explain what I was trying to explain --

Q. Doctor, I'm really not asking for an explanation right now, I'm asking you specific questions and I'd like to have specific answers. Did you in fact administer the questionnaire to individuals who were believed to be at risk of exposure? Is that a true statement, Dr. Kimbrough?

A. Well, if you read at the bottom of Page 26, that explains what I was trying to say. It says, "This process has since been continued with more active efforts being taken to find and interview all potentially-exposed individuals as well as comparison populations from uncontaminated areas."

Q. I understand that. I'm not asking about that, Doctor. Is what I read to you true? Did you in fact do that, ma'am?

A. Yes, but that wasn't -- that was a survey.

Q. Now, that's correct, no doubt about it. Now, would you turn to the next page, ma'am.

A. All right.

Q. You selected your high-risk group from that group of the people that completed the 800, the 800 questionnaires, did you not, ma'am? Is that correct, ma'am?

A. This was how the high-risk group was selected.

Q. They were selected from those people that completed the questionnaires, were they not, ma'am?

A. The high-risk group, yes.

Q. All right. Now, would you turn to the next page, ma'am? And on the next page, you say, "We also selected a low-risk comparison group of individuals most of whom were from the group of 800 who had completed the questionnaires." Correct, ma'am?

A. Yes.

Q. Now, the questionnaires were sent to people who you believed to be at risk of exposure, is that right, ma'am, as stated, as you said was the truth as stated on Page 26?

A. Yes.

Q. And you selected from that group of 800 the low-risk group -- I'm sorry. You selected for your low-risk group most of the people were from the group of 800 who completed the questionnaire, correct, ma'am?

A. Yes.

Q. And the questionnaire was sent to people who were believed to be at risk of exposure based on residence near, occupation at, or frequent activities in proximity to contaminated sites, correct, ma'am?

A. Yes.

Q. Is that correct, ma'am?

A. That's correct, but then we also -- Sorry.

Q. Most of your low-risk comparison group was selected from those people who were described in that sentence I just read to you, were they not, ma'am?

A. Yes.

Q. And, your low-risk group, most of them, not all, but most of them were selected from people who were believed to be at risk of exposure based on residence near, occupation at, or frequent activities in proximity to contaminated sites, is that correct, ma'am?

A. They were selected because --

Q. Could you answer that question, please, ma'am?

A. They were selected out of that group because they didn't have all of those criteria.

MR. CARR: I wonder if you would direct the witness to answer the question as I framed it?

THE COURT: Dr. Kimbrough, you have to answer it as the attorney frames it.

A. Well, I can't.

THE COURT: Well --

A. I mean, you can't --

THE COURT: It's a clear question, and you've shown yourself obviously capable of understanding any question

that's been asked in this courtroom so far. I would ask that you answer it as it's asked. If there is anything else that you feel needs to be brought out or that Mr. Heineman feels needs to be brought out, he'll have an opportunity for redirect examination where he can bring that out. But at this point in time, you answer the questions of the attorney who's asking you the questions.

A. Could you repeat the question, please?

(Question was read back by the Court Reporter.)

A. No.

Q. Was it the truth, as you said it was the truth, that the low-risk group, most of it were taken from the group of 800 who completed the questionnaire? Is that the truth, ma'am?

A. Yes.

Q. It is the truth that most of your low-risk group were taken from the group of 800 who had completed the questionnaire?

A. Yes.

Q. And the questionnaires were administered to individuals who were believed to be at risk of exposure, were they not, ma'am?

A. Yes.

Q. And therefore the low-risk group was selected from

that group of people who were believed to be at risk of exposure, isn't that correct, ma'am?

A. No.

Q. Doctor, how can one be the truth and not the other? If you selected it from the people who completed the questionnaires, and the questionnaires were sent to people believed to be at risk, of necessary, if I put eggs in this basket, and if I take eggs out of that basket, I'm obviously selecting people -- eggs that had previously been put in that basket?

A. Maybe those eggs weren't eggs.

Q. But it describes them as eggs, says individuals believed to be at risk. That's the people you administered the questionnaires to, isn't it, ma'am?

A. Yes.

Q. And that's the same group of people as described in the second paragraph on Page 28, isn't it sir, the group of 800 who completed the questionnaire?

A. Yes.

Q. And those were the people who had the lowest risk of exposure, correct, sir -- ma'am?

A. I don't --

Q. Doesn't it describe that those were the people with the lowest risk of exposure?

A. No.

Q. Doesn't it say that -- am I reading that wrong? Aren't the words with the lowest risk of exposure based on exposure site, doesn't that appear there, ma'am?

A. On which page are we now?

Q. Page 28. Doesn't it say that they selected the low-risk group, most of them were from the group of 800 with the lowest risk of exposure based on type exposure, site, age, risk, etcetera?

A. Yes.

Q. Then they had a risk of exposure but it was the lowest risk of exposure, this group of people, correct, ma'am?

A. Yes.

Q. And those were people who resided near, had an occupation at, or frequent activities in proximity to contaminated sites, correct, ma'am?

A. No.

Q. That is incorrect?

A. Yes.

Q. Now, Doctor, the only way I suppose that we can test that is to find out if you're -- you don't call them -- maybe there is another way. You don't call them no-risk group, do you, ma'am?

A. They virtually had no exposure.

Q. Excuse me, that's not my question. You don't call this group a no-risk or unexposed group, do you, ma'am?

A. To be conservative we call it a low-risk group.

Q. Could you answer my question, ma'am?

A. We called it a low-risk group.

Q. Dr. Kimbrough, you are not answering my question. Would you read the question to her again.

(Question was read by the Court Reporter)

Q. You don't call this a no-risk or unexposed group, do you, ma'am?

A. No.

Q. You called them low-risk?

A. Yes.

Q. Low-risk means that there is some risk, albeit low, correct, ma'am?

A. Yes.

Q. Now, no-risk or unexposed would mean that they have no risk of any problems related to dioxin, wouldn't that be correct, ma'am?

A. No.

Q. That wouldn't be correct?

A. No.

Q. What's incorrect about that, Dr. Kimbrough?

A. Because the general population, everybody has trace amounts of exposure to very low levels.

Q. Now, Doctor, you really don't know that to be a fact, and I'm not going to quarrel with that, but that's not responsive to my question. The best way to put it then, ma'am, is you did not select a group of controls that you believed to have no exposure to this particular episode of dioxin contamination, isn't that correct, ma'am.

MR. HEINEMAN: Excuse me, Your Honor, I'd like to object to the question of Mr. Carr. He's arguing with the witness and I'd like to have his statement about what she knows and doesn't know be stricken from the record. It's not a question and she has answered specifically the question that he did ask her.

THE COURT: Objection is overruled.

Q. (by Mr. Carr) Is that correct, ma'am?

A. Could you repeat the question?

(Question read back by the Court Reporter)

A. No, that's not true.

Q. You did select a group of people who did not reside in the contaminated site areas?

A. They did --

Q. They did reside, didn't they, ma'am?

A. Yes.

Q. And if somebody resides in Times Beach they may on occasion use the streets of Times Beach, might they not, ma'am?

A. Yes.

Q. Ma'am?

A. Yes.

Q. And, if they use the streets of Times Beach, they are going to have some risk of exposure to dioxin, aren't they, ma'am, from the dioxin that's in the soil in the streets of Times Beach?

A. They may.

Q. Yes. And that is what your low-risk group consisted of, didn't it, ma'am?

A. Yes.

Q. Yes.

THE COURT: Mr. Carr, is this a good point for a short break?

MR. CARR: Yes, Your Honor.

THE COURT: We will take a short recess at this time.

(Following a recess, these proceedings continued outside the presence of the jury.)

