

REX CARR

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

FRANCES E. KEMNER, et al,)
)
 Plaintiffs,)
)
vs.)
)
MONSANTO COMPANY,)
)
 Defendant.)

CAUSE NO. 80-L-970

REPORT OF PROCEEDINGS

Before the HONORABLE RICHARD F. GOLDENHERSH

January 10, 1986

APPEARANCES:

MR. REX CARR, Attorney at Law, and
MR. JEROME SEIGFREID, Attorney at Law,
On Behalf of the Plaintiffs.

MR. KENNETH HEINEMAN, Attorney at Law, and
MR. JOSEPH NASSIF, Attorney at Law,
On Behalf of the Defendant.

TRACY LYBARGER, C.S.R., R.P.R.

Official Court Reporter

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11 Before the HON. RICHARD P. GOLDENHERSH

12 JURY TRIAL

13 January 9, 1985

14
15 APPEARANCES:

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

18 Mr. J. William Newbold (a.m.)
19 Ms. Felicia Orth (a.m.)
20 Mr. Kenneth Heineman (p.m.)
Mr. Joseph Nassif (p.m.)

21 On Behalf of the Defendant.
22
23
24

Debra M. Musielak, CSR, CM

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

3
4 RENATE KIMBROUGH

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

7 CROSS EXAMINATION

8 BY MR. REX CARR

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

12 A. I do.

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

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

1 discuss those records.

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

4 A. Yes, I did.

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

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

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

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

15 Q. Would you check your records, please?

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

17 Q. You did not bring any records?

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

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

22 A. Um, yeah.

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

1 attorney, or representative?

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

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

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

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

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

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

4 A. We only --

5 Q. Was this case mentioned during that conversation?

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

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

20 A. No.

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

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

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

4 A. He was there for part of the afternoon.

5 Q. It would take a couple of hours perhaps?

6 A. Maybe. Maybe not even that much.

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

8 A. Maybe a couple of hours.

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

12 A. In the condition --

13 Q. Is that correct?

14 A. Yes.

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

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

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

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

23 Q. Records about Nitro?

24 A. Yes.

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

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

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

9 A. Not that I can remember, not specifically.

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

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

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

20 A. (indicates negatively.)

21 Q. Ma'am?

22 A. No.

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

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

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

7 A. Yes, but I don't remember.

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

9 A. No.

10 Q. The first memory you have of any contact with
11 reference to this case would have taken place in the fall of
12 1985, is that correct, ma'am?

13 A. Yes.

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

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

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

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

23 Q. That was in the fall of this year?

24 A. Yes.

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

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

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

10 A. Just in general or in connection with Monsanto?

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

13 A. Yes.

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

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

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

4 A. No, I have not specifically said that.

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

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

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

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

14 Q. When did you give that?

15 A. That was maybe '74, '75.

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

18 A. Yes.

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

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

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

1 honor subpoenas, does it not?

2 A. Yes.

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

5 A. In this particular case here?

6 Q. Yes.

7 A. No.

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

10 A. Yes.

11 Q. And have you always honored those subpoenas?

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

14 Q. Quashed?

15 A. Yeah.

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

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

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

1 A. I haven't -- I haven't -- except in a murder case,
2 I haven't been served a lot of subpoenas. That wouldn't be
3 private litigation, I guess.

4 Q. Well, really, not so much -- the subpoena isn't so
5 much served on you as it is served upon the department. My
6 question is really not directed to you personally as such,
7 but as to the department. So far as you know, has the
8 department of health always honored subpoenas and obeyed
9 subpoenas when proper and served on you or the appropriate
10 personnel in the health department?

11 A. I couldn't answer that question. You would have to
12 ask our legal counsel.

13 Q. Well, you have always responded when you've been so
14 advised by the legal counsel, are you not?

15 A. Yes, but I've always done that on their --

16 Q. I'm sorry.

17 A. I've always done that on their advice and I have
18 never paid any attention to all this other stuff.

19 Q. In any event, to your knowledge, no such subpoena
20 was ever served upon the department in this case, in 1982 or
21 '83, is that correct?

22 A. Not as far as I know.

23 Q. All right. Now, ma'am, back to the conversations
24 that you have had with Monsanto personally, have you had,

1 after the two that you mentioned with Dr. Roush, have you had
2 conversations relative to this case with other Monsanto
3 employees, agents, or attorneys up to the time you are
4 testifying here today?

5 A. I was visited by the -- by Mr. Heineman and by Jane
6 Rudolph.

7 Q. And was the visit by Mr. Heineman and Ms. Rudolph
8 the first contact that you had other than the ones you've
9 mentioned to Doctor, with Dr. Roush by Monsanto or of
10 Monsanto employees, agents, or attorneys?

11 A. Jane Rudolph called me.

12 Q. When did she first call you?

13 A. That was some time in the fall.

14 Q. Of this year?

15 A. I just unfortunately don't have any dates.

16 Q. The date isn't important, just so that it's this
17 fall, is all that -- I have some letters that -- and other
18 dates, so I don't need that. And that contact was the first
19 contact with Miss Rudolph that you had, is that correct?

20 A. Yes.

21 Q. Now, did she advise you at that time as to some of
22 the facts or some of the circumstances of this case?

23 A. She asked me whether I would testify and I told her
24 to get in touch with Martin Siegel.

1 Q. Did she give you any of the facts at that time?

2 A. I cut her short because very often --

3 Q. Dr. Kimbrough, all I really want to know whether
4 she gave you any facts at that time?

5 A. Not really.

6 Q. All right. Now, when did you first get some facts
7 from either Miss Rudolph or Mr. Heineman or somebody else
8 connected with this case?

9 A. That was during the visit.

10 Q. All right. That would be when Mr. Heineman and
11 Mrs. Rudolph came to see you?

12 A. Uh-huh.

13 Q. You were never told by that time about any of the
14 possible health problems of the people of Sturgeon,
15 plaintiffs in this case?

16 A. No.

17 Q. And you were never told by Mr. Rudolph or Mr.
18 Heineman about the level of dioxin contaminant that was
19 involved in this case?

20 A. That was discussed during the visit, but of course
21 it was also -- most of the information, what information I
22 had, was in the memos that we had written in our staff, and I
23 went back and read that.

24 Q. I understand that, but I'm trying to isolate the

1 information given to you by Heineman, Rudolph, or others at
2 Monsanto. I have all the letters and reports that you
3 brought, that you sent out. I have those already and I've
4 read those, Dr. Kimbrough. I'd like to direct your attention
5 to the conversations that you had with people from Monsanto
6 and what they told you.

7 A. I haven't really had any such conversations.

8 Q. My question is did they tell you the level of
9 dioxin in the tank car?

10 A. Only what the levels that we discussed were the
11 levels that were in the memos and what was talked about here
12 when I gave my direct examination.

13 Q. I know, but I want to know when were you given that
14 information that you testified about in direct examination,
15 about the levels in the tank car?

16 A. Not quite sure what levels in the tank car we have
17 talked about, but the only time we talked about levels in
18 soil and in the OCP-crude product was at the meeting when the
19 Monsanto attorneys came to CDC to visit me.

20 Q. What did they tell you was the level of TCDD
21 contamination in the tank car?

22 A. They told me that there was one measurement with
23 the OCP, in the OCP-crude which contain 45 parts per
24 billion. It was also a measurement of, I think, 67 parts per

1 Q. I'm sorry -- and did they tell you that it was a
2 Monsanto chemist that found the 67 parts per billion of TCDD?

3 A. I don't remember.

4 Q. Did you make notes of that conversation?

5 A. No.

6 Q. Did you get from them any kind of report or summary
7 or factual statement about this case in writing?

8 A. No.

9 Q. And what you are giving us today is your best
10 memory of what you were told at the time of this visit, is
11 that correct?

12 A. Yes.

13 Q. And it is not reflected by any kind of memo that
14 you may have in your possession either here or back at
15 Atlanta, is that correct?

16 A. Yes.

17 Q. All right. What did they tell you as far as the
18 health effects of the plaintiffs in this case were concerned?

19 A. We didn't discuss the health effects.

20 Q. They didn't advise you of any findings by the
21 immunologists, or by Mayos, or by SmithKline, or by anybody
22 else?

23 A. No.

24 Q. And is the testimony that you gave on direct

1 examination completely with no knowledge as to what
2 laboratories may have found, and what doctors may have
3 related as their opinion as to the medical conditions of
4 those plaintiffs?

5 A. Yes.

6 Q. Is that correct?

7 A. Yes.

8 Q. Were you told by Doctor -- by Mr. Heineman or Miss
9 Rudolph that the plaintiffs had been examined by Dr. Carnow?

10 A. They may have mentioned that.

11 Q. Do you know Dr. Carnow?

12 A. Not personally.

13 Q. And do you know of his reputation?

14 A. I have heard his name.

15 Q. Well, my question is do you know of his reputation?

16 A. Not really.

17 Q. Did Mr. Heineman or Miss Rudolph make any remarks
18 to you about Dr. Carnow?

19 A. They may have said that Dr. Carnow was involved in
20 testifying, and so on.

21 Q. You mean they may have said -- you have no memory,
22 Dr. Kimbrough, whether they did or not?

23 A. Not specifically. We primarily discussed the work
24 that CDC had done, and that they wanted to use that as

1 evidence.

2 Q. And what work was that?

3 A. Those were the -- partly the memos that were
4 written, the advice that I had given, the other -- other
5 government officials in the discussions, the rabbit ear
6 tests. The whole thing.

7 Q. As far as what had been discovered about the
8 toxicological effects of the TCDD in Sturgeon or are claimed
9 to have been discovered, you know nothing about that, is that
10 correct, ma'am?

11 A. Yeah.

12 Q. All right. And the approximate date of the
13 Heineman and Rudolph visit was what, Dr. Kimbrough?

14 A. It was before I went to China, which --

15 Q. Before you went to China?

16 A. Yeah, which would have put it probably in October.
17 But Mr. Siegel, our legal counsel, would be able to give you
18 those dates.

19 Q. I know, but he isn't here.

20 A. I'm sorry, he was the one. He was also at this
21 meeting.

22 Q. Your best judgment as to the time, ma'am?

23 A. Of this visit? It could have been the beginning of
24 October.

1 Q. Now, did you ever have any contact from some person
2 not employed by Monsanto but intervening for, or speaking
3 for, or interceding for, or in behalf of Monsanto?

4 A. Not that I specifically remember. I get an awful
5 lot of telephone calls and people wanting me to do all sorts
6 of things.

7 Q. And it is -- does the name Dr. Wayland Hayes mean
8 anything to you?

9 A. Yes, he used to be my supervisor.

10 Q. And did he talk with you about Monsanto's needs and
11 necessities or desires in this case?

12 A. It's possible, but I don't remember.

13 Q. You don't have any memory of any conversations in
14 the past where Hayes asked you to testify in behalf of
15 Monsanto?

16 A. (no response)

17 Q. If you don't, it's all right, Dr. Kimbrough.

18 A. I just don't. I mean --

19 Q. Now, how about Colonel Young, did you ever discuss
20 your appearance or possible appearance here with Colonel
21 Young with the Air Force?

22 A. He called me recently and asked me whether I had
23 any problems with testifying in court in general and whether
24 I was completely against doing -- giving testimony, and I

1 told him I wasn't.

2 Q. I'm sorry?

3 A. I told him I was not.

4 Q. You were not. Did he tell you why he was asking
5 whether or not you had any problems of that nature?

6 A. He was-- he mentioned the Monsanto litigation and
7 the fact that we had information at CDC which should be part
8 of the evidence.

9 Q. He mentioned that to you?

10 A. Yes.

11 Q. And, is that one of the reasons you've agreed to
12 testify here in behalf of Monsanto, because of that contact?

13 A. No.

14 Q. All right. Now, at any meetings that you had from
15 your first contact with Dr. Roush up to the time you
16 testified today, has Monsanto advised you of the dioxin
17 content of other chlorinated phenols other than the
18 orthochlorophenol-crude which you have mentioned already?

19 A. They told me that their Lysol contained trace
20 amounts of 2,3,7,8-tetrachlorodibenzo-dioxin.

21 Q. And who was it that told you that?

22 A. The attorneys at this same meeting in Atlanta.

23 Q. And when they described trace amounts, did they
24 tell you at what levels, parts per billion?

1 A. They did, but they were low parts per billion and

2 | ---

3 Q. I'm sorry?

4 A. They were low parts per billion. They were lower
5 than what's in hexachlorophene, or parts per trillion, I'm not

6 | --

7 Q. What's the level?

8 A. The highest that has ever been measured was 20
9 parts per billion.

10 Q. And they told you that it was lower than 20 parts
11 per billion?

12 | A. Yeah, but --

13 Q. Of course you know that hexachlorophene has been
14 taken from the market?

15 A. But not because of the TCDD, because it has -- it's
16 not toxic in itself. I did that work.

17 Q. Didn't the TCDD add to the toxicity of the
18 hexachlorophene?

19 | A. No.

20 Q. Ma'am?

21 | A. No.

22 Q. How did you establish that?

23 A. Because the effect that was caused by
24 hexachlorophene is entirely different, and the two are

1 Q. Well, Doctor, the extrapolation I'm not -- what was
2 the other compound?

3 A. It's -- those are the chlorinated dibenzo-furans.

4 Q. Well, the furans are indeed closely related. And
5 you have worked with furans?

6 A. I have not done any specific work on it.

7 Q. Well, you said you extrapolated from work that you
8 did on -- maybe I'm jumping to conclusions when I say that
9 you did on furans, is it work that others have done on
10 furans?

11 A. Yes. I'm referring to the poisoning in Japan and
12 Taiwan.

13 Q. You are dealing with the food poisoning case there?

14 A. Yes.

15 Q. Well, you haven't done any independent research of
16 your own?

17 A. No, but I've seen those patients.

18 Q. I'm sorry?

19 A. I have seen the patients.

20 Q. Well, you can see somebody with their legs cut off,
21 doesn't mean a thing, does it, Dr. Kimbrough? --

22 A. That's true.

23 Q. Have you done any research in the case of the
24 Japanese people that were damaged by the substance in

1 question?

2 A. No.

3 Q. All right. And, the German work, was it from BASF
4 or was it the Czechoslovakian work, Jirasek, Pazderova?

5 A. I simply reviewed the literature, the German
6 literature, and that was in part the BASF --

7 Q. And other than BASF literature, did you see
8 associated with neurotoxicity or lack of neurotoxicity of
9 TCDD from Germany?

10 A. There are a number of old reports in the literature
11 and --

12 Q. Such as?

13 A. There is one paper about Baur, and there is a paper
14 of Kimmig, and those were really different plants.

15 Q. Well, part of BASF, are they not?

16 A. No. No, some of those some of that was in
17 Rheinland-Westphalen.

18 Q. Pardon me?

19 A. I'm sorry, that's a German -- I don't know how to
20 pronounce that in English.

21 Q. I have -- I don't have trouble with the
22 pronunciation. I have trouble hearing your voice, ma'am.

23 A. In Rheinland-Westphalen. There was also a plant in
24 Hamburg.

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

4 A. In the workers that were in the explosion?

5 Q. Yes.

6 A. Yes. Dr. Suskind reported that also.

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

8 A. No, I --

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

11 A. No.

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

14 A. I read the study, yes.

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

18 A. The concentrations were very low.

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

21 A. I don't remember.

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

24 A. Yes.

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

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

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

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

10 Q. I wonder if you could answer my question.

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

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

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

19 Q. About a year ago?

20 A. Uh-huh.

21 Q. And from whom did you learn that? --

22 A. It was from the EPA.

23 Q. You know where they learned it?

24 A. They asked the manufacturers to give them

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

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

8 A. I don't know.

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

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

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

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

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

20 A. No.

21 Q. All right.

22 A. No.

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

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

3 A. It's a germicide.

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

5 A. Uh-huh.

6 Q. Same thing?

7 A. Uh-huh.

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

10 A. No.

11 Q. Have you ever attempted to make a determination as
12 to what amount of the, 2,3,7,8-TCDD, not just TCDD, but
13 2,3,7,8 would be medically acceptable in Lysol?

14 A. No.

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

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

20 THE COURT: Overruled.

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

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

1 A. I never determined that something was medically
2 acceptable, but I felt it would not add or contribute to the
3 body burden that people were getting anyway.

4 Q. When did you decide that people were getting a body
5 burden of TCDD?

6 A. A few years ago and then --

7 Q. Well, a few years ago is how many, Dr. Kimbrough?

8 A. In the late '70's, the early '80's.

9 Q. Well, your hexachlorophene decision was made when?

10 A. I was asked that question around that time whether
11 that could appreciably contribute to tissue levels that we
12 were finding in adipose tissue, and then I calculated what
13 the dose might be that somebody would get by using things
14 like Phisohex or the --

15 Q. I'm sorry?

16 A. Things like Phisohex or Dial soap that also had
17 hexachlorophene in it and decided that because of the dilution
18 factor that you would get, and the amount you would use it,
19 would not appreciably contribute to the body burdens that
20 people were getting.

21 Q. And, Doctor, when did you first determine that
22 there was a body burden of 2,3,7,8-TCDD in adipose tissue?

23 A. I decided that once we -- the chemical methods were
24 going to be able to detect smaller and smaller amounts that

1 we would eventually find it, and then the first time it was
2 reported was in some adipose tissue samples that the veterans
3 administration had taken both from Viet Nam veterans but also
4 from some control people.

5 Q. You are talking about the Gross, Dr. Gross work
6 from University of Nebraska?

7 A. That was some of it, yes.

8 Q. Well, is there anything other than that?

9 A. Well, since then, Dr. Rappe has done -- has
10 conducted some analysis with tissues. We are doing adipose
11 tissue analysis at the Centers for Disease Control.

12 Q. And are you basing -- well, that's recently you are
13 doing that. My question is when did you decide what the body
14 burden was, and is your answer that all you did was read Dr.
15 Gross' report on the veterans and the controls and the
16 veterans?

17 A. No, I -- that's not the only -- that was not the
18 only reason why I felt that there would be body burdens -- I
19 predicted that, in other words.

20 Q. I'm looking for knowledge. What knowledge did you
21 have, Doctor, as to the levels of TCDD in adipose tissue in
22 addition to Gross' work?

23 A. I can't really remember when that came out, but at
24 about -- at about the same time several things happened. One

1 was that the methodology was improving so you could detect
2 lower levels.

3 Q. Doctor, I'm trying to accelerate your appearance
4 here, and if you could just answer my question. I know the
5 methodology came out. I'm interested in knowing what your
6 knowledge was and when you had it.

7 MR. HEINEMAN: Objection, the witness was trying to
8 answer that question and he interrupted her.

9 THE COURT: Overruled. Not responsive.

10 Q. (by Mr. Carr) Do you understand my question, Dr.
11 Kimbrough?

12 A. I'm trying to answer it and it's -- there was some
13 information that those materials were in the environment that
14 came out in the middle and late '70's, and so I assumed if
15 you have something that's very -- that's present in the
16 environment, people would have occasion to be exposed. And I
17 predicted in a paper which I wrote in the '70's that we would
18 probably be able to detect those levels at very low
19 concentrations, and then pretty soon people started
20 publishing and showing those.

21 Q. There are only two publications we know of, one
22 from Canada, Kingston and Ottawa, the people living in that
23 area around the Great Lakes, and the Viet Nam study by Dr.
24 Gross, is there another study published.

1 A. There are papers by Rappe, who is a Swedish --

2 Q. I know who Rappe is. But his papers did not
3 mention levels of TCDD in the fat.

4 A. He mentions --

5 Q. He mentions it in the combustion?

6 A. No, he also -- he presented, I think, a paper at
7 the last Banbury -- one of the Banbury conferences --

8 Q. That may be, and has that been published?

9 A. The Banbury conference has been published.

10 Q. Okay. Doctor, I don't want to spend a lot of time
11 on that. Is that the extent of the knowledge of adipose
12 tissue?

13 A. And our own results, which we haven't published.

14 Q. You haven't brought those results here?

15 A. No.

16 Q. And you have not furnished those to us ahead of
17 time?

18 A. No.

19 Q. And could you produce those for us?

20 A. No, we haven't finished our analysis.

21 Q. But you've used the knowledge you've gained there
22 in your testimony you are giving here, have you not, ma'am?

23 A. I haven't really used it.

24 Q. I'm sorry?

1 A. I haven't -- I expect -- I mean that's -- I
2 expected that.

3 Q. Expected what?

4 A. That if you started analyzing fat tissue of humans
5 --

6 Q. That isn't really what I asked you. You have used
7 the knowledge you've gained in those studies in the testimony
8 that you will not or cannot bring to us in your testimony,
9 have you not, ma'am?

10 A. You asked about my experience, yes.

11 Q. And, Doctor, insofar as you mentioned in your
12 direct examination testimony, studies that were ongoing as to
13 health effects, I think you mentioned birth defects, and I
14 made a note somewhere if I can find it, you worked with
15 porphyria, screened populations, birth defects, and you had a
16 number of programs going on relative to TCDD, you recall
17 that, ma'am?

18 A. Some of those statements are made in respect to
19 what you find normally in the general population, rather than
20 any specific study with TCDD.

21 Q. I understand that, ma'am, but you mentioned that
22 you have done a number of studies screening people, things of
23 that sort. Are those -- and birth defects. Are those
24 ongoing studies at the CDC? Are those studies that have

1 already been done?

2 A. The Centers for Disease Control did a birth defect
3 study in Viet Nam veterans and that's been published in the
4 Journal of American Medical Association.

5 Q. All right, but I'm interested in your -- are there
6 any other surveys CDC is doing relative to birth defects?

7 A. Not at the moment.

8 Q. Are there any that you've done in the past that
9 have not been published?

10 A. Is this only in relation to TCDD now? We have a
11 birth defects program.

12 Q. I would only be interested if it's knowledge that
13 you have used in your testimony or in coming to your opinion
14 about the toxicity of the TCDD and its health effects.
15 That's all I'm interested in.

16 A. No, except for the study that's been published by
17 Dr. Eriksson, which is the study on the Viet Nam veterans.

18 Q. Well, that's been published?

19 A. Yes.

20 Q. All right. But there are no other CDC ongoing
21 programs dealing with that?

22 A. No.

23 Q. Birth defects and TCDD?

24 A. No, but we do have this broad birth defects

1 surveillance program.

2 Q. And are the results of that program available?

3 A. Of the birth defects surveillance program?

4 Q. Yes.

5 A. Yes.

6 Q. And you didn't bring any of that with you?

7 A. No.

8 Q. What about the other studies you mentioned, you had
9 something ongoing on screening for porphyrias, porphyrin
10 cutanea tarda, hematic porphyrin?

11 A. We have looked, for instance, at people in Michigan
12 in connection with other exposures, where we have measured
13 porphyrins in urine.

14 Q. Now, is that study available?

15 A. It hasn't been published yet.

16 Q. Is it available?

17 A. It's not in a form where it would be -- in other
18 words, it has not been summarized, but there was a report
19 made by a Dr. Robert Hill in a conference, and that has been
20 published in Environmental Health Perspective.

21 Q. What about work that you've done? Are you working
22 with TCDD now, ma'am?

23 A. No.

24 Q. Have you done any TCDD work other than your -- the

1 one article that you published, and I think you wrote, not a
2 chapter, but at least an article for a book relative to
3 occupational exposure to TCDD, anything besides that?

4 A. That was -- I also edited that book. Yes, I have
5 recently written a review for a book that will be published
6 to the Veterans Administration.

7 Q. Is it dealing with TCDD?

8 A. Yes.

9 Q. Is it available for us?

10 A. Yes.

11 Q. Have you -- did you bring it with you, ma'am?

12 A. No.

13 Q. Did Monsanto advise you that any documents or
14 material that you were going to use for opinions that you
15 were going to express in this case, did they advise you that
16 those must be produced to us?

17 A. No, I mean this is all my --

18 Q. I'm sorry?

19 A. This is all my information and my knowledge and my
20 experience. But any papers that you want, I'll be glad to
21 send you.

22 Q. But were you advised that we should have that
23 before you testified? Were you given any information at all
24 by Monsanto as to what to bring, what documents to bring,

1 what documents not to bring?

2 A. No.

3 Q. All right. Doctor, you have in your CV a large
4 number of papers that you've done, as well as reviewed, and
5 talks given, couple hundred of both things, I suppose, put
6 together, have you not, that are related to toxic substances
7 and the effect of toxic substance upon human populations?

8 A. Yes, animal studies.

9 Q. How many thousands of pages would you reckon you've
10 written in the area of effect of toxic substances on things
11 that may be associated with human health?

