SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

STEPHANIE FLECKNER, as Proposed Executrix for the Estate of JAY K. FLECKNER and STEPHANIE FLECKNER, individually,

Index No.
vs. 113970-04

AMCHEM PRODUCTS, INC., et al.

and

LOUISE RAVAGE MASS, as Proposed Executrix for the Estate of NORMAN D. MASS and LOUISE RAVAGE MASS, individually

Index No.
vs. 101931-04

AMCHEM PRODUCTS, et al.

Deposition Under
Oral Examination
of DR. THOMAS A. SPORN

PRIORITY-ONE COURT REPORTING SERVICES, INC.
899 Manor Road
Staten Island, New York 10314
(718) 761-0527

Transcript of the deposition of DR. THOMAS A. SPORN, called for Oral Examination in the above-captioned matter, said deposition being taken pursuant to the Federal Rules of Civil Procedure by and before Michele Cannata-Smith Court Reporter and Notary Public in and for the State of New York; taken at Millennium Hotel, Durham, North Carolina, on November 15, 2005, commencing at 9:48 a.m.

0003

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0004

IT IS HEREBY STIPULATED AND AGREED by and among the attorneys for the respective parties hereto that filing, sealing and

certification of the within Examination Before Trial be waived; that all objections, except as to form, are reserved to the time of trial.

IT IS FURTHER STIPULATED AND AGREED that the transcript may be signed before a Notary Public with the same force and effect as if signed before a Clerk or Judge of the Court.

IT IS FURTHER STIPULATED AND AGREED that the within examination may be utilized for all purposes as provided by the CPLR.

IT IS FURTHER STIPULATED AND AGREED that all rights provided to all parties by the CPLR shall not be deemed waived and the appropriate sections of the CPLR shall be controlling with respect thereto.

IT IS FURTHER STIPULATED AND AGREED by and between the attorneys for the respective parties hereto that a copy of the Examination shall be furnished, without charge, to the attorney representing the witness testifying herein.

DR. THOMAS ARTHUR SPORN, after being duly called and sworn, testified as follows:

EXAMINATION BY MR. KRISTAL:

Q. Good morning, Dr. Sporn. For the record, my name is Jerry Kristal. How are you this morning?

A. I'm well, thanks. How about yourself?
Q. Good. Thank you. I represent Norman Mass and Jay Fleckner. And you understand you're here to be deposed on those two cases?
A. Yes, sir.
Q. Okay. Most important rule, if you don't understand what I'm asking, please let me know. I'll try to rephrase it, reword it, redo the question, so that you do understand it. Because if you're answering questions I'm going to assume that you understand what I'm asking. Is that fair?
A. Certainly.
Q. Okay. Have you been deposed before in an asbestos case?
A. Yes, sir.
Q. How many times?

0007

A. Two or three times.
Q. When was the first time approximately?
A. 1999.
Q. And the other times?
A. Would have been I think in 2000 or 2002.
Q. Have you ever given testimony in court?
A. Yes, I have.
Q. Were those on the cases that you had been deposed on or different ones?
A. None of those were on asbestos-related cases.
Q. I'm only interested in asbestos.
A. Oh, okay. No.
Q. At least in my purposes today. I don't care about other depositions. Have you ever been deposed in an asbestos case?
A. Yes.
Q. The testimony -- the topics you testified in were not in asbestos cases; is that --
A. Yes. The cases I mentioned to you, the depositions I spoke of earlier, were all asbestos cases. But in answer to your other question, I've never given testimony in court in

0008

an asbestos-related case.
Q. Were the diseases in the three cases in which you've previously been deposed is the allegation that they were mesothelioma?
A. Yes, sir.
Q. On whose behalf were you testifying in those cases?
A. Plaintiff.
Q. And in those cases you were rendering an opinion that -- it was your opinion that the asbestos exposures those individuals had contributed to the development of the mesothelioma, in part?

A. It's my recollection that my testimony in those cases were both about confirmation of disease and causation with respect to asbestos exposure.
Q. Had there been any sort of fiber burden studies of any kind in those -- in any of those three cases?
A. Yes, there was. In one of them there was.
Q. And in the other two?
A. I can't recall.
Q. Could you tell me the plaintiff's

0009

attorneys?
A. The one that -- I can't remember the gentleman's name, but it was -- the firm was Motley Rice from South Carolina.
Q. All three?
A. No. I think the other two were local North Carolina firms. And again, I just can't recall.
Q. Do you have any records of those? In other words, if I wanted to contact the plaintiff's lawyers to get copies of your transcripts -- if you were going to do that, what would you do to do that?
A. I would -- in response to your subpoena, I looked through my records and I was unable to produce those. I would have to go back and look additionally to try to find them.
Q. Okay. I was informed that you had done some kind of preliminary search and were unable to locate them. And are you saying there are other places you may be able to look, and if you can, I'd ask you to do that pursuant to the notice, and give them to Paul and Paul will forward them to me.
A. There are additional ways of looking

0010

back through our database. It takes some time, but I might be able to do that.
Q. If you could do that within a reasonable period of time in terms of your time, I would ask you to do that.
But independent of that, if you were to try to locate them outside, how would you go about doing that? Are there billing records?
A. I think there were -- back to our database regarding mesothelioma, there's a way of searching the computer database about mesotheliomas that I looked at between 1996 and 2000 searching the computer log and searching my office records.
Q. And the computer database would tell you what?
A. It would give me a list of mesotheliomas that I looked at. That if I

pulled those reports and see, and that would jog my memory.
Q. So you do have reports on those cases somewhere stored?
A. Yes.
Q. Okay. Was it in the 1999 time frame that you were first involved in asbestos

0011

litigation?
A. I first became involved in asbestos litigation during my sort of -- my fellowship with Victor Roggli in 1997.
Q. In what way were you involved in asbestos litigation during your fellowship?
A. Involved with creating reports, analyzing tissue, doing a workup of tumors that were suspected to be mesothelioma. Learning the tricks of the trade during my fellowship with Dr. Roggli. The bulk of his practice is in the medical/legal arena, specifically asbestos-related diseases. And my fellowship had strong legal overtone to it.
Q. What do you mean by that?
A. It means that the cases that we were looking at and where I was learning about mesothelioma and asbestos-related diseases are the cases that provided educational material for me that had been provided as part of a medical/legal review rather than say from just routine patient care matters.
Q. I've seen in I forget which article, and you can correct me if I'm misreading it, that over 90 percent of the cases that Roggli

0012

has reviewed that are the subject of some of the papers about asbestos fiber burdens were referrals from legal cases; is that correct?
A. It's certainly the vast majority. I don't know if it's 90 percent, but it's certainly the vast majority of cases that he's involved with are in them.
Q. Let me see if I can find it. I think it might be in the tremolite mesothelioma article.
Is more than 90 percent not a number you're familiar with in terms of --
A. Again, it's not a number that -- I've never really paused to take stock of what actual percentage of the cases would have been legal cases. I know from having worked side by side with him for the last eight years that it's a very, very high number. I can't affix a numerical value to that.
MR. KRISTAL: Off the record.
(Discussion off the record.)
(Whereupon, Sporn Exhibit 1, an article, was then received and marked for

identification.)
BY MR. KRISTAL:

Q. While we were off the record I handed you an article. Let me mark it as Sporn 1. Sporn 1 is the article by Roggli and others, including yourself, entitled "Malignant Mesothelioma and Occupational Exposure to Asbestos: A Clinical Pathological Correlation of 1,445 cases."

And on page 62 in the discussion section it notes that more than 90 percent of the cases referred to it -- I'll call it the Roggli report -- are medical/legal cases.

Do you see where it says that?

A. Yes.

Q. Is that 90 percent of all the cases, or 90 percent of just these 1,445, or is 1,445 all the cases?

A. 1,445 is all the cases we have in the database.

Q. So you're not disagreeing that more than 90 percent of them are medical/legal cases?

A. No.

Q. You don't know how much more than 90 percent?

A. No. And again, I couldn't recall the specific number that we had set it. I know it's

the vast majority.

Q. While the article is out, let me mark another article because I have a question. I just couldn't figure something out and I might as well do it now.

A. Okay.

MR. KRISTAL: I'm marking the article entitled "Tremolite and Mesothelioma" as Sporn 2 by Roggli and others, including yourself.

(Whereupon, Sporn Exhibit 2, an article, was then received and marked for identification.)

BY MR. KRISTAL:

Q. The tremolite and mesothelioma article seems to -- did it appear in January 2002? I'm trying to figure out the dates on these two articles because then I have a question about the number of cases that had fiber burden analysis. I don't know the difference in the numbers and I'm sure there's some sort of reasonable explanation.

Let me tell you where I'm going so you understand what my question is aiming at. In the 1,445 cases article, it says that there were 268 cases that you folks had where there were

fiber burden analyses.

A. Right.

Q. In the tremolite and mesothelioma paper, which came out I think in the same year, it says there was 312 such cases, and I'm trying to reconcile those two numbers.

Do you follow what I'm asking?

A. Yes. I don't have a satisfactory explanation as to how we had subdivided -- why we would split off some case and why there's a different number reported here.

Q. But I am correct, though, that there are in the two articles which came out about the same time, one talks about your lab with Dr. Roggli having 268 cases for which fiber burden analyses were done?

A. Yes.

Q. The other talks about 312, right?

A. Yes.

Q. So that's 44 cases somewhere, and you just don't have an explanation as you sit here now?

A. No.

Q. Okay. Just curious. Can you venture -- we're talking about the same thing, right,

0016

fiber burden analyses in cases --

A. It could have been just a difference in when -- about cases that hadn't been entered in the database. I'm just not sure.

Q. Which article was written first?

A. I suspect -- these articles are written over the course of sometimes of several years, because the authorship in this is an older group, and so I suspect that this article was at least commenced earlier.

Q. So the 1,445 case article you believe was commenced earlier, but not necessarily finished -- Exhibit 1, not necessarily finished earlier?

A. Correct.

MR. KRISTAL: Let me mark as Exhibit 3 the notice for deposition which I've asked you to bring certain materials.

(Whereupon, Sporn Exhibit 3, deposition notice, was then received and marked for identification.)

BY MR. KRISTAL:

Q. I see you have some materials to your left. Was that in response to this deposition notice?

0017

A. Yes.

Q. May I see what you brought? Thank you. Is it okay if we mark on the outside of these folders -- we'll figure out how to do the housekeeping later.

A. Certainly.

(Whereupon, Sporn Exhibit 4, a folder

containing documents, was then received and marked for identification.)

BY MR. KRISTAL:

Q. There's three folders. I'm marking as Exhibit 4 a manila folder that contains the deposition notice, curriculum vitae for Dr. Sporn, copy or a reprint of the 1,445 case article, which is Exhibit 1, a portion of what appears to be a book entitled "Asbestos, Asbestosis and Cancer." I have an article from 1997.

Can we call this the Helsinki criteria article, and we'll all know what we're talking about?

A. Yes.

Q. And the last document is an article from 1995 entitled "Malignant Mesothelioma Associated With Low Pulmonary Tissue Asbestos

0018

Burdens; a Light and Scanning Electron Microscopic Analysis of 18 Cases" by Srebro S-R-E-B-R-O, Roggli, and Samsa, S-A-M-S-A.

Could you tell me what this folder represents in terms of response to the deposition notice?

