

1 IN THE CIRCUIT COURT OF THE TWENTIETH JUDICIAL CIRCUIT
2 ST. CLAIR COUNTY, ILLINOIS
3

4 FRANCES E. KEMNER, ET AL.,)
5 Plaintiffs,)
6 vs.) Case No. 80-L-970
7 MONSANTO COMPANY,)
8 Defendant.)
9

10
11 REPORT OF PROCEEDINGS

12 February 14, 1986
13

14 Before the HONORABLE RICHARD P. GOLDENHERSH, CIRCUIT JUDGE
15

16 APPEARANCES:

17 MR. REX CARR and MR. JEROME SEIGFREID, Attorneys at
18 Law, on Behalf of the Plaintiffs; and
19 MR. KENNETH HEINEMAN and MR. JOSEPH NASSIF, Attorneys
20 at Law, on behalf of the Defendant, Monsanto Company.
21

22
23 Kathleen Watson Brunsmann, RPR, CSR

24 Official Court Reporter

1 BE IT REMEMBERED AND CERTIFIED, that heretofore on
2 to-wit: Friday, February 14, 1986 the matter as hereinbefore
3 set forth came on for hearing before the Honorable Richard
4 P. Goldenhersh, Circuit Judge, in and for the Twentieth
5 Judicial Circuit, and the following was had of record, to-
6 wit:

7
8
9 (Defendant Monsanto's Exhibit 1704 was marked
10 for identification by the court reporter.)
11

12
13 THE COURT: Good afternoon. Okay.

14 MR. HEINEMAN: Your Honor, yesterday we had marked
15 Defendant's Exhibit 1704, as Dr. Suskind had pointed out the
16 first two pages of it were missing.

17 THE COURT: Right.

18 MR. HEINEMAN: We now have the document with the
19 first two pages included and we've had it remarked as
20 Defendant's Exhibit 1704.

21 THE COURT: Fine. Good.
22
23
24

1 DR. RAYMOND SUSKIND,

2
3 having previously been sworn, testified further
4 as follows:

5
6 FURTHER DIRECT EXAMINATION

7 BY MR. HEINEMAN:

8 Q I'd like to ask the witness, Dr. Suskind, are
9 those two pages that are now attached to 1704 the pages that
10 you felt were missing yesterday?

11 A Yes, they are.

12 Q All right. Thank you.

13 MR. HEINEMAN: At this time, your Honor, we'd move
14 the admission of Defendant's Exhibit 1704.

15 MR. CARR: No objection, your Honor.

16 THE COURT: Fine. It's admitted without
17 objection.

18 Q (By Mr. Heineman) Dr. Suskind, directing your
19 attention again to the Suskind/Hertzberg Morbidity Study
20 that we were discussing yesterday afternoon. With respect
21 to the decisions as to whether or not the people who were
22 examined were exposed or not exposed, who made those
23 decisions and on what basis?

24 A Well, we made the decisions on the basis of the

1 work history, the detailed work history, which were taken by
2 the interviewer, and then after the study was completed,
3 reviewed by myself and colleagues who were attempting to
4 determine accurately or as accurately as possible from that
5 information who was clearly exposed and who was clearly not
6 exposed to the 2,4,5-T process.

7 Q Were there any situations where an amount of
8 judgment was involved because of what was represented by the
9 person being examined, the interviewer?

10 A Yes, there was. A judgment had to be made and it
11 had to be made by persons who knew something about the plant
12 where 2,4,5-T was made, where Trichlorophenol was made over
13 the years, what kind of hauling was done from one part of
14 the plant to another where the 2,4,5-T was actually
15 produced, then put into bags, all of that would indicate
16 exposure.

17 Of course, there were the maintenance people who
18 recognized that this was a study of persons who were exposed
19 to 2,4,5-T and if at any time the maintenance people,
20 machinists, pipe fitters, were in any of the buildings for
21 any length of time they told us about it. From those pieces
22 of information, which appears in the first several pages of
23 the work history interview, we were able to make a judgment
24 as to whether they were clearly exposed or not exposed at

1 all.

2 Q Now, in terms of the people who were invited but
3 did not participate, did you have an impression that those
4 people who did not participate did not do so because they
5 were too sick to get there?