12 A. I don't really know.

13 Q. Well --

14 A. If you have a hundred papers and you have fifteen
15 pages a paper, that would be 1,500 pages.

16 Q. And none of those -- we got your CF on the day you
17 testified, I think, came here to testify. None of those
18 publications have been brought to us, have they, ma'am?

19 A. No.

20 Q. And, there is probably 20 lectures or -- they are
21 all listed as lectures on starting out with halogenated
22 compounds in February of '83 down to October the 2nd, '85,
23 lecture of hazard of chemicals in indoor air. All of those
24 are lectures that you have given in the past two years,

1 ma'am?

2 A. Yes.

3 Q. And many of them, if not -- well, the dominant
4 majority of those lectures that we have given involve dioxin
5 or polycyclic, polyhalogenated materials, do they not, ma'am?

6 A. Yes.

7 Q. And, are those -- can we get those in the public
8 area or must we get those from you if we needed to review
9 those to cross examine you?

10 A. Most of them are not available in any form.

11 Q. You have copies of all of those, though, did you
12 not?

13 A. No. You see, I don't write any talks. I just go
14 and give them.

15 Q. Well, do they take -- do you know what you say,
16 ma'am?

17 A. No. I think I gave one in St. Louis that was taped
18 and then later published.

19 Q. Ma'am, in any event, the works that you have
20 written and spoken in the past on the subject, some are
21 available and some are not, is that correct?

22 A. Yes, but the background information would be
23 available in articles that I have also written.

24 Q. I understand that, ma'am, but you understand what I

1 maybe don't understand, but when we undertake to cross
2 examine someone, we like to have, in advance of the time we
3 see them, the work that they have done that we can get either
4 from them when we take their prior deposition or order of
5 Court to produce them so that we can cross examine
6 intelligently on your views on particular subjects. None of
7 that material you have brought here in this case, isn't that
8 correct, ma'am?

9 A. No.

10 Q. That is correct, isn't it?

11 A. Yes. I'm sorry.

12 Q. I thought that's what you meant. Now, Dr.
13 Kimbrough, with regard to the Missouri Health Study you did,
14 I think you testified that you designed, or at least
15 participated in the design of the Missouri Pilot Health
16 Study, did you not?

17 A. Yes.

18 Q. And you have in your possession at CDC or available
19 to you the original health records and questionnaires that
20 were a part of that study, did you not, ma'am?

21 A. That is located at the Missouri State Health
22 Department.

23 Q. Well, as one of the participants in the study, it
24 is available to you, is it not, ma'am?

1 A. Yes.

2 Q. And if the Court were to order you to bring in the
3 raw data, all of those laboratory reports, you could do so,
4 could you not, ma'am?

5 A. This would be -- would have to be checked with the
6 Missouri State Health Department, because even though we were
7 involved in the study, it is the State Health Department
8 Study. You see, we gave the funding and some technical
9 expertise, but it is a -- the Missouri State Health
10 Department Study. It's not a CDC study.

11 Q. Well, you understand that most of the reports given
12 in that, in the published or reported results of the Missouri
13 Pilot Health Study, most of the lab reports were in the
14 nature of means and not actual values, you know that, don't
15 you, ma'am?

16 A. Yes.

17 Q. And in order to really know what people had, you
18 would need to see the lab reports themselves, wouldn't you?

19 A. Yes.

20 Q. Just, for instance, you could have a hundred people
21 who had abnormally high results in given tests and other
22 people who had abnormally low results in a given test and
23 your mean would come out in the normal range, would it not,
24 ma'am?

1 A. If you had very high and very low --

2 Q. Could you answer that question, Dr. Kimbrough?

3 A. Yes, but if you also give the range, then that
4 would give you some idea.

5 Q. All you've got is a range. You could have one
6 high, one very high and one very low, you've got the range,
7 doesn't tell you at all what the actual values were, does it,
8 ma'am? All you'd have is a range?

9 A. But it would tell you the extent of the
10 distribution.

11 Q. But that wouldn't tell me whether people are sick
12 or not, would it, based upon a laboratory result? All it
13 would give me is you would have a range of 500 parts at the
14 high and another range of five parts at the low, and all
15 cluster either high or low under that range, and you would
16 come up with a normal, if normal were halfway between the 5
17 and the 500, would you not, ma'am?

18 A. Yeah, but if you had this very high value and that
19 was extremely abnormal, that would tell you that that person
20 was sick. If you have a range, it would give you the extent
21 of the distribution of all of the values.

22 Q. But all it would give you is there is one -- if
23 you've got the range, all you'd get is that there is one
24 high, which could well be a variant, an outlier, and you've

1 got one low, which very well could be a variant or outlier.
2 The point that I'm making, ma'am, is that to properly assess
3 whether you and others connected with that Missouri Health
4 Study did in fact evaluate the lab results properly, one has
5 to see the lab results, doesn't one?

6 A. Not necessarily, but one could do that, though, and
7 could review them. Now, whether they are available would be
8 something you would have to discuss with our legal
9 department.

10 Q. I know, ma'am, but what you have here and
11 testifying, I'm sure you understand, you have an advantage in
12 that you've seen those lab reports. If you wanted to, you
13 could see them, if you haven't seen them, and when you
14 testify here, you say my opinion is thus and so. If I don't
15 have the material upon which you base your opinion, I've got
16 no option but to accept what you say, isn't that correct, Dr.
17 Kimbrough?

18 A. I've also had training and experience.

19 Q. Excuse me, Dr. Kimbrough, could you answer that
20 question for me, please?

21 A. Yes, and I also have training and experience.

22 Q. Of course you have. No question about that, Dr.
23 Kimbrough, but, when you as a scientist go in and want to
24 find out the truth, you look, or try to discover the facts

1 leading up to truth, don't you, ma'am?

2 A. Yes.

3 Q. And part of the facts leading up to the truth, you
4 don't necessarily -- well, I know you are famous for it, you
5 don't necessarily accept what someone else says, even though
6 they may be trained and experienced, do you, ma'am?

7 A. Yes.

8 Q. Isn't that correct?

9 A. Yes, that's right.

10 Q. You dig into it because you know that even though,
11 most best-intentioned people can misinterpret results, there
12 are biases, aren't there, ma'am, that can color somebody's
13 conclusions or opinions and interpretations of particular
14 tests, you know that, don't you?

15 A. The tests themselves may be biased, doesn't
16 necessarily mean how you took it, though.

17 Q. That's another element. You have to see the test
18 in order to see how it is biased, isn't that true, ma'am?
19 Now, in the case just for example for the Missouri Pilot
20 Health Study, you've given on direct testimony that those
21 people weren't sick, haven't you, ma'am?

22 A. I didn't say they weren't sick, I said that we
23 didn't find anything that we could associate with exposure to
24 TCDD.

1 Q. No, and that's because you looked at a group of
2 people that all of whom were exposed to some extent, isn't
3 that correct, Dr. Kimbrough?

4 A. We had really two groups of people --

5 Q. Could you answer that question, please?

6 A. No, I didn't.

7 Q. Doctor, did you not take 800 questionnaires as --
8 and separate those people in those questionnaires into the
9 high-risk group and the low-risk group?

10 A. Yes.

11 Q. And did you not send those questionnaires to the
12 people that live in the vicinity of the contaminated sites?

13 A. That lived in that area, yes.

14 Q. And by living in that area, isn't there a
15 possibility of exposure, albeit low, in some instances?

16 A. The possibility that the low-risk group would have
17 had any --

18 Q. I wonder if you would answer my question, Dr.
19 Kimbrough.

20 A. It's very remote.

21 Q. Dr. Kimbrough, you took people that live in Times
22 Beach, and put some of those people in your low-risk group,
23 did you not, ma'am?

24 A. We evaluated the possibility --

1 Q. Could you answer my question, ma'am?

2 A. I would have to go back and I can't answer that
3 question right now. I would have to go back and --

4 Q. Doctor, the questionnaires that you received back
5 in response were all from people who lived in the
6 contaminated -- who had addresses in the contaminated area,
7 isn't that correct, ma'am?

8 A. I can't answer that question.

9 Q. Aren't you familiar with this study that you sent
10 the questionnaires to people that lived in those areas?

11 A. We did, but I would have to -- I would have to
12 check with Richard Hoffman who was actually the one who was
13 conducting the study.

14 Q. Doctor, what you are saying now in point of fact
15 you don't know whether you did or did not have exposed people
16 in your low-risk group, is that what you are saying, if you
17 have to check?

18 A. We discussed the --

19 Q. I know you discussed it, but could you answer my
20 question?

21 A. The low and high-risk group, I don't recall that
22 the addresses of the people.

23 Q. Doctor, you do know that the 800 questionnaires
24 from which the high-risk group and the low-risk group were

1 selected -- well, strike that. You do know that your
2 high-risk group and low-risk group were selected from those
3 800 questionnaires that were received, did you not, ma'am?

4 A. Yes.

5 Q. And you do know that those questionnaires were sent
6 to people who responded to media announcements if you live in
7 an area, one of those contaminated, alleged to be
8 contaminated areas and want to participate in this study,
9 please give us your name and address. You know that's the
10 way you got the people, you know that, too, don't you, ma'am?

11 A. Yes, but not all of the questionnaires and not all
12 of that information that was collected was actually used for
13 the studies. There have been a number of effort --

14 Q. Doctor, please, we know that you didn't study 800
15 people. You selected a high-risk group from the 800 and a
16 low-risk group from the 800, did you not, ma'am?

17 A. Yes, we selected a high and low-risk group.

18 Q. But they were all from people who responded to your
19 public announcements if you lived in one of those
20 contaminated area, please let us know your identity, and if
21 possible, participate in this study, isn't that correct,
22 ma'am?

23 A. The --

24 Q. Could you answer that question?

1 A. No, that's not quite correct.

2 Q. Well, how is it incorrect?

3 A. In that there were two efforts ongoing. One was to
4 simply have a registry of, and register all of the people
5 that had had exposure. And that is what some of us
6 collection of people and so on, that was done by the Missouri
7 State Health Department and then in addition to that we
8 specifically tried to get two groups of people for the
9 studies, and we did the same thing with Quail Run. In other
10 words, one is simply a registry -- a registry of all of those
11 people.

12 Q. Yes.

13 A. That's one event which is separate from the
14 studies.

15 Q. All right. Go ahead.

16 A. And the people that were selected for the studies
17 were from the area with the highest contamination at Times
18 Beach, and then we tried to match them with controls from an
19 area that had really no contamination.

20 Q. Oh, now, Dr. Kimbrough, you did not send
21 questionnaires to areas that were not contaminated, did you,
22 ma'am?

23 A. Well, this is not -- the -- this is not the -- the
24 study of the small group of people where we also picked

1 controls.

2 Q. Doctor, did you not -- could you give Monsanto
3 Exhibit 55 to the witness. Could you turn to Page 26, Dr.
4 Kimbrough?

5 MR. HEINEMAN: Excuse me, is 55 the right --

6 MR. CARR: Yes, Monsanto Exhibit 55. Are you
7 ready?

8 MR. HEINEMAN: No, I'm not.

9 MR. CARR: Missouri Pilot Health Study.

10 Q. (by Mr. Carr) Page 26. Does it describe the
11 medical cares and methods used?

12 A. Yes.

13 Q. And does it say in the middle of that paragraph,
14 "We administered the questionnaire to the individuals (or
15 nearest relatives) believed to be at risk of exposure based
16 on residence near, occupation at, or frequent activities in
17 proximity to contaminated sites."

18 A. Yes.

19 Q. And did you in fact do that?

20 A. Yes.

21 Q. And now, Doctor, the high-risk group is described
22 on the next page, is it not, that you --

23 A. I would like to continue reading the end of this.

24 Q. You would like to read it for yourself or --

1 A. Yes.

2 Q. Or for some other purpose?

3 A. Well, in order to be able to explain what I was
4 trying to explain --

5 Q. Doctor, I'm really not asking for an explanation
6 right now, I'm asking you specific questions and I'd like to
7 have specific answers. Did you in fact administer the
8 questionnaire to individuals who were believed to be at risk
9 of exposure? Is that a true statement, Dr. Kimbrough?

10 A. Well, if you read at the bottom of Page 26, that
11 explains what I was trying to say. It says, "This process
12 has since been continued with more active efforts being taken
13 to find and interview all potentially-exposed individuals as
14 well as comparison populations from uncontaminated areas."

15 Q. I understand that. I'm not asking about that,
16 Doctor. Is what I read to you true? Did you in fact do
17 that, ma'am?

18 A. Yes, but that wasn't -- that was a survey.

19 Q. Now, that's correct, no doubt about it. Now, would
20 you turn to the next page, ma'am.

21 A. All right.

22 Q. You selected your high-risk group from that group
23 of the people that completed the 800, the 800 questionnaires,
24 did you not, ma'am? Is that correct, ma'am?

1 A. This was how the high-risk group was selected.

2 Q. They were selected from those people that completed
3 the questionnaires, were they not, ma'am?

4 A. The high-risk group, yes.

5 Q. All right. Now, would you turn to the next page,
6 ma'am? And on the next page, you say, "We also selected a
7 low-risk comparison group of individuals most of whom were
8 from the group of 800 who had completed the questionnaires."
9 Correct, ma'am?

10 A. Yes.

11 Q. Now, the questionnaires were sent to people who you
12 believed to be at risk of exposure, is that right, ma'am, as
13 stated, as you said was the truth as stated on Page 26?

14 A. Yes.

15 Q. And you selected from that group of 800 the
16 low-risk group -- I'm sorry. You selected for your low-risk
17 group most of the people were from the group of 800 who
18 completed the questionnaire, correct, ma'am?

19 A. Yes.

20 Q. And the questionnaire was sent to people who were
21 believed to be at risk of exposure based on residence near,
22 occupation at, or frequent activities in proximity to
23 contaminated sites, correct, ma'am?

24 A. Yes.

1 Q. Is that correct, ma'am?

2 A. That's correct, but then we also -- Sorry.

3 Q. Most of your low-risk comparison group was selected
4 from those people who were described in that sentence I just
5 read to you, were they not, ma'am?

6 A. Yes.

7 Q. And, your low-risk group, most of them, not all,
8 but most of them were selected from people who were believed
9 to be at risk of exposure based on residence near, occupation
10 at, or frequent activities in proximity to contaminated
11 sites, is that correct, ma'am?

12 A. They were selected because --

13 Q. Could you answer that question, please, ma'am?

14 A. They were selected out of that group because they
15 didn't have all of those criteria.

16 MR. CARR: I wonder if you would direct the witness
17 to answer the question as I framed it?

18 THE COURT: Dr. Kimbrough, you have to answer it as
19 the attorney frames it.

20 A. Well, I can't.

21 THE COURT: Well --

22 A. I mean, you can't --

23 THE COURT: It's a clear question, and you've shown
24 yourself obviously capable of understanding any question

1 that's been asked in this courtroom so far. I would ask that
2 you answer it as it's asked. If there is anything else that
3 you feel needs to be brought out or that Mr. Heineman feels
4 needs to be brought out, he'll have an opportunity for
5 redirect examination where he can bring that out. But at
6 this point in time, you answer the questions of the attorney
7 who's asking you the questions.

8 A. Could you repeat the question, please?

9 (Question was read back by the Court Reporter.)

10 A. No.

11 Q. Was it the truth, as you said it was the truth,
12 that the low-risk group, most of it were taken from the group
13 of 800 who completed the questionnaire? Is that the truth,
14 ma'am?

15 A. Yes.

16 Q. It is the truth that most of your low-risk group
17 were taken from the group of 800 who had completed the
18 questionnaire?

19 A. Yes.

20 Q. And the questionnaires were administered to
21 individuals who were believed to be at risk of exposure, were
22 they not, ma'am?

23 A. Yes.

24 Q. And therefore the low-risk group was selected from

1 that group of people who were believed to be at risk of
2 exposure, isn't that correct, ma'am?

3 A. No.

4 Q. Doctor, how can one be the truth and not the
5 other? If you selected it from the people who completed the
6 questionnaires, and the questionnaires were sent to people
7 believed to be at risk, of necessary, if I put eggs in this
8 basket, and if I take eggs out of that basket, I'm obviously
9 selecting people -- eggs that had previously been put in that
10 basket?

11 A. Maybe those eggs weren't eggs.

12 Q. But it describes them as eggs, says individuals
13 believed to be at risk. That's the people you administered
14 the questionnaires to, isn't it, ma'am?

15 A. Yes.

16 Q. And that's the same group of people as described in
17 the second paragraph on Page 28, isn't it sir, the group of
18 800 who completed the questionnaire?

19 A. Yes.

20 Q. And those were the people who had the lowest risk
21 of exposure, correct, sir -- ma'am?

22 A. I don't --

23 Q. Doesn't it describe that those were the people with
24 the lowest risk of exposure?

1 A. No.

2 Q. Doesn't it say that -- am I reading that wrong?
3 Aren't the words with the lowest risk of exposure based on
4 exposure site, doesn't that appear there, ma'am?

5 A. On which page are we now?

6 Q. Page 28. Doesn't it say that they selected the
7 low-risk group, most of them were from the group of 800 with
8 the lowest risk of exposure based on type exposure, site,
9 age, risk, etcetera?

10 A. Yes.

11 Q. Then they had a risk of exposure but it was the
12 lowest risk of exposure, this group of people, correct,
13 ma'am?

14 A. Yes.

15 Q. And those were people who resided near, had an
16 occupation at, or frequent activities in proximity to
17 contaminated sites, correct, ma'am?

18 A. No.

19 Q. That is incorrect?

20 A. Yes.

21 Q. Now, Doctor, the only way I suppose that we can
22 test that is to find out if you're -- you don't call them --
23 maybe there is another way. You don't call them no-risk
24 group, do you, ma'am?

1 A. They virtually had no exposure.

2 Q. Excuse me, that's not my question. You don't call
3 this group a no-risk or unexposed group, do you, ma'am?

4 A. To be conservative we call it a low-risk group.

5 Q. Could you answer my question, ma'am?

6 A. We called it a low-risk group.

7 Q. Dr. Kimbrough, you are not answering my question.
8 Would you read the question to her again.

9 (Question was read by the Court Reporter)

10 Q. You don't call this a no-risk or unexposed group,
11 do you, ma'am?

12 A. No.

13 Q. You called them low-risk?

14 A. Yes.

15 Q. Low-risk means that there is some risk, albeit low,
16 correct, ma'am?

17 A. Yes.

18 Q. Now, no-risk or unexposed would mean that they have
19 no risk of any problems related to dioxin, wouldn't that be
20 correct, ma'am?

21 A. No.

22 Q. That wouldn't be correct?

23 A. No.

24 Q. What's incorrect about that, Dr. Kimbrough?

1 A. Because the general population, everybody has trace
2 amounts of exposure to very low levels.

3 Q. Now, Doctor, you really don't know that to be a
4 fact, and I'm not going to quarrel with that, but that's not
5 responsive to my question. The best way to put it then,
6 ma'am, is you did not select a group of controls that you
7 believed to have no exposure to this particular episode of
8 dioxin contamination, isn't that correct, ma'am.

9 MR. HEINEMAN: Excuse me, Your Honor, I'd like to
10 object to the question of Mr. Carr. He's arguing with the
11 witness and I'd like to have his statement about what she
12 knows and doesn't know be stricken from the record. It's not
13 a question and she has answered specifically the question
14 that he did ask her.

15 THE COURT: Objection is overruled.

16 Q. (by Mr. Carr) Is that correct, ma'am?

17 A. Could you repeat the question?

18 (Question read back by the Court Reporter)

19 A. No, that's not true.

20 Q. You did select a group of people who did not reside
21 in the contaminated site areas?

22 A. They did --

23 Q. They did reside, didn't they, ma'am?

24 A. Yes.

1 Q. And if somebody resides in Times Beach they may on
2 occasion use the streets of Times Beach, might they not,
3 ma'am?

4 A. Yes.

5 Q. Ma'am?

6 A. Yes.

7 Q. And, if they use the streets of Times Beach, they
8 are going to have some risk of exposure to dioxin, aren't
9 they, ma'am, from the dioxin that's in the soil in the
10 streets of Times Beach?

11 A. They may.

12 Q. Yes. And that is what your low-risk group
13 consisted of, didn't it, ma'am?

14 A. Yes.

15 Q. Yes.

16 THE COURT: Mr. Carr, is this a good point for a
17 short break?

18 MR. CARR: Yes, Your Honor.

19 THE COURT: We will take a short recess at this
20 time.

21 (Following a recess, these proceedings continued outside the
22 presence of the jury.)

23 Q. (by Mr. Carr) Dr. Kimbrough, is the Missouri
24 Health Study the only human health study of which you are

1 aware and which the effects of low-dose exposure to dioxin
2 was the subject of the study?

3 A. There have been studies in Seveso, Italy.

4 Q. Well, Seveso. All right.

5 A. And then there was a study of the Ranch Hand -- the
6 Ranch Handlers in the Air Force.

7 Q. Well, the Ranch Handlers, some people questioned
8 whether or not it was a study of exposure at all. But those
9 three then, Seveso, Ranch Hand and Missouri?

10 A. And then we looked at birth defects on Viet Nam
11 veterans that has been reported. There was a mixed exposure
12 in Binghamton where some people were looked at.

13 Q. Well, that was a lot of other chemicals involved
14 there, a lot of other furans and everything else involved
15 there. It would be extremely difficult to isolate, would it
16 not, what effects, if any, the TCDD at the Binghamton Office
17 Building may have had upon the people?

18 A. Yes.

19 Q. Impossible to tell, would it not?

20 A. There was a mixed exposure.

21 THE COURT: I'm sorry, I didn't hear your answer.

22 A. There was a mixed exposure. There were a number of
23 chemicals.

24 THE COURT: Okay. Thank you.

1 Q. And do you subscribe to the theory that when
2 chemicals are mixed that way, there can be synergistic
3 effects, one toxic chemical added to another toxic chemical,
4 the sum of the toxicity would be greater than if they were
5 just individually exposed?

6 A. That occurs sometimes, and the opposite can also be
7 true. It varies.

8 Q. Sometimes one can tend to neutralize the other so
9 that the two chemicals mixed together would be less toxic
10 than the sum of the two individually, and the opposite is
11 true, they add to one another's toxicity in some instances?

12 A. Yes.

13 Q. All right. And that could be, could it not, a
14 cause of some of the serious problems that were found at the
15 Binghamton Office Building, synergistic effect?

16 A. I'm not aware of any serious problems.

17 Q. You are not?

18 A. No.

19 Q. Have you read -- I don't know whether he's a
20 doctor, Dr. Schechter's work on this area?

21 A. Yes, Schechter.

22 Q. Have you read that?

23 A. Yes. I'm on the -- I'm a member of the group of
24 consultants that has advised the New York State Health

1 Department.

2 Q. Weren't there a number of serious health effects
3 described in the Binghamton Office Building?

4 A. No.

5 Q. Then perhaps you are not, and I don't have the
6 particular document with me to show it to you, but you don't
7 recall reading in the book that was put out that the
8 Plaintiff's Exhibit here, the exact number I don't know, in
9 which there were -- the people seen at the clinic were,
10 following exposure were found to have a number of serious
11 problems?

12 A. I'm aware of --

13 Q. Suicide and things of that sort?

14 A. I'm aware of Dr. Schecter's reports. They are
15 individual case reports and those people may have had
16 problems, but whether or not that was related to the exposure
17 is not clear.

18 Q. Well, it's not clear that it wasn't related to
19 exposure. They had the exposure and they had those problems,
20 isn't that right, ma'am?

21 A. The exposure hasn't been established all that well,
22 either.

23 Q. Well, that's another problem, Doctor, but they were
24 in the office building, they had potential exposure, they had

1 those problems, did they not, ma'am?

2 A. They claimed to have problems.

3 Q. Well, did a doctor upon examination confirm that
4 they did have those problems?

5 A. I'm not sure what problems we are talking about.

6 Q. Well, maybe I better take the time to look up the
7 exhibit. Would you Jerry? I don't think I brought that file
8 with me. Here, it is. Article -- Plaintiff's Exhibit 1534,
9 1534 A, 1534 B, I'll hand our copy to her.

10 THE CLERK: I have them.

11 Q. Give her 1534 B, that would be the easiest thing
12 for her to use. Now, what was my -- Doctor, have you had a
13 chance to look at Page 8?