A. These are some of the articles and some of the literature that I have specifically reviewed in the formulation of my opinions in these matters.

(Whereupon, Sporn Exhibit 5, a Duke University folder - Mass, was then received and marked for identification.)

MR. KRISTAL: Exhibit 5, I'm marking a Duke University Medical Center folder which appears to be your file in the Norman Mass case specifically; is that correct?

THE WITNESS: Yes, sir.

(Whereupon, Sporn Exhibit 6, a Duke University folder - Fleckner, was then received and marked for identification.)

BY MR. KRISTAL:

Q. And Sporn 6, which is another blue Duke University Medical Center folder. Is that your specific file on the Fleckner case?

0019

A. Yes, sir, it is.

Q. If you could pull out the manila folder with the deposition notice. Do you have it there?

A. Yes, sir.

Q. Okay. So is what we have, which is Exhibits 4, 5, and 6, the universe of materials that are on Exhibit A?

A. Well, again, I was unable to furnish you with a list of prior testimony and a transcript of prior testimony. I was unable to furnish you with item 10 due to the sheer volume

that would have entailed. And I also have not been able to get a copy of all the billing for this.

Q. Okay. Well, let's start at the bottom then and go up. You have presented at lectures, seminars, and conferences on asbestos; is that fair to say?

A. Yes, it is.

Q. And you have written materials, PowerPoints, for those presentations?

A. Yes.

Q. And how voluminous are we talking?

A. I've given scores of lectures;

PowerPoints on which I have of and which I don't. And again, I just wasn't able to locate all of these on my computer within my files.

Q. Okay. Were you able to locate some of them? In other words, two things are going on here, and let me just -- I'm not trying to fuss with you. If you have done many, many such lectures and you have PowerPoints on your computer for those lectures, I think we're entitled to them pursuant to this notice. If you have thrown those away or they no longer exist, then that's the way it goes.

So are there things that are responsive to number ten that you have in your possession that you just haven't produced?

A. There probably are. Again, just the timing of the receipt of my notice for deposition, I just looked through the remainder of my duties, was unable to get a hold of, but I probably can and will be happy to furnish you those.

Q. Okay. When did you receive the notice? It's dated October 19th.

A. I'm not sure when I actually received the -- I think I printed this off on November 7th.

Q. Okay. So if I'm understanding correctly, with respect to Number 10, it's a timing issue, you just haven't had the time since you received the notice and were told to bring these things today -- to bring them, but it's not going to be a problem for you to produce?

A. In part. And part, some of the things I just don't have the asbestos --

Q. You can't produce what you don't have?

A. Correct.

Q. So putting those aside. I'm not asking you to produce something you don't have. That's not possible.

With respect to the stuff that you do

have that is responsive to number 10, you haven't produced them today because you just in your busy schedule as a doctor haven't had a chance to gather them; is that a fair --

A. Yes.

Q. But you can do that?

A. Yes.

Q. And you're willing to do that?

A. I'm more than happy to.

0022

Q. Nine, we've discussed already. Ten, we've discussed already. Seven, we'll come back to when I look at some. Billing, we've talked about. Reports, CV, okay.

Number three, there were two particular sentences which, for lack of a better word, at least I pulled out of your reports for Dr. Mass's case and for Dr. Fleckner's cases, which I thought were the nub of your opinions. And I'm asking you to provide all the materials you're relying on for those statements.

Do you see number three?

A. Yes.

Q. I think when you were identifying Exhibit 3, the manila folder, you said that those were some of the articles that you reviewed in forming your opinions.

Is Exhibit 3 and the articles in there the universe of materials that satisfy number three of the deposition notice?

A. No.

Q. I'm sorry. It's number four, the manila folder exhibit.

A. Beyond the articles I provided, much of what I have relied on is my experience and

0023

training.

Q. That's fine, and we'll get to that. You know, your experience and training is sitting in the seat right now.

In terms of articles and materials that you're relying on which you were asked to bring -- let me read it into the record, and I'll ask you what specifically you brought.

You were requested to bring all articles and any other materials relied on for the statement, quote, In the absence of non-neoplastic, asbestos-related pleural pulmonary disease detection of asbestos bodies on routine or iron-stained histologic sections of lung with corroboration on tissues asbestos analysis, it is my opinion that Dr. Mass's malignant mesothelioma is not related to an exposure to asbestos, end quote.

So let me stop there. What have you brought that you are relying on in terms of

articles or other materials for that proposition?
A. I think what I have here.
Q. Okay. Which are what? If you could identify them specifically.

There's the Helsinki criteria article, correct?
A. Yes. And there is a review here of -- in our mesothelioma paper.
Q. So it's the 1,445 papers cases, the Helsinki paper, and that portion of the text?
A. The bulk of this is from --
Q. We're going to take it one at a time. I just want to know now all the materials and articles you're relying on, materials and articles, putting your experience aside, for that proposition that I read. So just give it to me in a list. They'll have a record of it, and then I'll talk to you about your experience. So tell me what it is.
MR. SCRUDATO: What's the question, Jerry?
MR. KRISTAL: The question asks for all the materials and articles you're relying on for the statement I read about Dr. Mass's malignant mesothelioma not being related to an exposure to asbestos.
THE WITNESS: Perhaps if I --
MR. SCRUDATO: Are you asking him to give you a complete list?

BY MR. KRISTAL:
Q. No. He was asked to bring the articles and materials that he's relying on for that proposition. And I want to know -- it's simple. I'm not arguing with you. I'd like to know what you're relying on for that opinion, and if you brought the materials that you're relying on for that opinion.
A. Perhaps the word relying is -- again, I realize -- and I'm not trying to be evasive --
Q. I understand. You don't seem to be evasive.
A. And perhaps relying on isn't maybe the best -- the best term. Because to my knowledge there's -- there was no article or study excerpt that I could show you that these -- these are articles and studies that I had reviewed in forming my opinion.
Q. Okay. But so let's start there. Tell me the articles that you reviewed in formulating your opinion, and then we'll go on to the relied portion. Are they -- just pick them up in your hand, identify them for us so we have a record.
A. Exhibit 1, "Malignant Mesothelioma, Occupational Exposure to Asbestos."

0026
Q. That's the 1,445 cases article, right?
A. Yes.
Q. All right.
A. Asbestosis -- I'm sorry, I don't think we have this --
Q. It's part of Exhibit 4. I marked that whole manila folder.
A. This is the "Asbestos, Asbestosis and Cancer" article by the Institute of Occupational Health. There's the Helsinki criteria article. And then there's RR, and then there's Dr. Roggli's article by the -- published with Srebro, et al., that you cited earlier.
Q. From 1995?
A. Yes, sir.
Q. Okay. Anything else?
A. No, sir.
Q. Okay. Let me see if I'm understanding what you were saying. There's no article or group of articles that you can say that you're relying on for the opinion that I read regarding Dr. Mass's mesothelioma and its relation to exposure to asbestos, but the four items that you mentioned were things that you specifically reviewed in reviewing his case?

0027
A. Yes, sir.
Q. Okay. Is the answer any different if I were to quote the portion of Exhibit 3, the section that asks you to bring all articles and other materials relied on with respect to Dr. Fleckner and your opinion about his mesothelioma and causation?
A. Yes. These are -- these are --
Q. The same?
A. Yes.
Q. And with respect to items one and two on the deposition notice, those are your materials that are in the blue folders?
A. I'm sorry?
Q. Sure. Take your time.
A. Yes.
Q. Okay. So items one and two were in the blue folders for each --
A. Yes.
Q. Okay. Fair enough. If you -- this is independent of any articles so we don't have to worry about the housekeeping for a moment.
If you were asked to consult a pathology consultation on a patient who was diagnosed with malignant mesothelioma, let's say

0028
in the year 2000, and the diagnosis was based on a biopsy and you confirmed the diagnosis pathologically -- you yourself confirmed it -- and all you knew about the person in terms of

asbestos exposure was that there was an occupational history as a lifelong asbestos insulator who worked daily with asbestos-containing products from 1950 to 1975 -- are you with me so far?

A. We're constructing a hypothetical situation here?

Q. That's exactly what we're doing.

A. Yes, sir. I understand.

Q. And you had no tissue. There was no tissue available to do any sort of fiber burden analysis. And there were no x-rays or other clinical findings regarding to the presence or absence of pleural plaques or asbestosis.

What's your opinion about whether or not that person's asbestos exposure was a substantial contributing factor in causing his mesothelioma?

A. Would you mind repeating for me what his occupational exposure was? A lifelong --

Q. Lifelong asbestos insulator, worked

0029

daily with asbestos-containing products from 1950 to 1975, and was diagnosed with malignant pleural mesothelioma in the year 2000. No evidence one way or the other either clinically or pathologically with respect to pleural plaques or asbestosis, and no tissue to do any sort of asbestos body counts or fiber counts.

MR. SCRUDATO: Object to the form of the question, but go ahead and answer the question.

THE WITNESS: That would be my opinion that within a reasonable degree of certainty that his mesothelioma was caused by his asbestos exposure.

BY MR. KRISTAL:

Q. Based on the history?

A. Yes.

Q. And if I change the hypothetical and made it to a person, same date, same everything, except it was a pipefitter as opposed to an asbestos insulator, same opinion?

A. Yes, sir.

Q. If it was -- if the person was the spouse of the person in the first hypothetical, so the spouse of an asbestos insulator, who

0030

would, you know, shake the clothes off and do the laundry on a regular basis of the insulator between 1950 and 1975, and was diagnosed in the year 2000, is it your opinion that the asbestos exposure was a substantial contributing factor?

MR. SCRUDATO: You're asking him just based on the information you're giving him, right, Jerry?

MR. KRISTAL: Exactly.
MR. SCRUDATO: I'll object to the form of the question, but go ahead.
THE WITNESS: That would be my opinion.
BY MR. KRISTAL:
Q. Sir, if I'm understanding you correctly, you could make -- strike that.
It would be your opinion in certain circumstances that anecdotal history of exposure to asbestos would be sufficient for you to attribute the asbestos as causing the mesothelioma in certain circumstances?
A. I would hope it would be more anecdotal. I would like to see that --
Q. The employment records?
A. Yes. Something -- some type of hard evidence by way of occupational history that the

0031

patient in question was -- had a significant exposure to asbestos. Yes.
Q. Okay. So --
A. Not just hearsay.
Q. Right. Well, suppose the person testified as to what they did under oath.
A. Okay. Certainly.
Q. All right. So let me try to cut through. How does that square with your opinion that I read from the Mass report and the Fleckner report? Let me mark the Mass report and let me read you that sentence again because I would like to hear how you square those two sentences, because maybe I'm missing something.
Let me mark as Sporn 7, although you have your own copy in your file, and if you want to use your own copy, that's certainly fine.
(Whereupon, Sporn Exhibit 7, a 7/19/05 letter, was then received and marked for identification.)
BY MR. KRISTAL:
Q. Sporn 7 is the July 19th, 2005 letter report that you wrote to Paul here on the Norman Mass case; is it not?
A. Yes, sir.

0032

Q. And it consists of two pages?
A. Yes, it does.
Q. Okay. And in the bottom, the final -- the next to the last sentence, is that kind of your ultimate opinion in the case?
A. Yes, sir.
Q. Okay. Let me read it into the record and ask you a question. Quote, In the absence of non-neoplastic, asbestos-related pleural pulmonary disease detection of asbestos bodies on routine or iron-stained histologic sections of lung with corroboration on tissue asbestos analysis, it is my opinion that Dr. Mass's

malignant mesothelioma is not related to an exposure to asbestos, end quote.