6 A No, I don't believe so. I think that if there was
7 a bias, and we always look for possible biases, it was in
8 favor of the people who were more heavily -- or the people
9 who were exposed, and people who had chloracne.

10 After the study was completed we went back and
11 looked at the records as we had them of the invitees. We
12 knew if they were classified as exposed with chloracne,
13 exposed without chloracne, and not exposed, intimately
14 exposed.

15 We found that, first of all, those who came to
16 participate were several years older than those who did not
17 come to participate. We also found that there was a higher
18 percentage of exposed among the participants than exposed
19 among those who didn't participate. As a matter of fact, I
20 think if I recall correctly it was about 60 to 40.

21 Then, of course, we had to look at who had
22 chloracne among the participants and among the non-
23 participants according to the record, and we found, and we
24 found that about -- there was a much higher percentage of

1 persons who had a record of chloracne among the participants
2 than among the non-participants.

3 Q So --

4 A So I would assume that these people had
5 experienced illness as a result of their either exposure or
6 having chloracne and other symptoms, and there was a higher
7 percentage of those among the participants than there were
8 among the non-participants, from the records.

9 Q Dr. Suskind, toward the end of the day yesterday I
10 believe you told us that there was a -- after the interview
11 had taken place that there was a history taken by the
12 physician as well; is that right, sir?

13 A Yes, there was.

14 Q Would you tell us why an additional history was
15 taken by the physician?

16 A Well, although the interviewer was trained to do
17 both work history and other kinds of history interviewing,
18 as well as medical history interviewing, it was obvious that
19 the well trained physician was much better qualified to take
20 a medical history. So with respect to medical history we
21 asked the physicians to take their own history as well,
22 followed by an examination, which they performed.

23 We felt anybody whose been to a physician knows
24 that a capable physician takes a history. Sometimes it's

1 done by the nurse, but more often than not it's done by the
2 doctor, him or herself. And we felt that those physicians
3 who were doing the examination should also take a medical
4 history.

5 We depended on the results of those histories for
6 determining what some of the history of health problems
7 were.

8 Q All right, sir. Now, in connection with what was
9 done with the data and the information developed as a result
10 of the study, what disposition did you make of that data?

11 You mentioned yesterday about computerizing it,
12 coding it and putting it on the computer, but in terms of
13 any disposition of the information, what did you do with
14 that?

15 A You're talking about analysis or where the
16 information went?

17 Q Where it went.

18 A Okay. From the very beginning we told the
19 participants that we would provide the results of our
20 examination to their physicians, and we provided them with a
21 statement which could be signed by them requesting such
22 information be sent to their doctors. About 90 to 95
23 percent of the persons who participated in the study
24 requested that we send that information to the physicians.

1 This was an epidemeologic study. But we felt that
2 although there was a doctor/patient confidential
3 relationship, that that could be maintained by our sending
4 the information to their doctor.

5 However, Monsanto did not get that information.
6 The records of these participants were not sent to Monsanto.

7 Q Sir, did you prepare any letters for the
8 furnishing of the information to the physicians?

9 A Yes, we did.

10 Q Okay.

11
12 (Defendant Monsanto's Exhibits 1705, 1706, 1707
13 were marked for identification by the court
14 reporter.)

15
16 Q (By Mr. Heineman) Dr. Suskind, let me hand you
17 what's been marked as Defendant's Exhibits 1705, 1706, and
18 1707. I wonder if you'd take each of them, and one at a
19 time, tell the Court and jury what those documents are, and
20 use the exhibit numbers as you do so, would you please, sir.

21 A Exhibit Number 1705 is a letter from me addressed
22 to the Monsanto employees, thanking them for their
23 participation, and it's dated August 27, 1979, thanking the
24 employee for his or her participation in our medical survey

1 of active and former employees at Nitro, West Virginia plant
2 conducted in 1979.

3 And also it reads, "As you requested at the time
4 of your examination, we have sent a copy of the results of
5 your medical examination to your personal physician. We
6 urge you to review the results of this examination with your
7 physician. Please remember that participation in our
8 medical survey should not be regarded as a substitute for a
9 periodic medical examination by your personal physician."
10 This went out to all the participants.