Q. (by Mr. Carr) Dr. Kimbrough, is the Missouri Health Study the only human health study of which you are

aware and which the effects of low-dose exposure to dioxin was the subject of the study?

A. There have been studies in Seveso, Italy.

Q. Well, Seveso. All right.

A. And then there was a study of the Ranch Hand -- the Ranch Handers in the Air Force.

Q. Well, the Ranch Handers, some people questioned whether or not it was a study of exposure at all. But those three then, Seveso, Ranch Hand and Missouri?

A. And then we looked at birth defects on Viet Nam veterans that has been reported. There was a mixed exposure in Binghamton where some people were looked at.

Q. Well, that was a lot of other chemicals involved there, a lot of other furans and everything else involved there. It would be extremely difficult to isolate, would it not, what effects, if any, the TCDD at the Binghamton Office Building may have had upon the people?

A. Yes.

Q. Impossible to tell, would it not?

A. There was a mixed exposure.

THE COURT: I'm sorry, I didn't hear your answer.

A. There was a mixed exposure. There were a number of chemicals.

THE COURT: Okay. Thank you.

Q. And do you subscribe to the theory that when chemicals are mixed that way, there can be synergistic effects, one toxic chemical added to another toxic chemical, the sum of the toxicity would be greater than if they were just individually exposed?

A. That occurs sometimes, and the opposite can also be true. It varies.

Q. Sometimes one can tend to neutralize the other so that the two chemicals mixed together would be less toxic than the sum of the two individually, and the opposite is true, they add to one another's toxicity in some instances?

A. Yes.

Q. All right. And that could be, could it not, a cause of some of the serious problems that were found at the Binghamton Office Building, synergistic effect?

A. I'm not aware of any serious problems.

Q. You are not?

A. No.

Q. Have you read -- I don't know whether he's a doctor, Dr. Schecter's work on this area?

A. Yes, Schecter.

Q. Have you read that?

A. Yes. I'm on the -- I'm a member of the group of consultants that has advised the New York State Health

Department.

Q. Weren't there a number of serious health effects described in the Binghamton Office Building?

A. No.

Q. Then perhaps you are not, and I don't have the particular document with me to show it to you, but you don't recall reading in the book that was put out that the Plaintiff's Exhibit here, the exact number I don't know, in which there were -- the people seen at the clinic were, following exposure were found to have a number of serious problems?

A. I'm aware of --

Q. Suicide and things of that sort?

A. I'm aware of Dr. Schecter's reports. They are individual case reports and those people may have had problems, but whether or not that was related to the exposure is not clear.

Q. Well, it's not clear that it wasn't related to exposure. They had the exposure and they had those problems, isn't that right, ma'am?

A. The exposure hasn't been established all that well, either.

Q. Well, that's another problem, Doctor, but they were in the office building, they had potential exposure, they had

those problems, did they not, ma'am?

A. They claimed to have problems.

Q. Well, did a doctor upon examination confirm that they did have those problems?

A. I'm not sure what problems we are talking about.

Q. Well, maybe I better take the time to look up the exhibit. Would you Jerry? I don't think I brought that file with me. Here, it is. Article -- Plaintiff's Exhibit 1534, 1534 A, 1534 B, I'll hand our copy to her.

THE CLERK: I have them.

Q. Give her 1534 B, that would be the easiest thing for her to use. Now, what was my -- Doctor, have you had a chance to look at Page 8?

A. Not really.

Q. Now have you had a chance to look at it?

A. Uh-huh.

Q. Doctor, there is a number of significant problems described in that exhibit, are there not, ma'am?

A. Yes, but I'm not sure that they have anything to do with the Binghamton building.

Q. Doctor, I didn't ask you that, did I? What I asked you was in this document there was a number of significant problems, aren't there, Doctor?

A. There are a number of conditions listed.

Q. Do you not consider those conditions significant problems?

A. Yes, they may be.

Q. Well not maybe, they are if they exist, they are significant problems, aren't they, Dr. Kimbrough?

A. Yes, if they exist.

Q. And, do you have any reason to doubt the truth of what's reported by Schecter as having been found in this occupational medical clinic?

A. Yes.

Q. You have reason to doubt the truthfulness of it?

A. Yes.

Q. Do you -- is Dr. Schecter a -- do you have some knowledge that he lies and cheats and tells tales?

A. No, but there are studies that were also done by the New York Health Department, there are other studies that looked at the same group of people.

Q. How do you know that, Doctor?

A. Because I am an advisor to the New York State Health Department.

Q. What other health studies are you talking about at New York?

A. They surveyed the population.

Q. Who surveyed, Doctor?

A. Some physicians at the State Health Department.

Q. Physicians, Doctor, are you sure it was physicians?

A. Yes.

Q. Was it not -- and did they publish it, Doctor?

A. There are reports that are available which you can obtain by writing to the New York State Health Department.

Q. Doctor, we have some reports and what we have is Dr. Roush referred to them and they were -- he originally said it was by a doctor but when we got to it, we found out it was some technician made a report. Is that what you are referring to, sir -- ma'am?

A. No, it's a woman physician and I can't recall her name right now, and Doctor Axelrod, who is also a physician.

Q. And they have published those, Schecter's reports untrue?

A. They have not published his reports are untrue, they have examined the people and they have summarized their findings.

Q. Well then, what you've done is you've selected and chose to believe the report of this group you've mentioned, Axelrod and others and not what Schecter says, is that right?

A. What I'm saying is that there seems to be --

Q. Excuse me, could you answer that question?

A. Yes, because there is a discrepancy.

Q. And you selected the one that you wanted to believe and rejected the one that you did not want to believe, correct?

A. I have been several times in Binghamton, many times.

Q. Could you answer that question, ma'am?

A. Yes.

Q. The answer is yes, you did reject the Schecter view, did you not?

A. Yes.

Q. Now, Schecter's book was -- his article was subscribed by as a co-author, Dr. Tiernan, do you believe him to be a reputable scientist?

A. He is a chemist.

Q. Do you believe him to be a reputable scientist?

A. Yes.

Q. M. L. Taylor, do you believe him to be a reputable scientist?

A. I don't know who M. L. Taylor is.

Q. Isn't Taylor from the Wright State University, the laboratory? Don't you know he's in the Department of Pharmacology and Toxicology?

A. I guess I did know that.

Q. Yes, you did. Do you consider him to be a

reputable scientist?

A. I really don't know much about him.

Q. Do you believe the laboratory at Wright State University, reputable scientists?

A. Yes.

Q. Do you think they would say something that was not true if they knew it was untrue?

A. They might not know.

Q. I know that, but that's not what I said, is it?

A. Their contribution was to the tissue levels.

Q. Excuse me, could you answer my -- Could you read it?

(Question read back by the Court Reporter.)

A. No, I don't think so.

Q. If they reported dioxin in blood, would you believe them, that they were telling the truth?

A. I would wonder about that.

Q. Whether they are telling the truth?

A. They may know it -- as they see the truth they would be telling the truth.

Q. Well, that's what I'm asking you.

A. But it may not be the real truth.

Q. The truth is always in the eye of the beholder, may not be a fact but I could believe this world is flat and if I

tell you this world is flat and believe it to be so, I'm telling you the truth, am I not?

A. But that's not the way things are.

Q. But it's not a fact that the world is flat, is it, ma'am?

A. No.

Q. You understand when I ask you whether it's a fact or whether it's a truth I'm asking you two different things, what a person is saying? Because I'm asking you based upon the reputation, what you know of Dr. Taylor, Tiernan. Would they report the truth as they saw it to be the truth?