Tell me how you square that with the hypotheticals I gave you and your opinions here.

A. If I understood your hypothetical situations, we didn't have -- all we had was tumor. The hypothetical situations that you offered me, and please tell me if I'm --

Q. No, no. All we have is tumor tissue.

A. All we had was tumor tissue, and we didn't have tissue asbestos analyses. We didn't have sections of lung to look at to do iron

0033

stains. So I don't -- they're not valid comparisons.

Q. Okay. So let me see if I'm understanding. Are you saying that you don't require there to be pleural plaques before you would give -- strike that.

What is the minimum requirements that you have if you were asked to render an opinion about whether or not an exposure to asbestos caused mesothelioma?

A. Well, my approach here is strictly from the pathologist's perspective.

Q. Okay.

A. Nobody has ever asked me outside of in a curbside discussion at a conference, but any type of -- where I have created a formal report or asked to, you know, give testimony have I ever given testimony based solely on what we agreed to call anecdotal evidence.

What I require in order to give attribution causation to asbestos is scientific matter, either in the form of radiology with plaques or evidence of asbestosis. I require demonstration of asbestos bodies on iron stains or H & E stained sections of lung, or I require

0034

tissue asbestos analysis. In the hypotheticals that you constructed, I was given none of those.

Q. Right. So how then can you render an opinion that the exposures caused the mesothelioma?

A. Well --

Q. That's what I'm not understanding. Do you understand my question?

A. Yes.

Q. In other words, we had no rad -- there was nothing radiological --

A. This is -- again, I would -- this is a part of the Helsinki criteria that I'm in agreement with.

Q. Which is what?

A. That in certain instances exposure history in and of itself is sufficient for

attribution.
Q. Okay. And what are those instances when -- and when you say exposure evidence, you mean anecdotal exposure evidence?
A. Yes.
Q. What are the situations, in your opinion, when anecdotal evidence of asbestos exposure is sufficient to attribute the

0035

causation of a mesothelioma to that exposure?
A. Basically, my experience, there are a handful of exposures where I am in agreement that such exposure would more likely than not raise your tissue asbestos levels to above that of what our control values are. And the instances that you cited to me were insulators. I think you said pipefitters or shipyard workers. Those are all folks who I think that that is a -- those are majorly significant exposures that would likely --
Q. And spouses?
A. Yes. And spouses are the same, yes. I am unconvinced that exposure to -- as were sustained by Dr. Mass, that it is on par with that type of exposure that a -- the insulator or the shipyard worker or the spouse of same sustained.
Q. And it would have to be anecdotally in order for you to base your opinion that the asbestos exposure was causative in order for you to render that opinion?
A. In this case, I am less concerned in Dr. -- in Dr. Mass's case about what his exposure history was at all. I think the tissue

0036

asbestos studies sort of trumps what the occupational exposure is. That to me, the occupational exposure -- or the -- I beg your pardon -- the tissue asbestos analysis, that is the gold standard, and not the occupational exposure history.
Q. Now, let's use Dr. Mass's situation in a hypothetical. Suppose there was no other tissue and all we had was an anecdotal history of exposure. Would you then say I don't know one way or the other whether or not his exposure caused the mesothelioma?
A. Well --
Q. Do you follow what I'm asking?
A. Yes, sir, I do. I would still say no that based on the available data and the history that that was -- that would be insufficient enough to raise your lung asbestos levels above that background.
Furthermore, I'm not convinced that the type of asbestos that -- I think the type of asbestos that Dr. Mass was exposed to is a

different form of asbestos with completely different oncogenic properties than the insulators and pipefitters that you offered up as hypotheticals.

Q. Okay. If you -- let me see if I'm understanding what you just said in that last answer.

If you felt that anecdotally a history of asbestos exposure would raise tissue burden above background, would it then be your opinion that the exposures were causative for mesothelioma?

A. Again, I would --

Q. In the absence of other evidence.

A. I would have to take that -- there's no one-size-fits-all answer to your question. I would have to take it -- in cases like that, I would have to look at what those exposures were and what those -- and to what types of asbestos.

Q. Well, that's what I'm getting at. I want you to assume that you believed that an anecdotal exposure raised the level above background.

MS. MILLER: Objection to form.

BY MR. KRISTAL:

Q. Do you follow?

A. I believe that anecdotal evidence is for me sufficient enough for attributions, yes.

In certain cases, not all cases. But certain cases.

Q. Right. I'm trying to understand the cases. And in those cases you believe that that anecdotal exposure would raise the lung burdens above background?

A. Yes.

Q. Now, are there dental exposure articles or something you're relying on so that you believe that anecdotally Dr. Mass's levels would be below background or at background?

A. Are there articles of --

Q. In other words, what are you relying on? I think you said earlier that even if you didn't have the pathological evidence, it would be your opinion that Dr. Mass's anecdotal testimony about exposure would not, in your opinion, be sufficient to render an opinion that the mesothelioma was caused by that exposure.

Did I understand that correctly?

A. Yes.

Q. What are you relying on for that?

A. Well, that -- I'm relying on a review of our database. I'm relying on from what I understand that dentists such as Dr. Mass may have been -- the actual material that they were

working with and the form of asbestos present therein. And to me, none of those were of sufficient severity to raise the level of cancer-causing asbestos within the substance of his lungs.

Q. What -- anything else?

A. No, sir.

Q. Okay. What is it about the review of your database? Are you talking about the 1,445 cases article?

A. That, and just a review of the computer database that we -- that Dr. Roggli maintains.

Q. Tell me what that means in the context of the answer you've given.

A. Well, I was curious as to whether we would have -- whether we had a bunch of dentists in our database that had come down with mesothelioma. And in point of fact, we had one, and his situation was not analogous to either Dr. Mass or Dr. Fleckner.

Q. And this database is on a computer or printed out?

A. It's on Victor Roggli's --

Q. On Victor Roggli's computer?

0040

A. His computer, yes.

Q. And if I'm hearing you, you specifically reviewed that for these two cases, take a look at what that database said in terms of information you were looking at, to render an opinion?

A. Not at the time of the formulation -- I looked up our article here to see if there was anything. But then following the completion of my review, I went back and looked through our database.

Q. And are you relying on that review, in part, for your opinion?

A. Not -- I'm relying on the buttress of my opinion, but not in the formulation of my opinion.

Q. But we're in real-time now. And I realize at the time you wrote your report, you haven't reviewed it, but since then you've done other work?

A. Yes, sir.

Q. So as you sit here today and as I anticipate when we get to trial and you testify, you would be relying on that as well?

A. Yes, sir.

0041

Q. I would request that.

Are you talking about chrysotile when you're talking about fiber type, oncogenic properties? I think you said you're relying on the type of asbestos in the product.

A. Yes, yes.

Q. You're talking about chrysotile?
A. Yes.
Q. Is it your opinion that chrysotile is capable of causing malignant mesothelioma?
A. In a very, very select minority of cases.
Q. And what is that select and small minority? Is it a dose issue?
A. It's more of an occupational -- yes, it's a dose issue through a certain type of occupation.
Q. Meaning what?
A. I think that when you look at folks who have an increased incidence of mesothelioma who were exposed only to chrysotile, you find those are chrysotile miners or people who were exposed to chrysotile ore, not the end users, not using products containing chrysotile. Friction products and so forth.

0042

Q. So is it your opinion then that no dose of chrysotile in folks who are exposed to chrysotile through end product use is capable of causing mesothelioma?
A. I beg your pardon. Would you repeat the question?
Q. Sure. I'm trying to understand your opinion on chrysotile. And from what I heard, I have a follow-up question. Just so I'm fine tuning my understanding.
The question is: Is it your opinion that chrysotile exposure, from people who were exposed in end product use to chrysotile, is not capable of causing mesothelioma?
A. It may be, but not through the chrysotile itself. But more commonly due to the --
Q. The tremolite?
A. -- the tremolite, the natural contaminant. People exposed to pure chrysotile, no. I remain unconvinced that that causes mesothelioma.
Q. Is there anyone you know of that's been exposed to pure chrysotile? Have you ever read any such a thing? That's a laboratory thing,

0043

right? Pure chrysotile doesn't exist in the real world?
MS. MILLER: Objection.
MR. DiGREGORIO: Objection to form.
THE WITNESS: I'm not sure that that's true.
MR. KRISTAL: People who are exposed to end products which contain chrysotile are not being exposed to pure chrysotile, are they?
MS. MILLER: I think this witness is a pathologist, not a mineralogist.

BY MR. KRISTAL:
Q. Okay.
A. Again, there's -- I think it varies from chrysotile source to chrysotile source. There's some -- there are some chrysotile that is heavily contaminated with tremolite and there's other chrysotile that's not.
Q. I'm not talking heavily or not. Is there such a thing, in your opinion, from an end product use of a chrysotile-containing product that it's pure chrysotile?
A. Probably not.
Q. If I'm understanding you correctly, somebody who is exposed to let's say a pipe

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covering product that had previously contained asbestos, that was certain percent asbestos, 15, 20 percent chrysotile asbestos, is that capable of causing mesothelioma in someone exposed by using that end product? Whether it's the tremolite or not, you know. And if you want to say --
A. No, I think -- I'm not convinced that that's true, the fact that that type of exposure will result in the causation of mesothelioma.
Q. In anybody regardless of the dose?
A. Well, I imagine you might find somebody who had an extremely high exposure to ingested chrysotile analogous to someone who worked with chrysotile or perhaps a -- but I think that would be an unusual circumstance.
Q. Let me see if I'm understanding you. Are you saying it's an issue of dose? That it's sufficiently high doses of chrysotile in end products, it's capable of causing mesothelioma?
A. Probably.
Q. So if I modify my first hypothetical and there's a diagnosis of mesothelioma in the year 2000, you have a lifelong asbestos insulator who worked daily with asbestos-

0045

containing products that only contained chrysotile with whatever level of tremolite contamination there might or might not be from 1950 to 1975, do you have an opinion on whether or not that exposure contributed to the development of mesothelioma?
A. I would say that that exposure as you just described would more likely than not have raised their tissue asbestos content to levels above background and therefore increased their risk.
Q. Same thing for the pipefitter?
A. Yes, sir.
Q. Same thing for the spouse of the insulator worker?
A. Yes, sir.

Q. Okay. Can you get out the attributions article -- I'm sorry, the criteria article, the Helsinki criteria article.

I think you mentioned you were in agreement with some portion about attribution. There's a section that refers to causal attribution. It says brief or low level exposure are sufficient, something to that effect. If you can find that, that would be

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helpful. I can find it and maybe hand it back to you. There's a specific section --

A. I see it right here.

Q. Can you tell the page and read what I tried to paraphrase?

A. On page 313, it's on the second column in the bullet point in the third paragraph. It is the one -- fourth bullet point there in the third heading.

Q. Can you read that bullet point?

A. Occupational history of brief or low level exposure should be considered sufficient for mesothelioma to be designated as occupationally related.