11 Then we sent a letter to Monsanto employees
12 individually, also on August 27, 1979, thanking them for
13 their participation in the medical survey, and we added "We
14 would like to send a copy of the results of your medical
15 examination to your physician. However, at the time of the
16 examination we did not receive a signed medical release form
17 authorizing us to do so."

18 And further, "If you would like us to send a copy
19 of the results of your medical examination to your
20 physician, please fill in the enclosed Authorization to
21 Release Medical Information form, and return it to us at the
22 address indicated on the form. We urge you to review the
23 results of this examination with your physician. Please
24 remember that participation in our medical survey should not

1 be regarded as a substitute for periodic medical examination
2 by your personal physician."

3 This was sent to people who did not participate,
4 the non-participants. I'm sorry. This was sent to the
5 people who participated, but did not request that we send
6 their examination results.

7 THE COURT: Doctor, what's the number on that
8 exhibit, please?

9 THE WITNESS: Sorry?

10 THE COURT: The one you just read, what's the
11 number on that one?

12 THE WITNESS: The number is 1706.

13 THE COURT: Thank you.

14 THE WITNESS: And the third exhibit is 1707, a
15 letter dated August 27, 1979 from me again, addressed to the
16 physicians -- the physician who was designated by the
17 individual participant to receive a copy of the information
18 contained in the report, the medical information and
19 laboratory and test information contained in the report.

20 It reads, "In June, 1979, a medical survey of
21 active and former employees of the Monsanto Industrial
22 Chemical Company in Nitro, West Virginia, was conducted by
23 the University of Cincinnati Department of Environmental
24 Health." This is to the doctor. "The participants whose

1 medical records accompany this letter have requested that
2 you be notified of the results of their medical examination.
3 Most of the reports are self-explanatory. However, the
4 following comments may be of assistance in analyzing some of
5 the laboratory information.

6 Plasma lipid levels, reported separately from the
7 Metpath laboratory information, were performed by the Lipid
8 Research Project group of the University of Cincinnati, and
9 are compared to age and sex-specific normal values as
10 indicated."

11 We had two different laboratories doing our blood
12 chemistries. One was the Metpath that did most of the blood
13 chemistries, and the other was the Lipid Research Project
14 laboratory at the University of Cincinnati. We so indicated
15 this.

16 "Where disagreement occurs between the Metpath and
17 the L.R.P. lipid determinations, we have chosen
18 preferentially the L.R.P. data as the standard to
19 differentiate normal from abnormal."

20 We then go on to indicate that "Pulmonary function
21 studies were performed with a Vitalograph spirometer. FVC
22 and FEV1 are reported as percent of predicted value for the
23 participant's age, sex, race, and body habitus.

24 If you have any questions regarding these reports,

1 please call me," and the telephone number is listed.

2 And then we provided a sheet with the name of the
3 participant and the results of the physical examination, if
4 there were any abnormal -- if there were any abnormal
5 findings on the physical examination. Abnormal findings of
6 the biochemical tests, chest x-ray, pulmonary function test,
7 electrocardiogram, the skin biopsy and/or scraping was so
8 done, and we included in his the full copies of the lab
9 results of the pulmonary function tests.

10 MR. HEINEMAN: Your Honor, at this time we'd offer
11 into evidence Defendant's Exhibits 1705, 06 and 07.

12 MR. CARR: No objection, your Honor.

13 THE COURT: They're admitted without objection.

14 Q (By Mr. Heineman) Now, Dr. Suskind, what effort
15 was made to communicate the results of this examination to
16 the plant workers, to the people who had participated in the
17 study?

18 A Well, what we actually did was in 1982 when we had
19 much of the data analyzed and put together a draft of the
20 analysis of the data, we thought it would be very
21 appropriate to present this information to the workers
22 themselves. So that in 1982 we paid a visit to Nitro and a
23 meeting of the workers, the participants, as well as those
24 who did not participate, was assembled and I presented this

1 information in slide form to all of the people who were
2 assembled there. This included, as I indicated, the
3 participants, some of the non-participants, the union
4 officials, members of the plant medical department, and
5 administration.