A. As they saw it, yes.

Q. Would they do that?

A. Yes.

Q. So the rest of those people from the Department of Surgery at the clinical campus of the Upstate Medical Center, New York at Binghamton, do you know him, this is G. Gitlitz, I suppose?

A. No.

Q. You don't know him?

A. No.

Q. Do you believe then, ma'am, that those people did not have skin cancer as described here?

A. They may have skin cancer, yes.

Q. Do you believe that they had liver pathology, three cases of liver pathology?

A. They had some changes in their liver. Pathology is a little strong.

Q. Well, do you believe they had liver pathology?

A. No, I don't believe that.

Q. Did you look at the slides?

A. I also saw the --

Q. Excuse me, did you look at the slides?

A. I saw the pictures of the ultra structures.

Q. I'm sorry?

A. Yes, I did look at some pictures that he had.

Q. That Schecter had?

A. Yes.

Q. And that were published as a matter of fact in the book, you saw those, didn't you?

A. I didn't see the book but I saw the -- I saw some pictures of the liver.

Q. And it is your judgment I forgot -- forgive me, are you a pathologist?

A. Yes.

Q. It's your judgment as a pathologist, that those pictures did not show any pathology?

A. They show some changes.

Q. That isn't what I asked you?

A. They don't show what I would consider pathology.

Q. All right. They show changes but you did not consider those changes to be pathological?

A. Right.

Q. Do you believe them when they say they had hypertension or they discovered associated with this fire, case of hypertension, or doesn't say a case but just hypertension, do you believe that?

A. Not the association, no.

Q. Dr. Kimbrough, I'm going to get to that in a moment, but I'm asking you now whether or not you believe those cases existed and that Schecter is telling the truth when he says they were from people that had been working in that building?

A. That's possible.

Q. I'm not even asking you that. Do you believe it could be the truth? Do you think the man is lying when he says it was reported to him that those people were working in this building and at the occupational clinic those records showed those things? Do you think Schecter is lying?

A. You find those things in the general population.

Q. Dr. Kimbrough, every ailment on earth you find in the general population?

A. Uh-huh, yes.

Q. You can have somebody laying in the street and he says I just got run over by a car, I got these broken legs, and you can say, well, you find that in the general population. You can say that about anything and everything, can you not? That's not an answer to my question, did you believe that, is it, Dr. Kimbrough?

A. I think it is.

Q. Dr. Kimbrough, do you believe the man is telling the truth when he says it was reported to him he found in those records, in those clinical records, a case of hypertension, suicide, nervousness, irritability, insomnia, impotence, fatigue, elevated serum cholesterol and triglyceride levels, psychoneurotic illness leading to time off from work and psychiatric treatment, headaches, and peripheral nerve impairment and other findings? Do you believe that, believe that he's telling the truth that those were facts that he believes, those are things that he believes to be facts and are shown in the records that he's examined?

A. I don't really believe that.

Q. Do you have any information of your own to cause you to come to a disbelief that Schecter is telling the truth?

A. The -- the New York State Health Department reviewed the --

Q. I know that somebody did the reviewing. I'm asking you whether or not you have any information of your own to support your statement that Dr. Schecter is not telling the truth when he reports those things?

A. There weren't -- there aren't that many abnormal health effects in those findings in this population.

Q. Doctor, you still didn't answer my question.

A. No, I don't.

Q. Now, Doctor, what -- why would Schecter -- what would motivate him to tell something that he doesn't believe is the truth?

A. I don't know.

Q. Have you associated with him in the past?

A. Yeah.

Q. Does he hae a financial or monetary interest in telling something that isn't true?

A. Not as far as I know.

Q. Is there any reason that you know of that he would not report the truth as he sees it?

A. He may be overstating the facts. Some people do that.

Q. I know that. Some people don't do it. My question

is, any reason that you know of at all why he would not be telling the truth?

A. I don't know of any reason, no.

Q. All right. Then -- he is then, unless -- do you simply believe he made it up, just for fun?

A. I think he's overstating the fact, and we have argued about this in public, at meetings. I've told him so.

Q. Well, by overstating the facts, do you mean that somebody that he -- when he -- there was not three cases of skin cancer?

A. There may have been three cases of skin cancer.

Q. Excuse me, if there may have been three cases of skin cancer, he's not overstating the fact that those three cases of skin cancer exist, isn't that correct, ma'am?

A. Yes, but they had nothing to do with the exposure.

Q. Doctor, that may be. That's the next point that I'll get to, if I ever get to it. That may be. What I'm asking you is whether or not there were -- there were cases of skin cancer. Do you have any reason to dispute or doubt that there were three cases of skin cancer as reported by Dr. Schecter?

A. No.

Q. Do you have any reason to doubt that there were three cases of liver pathology with those changes, although

you don't call them, with liver changes as described by Dr. Schecter?

A. There were liver changes.

Q. And I adopted, do you have any reason to believe that he's not telling the truth there, if we call those liver changes rather than liver pathology?

A. It is my recollection that there were two people with liver changes, but I may be wrong.

Q. And he may be right?

A. Right.

Q. Now, this is not only published, given before the some chemical society, if my memory serves me right, also published in a book, wasn't it? Chapter in a book? This was the follow up of the ACS meeting in Miami?

A. Yes.

Q. Yes.

A. Yes, just the proceedings are published.

Q. Those other things, to save me going into one at a time, do you believe that those other cases exist but that he has in each instance tried to connect them to the Binghamton fire and you don't believe such a connection exists? What I'm trying to do is separate, Dr. Kimbrough, whether or not those cases exist from a connection with the, causal connection with the fire, that's what I'm trying to do. Do

those cases exist in your opinion?

A. I don't know.

Q. You don't have any reason to doubt that they exist, do you, ma'am? He would not make them up, would he, ma'am?

A. I do, sir, have some reason to doubt, but I don't know whether he made them up.

Q. You think he might have made them up?

A. I don't know.

Q. I know what you said, you don't know, I'm asking you to put it on the record. Do you think that he might have made them up?

A. I just don't know.

Q. Do you understand the difference between think and know?

A. I don't know.

Q. I know you don't know whether he made them up, Dr. Kimbrough, do you believe that he made them up? Do you think that he made them up?

A. I don't know that either.

Q. You don't know what you think or what you believe? I'm asking you what you think or believe, Dr. Kimbrough.

A. Some of them may be there and some of them the evidence may really not be there. The only way I would have to be able to do that would be to look at the records.

Q. That isn't what I'm asking you, again, Dr. Kimbrough. Do you believe that he made those cases up or any of those cases up?

A. I can't answer that question.

Q. Is it because you have no belief one way or the other?

A. That's one part of it, and I'm not really sure what we are talking about, what cases and what of those parts.

Q. I can help you with the latter part, the cases that he has described in here. Are those fictitious cases that he has made up for whatever purpose he might have? Are those cases, or are those cases, do they in fact exist as far as you -- do you have any information to believe that they do not exist, that this is something manufactured by Dr. Schecter or by somebody else?

A. There are other possibilities.

Q. And those are --

A. For instance, you don't know whether all of this occurred in just a few people, whether with each of those things you are talking about a separate person --

Q. Maybe, I'm not quarreling with that.

A. So I don't know.

Q. I'm not trying to tell you each of those are separate episodes. I'm simply trying to find out from you

whether or not you believe those are symptoms accurately, or not accurately even, but truthfully reported by Dr. Schecter?