14 A. Not really.

15 Q. Now have you had a chance to look at it?

16 A. Uh-huh.

17 Q. Doctor, there is a number of significant problems
18 described in that exhibit, are there not, ma'am?

19 A. Yes, but I'm not sure that they have anything to do
20 with the Binghamton building.

21 Q. Doctor, I didn't ask you that, did I? What I asked
22 you was in this document there was a number of significant
23 problems, aren't there, Doctor?

24 A. There are a number of conditions listed.

1 Q. Do you not consider those conditions significant
2 problems?

3 A. Yes, they may be.

4 Q. Well not maybe, they are if they exist, they are
5 significant problems, aren't they, Dr. Kimbrough?

6 A. Yes, if they exist.

7 Q. And, do you have any reason to doubt the truth of
8 what's reported by Schecter as having been found in this
9 occupational medical clinic?

10 A. Yes.

11 Q. You have reason to doubt the truthfulness of it?

12 A. Yes.

13 Q. Do you -- is Dr. Schecter a -- do you have some
14 knowledge that he lies and cheats and tells tales?

15 A. No, but there are studies that were also done by
16 the New York Health Department, there are other studies that
17 looked at the same group of people.

18 Q. How do you know that, Doctor?

19 A. Because I am an advisor to the New York State
20 Health Department.

21 Q. What other health studies are you talking about at
22 New York?

23 A. They surveyed the population.

24 Q. Who surveyed, Doctor?

1 A. Some physicians at the State Health Department.

2 Q. Physicians, Doctor, are you sure it was physicians?

3 A. Yes.

4 Q. Was it not -- and did they publish it, Doctor?

5 A. There are reports that are available which you can

6 obtain by writing to the New York State Health Department.

7 Q. Doctor, we have some reports and what we have is

8 Dr. Roush referred to them and they were -- he originally

9 said it was by a doctor but when we got to it, we found out

10 it was some technician made a report. Is that what you are

11 referring to, sir -- ma'am?

12 A. No, it's a woman physician and I can't recall her

13 name right now, and Doctor Axelrod, who is also a physician.

14 Q. And they have published those, Schecter's reports

15 untrue?

16 A. They have not published his reports are untrue, ↗

17 they have examined the people and they have summarized their

18 findings.

19 Q. Well then, what you've done is you've selected and

20 chose to believe the report of this group you've mentioned,

21 Axelrod and others and not what Schecter says, is that right?

22 A. What I'm saying is that there seems to be --

23 Q. Excuse me, could you answer that question?

24 A. Yes, because there is a discrepancy.

1 Q. And you selected the one that you wanted to believe
2 and rejected the one that you did not want to believe,
3 correct?

4 A. I have been several times in Binghamton, many
5 times.

6 Q. Could you answer that question, ma'am?

7 A. Yes.

8 Q. The answer is yes, you did reject the Schecter
9 view, did you not?

10 A. Yes.

11 Q. Now, Schecter's book was -- his article was
12 subscribed by as a co-author, Dr. Tiernan, do you believe him
13 to be a reputable scientist?

14 A. He is a chemist.

15 Q. Do you believe him to be a reputable scientist?

16 A. Yes.

17 Q. M. L. Taylor, do you believe him to be a reputable
18 scientist?

19 A. I don't know who M. L. Taylor is.

20 Q. Isn't Taylor from the Wright State University, the
21 laboratory? Don't you know he's in the Department of
22 Pharmacology and Toxicology?

23 A. I guess I did know that.

24 Q. Yes, you did. Do you consider him to be a

1 reputable scientist?

2 A. I really don't know much about him.

3 Q. Do you believe the laboratory at Wright State
4 University, reputable scientists?

5 A. Yes.

6 Q. Do you think they would say something that was not
7 true if they knew it was untrue?

8 A. They might not know.

9 Q. I know that, but that's not what I said, is it?

10 A. Their contribution was to the tissue levels.

11 Q. Excuse me, could you answer my -- Could you read
12 it?

13 (Question read back by the Court Reporter.)

14 A. No, I don't think so.

15 Q. If they reported dioxin in blood, would you believe
16 them, that they were telling the truth?

17 A. I would wonder about that.

18 Q. Whether they are telling the truth?

19 A. They may know it -- as they see the truth they
20 would be telling the truth.

21 Q. Well, that's what I'm asking you.

22 A. But it may not be the real truth.

23 Q. The truth is always in the eye of the beholder, may
24 not be a fact but I could believe this world is flat and if I

1 tell you this world is flat and believe it to be so, I'm
2 telling you the truth, am I not?

3 A. But that's not the way things are.

4 Q. But it's not a fact that the world is flat, is it,
5 ma'am?

6 A. No.

7 Q. You understand when I ask you whether it's a fact
8 or whether it's a truth I'm asking you two different things,
9 what a person is saying? Because I'm asking you based upon
10 the reputation, what you know of Dr. Taylor, Tiernan. Would
11 they report the truth as they saw it to be the truth?

12 A. As they saw it, yes.

13 Q. Would they do that?

14 A. Yes.

15 Q. So the rest of those people from the Department of
16 Surgery at the clinical campus of the Upstate Medical Center,
17 New York at Binghamton, do you know him, this is G. Gitlitz,
18 I suppose?

19 A. No.

20 Q. You don't know him?

21 A. No.

22 Q. Do you believe then, ma'am, that those people did
23 not have skin cancer as described here?

24 A. They may have skin cancer, yes.

1 Q. Do you believe that they had liver pathology, three
2 cases of liver pathology?

3 A. They had some changes in their liver. Pathology is
4 a little strong.

5 Q. Well, do you believe they had liver pathology?

6 A. No, I don't believe that.

7 Q. Did you look at the slides?

8 A. I also saw the --

9 Q. Excuse me, did you look at the slides?

10 A. I saw the pictures of the ultra structures.

11 Q. I'm sorry?

12 A. Yes, I did look at some pictures that he had.

13 Q. That Schecter had?

14 A. Yes.

15 Q. And that were published as a matter of fact in the
16 book, you saw those, didn't you?

17 A. I didn't see the book but I saw the -- I saw some
18 pictures of the liver.

19 Q. And it is your judgment I forgot -- forgive me, are
20 you a pathologist?

21 A. Yes.

22 Q. It's your judgment as a pathologist, that those
23 pictures did not show any pathology?

24 A. They show some changes.

1 Q. That isn't what I asked you?

2 A. They don't show what I would consider pathology.

3 Q. All right. They show changes but you did not

4 consider those changes to be pathological?

5 A. Right.

6 Q. Do you believe them when they say they had

7 hypertension or they discovered associated with this fire,

8 case of hypertension, or doesn't say a case but just

9 hypertension, do you believe that?

10 A. Not the association, no.

11 Q. Dr. Kimbrough, I'm going to get to that in a

12 moment, but I'm asking you now whether or not you believe

13 those cases existed and that Schecter is telling the truth

14 when he says they were from people that had been working in

15 that building?

16 A. That's possible.

17 Q. I'm not even asking you that. Do you believe it

18 could be the truth? Do you think the man is lying when he

19 says it was reported to him that those people were working in

20 this building and at the occupational clinic those records

21 showed those things? Do you think Schecter is lying?

22 A. You find those things in the general population.

23 Q. Dr. Kimbrough, every ailment on earth you find in

24 the general population?

1 A. Uh-huh, yes.

2 Q. You can have somebody laying in the street and he
3 says I just got run over by a car, I got these broken legs,
4 and you can say, well, you find that in the general
5 population. You can say that about anything and everything,
6 can you not? That's not an answer to my question, did you
7 believe that, is it, Dr. Kimbrough?

8 A. I think it is.

9 Q. Dr. Kimbrough, do you believe the man is telling
10 the truth when he says it was reported to him he found in
11 those records, in those clinical records, a case of
12 hypertension, suicide, nervousness, irritability, insomnia,
13 impotence, fatigue, elevated serum cholesterol and
14 triglyceride levels, psychoneurotic illness leading to time
15 off from work and psychiatric treatment, headaches, and
16 peripheral nerve impairment and other findings? Do you
17 believe that, believe that he's telling the truth that those
18 were facts that he believes, those are things that he
19 believes to be facts and are shown in the records that he's
20 examined?

21 A. I don't really believe that.

22 Q. Do you have any information of your own to cause
23 you to come to a disbelief that Schecter is telling the
24 truth?

1 A. The -- the New York State Health Department
2 reviewed the --

3 Q. I know that somebody did the reviewing. I'm asking
4 you whether or not you have any information of your own to
5 support your statement that Dr. Schecter is not telling the
6 truth when he reports those things?

7 A. There weren't -- there aren't that many abnormal
8 health effects in those findings in this population.

9 Q. Doctor, you still didn't answer my question.

10 A. No, I don't.

11 Q. Now, Doctor, what -- why would Schecter -- what
12 would motivate him to tell something that he doesn't believe
13 is the truth?

14 A. I don't know.

15 Q. Have you associated with him in the past?

16 A. Yeah.

17 Q. Does he have a financial or monetary interest in
18 telling something that isn't true?

19 A. Not as far as I know.

20 Q. Is there any reason that you know of that he would
21 not report the truth as he sees it?

22 A. He may be overstating the facts. Some people do
23 that.

24 Q. I know that. Some people don't do it. My question

1 is, any reason that you know of at all why he would not be
2 telling the truth?

3 A. I don't know of any reason, no.

4 Q. All right. Then -- he is then, unless -- do you
5 simply believe he made it up, just for fun?

6 A. I think he's overstating the fact, and we have
7 argued about this in public, at meetings. I've told him so.

8 Q. Well, by overstating the facts, do you mean that
9 somebody that he -- when he -- there was not three cases of
10 skin cancer?

11 A. There may have been three cases of skin cancer.

12 Q. Excuse me, if there may have been three cases of
13 skin cancer, he's not overstating the fact that those three
14 cases of skin cancer exist, isn't that correct, ma'am?

15 A. Yes, but they had nothing to do with the exposure.

16 Q. Doctor, that may be. That's the next point that
17 I'll get to, if I ever get to it. That may be. What I'm
18 asking you is whether or not there were -- there were cases
19 of skin cancer. Do you have any reason to dispute or doubt
20 that there were three cases of skin cancer as reported by Dr.
21 Schechter?

22 A. No.

23 Q. Do you have any reason to doubt that there were
24 three cases of liver pathology with those changes, although

1 you don't call them, with liver changes as described by Dr.
2 Schechter?

3 A. There were liver changes.

4 Q. And I adopted, do you have any reason to believe
5 that he's not telling the truth there, if we call those liver
6 changes rather than liver pathology?

7 A. It is my recollection that there were two people
8 with liver changes, but I may be wrong.

9 Q. And he may be right?

10 A. Right.

11 Q. Now, this is not only published, given before the
12 some chemical society, if my memory serves me right, also
13 published in a book, wasn't it? Chapter in a book? This was
14 the follow up of the ACS meeting in Miami?

15 A. Yes.

16 Q. Yes.

17 A. Yes, just the proceedings are published.

18 Q. Those other things, to save me going into one at a
19 time, do you believe that those other cases exist but that he
20 has in each instance tried to connect them to the Binghamton
21 fire and you don't believe such a connection exists? What
22 I'm trying to do is separate, Dr. Kimbrough, whether or not
23 those cases exist from a connection with the, causal
24 connection with the fire, that's what I'm trying to do. Do

1 those cases exist in your opinion?

2 A. I don't know.

3 Q. You don't have any reason to doubt that they exist,
4 do you, ma'am? He would not make them up, would he, ma'am?

5 A. I do, sir, have some reason to doubt, but I don't
6 know whether he made them up.

7 Q. You think he might have made them up?

8 A. I don't know.

9 Q. I know what you said, you don't know, I'm asking
10 you to put it on the record. Do you think that he might have
11 made them up?

12 A. I just don't know.

13 Q. Do you understand the difference between think and
14 know?

15 A. I don't know.

16 Q. I know you don't know whether he made them up, Dr.
17 Kimbrough, do you believe that he made them up? Do you think
18 that he made them up?

19 A. I don't know that either.

20 Q. You don't know what you think or what you believe?
21 I'm asking you what you think or believe, Dr. Kimbrough.

22 A. Some of them may be there and some of them the
23 evidence may really not be there. The only way I would have
24 to be able to do that would be to look at the records.

1 Q. That isn't what I'm asking you, again, Dr.
2 Kimbrough. Do you believe that he made those cases up or any
3 of those cases up?

4 A. I can't answer that question.

5 Q. Is it because you have no belief one way or the
6 other?

7 A. That's one part of it, and I'm not really sure what
8 we are talking about, what cases and what of those parts.

9 Q. I can help you with the latter part, the cases that
10 he has described in here. Are those fictitious cases that he
11 has made up for whatever purpose he might have? Are those
12 cases, or are those cases, do they in fact exist as far as
13 you -- do you have any information to believe that they do
14 not exist, that this is something manufactured by Dr.
15 Schechter or by somebody else?

16 A. There are other possibilities.

17 Q. And those are --

18 A. For instance, you don't know whether all of this
19 occurred in just a few people, whether with each of those
20 things you are talking about a separate person --

21 Q. Maybe, I'm not quarreling with that.

22 A. So I don't know.

23 Q. I'm not trying to tell you each of those are
24 separate episodes. I'm simply trying to find out from you

1 whether or not you believe those are symptoms accurately, or
2 not accurately even, but truthfully reported by Dr. Schechter?

3 A. I just don't know.

4 Q. I know that. I'm asking you what you believe.

5 A. I believe that they are not accurately reported.

6 Q. No, and I asked you whether or not you believe they
7 are truthfully reported. Left the accurate out.

8 A. As Dr. Schechter sees the truth, they may be
9 truthful.

10 Q. All right.

11 A. I don't know.

12 Q. Well, that's what I'm asking you. Do you believe
13 that he is telling the truth as he sees it?

14 A. I don't know.

15 Q. Doctor -- Doctor, you do understand the difference
16 between the word believe and know, don't you, ma'am? I would
17 like to move on to another point. It is an elementary thing,
18 what you believe. Why are you reluctant to tell me whether
19 or not you believe the man is telling the truth? That's all
20 I'm asking you. Do you believe the man is telling the truth
21 as he sees it? He may be seeing imaginary things, may be
22 seeing things that do not exist, but is he relating the truth
23 as he sees it in your belief, ma'am?

24 A. The truth as he sees it, yes.

1 Q. All right. Now, Doctor, the next point to ask is
2 whether or not the truth as he sees it was in fact associated
3 with the Binghamton Office Building. Do you believe that
4 those people that he -- not accurately, truthfully reporting
5 his belief, that those people had a connection with the
6 Binghamton Office Building fire?

7 A. I -- you stated your question in two ways. Which
8 one should I answer?

9 Q. Do you believe that he is telling the truth that as
10 he sees it that those cases of those problems listed here
11 were associated with people who had been in the building
12 after the explosion, after the fire?

13 A. I can't answer that question.

14 Q. Why not?

15 A. Because I don't know what people he's talking
16 about.

17 Q. He's talking about those people that he's described
18 here, those cases that he says were people, cases of people
19 that were in the building.

20 A. He's talking about a subset of patients followed in
21 an occupational clinic, and I'm not sure what this subset of
22 patients represents, whether they actually were all in the
23 building.

24 Q. It represents a group of people that he believes

1 were in the building, doesn't it, ma'am?

2 A. Yeah, but I don't know that.

3 Q. I know you don't know it, ma'am. I'm talking about
4 -- everything that you read in an article, you don't know
5 that it exists. What I'm asking you, is do you believe that
6 he's reporting what he thinks is the case, that those people
7 were in the building?

8 A. That had those symptoms, problems, I don't know.

9 Q. Dr. Kimbrough, you do know what the word believe
10 means, don't you, ma'am? You do know that it's different
11 from the answer you are giving me, you know that, don't you?
12 Why are you coming here and doing this?

13 A. I'm trying to answer your questions and I can't
14 answer this question, not this way.

15 Q. You can answer the question as to what you believe,
16 Doctor. If you believe the man is a liar, say so.

17 A. I don't know that he's a liar.

18 Q. You are protected by the privilege of testifying in
19 this case. You can call the President, you can call your
20 boss, you can call the Judge, you can call me, you can call
21 anybody you want any kind of name that you want. Anything
22 that you say in this courtroom is absolutely privileged. You
23 may not be liable for anything that you say here, absolutely
24 privileged. Now, is it that you simply believe the man is a

1 phony and a fraud and a liar?

2 A. No, I don't believe that.

3 Q. All right. Do you believe that he's telling the
4 truth as he sees it?

5 A. I don't believe anything. Why should I believe
6 something?

7 Q. Because you are a lady that's coming here, that is
8 represented to be an expert in the area of human health
9 effects associated with dioxin. Because you have read this,
10 because you are part of the counsel that is responsible for
11 the Binghamton office health effects, because you are
12 obviously an intelligent young lady and you must have a
13 belief. Because you are not a fool, Dr. Kimbrough. Because
14 I don't believe that you are telling me the truth when you
15 say you don't have a belief. You have already said that you
16 argued with Dr. Schecter on other occasions.

17 A. Uh-huh. And I have some problems with this, but I
18 can't explain them.

19 Q. Why can't you explain them?

20 A. Not in the way we are conversing.

21 Q. Well, explain then, ma'am.

22 A. Okay. One of the -- as I said earlier, a lot of
23 those things occur normally in the population. Some of them
24 are chronic health effects that you would not get following

1 an acute exposure. For instance, hypertension is something
2 that comes on very gradual. Cancer, incubation period or the
3 latency period for the development of cancer is usually many
4 many years --

5 Q. Doctor, all of those things I agree with.

6 A. So all of this has nothing to do with each other.

7 Q. We are not arguing that point. Apparently you do
8 not understand what I'm asking you.

9 MR. HEINEMAN: Object, Your Honor, he asked the
10 witness to explain.

11 MR. CARR: I know it. I'm trying to save us some
12 time because we are not at issue on this point.

13 MR. HEINEMAN: He interrupted her and I object to
14 it.

15 THE COURT: Objection is overruled. I don't think
16 -- there is some lack of understanding somewhere along the
17 line because I don't think that -- first of all, she said
18 those things already. Secondly, I don't think it was
19 responsive to his question. Mr. Carr, go ahead.

20 Q. (by Mr. Carr) Doctor, you are talking about
21 whether or not the Binghamton fire indeed caused those
22 problems which are all problems found in the general
23 population and that the cancer or latency period is certainly
24 a long time. This fire was in '79 and the article was

1 written in '81 or something, whatever the date is. That
2 isn't what I'm asking you about. I'm not trying to get you
3 to concede that those problems were in fact caused by the
4 Binghamton fire, not at this point as yet. All I'm trying to
5 do is to get some kind of framework that I can ask you about,
6 because if you absolutely believe there were no cases of skin
7 cancer, there was no liver changes, there wasn't any
8 hypertension, any suicide, then it's silly for me to even
9 talk to you about it. But if you think that there may have
10 been those cases but not caused by this fire and are not
11 caused by exposure or some other reason, then we can talk
12 about it. I'm simply trying to find out whether or not you
13 believe those cases existed; whether or not the man is
14 telling the truth. I'm not asking you to agree that his
15 conclusion is correct. Do you understand that, Dr.
16 Kimbrough?

17 A. Yes.

18 Q. All right. Now, with that in mind, do you think
19 the man is reporting the truth as he sees it insofar as those
20 problems are concerned?

21 A. Yes.

22 Q. All right. Now, it is your belief, as I understand
23 it, whether the problems exist or don't exist, they were not
24 caused by exposure to the chemicals in that -- associated

1 with that fire, is that right?

2 A. I'm sorry. I didn't pay attention. Can you read
3 the question back?

4 Q. Why didn't you pay attention, Dr. Kimbrough?

5 A. I don't know. I'm getting tired.

6 THE COURT: Would you like to take a short break?

7 A. It's okay. But I just, see, I'm one hour ahead.

8 Q. It's ten after five your time.

9 A. That's right.

10 Q. All right. But, they have been reported as
11 associated by those people named, have they not, ma'am, or by
12 this one person named, if you have problems with that, Dr.
13 Schecter?

14 A. He also states etiology of those medical findings
15 is not always clear.

16 Q. Yeah. Nobody --

17 A. That's on the same --

18 Q. Nobody is quarreling with that, Dr. Kimbrough, you
19 are fighting a straw man that doesn't exist. You are
20 advocating a position, Dr. Kimbrough, that I'm not contesting
21 at this point.

22 A. He's making those reports but he's not necessarily
23 making this association.

24 Q. That's right. He isn't. Did I say that he was?

1 A. I thought that was what I said.

2 Q. I know, but that's not -- he's reported those
3 things in this paper, hasn't he, ma'am?

4 A. He has a sentence in this paper which says,
5 etiology of those medical findings is not always clear.
6 It's on the page you gave me.

7 Q. He says that, doesn't he?

8 A. That's what he says on this page that you gave me.

9 Q. Right, he says that. Nobody is quarreling with
10 that, so, whatever it is, he reports those things, doesn't
11 he, ma'am?

12 A. Yes.

13 Q. And, Doctor, are there any other reports of health
14 effects that somebody has said may be associated with
15 exposure to dioxin other than the ones you've named?
16 Mentioned Seveso, Binghamton possibility, I don't know, I
17 can't remember myself, you mentioned, I thought, three,
18 Seveso, Binghamton, and the Missouri -- Ranch Hand. Right?

19 A. Ranch Hand.

20 Q. All right. Any other human health effects study of
21 which you are aware?

22 A. Of low-level exposure?

23 Q. Yes.

24 A. I can't think of anything at the moment, it was

1 some other surveys, but --

2 Q. There were other surveys?

3 A. Well, there was a suspicion of exposure, which
4 doesn't bear out.

5 Q. I'm sorry, I can't hear you.

6 A. Where there was a suspicion of exposure, but there
7 really wasn't any exposure.

8 Q. What surveys were those?

9 A. For instance a survey that was done around Dow
10 Chemical Company.

11 Q. In Midland, you mean?

12 A. In Midland, Michigan.

13 Q. And cook reported those in their works? Or is
14 there -- has it been published?

15 A. I think it's only a report that you can get from
16 the Michigan Department of Health. They were involved in
17 that.

18 Q. Wasn't a CDC work?

19 A. No.

20 Q. Anything else?

21 A. Nothing that I can think of at the moment.

22 Q. All right. Then the Missouri Health Study then at
23 the very least is one of at the most a half a dozen studies
24 that may be related to low-dose effects of exposure, human

1 health effects associated with low-dose exposure of dioxin,
2 correct, ma'am?

3 A. Yes.

4 Q. All right. Now, do you still have the Missouri
5 Health Study in front of you?

6 A. Yes.

7 Q. Would you turn to table C-2 on Page 61, if you
8 would. Now, Dr. Kimbrough, in the normal population, what
9 percent of people would you believe as a pathologist, as a
10 doctor, would have swelling in hands or feet?

11 A. Somewhere up to about 25 percent. It depends on
12 the age and the -- what you call swelling.

13 Q. I noted you were looking directly at the result
14 here. Did the number that reported that abnormality --, I
15 directed your attention to it, did the number that reported
16 that abnormality influence your opinion?

17 A. No.

18 Q. Doctor, do you really believe that 25 percent of
19 the normal population has swelling in hands or feet? Do you
20 really sincerely, honestly believe that?

21 A. It's a very common complaint.

22 Q. That's not what I asked you.

23 A. Yeah.

24 Q. You believe that we have got, of the eight people

1 in this room, that two of us have swelling hands or feet?

2 A. Not all the time, but sometimes.

3 Q. Doctor, anybody will have a swollen foot if they
4 hit it on something or if they get injured. This isn't the
5 questionnaire. When you ask the questionnaire -- did you
6 bring a copy of the questionnaire with you by any chance?

7 A. No.

8 Q. How was the question posed? Swelling in hands or
9 feet, or did you see -- you helped design the question, did
10 you not?

11 A. I saw the questions but I don't remember anymore
12 exactly how it was posed.

13 Q. You helped design the question, did you not, ma'am?

14 A. Yeah, most of the questions that had more to do
15 with toxicology.

16 Q. My question is, did you help design those
17 questions?

18 A. Yes.

19 Q. Now, the purpose of those questions were to find
20 out whether or not they had some things that would be caused,
21 called ailments, not just an occasional occurrence, isn't
22 that right, ma'am?

23 A. Not all of the questions. You put some questions
24 in there to see how valid the answers are that you get.

1 Q. How about the swelling in hands or feet, was that
2 question put in there to see if they were honest?

3 A. No.

4 Q. It was a question designed to find out whether or
5 not there was an unusual, if you will, health effect, or a
6 real health effect associated with this population, isn't
7 that correct, ma'am?