6 Q Now, at this meeting did you provide individual
7 health statistics or data or was it the general --

8 A We presented, as we did in the first draft, we
9 presented collective information. This was an epidemeologic
10 study. Epidemeologic studies are not concerned with
11 individual records. They're concerned with collective
12 information, how the health of the exposed collectively
13 compares with the unexposed collectively. How the -- among
14 the exposed and the not exposed, how the health of the older
15 age group, 50 and older, compare with the group under 50
16 years old, for all of the parameters of the examination,
17 physical examination findings, history findings, laboratory
18 findings, pulmonary findings. All of the tests that we did.
19 We presented this to the workers.

20 Q What overall did you find with respect to the
21 chloracne status as between the exposed and the unexposed
22 group?

23 A Well, as the publication indicates we found that
24 when you compared the exposed to the unexposed group 86

1 percent of the exposed developed chloracne at some time, not
2 all of them still had it, but 86 percent had a history of
3 and presently had chloracne. That is the combined group.

4 Q With respect --

5 A And --

6 Q I'm sorry. With respect to the unexposed group
7 how many had chloracne?

8 A We didn't find anybody with chloracne in the
9 unexposed group.

10 Q Now I wonder if you would let me -- let me hand
11 you, Dr. Suskind, what's been marked as Plaintiff's Exhibit
12 1467. Would you identify that. Well, it's in evidence.
13 That is your published paper, the Suskind/Hertzberg
14 Morbidity Study, is it not, sir?

15 A This is the paper which Dr. Hertzberg and I wrote
16 on the Human Health Effects of 2,4,5 and its Toxic
17 Contaminants, which is -- which was published in the Journal
18 of the American Medical Association on May 11, 1984.

19 Q I wonder, sir, if you'd be so kind as to give us
20 the principle findings of your study.

21 A Well, the principle findings were these, that we
22 found that 86 percent, as I indicated, of those people who
23 were exposed developed chloracne, and none of the people who
24 were not exposed had chloracne at any time.

1 We also found that among those people who had
2 chloracne, there was an increased frequency, especially --
3 there was an increased frequency of those whose chloracne
4 persisted of actinic elastosis, which is a problem
5 involving the deterioration of the elastic fibers of the
6 skin. So that in those people who still had chloracne, and
7 it was 52.7 percent of the people who were exposed still had
8 chloracne when we examined them. In that group there was an
9 increased frequency of actinic elastosis, sensitivity of the
10 elastic tissue to sunlight. Those were the two major
11 findings which were rather prominent.

12 We also found that there was an increased
13 frequency among the exposed of a history of upper
14 gastrointestinal ulcer, as when you compared the exposed to
15 the unexposed.

16 We also found that among those who still had
17 chloracne there was a greater frequency of abnormal levels
18 of high density lipoprotein, which is a lipid in the
19 blood. Although there was no difference whatsoever in the
20 mean values of any lipid, triglyceride, lipoproteins,
21 cholesterol, and the mean values when you compared the
22 unexposed to the exposed, or when you compared the various
23 chloracne groups, those who had a history of chloracne only,
24 those who still had chloracne, or those who never had

1 chloracne, there was no difference in the mean. But if you
2 just looked at the abnormal frequency of high density
3 lipoproteins, you found that there was a greater frequency
4 among the people that still had chloracne.

5 We also found that for -- among the exposed there
6 was a greater frequency of abnormal pulmonary function
7 levels, that is breathing test measurements. They were
8 abnormal among those who still smoked and were exposed as
9 compared to those who still smoked and were not exposed.
10 In that instance it's kind of difficult to separate the
11 exposure factor from the smoking factor because we do know
12 that smoking and number of pack years, number of packs per
13 year over a -- over the lifetime has a great influence on
14 pulmonary function. It's the most influence on pulmonary
15 function.

16 Q Now --

17 A Those were the positive findings. The first two,
18 I think, are rather conclusive. The others that we found
19 were really -- can only be called suggestive. They were
20 suggestive long term health effects.

21 Q Why do you believe that the pulmonary function
22 results were only suggestive?

23 A Well, as I indicated it's very difficult to
24 determine -- separate the smoking factor from the exposure

1 factor.