A. I just don't know.

Q. I know that. I'm asking you what you believe.

A. I believe that they are not accurately reported.

Q. No, and I asked you whether or not you believe they are truthfully reported. Left the accurate out.

A. As Dr. Schecter sees the truth, they may be truthful.

Q. All right.

A. I don't know.

Q. Well, that's what I'm asking you. Do you believe that he is telling the truth as he sees it?

A. I don't know.

Q. Doctor -- Doctor, you do understand the difference between the word believe and know, don't you, ma'am? I would like to move on to another point. It is an elementary thing, what you believe. Why are you reluctant to tell me whether or not you believe the man is telling the truth? That's all I'm asking you. Do you believe the man is telling the truth as he sees it? He may be seeing imaginary things, may be seeing things that do not exist, but is he relating the truth as he sees it in your belief, ma'am?

A. The truth as he sees it, yes.

Q. All right. Now, Doctor, the next point to ask is whether or not the truth as he sees it was in fact associated with the Binghamton Office Building. Do you believe that those people that he -- not accurately, truthfully reporting his belief, that those people had a connection with the Binghamton Office Building fire?

A. I -- you stated your question in two ways. Which one should I answer?

Q. Do you believe that he is telling the truth that as he sees it that those cases of those problems listed here were associated with people who had been in the building after the explosion, after the fire?

A. I can't answer that question.

Q. Why not?

A. Because I don't know what people he's talking about.

Q. He's talking about those people that he's described here, those cases that he says were people, cases of people that were in the building.

A. He's talking about a subset of patients followed in an occupational clinic, and I'm not sure what this subset of patients represents, whether they actually were all in the building.

Q. It represents a group of people that he believes

were in the building, doesn't it, ma'am?

A. Yeah, but I don't know that.

Q. I know you don't know it, ma'am. I'm talking about -- everything that you read in an article, you don't know that it exists. What I'm asking you, is do you believe that he's reporting what he things is the case, that those people were in the building?

A. That had those symptoms, problems, I don't know.

Q. Dr. Kimbrough, you do know what the word believe means, don't you, ma'am? You do know that it's different from the answer you are giving me, you know that, don't you? Why are you coming here and doing this?

A. I'm trying to answer your questions and I can't answer this question, not this way.

Q. You can answer the question as to what you believe, Doctor. If you believe the man is a liar, say so.

A. I don't know that he's a liar.

Q. You are protected by the privilege of testifying in this case. You can call the President, you can call your boss, you can call the Judge, you can call me, you can call anybody you want any kind of name that you want. Anything that you say in this courtroom is absolutely privileged. You may not be liable for anything that you say here, absolutely privileged. Now, is it that you simply believe the man is a

phony and a fraud and a liar?

A. No, I don't believe that.

Q. All right. Do you believe that he's telling the truth as he sees it?

A. I don't believe anything. Why should I believe something?

Q. Because you are a lady that's coming here, that is represented to be an expert in the area of human health effects associated with dioxin. Because you have read this, because you are part of the counsel that is responsible for the Binghamton office health effects, because you are obviously an intelligent young lady and you must have a belief. Because you are not a fool, Dr. Kimbrough. Because I don't believe that you are telling me the truth when you say you don't have a belief. You have already said that you argued with Dr. Schecter on other occasions.

A. Uh-huh. And I have some problems with this, but I can't explain them.

Q. Why can't you explain them?

A. Not in the way we are conversing.

Q. Well, explain then, ma'am.

A. Okay. One of the -- as I said earlier, a lot of those things occur normally in the population. Some of them are chronic health effects that you would not get following

an acute exposure. For instance, hypertension is something that comes on very gradual. Cancer, incubation period or the latency period for the development of cancer is usually many many years --

Q. Doctor, all of those things I agree with.

A. So all of this has nothing to do with each other.

Q. We are not arguing that point. Apparently you do not understand what I'm asking you.

MR. HEINEMAN: Object, Your Honor, he asked the witness to explain.

MR. CARR: I know it. I'm trying to save us some time because we are not at issue on this point.

MR. HEINEMAN: He interrupted her and I object to it.

THE COURT: Objection is overruled. I don't think -- there is some lack of understanding somewhere along the line because I don't think that -- first of all, she said those things already. Secondly, I don't think it was responsive to his question. Mr. Carr, go ahead.

Q. (by Mr. Carr) Doctor, you are talking about whether or not the Binghamton fire indeed caused those problems which are all problems found in the general population and that the cancer or latency period is certainly a long time. This fire was in '79 and the article was

written in '81 or something, whatever the date is. That isn't what I'm asking you about. I'm not trying to get you to concede that those problems were in fact caused by the Binghamton fire, not at this point as yet. All I'm trying to do is to get some kind of framework that I can ask you about, because if you absolutely believe there were no cases of skin cancer, there was no liver changes, there wasn't any hypertension, any suicide, then it's silly for me to even talk to you about it. But if you think that there may have been those cases but not caused by this fire and are not caused by exposure or some other reason, then we can talk about it. I'm simply trying to find out whether or not you believe those cases existed; whether or not the man is telling the truth. I'm not asking you to agree that his conclusion is correct. Do you understand that, Dr. Kimbrough?

A. Yes.

Q. All right. Now, with that in mind, do you think the man is reporting the truth as he sees it insofar as those problems are concerned?

A. Yes.

Q. All right. Now, it is your belief, as I understand it, whether the problems exist or don't exist, they were not caused by exposure to the chemicals in that -- associated

with that fire, is that right?

A. I'm sorry. I didn't pay attention. Can you read the question back?

Q. Why didn't you pay attention, Dr. Kimbrough?

A. I don't know. I'm getting tired.

THE COURT: Would you like to take a short break?

A. It's okay. But I just, see, I'm one hour ahead.

Q. It's ten after five your time.

A. That's right.

Q. All right. But, they have been reported as associated by those people named, have they not, ma'am, or by this one person named, if you have problems with that, Dr. Schecter?

A. He also states etiology of those medical findings is not always clear.

Q. Yeah. Nobody --

A. That's on the same --

Q. Nobody is quarreling with that, Dr. Kimbrough, you are fighting a straw man that doesn't exist. You are advocating a position, Dr. Kimbrough, that I'm not contesting at this point.

A. He's making those reports but he's not necessarily making this association.

Q. That's right. He isn't. Did I say that he was?

A. I thought that was what I said.

Q. I know, but that's not -- he's reported those things in this paper, hasn't he, ma'am?

A. He has a sentence in this paper which says, etiology of those medical findings is not always clear. It's on the page you gave me.

Q. He says that, doesn't he?

A. That's what he says on this page that you gave me.

Q. Right, he says that. Nobody is quarreling with that, so, whatever it is, he reports those things, doesn't he, ma'am?

A. Yes.

Q. And, Doctor, are there any other reports of health effects that somebody has said may be associated with exposure to dioxin other than the ones you've named? Mentioned Seveso, Binghamton possibility, I don't know, I can't remember myself, you mentioned, I thought, three, Seveso, Binghamton, and the Missouri -- Ranch Hand. Right?

A. Ranch Hand.

Q. All right. Any other human health effects study of which you are aware?

A. Of low-level exposure?

Q. Yes.

A. I can't think of anything at the moment, it was

some other surveys, but --

Q. There were other surveys?

A. Well, there was a suspicion of exposure, which doesn't bear out.

Q. I'm sorry, I can't hear you.

A. Where there was a suspicion of exposure, but there really wasn't any exposure.

Q. What surveys were those?

A. For instance a survey that was done around Dow Chemical Company.

Q. In Midland, you mean?

A. In Midland, Michigan.

Q. And cook reported those in their works? Or is there -- has it been published?

A. I think it's only a report that you can get from the Michigan Department of Health. They were involved in that.

Q. Wasn't a CDC work?

A. No.

Q. Anything else?

A. Nothing that I can think of at the moment.

Q. All right. Then the Missouri Health Study then at the very least is one of at the most a half a dozen studies that may be related to low-dose effects of exposure, human

health effects associated with low-dose exposure of dioxin, correct, ma'am?