Q. And do you agree or disagree with that?

A. Again, I think that -- it's not really so much a question of disagreeing -- I'm trying not to be evasive.

Q. Right.

A. It's -- there are times where -- that I would hold that fact, a brief history of or history of brief or low level exposure to commercial amphibole asbestos, I would absolutely agree with that. A brief or low level exposure to chrysotile asbestos, I would

0047

not -- I would take issue with that.

Q. Okay. And in this, the criteria document, they don't parse out in that bullet point chrysotile or tremolite or amosite or amphibole, or anything?

A. No.

Q. Okay. So you agree if it's referring to amphiboles and you would disagree if it's referring to chrysotile?

A. Not so much -- that in the context of what the actual occupation -- I would add to that as to what the occupation was, as well, in addition to the actual fiber type.

Q. Meaning if it was brief or low level exposure to amphibole in certain occupations, you would agree, and in certain occupations you wouldn't agree?

A. Yes. Because different occupations will be exposed to different types of asbestos.

Q. I'm just focusing on the amphibole component.

A. No. I think that -- the amphibole -- that leads into my qualification regarding the occupational history.
Q. And that's what I'm trying to

0048

understand. It's your opinion that there are certain occupations to which brief or low level exposures to amphiboles you would say caused the mesothelioma, and there are other occupations which a brief or low level exposures to amphiboles which you would say didn't cause the mesothelioma? I'm trying to understand what you were saying.
A. Right. I would say a brief or low level exposure would be at least contributory to mesothelioma.
Q. In every case?
A. In every case.
Q. And am I understanding you correctly that in no case would brief or low level exposures to chrysotile be contributory in the development of mesothelioma?
A. Not in my opinion.
Q. So to that extent, you're disagreeing with the Helsinki criteria as it's stated there?
A. I'm in disagreement, yes, of the --
MR. SCRUDATO: Hold on a second. I thought we established that this didn't identify out the fibers. That was your original question.

0049

BY MR. KRISTAL:
Q. That's right. And I think that's why Dr. Sporn is saying he agrees with it if it's referring to amphiboles, as he's discussed, and he disagrees with it as it relates to chrysotile.
A. That's a fair statement.
Q. Okay. Was that the section you were referring to earlier when you said you were relying on the Helsinki --
A. Yes.
Q. Are you relying on the Helsinki criteria article for any other opinion in the Dr. Mass or Dr. Fleckner case?
A. If I could -- if I can refer to another -- the document that this Helsinki criteria was distilled from.
Q. Okay. Let me just see that for a second.
A. Certainly.
Q. Okay. So let's identify this. This appears to be -- would you call it a chapter?
A. It's a chapter within sort of a little periodical that was published by all the gurus who assembled them in Finland to discuss all

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this to hammer this out.
Q. Okay. So as part of Exhibit 4 in the manila folder in the chapter from the proceedings -- Asbestos, Asbestosis and Cancer, are the proceedings from the Helsinki criteria meeting; is that what you're saying?
A. They are the proceedings from which spawned the publication of the Helsinki criteria.
Q. Okay. And you know that from Dr. Roggli? How do you know that?
A. I just know that from reading this.
Q. Two plus two equals four?
A. Yes.
Q. Tell me what in the chapter that you brought in, the "Asbestos, Asbestosis and Cancer" proceedings book, you're referring to?
A. If you refer here to page 9, they talk about areas of -- they subdivide exposures. They talk about definitive, definite exposures, probable exposures, possible exposures, unlikely exposures, and they refer to unlikely exposures to occur in the -- in the health care setting, health care workers.
Q. Let me see if I'm understanding what

0051

you're saying. There's a -- the chapter that you brought, seems to be Chapter 3, and it is by two individuals, neither one of whose name I can pronounce. Let me spell the first one, Tossavainen, T-O-S-S-A-V-A-I-N-E-N. The second one is Techn, T-E-C-H-N.
And on page 9 there is a section that says, quote, In case control studies of mesothelioma or lung cancer, the individual work histories have been classified in terms of exposure probability roughly as follows. And then they have the categories you mentioned, definite, probable, possible, and unlikely.
What is your takeaway from that section?
A. The health care workers in general are -- I don't think -- regardless of what their actual day-to-day chores might entail, are unlikely to have a meaningful exposure to asbestos, or a significant exposure to asbestos, or any type of exposure to asbestos.
Q. And therefore -- I'm trying to understand where you're fitting that in. This is talking about epidemiological studies, case control studies, right?

0052

A. Yes.
Q. And how work histories have been classified in -- it looks like four or five case control studies, right?
A. Right.

Q. There's a reference there?
A. Right.
Q. Tell me how that impacts your opinion one way or the other. I don't see the references as part of this book. I'd ask if you could provide Paul the sections with the references.
A. Not having been invited to participate in this august group of world class experts on asbestos-related disease and mesothelioma, I'm not sure that they're talking about dentists, about -- and other people as mentioned in that category. I think that they were talking about people with well-known occupational exposure. That's my take on reviewing this and then the Helsinki criteria.
Q. And you're getting that from your own head, so to speak?
A. Yes.
Q. From no other source?

0053

A. No other source.
Q. Let me see the Helsinki criteria. I truly apologize for not understanding how you're using this article, so if you could run it by me again. I'm really trying to understand what you're saying.
Are you saying that the section that we've been reading from, the different categories of exposure, impacts the Helsinki criteria article in some way that informs your opinion?
A. No. Maybe -- let me explain it like this.
Q. However you want to explain it because I'm really having trouble following.
A. If you were -- may I have the Helsinki criteria?
Q. Sure.
A. If you were to take bullet point four here of the Helsinki criteria, occupational history of brief or low level exposure should be sufficient for mesothelioma to be designated as occupational related, I think that that would almost get rid of the concept of idiopathic mesothelioma in -- because I think that you have

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to sort of parse out with the occupational history what that actual brief or low level exposure was.
Q. How does the other document relate to what you just said, or does it not relate to what you just said?
A. Well, I think that there are people, such as the two gentlemen in question here, who maybe had a brief and low level exposure to chrysotile asbestos, and they are -- but they

are stratified, I think, in a group that has an un -- what I would -- unless I'm misreading this -- as an unlikely exposure.

Q. I see what you're saying. Let me tell you from what you're saying why I think you're misreading that, and you can tell me if I'm wrong.

It seems to me that the categories they're talking about, epidemiological categories. So if you're breaking out cases and controls, if you had someone who gives an occupation and the only thing they tell you is I'm a health worker, health care worker, whatever the term is, that may get put into a category for a case controlled study of unlikely

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exposure, if that's how you were conducting your study. Is that fair to say? Is that kind of what it's saying?

A. Possibly, yes.

Q. But then if you asked a specific health care worker, have you had exposure to asbestos and they tell you yes, and here's my exposure to asbestos as a health care worker, then it takes it out of that category because you have more specific information on a specific person as opposed to a category of people.

Do you follow what I'm saying?

A. Yes.

Q. So that it seems to me that it would not be an unusual proposition to say that health care workers generally would have unlikely exposures to asbestos, while at the same time saying certain specific people may have had an occupational exposure to asbestos as a health care worker.

Am I missing something? Is that advancing the ball at all?

A. No. That's another way, I think, of looking at it. It's not the way I choose to. But yeah.

0056

Q. Let me probe a little bit. Why are you saying because as a category health care workers may be considered to have unlikely exposures when you have specific information on two specific people who have testified under oath that they have had asbestos exposure? In other words, why is the more general trumping the more specific?

A. Again, we're all exposed -- I take that because we're all exposed to asbestos. All of us are exposed to asbestos on a -- through the course of our lives. We all have asbestos in our lungs.

Q. Right. But we're talking about asbestos exposure other than simply walking

around on the planet. Is that fair to say? In other words, nobody disagrees with the proposition that you just said. Living on Earth and breathing, your lungs are exposed to asbestos?

A. Right.

Q. But then you start asking about don't -- isn't a occupational history something that doctors routinely ask if somebody comes in and they're thinking about a diagnosis of

0057

mesothelioma?

A. Yes.

Q. And that's done because occupational exposures generally distinguish people from somebody who's just walking around breathing, right?

A. Right.

Q. So I guess what I'm trying to understand is why you believe the general category for the epidemiological purposes of office workers as having an unlikely exposure means anything with respect to these two gentlemen.

A. I'm not talking about office workers. Health care workers.

Q. I apologize. Just substitute health care workers in that last question.

A. I guess where I think I might have the best answer for you is that there's a -- you know, there's a difference between working with something that may have some asbestos in it and being -- exposure to asbestos to increase your levels.

Q. Well, let me take a step back then. Do you believe from your understanding of this case

0058

that Dr. Mass and Dr. Fleckner were occupationally exposed to asbestos?

I'm going to get to the issue of how much and whether you believe that increases the risk, but as the first question: Do you believe that they had occupational exposure to asbestos in the sense that they were students?

A. I believe that -- I believe that they -- I have no reason to doubt that they had worked with compounds that contained asbestos. Whether that work caused them to be actually exposed to the asbestos themself, I'm not sure of.

Q. Was there visible dust created from their use of the products, according to their testimony?

A. I think there was dust, yes.

Q. From their use of the asbestos-containing products?

A. I don't know for certain whether it was

actual dust from their actual products.
Q. Because you don't recall their testimony about it or you're doubting --
A. Right.
Q. Whatever their testimony is, it is?

A. Yes.
Q. If there is testimony that their use of the asbestos-containing product created dust which they breathed, those would be exposures that would be different than people just walking around?
MR. SCRUDATO: I'll object to the form of the question.
BY MR. KRISTAL:
Q. Is that fair to say?
A. Yes.
Q. Do you know -- it seems to me that you're working with the understanding that the products that Dr. Mass and Dr. Fleckner are talking about contained chrysotile; is that fair to say?
A. Yes.
Q. Where did you get that from?
A. I think that's just from my general knowledge of -- or in the past what these dental materials -- I know a little bit about what dental technicians and, you know, dental students are exposed to.
Q. Any other sources other than what you just said?

A. No.
Q. What is that knowledge based on?
A. I guess it's -- I can't recall if it's reading Churg's book on occupational lung disease or in seminars. That just -- that's just the knowledge base I carry with me. I can't --
Q. You can't be more specific?
A. I honestly can't tell you where I heard that from. I'm not -- I never heard that dental students or dental technicians were exposed to commercial amphiboles.
Q. And I'm just trying to find out where you heard that they were exposed to chrysotile.
A. In the course of my work as a thoracic pathologist with an interest in mesothelioma. It's just, you know --
Q. Other than these two cases, what other -- why would the issue of what dental technicians or dentists are exposed to by the way of asbestos products, when would that ever arise?
A. Well --
Q. In other words, was there a seminar --

I think you mentioned a seminar. Was there a seminar where dentists using asbestos was --

A. I can't remember. I can't remember. A big part of what I do is with occupational lung disease, and I can't recall for you when I heard that.

Q. Okay. We're making Michele's job really hard. You're talking over my lines and I am talking over yours. We just have to be a little more cognizant of that.

MR. SCRUDATO: Can we take a break?

MR. KRISTAL: Sure.

(Whereupon, a recess was then taken.)

BY MR. KRISTAL:

Q. Okay. Dr. Sporn, I want to spend a little time going over the folder which we've marked as Exhibit 5, which is your file on the Mass case, okay?