2 The other aspect of it which I think is important
3 here that when we compared the exposed who smoked to the non
4 exposed who smoked, there were no obvious differences in
5 their clinical findings. Clinical, not the laboratory test
6 findings, not the pulmonary function findings. But there
7 was no difference if you looked at them as a group in their
8 clinical findings and there was no difference in their X-ray
9 findings. They had the same types of X-rays and you
10 couldn't distinguish quantitatively or qualitatively the
11 differences between the smokers who were exposed and the
12 smokers who were not exposed.

13 Q Which group had the greater history of smoking, is
14 that what the pack years means?

15 A Well, I think from the standpoint of pack years,
16 the present smokers, up to 1979, those who still smoked, the
17 present smokers who were exposed had a larger number of pack
18 years, and then the still smokers who were not exposed, and
19 there was a 19 pack year difference between the smokers
20 exposed and the smokers not exposed.

21 It was an older group and they smoked for a longer
22 period of time. So I think that one has to look at that,
23 and that's why anybody qualified in the problems of
24 pulmonary disease in relation to smokers would admit that it

1 was very difficult to separate the smoking aspect from the
2 exposure aspect mostly because of that factor, that the
3 exposed smoked a greater number of pack years.

4 That's why we said, and we say it in the paper,
5 that these are suggestive long term effects, but certainly
6 not clear cut conclusive effects.

7 Q You also mentioned that the ulcer history was a
8 suggestion of association, did you not, sir?

9 A Yes, we did.

10 Q And I thought I understood you to emphasize the
11 word "history" in discussing ulcers. Did you do that as
12 well?

13 A Yes. Here again --

14 MR. CARR: Your Honor, I would like to approach
15 the bench.

16 THE COURT: Yes, you may.

17
18 (The following proceedings were had at the
19 bench out of the hearing of the jury:)

20
21 MR. CARR: Counsel certainly knows why I'm here.
22 That was about as blatant and suggestive and leading a
23 question as can possibly be asked. I have not objected and
24 I don't object in areas where Counsel knows it's routine in

1 suggesting routine articles. But he also knows that I
2 object to leading questions where it gets into this kind of
3 area. And I do object to it.

4 THE COURT: I think that was leading. I don't
5 think there's any question about that. So I'm ordering you
6 to rephrase it.

7 While you're up here --

8 MR. CARR: He doesn't need to rephrase it, your
9 Honor, the witness had already answered it.

10 THE COURT: Okay.

11 MR. CARR: I'm just pointing it out so I don't
12 have to make a further objection.

13 THE COURT: While you're up here a couple of
14 little areas. One of the jurors is not feeling well. We'll
15 break in an hour and take a short break and then come back.

16 MR. CARR: Break an hour after we started?

17 MR. HEINEMAN: What time did we start?

18 THE COURT: 1:25 or so. At 2:25 we'll take a
19 short break.

20

21 (The following proceedings were had in the
22 presence and hearing of the jury:)

23

24 Q (By Mr. Heineman) Doctor, would you explain your

1 findings with respect to ulcers to us, please.

2 A The raw data showed that there was a four fold
3 difference between the exposed group and the not exposed in
4 the frequency of history of -- information provided by the
5 participant, history of upper gastrointestinal ulcer.

6 This was essentially not an ulcer study, but we
7 wanted to find out whether or not this was actually so. So
8 we went back and really looked at all of the possible
9 information that we could get to verify, to verify this
10 ulcer information. What we found essentially was that there
11 were ulcers which had occurred before exposure was possible.
12 And there were certain number of ulcers, and this was in the
13 plant medical record, these occurred before 1948.

14 There was also in the plant record and we got it
15 from the participants themselves, a number of persons with
16 ulcer symptoms who were told that this was due to the large
17 amount of aspirin they were taking. We know that aspirin,
18 high doses of aspirin, can cause bleeding of the lining of
19 the stomach.

20 We also were told by the participant and verified
21 in the plant medical record that some of the people who had
22 developed ulcers had developed them when they were taking
23 cortical steroids, cortical steroids.

24 Even if you took those out, that group out, and

1 you still remained with about a two and a half to three fold
2 difference in ulcer frequency between the exposed and the
3 not exposed. If you age adjusted -- not age adjusted, but
4 smoking adjusted, it still came out with a statistically
5 significant difference.