8 A. Whether there was a difference between the two
9 groups.

10 Q. Doctor --

11 A. No, that's how you analyzed it later on.

12 Q. You wanted to find out -- just suppose that you
13 found out that 15 percent of the people in the high-risk
14 group had swelling in hands or feet and only one percent of
15 the people in the low-risk group had such swelling, what
16 would you have concluded from that?

17 A. Nothing.

18 Q. Nothing at all?

19 A. No. I would have to analyze other things.

20 Q. Well, other things along with it, when your
21 questionnaires came out that way, the high-risk group had
22 this abnormality or this generalized disorder and the
23 low-risk group did not. What would you conclude from that?

24 A. That would be something I would register and I

1 would do other things, but I wouldn't make any conclusions
2 based on it?

3 Q. What would that help you, what kind of evidence
4 that would be toward coming to a conclusion?

5 A. I wouldn't -- just based on that, I wouldn't come
6 to any conclusion.

7 Q. I didn't ask you that. I asked you how would you
8 consider that evidence in helping you to come to your
9 conclusion?

10 A. It's only an indicator.

11 Q. I understand that, ma'am. I'm not asking you
12 that. You would consider that, would you not, as something
13 that would indicate that the people with the swollen hands or
14 feet are having a health effect that the people in the
15 low-risk group are not having. That was the purpose for
16 putting it in, was it not?

17 A. It suggests that they might have some fluid
18 retention.

19 Q. Associated with dioxin exposure?

20 A. No.

21 Q. Well, Doctor, didn't you design those questions to
22 try to find out whether or not they had health effects
23 associated with dioxin exposure? Wasn't all of your
24 questions except your test questions designed by CDC or

1 helped by CDC for the express purpose of finding out whether
2 or not there were health effects associated with dioxin
3 exposure?

4 A. This is only a preliminary --

5 Q. Could you answer my question, Dr. Kimbrough?

6 A. No.

7 Q. Then, Doctor, your entire study is a fraud, isn't
8 it, ma'am?

9 A. No.

10 Q. If you didn't design -- did you really tell those
11 Missouri people that those questions are not designed to help
12 you find out whether or not there are harmful consequences
13 from dioxin exposure? Did you tell them that when they
14 started this study?

15 A. To help us find out whether -- yes.

16 Q. Those questions were designed to help you find out
17 whether or not there are harmful health effects from exposure
18 to dioxin, isn't that correct, ma'am?

19 A. Yes.

20 Q. Yes. That's the reason you put that question in
21 about swelling in hands or feet, to aid you to come to that
22 conclusion, isn't that right, ma'am?

23 A. To obtain some information.

24 Q. To aid you in coming to that conclusion, isn't that

1 right?

2 A. To obtain information.

3 Q. I'm sorry?

4 A. To obtain information.

5 Q. That's not what I asked you. To aid you to come to
6 the conclusion whether or not there are health effects from
7 exposure to dioxin, isn't that right, ma'am?

8 A. That's not quite right.

9 Q. Well, did you put it in there for any purpose other
10 than to help you come to that conclusion along with the other
11 evidence? What other reason would you have for putting it in
12 there, Dr. Kimbrough, except to aid you in arriving at a
13 conclusion of whether or not there are health effects
14 associated with dioxin exposure?

15 A. To be able to focus more on specific things, and
16 then once you do that, you then arrive at conclusions as to
17 whether some of those effects might be associated with
18 exposure.

19 Q. Doctor, isn't that all part of the process of
20 aiding you to come to the conclusion of whether or not dioxin
21 has harmful health effects?

22 A. It's all part of the process, yes.

23 Q. Yes, indeed. This question was put in there for
24 that purpose, otherwise, it would be stupid to put it in

1 there, wouldn't it be, ma'am, a useless thing?

2 A. It's part of the process, yes.

3 Q. And it had a useful purpose, did it not, ma'am?

4 A. Yes.

5 Q. And you wouldn't have put it in there if you had
6 not expected to use that, along with other things, in helping
7 you arrive at a scientific opinion, if you will, or
8 conclusion as to the health effects as to dioxin, isn't that
9 correct, ma'am?

10 A. Yes, it's part of the process.

11 Q. And that's true of all those questions that you've
12 asked those people except some that you may have put in as a
13 test or a catch question, right, ma'am?

14 A. Yes.

15 Q. Now, you would not expect the normal population to
16 have swelling in hands or feet, would you, ma'am?

17 A. Yes.

18 Q. You would?

19 A. Yes.

20 Q. Dr. Kimbrough, I'll remind you that you are under
21 oath. Do you really think that 25 percent of the people
22 responding to that question that you asked that would say,
23 yes, I have swollen hands or feet?

24 A. Yes.

1 Q. Now, Doctor, your question then is worthless, isn't
2 it?

3 A. No. If everybody had responded that they had
4 swelling then it depends on the number, and it also depends
5 on the age.

6 Q. How many people would you have to have respond that
7 they have swollen hands or feet before you would consider
8 that that is an aid in arriving at your conclusion?

9 A. If more than half of the people would say that they
10 would have swelling of hands and feet all of the time then I
11 would get concerned.

12 Q. No, I'm not asking concerned, Dr. Kimbrough. Maybe
13 we are going at the wrong thing, because this is not to find
14 out whether or not you should have concern, this is to find
15 out, is it not, ma'am, are there health effects, and, if so,
16 are they from exposure to dioxin. Isn't that the whole
17 purpose of the study?

18 A. Yes, that's the purpose of the study.

19 Q. And, Doctor, you designed the study to be able to
20 pinpoint problems that people are having. You really don't
21 think that 49 percent of the population have swollen hands or
22 feet, do you, ma'am?

23 A. Sometimes, depending on the age.

24 Q. Doctor, how did you phrase the question?

1 A. I don't specifically know. I would have to go back
2 to the questionnaire.

3 Q. The swelling of the hands and feet depend upon age,
4 doesn't it, ma'am?

5 A. And whether or not you are pregnant, and whether or
6 not --

7 Q. Did you take -- did you finish your answer?

8 A. And whether or not you have eaten a lot of salt. I
9 mean there are a lot of things that can affect that.

10 Q. I'm sure there is. Did you take those things into
11 consideration when you selected your population?

12 A. No, not all of those things, because you can't take
13 those things into consideration.

14 Q. Why can't you?

15 A. When you select the population --

16 Q. Why can't you?

17 A. You can't select a population for all of those
18 factors. That's part of epidemiology.

19 Q. Well, you wouldn't expect to have 25 percent
20 pregnant women, would you?

21 A. No, but there may be a few.

22 Q. Sure, there may be a few. But certainly not 25
23 percent or 49 percent?

24 A. There may be a few that ate a lot of salt. There

1 may be a few that sit a lot.

2 Q. Doctor, in your general population, taking a group
3 at random, as you did here, you tried to get a random group,
4 didn't you, ma'am, except exposure, low risk or high risk?

5 A. Uh-huh.

6 Q. Now, that's the population that I'm talking about.
7 This population here in this room where Mr. Seigfreid is the
8 very oldest of us all.

9 MR. NASSIF: By far

10 Q. (by Mr. Carr) Months at least older than most of
11 us. And we have Court Reporter and the Clerk who are by all
12 odds the youngest. And we have a cross section here. Do you
13 really think that half of those people, or part of those
14 people, are going to have swollen hands or feet in the
15 parameters of your question?

16 A. Some of the time, I do.

17 Q. And, Doctor, then your question, if you ask do you
18 have some swollen hands or feet, a hundred percent of the
19 population some of the time, a hundred percent is going to
20 answer question. Because surely you didn't frame the
21 question that way. If you did, it was a stupid question.

22 A. Well, maybe it was.

23 Q. Well, was it framed that way, Dr. Kimbrough? I'm
24 not going to accept that.

1 A. I don't know specifically how it was framed.

2 Q. Doctor, you know good and well it wasn't framed
3 that way to get a yes response from a hundred percent of the
4 people. Dr. Kimbrough, I suggest to you that you are playing
5 games with me.

6 A. No, I am not.

7 Q. Did you design the question in such away that you
8 would get an affirmative response from everybody? Do you
9 believe that everybody has swollen hands or feet at some time
10 or another in their life?

11 A. Yes.

12 Q. Yes. Then if you ask that question that way, you
13 should have got a hundred percent yeses, shouldn't you,
14 ma'am?

15 A. Yes.

16 Q. That question framed that way would be worthless,
17 wouldn't it, ma'am?

18 A. Yes.

19 Q. Therefore, you did not frame it that way, did you,
20 ma'am, because you framed it in a fashion to get information
21 that you could use, isn't that correct, ma'am?

22 A. Yeah, we tried.

23 Q. So that question wasn't framed that way, was it,
24 ma'am?

1 A. Yeah, but I don't know exactly how it was framed.

2 Q. I'm excluding, eliminating something that would --

3 swelling on occasion?

4 A. Uh-huh.

5 Q. Now, Doctor, this question was designed to elicit

6 whether or not swelling in hands or feet was a real problem

7 to the person being asked that question, that is the truth of

8 the matter, isn't it, ma'am?

9 A. I assume so.

10 Q. Now, Dr. Kimbrough, what percent of the population

11 do you think has a real propose with swelling in the hands or

12 feet?

13 A. I still believe that about 25 percent of the

14 population, if you talk about a cross section, taking all

15 ages, does have that problem.

16 Q. Has a real problem with swollen hands or feet?

17 A. Uh-huh.

18 Q. Do you have such a problem?

19 A. Yes.

20 Q. When, do you have it, now?

21 A. At night after I've been on an airplane. I just --

22 I'm very sensitive to salt. I try to eat very little salt,

23 for instance.

24 Q. Isn't that unusual to be very sensitive to salt?

1 A. No.

2 Q. What percent of the population do you believe are
3 very sensitive to salt?

4 A. Probably more than we realize, but --

5 Q. That may be, but what percentage do you believe,
6 ma'am?

7 A. I would think maybe 25 percent of the people.

8 Q. 25 percent of the people are sensitive to salt,
9 too?

10 A. Uh-huh.

11 Q. Dr. Kimbrough, is it your opinion, and we can save
12 a lot of trouble here, that 25 percent of the population are
13 afflicted with every problem known to man?

14 A. I don't understand what -- some time in their lives
15 they will have some problems, I don't --

16 Q. No, in the framework of a question you are going to
17 ask to elicit health effects?

18 A. Some people will have. Some problems are more
19 prevalent than other problems.

20 Q. What problems do you think that 25 percent of the
21 population had?

22 A. Things like headaches, since they are more frequent
23 than that.

24 Q. I'm sorry?

1 A. Headaches and those sorts of things would be even
2 more frequent.

3 Q. You think that 25 percent of the population have
4 persistent headaches?

5 A. Well, they are also different --

6 Q. Excuse me. Do you think that 25 percent of the
7 population have persistent headaches?

8 A. Depends on what a persistent headaches is, what you
9 mean by that.

10 Q. How you all used the word and expected to use the
11 word when you used the phrase in your questionnaire. Do you
12 think 25 percent of the population have persistent headaches
13 in that framework?

14 A. They have frequent headaches, that's what I
15 believe.

16 Q. My question is persistent headaches, isn't it?

17 A. 24 hours a day, every day of the year?

18 Q. Doctor, within the parameters -- within the
19 framework of the way you all designed the question and
20 administered the question to the people in the Missouri Pilot
21 Health Study?

22 A. I personally feel that the term persistent, the way
23 it's used here, is a very poor choice of words.

24 Q. Well, that may be, but you chose the wording, I

1 didn't?

2 A. I didn't necessarily choose that word.

3 Q. You were a part of the group that chose the word?

4 A. I was part of the group, but I wasn't necessarily
5 the one that used that term.

6 Q. Well, in any event, do you think that 25 percent of
7 the population have persistent headaches?

8 A. That's one of the afflictions that people have a
9 lot, yes, I do believe that.

10 Q. You believe that 25 percent of the American
11 population have got persistent headaches?

12 A. It depends on -- unless the term persistent is
13 defined to me, I can't answer that question.

14 Q. Well, did you define it to the people that you gave
15 the questionnaire to?

16 A. I wasn't involved in administering the
17 questionnaires, so I don't know.

18 Q. Well, you would have given -- did you define it in
19 writing to the people you gave the questionnaire to?

20 A. No.

21 Q. What kind of question did you ask them? Are you
22 afflicted with persistent headaches?

23 A. I was not involved in that part of the study. You
24 would have to --

1 Q. You read it, you designed the study, including the
2 questionnaire. What was the question that you asked?

3 A. I helped design the study, but I was not involved
4 in the details of it.

5 Q. Did you read the details of it? Did you read the
6 study before it went out from CDC or before it went out to
7 the public?

8 A. I was involved in the clinical laboratory side,
9 what types of tests to do, and in the question of exposure
10 assessment.

11 Q. Would you answer my question, Dr. Kimbrough, did
12 you read it, ma'am?

13 A. I read the draft, yes.

14 Q. Now, did you see the questions on headaches?

15 A. Yes.

16 Q. Did you criticize or did you send any criticism or
17 make any comment to anybody about the question on persistent
18 headaches?

19 A. No, not specifically.

20 Q. Doctor, here 41 percent of the people with the
21 low-risk exposure have got persistent headaches according to
22 what they say, isn't that correct?

23 A. Yes.

24 Q. Do you think that 41 percent of the population have

1 got persistent headaches?

2 A. It depends on how they interpret persistent. I
3 just can't answer that question.

4 Q. Doctor, how would you consider persistent
5 headaches, one that you have and you cannot get rid of, that
6 it stays with you, it persists? Isn't that what persistent
7 means?

8 A. It could mean to a person that he has a headache
9 that starts in the morning and he still has it at night, and
10 I would think that there are maybe as many as 50 percent of
11 the people that could have such headaches.

12 Q. 50 percent of the population have such headaches?

13 A. Yes, not every day, but --

14 Q. God, Dr. Kimbrough, what population do you
15 associate with?

16 A. This type of information also is in other health
17 surveys.

18 Q. Doctor, if that amount of the population have got
19 persistent headaches do you think it might be associated with
20 the fact that the population have got dioxin in their tissue,
21 is that a possibility?

22 A. No, it's always -- people always have suffered from
23 headaches.

24 Q. How do you know that?

1 A. If you look at all the headache remedies that are
2 sold.

3 Q. Dr. Kimbrough, how do you know that they had -- 50
4 percent of the population have persistent headaches before
5 the onset of chemical contamination of our environment,
6 including dioxin?

7 A. If you go back to the old medical literature, there
8 is evidence that people -- that's one of the problems.

9 Q. What medical literature says 50 percent of the
10 population has got persistent headaches?

11 A. It's just a very common problem.

12 Q. How about joint and muscle pains, without looking
13 at the -- unless you've already read it recently, what
14 percent of the population have joint and muscle pains,
15 ordinary cross section of a healthy population?

16 A. Well, there were two healthy people outside that
17 were complaining about muscle pain at the remission that we
18 had.

19 Q. How do you know they weren't plaintiffs in the
20 lawsuit?

21 MR. SEIGFREID: No, Ken Heineman, he's not
22 healthy.

23 MR. CARR: Heineman has never been healthy a day
24 during this trial.

1 MR. NASSIF: Seigfreid was the other one.

2 MR. CARR: I'm not talking about old men.

3 MR. NASSIF: Your Honor, there were three. Jane
4 Rudolph also complained.

5 MR. CARR: She is a pregnant lady.

6 A. She is not pregnant.

7 THE COURT: It's from exposure to toxic chemical
8 trials.

9 MR. NASSIF: Three out of the five in the hallway.

10 Q. What population would have joint and muscle pains
11 in your judgment?

12 A. It's again depends on the age.

13 Q. Well, the cross section that you have, people that
14 you use in the Missouri Pilot Health Study?

15 A. It could have up to 30, 40 percent.

16 Q. Up to -- That starts out at one. Do you think that
17 30 or 40 percent of the general population have got a
18 disorder known as joint and muscle pains?

19 A. Yeah. Unless you primarily look at children, they
20 don't seem to complain as much.

21 Q. Doctor, then your health study, as you designed it
22 here, in your judgment, could not possibly elicit health
23 effects, could it? If you expect 40 or 50 percent of the
24 people answering the question to have the problem, there is

1 no point in asking the question, is there, ma'am? You are
2 never going to find out whether or not dioxin caused the
3 problem, are you, ma'am?

4 A. I think some of the questions were unnecessary.

5 Q. Could you answer my question, please, ma'am?

6 A. Yes, you can still find that out.

7 Q. What you'd have to do, I suppose, agree on what the
8 base is and say all right, 50 percent of the people are going
9 to have headaches, therefore, if we get a result that shows
10 70 percent of the headaches, we can say that that might be
11 associated with the dioxin, is that what you are saying?

12 A. Yes.

13 Q. And, since 70 percent of the people do not have
14 complaints of persistent headaches, it's your judgment as a
15 pathologist and toxicologist that dioxin doesn't cause
16 headaches, is that right, Dr. Kimbrough?

17 A. Not in this situation.

18 Q. That is to low-dose exposure?

19 A. Uh-huh.

20 Q. There isn't anything in your judgment, and if I
21 went through those other findings here, there isn't anything
22 in your judgment that could possibly be caused by dioxin, is
23 there, ma'am? If 50 percent of the population is going to
24 have the afflictions anyway, you don't leave much for dioxin

1 to cause, do you, ma'am?

2 A. That's one purpose in epidemiology studies. It's
3 very difficult to sort those things out.

4 Q. You sure don't sort it out by asking questions
5 where you expect 50 percent of the population to respond yes
6 to start out with, do you, ma'am?

7 A. If you do have a high background noise then that's
8 the best you can do.

9 Q. Doctor, are there any publications that you use or
10 used in designing this study, do you know, were used to set
11 up the baseline that you are going to start out with for
12 swelling in hands or feet, or persistent headaches, or joint
13 and muscle pains?

14 A. We reviewed the literature on the problems that the
15 workers had reported. We also looked at the Ranch Hand
16 questionnaires. We are also aware of studies that have been
17 -- surveys that have been done, National Center for Health
18 Statisticians of the general population.

19 Q. And the survey showed what? Are those available?

20 A. Those surveys?

21 Q. Uh-huh.

22 A. Yes, the Haines studies, which are nutrition
23 studies, and they are, they just give you information on what
24 the background complaints and --

1 Q. And did you -- did you look at those, and by you, I
2 mean the Missouri Pilot Health Group when you designed the
3 questionnaire?

4 A. I don't think everybody in Missouri did, no, but
5 I'm aware of those.

6 Q. But you do, so if I wanted to cross examine you as
7 I'm trying to, to test whether or not you are accurately
8 stating the number of people that have headaches, or
9 persistent headaches and joint and muscle pain, swelling
10 hands, I could have that? If I had an opportunity to get
11 that data from you, I could use it to test your statements,
12 couldn't I, ma'am?

13 A. Uh-huh.

14 Q. But you didn't bring that data with you, ma'am, and
15 you weren't asked to do so, were you, ma'am?

16 A. No.

17 Q. You knew that, though, that you were going to
18 testify and did testify in direct examination about the
19 Missouri Pilot Health Group, you did know that?

20 A. I simply said that --

21 Q. I'm sorry?

22 A. Yes, I did.

23 Q. You did know in advance of the time that we have
24 used the Missouri Health Study, because the answer to your

1 questions indicated that we had used the Missouri Health
2 Study to suggest ailments caused by dioxin? You knew that,
3 too, didn't you?

4 A. No.

5 Q. You didn't?

6 A. No.

7 Q. You didn't know that we combined the two groups?

8 A. No.

9 Q. Nobody told you that?

10 A. No.

11 Q. Doctor, how did you come to know that we were going
12 to ask you about the Missouri Pilot Health Test?

13 A. I didn't know that you were going to ask me.

14 Q. I thought you just said you did.

15 A. The only thing I said was that I talked about the
16 study in my previous testimony.

17 Q. But you didn't know before you got here that you
18 were going to be asked about it?

19 A. No.

20 Q. All right. And for that reason then -- well,
21 nobody asked you to bring your documentation?

22 A. No.

23 Q. Doctor, what about the loss of ten pounds a month?
24 How many people do you believe lose ten pounds a month not

1 being on a diet?

2 A. They don't.

3 Q. I'm sorry?

4 A. That's a very low incidence, unless they have a
5 health problem.

6 Q. My question is how many people, in your judgment,
7 lose ten pounds in a month's time when they are not on a
8 diet?

9 A. None.

10 Q. Or more than ten pounds?

11 A. None, unless you are pregnant and have a baby.

12 Q. All right, and we have got 6 percent in the
13 high-risk group that report that, don't we?

14 A. Yes.

15 Q. And we have got 4 percent in the low-risk group
16 that report that, don't we, ma'am?

17 A. 3 percent.

18 Q. 2.9. What did I say?

19 A. You said 4.

20 Q. I'm sorry. 2.9. We have got 3 percent?

21 A. Uh-huh.

22 Q. So, well, we would have then about 5 percent of the
23 population here that has lost ten pounds or more in one month
24 and not on a diet, correct?

1 A. Uh-huh.

2 Q. That would be then certainly significant to you,
3 wouldn't it?

4 A. Uh-huh.

5 Q. Did you consider the significance of that when you
6 reviewed this study?

7 A. One possibility would be anxiety.

8 Q. I'm sorry?

9 A. Anxiety would be one reason.

10 Q. That could be one possibility, so the answer is
11 yes, you did consider that, did you?

12 A. Uh-huh.

13 Q. And did you just put it off on anxiety?

14 A. We are going to look at more people and try and get
15 further information from an additional study.

16 Q. Would you answer my question?

17 A. We didn't know how to interpret it.

18 Q. You made no conclusions based upon that whatsoever?

19 A. Not yet.

20 Q. It's possible that it could be a health effect from
21 dioxin exposure, however, isn't it, ma'am?

22 A. Yes, we just have not made any conclusions.

23 Q. Is the answer to my question, yes, it is possible?

24 A. It would be possible, yes.

1 Q. What about the blood problems that show up here,
2 Doctor, how many people would you expect to have those kind
3 of blood problems that are listed here, anemia, leukopenia,
4 blood clotting problems, and other blood problems?

5 A. Again it would vary with the people that you would
6 look at, but, you could have those problems in people up to
7 about ten percent or so. For instance, some people are on
8 anticoagulants. I mean, just depends on what you are looking
9 at.

10 Q. What are those other blood problems that are listed
11 there?

12 A. You mean leukopenia?

13 Q. There is a category of other blood problems, got
14 anemia, leukopenia, blood clotting problems and other blood
15 problems. What is that?

16 A. That was a catch-all question, and we really
17 couldn't analyze it and --

18 Q. What did you do, just ask them if they had other
19 blood problems?

20 A. Yes.

21 Q. Not specifying what they mean?

22 A. Yes.

23 Q. And you had no idea at all what you were asking
24 them?

1 A. No.

2 Q. Doctor --

3 A. No. Sometimes people will get information from
4 their physician and they may not understand that something
5 called leukopenia is a blood problem, so then in order to
6 catch that, you put in a general phrase. If you then find
7 that many people in the population that you are concerned
8 with have a problem, you may have to go back. That was --
9 it was --

10 Q. I understand your question now. And you've got --
11 you add those up, you've got 25 percent in your high-risk
12 group that have got some kind of blood problem, do you not,
13 ma'am?

14 A. I -- it's possible that some of those people were
15 the same people.

16 Q. Well, it would be possible they might be included
17 in the other blood problems but anemia, leukopenia and blood
18 clotting problems are all three separate problems that you
19 would not have in one individual?

20 A. If somebody has a blood clotting problem he could
21 also very well have an anemia. So I can't answer that.

22 Q. What about leukopenia?

23 A. That wouldn't necessarily -- that could be
24 associated with anemia, but --

1 Q. It's a distinct and different disease?

2 A. In a way it's different.

3 Q. Sorry?

4 A. It is different.

5 Q. Those four questions here were not meant to be
6 duplicative, were they, ma'am?

7 A. They were meant in a way to be duplicated so that
8 if people didn't understand one thing we might still catch it
9 by something asking another question.

10 Q. You've got from 22 to 25 percent then of people,
11 let's even say 20 to 25 percent of people in the high-risk
12 group that have got some kind of blood problems, correct,
13 ma'am?