A. Certainly.

Q. I'm trying to do this in some organized fashion. The first document is a letter from a legal assistant dated May 6, 2005 forwarding you some pathology slides; is that correct?

A. Yes, it is.

Q. And then there appears to be a surgical pathology report from one of the hospitals where there were samples taken; is that right?

A. Yes.

Q. And then I believe, if I'm correct, there is some -- it seems to be multiple copies of that same surgical pathology report from Memorial Hospital; you know, Sloan-Kettering. Can you confirm that those are the same?

A. Yes.

Q. And then there's a surgical pathology report from the Bridgeport Hospital which is where one of the samples came from, right?

A. Yes.

Q. And then there's a number of different medical records, radiology consultation and other medical records?

A. Yes.

Q. I think this goes with the Bridgeport. I don't want to separate these things. These are all part of the surgical pathology report from Bridgeport?

A. Yes, sir.

Q. Okay.

MR. SCRUDATO: These are all for Dr. Mass.

THE WITNESS: These are all for Dr. Mass.

BY MR. KRISTAL:

Q. And then there's a copy of your report

dated July 19, 2005, which we separately identified as Exhibit 7 already?

A. Yes.

Q. Now, in your report -- you can operate off that one and I'll look at this one, if that's all right -- there's a mention of a protocol and report of tissue asbestos analysis performed on lung tissue by Dr. Samuel Hammar, H-A-M-M-A-R. Do you see that?

A. Yes.

Q. Did you ask Dr. Hammar to conduct that report?

A. No, I didn't.

Q. Okay. Do you know Sam Hammar?

A. Very well.

Q. Recognized authority in asbestos disease?

A. A recognized authority in asbestos disease and a friend of mine.

Q. Okay. A twofer.

A. Yes.

Q. Do you rely at times on Dr. Hammar for

0064

his opinions about asbestos and asbestos disease?

A. Over the course of the last 15 years I've relied on Dr. Hammar's opinion on a lot of things in thoracic pathology, asbestos-related disease, and mesothelioma.

Q. I think there are three copies of Dr. Hammar's report dated May 17, '05. There's a cover letter to Mr. Scrudato and then reports underneath that. I just want to make sure those are three of the same, and then I can operate off one and you can operate off one.

A. Yes. What you've just given me is --

MR. SCRUDATO: These are all three copies of the same thing; is that what you're asking?

MR. KRISTAL: That's the question. That's the only question right now.

THE WITNESS: No, they're not. Two -- even though they're all dated May 17, 2005, one is a --

MR. SCRUDATO: Hold on a second. Let me make sure I understand the question. I have three stacks of materials, cover letter and

attached report. Is the question whether or not

0065

these three copies are all identical?

MR. KRISTAL: Yes.

MR. SCRUDATO: I understand your question. They appear to be, but if you want to compare them, you can compare them.

Is this, this, and this the same?

THE WITNESS: Yes.

MR. SCRUDATO: That's the question on the table.
THE WITNESS: I was in error. These three separate, they are all the same.
MS. MILLER: Except for the faxed footer it looks like on the bottom.
MR. KRISTAL: Yes. Disregard any fax cover sheet. I'm just talking about the cover sheet itself.
MS. MILLER: I was just being thorough.
MR. KRISTAL: Thank you for your thoroughness.
(Discussion off the record.)
BY MR. KRISTAL:

Q. You read these materials, I take it, that's why they were in your folder?
A. Yes.
Q. The letter to Mr. Scrudato says, quote,

0066

please find enclosed my report on Mr. Norman Mass. At your request we performed asbestos digestion analysis on lung tissue from Mr. Mass. We received two paraffin blocks from the department of pathology at Sloan-Kettering Memorial Cancer Center in New York. The amount of lung tissue in the paraffin -- strike that -- oh, that's right. The amount of lung tissue in the paraffin tissue was 1.5 grams. Digestion analysis showed no asbestos bodies in this tissue, end quote.
Do you see that?
A. Yes, I do.
Q. And that's a summary of the two-page report that is attached to that letter?
A. Yes, it is.
Q. Then Dr. Hammar says, quote, This does not mean Mr. Mass was not exposed to asbestos, end quote.
Do you agree or disagree with that?
A. I would disagree with that.
Q. Okay. And why is that?
A. I mean, I'm -- again, I did not actually review the preparations that Dr. Hammar used to perform his digestion. I'm sure when he

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says it was lung tissue that that's in fact what it was.
But to me, based on my experience and training, the gold standard of whether or not one was exposed to asbestos, at least for the commercial amphibole asbestos, is tissue asbestos digestions. And if you're -- if you're going to do them and find no asbestos and say, well, that doesn't mean that he wasn't exposed to asbestos, that to me is -- suggests why bother doing the assay at all if you're not

going to find a negative result meaningful.
Q. So let's read the next sentence and see if Dr. Hammar is explaining why. Let me read them together and I'll ask you another question.
A. Okay.
Q. Quote, This does not mean Mr. Mass was not exposed to asbestos. It means simply that in this sample no asbestos bodies were found, end quote.
Do you agree with that second sentence?
A. Well, again, I agree with the statement, in this sample. I have no reason to dispute that in that sample no asbestos bodies were found.

0068

Q. He says simply in that sample, which is the -- don't you take that sentence to be an explanation of why he does not feel that means Mr. Mass was not exposed to asbestos?
A. Well, I think that he -- he is neutral on whether or not Dr. Mass was exposed to asbestos.
Q. Right. I'm not saying he wasn't. Do you agree -- strike that.
I just want to see what your understanding of what he's saying -- what he's saying.
A. I understand absolutely what he is saying.
Q. And what he seems to be saying is the fact that you didn't find asbestos bodies in a sample does not mean that that person was not exposed to asbestos.
A. Yes.
Q. Okay. It doesn't mean they were, it doesn't mean they weren't.
A. Yes.
Q. And you disagree with that?
A. No. I think that's a fair statement.
Q. Meaning you do agree with it?

0069

A. Yes.
Q. Okay. And then Dr. Hammar says, quote, According to Helsinki consensus report criteria, one can attribute mesothelioma to asbestos by a history of exposure to asbestos alone even if it is a history of a small, parenthesis, low, closed parenthesis, exposure to low asbestos, end quote.
Do you see that?
A. Yes.
Q. And do you disagree with that to the extent that it is talking about chrysotile? I think we discussed this, and I'm trying to short-circuit it. But if there's some -- let me ask you this again: Do you agree or disagree with that statement?

A. I agree with Sam's sort of condensation of what the Helsinki criteria is saying in that sense. He is saying --
Q. Well, do you agree with that proposition?
A. Do I agree with that proposition?
Q. Right.
A. Again, we talked about this earlier. In certain circumstances, I do.

Q. And the circumstances which you do we've already discussed when we talked about that bullet point?
A. Correct.
Q. Okay. And there's nothing additional that we haven't talked about --
A. Okay.
Q. -- so I don't have to go back over that.
Peak latency for mesothelioma from first exposure is 30 to 40 years after first exposure?
A. It's certainly measurable in decades. Two to three decades at one end of the spectrum and six or seven decades I think at the other end of the spectrum. It's a latency period measured in decades, yes.
Q. My question is, though, whether peak latency is 30 to 40 years after first exposure.
A. I'm not sure what the peak latency or -- I've never heard latency described as a peak. In other words --
Q. Okay. You would certainly agree with respect to Mr. Mass that from his first exposure to asbestos as a dental student until the date

of his diagnosis with asbestos is clearly within the appropriate latency for mesothelioma?
There's no disagreement about that, right?
A. No.
Q. If you had seen pathological evidence of pleural plaques in Dr. Mass, would you then say that more likely than not his exposure as a dental student was a substantial contributing factor to his mesothelioma?
A. Yes.
Q. If you had seen clinical evidence of pleural plaques, would that be your opinion?
MR. SCRUDATO: When you say -- objection.
BY MR. KRISTAL:
Q. Radiographic evidence.
A. Yes. I would accept a radiologist's diagnosis of plaques.
Q. Same thing for asbestosis, both radiographic and pathological evidence, if that

existed, you would say that his exposure to asbestos as a dental student was a substantial contributing factor to his mesothelioma?
A. I would say that asbestos was clearly

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-- I would say evidence of asbestosis that I would clearly say this was an asbestos-related malignancy.
Q. And if the only evidence of exposure to asbestos other than simply walking on the Earth was as a dental student, would you then say that that exposure was a substantial contributing factor?
A. Yes, I would.
(Discussion off the record.)
BY MR. KRISTAL:
Q. I'm going to have some more general questions about asbestos bodies, but in the context of some general questioning, I just want to focus on Mass right now.
In the Mass folder there's an article entitled "Black Spots Concentrate Oncogenic Asbestos Fibers in the Parietal Pleura" by B-O-U-T-I-N and others?
A. Yes.
Q. Can you tell me why that was in the folder?
A. I think there's been some -- I didn't rely upon this to -- and if I said that I used this in the formulation of my opinion or not, I

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would retract that.
Q. No, I don't think you had.
A. This is --
Q. I just want to know why it was in the Mass folder. If it's a mistake, it's a mistake. If you reviewed it, I just want to know why you reviewed it.
A. It shouldn't have been in the Mass folder. This was something that I had anticipated possibly being asked about during the course of the deposition.
Q. Okay. In what context? This is good now. You're asking the questions and answering them. A whole purpose witness.
What were the anticipated questions for which you wanted to look at that article?
MR. SCRUDATO: I'm sure there's an objection here somewhere to that question, but go ahead and answer the question.
MS. MILLER: Streamlining.
THE WITNESS: I anticipated --
MR. SCRUDATO: The lawyer asking the witness to ask the questions.
THE WITNESS: I anticipated at some point a question regarding diagnostic -- or

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analytic substrates lung versus pleura.
MR. KRISTAL: And what were you anticipating I was going to ask on said subject?
MR. SCRUDATO: Just ask the question, Jerry.
BY MR. KRISTAL:
Q. Do you mean in terms of whether or not what you find in the lung relates to what's in the pleura?
A. Yes.
Q. We'll get there. And how does that article relate to that line of questioning?
A. That line of -- this article specifically addresses the levels of asbestos fibers within lung and pleura in exposed individuals and in nonexposed individuals.