A. Yes.

Q. All right. Now, do you still have the Missouri Health Study in front of you?

A. Yes.

Q. Would you turn to table C-2 on Page 61, if you would. Now, Dr. Kimbrough, in the normal population, what percent of people would you believe as a pathologist, as a doctor, would have swelling in hands or feet?

A. Somewhere up to about 25 percent. It depends on the age and the -- what you call swelling.

Q. I noted you were looking directly at the result here. Did the number that reported that abnormality --, I directed your attention to it, did the number that reported that abnormality influence your opinion?

A. No.

Q. Doctor, do you really believe that 25 percent of the normal population has swelling in hands or feet? Do you really sincerely, honestly believe that?

A. It's a very common complaint.

Q. That's not what I asked you.

A. Yeah.

Q. You believe that we have got, of the eight people

in this room, that two of us have swelling hands or feet?

A. Not all the time, but sometimes.

Q. Doctor, anybody will have a swollen foot if they hit it on something or if they get injured. This isn't the questionnaire. When you ask the questionnaire -- did you bring a copy of the questionnaire with you by any chance?

A. No.

Q. How was the question posed? Swelling in hands or feet, or did you see -- you helped design the question, did you not?

A. I saw the questions but I don't remember anymore exactly how it was posed.

Q. You helped design the question, did you not, ma'am?

A. Yeah, most of the questions that had more to do with toxicology.

Q. My question is, did you help design those questions?

A. Yes.

Q. Now, the purpose of those questions were to find out whether or not they had some things that would be caused, called ailments, not just an occasional occurrence, isn't that right, ma'am?

A. Not all of the questions. You put some questions in there to see how valid the answers are that you get.

Q. How about the swelling in hands or feet, was that question put in there to see if they were honest?

A. No.

Q. It was a question designed to find out whether or not there was an unusual, if you will, health effect, or a real health effect associated with this population, isn't that correct, ma'am?

A. Whether there was a difference between the two groups.

Q. Doctor --

A. No, that's how you analyzed it later on.

Q. You wanted to find out -- just suppose that you found out that 15 percent of the people in the high-risk group had swelling in hands or feet and only one percent of the people in the low-risk group had such swelling, what would you have concluded from that?

A. Nothing.

Q. Nothing at all?

A. No. I would have to analyze other things.

Q. Well, other things along with it, when your questionnaires came out that way, the high-risk group had this abnormality or this generalized disorder and the low-risk group did not. What would you conclude from that?

A. That would be something I would register and I

would do other things, but I wouldn't make any conclusions based on it?

Q. What would that help you, what kind of evidence that would be toward coming to a conclusion?

A. I wouldn't -- just based on that, I wouldn't come to any conclusion.

Q. I didn't ask you that. I asked you how would you consider that evidence in helping you to come to your conclusion?

A. It's only an indicator.

Q. I understand that, ma'am. I'm not asking you that. You would consider that, would you not, as something that would indicate that the people with the swollen hands or feet are having a health effect that the people in the low-risk group are not having. That was the purpose for putting it in, was it not?

A. It suggests that they might have some fluid retention.

Q. Associated with dioxin exposure?

A. No.

Q. Well, Doctor, didn't you design those questions to try to find out whether or not they had health effects associated with dioxin exposure? Wasn't all of your questions except your test questions designed by CDC or

helped by CDC for the express purpose of finding out whether or not there were health effects associated with dioxin exposure?

A. This is only a preliminary --

Q. Could you answer my question, Dr. Kimbrough?

A. No.

Q. Then, Doctor, your entire study is a fraud, isn't it, ma'am?

A. No.

Q. If you didn't design -- did you really tell those Missouri people that those questions are not designed to help you find out whether or not there are harmful consequences from dioxin exposure? Did you tell them that when they started this study?

A. To help us find out whether -- yes.

Q. Those questions were designed to help you find out whether or not there are harmful health effects from exposure to dioxin, isn't that correct, ma'am?

A. Yes.

Q. Yes. That's the reason you put that question in about swelling in hands or feet, to aid you to come to that conclusion, isn't that right, ma'am?

A. To obtain some information.

Q. To aid you in coming to that conclusion, isn't that

right?

A. To obtain information.

Q. I'm sorry?

A. To obtain information.

Q. That's not what I asked you. To aid you to come to the conclusion whether or not there are health effects from exposure to dioxin, isn't that right, ma'am?

A. That's not quite right.

Q. Well, did you put it in there for any purpose other than to help you come to that conclusion along with the other evidence? What other reason would you have for putting it in there, Dr. Kimbrough, except to aid you in arriving at a conclusion of whether or not there are health effects associated with dioxin exposure?

A. To be able to focus more on specific things, and then once you do that, you then arrive at conclusions as to whether some of those effects might be associated with exposure.

Q. Doctor, isn't that all part of the process of aiding you to come to the conclusion of whether or not dioxin has harmful health effects?

A. It's all part of the process, yes.

Q. Yes, indeed. This question was put in there for that purpose, otherwise, it would be stupid to put it in

there, wouldn't it be, ma'am, a useless thing?

A. It's part of the process, yes.

Q. And it had a useful purpose, did it not, ma'am?

A. Yes.

Q. And you wouldn't have put it in there if you had not expected to use that, along with other things, in helping you arrive at a scientific opinion, if you will, or conclusion as to the health effects as to dioxin, isn't that correct, ma'am?

A. Yes, it's part of the process.

Q. And that's true of all those questions that you've asked those people except some that you may have put in as a test or a catch question, right, ma'am?

A. Yes.

Q. Now, you would not expect the normal population to have swelling in hands or feet, would you, ma'am?

A. Yes.

Q. You would?

A. Yes.

Q. Dr. Kimbrough, I'll remind you that you are under oath. Do you really think that 25 percent of the people responding to that question that you asked that would say, yes, I have swollen hands or feet?

A. Yes.

Q. Now, Doctor, your question then is worthless, isn't it?

A. No. If everybody had responded that they had swelling then it depends on the number, and it also depends on the age.

Q. How many people would you have to have respond that they have swollen hands or feet before you would consider that that is an aid in arriving at your conclusion?

A. If more than half of the people would say that they would have swelling of hands and feet all of the time then I would get concerned.

Q. No, I'm not asking concerned, Dr. Kimbrough. Maybe we are going at the wrong thing, because this is not to find out whether or not you should have concern, this is to find out, is it not, ma'am, are there health effects, and, if so, are they from exposure to dioxin. Isn't that the whole purpose of the study?

A. Yes, that's the purpose of the study.

Q. And, Doctor, you designed the study to be able to pinpoint problems that people are having. You really don't think that 49 percent of the population have swollen hands or feet, do you, ma'am?

A. Sometimes, depending on the age.

Q. Doctor, how did you phrase the question?

A. I don't specifically know. I would have to go back to the questionnaire.

Q. The swelling of the hands and feet depend upon age, doesn't it, ma'am?

A. And whether or not you are pregnant, and whether or not --

Q. Did you take -- did you finish your answer?

A. And whether or not you have eaten a lot of salt. I mean there are a lot of things that can affect that.

Q. I'm sure there is. Did you take those things into consideration when you selected your population?

A. No, not all of those things, because you can't take those things into consideration.

Q. Why can't you?

A. When you select the population --

Q. Why can't you?

A. You can't select a population for all of those factors. That's part of epidemiology.

Q. Well, you wouldn't expect to have 25 percent pregnant women, would you?

A. No, but there may be a few.

Q. Sure, there may be a few. But certainly not 25 percent or 49 percent?

A. There may be a few that ate a lot of salt. There

may be a few that sit a lot.