14 A. We don't know that. This is what they said they
15 did.

16 Q. That's what they said. Isn't that an
17 extraordinarily high number, Dr. Kimbrough?

18 A. Not necessarily, since most of them seem to be
19 anemias.

20 Q. I'm sorry?

21 A. Since most of them seem to be anemias.

22 Q. It would have to be anemia that they'd know about
23 and had treated for, Doctor. Don't you consider that to be
24 an extraordinarily high amount of people to have anemia, 15

1 percent?

2 A. If people answer questionnaires like this and they
3 may say they have anemia, and when we then check the records,
4 it may be that they at one point had anemia or that they
5 really just have a slightly --

6 Q. Well, did you do that, Doctor?

7 A. No, that wasn't done.

8 Q. Well, Doctor, taking this at face value, isn't that
9 an extraordinarily high number of 20 to 25 percent to have
10 blood problems?

11 A. Not if the anemia is very mild.

12 Q. Well, you've added the caveat there, Doctor, you
13 didn't make it whether it was severe or mild anemia, did
14 you? And I'm not asking the question that way. Do you not
15 consider this to be an extraordinary number of people to
16 report on blood problems?

17 A. No.

18 Q. I thought you told me before you would expect about
19 what, ten percent, five, ten percent, that had those
20 problems? Didn't you tell me that, ten percent?

21 A. Then I was talking about documented problems.

22 Q. You weren't talking about what you were asking, you
23 didn't understand that I was asking about those questions?

24 A. No, I thought you were asking about documented

1 cases, what you would find if I did a blood survey in a
2 population. By actually doing the tests on a group of
3 people, I might get that in a general population, but,
4 looking at this questionnaire, it wouldn't necessarily be
5 very high, because --

6 Q. Here again --

7 A. It would depend on how the people interpreted the
8 questionnaire.

9 Q. Again, the only way I could test that would be if
10 you brought your questionnaire here, if you brought the
11 documents that you studied in trying to determine how many
12 people would have reports of the anemia problems, is that
13 correct, ma'am?

14 A. This would be the Missouri State Health Department
15 where all this would be.

16 THE COURT: I'm sorry?

17 A. It's basically a study that was funded by CDC. We
18 consulted on it. But basically the study was done out of the
19 Missouri State Health Department and out of the group of
20 physicians in St. Louis.

21 Q. Dr. Kimbrough, those questions weren't just sent to
22 the subject and asked to fill it out and send back, was it?
23 Those were questions that were administered by trained health
24 people, isn't that correct?

1 A. Yes.

2 Q. So they would ask not just one question, do you
3 have persistent headaches, or do you have blood problems, but
4 they would ask as many questions as they need to get
5 meaningful information, isn't that right?

6 A. No.

7 Q. No? What's wrong with that?

8 A. They will just ask the questions on the
9 questionnaire, otherwise you would introduce a bias, because
10 everybody would do that differently then, if you have more
11 than one person doing it.

12 Q. Weren't they given instructions as to how they were
13 to respond and the way they were -- the language they would
14 use, and the method they would use, were to use to respond to
15 questions and to explain the meaning of these?

16 A. No, they were simply told how to introduce
17 themselves and how to word the questions that were in the
18 questionnaire.

19 Q. Doctor, you could just as easily then send them out
20 by mail, you didn't need a train personnel to do that, did
21 you, ma'am?

22 A. Some of the questionnaires were -- well, that's the
23 other survey. Never mind.

24 Q. That's the other one, Doctor. I'm talking about

1 the ones you selected and then you surveyed their health.
2 You had trained health people ask the questions and
3 administer the review of their systems, didn't you, ma'am?

4 A. Yes.

5 Q. And, weren't they -- they did more than just simply
6 take a response to a question given, didn't they, ma'am?

7 A. They took the response given to the question. You
8 can't do it any other way.

9 Q. Didn't they even have -- didn't they use some
10 doctors to do that, administer those questionnaires?

11 A. I don't think so, not physicians.

12 Q. What kind of people did they actually use?

13 A. Normally -- and I'm not quite sure really what
14 those people were that administered the questions, but
15 normally we use people that are public health advisors that
16 usually have a Bachelor's Degree, and sometimes we use
17 nurses.

18 Q. You were talking about who you use at CDC. Do you
19 know whether or not you used those people in this pilot
20 health study?

21 A. I don't.

22 Q. You have no knowledge?

23 A. No.

24 MR. CARR: Your Honor, how long do you want to go

1 tonight?

2 THE COURT: Well, I was thinking five, but do you
3 want to go --

4 Q. (by Mr. Carr) Doctor, before we close for the day
5 I'd like to ask you the question about those problems that
6 were related on -- what page is it, Table C-6 on Page 67.
7 What is your expectation on the number of people that were
8 going to report peripheral neuropathies? You are reading
9 before the answer, but it's all right. You want to give me
10 your own judgment before you read it? No, you don't. Okay.
11 Shall I just ask you a lot of questions, you want to give me
12 your answer? Do you want to look at the answer first to see?

13 A. I thought -- I'm sorry. I thought you had directed
14 me to look at peripheral neuropathy.

15 Q. I want to know first of all what is your judgment
16 as to the ordinary.

17 A. I shouldn't look at this table?

18 Q. It's all right. Ordinary random population, expect
19 to have peripheral neuropathy?

20 A. I really probably shouldn't answer this question
21 anymore now.

22 Q. I'm sorry?

23 A. I probably shouldn't answer this question anymore.

24 Q. Sure, you should.

1 A. I would have said somewhere between 5 and 10
2 percent, if I had to take a guess. It against depends on the
3 age group.

4 Q. Well actually, Dr. Kimbrough, what you've been
5 doing in giving me those percentages of people that you would
6 expect to have those particular problems, you have in fact
7 been giving me your guesses, haven't you?

8 A. Yes.

9 Q. Yeah. And not really based upon any considered or
10 reflective analysis of the population in general?

11 A. They are based on -- partly on my experience and
12 partly on the information that we got in those Haines
13 studies. But I can't specifically remember exact numbers.

14 Q. Doctor, you couldn't even actually, as far as those
15 Haines studies are concerned, you really couldn't tell me
16 within 10, 15, or 20 percent of the results of the Haines
17 study without having them here on any particular ailments?

18 A. Well, one specific thing that sticks in my mind was
19 that about 50 percent of the population said that they had
20 skin problems.

21 Q. Is that the only thing?

22 A. I was impressed --

23 Q. I'm sorry?

24 A. I was impressed by that.

1 Q. Is that the only thing that sticks in your mind?

2 A. And that a lot of things like headaches were very
3 frequent.

4 Q. Yes, but you don't really remember the percentage
5 of the frequency, do you, ma'am?

6 A. Not the exact percentage.

7 Q. No, not within 10 percent, do you, ma'am?

8 A. Maybe not.

9 Q. I'm sorry?

10 A. Not within -- whether something is 50 percent or 40
11 percent, you just know it's high.

12 Q. What you are doing when you give me the
13 percentages, you are just guessing, aren't you?

14 A. To some extent.

15 MR. CARR: Your Honor, I think it's five o'clock
16 now and I know the lady is tired. It's six o'clock her
17 time. I'd be shooting somebody if you had me asking
18 questions, answering -- see, I'm in bad shape at five --
19 answering questions at six o'clock tonight.

20 THE COURT: Okay, we will break. Any problem with
21 starting at nine o'clock?

22 MR. CARR: None from us.

23 THE COURT: Any problem.

24 MR. HEINEMAN: (indicates negatively.)

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THE COURT: Okay, start at nine o'clock.
COURT ADJOURNED:

1 BE IT REMEMBERED AND CERTIFIED, that heretofore,
2 on to-wit: January 10, 1986, the matter as hereinbefore
3 set forth came on for hearing before the Honorable Richard
4 P. Goldenherseh, Circuit Judge in and for the Twentieth
5 Judicial Circuit, State of Illinois, and the following was
6 had of record, to-wit:

7 (The following Offer of Proof was had out of the
8 hearing and presence of the jury.)

9 THE COURT: You may be seated. Mr. Carr?

10 CONTINUED CROSS EXAMINATION

11 BY MR. CARR:

12 Q Dr. Kimbrough, we were discussing the Missouri
13 Health Study yesterday. What in your judgment is the
14 number of people that would suffer from dizziness--percen-
15 tage of people?

16 A You mean in the study or in the general popula-
17 tion?

18 Q In the general population?

19 A A lot. I don't really know.

20 Q You have no idea whatsoever as to what percentaga
21 of people you would expect to have dizziness in the general
22 population?

23 A It--no, not really. It depends on the age and--

24 Q Doctor, the general population includes all ages.

1 What percentage of the general population do you expect to
2 have dizziness?

3 A I guess almost everyone will be dizzy at some time
4 at some point.

5 Q Doctor--and you know that that's not what I'm
6 asking you about--I'm asking you in terms of the Missouri
7 Health Study. You asked that question; you put that
8 question in there for your people to discover whether or
9 not the people that have been exposed to dioxin have a
10 particular sign or symptom. What percentage of people do
11 you expect to answer in the affirmative from the general
12 population?

13 A I didn't put that question in there.

14 Q Doctor, you testified in behalf of Monsanto here
15 earlier that you and others at CDC helped to design that
16 proposal; the name of CDC is on the cover as being one of
17 the participants; I believe you said that CDC helped fund
18 it, if not fund it entirely; you are here as an expert
19 witness; you brought up the subject of the Missouri Health
20 Study in your direct testimony. I'd like--if you don't
21 take responsibility for it, who will take responsibility
22 for the study?

23 A I helped design the study, as you correctly
24 stated, but I'm not responsible for each and every question

1 on that questionnaire. When you work in a group and design
2 something, you make certain suggestions, and then you
3 finally arrive at a protocol by consensus. But, that
4 doesn't mean that I have to agree with every question that's
5 on this questionnaire or that I feel that every question is
6 important.

7 Q But, when you said you arrived at a consensus, you
8 did indeed participate in the proposal and you did, includ-
9 ing you, arrive at a consensus. Now, that question is in
10 there; and I know that you discussed it with the people
11 before it was put in there; I know you considered it,
12 you're that type of scientist; and I'm sure that you had in
13 your mind at that time what you would expect the general
14 population to reveal would be a symptom of dizziness when
15 asked such a question. Now, I'm now asking you today what
16 percentage of the population do you believe would have
17 dizziness?

18 A I believe that most people at some point have
19 dizziness, and I don't think it was a good question.

20 Q Doctor, I know; we've said that.

21 A And that was my opinion--

22 Q But that question, if you put in in expecting
23 that answer, then there would be no point in putting it in,
24 because the answer would be 100 percent. What did you

1 expect to get a normal percentage of population to answer
2 in the framework that you asked the question designed to
3 discover health effects?

4 A In my opinion it was a meaningless question. That
5 was my personal opinion.

6 Q Now, Doctor, if you expect a hundred percent of
7 the people to have dizziness to answer in the affirmative,
8 then it would be revealing indeed that only 15 percent with
9 a high risk exposure were dizzy. That would suggest to you
10 as a scientist, wouldn't it, ma'am, that dioxin has an
11 effect upon the body that would prevent a person from being
12 dizzy?

13 A No.

14 Q Oh, it wouldn't? If you expect a hundred percent
15 affirmative answers, and you only got 15 percent?

16 A It just reveals that maybe people answered the
17 question in some way where they only considered dizziness
18 of a profound dizziness, or I don't know how--it's a very
19 soft assessment of a health effect.

20 Q Doctor, that may be, but it was one of the factors
21 you used to assess health effects. And by "you", I mean you
22 as a participant in this Missouri Health Study. And, there-
23 fore, I'm obligated to ask you about it. If you say today
24 all of these questions were meaningless, then what you are

1 telling me is that your health study was meaningless and
2 that CDC participated in a meaningless event or scientific
3 endeavor, one that was designed from the outset to show
4 nothing and designed to tell the world there's nothing
5 wrong with anybody. We at the CDC, we at the Missouri
6 Public Health System, and we at St. Joseph's Hospital
7 conducted this great survey of the exposed people, and we
8 find nothing wrong with them; we find them to have no prob-
9 lems that are not existent in the general population. It
10 sounds to me like, and I submit to you that you can either
11 disagree or agree with this statement of mine, it sounds to
12 me like you created a phony study for the purpose of a
13 publicity and taking away from the effects of dioxin. Is
14 that correct, Dr. Kimbrough?

15 MR. HEINEMAN: Object to the speech, your Honor,
16 and move that it be stricken as not part of the question.
17 Improper.

18 THE COURT: It was proper--in viewing the
19 question in it's totality, it's a proper question in cross
20 examination. Overruled.

21 A I did not say that all of these questions were
22 meaningless. I just simply said that dizziness was
23 something that occurred commonly in the general popu-
24 lation, and that if you just take one question like that out

1 of context without evaluating all of the other things that
2 we did in this study that--it just doesn't mean anything.
3 And to ask me what I think the prevalence of this would be
4 in the general population really all by itself is meaning-
5 less. It depends on how persistent the dizziness is with
6 somebody that has this symptom. You then have to examine
7 them to see if there are other things wrong with them. But,
8 just by itself--people every once in a while when they get
9 up very rapidly out of bed, they may feel that they are
10 slightly dizzy early in the morning, or they may have a
11 hangover, or they may have some dizziness. So, it's
12 something that can be very common. But, in the context of
13 all of the other things, it may mean something. That's why
14 we ask these questions. And we partly ask the questions,
15 because at the moment we really don't know--that was also
16 the problem with the design of the Ranchand Study--what the
17 health effects are that might be caused by TCDD. It's like
18 throwing out a net and then seeing whether there are
19 differences and then trying to interpret that and see
20 whether there actually may be some health effects that may
21 be associated with this type of exposure. That's what
22 epidemiology of--this type of epidemiology is all about when
23 you don't do clinical trials.

24 Q Doctor, I suggest you didn't answer the question

1 that I posed to you. Was this study designed simply to
2 placate the public? That is, to let the public believe
3 that you were doing something about the dioxin problem and
4 then ask meaningless questions and come up with meaning-
5 less means taking--lumping all the laboratory findings
6 together and getting just means? Was it for the purpose of
7 letting the public believe that you were doing something
8 about the dioxin problem and then announcing the results
9 that there's no difference between the two groups exposed;
10 they all have ailments that everybody has; and therefore
11 dioxin doesn't cause any problems?

12 A No, of course not. We tried the best we could.
13 What I'm trying to explain to you that there are limi-
14 tations to what is called observational epidemiology, and
15 you are trying to misrepresent and misinterpret our work.

16 Q Doctor, what I've asked you, every question that
17 I've asked you about so far that you submitted to the
18 people, every single one that I've asked you about so far
19 you've in effect said is meaningless because you can have
20 swelling in the hands at any time in your life, because you
21 can have--everybody has headache, because everybody has
22 joint and muscle aches, because everybody has dizziness,
23 because everybody has a peripheral neuropathy. These
24 questions then, every single time you've answered you've

1 said in effect that question is meaningless; isn't that
2 correct?

3 MR. HEINEMAN: Objection, your Honor, mischar-
4 acterizes the witness' testimony.

5 THE COURT: Overruled.

6 Q Isn't that correct?

7 A No.

8 Q Which question did you say was meaningful?

9 A For instance, I said that losing weight, ten
10 pounds--over ten pounds of weight--

11 Q I do stand corrected; you did say that was mean-
12 ingful.

13 A --was important. And I never said that any of
14 these questions were entirely meaningless. They are only
15 meaningless if you take them out of context; and that's what
16 you are doing. See, you have to understand and you have to
17 evaluate all of this together rather than just saying--

18 Q Now, Doctor, before we can evaluate it all to-
19 gether, we have to arrive at what was found and the basis
20 for determining the validity of what was found. And I do
21 agree that you did say the weight loss had meaning, but all
22 the other questions thus far you've said have no meaning,
23 that they can't in effect use it to asses the health
24 conditions of these people; isn't that correct?

1 A I didn't say that they had no meaning; I said that
2 this was something that was very prevalent in the general
3 population and it was difficult to interpret. That's what
4 I said.

5 Q Well, you didn't interpret it at all?

6 A Or that's what I tried to say anyway.

7 Q You gave no significance to the fact that 36 and
8 41 percent of the people respectively had persistent
9 headaches, did you, ma'am, because you said what--a hun-
10 dred percent of the population--was that the one you said a
11 hundred percent have headaches--50 percent of the population
12 have headaches; isn't that right, ma'am?

13 A We were talking about numbers here.

14 Q Isn't that what you said?

15 A We weren't talking about headaches in general.

16 Q Isn't that what you said, ma'am?

17 A I said that headache is very prevalent in the
18 general population.

19 Q No, you said that half the people or better have
20 headaches?

21 A Yes.

22 Q Twenty-five percent of the other people have
23 swollen legs, swollen limbs, swollen fingers?

24 A That's the way it is. I mean, there's nothing I

1 can do about it.

2 Q Well, Dr. Kimbrough, I'm not asking whether or not
3 that's the way it is; I submit to you that that's a flip
4 answer that you've given to me and not one that's meant to
5 enlighten me. Dr. Kimbrough, I'm asking you specifically
6 as to the meaning of these questions and as to the meaning
7 of this study. I would appreciate if you would respond
8 accordingly. Doctor--

9 MR. HEINEMAN: Object to the speech, your Honor,
10 and move it be stricken.

11 THE COURT: Overruled.

12 Q Doctor, what percent of the population do you
13 believe will have loss of sensation in their extremities in
14 the context of the study that was conducted in the way the
15 question was posed for the purpose of using and putting that
16 question in, what percent of the people in the general pop-
17 ulation would you expect to answer that they had loss of
18 sensation in the extremities?

19 A What do you mean by loss of sensation?

20 Q Whatever you meant in the question that you put to
21 the people?

22 A I mean, are they totally numb?

23 Q I'm sorry, whatever you meant, ma'am. I don't
24 know what you meant; you were the ones that designed the

1 study, I did not; it is your question, not mine. Whatever
2 you expected to get as a response. What response did you
3 expect to get from the general unexposed population when
4 you asked that question?

5 A There will be some people who will report occa-
6 sional loss of sensation--

7 Q Doctor, to save some--are you going to give me a
8 percentage?

9 A Yes.

10 Q All right.

11 A Up to somewhere between 25 and 30 percent. On the
12 other hand, total loss of sensation and inability to feel
13 hot and cold in addition to that would be a percentage that
14 would be around five or less.

15 Q Well--and in what context did you ask the ques-
16 tion? Which one of those parameters controlled the
17 question you asked?

18 A In this case, it was the broader question, as I
19 remember. I would have to go back to the questionnaire.

20 Q So, you would expect what--50 percent of the--

21 A No, I said around 25 percent.

22 Q Twenty-five percent of the people to answer in the
23 affirmative?

24 A For the broader question, which is not total inca-

1 pacity. But, I would have to go back to the questionnaire
2 to sort out what additional questions there were to
3 determine whether we were dealing with the total loss and
4 whether you could actually gather that from the question-
5 naire. I don't remember.

6 Q And you don't have the questionnaire here, so I
7 can't really examine you on that either; can I?

8 A No. It's really a study, as you correctly stated,
9 done by the Missouri State Health Department. And that's
10 where the questionnaires and all that would be.

11 Q Doctor, if you would expect 25 percent to have
12 these kind of problems, and you only end up with 20 percent,
13 that would indicate that dioxin is doing something to the
14 nervous system as well; wouldn't it?

15 A I'm sorry, could you--

16 Q If you expected 25 percent to answer in the
17 affirmative, and you only got 19 or 20 percent, that would
18 be significant; wouldn't it, ma'am?

19 A No.

20 Q You don't think so?

21 A No. It just depends on--you see, you are asking me
22 about the general population.

23 Q Yes.

24 A And then, it depends on the age distribution and a

1 lot of other things.

2 Q Doctor, you designed this study with the age in
3 mind of that very group; did you not?

4 A Of that very group, but the general population.

5 Q You picked your group to mirror the general popu-
6 lation; did you not?

7 A No.

8 Q You did not?

9 A No, because we had a comparison group; and that's
10 why we picked--

11 Q What comparison group did you have?

12 A That's the low risk group.

13 Q The low risk group was exposed. What kind of
14 comparison group is that?

15 A Well, we didn't think they had any exposure.

16 Q Now, Doctor, you just got through telling me yes-
17 terday that if they walked on the streets of Times Beach
18 they had exposure; did you not? Didn't you tell me that
19 yesterday? Didn't you tell me that yesterday?

20 A That's what you said.

21 Q No, that's what you said, Doctor. Did you not say
22 that yesterday that if they walked on the streets of Times
23 Beach they had exposure?

24 A As far as we could determine--

1 Q Doctor, answer my question, please. Isn't that
2 what you said yesterday?

3 A Could we read back what I said yesterday?

4 Q No, because she doesn't have it. I asked you the
5 question if people walked on the streets of Times Beach and
6 were included in this questionnaire and in the low risk
7 group, and you said they were. I said, "Well, then they had
8 exposure; did they not?" And you said, "Yes, they did."

9 MR. HEINEMAN: Objection, your Honor, misrepres-
10 sents the witness' testimony.

11 THE COURT: Overruled; it does not.

12 Q Don't you recall that being asked?

13 A I would have to go back to the record. It's on the
14 record, so you can clarify it.

15 Q I know it's in the record. But, now you are saying
16 that the people had no exposure; aren't you?

17 A I'm saying that it was a low risk group, and we--

18 Q Doctor, that's not what you are saying now, that
19 they had no exposure. They did indeed have exposure in the
20 low risk group, most of them; didn't they?

21 MR. HEINEMAN: Object to the question; interpret-
22 ted the witness' answer; argumentative.

23 THE COURT: Not responsive; objection is properly
24 made; your objection is overruled.

1 A No.

2 Q Doctor, did you not say that the people in the low
3 risk group, most of them had exposure? Could you answer
4 that question directly?

5 A No.

6 Q Are you in fact answering the question saying "no"?

7 A I'm not understanding any more where we are.

8 Q Doctor, did you not testify yesterday that most of
9 the people in the low risk group had some kind of exposure
10 to dioxin?

11 A I would like to go back--

12 Q Doctor, could you answer that question directly,
13 please?

14 A As I recall the conversation, you said that they
15 walked across the street and couldn't they have had some
16 exposure walking across the street. And I said yes.

17 Q Yes. And you agreed that they lived in Times
18 Beach; did you not, ma'am?

19 A Not all of them; some of them.

20 Q All right. Most of the people lived in these
21 contaminated areas, did they not, that were in the low risk
22 group?

23 A That's the question you asked me yesterday, and I
24 said yes.

1 Q Yes. All right. And then, after you agreed that
2 most of the people in the low risk group lived in the
3 contaminated areas, I then asked you, "Well then, if they
4 just walked on the streets that were sprayed with dioxin,
5 they had exposure; didn't they, ma'am?" And you then said
6 yes; did you not, ma'am?

7 A I think we had some--

8 Q Excuse me, could you answer that question, because
9 that's exactly what I asked you.

10 A No, your question was slightly different.

11 Q How was it slightly different?

12 A In that they would have had to use the streets
13 sometimes; wouldn't they?

14 Q Yes.

15 A And I said yes.

16 Q And then, if they used the streets that were
17 exposed with the dioxin, they had exposure?

18 A They might have had exposure, yes.

19 Q Yes. And your answer was yes to that question;
20 correct, ma'am?

21 A Yes.

22 Q Isn't that correct?

23 A Yes.

24 Q All right. Then the people in the low risk group,

1 most of the people in the low risk group had exposure to
2 dioxin; did they not, ma'am?

3 A The amount of exposure--

4 Q Could you answer that question directly, Dr.
5 Kimbrough?

6 A There is something in toxicology called a response
7 curve--

8 MR. CARR: Your Honor, would you order the witness
9 to answer that question.

10 THE COURT: Doctor, you are so ordered. The
11 question was clear. You have to answer it directly.

12 THE WITNESS: Could I have the question again?

13 THE COURT: Could you read back the question?

14 (The previous question was read back by the court
15 reporter, as requested.)

16 A Yes.

17 Q Now, Doctor, the control group then that you used
18 here, most of the people in the control group had exposure
19 to dioxin; did they not, ma'am?

20 A They had negligible exposure to dioxin.

21 Q Is the answer to my question yes they did have
22 exposure, but you consider it negligible?

23 A Yes.

24 Q And most of these people that had exposure to

1 dioxin--well, you compared the group that had the exposure
2 with dioxin, what you considered a negligible exposure, to
3 people that you considered to have not a negligible expo-
4 sure; isn't that correct, ma'am?

5 A That had high exposure, yes.

6 Q Is the answer to my question this group in the high
7 risk group had significant exposure or at least not negligi-
8 ble?