Q. In terms of total lung burden?
A. Yes. In terms of, yes, how pleural burdens relate to lung burdens.
Q. Does it break out the burdens in the lung and the pleura by fiber type?
A. I don't believe it did.
Q. There is a difference, though, between the type of fiber that you see lung tissue many years after exposure as opposed to the type of

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fiber that you see in the pleura --
A. Yes.
Q. -- is there not, generally?
A. Well, I answered you before I had a chance to hear your full question.
Q. You can read the question back. I trailed off in the end.
(Whereupon, the above-requested question was then read by the reporter.)
THE WITNESS: I don't know about fiber types per se.
BY MR. KRISTAL:
Q. What does that mean?
A. Again, I don't know if this has been broken down to look at whether these are the fibers you see in the lung or in the pleura are amphibole asbestos or nonamphibole asbestos.
Q. So you have no opinion as to whether or not the type of fiber that you see in lung tissue correlates to the type of fiber that you would see in the pleura if you looked?
A. I -- no.
MR. SCRUDATO: I didn't understand that's what he said, Jerry, but --
MR. KRISTAL: That's why I asked the

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question.
THE WITNESS: Let me -- I think -- actually, if I recall the article, actually you do see the persistence of amphiboles in the

pleura and not chrysotile, just as in the lung.
BY MR. KRISTAL:
Q. Based on that article?
A. Based on that article.
Q. Any other material you're relying on for that opinion?
A. No. Because I've never had the opportunity to. In our lab it's not our practice to assay the pleura for asbestos fibers.
Q. And why is that?
A. Again, I think -- one of the main things, I'm not sure that there's any set values of -- control values for pleural tissue so you measure -- say it's your digestion and pleural tissues and you found some asbestos bodies or asbestos fibers. You wouldn't have any number to compare that to to know whether that was increased value or decreased value.
Q. Well, isn't that circular, though? What I mean by that is the values in your lab

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for what you call, in quotes, normal are based on the values that you see in your lab, right?
A. For lung tissue.
Q. Right.
A. We've hashed -- not me, but Dr. Roggli hashed out what the normal -- what the range of normal values was in unexposed people just walking around.
Q. In your lab?
A. In our lab.
Q. Right. So that the values that you compare what you find in the lung now are compared to values that you had found in lung tissue that you consider to be nonoccupationally exposed, correct?
A. Right.
Q. So you could certainly do that with pleura, right? In other words, you're saying the reason you don't do the pleural analyses of fiber burden is you have nothing to compare it to, but if you did it, you would have something to compare it to?
A. Yes. Very likely.
Q. So the reason you don't do it is because you haven't done it historically?

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A. Yes, we haven't done it historically.
Q. And is that the reason why you don't do it now? In other words -- I'm not trying to give you a hard time.
A. I know. And actually, if you were to look at this -- at what this -- what this article is saying that the distribution of asbestos fibers in the pleura is sort of a hit-and-miss thing. The asbestos fibers tend to be

concentrated in areas of porous or lymphatic drainage and not uniformly distributed around the lung.

So I'm not sure that we would get -- another reason is I'm not sure we would be getting -- you can't ask the pathology lab to submit to you all the black spots only for us to digest and not pleura. And that's as general pleura at all. So I'm not convinced -- neither one of us -- I don't want to put words in Dr. Roggli's mouth -- but I'm not convinced of the diagnostic utility of the pleura in general, irrespective of this fact that we don't have controlled values.

Q. Well, are fibers in lung tissue evenly distributed?

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A. I think -- there is some variation.

Q. Right. But they're not evenly distributed, right? There are areas of the lung to which fibers preferentially migrate, and so under the same logic then you're maybe looking in the wrong spot of the lung, right?

A. I don't know that that's necessarily true.

Q. Not necessarily true, but could be true in certain cases, right?

A. Maybe, yes.

Q. And there's really no way of knowing that?

MR. SCRUDATO: Wait a minute. No way of knowing what, Jerry?

BY MR. KRISTAL:

Q. Whether or not you're in an area where there are higher fibers in the lung or an area where there are lower fibers in the lung in any individual.

A. I think with -- based on this article of asbestos fiber depositions tends to be a lot more geographic and concentrated around the lung and much more uniform.

Q. Than in the pleura?

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A. Than in the pleura.

Q. But not uniform?

A. More --

Q. It can be more uniform than in the pleura, but that doesn't mean it's uniform?

A. Right.

Q. And it's not uniform?

A. No, it's not.

Q. And in an individual person, when you're digesting lung tissue, you don't know for that person whether it's in an area of the lung where there's higher fiber burden or lower fiber burden, or somewhere in the middle? There's no

way of knowing that unless you took samples from all over the lung.

A. Unless you took samples from all over the lung, right.

Q. Just so there's a clear record, in the last couple of questions you've been referring to an article and it's -- I'll call it the black spots article; is that okay? So we have a record of what you're talking about.

A. Certainly.

Q. Okay. Is the best mechanistic explanation for how asbestos fibers cause meso

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the fact that they're doing some sort of chromosomal damage to the mesothelial cells?

A. That they deliver -- that they are capable of transforming mesothelial cells.

Q. And is that in your opinion a mechanical process?

A. There's a wealth of literature regarding the oncogenicity of asbestos, a lot of which is beyond the scope of my expertise, but it's not just a mechanical irritation. I think that there's an actual -- there's actual ways of inducing neoplasia in asbestos from my understanding. That's also in the biochemical level, not just the mechanical level.

Q. I'm just asking for your opinion. So it's -- it's in part mechanical? Let me tell you what I'm talking about when I say mechanical. If you have a physical structure, a fiber, which is physically disrupting a portion of the DNA so that it's causing some kind of transformation or abnormality, it can trigger a carcinogenic process. That's what I'm talking about by mechanical.

A. That's part of it.

Q. And I think what you're saying, in

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part, the biochemical makeup of the fiber itself has something to do with it?

A. Well, and the generation of superoxide radicals. And again, there's it's a very complicated process. It's not just related I think to the physical disruption of DNA structure mesothelial nuclei.

Q. Is that an inflammatory process?

A. I'm sure at some level there's the recruitment of inflammatory infector cells that are playing a role in this.

Q. Are you familiar with the term target organ in cancer?

A. Target organ.

Q. Well, let me put it this way: Would you agree that the target organ for mesothelioma is the pleura?

A. Well, the serous membranes of which the

pleura is one of them, yes.
Q. Okay. Let's focus on Dr. Mass and Dr. Fleckner. Are we talking about the pleura as the target organ?
A. Target structure, yes.
Q. Target structure, that's fine. Is it the parietal pleura or the visceral pleura?

A. It's typically the parietal pleura, but there a cases where it's the visceral pleura as well.
Q. Okay. And to trigger the carcinogenic process, whether it's mechanical by itself or a combination of mechanical and biochemical, the fiber has to reach the target organ, does it not, or the target structure?
A. Yes.
Q. Is it fair to say that the fibers that you see in lung tissue when you digest it by definition have not reached the pleura?
A. Yes.
Q. So what we can say for sure is the specific fibers that you see when you do a digestion study of the lung did not cause the mesothelioma?
A. The ones that were left behind, yes.
Q. The ones that were left behind. And it's the ones that migrate to the pleura are the ones that are causative?
A. Right.
Q. And the migration to the pleura, is that physically through the interstitium and/or through the lymphatics?

A. There are probably both.
Q. Any other way that the fibers migrate through the lung and get to the pleura?
A. Some are probably transported through macrophages.
Q. Can some get into the bloodstream and get to the pleura that way?
A. I doubt --
Q. There are distant organs for which there have been asbestos fibers detected, right?
A. Yes. And that's probably through -- mediated by macrophages or histiocytes, and whether they're gaining access to lymph node vasculature or blood vessels. That's probably the -- that's how macrophages traverse the body.
Q. Does chrysotile asbestos preferentially translocate from the lung to the pleura in your opinion?
A. I don't believe it does.
Q. What are you basing that on?
A. From my knowledge of the fate of inhaled chrysotiles. It's clear to its size -- others -- other fibers have a decreased bio-

persistence and they're degraded by the body's defense mechanisms. They're clear. So they don't make it to the pleura.

Q. It's your opinion that no chrysotile asbestos makes it to the pleura?

A. No. I think -- some short fragments chrysotiles probably might make it to the pleura.

Q. Are there articles you're basing that on or -- is there anything specific that you can point me to for which you are basing that opinion?

A. I think Suzuki published something on that.

Q. Right. And he published a lot on that, right?

A. Uh-hum.

Q. Do you find Dr. Suzuki to be an authority on mesothelioma?

A. To be honest, I'm not familiar that much with the body of his work. I know that he's very active in it. I don't hold him in the -- I don't think he's in the same league as a great many other pathologists are.

Q. Such as?

A. Such as Sam Hammar, Andrew Churg, Tom Colby. The U.S. -- all the people -- the experts who sit on the U.S./Canadian --

Q. Mesothelioma panel?

A. The panel, yes. I'm not sure he's in their league.

Q. I think he sat on the panel, so that would by definition make him in their league, if he did; is that fair to say?

A. Again --

Q. The people who are selected to sit on the U.S./Canadian mesothelioma panel are experts in mesothelioma?

A. Yes.

Q. We got off on a little bit talking about Suzuki because you mentioned his articles. Is it your -- is there any particular article you are recalling or what is it about the Suzuki articles that you believe is helpful to your opinion about chrysotile -- we're making it a problem. In conversation this is easy to do because we understand each other, but if you start talking before I finish, it makes it real hard.

A. I apologize.

Q. Let me see if there's a question pending. Can you try and read that back?

(Whereupon, the above-requested question was then read by the reporter.)

BY MR. KRISTAL:

Q. About chrysotile with respect to translocating to the pleura?

A. I don't remember the title of the article, but I remember there was an article that he published of a TEM study looking at short chrysotile, less than five micron, fragments were, as I recall, the synthesis of his article was that these chrysotile fragments were in fact responsible for mesothelioma.

I think that's -- I haven't reviewed this article in some time, but that's my recollection as to what the synthesis of his article was.

Q. And do you disagree with that, that fibers less than five microns don't cause mesothelioma?

A. I don't know. I'm just -- again, I'm -- I still hold by my opinion that chrysotile in and of itself, I don't think is, or at very best, a very weak carcinogen for the pleura.

Q. Okay. Let's put chrysotile out of the picture. Do you believe that fibers of any kind

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less than five microns are not capable of causing mesothelioma?

A. Parts, no. We only count in our lab fibers that are greater than that. Who knows what those fibers might have been at some other point. I don't know. I'm not sure how I feel about fibers less than the power to transform -- fibers less than five microns carry.

Q. Just so I'm clear, so we don't have to beat dead horses or I'm not surprised, as you sit here today, you have no opinion one way or the other as to the propensity of fibers shorter than five microns to cause mesothelioma?

A. Yes.

Q. Okay. I was going to get to it -- I think it's mentioned in the Fleckner report -- I don't think in the Mass report, but let me ask you since you raised it. In your lab when you count fibers only -- let me -- strike that.

Let me tell you what I think you're counting, and you tell me if I'm wrong. You're only counting when you're doing an asbestos fiber burden study fibers that are greater than five microns that have an aspect ratio of at least three-to-one and that are roughly

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parallel?

A. Correct.

Q. Why do you choose that definition in terms of what you're looking at for counting purposes?

A. I think those are the ones that are -- that have been shown to be more clearly

associated with induction of mesothelioma.
Q. Okay. I'm just trying to square that with what I thought we just said your opinion was about lower than five microns, which is that you have no opinion. Is that right?
In other words, I'm trying to understand what you're saying. Let me rephrase it. Maybe that will be easier.
You count fibers, and I'm just talking about length now, greater than five microns because it's your opinion those have been most clearly associated with mesothelioma?
A. Right.
Q. But you're not saying you only count fibers greater than five microns because you don't believe fibers less than five microns can cause mesothelioma; you simply don't have an opinion on that?

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A. Right.
Q. Okay. Scanning electron microscopes is what you use?
A. Yes, sir.
Q. They're certainly capable of counting fibers less than five microns, right?
A. Yes.
Q. In other words, it's not a physical counting problem, right?
A. No.
Q. And do you know anything about the OSHA standards and why they have a five micron cut-off or not?
A. I don't.
Q. Do you know that OSHA has a five micron cut-off?
A. That's my understanding.
Q. Is it your understanding that was because of old technological feasibility as opposed to some weighing in on the causation issue?
A. Again, I think that -- I think some of that had to do with the methodology that TEM being more sensitive, picking up small fibers, and SEM being less likely to pick up fibers.