Q. Doctor, in your general population, taking a group at random, as you did here, you tried to get a random group, didn't you, ma'am, except exposure, low risk or high risk?

A. Uh-huh.

Q. Now, that's the population that I'm talking about. This population here in this room where Mr. Seigfreid is the very oldest of us all.

MR. NASSIF: By far

Q. (by Mr. Carr) Months at least older than most of us. And we have Court Reporter and the Clerk who are by all odds the youngest. And we have a cross section here. Do you really think that half of those people, or part of those people, are going to have swollen hands or feet in the parameters of your question?

A. Some of the time, I do.

Q. And, Doctor, then your question, if you ask do you have some swollen hands or feet, a hundred percent of the population some of the time, a hundred percent is going to answer question. Because surely you didn't frame the question that way. If you did, it was a stupid question.

A. Well, maybe it was.

Q. Well, was it framed that way, Dr. Kimbrough? I'm not going to accept that.

A. I don't know specifically how it was framed.

Q. Doctor, you know good and well it wasn't framed that way to get a yes response from a hundred percent of the people. Dr. Kimbrough, I suggest to you that you are playing games with me.

A. No, I am not.

Q. Did you design the question in such away that you would get an affirmative response from everybody? Do you believe that everybody has swollen hands or feet at some time or another in their life?

A. Yes.

Q. Yes. Then if you ask that question that way, you should have got a hundred percent yeses, shouldn't you, ma'am?

A. Yes.

Q. That question framed that way would be worthless, wouldn't it, ma'am?

A. Yes.

Q. Therefore, you did not frame it that way, did you, ma'am, because you framed it in a fashion to get information that you could use, isn't that correct, ma'am?

A. Yeah, we tried.

Q. So that question wasn't framed that way, was it, ma'am?

A. Yeah, but I don't know exactly how it was framed.

Q. I'm excluding, eliminating something that would -- swelling on occasion?

A. Uh-huh.

Q. Now, Doctor, this question was designed to elicit whether or not swelling in hands or feet was a real problem to the person being asked that question, that is the truth of the matter, isn't it, ma'am?

A. I assume so.

Q. Now, Dr. Kimbrough, what percent of the population do you think has a real propose with swelling in the hands or feet?

A. I still believe that about 25 percent of the population, if you talk about a cross section, taking all ages, does have that problem.

Q. Has a real problem with swollen hands or feet?

A. Uh-huh.

Q. Do you have such a problem?

A. Yes.

Q. When, do you have it, now?

A. At night after I've been on an airplane. I just -- I'm very sensitive to salt. I try to eat very little salt, for instance.

Q. Isn't that unusual to be very sensitive to salt?

A. No.

Q. What percent of the population do you believe are very sensitive to salt?

A. Probably more than we realize, but --

Q. That may be, but what percentage do you believe, ma'am?

A. I would think maybe 25 percent of the people.

Q. 25 percent of the people are sensitive to salt, too?

A. Uh-huh.

Q. Dr. Kimbrough, is it your opinion, and we can save a lot of trouble here, that 25 percent of the population are afflicted with every problem known to man?

A. I don't understand what -- some time in their lives they will have some problems, I don't --

Q. No, in the framework of a question you are going to ask to elicit health effects?

A. Some people will have. Some problems are more prevalent than other problems.

Q. What problems do you think that 25 percent of the population had?

A. Things like headaches, since they are more frequent than that.

Q. I'm sorry?

A. Headaches and those sorts of things would be even more frequent.

Q. You think that 25 percent of the population have persistent headaches?

A. Well, they are also different --

Q. Excuse me. Do you think that 25 percent of the population have persistent headaches?

A. Depends on what a persistent headaches is, what you mean by that.

Q. How you all used the word and expected to use the word when you used the phrase in your questionnaire. Do you think 25 percent of the population have persistent headaches in that framework?

A. They have frequent headaches, that's what I believe.

Q. My question is persistent headaches, isn't it?

A. 24 hours a day, every day of the year?

Q. Doctor, within the parameters -- within the framework of the way you all designed the question and administered the question to the people in the Missouri Pilot Health Study?

A. I personally feel that the term persistent, the way it's used here, is a very poor choice of words.

Q. Well, that may be, but you chose the wording, I

didn't?

A. I didn't necessarily choose that word.

Q. You were a part of the group that chose the word?

A. I was part of the group, but I wasn't necessarily the one that used that term.

Q. Well, in any event, do you think that 25 percent of the population have persistent headaches?

A. That's one of the afflictions that people have a lot, yes, I do believe that.

Q. You believe that 25 percent of the American population have got persistent headaches?

A. It depends on -- unless the term persistent is defined to me, I can't answer that question.

Q. Well, did you define it to the people that you gave the questionnaire to?

A. I wasn't involved in administering the questionnaires, so I don't know.

Q. Well, you would have given -- did you define it in writing to the people you gave the questionnaire to?

A. No.

Q. What kind of question did you ask them? Are you afflicted with persistent headaches?

A. I was not involved in that part of the study. You would have to --

Q. You read it, you designed the study, including the questionnaire. What was the question that you asked?

A. I helped design the study, but I was not involved in the details of it.

Q. Did you read the details of it? Did you read the study before it went out from CDC or before it went out to the public?

A. I was involved in the clinical laboratory side, what types of tests to do, and in the question of exposure assessment.

Q. Would you answer my question, Dr. Kimbrough, did you read it, ma'am?

A. I read the draft, yes.

Q. Now, did you see the questions on headaches?

A. Yes.

Q. Did you criticize or did you send any criticism or make any comment to anybody about the question on persistent headaches?

A. No, not specifically.

Q. Doctor, here 41 percent of the people with the low-risk exposure have got persistent headaches according to what they say, isn't that correct?

A. Yes.

Q. Do you think that 41 percent of the population have

got persistent headaches?

A. It depends on how they interpret persistent. I just can't answer that question.

Q. Doctor, how would you consider persistent headaches, one that you have and you cannot get rid of, that it stays with you, it persists? Isn't that what persistent means?

A. It could mean to a person that he has a headache that starts in the morning and he still has it at night, and I would think that there are maybe as many as 50 percent of the people that could have such headaches.

Q. 50 percent of the population have such headaches?

A. Yes, not every day, but --

Q. God, Dr. Kimbrough, what population do you associate with?

A. This type of information also is in other health surveys.

Q. Doctor, if that amount of the population have got persistent headaches do you think it might be associated with the fact that the population have got dioxin in their tissue, is that a possibility?

A. No, it's always -- people always have suffered from headaches.

Q. How do you know that?

A. If you look at all the headache remedies that are sold.

Q. Dr. Kimbrough, how do you know that they had -- 50 percent of the population have persistent headaches before the onset of chemical contamination of our environment, including dioxin?

A. If you go back to the old medical literature, there is evidence that people -- that's one of the problems.

Q. What medical literature says 50 percent of the population has got persistent headaches?

A. It's just a very common problem.

Q. How about joint and muscle pains, without looking at the -- unless you've already read it recently, what percent of the population have joint and muscle pains, ordinary cross section of a healthy population?

A. Well, there were two healthy people outside that were complaining about muscle pain at the remission that we had.

Q. How do you know they weren't plaintiffs in the lawsuit?

MR. SEIGFREID: No, Ken Heineman, he's not healthy.

MR. CARR: Heineman has never been healthy a day during this trial.

MR. NASSIF: Seigfreid was the other one.

MR. CARR: I'm not talking about old men.

MR. NASSIF: Your Honor, there were three. Jane Rudolph also complained.

MR. CARR: She is a pregnant lady.

A. She is not pregnant.

THE COURT: It's from exposure to toxic chemical trials.