9 A Yes.

10 Q Yes. Now, Doctor, what is the range of exposure
11 that you consider negligible? That is, would encompass your
12 low risk people? And what's the range of exposure that you
13 would consider not negligible? That is, significant and
14 would compose your high risk people?

15 A That is in the document that you have. And the
16 criteria that we used were, I believe, people that lived, I
17 think it was, two years in--

18 Q Now, Doctor, I want to know the level of dioxin
19 contaminant that you considered in the high risk group and
20 the level of contaminant that you considered in the low risk
21 group?

22 A The area where these people lived had spotty
23 contamination; it wasn't uniform. And the people that were
24 living or in close proximity in areas that had 200 parts per

1 billion--I guess the cutoff was really 20 parts per billion,
2 but then had levels up to almost 1 part per million in the
3 soil were the people that were in the high risk group. And
4 they would have had to live there for a period of time in
5 order to qualify for the high risk group. And they would
6 have had to be gardening and have relatively intimate
7 contact with the soil.

8 Q All right. If I understand you correctly, then,
9 your high risk group consisted of people that lived in areas
10 that were known to be contaminated of dioxin or worked or
11 had extensive soil activity in areas that were known to be
12 contaminated with levels from 20 parts per billion up to 1
13 part per million?

14 A Yes.

15 Q And your low risk group, what? Your low risk group
16 would be anything under 20 parts per billion?

17 A These were people where there actually was no
18 contamination and they had no intimate contact with soil,
19 but they might have walked across the street or they might
20 have--in other words, they were in the general environment,
21 but they had no intimate contact as far as we could
22 establish with such contaminated soil.

23 Q Well, they would have been living in areas that
24 could indeed be contaminated with less than 20 parts per

1 billion and have activity in an area that's contaminated
2 with less than 20 parts per billion of TCDD; isn't that
3 correct?

4 A No.

5 Q No?

6 A We took people that didn't have that. We were just
7 careful to call them a low risk group, because we are still
8 trying to establish their--

9 Q Doctor, you are talking in generalities, and I'm
10 trying to get specific. These people that lived in Times
11 Beach, part of whom were in your low risk group--now, in the
12 parts of Times Beach that they lived in, did they live in
13 areas that were contaminated with less than 20 parts per
14 billion? Did you select any of your low risk group from
15 people who lived in a section of Times Beach that was
16 contaminated with greater than 20 parts per billion, or were
17 they--all the ones that were from Times Beach--were they all
18 from a part of Times Beach that was contaminated with less
19 than 20 parts per billion?

20 A As far as I recall, they should not have had any
21 intimate contact with soil that was contaminated above 1
22 part per billion. That was my recollection.

23 Q Doctor, I didn't say intimate contact with soil in
24 my question; I said lived in the section that was contami-

1 nated. Are you telling me that some of the low risk people
2 could live in the section of Times Beach that's contaminated
3 from 20 parts per billion to one part per million, but if
4 they did not have intimate contact with the soil they were
5 not considered high risk and thus could be in the low risk
6 group?

7 A They would have lived in areas that had less than 1
8 part per billion.

9 Q In areas in Times Beach that had less than 1 part
10 per billion?

11 A Yes.

12 Q Then your phrase "intimate contact" really didn't
13 mean anything, did it, "intimate contact with the soil"?

14 A In order to assure more--

15 Q Could you answer that question? Did the phrase
16 that you used, "intimate contact with the soil", to describe
17 your high risk people; did it mean anything?

18 A Yes.

19 Q All right. Did you select people that lived in
20 Times Beach in areas that were indeed contaminated with 20
21 parts per billion or greater but where they had no history
22 of intimate contact with the soil or frequent working with
23 the soil or anything of that sort?

24 A Not for the high risk group.

1 Q No, I meant for the low risk group?

2 A No.

3 Q How many of your low risk group were actually from
4 Times Beach?

5 A I don't exactly know the number; we would have to
6 get that from Missouri.

7 Q Well, we've already established that. All of the
8 people from Times Beach, now, whether they lived in the--
9 strike that. Were there some streets in Times Beach that
10 were sprayed with this contaminated oil and other streets of
11 Times Beach that were not sprayed with it?

12 A Yes.

13 Q And you could use--or did you use in your low risk
14 group people who lived on streets not sprayed with the
15 contaminated oil?

16 A Yes.

17 Q Ma'am; is that correct?

18 A As far as I know, but--

19 Q Yes.

20 A But to make sure, we would have to contact Mis-
21 souri.

22 Q But, these people then in that low risk group that
23 lived on streets not sprayed with the oil could quite easily
24 have and indeed would have access to the streets that were

1 sprayed with the contaminated oil; correct, ma'am?

2 A Yes.

3 Q And they could drive on those streets or walk on
4 those streets, and dust on those streets would blow to them
5 and vapors from those streets could blow to them as well;
6 correct, ma'am?

7 A No; it doesn't volatilize.

8 Q I'm sorry?

9 A ICDD doesn't really evaporate.

10 Q Doctor, that's another side issue. We have plenty
11 of evidence in this case that it does. We've got sworn
12 testimony from Monsanto employees that it does. And we have
13 statements from others that it does. We've got lots of--
14 Monsanto has put on lots of testimony on that point already;
15 I don't want to argue. But, assume if you will, that this
16 does evaporate, that it does volatilize. Would you assume
17 that, ma'am?

18 A Okay.

19 Q And just insight, you are familiar with the work of
20 Nash and Beall; aren't you?

21 A I'm sorry?

22 Q You are familiar with the works of Nash and Beall;
23 aren't you, ma'am?

24 A Yes.

1 Q And they did find that TCDD in the air in their
2 studies; did they not, ma'am?

3 A That was never a published and a reviewed article.

4 Q It was published and a peer reviewed article. Are
5 you not familiar with it?

6 A I didn't see the peer reviewed article, no.

7 Q Doctor, back to my point anyway. The point is that
8 people that lived on the noncontaminated streets of Times
9 Beach had exposure and would use the contaminated streets of
10 Times Beach; would they not?

11 A Yes.

12 Q And they would--might visit back and forth, back
13 yards from one house with a noncontaminated street might butt
14 right up against the back yard of another house on a contam-
15 inated street; correct?

16 A I'm not absolutely sure, but it's possible.

17 Q And your low risk group then had--was it their
18 residences that had soil with less than 1 part per billion
19 of TCDD in it?

20 A Yes. I mean, the outside of the house; not the
21 inside.

22 Q So, you would take people and did include people in
23 your low risk group who lived in areas where the contamina-
24 tion was 900 parts per trillion or less?

1 A No, I didn't say that.

2 Q Well, you said you excluded anybody in the group
3 with 1 part per billion; did you not?

4 A Our analysis, at least for some of the contract
5 laboratories, the limit of detection for TCDD in soil was
6 around 100 parts per trillion. So, there could have been
7 nothing or there could have been something below 100 parts
8 per trillion in some cases. I wouldn't know.

9 Q Doctor, I thought you told us that the low risk
10 group included only those people who lived in areas that
11 were contaminated with 100 parts per billion of TCDD or
12 less?

13 A The only reason I said that was because of the way
14 the chemical analysis was set up.

15 Q Doctor, is what you are saying is that your low
16 risk people included people who lived in residences or lots
17 that could be contaminated with dioxin up to 100 parts per
18 billion?

19 A Or there could be nothing.

20 Q Or there could be nothing?

21 A Right.

22 Q Is that correct that they could have lived in
23 residences where they had up to 1 part per billion of TCDD
24 contamination?

1 A We were only quantitating the 1 part per billion
2 and slightly below that, and then beyond that, although on
3 a qualitative base we would be able to say, "Well, there
4 really wasn't any TCDD" we made no effort to quantitate it.

5 Q Could you answer the question that I asked you?

6 A I can't, only what I told you.

7 Q Doctor, I submit that you can.

8 MR. CARR: And would you read the question to
9 her?

10 (The previous question was read back by the court
11 reporter, as requested.)

12 A Because of the scientific limitations, I cannot--

13 Q Could you answer that question, ma'am?

14 A I can't really answer it. I can't give you tech-
15 nical information.

16 Q Did you hear the word "could" in that question?

17 A That's speculation.

18 Q My question is: People you selected from the so-
19 called noncontaminated areas of the TCDD to include in your
20 low risk group could have included people who had homes
21 that were--and areas around the homes--that were contami-
22 nated up to 1 part per billion of TCDD; isn't that correct,
23 ma'am?

24 A That's mere speculation, and I don't speculate;

1 I'm a scientist.

2 Q Did you hear when I said the word--Dr. Kimbrough,
3 the word "could" is in there.

4 A Yes. But, I don't want to speculate, because I'm
5 a scientist.

6 Q Well, Doctor, you are required to answer that
7 question when I ask it.

8 A I can't.

9 Q I'm sorry?

10 A I cannot.

11 MR. CARR: Your Honor, would you direct the
12 witness to answer the question?

13 THE COURT: Doctor, you have to answer the
14 question. It's a proper question.

15 THE WITNESS: If I can't give an answer that is
16 correct, then why should I answer it?

17 THE COURT: You understand the question; the
18 question is a proper question to ask of an expert witness
19 such as yourself in a court of law in the state of Illi-
20 nois; therefore, you have to answer it.

21 A No.

22 Q Doctor, do you have any--you did select people
23 that were from Times Beach; did you not, ma'am?

24 A Yes.

1 Q And there were variations of contamination in
2 Times Beach; wasn't there, ma'am?

3 A Yes.

4 Q And you identified those areas that had contami-
5 nation of 1 part per billion or above; did you not, ma'am?

6 A Yes.

7 Q And you did not identify any area of being contam-
8 inated other than 1 part per billion or above; did you not?

9 A Qualitatively.

10 Q Qualitative what? That's not an answer.

11 A That was what I was trying to explain earlier.

12 Q Doctor, could you--do you understand what I'm
13 asking you? Is it not a fact--maybe I can put it more
14 plainly--is it not a fact that you identified areas of
15 Times Beach that was contaminated from 20 parts per billion
16 to 1 part per million?

17 A Yes.

18 Q And did you then identify parts of Times Beach
19 that were contaminated from 1 part per billion to 20 parts
20 per billion?

21 A Yes. You always say "you". All of this work was
22 really done by the Environmental Protection Agency.

23 Q Well, I mean by those participants in the study.
24 The values that you used in the study, whether you did the

1 identifying or not. I'm not suggesting that you personally
2 or you at CDC did; my question said the values that you
3 all used; all right?

4 A Yes.

5 Q And I can understand your problem with that
6 question. There was identified in Times Beach--whether it
7 was by you, or by God, or by EPA, or by whoever--the areas
8 of Times Beach were identified by level of contamination;
9 were they not, ma'am?

10 A Yes.

11 Q And there was identified those areas of Times
12 Beach that had contamination from 20 parts per billion to
13 1 part per million; is not that correct, ma'am?

14 A Yes.

15 Q And you selected from those areas, as you have
16 previously stated, high risk participants; did you not,
17 ma'am?

18 A Yes.

19 Q Now, there were areas of Times Beach that were
20 identified as having contamination of less than 20 parts
21 per billion and down to 1 part per billion; isn't that
22 correct, ma'am?

23 A And down to nothing.

24 Q Could you answer the question, first of all, as I

1 gave it to you?

2 A Yes.

3 Q And did you select from the areas that were
4 contaminated, or is it possible that any of the low risk
5 participants came from the areas that were identified as
6 having contamination from 20 parts per billion down to 1
7 part per billion?

8 A As far as I know, we did not try to take anybody
9 out of that middle group.

10 Q That isn't what I asked you. I did not ask you
11 what you tried to do. What I'm asking you--because I
12 understand it was not your intention to go by this kind of
13 parameter for contamination--what I'm asking you, ma'am, is
14 it possible that some of your low risk participants were
15 taken from the group that lived in areas contaminated with
16 20 parts per billion down to 1 part per billion of TCDD?

17 A As far as I know, it's not possible.

18 Q All right. Now, did you also--or was there
19 identified at Times Beach parts of the community that had
20 contamination of 1 part per billion and below, down to
21 nothing?

22 A Most of those analysis were reported as negative
23 or trace or--and so, I don't really know.

24 Q Well, the word trace means there's something

1 there, although according to some people in this case it's
2 defined trace as being up to 10 parts per million.

3 A No.

4 Q Others in this case have identified as trace down
5 to 45 parts per billion. We have a wide range of testi-
6 mony as to what is meant by trace in this context. So,
7 you'll forgive me if I won't accept your use of the word
8 trace without knowing what you mean by it; what you mean by
9 the word trace.

10 A Something that's below 100 parts per trillion.

11 Q Something that's below 100 parts per trillion is
12 trace to you?

13 A Yes.

14 Q All right.

15 A I'm not talking about our own analysis; I'm only
16 talking about the soil analysis that the EPA did.

17 Q I understand that. Down to 100 parts per trillion
18 in the EPA analysis is trace. From what to what? One part
19 per billion down to 100 parts per trillion?

20 A That again varies with the different laboratories.
21 Some laboratories still reported positive findings in parts
22 per trillion at lower levels, and some laboratories didn't.
23 And sometimes they would report it, and sometimes they
24 wouldn't. The lower you go down with soil analysis, the

1 more difficult the quantitation becomes.

2 Q I understand that, Doctor, but I'm simply trying
3 to--

4 A So, I really am not competent to answer those ana-
5 lytical questions.

6 Q Well, I know, and I'm not asking you, ma'am. I'm
7 asking you how you use the word trace? What values were
8 included when you said these people lived in areas that had
9 trace amounts of dioxin in the soil?

10 A I cannot answer this question without consulting
11 the EPA and finding out what different laboratories did
12 where.

13 Q Well, up to what level--where would it get not to
14 be trace? At what level?

15 A As we were told, all laboratories had a--at least
16 limit of detection of 100 parts per trillion. Now, some
17 had a lower limit of detection, but since we weren't
18 concerned very much about that anyway, we didn't--

19 Q Dr. Kimbrough, I understand that. But, I'm trying
20 to pin something down here. In general, was trace used to
21 describe contamination that would be below the limits of
22 detection for any laboratory involved?

23 A I'm not clear.

24 Q Well, that's the reason I'm trying to find out

1 what you are talking about. When the word trace is used by
2 you as you've adopted it from the laboratories, do you mean
3 to say that trace is that quantity which we cannot accu-
4 rately identify quantitatively or qualitatively?

5 A Yes. And also we are not absolutely sure that
6 that's really the 2,3,7,8-tetrachlorodibenzo-para-dioxin.

7 Q So, any time you can't be sure of what it is, then
8 you--or the amount that it is, it's then--and by "you" I
9 mean the laboratory, the chemists involved, the analytical
10 chemists involved--it is then that the word trace is used.
11 Is that correct?

12 A By some laboratories, yes. I don't know what all
13 laboratories do.

14 Q But you used the word trace, ma'am. And how were
15 you using it?

16 A I was using it in that context, yes.

17 Q All right. If it can't be accurately quantitated
18 or identified as to the isomer, then it's considered trace?

19 A That's what the chemists have explained to me.

20 Q All right. But, above that--and that's the way
21 you used the word; correct?

22 A Yes.

23 Q But, above that it is not trace?

24 A Yes.

1 Q Now, the participants in the low risk group, what
2 was the--strike that. How much of Times Beach--or how many
3 streets were there in Times Beach, Dr. Kimbrough?

4 A I don't know.

5 Q How many streets--were all the streets sprayed by
6 Bliss? Did all the streets receive the contaminated oil?

7 A Not as far as I know.

8 Q Well, what part didn't?

9 A I sort of, if I remember correctly, it's sort of a
10 third maybe maybe. But, I would have to go back to the
11 maps.

12 Q All right. What you are doing now is trying to
13 resurrect you memory, and again you're--

14 A But, I just can't relate to that.

15 Q And you don't really know; is that right?

16 A Right.

17 Q Well, to get it down to what you do know is that
18 the high risk group had to live and have intimate contact
19 in soil of 20 parts per billion and above, and your low
20 risk group was taken from people who lived in areas at
21 least less than that. Is that right?

22 A Less than 1 part per billion.

23 Q All right. Now--and were people--there were more
24 than one site involved in this study--what was it; Minker

1 Stout, Quail Run--there were a whole number of places that
2 were included in your contaminated sites. From what
3 areas--we've already identified the Times Beach area. Did
4 you select volunteer participants from the Quail Run area?

5 A That's a different study that's still in progress.

6 Q Now, I'm talking about the Missouri study, the one
7 that we are talking about now. Did you take anybody from
8 that area?

9 A No.

10 Q Were the--

11 A Not as far as I know.

12 Q Were the people that you took just from the Times
13 Beach area?

14 A As far as I know it was a Times Beach area study.

15 Q All right. And none of these other--not Minker
16 Site or Minker Stout; is that right?

17 A Yes.

18 Q All right. And all of these--did all of these
19 participants in this study actually live in Times Beach
20 then?

21 A I'm not absolutely certain. There may have been
22 some controls who were slightly outside or who had moved
23 away. I mean, nobody really lived at Times Beach at the
24 time.

1 Q At the time of the study?

2 A Yes.

3 Q Well, that was inaccurately put. The participants
4 in the study were drawn all from people that had lived in
5 Times Beach--that had lived in Times Beach or near Times
6 Beach; is that correct, ma'am?

7 A Yes.

8 Q All right. And that's 100 percent of both groups
9 either lived in Times Beach or near Times Beach; is that
10 correct, ma'am, to the best of your knowledge?

11 A To the best of my knowledge, yes.

12 Q All right. And how often the people that actually
13 went on the contaminated streets is unknown to you?

14 A Yes.

15 Q All right. What you did do was try to select out
16 these people, put the--divide them in two groups, the
17 people that had the less known or less obvious or less
18 often or less intense contact with the contaminated--actual
19 contamination in one group and those with the known, more
20 intense, more active, more frequent participation in these
21 contaminated--actual known contaminated areas in the other
22 group; is that right, ma'am?

23 A Yes.

24 Q All right. Now, in the--in order to speed this up

1 a little bit, if I were to ask you the questions about how
2 many people would be expected to have persistent feelings
3 of pins and needles, and cramps, and loss of power, and
4 burning in body, and tingling in fingers and toes, would it
5 be your answer that you have no judgment that would be of
6 any significance in this case?

7 A You mean all of these things together or just--

8 Q Or independently?

9 A --or independently?

10 Q Yes.

11 A Independently I would say that 25 percent of the
12 people of the total general population might report some-
13 thing like that, but they wouldn't have all of these
14 things.

15 Q At the same--all right. What you are saying is 25
16 percent of the population would have persistent feelings of
17 pins and needles in the body, within the meaning of the
18 question and the way it was asked in the Times Beach pilot
19 study?

20 A No. Maybe 5 or 10 percent would say that, and
21 some others would say they had heart burns and--

22 Q All right. But, anyway, what I'm asking you is a
23 specific question. You say 5 to 10 percent of the people
24 would respond yes they have persistent feelings of pins and

1 needles in the body; is that what you are saying?

2 A In their hands or in their feet.

3 Q All right. And what about cramps? What per-
4 centage of people would respond that they have muscle
5 cramps?

6 A Judging from the experience yesterday, I would
7 say--strike that. At some time everybody has muscle
8 cramps.

9 Q Yes, Doctor, we've established that already. I'm
10 asking you again, in the way the question was asked by the
11 people that did the asking, and they had follow-up
12 questions to pinpoint the problem as you've suggested this
13 morning. In the context of this health study, this review
14 that went on, the interviews that went on, in the context of
15 that question posed in that way--and so I need not say it
16 again--will you assume that all of these things that I'm
17 asking you is put in that context about these symptoms and
18 findings and problems--will you do that ma'am?

19 A All right.

20 Q What percentage of people would have cramps?

21 A Persistent cramps?

22 Q I'm sorry?

23 A You mean persistent cramps?

24 Q The word cramps was used. I don't know what the

1 question--I don't have the advantage, the same advantage
2 that you have. You read the questions; I did not. All I
3 have are the results, see. So, you have an advantage over
4 me. In the way the question was asked, as I've already
5 told you, ma'am, what percentage of people would report
6 that they had cramps in the general population?

7 A Persistent cramps could be reported in 10 to 15
8 percent of the population.

9 Q And loss of power? What percentage would report
10 loss of power?

11 A That would be lower; somewhere between 1 and 5
12 percent.

13 Q And burning in body?

14 A I can't answer that; I don't know what burning in
15 body--that's one of those catch all questions where we want
16 to know--

17 Q It's one of the questions you threw in to test--
18 I'm not going to say honesty, because they were all honest
19 presumably--but to test the subjective view of their
20 health; is that right?

21 A Partly, and also to try and evaluate their under-
22 standing of the question.

23 Q All right. So, that's a question that would have
24 no--that wasn't designed to bring out a health effect; if I

1 understand what you said before?

2 A Well, that's not quite right. If they may answer
3 that, we may then go back and see what else they are, and
4 see how that all fits together. And we may want to go back
5 and examine them more if we think they haven't properly
6 answered the questionnaire.

7 Q All right. More so than the other questions, it
8 can't stand by itself; it's a more unique question than the
9 others, and you would definitely have to do other things in
10 order to give the answer to that question meaning; is that
11 right?

12 A Yes.

13 Q All right. What percentage of the people would
14 you expect to respond that they had tingling in fingers and
15 toes?

16 A I've already answered that earlier.

17 Q No, I'm sorry, but the question that was asked
18 before was persistent feelings of pins and needles in body.
19 This is a different question.

20 A Okay. That's again, the tingling and pins and
21 needles--

22 Q I didn't make the questions; don't look at me. I
23 didn't design the study. Tingling in fingers and toes.
24 What percentage of the general population would respond

1 that they had tingling in fingers and toes in your esti-
2 mation?

3 A It's the same thing as pins and needles; it's the
4 same question asked in a different way.

5 Q All right. What percentage then?

6 A And I said, it was somewhere between 10 and 15
7 percent.

8 Q All right. Now, on--in the general population,
9 what percentage of people would you expect to respond that
10 they had prolonged infections?

11 A Could be up to 25 percent.

12 Q And as far as findings are concerned in the
13 immune, how many--in the general population, what would you
14 expect to find to have marked depression in lymphocyte pro-
15 liferation?

16 A That's not very well known; and I can't answer
17 that question.

18 Q You have no judgment at all?

19 A No.

20 Q Could be anywhere from 5 percent to 100 percent?

21 A I don't know.

22 Q You have no judgment at all?

23 A No.

24 Q Would you expect 100 percent to have it?

1 A I don't know.

2 Q You've done no work in this area at all?

3 A I have read the literature, and I've reviewed it.
4 I had first got involved with that when I was dealing with
5 Love Canal, and there just isn't enough information at the
6 moment.

7 Q What you are saying then is that any figure would
8 be meaningful; but, on the other hand, any figure would not
9 necessarily have any meaning?

10 A Right, until we get more information. That's an
11 area of research that we don't have good information in
12 yet.

13 Q And so, it could be that if as much as 10 percent
14 of the population had a marked depression in their lymph-
15 phocyte proliferation that that could have real signifi-
16 cance; couldn't it?

17 A I just cannot answer those questions at the
18 moment; I just don't know enough about it.

19 Q Doctor, I submit that if you don't have any scien-
20 tific basis to dispute it, then what I say to you, anything
21 I say to you you will have to accept as true unless you do
22 have some scientific basis to dispute it. And that's the
23 reason--I'm asking this question to test whether or not you
24 in fact have any scientific basis as you say you do not

1 have. Could be, could it not, ma'am, that if 10 percent
2 of the exposed population have a marked depression in
3 lymphocyte proliferation, that could be significant;
4 couldn't it, ma'am?

5 A Lymphocyte proliferation is affected by so many
6 things that--significant for what? I mean, I don't under-
7 stand.

8 Q In determining whether or not one has had an
9 adverse health effect from exposure to a chemical involved?

10 A No.

11 Q Pardon?

12 A No.

13 Q It could not be then? It could have no signifi-
14 cance? You are saying that--

15 A You cannot answer that question in a vacuum like
16 this.

17 Q Doctor, if I ask you and you have no knowledge, if
18 I ask you it could be that there are a million planets in
19 this universe that have human beings, or humanoids, or
20 creatures like humans, you could not dispute that; could
21 you, ma'am?

22 A I sure could.

23 Q How so?

24 A I can also say that I believe that's not true.

1 Q No; but I'm not asking your belief. I'm asking
2 you is it possible, ma'am, that there are a million planets
3 in this universe that have humans on it? Is that possible?