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Q. And I think if I understood you earlier, fibers that are shorter than five microns, whether it's in the lung or the pleura, as you look at them today, were not necessarily that length 10 years ago, 5 years ago, 20 years ago?
A. Correct.
Q. And so those fibers that are less than five microns could have been greater than five microns at a time critical to the triggering of the cancer process? We just don't know one way or the other.

A. Right.
Q. Is the latency period for mesothelioma related to the mechanism of carcinogenesis?
MR. SCRUDATO: Is what? I don't understand that question.
MR. KRISTAL: Sure. Well, I don't -- care less about your understanding, but because the doctor made a face, so I'll rephrase it.
MR. SCRUDATO: Well, that's very kind of you.
(Discussion off the record.)
MR. KRISTAL: It's more important for me that the person I'm asking the questions

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understands the question.
Do you understand what I'm asking or do you want me to rephrase it?
THE WITNESS: Why don't you repeat it.
MR. SCRUDATO: That was the right answer.

BY MR. KRISTAL:

Q. That was a give me because you were giving me some of my question.
Do you have a belief that it is a fiber interacting with a mesothelial cell shortly after exposure that begins a process that takes a long time to develop into mesothelioma, or is it that the fibers just take a long time to interact with a cell in terms of latency?
A. Well, there's probably two answers to that. One is it probably takes some time for the migration of asbestos fibers from the respiratory branchials that were deposited for them to get out to where they're likely concentrated in these black spots. That probably in and of itself takes a good, long time. I can't imagine these fibers are migrating rapidly through the lung.
The other thing is that there is

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probably some mesothelial cells are probably more resistant to the damage that asbestos fibers may cause; others probably less resistant. By the time -- and there are probably some mesothelial cells that are

probably killed by the asbestos fibers.
So that the process of carcinogenesis at the level of the pleura is probably a function both of time of migration and then the actual time that it takes to induce a malignant mesothelial cell also takes a long time. The establishment of a durable malignant clone, probably takes quite a long time.
Excuse me. I would like to take a break.
(Whereupon, a recess was then taken.)

BY MR. KRISTAL:

Q. Okay. I note in the folder, and I don't know if it's a function of recycling a folder or something, it says -- and this is the inside folder of Exhibit 5 -- there's a little star and it says brake paper.

Unrelated to this case?

A. Yes, unrelated.

Q. We'll save that deposition for a different day.

I guess I do have a question, though, on that. In the book when you talk about exposures to asbestos from brake mechanics, I don't know if you recall you cite to -- there's an article called "Brake Emissions" or "Dust Exposure to Brake Emissions." Muhlbaier or something like that. That's a blow-out article, right? It's talking about emissions from brakes during the braking process?

A. Right.

Q. Why do you use that as the measure of brake mechanics' exposures when they're doing the grinding and beveling which are completely different exposures? M-U-H-L-B-A-I-E-R is the spelling, I believe.

A. I'm not sure how much data exists in the other regard.

Q. In the other regards, okay. Because it makes -- it seem like the only exposures are those exposures and those are low exposures, which they may very well be, but it ignores a whole other -- maybe I need to speak to Dr. Roggli. It's just a point that seems odd for me.

MR. SCRUDATO: We didn't prepare for that.

MR. KRISTAL: I know.

MR. SCRUDATO: You should charge Mr. Kristal for that Q and A.

MR. KRISTAL: It's just a little bit of a pet project of mine.

BY MR. KRISTAL:

Q. All right. The affidavit in here, what's that?

So the record is clear, in Exhibit 5, the folder, there's an affidavit in the Mass and Fleckner cases.

Paul, if you want to say what you said, I don't care what you're telling him what it's about. That's fine. I'm not criticizing you because it's not all that big a point. I would if it was a big point.

Was this done in terms of the consolidation of the two mesotheliomas?

A. Yes.

Q. Okay. And how did that -- I'm sorry, go ahead.
A. Again, this was argued against consolidating these two claims.

Q. And I guess the question is: How did you view your role as a pathologist in terms of that issue?
MR. SCRUDATO: Jerry, he can't answer that question. I mean --
MR. KRISTAL: Okay. That's fine.
MR. SCRUDATO: You know, if you want to ask him about the statements in the affidavit, that's fine.
MR. KRISTAL: Only because it's you, Paul.
MR. SCRUDATO: Okay.
BY MR. KRISTAL:
Q. Since it's kind of in the affidavit, although I think it's misspelled, what's your definition of idiopathic mesothelioma?
A. Idiopathic means that there's no known cause.
Q. Okay.
MR. SCRUDATO: Jerry, off the record.
(Discussion off the record.)
BY MR. KRISTAL:
Q. And here you use the terms in the affidavit idiopathic or sporadic, and you're using those synonymously?

A. Right.
Q. So if I'm understanding your definition of idiopathic, it's not that there is no cause, it's just that the cause is not known?
A. Yes. It's something. Something obviously had to result in the transformation of those mesothelioma cells, but whether it was ionizing or -- we don't -- in the absence of the other known causes, asbestos ionizing radiation, chronic inflammation, in the absence of those factors, the process of mesothelioma is idiopathic or sporadic.
Q. Is that basically a differential diagnosis in terms of causation? In other words, you go over the various exposures that you believe are causative, and if none of those exist then it becomes idiopathic?
A. Yes. And if asked to classify it as idiopathic, yes.
Q. And if I understood you correctly, I think what you're saying is that known causes of mesothelioma are exposure to asbestos nonionizing --
A. Ionizing.
Q. Ionizing. What did I say, iron?

A. Nonionizing.
Q. Tell me what you believe are the causes to a reasonable degree of medical certainty of malignant pleural mesothelioma?
A. What are the causes of malignant pleural mesothelioma?
Q. Yes.
A. Okay. Asbestos, ionizing radiation, asbestos-formed minerals such as erionite.
Q. I think you said something about inflammatory?
A. Yes. Chronic pleural inflammation, people who have had presence of some irritating process going on in their pleural space. And then idiopathic. Those are the -- those are the generally accepted causes of --
Q. Okay. Maybe we're just -- it's a language problem. Idiopathic is not a cause. Idiopathic is a doctor throwing up his or her hands and saying, I don't know what the cause is, therefore, I call it idiopathic; is that correct?
A. Yes. But if you were to look in the textbook of pathology, mesotheliomas may be asbestos, ionizing radiation, pleural

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inflammation, or idiopathic.
Q. Okay. Do you have an opinion as to what the -- strike that.
Is there a what's called a background incidence of mesothelioma?
A. A background incidence? Yes. It's both gender and site specific, but in pleural mesotheliomas.
Q. Pleural mesotheliomas in men.
A. It's between 80 and 90 percent are caused by asbestos.
Q. And what percent of those are ionizing radiation?
A. A vast minority.
Q. And --
A. Less than one percent.
Q. Inflammation?
A. Less than one percent.
Q. And the asbestos-formed materials such as erionites?
A. If you go to two villages in Turkey, it's pretty darn high. But in the United States, it's negligible.
Q. So then, in your opinion, somewhere between 19 or so percent to 20 percent, or it

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would be around 10 percent to 20 percent are idiopathic?
A. Somewhere between 8 and 18 percent.
Q. Are no known cause?
A. No known cause.

Q. Is there a rate of mesothelioma per million in your opinion that has -- that occurs in the general population without asbestos exposure?
A. I don't know the epidemiology of that particular cohort, no.
Q. Let's get the materials that belong in the folder 5 back.
If you could give me folder 6.
A. Folder 6.
(Discussion off the record.)
MR. KRISTAL: Let me just ask you about Mass. The cover letter that's in there from the attorney in the Mass folder asks you to contact one of the attorneys, I think, after you've done your study, but before the report is written. Something like that.
MR. SCRUDATO: Could you show him the cover letter?
MR. KRISTAL: It's in there. I think

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it's from -- it's on this kind of letterhead. Marin Goodman.
MS. MILLER: I'm going to object to the form of that question, since I'm the attorney.
MR. KRISTAL: Please call either Diane Miller or Paul Scrudato to discuss this case after you've had a chance to review it.
MR. SCRUDATO: Okay.

BY MR. KRISTAL:

Q. Did you do that?
A. I honestly don't remember.
Q. Do you have any notes about the contact in this case --
A. No.
Q. -- or anything written?
A. No, I don't.
Q. Okay. In the Fleckner file, which is Exhibit 6, there's a copy of a cover letter and a copy of Dr. Moline's report; is that correct?
A. Yes.
Q. And then there's a May 11, 2005 -- there's a May 11, 2005, cover letter from Paul's assistant to you enclosing some medical records, which I think the sum and substance of the medical records are behind that; is that

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correct?
A. Yes.
Q. And then you got another letter, May 11, 2005, enclosing some slides.
A. Yes.
Q. Is that right?
A. Yes.
Q. And then you got another letter in August 1st of 2005 enclosing additional slides from Memorial Sloan-Kettering?

A. Right.
Q. Okay. On the Marin Goodman -- in the letter dated August 1st, there's some highlighted session numbers for the slides. Are those the ones that were specifically reviewed for fiber counts? Why are those highlighted, I guess is my question.
A. The two -- if you look, these are all on the bottom three. The one on the bottom two was -- were the diagnostically relevant specimens, the biopsy and radical pleurectomy, and then the bottom one was from a surgical case after following the completion of his surgery. I'm not quite sure why I chose to underline that one.

0103

Q. Okay. I think on the back of that letter that you're looking at there's some handwritten notes or the back of one of those letters, whose handwriting is that?
A. It's mine.
Q. And on this sheet of paper there's some other handwritten notes with a little sticky. Could you tell me what that is?
A. These are -- these are the notes that are or a copy of the notes that were performed by Dr. Roggli in the Fleckner case.
Q. On the fiber counting and on the fiber analysis?
A. Correct.
Q. Is there a technician who does that or does Dr. Roggli?
A. Dr. Roggli actually did these.
Q. How do you know that?
A. How do I know? He told me.
Q. I mean, were you there when he was doing it?
A. No.
Q. Does Dr. Roggli normally do the counting or does a technician normally do the counting?

0104

A. One of us usually does the assays. I didn't do this particular one because I was convalescing from a bicycling accident and was gimping around the hospital and couldn't physically make it over to the VA.
Q. Make it over to the what?
A. The VA. Our analytic -- the analytic studies -- electron microscopy are equipped with the machinery to do analytic studies are all Dr. Roggli's side of the street.
Q. The .3 gram specimen that was used for the digestion studies, does that have a detection limit in terms of asbestos bodies or fibers?
A. A detection limit?