MR. NASSIF: Three out of the five in the hallway.

Q. What population would have joint and muscle pains in your judgment?

A. It's again depends on the age.

Q. Well, the cross section that you have, people that you use in the Missouri Pilot Health Study?

A. It could have up to 30, 40 percent.

Q. Up to -- That starts out at one. Do you think that 30 or 40 percent of the general population have got a disorder known as joint and muscle pains?

A. Yeah. Unless you primarily look at children, they don't seem to complain as much.

Q. Doctor, then your health study, as you designed it here, in your judgment, could not possibly elicit health effects, could it? If you expect 40 or 50 percent of the people answering the question to have the problem, there is

no point in asking the question, is there, ma'am? You are never going to find out whether or not dioxin caused the problem, are you, ma'am?

A. I think some of the questions were unnecessary.

Q. Could you answer my question, please, ma'am?

A. Yes, you can still find that out.

Q. What you'd have to do, I suppose, agree on what the base is and say all right, 50 percent of the people are going to have headaches, therefore, if we get a result that shows 70 percent of the headaches, we can say that that might be associated with the dioxin, is that what you are saying?

A. Yes.

Q. And, since 70 percent of the people do not have complaints of persistent headaches, it's your judgment as a pathologist and toxicologist that dioxin doesn't cause headaches, is that right, Dr. Kimbrough?

A. Not in this situation.

Q. That is to low-dose exposure?

A. Uh-huh.

Q. There isn't anything in your judgment, and if I went through those other findings here, there isn't anything in your judgment that could possibly be caused by dioxin, is there, ma'am? If 50 percent of the population is going to have the afflications anyway, you don't leave much for dioxin

to cause, do you, ma'am?

A. That's one purpose in epidemiology studies. It's very difficult to sort those things out.

Q. You sure don't sort it out by asking questions where you expect 50 percent of the population to respond yes to start out with, do you, ma'am?

A. If you do have a high background noise then that's the best you can do.

Q. Doctor, are there any publications that you use or used in designing this study, do you know, were used to set up the baseline that you are going to start out with for swelling in hands or feet, or persistent headaches, or joint and muscle pains?

A. We reviewed the literature on the problems that the workers had reported. We also looked at the Ranch Hand questionnaires. We are also aware of studies that have been -- surveys that have been done, National Center for Health Statisticians of the general population.

Q. And the survey showed what? Are those available?

A. Those surveys?

Q. Uh-huh.

A. Yes, the Haines studies, which are nutrition studies, and they are, they just give you information on what the background complaints and --

Q. And did you -- did you look at those, and by you, I mean the Missouri Pilot Health Group when you designed the questionnaire?

A. I don't think everybody in Missouri did, no, but I'm aware of those.

Q. But you do, so if I wanted to cross examine you as I'm trying to, to test whether or not you are accurately stating the number of people that have headaches, or persistent headaches and joint and muscle pain, swelling hands, I could have that? If I had an opportunity to get that data from you, I could use it to test your statements, couldn't I, ma'am?

A. Uh-huh.

Q. But you didn't bring that data with you, ma'am, and you weren't asked to do so, were you, ma'am?

A. No.

Q. You knew that, though, that you were going to testify and did testify in direct examination about the Missouri Pilot Health Group, you did know that?

A. I simply said that --

Q. I'm sorry?

A. Yes, I did.

Q. You did know in advance of the time that we have used the Missouri Health Study, because the answer to your

questions indicated that we had used the Missouri Health Study to suggest ailments caused by dioxin? You knew that, too, didn't you?

A. No.

Q. You didn't?

A. No.

Q. You didn't know that we combined the two groups?

A. No.

Q. Nobody told you that?

A. No.

Q. Doctor, how did you come to know that we were going to ask you about the Missouri Pilot Health Test?

A. I didn't know that you were going to ask me.

Q. I thought you just said you did.

A. The only thing I said was that I talked about the study in my previous testimony.

Q. But you didn't know before you got here that you were going to be asked about it?

A. No.

Q. All right. And for that reason then -- well, nobody asked you to bring your documentation?

A. No.

Q. Doctor, what about the loss of ten pounds a month? How many people do you believe lose ten pounds a month not

being on a diet?

A. They don't.

Q. I'm sorry?

A. That's a very low incidence, unless they have a health problem.

Q. My question is how many people, in your judgment, lose ten pounds in a month's time when they are not on a diet?

A. None.

Q. Or more than ten pounds?

A. None, unless you are pregnant and have a baby.

Q. All right, and we have got 6 percent in the high-risk group that report that, don't we?

A. Yes.

Q. And we have got 4 percent in the low-risk group that report that, don't we, ma'am?

A. 3 percent.

Q. 2.9. What did I say?

A. You said 4.

Q. I'm sorry. 2.9. We have got 3 percent?

A. Uh-huh.

Q. So, well, we would have then about 5 percent of the population here that has lost ten pounds or more in one month and not on a diet, correct?

A. Uh-huh.

Q. That would be then certainly significant to you, wouldn't it?

A. Uh-huh.

Q. Did you consider the significance of that when you reviewed this study?

A. One possibility would be anxiety.

Q. I'm sorry?

A. Anxiety would be one reason.

Q. That could be one possibility, so the answer is yes, you did consider that, did you?

A. Uh-huh.

Q. And did you just put it off on anxiety?

A. We are going to look at more people and try and get further information from an additional study.

Q. Would you answer my question?

A. We didn't know how to interpret it.

Q. You made no conclusions based upon that whatsoever?

A. Not yet.

Q. It's possible that it could be a health effect from dioxin exposure, however, isn't it, ma'am?

A. Yes, we just have not made any conclusions.

Q. Is the answer to my question, yes, it is possible?

A. It would be possible, yes.

Q. What about the blood problems that show up here, Doctor, how many people would you expect to have those kind of blood problems that are listed here, anemia, leukopenia, blood clotting problems, and other blood problems?

A. Again it would vary with the people that you would look at, but, you could have those problems in people up to about ten percent or so. For instance, some people are on anticoagulants. I mean, just depends on what you are looking at.

Q. What are those other blood problems that are listed there?

A. You mean leukopenia?

Q. There is a category of other blood problems, got anemia, leukopenia, blood clotting problems and other blood problems. What is that?

A. That was a catch-all question, and we really couldn't analyze it and --

Q. What did you do, just ask them if they had other blood problems?

A. Yes.

Q. Not specifying what they mean?

A. Yes.

Q. And you had no idea at all what you were asking them?

A. No.

Q. Doctor --

A. No. Sometimes people will get information from their physician and they may not understand that something called leukopenia is a blood problem, so then in order to catch that, you put in a general phrase. If you then find that many people in the population that you are concerned with have a problem, you may have to go back. That was -- it was --

Q. I understand your question now. And you've got -- you add those up, you've got 25 percent in your high-risk group that have got some kind of blood problem, do you not, ma'am?

A. I -- it's possible that some of those people were the same people.

Q. Well, it would be possible they might be included in the other blood problems but anemia, leukopenia and blood clotting problems are all three separate problems that you would not have in one individual?

A. If somebody has a blood clotting problem he could also very well have an anemia. So I can't answer that.

Q. What about leukopenia?

A. That wouldn't necessarily -- that could be associated with anemia, but --

Q. It's a distinct and different disease?

A. In a way it's different.

Q. Sorry?

A. It is different.

Q. Those four questions here were not meant to be duplicative, were they, ma'am?

A. They were meant in a way to be duplicated so that if people didn't understand one thing we might still catch it by something asking another question.

Q. You've got from 22 to 25 percent then of people, let's even say 20 to 25 percent of people in the high-risk group that have got some kind of blood problems, correct, ma'am?