4 A I'm saying no.

5 Q And why are you saying no?

6 A Because I don't think it's possible.

7 Q Why do you think it's not possible?

8 A Because of my experience that I've had and the
9 general knowledge that I have acquired.

10 Q All right. What is that experience and general
11 knowledge that tells you that there cannot possibly be a
12 million or a hundred or a hundred million other planets in
13 this universe that have humans on them? What is your
14 background? Is it religious, or is it scientific that
15 tells you that that's no so?

16 A Both.

17 Q From a religious viewpoint you believe that then
18 there couldn't be anybody--any place except earth that's
19 got humans on it?

20 A I didn't say that.

21 Q All right. Do you believe that there could be
22 another planet in the universe that has humans on it?

23 A I don't know.

24 Q I'm not asking you of your knowledge; again, I'm

1 testing the way you are using the words that you are using,
2 Dr. Kimbrough. Is it possible, Dr. Kimbrough, that in the
3 billions and trillions and billions of other solar systems
4 that exist in this universe, is it possible that there is
5 one single other planet out there that have human like
6 beings on them--on it?

7 A There may be another planet that may have some
8 life on it, but I don't think there would be humans.

9 Q Or human like?

10 A Human like creatures.

11 Q And now, are you giving that answer from a scien-
12 tific viewpoint or from a religious viewpoint?

13 A That's from a scientific viewpoint.

14 Q All right. Now, what in science tells you that in
15 all these countless--and they are countless--unimaginable
16 number of solar systems out there--haven't yet reached the
17 end of the--we don't know yet the end of the universe--we
18 don't even know, there might be more than one universe out
19 there. What in your scientific knowledge tells you that it
20 isn't possible that there could be another planet out there
21 with human like beings on it?

22 A You changed it slightly; you said human like.

23 Q No, I said that before, ma'am.

24 A Oh, I'm sorry; I didn't hear that. I wouldn't

1 think that the evolution in any one planet would be just
2 exactly the same--

3 Q And I carefully did not say--

4 A Okay; I didn't catch that.

5 Q Initially I did say humans, and you were correct
6 in humans. But, then I said--my next question said human
7 like.

8 A Oh, I'm sorry; I didn't hear the "like".

9 Q So--by your hesitation here and by your inquiry
10 here, are you saying that you believe it is possible that
11 there could be another planet out there that has human like
12 beings on it?

13 A That could be possible.

14 Q Is it possible there could be a hundred planets
15 out there that could have human like beings on it?

16 A I don't know.

17 Q I'm sorry?

18 A I do not know.

19 Q No, I didn't ask you whether--

20 A I mean, I can't even guess.

21 Q Dr. Kimbrough, I suggest to you that if there
22 could be one out there, as you've agreed that there could
23 be, then there could be two; couldn't there, ma'am?

24 A The earth could be flat.

1 Q Well, but we know the earth isn't flat; we don't
2 know what's out in the universe as far as life is con-
3 cerned; do we, ma'am?

4 A Not--we know a little bit, but we don't know a
5 lot.

6 Q We don't know enough to say that there couldn't be
7 human like creatures out there; do we, ma'am?

8 A No.

9 Q We don't know enough to say that there could not
10 be a hundred planets out there with human like creatures;
11 do we, ma'am?

12 A Since this is totally out of my area, I'm not
13 really qualified to discuss that; but, I think a hundred
14 would be an exaggeration.

15 Q Why, ma'am? How many millions of planets--or how
16 many millions of solar systems would you have to have to
17 produce one with atmosphere and conditions like we have on
18 the earth?

19 A I don't know.

20 Q You haven't the vaguest idea, and nobody else has,
21 ma'am. Nobody knows. There could be, it's possible that
22 there could be billions of solar systems out there that
23 have a planet that goes around that sun the same way this
24 earth goes; isn't that possible, ma'am? Could be billions

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1 of such out there?

2 A If you--

3 Q On the other hand, there could be none; isn't that
4 right, ma'am?

5 A There could not be any other solar systems.

6 Q No solar systems with planets that have the same
7 conditions that cause human life to evolve on this planet?

8 A Yes.

9 Q There could be billions of such planets; couldn't
10 there, ma'am?

11 A Billions?

12 Q Billions of such planets out in the countless
13 universe?

14 A That's--I don't think so.

15 Q Why not, ma'am?

16 A Some of those creatures might have made contact
17 with us by now.

18 Q You are saying might have. Again, they might not
19 have as well; is that right, ma'am?

20 A I would think they would have.

21 Q Doctor, what makes you think that they would have
22 evolved any more rapidly than we?

23 A Because I'm an optimist.

24 Q Doctor, I'm not talking about your optimism; I'm

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1 asking strictly--and I know this gets to be ludicrous--
2 strictly in possibilities, ma'am. What it boils down to,
3 what I'm saying is, it is possible, even though you might
4 say that it's not likely, it is possible that there are
5 hundreds of planets out there, billions of planets out
6 there with human like creatures on them; isn't that right,
7 ma'am?

8 A I have problems making these sweeping statements,
9 because they don't mean anything.

10 Q Well, I know they don't mean anything, but that's
11 the reason I'm asking the question, ma'am, to establish
12 that what you've said about your marked depression in lym-
13 phocyte proliferation. If you have no knowledge as to the
14 significance of it, then you can't say that it does not
15 have significance, if you have no knowledge one way or the
16 other? That's the whole point of this exercise, Dr. Kim-
17 brough.

18 A I didn't say it had no significance; I said that
19 there were many things--I was trying to say that there are
20 many things that effect the immune system, that at the
21 moment we have not sorted that out and we need to do more
22 work in science--

23 Q And that's the reason I asked you, ma'am: it is
24 possible, is it not--and I used the word "possible" ma'am--

1 it is possible that a 10 percent depression in lymphocyte
2 proliferation may be? And I used two words--it's possible,
3 might be; and I said it may have significance in showing
4 dioxin exposure. Now, isn't that possible, ma'am?

5 A It's also possible that something entirely
6 different could--

7 Q I agree. I agree, and have no dispute on that
8 point. One is possible; the other is possible; isn't it,
9 ma'am?

10 A Well, if one is possible, then the other may not
11 be possible.

12 Q No, both could be possible. There could be a
13 thousand possible solutions to the problem. When in fact
14 there's only one real solution, there are a thousand--until
15 we identify it, there are a thousand possible solutions.
16 In this particular case, ma'am, do you not agree that if
17 one is possible, the other might also be possible? Perhaps
18 not as likely, but possible?

19 A That's putting it a little too loose. I think by
20 carefully reviewing these people's records and the find-
21 ings, doing some follow-up, and doing some other things, we
22 could limit down the possibilities.

23 Q Yes; but that hasn't been done, and I'm using--has
24 it, ma'am?

1 A No.

2 Q I'm obligated here to prove this case with what
3 we've got; not what we might have someday; but what we have
4 at this time. Could be absolutely wrong; could be a
5 thousand percent wrong. But, I'm using the tools that we
6 have. And I'm suggesting to you that a marked depression
7 in lymphocyte proliferation might have significance in this
8 case; might it not, ma'am?

9 A It might.

10 Q Yes. All right. Now, Doctor, how about the T4:I8
11 ratio being less than one. What percent of the population
12 would have that ratio of less than one of the general popu-
13 lation?

14 A We're just going to go through the same thing. It
15 all goes together. I don't know.

16 Q Would your answer be then that you don't really
17 know the significance of that related to this case, but it
18 might possibly have significance? Is that the answer to
19 the question?

20 A Yes.

21 Q All right. What about porphyrins, ma'am? I know
22 that you've worked with porphyrins. What percent of the
23 population would you expect to have chronic hepatic
24 porphyria as defined and used in the Missouri Health Study?

1 A Now, there is a human disease called porphyria
2 cutanea tarda--

3 Q Now, Doctor, I asked the question specifically,
4 chronic hepatic porphyria as used in the Missouri Health
5 Study that you helped design? I don't want to get into all
6 kinds of porphyria that there might be; I'm asking you a
7 specific question on the study you designed. What percent
8 of the general population would you expect to have chronic
9 hepatic porphyria?

10 A The disease, which is porphyria cutanea tarda--

11 Q Doctor--Doctor, did you understand my question?
12 I'm talking about the chronic hepatic porphyria defined,
13 discussed, identified, used in the Missouri Health Study
14 which you helped design. What percent of the general
15 population would you expect to have chronic hepatic
16 porphyria?

17 A Since we seem to have difficulties with semantics,
18 I'm trying to explain what I mean by my percentages.

19 Q Doctor, I don't want an explanation; all I want
20 for you to tell me is in this study that you designed--that
21 you helped design--and I know you had a great deal of input
22 on the porphyria section; did you not, ma'am?

23 A Yes.

24 Q In that study, ma'am, in the way you used the term

1 chronic hepatic porphyria, the way you defined it then,
2 the way you took it then, the tables you used and every-
3 thing you did in that study, what percent of people did you
4 expect to find had chronic hepatic porphyria in the general
5 population?

6 A What I mean by chronic hepatic--

7 MR. CARR: Your Honor, would you direct the
8 witness to answer the question as I've posed it.

9 THE COURT: Doctor, you have to answer the
10 question, Doctor; it was directly posed; it did not call
11 for an explanation of the term.

12 A The percentage would be very low; it would be one
13 in a thousand or less.

14 Q Doctor, how much time did you all spend at least
15 that you are aware of in discussing what kind of parameters
16 to put up in your tests dealing with chronic hepatic
17 porphyria?

18 A I don't understand the question.

19 Q How much--what I mean is how much time did you
20 devote to that--to setting up or designing that as part of
21 your study?

22 A We started several years ago to set up a method,
23 and we've done a lot of work in that area with other pop-
24 ulations, and so it is something that we now routinely do.

1 Q All right. And as far as the Missouri Health
2 Study is concerned, then, you had a great deal of back-
3 ground when you designed and suggested and had made the
4 porphyria protocol part of that study; is that correct?

5 A Yes.

6 Q It wasn't done as an off-the-shelf kind of thing;
7 it was done after careful and deliberate thought?

8 A Yes, and also because we put time into developing
9 the hot pressure liquid chromatology method.

10 Q All right. And as a pathologist, you were well
11 versed in the various kinds of porphyria?

12 A Yes, to some extent.

13 Q Yes. And you knew all about Doss and Strik and
14 their work; did you not, ma'am?

15 A Yes.

16 Q Doctor, what percent of the general population
17 would you expect to come up with the results that would not
18 be typeable in your porphyria exam as far as the type of
19 porphyria they may have?

20 A There are--all the porphyrias that would not fit
21 into this classification; is that--

22 Q No.

23 A I don't understand the question.

24 Q No. All right. In your Missouri Health Study,

1 you put down the number of people that had various kinds of
2 lab results and you determined whether or not that was or
3 was not an indication of hepatic porphyria--or chronic
4 hepatic porphyria. All right?

5 A Yes.

6 Q There was a category that you put, not in the
7 normal--you had two sections, you had the normal and you
8 had the chronic hepatic porphyria section. And then you
9 had an untypeable section. Do you follow me? You had
10 normal, you had chronic hepatic porphyria, and then you had
11 untypeable.

12 A Yes.

13 Q What percent of people do you expect to be--to
14 fall into that untypeable classification?

15 A There are--there's probably about a third of the
16 population that has some variance from the rest of the
17 population. We feel that it's a variance in the general
18 population which has nothing to do with disease.

19 Q That isn't what I asked.

20 A Is that--

21 Q Probably not, but I think it would be so long to
22 get an appropriate explanation to you so that I could get
23 an answer that would fit my needs; I think it would prob-
24 ably be best if I use this time for something else. And do

1 let me pass on to something else, Doctor. You have
2 testified here yesterday as to the means and methods by
3 which you could be used to testify in other cases. And you
4 mentioned that you were in one case in Missouri, did you
5 not, by way of deposition? To refresh your memory, you
6 gave a deposition, did you not, in the case of Patricia
7 Drinkard, Paul Drinkard, Lori Platt, and Andrea Platt
8 versus Independent Petrochemical Corporation, which was on
9 file in the Circuit Court in the City of St. Louis, State
10 of Missouri, case number 782-559. You gave such a depo-
11 sition; did you not, ma'am?

12 A Yes, I guess so.

13 Q You didn't mention it, but--

14 A I'm sorry, but--

15 Q That's all right. You see, this is your depo-
16 sition, deposition of Renate Kimbrough.

17 A Yes.

18 Q And it took place on the 18th day of February
19 1983, as a matter of fact, just 12 days after this case
20 started. No--did we start in '83 or '84?

21 THE COURT: We started February of '84.

22 Q All right. Your deposition was given a year,
23 then, before this case started.

24 A Okay.

1 Q All right. Do you remember that now?

2 A Yes. There were a number of things we went round
3 and round about it, but I'm not really quite sure--

4 Q No, all I want to establish is that you gave an
5 evidence deposition in that case.

6 A Yes; okay.

7 Q Did you not, ma'am?

8 A Yes.

9 Q And you gave an evidence deposition in the case
10 filed in the Circuit Court of Pike County, Missouri. You
11 gave it a long time ago. That was the 28th of February
12 1975. Did you not, ma'am? And I could forgive you for
13 forgetting that one.

14 A Yes.

15 Q That was the case of Frank J. Hampel and Judy
16 Piatt versus Russell Bliss and a whole bunch of others, and
17 some chemical companies. Do you recall that?

18 A Yes. Now I remember the lawyer's name again, too.

19 Q That's all right. And that was also an evidence
20 deposition that you gave; was it not?

21 A Yes.

22 Q You also gave an evidence deposition in the case
23 of--

24 A Evidence deposition means what?

1 Q Will be read in the proceeding that follows with-
2 out your coming in person like you have here, for instance?

3 A Okay.

4 Q In other words, you give your testimony in Atlan-
5 ta, Georgia, as you did in the two cases I've just talked
6 to you about--

7 A Yes.

8 Q And it's subsequently read at the trial.

9 A I don't know that; you see, that would be some-
10 thing you would have to talk to--

11 Q Okay; I'll just eliminate the word "evidence" for
12 now. And you did--well, I'll have to say evidence
13 deposition, because that's what it was--you gave an
14 evidence deposition in the case of Jerry Russell Bliss
15 versus Fred Lafser, State of Missouri, Number HW 81-1A, did
16 you not, ma'am, on December 8, 1982?

17 A Yes.

18 Q Is that correct, ma'am?

19 A Yes.

20 Q All right. Now, in that--in the situation of the
21 Missouri Health Study, there is such a thing as a--strike
22 that. What health effects do you expect to come from long
23 time and or low dose exposure to TCDD, if any?

24 A There may not be any; that's--

1 Q Well, there may be some?

2 A --that's what we hope.

3 Q Well, what are the signs that may be present, or
4 is it simply you do not know what it may be?

5 A We don't know.

6 Q And the reason you don't know, ma'am, is why? Why
7 don't you know what the effects of long term low dose expo-
8 sure to dioxin may be in human beings?

9 A Two reasons. One is that different animal species
10 respond quite differently; we don't know where humans are.
11 And then, the only experience that we've had has been in
12 workers that have been exposed to very high doses and often
13 over short periods of time. And even there, any chronic
14 health effects that have been reported, if you really
15 examined all of that information, it isn't very clear, and
16 some of it may actually be chronic disease that you get
17 with aging. And so, it's--that's also because of that.
18 And it's very difficult to design epidemiology studies, and
19 you have to sort of throw out a big net and then try and
20 see whether there are any differences between that and a
21 comparison group. The things that we have concentrated on,
22 partly because of the animal data, has been the sensory
23 nervous system, the immune response, and the porphyria
24 cutanea tarda. And there are things in the workers with

1 acute exposure that have had some general malaise, and so
2 we have included all of those things, too.

3 Q Well, to get it back to what I thought I was
4 asking, is that you have not reached--and by you I mean the
5 scientific and medical world in general--you have not
6 reached yet a state where you can be absolutely sure as to
7 what the chronic health effects in humans will be because
8 of, one, the human life span is so much longer than the--
9 most of the animals that you tested and studied, and there
10 there isn't yet a sufficient history length of time to come
11 to any results positive--or absolutely sure results in the
12 case of long time low dose exposure in the case of human
13 beings?

14 A Yes. The only thing is chloracne.

15 Q And chloracne may be present in some instances,
16 and it may not be present in others; isn't that correct?

17 A That's a very complicated question. Most people
18 that have had--most workers that have had exposure to high
19 concentrations have developed chloracne.

20 Q Yes. But you are talking about a high concentra-
21 tion; aren't you? My question is aimed at chronic long
22 term low dose exposure to dioxin. Ma'am?

23 A Could I get the question again?

24 Q Well, you said chloracne.

1 A Yes.

2 Q And when I asked you what were the findings from
3 long term low dose exposure, in that general area, you said
4 chloracne was one of the things. But, in point of fact,
5 the chloracne that you are familiar with had been acute
6 high dose exposure to dioxin; isn't that correct, ma'am?

7 A Yes.

8 Q Yes. And whether--and chloracne is not--let me
9 ask it another way as well. Even in those instances,
10 chloracne is not a constant finding; is it, ma'am?

11 A In most people it is; not in everybody, but in
12 most people.

13 Q My question is: you know a number of cases where
14 they didn't have chloracne, for instance; don't you, ma'am?

15 A They are rare.

16 Q Pardon?

17 A They are rare in those situations.

18 Q But, my question is: you know of cases in Europe--
19 you know of cases in this country where people working side
20 by side in the same plant, the one guy gets chloracne and
21 his fellow right next to him doesn't get chloracne. You
22 know that; don't you, ma'am?

23 A As far as the 2,3,7,8-tetrachlorodibenzo-para-
24 dioxin is concerned, there were a few workers, maybe two or

1 three, in the Spulana factory that Dr. Jirasek reported
2 that didn't have any chloracne.

3 Q Yes, but as a matter of fact, what happened there,
4 as you pointed out in one of your statements or papers,
5 something that I read, they just really studied the people
6 that had chloracne. Those were the ones that they thought
7 were exposed, and those were the ones they went after;
8 isn't that right?

9 A That's true.

10 Q So, actually what that study was and what so many
11 of these studies were, including the Suskind 49 studies,
12 these are studies of people that have chloracne; isn't that
13 correct?

14 A Yes.

15 Q And they are not studies of people who had
16 exposure to 2,3,7,8-tetrachlorodibenzo-para-dioxin per say;
17 are they, ma'am?

18 A They also had exposure to TCDD.

19 Q Who?

20 A The people with chloracne had exposure to TCDD.

21 Q Right. I didn't mean to say they did not.

22 A Yes.

23 Q What it was a study of--what most of these studies
24 if not all of the studies was were studies of people who

1 were exposed to 2,3,7,8 ICCD and got chloracne; isn't that
2 correct, ma'am?

3 A Yes.

4 Q They were not studies of people who were exposed
5 to 2,3,7,8 ICCD period; were they, ma'am?

6 A No.

7 Q No.

8 THE COURT: Is this a point for a short break?

9 MR. CARR: Sure, your Honor.

10 THE COURT: Okay. We'll take a short break at
11 this time and resume testimony.

12 (At this time a short break was taken.)

13 (The following proceedings were had out of the
14 hearing and presence of the jury.)

15 THE COURT: Mr. Carr?

16 Q Doctor, on the point that we were discussing on
17 the effect of long term low dose exposure, there's been a
18 population that has been considered to fall into that
19 category, but in fact that have not, and that's the Seveso
20 group of people; isn't that correct, ma'am?

21 A They have not had long term exposure?

22 Q Right. They've had low dose exposure, but not
23 long term?

24 A They had initially a relatively high exposure, and

1 then they really haven't had long term exposure.

2 Q Well, what was the extent of the exposure that you
3 would call high initially?

4 A The exposure to the cloud and the vegetation
5 during the first two weeks after the accident.

6 Q I understand that. But; I want to know the level.

7 A I'm sorry.

8 Q The level of contamination?

9 A I don't know what the contamination in the cloud
10 was; on the vegetation there are some measurements of 15
11 parts per million.

12 Q And there were--are you familiar with the studies
13 that--the tests that were performed later on showing--I
14 think there's exhibits in this case which if I had time I
15 could pull it out and show you--but are you familiar with
16 the studies that showed that the contamination in general
17 was much less than that, down into the low parts per
18 billion or even down in the parts per trillion?

19 A In the soil measurements--or there are three
20 zones; and except for Zone A, all of the soil measurements
21 in Zone B and Zone C were in parts per trillion.

22 Q Yes. And the people living in those areas,
23 including some of them in Zone A--Zone A, if I remember
24 the map, was that small area that was in the direct path of

1 this cloud, and I've seen the drawings that I have, like a
2 large long teardrop of water. That would be the Zone A
3 that you are speaking about?

4 A It was adjacent to the plant.

5 Q Yes.

6 A Now, recently they have redefined the zones, but
7 I'm talking about the original zones.

8 Q Actually, as far as those people are concerned
9 then, they did not actually have long term exposure; did
10 they, ma'am?

11 A The people that lived in B and C, no.

12 Q Well, in A, B, and C. None of the people in
13 Seveso had what's considered long term exposure; did they,
14 sir--ma'am?

15 A No.

16 Q Is your answer to my question yes, that's correct,
17 they did not have long term exposure?

18 A Yes, to--

19 Q I'm sorry?

20 A To levels that would be important.

21 Q By your definition of importance?

22 A Yes.

23 Q Well, none of those people would have those
24 levels. What do you consider important; what levels?

1 A There is some--there is some contamination in the
2 part per trillion range.

3 Q Well, but you don't consider that important; do
4 you?

5 A No.

6 Q Well, I want to know what you do consider impor-
7 tant. In what range?

8 A We have developed this paper that gives you all of
9 the rational on soil levels.

10 Q I understand the rational; but, I'd like to know
11 what level of contamination is it that you consider impor-
12 tant?

13 A We said that anything below 1 part per billion.

14 Q I know what you said, ma'am, but my question is
15 what do you consider important level of contamination?

16 A Below 1 part per billion is negligible.

17 Q And do you mean, then, that exposure to--or strike
18 that--contamination above 1 part per billion is important,
19 and contamination levels below 1 part per billion are not
20 important?

21 A Levels below 1 part per billion are negligible.
22 They are not important in residential areas.

23 Q Okay. Then, the answer to the question is they
24 are not important if they are below 1 part per billion?

1 A In residential areas.

2 Q Well, in any other area are they important?

3 A If you had pastures where cattle was grazing, you
4 might have to go down to lower levels. It depends on the
5 circumstances.

6 Q What about lakes or ponds where fish are located,
7 where you have drain off into those ponds--run off?

8 A That is not really my area. This is the responsi-
9 bility of the Environmental Protection Agency, and I have
10 not evaluated that.

11 Q Doctor, you have evaluated and you do know,
12 however, that if one eats fish contaminated, that his
13 levels of dioxin--that one can accumulate in one's body
14 levels of dioxin from eating just that contaminated fish.
15 You know that; don't you, ma'am?

16 A Yes.

17 Q And you can get that significantly high concentra-
18 tions simply because of eating the contaminated fish and
19 absorbing the dioxin from that fish; correct, ma'am?

20 A It depends on the level of contamination.

21 Q Dioxin accumulates in the body; doesn't it, ma'am?

22 A Yes.

23 Q And any time you are exposed to dioxin, you--and
24 you ingest it, absorb it--you are accumulating some of

1 that dioxin; aren't you, ma'am?

2 A Yes.

3 Q Because of it's half-life?

4 A Yes.

5 Q And every day if you are exposed in a fashion that
6 you will be ingesting or taking into your body portions of
7 dioxin, you are accumulating some part of that which you
8 are ingesting or taking in daily; isn't that correct,
9 ma'am?

10 A Yes.

11 Q And, depending upon it's half-life, you would
12 continue to accumulate until such time as you reach a point
13 or the amount that you are excreting or disposing of on a
14 daily basis becomes equal to the amount that you are taking
15 in--equal to or greater than the amount that you are taking
16 in on a daily basis; isn't that correct, ma'am?

17 A Yes.

18 Q And that to a great extent depends upon the half-
19 life of the dioxin?

20 A Yes.

21 Q In human tissue; isn't that right?

22 A Yes.

23 Q And all during that period of time, whether you
24 are exposed to it in the air, in the soil, in the dirt, in

1 liquid, in fish, in beef, in chickens, and however you
2 might be getting it into your body, you are accumulating
3 dioxin; aren't you, ma'am?