6 We say it's suggestive for several reasons, and I
7 think it should be pointed out that we didn't intend to
8 conduct an ulcer study, and those who have, and we consulted
9 some at the University of Cincinnati who have, told us that
10 we don't have the kind of information in our data to say
11 without any doubt that there is an increased frequency of
12 ulcer based upon the history, and even if we did have an
13 adequate history the numbers of people who were involved
14 were too small to make any judgments.

15 With our data, not all of the persons who gave a
16 history of peptic ulcer could we verify that they actually
17 did have a history of peptic ulcer. We did not have access
18 to their physicians medical records -- records of the
19 physicians who made the diagnosis, at least told the patient
20 that they had a peptic ulcer, nor did we have their X-rays,
21 nor did we have the results of endoscopy, that's a visual
22 observation of the gastrointestinal tract.

23 So that, in essence, I think it has to be said
24 without modesty, without criticism, although we did find a

1 statistical relationship, we have to look at the
2 significance of it, and whether or not we have proper data
3 to make hard and fast conclusions about it. We don't. So
4 that we say these are suggestive long term effects.

5 Q Okay. With respect to your morbidity study, did
6 you find any absences of associations that you were looking
7 for?

8 A Yeah. I think that the data itself demonstrates
9 that there was no evidence of any abnormal long term effects
10 which affected the cardiovascular system, no increase in
11 cardiovascular disease among the exposed as compared with
12 the not exposed. There was no increase in hepatic disease,
13 renal disease, neurologic problems, or nerve conduction
14 velocity, and you have to take the values such as they are.
15 They are non conclusive, but we found no difference between
16 the results of our nerve conduction velocity, or
17 neurological examination between the exposed or the not
18 exposed.

19 Q Excuse me, sir.

20 A Nor did we find any evidence of persistence of
21 peripheral nerve problems, something that we saw earlier.
22 We saw peripheral neuritis. There was no evidence of
23 increased frequency of neuralgia or peripheral neuritis
24 problems in the exposed as compared to the not exposed.

1 Q Excuse me, Dr. Suskind, can I interrupt you for
2 just a moment.

3 A Please.

4 Q What did you say about the nerve conduction or the
5 nerve velocity studies as being non conclusive?

6 A No. I think most people feel that current status,
7 the current state of nerve conduction velocity measurements
8 as such, and the equipment as such, that you cannot draw
9 hard and fast conclusions from them. However, we found that
10 there was no difference in nerve conduction velocity
11 outcomes between the exposed and the not exposed, nor was
12 there any difference in the findings on neurological
13 examination, on neurological examination. And we found that
14 there was no increased risk for birth defects or
15 reproductive outcomes.

16 Q Now do you have an opinion, sir, as to whether or
17 not the findings of the Moses Study which you described
18 before are consistent with or inconsistent with the findings
19 of your morbidity study?

20 A Well, I think that if they did a cross sectional
21 study and didn't separate the exposed and the not exposed.
22 They had separated -- they looked at or compared their
23 chloracne groups with the non chloracne groups.

24 But essentially they found that the only major

1 finding was chloracne. They found that in their population
2 that they exposed -- that they examined rather, 52 percent
3 had at some time had chloracne. In our exposed group we
4 found that 86 percent had chloracne, and it persisted in
5 52.7 percent. So in that sense it's consistent.

6 They did find some increased frequency in abnormal
7 G.G.P.T., which is a liver enzyme laboratory test, among the
8 chloracne group as compared to the non chloracne group. We
9 didn't find that to be so.

10 They found on a kind of gross neurological
11 examination of the response to pinprick, that is you stick a
12 pin in the skin and ask the individual do you feel it, don't
13 you feel it, and so on, and they found that there was a
14 decrease ability to appreciate pinprick, pain to pinprick in
15 the chloracne group as compared to the non chloracne group.

16 It's a very crude measurement, and my only comment
17 on something like that would be did they adjust for age,
18 because the response to pain is often -- pain diminishes
19 with age. Areas of the body, for example the lower
20 extremities are less likely to be sensitive to that in aging
21 people, or who had diabetes, and you get decrease in
22 sensation to the diabetes.

23 However, even with all of that, the findings are
24 really very similar. They're very similar to ours. They