A. We don't know that. This is what they said they did.

Q. That's what they said. Isn't that an extraordinarily high number, Dr. Kimbrough?

A. Not necessarily, since most of them seem to be anemias.

Q. I'm sorry?

A. Since most of them seem to be anemias.

Q. It would have to be anemia that they'd know about and had treated for, Doctor. Don't you consider that to be an extraordinarily high amount of people to have anemia, 15

percent?

A. If people answer questionnaires like this and they may say they have anemia, and when we then check the records, it may be that they at one point had anemia or that they really just have a slightly --

Q. Well, did you do that, Doctor?

A. No, that wasn't done.

Q. Well, Doctor, taking this at face value, isn't that an extraordinarily high number of 20 to 25 percent to have blood problems?

A. Not if the anemia is very mild.

Q. Well, you've added the caveat there, Doctor, you didn't make it whether it was severe or mild anemia, did you? And I'm not asking the question that way. Do you not consider this to be an extraordinary number of people to report on blood problems?

A. No.

Q. I thought you told me before you would expect about what, ten percent, five, ten percent, that had those problems? Didn't you tell me that, ten percent?

A. Then I was talking about documented problems.

Q. You weren't talking about what you were asking, you didn't understand that I was asking about those questions?

A. No, I thought you were asking about documented

cases, what you would find if I did a blood survey in a population. By actually doing the tests on a group of people, I might get that in a general population, but, looking at this questionnaire, it wouldn't necessarily be very high, because --

Q. Here again --

A. It would depend on how the people interpreted the questionnaire.

Q. Again, the only way I could test that would be if you brought your questionnaire here, if you brought the documents that you studied in trying to determine how many people would have reports of the anemia problems, is that correct, ma'am?

A. This would be the Missouri State Health Department where all this would be.

THE COURT: I'm sorry?

A. It's basically a study that was funded by CDC. We consulted on it. But basically the study was done out of the Missouri State Health Department and out of the group of physicians in St. Louis.

Q. Dr. Kimbrough, those questions weren't just sent to the subject and asked to fill it out and send back, was it? Those were questions that were administered by trained health people, isn't that correct?

A. Yes.

Q. So they would ask not just one question, do you have persistent headaches, or do you have blood problems, but they would ask as many questions as they need to get meaningful information, isn't that right?

A. No.

Q. No? What's wrong with that?

A. They will just ask the questions on the questionnaire, otherwise you would introduce a bias, because everybody would do that differently then, if you have more than one person doing it.

Q. Weren't they given instructions as to how they were to respond and the way they were -- the language they would use, and the method they would use, were to use to respond to questions and to explain the meaning of these?

A. No, they were simply told how to introduce themselves and how to word the questions that were in the questionnaire.

Q. Doctor, you could just as easily then send them out by mail, you didn't need a train personnel to do that, did you, ma'am?

A. Some of the questionnaires were -- well, that's the other survey. Never mind.

Q. That's the other one, Doctor. I'm talking about

the ones you selected and then you surveyed their health. You had trained health people ask the questions and administer the review of their systems, didn't you, ma'am?

A. Yes.

Q. And, weren't they -- they did more than just simply take a response to a question given, didn't they, ma'am?

A. They took the response given to the question. You can't do it any other way.

Q. Didn't they even have -- didn't they use some doctors to do that, administer those questionnaires?

A. I don't think so, not physicians.

Q. What kind of people did they actually use?

A. Normally -- and I'm not quite sure really what those people were that administered the questions, but normally we use people that are public health advisors that usually have a Bachelor's Degree, and sometimes we use nurses.

Q. You were talking about who you use at CDC. Do you know whether or not you used those people in this pilot health study?

A. I don't.

Q. You have no knowledge?

A. No.

MR. CARR: Your Honor, how long do you want to go

tonight?

THE COURT: Well, I was thinking five, but do you want to go --

Q. (by Mr. Carr) Doctor, before we close for the day I'd like to ask you the question about those problems that were related on -- what page is it, Table C-6 on Page 67. What is your expectation on the number of people that were going to report peripheral neuropathies? You are reading before the answer, but it's all right. You want to give me your own judgment before you read it? No, you don't. Okay. Shall I just ask you a lot of questions, you want to give me your answer? Do you want to look at the answer first to see?

A. I thought -- I'm sorry. I thought you had directed me to look at peripheral neuropathy.

Q. I want to know first of all what is your judgment as to the ordinary.

A. I shouldn't look at this table?

Q. It's all right. Ordinary random population, expect to have peripheral neuropathy?

A. I really probably shouldn't answer this question anymore now.

Q. I'm sorry?

A. I probably shouldn't answer this question anymore.

Q. Sure, you should.

A. I would have said somewhere between 5 and 10 percent, if I had to take a guess. It against depends on the age group.

Q. Well actually, Dr. Kimbrough, what you've been doing in giving me those percentages of people that you would expect to have those particular problems, you have in fact been giving me your guesses, haven't you?

A. Yes.

Q. Yeah. And not really based upon any considered or reflective analysis of the population in general?

A. They are based on -- partly on my experience and partly on the information that we got in those Haines studies. But I can't specifically remember exact numbers.

Q. Doctor, you couldn't even actually, as far as those Haines studies are concerned, you really couldn't tell me within 10, 15, or 20 percent of the results of the Haines study without having them here on any particular ailments?

A. Well, one specific thing that sticks in my mind was that about 50 percent of the population said that they had skin problems.

Q. Is that the only thing?

A. I was impressed --

Q. I'm sorry?

A. I was impressed by that.

Q. Is that the only thing that sticks in your mind?

A. And that a lot of things like headaches were very frequent.

Q. Yes, but you don't really remember the percentage of the frequency, do you, ma'am?

A. Not the exact percentage.

Q. No, not within 10 percent, do you, ma'am?

A. Maybe not.

Q. I'm sorry?

A. Not within -- whether something is 50 percent or 40 percent, you just know it's high.

Q. What you are doing when you give me the percentages, you are just guessing, aren't you?

A. To some extent.

MR. CARR: Your Honor, I think it's five o'clock now and I know the lady is tired. It's six o'clock her time. I'd be shooting somebody if you had me asking questions, answering -- see, I'm in bad shape at five -- answering questions at six o'clock tonight.

THE COURT: Okay, we will break. Any problem with starting at nine o'clock?

MR. CARR: None from us.

THE COURT: Any problem.

MR. HEINEMAN: (indicates negatively.)

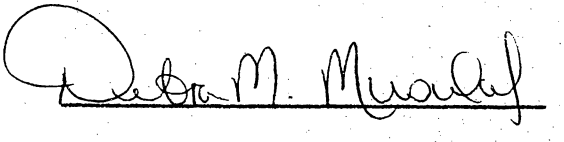
THE COURT: Okay, start at nine o'clock.

COURT ADJOURNED:

STATE OF ILLINOIS)
)
TWENTIETH JUDICIAL CIRCUIT) SS
)
COUNTY OF ST. CLAIR)

I, DEBRA M. MUSIELAK, certify the foregoing to be a true and accurate transcript of the testimony and proceedings in the above-entitled cause.

Dated this 14 day of January, 1986.



STATE OF ILLINOIS)
)
TWENTIETH JUDICIAL CIRCUIT) SS
)
COUNTY OF ST. CLAIR)

I, RICHARD P. GOLDENHERSH, one of the Judges in and for the Twentieth Judicial Circuit, do hereby certify that I have examined the aforesaid transcript of proceedings, and certify the foregoing to be a true and accurate transcript of the testimony and proceedings in the above-styled cause.

Dated this _____ day of January, 1986.

HON. RICHARD P. GOLDENHERSH