4 A Yes.

5 Q And you'll accumulate it until you reach a point
6 where your excretion becomes greater than your intake;
7 isn't that correct, ma'am?

8 A Or equal to.

9 Q Or equal to.

10 A Greater or equal to.

11 Q Equal to or greater than. All right, ma'am.

12 That's one reason that the F.D.A. or whoever made the rules
13 on eating fish said there's a certain level of fish that
14 you should not eat; correct, ma'am?

15 A Yes.

16 Q Because of the bio-accumulation effect?

17 A Yes.

18 Q All right. And of course, that's a reason that
19 you at CDC set the level in soil, again, because of the
20 bio-accumulation factor?

21 A Yes.

22 Q Now, a lot of this depends upon half-life in
23 humans then. What is the half-life of humans that you
24 believe to be the appropriate half-life in fat tissue in

1 humans?

2 A There is really not enough information. There's
3 one scientist who took some TCDD--

4 Q Dr. Froyer. We know that.

5 A Right; I heard that story, too. And that's all I
6 know.

7 Q Well, you know that the volunteer wasn't described
8 as a scientist, but in the abstract that came out, it was a
9 volunteer took some radiomarked TCDD and measured the half
10 life of that TCDD in his tissue; correct, ma'am?

11 A Yes.

12 Q And that it was concluded by Poiger and Schlatter
13 at that time that half-life was right at four and a half
14 years, five years--what is it; I forget now?

15 A Something like that.

16 Q Yes. And do you have any reason to doubt the
17 validity of their experiment and the result?

18 A No, except that it was a single dose and just one
19 person.

20 Q That I understand. But, my question is: do you
21 have any reason to doubt that validity of that single
22 experiment with that single person?

23 A No.

24 Q And you used and relied upon works and experiments

1 of Poiger and Schlatter in other instances; have you not,
2 ma'am?

3 A Yes.

4 Q For instance, in your book--in your health assess-
5 ment document, I noted that you relied upon a number of
6 Poiger and Schlatter results; did you not, ma'am?

7 A Yes.

8 Q Now, dioxin is by consensus, and by yourself as
9 well I'm sure, the most potent or one of the very most
10 toxic--I shouldn't say potent--toxic chemicals made by man;
11 isn't that correct?

12 A Yes.

13 Q And, however, it is not the most toxic substance
14 or material known; is it?

15 A No.

16 Q The botulina toxin is more potent than dioxin; is
17 it not, ma'am?

18 A Yes. And there are some chemical war gasses.

19 Q Chemical war gasses that I guess the rest of us,
20 we don't know about yet; correct?

21 A Yes.

22 Q All right. But, the difference between the
23 botulina toxin and dioxin is that the botulina toxin will
24 not bio-accumulate; will it, ma'am?

1 A Yes.

2 Q Is that correct, ma'am?

3 A Yes.

4 Q So, the toxicity of dioxin can be greatly expanded
5 and magnified over and above the botulina toxin toxicity
6 because of the difference? That is, one accumulates in
7 the body and the other--that is, the botulina toxin--does
8 not accumulate in the body; isn't that correct, ma'am?

9 A That doesn't necessarily follow. It's just a
10 difference. One causes chronic toxicity, might cause
11 chronic toxicity, where the other might not. There is
12 also, in humans at least, a protective mechanism in that
13 they--the human--while he has a lot of trouble excreting
14 it, stores it away in fatty tissue where it is not as
15 effective on the cells.

16 Q But, that's--most of that is speculative; isn't
17 it, ma'am?

18 A Yes and no. Monkeys, for instance, and also
19 guinea pigs have very little fatty tissue, and they are
20 extremely sensitive to these types of compounds. And that
21 may be one reason why they are.

22 Q All right. That's not an important point that I
23 really want to pursue. You made a mention about dioxin in
24 the half-life in soil. It is a fact, isn't it, ma'am, that

1 as far as when we're talking about half-lives, that in the
2 soil dioxin doesn't readily decay in the environment and
3 it's extremely persistent in soil?

4 A It's extremely persistent wherever it does not
5 come in contact with UV light.

6 Q Well now, Doctor, that's not exactly correct.
7 It's got to be in contact with UV light and it has to be
8 associated with some kind of solvent as well; does it not,
9 ma'am?

10 A It has to have a hydrogen donor.

11 Q Yes.

12 A But, they are also in the environment.

13 Q Doctor, didn't Crosby point out that there has to
14 be this solvent as well?

15 A No. I mean, I don't know what Crosby pointed out,
16 but you need to have a hydrogen donor; any hydrogen donor
17 will do.

18 Q Didn't he study half life in soil, and haven't you
19 agreed that half life in soil is anywhere from what--one
20 year to ten years?

21 A Crosby published a paper where he, I think,
22 measured the degradation on vegetation which was exposed.
23 And we may be talking about different papers.

24 Q May well. But, I want to talk about the soil and

1 not the vegetation anyway.

2 A I don't know about Crosby's work in soil.

3 Q All right. And, Doctor, you have stated in the
4 past, have you not, that the half-life in soil is what?
5 Ten years?

6 A I've estimated that; nobody really knows.

7 Q Yes. And is that still your best judgment that
8 the half-life in soil, or you best estimate I should say,
9 is ten years?

10 A Yes, in soil that is not exposed to UV light.

11 Q Well, an exposure to UV light takes precious
12 little shading or a very thin layer of soil to prevent that
13 sunlight from reaching it; doesn't it, ma'am?

14 A Yes.

15 Q And nobody knows yet what happens to the dioxin
16 vapor in the air--you don't agree that it turns into
17 vapor--but if it does turn into vapor in the air, nobody
18 knows what happens to it in the sunlight in that form; do
19 they, ma'am?

20 A I don't know.

21 Q And others have testified in this case on that
22 point. You have nothing to add, I take it, to what they've
23 said on the point; isn't that correct?

24 A Well, I don't know what they've said.

1 Q Well--

2 A But, I don't know anything about it.

3 Q You don't know anything about the subject?

4 A Yes.

5 Q Is that correct, ma'am?

6 A I'm sorry; is what correct?

7 Q That you don't know enough about the subject of
8 the resistance or life of dioxin in the soil or in the air
9 to make--to give us an expert opinion on the view on the
10 issue?

11 A That's correct.

12 Q All right. Now, Doctor, to sum up your knowledge
13 as to the long term low dose exposure to dioxin--well,
14 first of all, you consider low dose to be in the lower
15 parts per billion, do you not, ma'am, and below? Or is it
16 fair to say that you consider anything above one billion a
17 high dose exposure--one part per billion?

18 A This is in soil, or where people ingest it, or--I
19 mean, what--

20 Q Well, whatever? Well, in soil, for instance?
21 Anything above 1 part per billion in soil, do you consider
22 that to be high exposure?

23 A No.

24 Q All right. What is the level of contamination in

1 the soil that you would consider to be high exposure?

2 A That would depend on the circumstances.

3 Q In a residential area where people will be exposed
4 to it?

5 A I would call anything--anything below 1 part per
6 billion I would not be concerned about at all. That's one
7 category. The next category of low exposure--and you were
8 asking me about low exposure or high exposure?

9 Q High exposure.

10 A High exposure. Then, anything above 100 parts per
11 billion I would consider high exposure.

12 Q In the soil? If the soil is contaminated with
13 that?

14 A Yes. And that would be of great concern. Any-
15 thing above 20 would be in sort of an intermediate range,
16 between 20 and 100, as far as I'm concerned.

17 Q All right.

18 A Now, there are other variables. In Missouri, and
19 that's why we were always--we always said that whatever we
20 evaluated was for Missouri. In addition to the 2,3,7,8-
21 tetrachlorodibenzo-para-dioxin, this material was also
22 mixed in oil. And it's possible that that would increase
23 its biodegradability versus other areas where you would
24 not have this addition of the oil.

1 Q All right. You mentioned from 20 to 100 is an
2 intermediate zone. And from 20 parts per billion and
3 below, down to 1 part per billion, what do you consider
4 that zone?

5 A In a residential area with small children, I would
6 also be concerned. In an industrial site, depending on the
7 situation, and depending on the type of exposure--and of
8 course, all of this is explained in our paper--

9 Q I know.

10 A I would not--you might not have a lot of concern,
11 and your actions might be different.

12 Q I'm talking about residential zones right now.
13 And from 1 part per billion and below is what you consider
14 low dose or--I'm sorry, not low dose, but exposure--well,
15 yes, I do mean low dose exposure. Correct; ma'am?

16 A I consider that as of no concern.

17 Q And you consider--well, all right. You consider
18 it of no concern. But, you have no knowledge as to what
19 the long term health effects will be from exposure to
20 levels of 1 part per billion and below; isn't that correct,
21 ma'am?

22 A Based on the knowledge that I have, and based on
23 animal experiments, and my own experience in the area of
24 toxicology, I don't think there will be any health effects,

1 or I don't think there are any health effects.

2 Q That isn't really what I asked you. You don't
3 know the health effects from that kind of exposure; isn't
4 that correct, ma'am?

5 A Yes, I do; they are none.

6 Q I'm sorry?

7 A I do. There are none.

8 Q There are none?

9 A Yes.

10 Q Where have you had human long term exposures to low
11 doses to allow you to come to that conclusion, ma'am?

12 A The general population has been exposed to low
13 doses.

14 Q And how do you know that the general population
15 hasn't been effected by it?

16 A The health of the general population--the health
17 of the general population seems to be improving. We live
18 longer now and our life expectancy is increasing.

19 Q Doctor, that doesn't mean that our health is
20 improving. You can have--you can live 80 years with pains
21 in the back; you can live 80 years with joint pains; you
22 can live 80 years with having colds; you can live 80 years
23 having headaches; you can have all kinds of health effects
24 and have long life; can you not?

1 MR. HEINEMAN: Object to the question as argu-
2 mentative, your Honor.

3 THE COURT: Overruled. It's proper cross.

4 A These sorts of health effects have always been
5 there. They've been there before.

6 Q There's no doubt about that, ma'am. But, if they
7 are increased or exacerbated by exposure to dioxin, that
8 still is a health effect caused by dioxin; is it not?

9 A They are not increased or exacerbated.

10 Q How do you know that?

11 A If you compare what data we have from years in the
12 past, and I've sometimes tried to do that, to what we know
13 now, there either is no difference, or there is something
14 like the increase in cancer of the lung because of smoking,
15 or there are declines in health effects.

16 Q Well now, Doctor, you are talking about signifi-
17 cant health effects when you talk about lung cancer. I'm
18 talking about just general health. Let me put it a differ-
19 ent way. Isn't it a fact that whether or not there will be
20 chronic health effects is not known yet, because it takes a
21 long time for such a health effects to show up, and because
22 of the life span in humans is very long?

23 A If you are talking about the low level background
24 contamination in our environment, we have now had that, as

1 far as commercial products are concerned, for--

2 Q Pardon?

3 A As far as commercial products are concerned, for
4 at least since right after the Second World War. And as
5 far as the fire and combustion and incinerators are con-
6 cerned, we've had that longer than that.

7 Q Doctor, would you answer my question?

8 A There has been enough long term exposure that,
9 this low level long term exposure, that you could make some
10 judgment.

11 Q And when did you make that judgment, ma'am? How
12 long have you had that opinion?

13 A I've had that opinion for several years and for
14 some--for quite a number of years.

15 Q How many would that be?

16 A Five or six, maybe. I don't remember. There's a
17 paper that shows the contamination with TCDD in different
18 areas of sediment, I think in Lake Michigan, which give us
19 also some information about some of this background contami-
20 nation.

21 Q No; but, you've had this opinion as to the long
22 term health effects--chronic health effects--for at least
23 five years or seven?

24 A I have started looking at that in connection

1 with--in the publications--

2 Q Can you answer--

3 A I don't quite know the year, you see. When the
4 papers came out about the incineration, and also this paper
5 about the various levels of TCDD that were found in the
6 sediment in Lake Michigan where they found an appreciable
7 increase over a period of time and then tried to relate
8 that to the period when the sediments were put down.

9 Q Did you have that opinion at least by the time you
10 wrote your article "Health Complications of 2,3,7,8-tetra-
11 chlorodibenzo-para-dioxin Contamination in Residential
12 Soil"; you and Falk and Stehr wrote?

13 A Yes.

14 Q You had that opinion at that time?

15 A After--

16 Q Could you answer that question?

17 A Yes.

18 Q And that--published that in '84. Did you have
19 that opinion in--are you talking--when you talk about your
20 sediment in Lake Michigan, you are talking about the
21 Kingston Ottawa Study?

22 A I think that's the study; I'm not--

23 Q With the fish?

24 A I--

1 Q Now, Doctor, in your deposition that you gave in
2 1982, did you have that opinion then?

3 A I probably did; I don't remember whether it came
4 up.

5 Q Well, let me read you what you answered at that
6 time. And this is--I'm giving it to you as part of your
7 answer--

8 MR. HEINEMAN: May I see it, please?

9 MR. CARR: In a moment.

10 Q "Whether there will be chronic health effects is
11 very--not known yet, because it takes a long time since the
12 life span in humans is very long." Did you make such a
13 statement? You recall that; don't you, ma'am?

14 A But, that's in connection with high level
15 exposure, and you are asking me about background exposure.

16 Q No, I'm asking about low level exposure.

17 A You were talking about 1--below 1 part per
18 billion.

19 Q I was talking about low level exposure--chronic
20 long term low level exposure.

21 A To me that goes into the background exposure that
22 the general population is getting, and that I don't--has no
23 effect on the general well-being of the population.

24 Q Well, what about exposure like at Seveso?

1 A The long term exposure is generally in that--first
2 of all, that population hasn't had any long term exposure;
3 it only had short term acute exposure. They were then
4 removed, the place was cleaned up, they were moved back in.

5 Q Doctor, the question was asked you relating to
6 Seveso, on page 57, "Were there any reported--anything
7 reported in connection"--and this is at the deposition in
8 December 1982 where Bliss is suing Lafser--the question
9 asked you, "Were there reported--anything else reported in
10 connection with the Seveso, Italy incident with which you
11 agree?" You answer was, "There were some abnormal liver
12 function tests, and there were some abnormal nerve con-
13 duction tests. I've not actually reviewed that in detail.
14 Whether there will be chronic health effects is very--not
15 known yet, because it takes a long time since the life span
16 in humans is very long." Do you recall that answer at that
17 time?

18 A That population had--

19 Q My question is: do you recall that being your
20 answer?

21 A I don't recall that answer, but--

22 Q That would have been the truth at that time?

23 A Yes, that's what I said; but that was talking
24 about the population in Seveso, which was a population that

1 THE COURT: Your objection is overruled. I don't
2 think it's out of context.

3 Q Now, Doctor, your answer there regarding the
4 Seveso people were based upon people who had a short term
5 exposure, and you responded that whether or not there are
6 going to be chronic health effects from the exposure the
7 people of Seveso had is not known yet, because it takes a
8 long time since the life span in humans is very long.
9 Isn't that what you said, ma'am?

10 A Yes.

11 Q And you were referring to the fact that these
12 people in Seveso had this exposure at that point in time
13 and that because human life is so long, it had not yet had
14 time for long term health effects to show up. Isn't that
15 correct, ma'am?

16 A For that population.

17 Q Yes; right. Now, ma'am, on the high dose or high
18 level exposure, what are the health effects that you expect
19 to be--show or develop from this high level exposure, and
20 exposure to higher levels or concentrations of dioxin?

21 A The thing that hasn't been worked out properly
22 is--the one question is cancer.

23 Q All right. That hasn't been worked out yet. So,
24 there's a question--you certainly would worry about cancer;

1 would you not, ma'am?

2 A That would be a chronic health effect that you
3 would--

4 Q I'm sorry?

5 A Yes.

6 Q And, what other health effects are there from high
7 levels of exposure to dioxin?

8 A There are no health effects that we know of. The
9 things we would worry about would be things like cancer.

10 Q Are you saying that there are no risks involved
11 with exposure to high levels of dioxin other than the risk
12 of cancer?

13 A There have not been any demonstrated health
14 effects other than chloracne.

15 Q My question is that sofar as you, Dr. Kimbrough,
16 is concerned, there are no health effects connected with
17 high dose exposure other than chloracne and the possible
18 worry about cancer?

19 A We're not talking about chronic health effects--

20 Q Yes, we're talking about any kind of health
21 effects, Doctor, from exposure to high levels of dioxin.

22 A Any kind of health effect is different from
23 chronic health effect to me.

24 Q Well, then, let me include it to any kind of

1 health effect. What are the health effects that are conse-
2 quences of exposure to high levels of dioxin?

3 A There have been in workers acute health effects
4 which have been described.

5 Q And those are what?

6 A And some of--there's the chloracne; there can be
7 hyperpigmentation; there have been things like general
8 malaise; and there have been some abnormal liver function
9 tests. There have been some complaints in the GI system;
10 and there have been problems with sensory neuropathy.
11 Those acute effects have usually resolved themselves over
12 the years.

13 Q Usually, but not always?

14 A Except for the chloracne, which seems to be
15 extremely persistent.

16 Q Now, the others, you say usually they resolve
17 themselves. But not always?

18 A Not always.

19 Q Doctor, in addition to those that you mentioned,
20 there are other organs that are affected, which are the
21 liver, the thymus, the kidney--

22 A I mentioned the liver.

23 Q Oh, you did?

24 A Yes.

1 Q Well, what about the thymus and the kidneys--the
2 thymus and the kidneys? Aren't they also effected?

3 A We don't know about the thymus; and as far as the
4 kidney is concerned, the only acute effect that we saw was
5 in that one girl in Missouri that had the hemorrhagic
6 cystitis. But, that has not been reported in any other
7 people--in workers.

8 Q Doctor, didn't you testify in this Lafser case
9 when they asked you, "What are the symptoms that you as a
10 toxicologist would look for or expect to see when an animal
11 or human, etc., was exposed to dioxin. Aside from hyper-
12 caratosis and the chloracne, are there other symptoms?"
13 And you said, "The symptoms and signs in different species
14 vary. The organs that might be effected are the liver, the
15 thymus, the kidneys. In addition, there seems to be a
16 general effect which produces severe weight loss; and often
17 loss of adipose tissue, fatty tissue. If the exposure
18 occurs to high degrees or high concentrations of dioxin,
19 there may be an effect on reproduction. From long term
20 exposure, you worry about cancer." Wasn't that your answer
21 to that question at that time?

22 MR. HEINEMAN: Excuse me, your Honor. Excuse me,
23 Doctor. May Counsel approach the bench, your Honor?

24 THE COURT: Sure.

1 (The following proceedings were had at the
2 bench.)

3 MR. HEINEMAN: Your Honor, I object to that
4 questioning as not being impeaching and an improper use of
5 a prior deposition, because it clearly states that she was
6 asked at that time about both animals and humans, and on
7 this occasion she was asked about humans. And therefore,
8 that's not impeaching. And I object to it as an improper
9 use of the prior deposition.

10 MR. CARR: Her answer, she did not limit it to
11 animals; her answer was a response to a question that said
12 animals and--or was it or--an animal or a human. It
13 doesn't say just animals; it says animals or humans.

14 THE COURT: She had the opportunity to limit it
15 if she wanted to limit it during the answer. Apparently
16 she didn't. I don't think that the fact that it was asked
17 of either or takes away from it's value as impeachment
18 given the answer that was made. Overruled.

19 (The following proceedings were had out of the
20 hearing and presence of the jury.)

21 Q And Doctor, when you said "and for long term
22 exposure you worry about cancer" your answer there
23 certainly was directed to a human being--worry about human
24 beings; wasn't it?

1 A It was directed to the animals and human beings.
2 And we have found cancer in animals.

3 Q Well, my question is that your answer related to
4 animals and human beings; did it not, ma'am?

5 A My answer related to animals and human beings,
6 yes.

7 Q All right. And you said for long term exposure
8 you worry about cancer; didn't you say that, ma'am?

9 A Yes.

10 Q That was the truth at that time; wasn't it, ma'am?

11 A Yes.

12 Q Related to human beings; wasn't it, ma'am?

13 A Also, yes.

14 Q Now, Doctor, in point of fact, you haven't really
15 done any study or any work to see what some of the lesser
16 type ailments might be that result from dioxin exposure
17 such as headaches, and peripheral neuropathies, weakness,
18 and the joint aches, and general malaise? You really
19 haven't done any studies or work connected with dioxin and
20 those being the symptoms you are looking for; have you,
21 ma'am? Other than the Missouri Study?

22 A When you say "you" do you mean all of CDC or do
23 you mean me?

24 Q I mean CDC.

1 A We have--NIOSH is part of CDC.

2 Q Well, NIOSH just works on cancer.

3 A No, they also do cross sectional studies.

4 Q Did they do some studies on dioxin exposure and
5 these other types of problems?

6 A There hasn't been anything published.

7 Q There's nothing that we can see or read or that's
8 available to us?

9 A No.

10 Q Actually the only study that we've got in which
11 they went out and asked questions and tried to expose these
12 general kind of problems that I've discussed to you are non
13 specific or less specific kind of problems that I've dis-
14 cussed with you. The only thing we've got is this Missouri
15 Health Study; is that correct, ma'am?

16 A That's the only thing that has been published.

17 Q Yes. And insofar as your--the study that you
18 published in 1984, that is, "The Health Complications of
19 2,3,7,8 TCDD Contamination in Residential Soil", the only
20 really thing that you used in estimating your risks and
21 arriving at your levels was the risk of cancer; and then
22 you used just the risk of cancer in animals as a criteria;
23 isn't that right, ma'am?

24 A Yes.

1 Q So, actually when you set a level of 1 part per
2 billion as being below that--or above that of concern,
3 you're actually talking about of concern for risk of
4 cancer; aren't you, ma'am?

5 A Yes.

6 Q And you are not talking about any other single
7 health effect; are you, ma'am?

8 A All other single health effects you could proba-
9 bly have--for other single health effects, you could have
10 higher doses and you would not have a problem.

11 Q That isn't what I've asked you, ma'am. This
12 study, this publication that you had, purports to and deals
13 only with the single ailment, that is, cancer, and related
14 only to the risk of getting cancer from exposure to these
15 levels of dioxin; isn't that correct, ma'am?

16 A Yes.

17 Q And there are a world of other health problems--
18 heart attacks, brain disease, paralysis, porphyria--there's
19 any number of other health problems besides cancer; isn't
20 that correct, ma'am?

21 A Yes.

22 Q And this paper of yours did not address the health
23 complications of any of those other problems; did it,
24 ma'am?

1 A There was no reason to do that.

2 MR. CARR: Your Honor, would you tell the witness
3 to answer that question.

4 THE COURT: I don't think that was responsive.
5 You have to answer the question, please.

6 THE WITNESS: Could I have the question again,
7 please?

8 (The previous question was read back by the court
9 reporter.)

10 A Yes, it did.

11 Q And what other problems did it address in addition
12 to cancer?

13 A It addressed reproduction, and it also discussed
14 the human health effects.

15 Q What level did--where did you--well, you discussed
16 those things, but--maybe my question was imprecise. The
17 risk assessment that you undertook for just related to
18 cancer; did it not, sir--ma'am?

19 A No. We also looked at the effects on repro-
20 duction in monkeys.

21 Q All right. You are correct. You said, "The
22 exposure assessment used was for estimating risks being for
23 carcinogenicity and reproductive health effects." Correct,
24 ma'am?

1 A Because those seemed to be the most sensitive.

2 Q Excuse me, could you answer my question? Just
3 those two things that you used in your exposure assess-
4 ments?

5 A No.

6 Q Isn't that what you said? Didn't you use and
7 didn't you say on page 80, ma'am, "For these reasons this
8 study was not used for risk assessment calculations, but
9 only the chronic toxicity studies which demonstrated a
10 carcinogenic response in rodents were used." Didn't you
11 say that, ma'am?

12 A But, I have reasons for that.

13 Q Excuse me; my question is: didn't you say that,
14 ma'am?

15 A I said, "For these reasons", yes.

16 Q And on the next page, didn't you also say, "It
17 must be stressed that the exposure assessments used in
18 estimating risks for carcinogenicity and reproductive
19 health effects contain critical assumptions that are not
20 likely to be actually encountered." Isn't that correct,
21 ma'am?

22 A Yes.

23 Q And did you also discuss about these are
24 calculations for--that you made for long term risk as far

1 as cancer is concerned?

2 A Yes.

3 THE COURT: Is this a good point to break?

4 MR. CARR: Yes, your Honor.

5 THE COURT: Okay. We'll start Monday morning at
6 9:30. Thank you, Doctor.

7 (At this time Court adjourned for the day.)

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