Q. Uh-hum.
A. I don't understand what you mean.
Q. I think I read something about that in one of these articles. Let me see if I can find it.
For example, in Exhibit 1, the 1,445 cases article, on page 57 it says, quote, The detection limit for a 0.3 gram sample size is approximately three asbestos bodies per gram. For cases in which no asbestos bodies were

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detected in the sample, the value is recorded as less than the detection limit for that sample, end quote.
That's what's written?
A. Yes.
Q. What does that mean?
A. It means if you don't see any asbestos bodies doing the SEM than you're allowed the option of less than however many.
Q. The detection limit is?
A. The detection limit is.
Q. Okay. So if I'm understanding it, in the Fleckner case, it's not correct that no asbestos bodies were found, it's correct that there were none seen in the sample, and the limitations of that sample mean all you can say is that there were less than three? That would be more accurate?
A. Yes. Yes.
Q. So why did you say there were none if in reality --
MR. SCRUDATO: Wait a minute.
Can we go off the record, Jerry?
MR. KRISTAL: You don't need to go off the record. I think we're asking questions and

0106

you'll have a chance to clarify. There's no trick here. Let's go over it.
THE WITNESS: Okay.
MR. SCRUDATO: Did you just say there were no asbestos bodies found in the Fleckner report?
BY MR. KRISTAL:
Q. If you don't see in a .3 gram sample, if you don't see asbestos bodies, all that means is you can say there are less than three because of the detection limits in the sample size, right?
A. Right. For light microscopy.
Q. That's not what was used there. That's SEM, isn't it, in the article?
A. Yes. For -- I misunderstood what you were saying. Yes.
Q. Let's back up.
A. Okay.
Q. In the Fleckner case, it's your

understanding that Dr. Roggli, when he did his counting of asbestos bodies and fibers, was using scanning electron microscopy, SEM?

A. Right. Both light and SEM.

Q. Okay. And in the article they're talking about, in terms of detection limits, SEM; are they not?

A. Right.

Q. What it says, in a .3 gram sample of lung tissue, there's what's known as a detection limit?

A. Which is known as three.

Q. And that's the same sample size that was used in the Fleckner case, .3 grams?

A. Right.

Q. So what it means when we put it all together is: If you don't see asbestos bodies in that sample, it doesn't mean that there are no asbestos bodies?

A. It means that there are fewer than three.

Q. Okay. And the same, if you continue down in the article, it talks about asbestos fiber counts on the detection limit for the sample. I think it says, all you can say if you don't see any asbestos fibers is that there's less than -- is it 440?

A. Yes.

Q. So just to be correct, in the Fleckner report, it's not accurate that there was no asbestos bodies found in that sample, what is accurate is that there were less than three found in that sample?

MR. SCRUDATO: Objection. Ask about the report, Jerry. He's written the report.

MR. KRISTAL: Exactly. That's what I'm basing my questions on.

MR. SCRUDATO: I'm not sure I understood the question.

THE WITNESS: The answer to the question is no. There were no asbestos bodies found.

BY MR. KRISTAL:

Q. Identified?

A. Identified. But that does not mean that there were not three asbestos bodies per gram of wet lung tissue.

Q. Got you. So the report, when it says no asbestos bodies identified, is not the same as there were no asbestos bodies in that sample?

A. Yes. That is correct.

Q. Okay. And with respect to the fiber counting, the fact that there were no asbestos fibers found identified in the sample, means that there were potentially 440 or less?

0109

A. Potentially, yes.
Q. Okay. And it doesn't mean the fact that there was no asbestos fibers found, that there were no asbestos fibers in the sample? It doesn't mean that?
A. Precisely.
Q. Okay. Was -- strike that.
Is there a protocol, that the lab has a written protocol, for counting asbestos fibers or counting asbestos bodies?
A. I mean, I don't know if it's written down anywhere, but yes, there's a protocol that we follow.
Q. I guess what I'm driving at, the section of the report where it's written that there were 18 consecutive uncoated fibers examined by electron dispersion x-ray analysis, where does that number come from?
A. That means that was all that we -- that was all -- notice that we counted -- that he counted 100 consecutive fields and only identified 18.
Q. That's not what it says. Am I missing something? Doesn't it say there was 8,280 uncoated fibers per gram?

0110

MR. SCRUDATO: Read the report.
BY MR. KRISTAL:
Q. Yes. Take your time.
A. That number of 8,280 fibers is based on a calculation based on the number of fibers observed plugged into an equation. Not that we've detected 8,000 -- or that we saw and counted 8,280 uncoated fibers. That's an extrapolated number.
Q. Extrapolated number based on what? The area of the sample?
A. Yes. The area --
Q. The thickness of the sample?
A. And the weight of the sample.
Q. So it's all three: Area, thickness, and weight?
A. Yes. I don't know about thickness, but the area, the filter, and the --
Q. Well, just tell me your understanding as to what the 8,080 uncoated fibers per gram of wet lung tissue means?
A. Again, that is a calculation. That is an extrapolated number based on the number of fibers observed in an area of the filter size and -- there are other variables that are used

0111

to derive that number, including the weight of the specimen and the area of the filter.
Q. And can you tell me -- let's assume that I want to check the math. What numbers are

you plugging into what equation to get that number?
A. The uncoated fiber numbers.
Q. So you start with 18?
A. Yes. And you plug --
Q. Then you do what?
A. Then you plug that into the equation and that's the number that was generated.
Q. Okay. And can you tell me what the equation is?
A. Gosh, not offhand. I always have to refer to that as a long equation.
Q. What makes you say that there were only 18 fibers -- strike that.
What makes you say that there were only 18 fibers found in the sample physically or observed? Because that doesn't say that there, does it? It says there were 18 that were examined by EDXA.
A. You have to -- you have to take with this a familiarity with -- this is what our

0112

typical worksheet --
Q. So you're talking about the Xerox copy of the counting?
A. This is a -- this is the typical worksheet of what we use when we're examining

this in the M lab. And every field, we look to see if there's asbestos fibers or asbestos bodies or if they're uncoated fibers. And we basically go for a hundred fields. And every time we see an uncoated fiber and once we get to 50, we tend to stop.
But beyond that, we -- every fiber we see we record, and then we examine using the EDXA. So that's how I know that 18 -- that only 18 fibers were identified.
Q. Okay. And the sample size that we're talking about here?
A. That was our typical --
Q. That's the .3 grams?
A. That is our standard. For most cases, that's our standard analytic volume. In patients with asbestosis, when there's asbestos fibers everywhere and you can't hardly see the filter because of the asbestos fibers all over the place, we use a smaller size. But 0.3 is our

0113

standard diagnostic weight.
Q. And was this from a -- taken from a sample that was in a block?
A. No. This was actually wet lung tissue that was provided to me.
Q. Okay.
A. Not paraffin -- not --
Q. Okay.

A. Formal and fixed, but not paraffin embedded.
Q. So you had some actual lung tissue that was formal and fixed to preserve it?
A. Right.
Q. And somebody took a slice of that?
A. Yes.
Q. I want to know physically the process. You got a piece of lung sitting in your lab.
A. Okay. The lung in my lab. I was instructed not to use -- not to use it all in case opposing counsel had wanted to do an assay. There was a fairly generous amount of lung tissue.
I took some, gave it to our -- we actually have technicians that do the actual physical preparation and digestion and

0114

preparation of the filters we use.
Q. And how does that work? You give it to a technician?
A. Yes.
Q. What does a technician do?
A. The technicians digests or gets rid of all the alveolar tissue, the blood vessels, and the airways. And all that you're left with is the material that's insoluble in bleach.
Q. And they are doing that on a .3 gram sample?
A. Yes.
Q. So they take a slice of the portion of the lung that you have and they weigh it out, you know, and you get .3 grams?
A. Correct.
Q. Yes. And what portion of the lung did you have from -- in other words, from where in the lung?
A. It didn't specify.
Q. The right, left, top, bottom?
A. It was from the -- Dr. Fleckner's radical pleurectomy specimen, but didn't actually specify on the container where the cite was. It just had the name, the succession

0115

number. It didn't actually specify this is from which lobe, central, peripheral. It did not otherwise specify.
Q. All right. So in the sample that we're talking about, the .3 grams, we don't know if it was upper, middle, or lower lobe, or whether it was central or peripheral lung tissue?
A. Correct.
Q. And the .3 grams of tissue, is that mounted on a slide before it's digested in bleach?
A. No.
Q. Is it put in a little dish?

A. It's put in a little cup and then it's taken to -- over to our processing lab. They take it out of the cup, weigh off the piece, and then digest it in bleach.
Q. Okay. And then you had a little pool of liquid and stuff at the bottom of the cup?
A. No. Then it's all -- it's all run through some filter apparatus. So you were actually left with a filter containing all the residue.
Q. Okay. So the -- there's a liquid in a cup that's eating away at all the lung tissue?

0116

A. Right.
Q. And at some point someone determines all the lung tissue was gone, right?
A. Right.
Q. And so you have a little puddle of liquid in the bottom of the cup?
A. Uh-hum.
Q. Is that a yes?
A. Yes, it is.

Q. And then it gets poured through a filter?
A. It gets suck -- there's a suction apparatus, and so it gets sucked through a nuclear port filter.
Q. What is the thickness of the slice of the .3 grams? Is it --
A. The thickness --
Q. Is it less than five microns?
A. The thickness of the actual tissue that gets submitted?
Q. Uh-hum.
A. No. It's about the size of -- I don't know -- .3 grams, what's the --
Q. Some point of reference?
A. Some point of reference. Like little

0117

piece of Hershey's chocolate.
Q. And then that's poured through a filter or sucked through a filter?
A. Right.
Q. And then what's left is the residue or is there something left?
A. The residue.
Q. Not visible to the naked eye?
A. No, it's visible. Because it usually tends to be -- in the lung tissue there's carbon and other stuff. You can actually see it.
Q. And then that filter, what's done with the residue that's on that filter?
A. Actually, two filters are made by two different specimens. One is used to quantify asbestos just with the naked eye -- not the naked eye -- but with light microscopy, and then

the other specimen is used for the SEM lab.
Q. So there were two separate digestions of two separate .3 gram samples going on?
A. That is correct.
Q. And the residue that's left on the filter go to two different places?
A. They go to two different filters, yes.
Q. Okay. And you're looking through a

0118

microscope and it's broken up into grids which are called fields?
A. Yes.
Q. And then --
A. No. We don't -- our machinery doesn't actually have grids.
Q. Okay. How do you know -- how do you distinguish one field from the next?
A. You're actually able to -- on the SEM you're actually able to move the specimen around the unit where the electron beam passes, so you can tell, you're actually able to watch as you're moving the specimen around the -- and we do, you know -- we do this not in a haphazard, but in a precise manner of examining fields and in different lines. We sort of form our own not really grids, but they're sort of transects. But it's not picking here and picking there. We actually move up and down.
Q. There's a uniform way of guessing?
A. Yes.
Q. Now, when you look at your page 2, it says analytical results at the top.
A. Yes.
Q. There's one light microscopy and one

0119

that is SEM, and if I understand you correctly, those are two different samples?
A. Yes.
Q. How do you explain under the light microscopy, one sample there were 13.3 asbestos bodies per gram and under SEM there was no asbestos bodies detected?
A. That there was some variation.
Q. Okay. How close -- well, strike that.
The two pieces of little Hershey chocolate that were cut that were digested, were they adjacent pieces of lung?
A. Yes. Because what I was given was just one cube of lung tissue.
Q. Right.
A. And I split off of that two pieces that I guesstimated were around .3 grams, and our technicians had to do a little trimming to make sure that they made exactly .3 grams. But no, they were all from the cube of lung tissue that was provided to me.
Q. I assume they were all from the same

cube. My question is: Were they adjacent slices?

A. Yes.

Q. So like you're slicing baloney, you put a big thing of baloney in and took two slices?

A. No. Actually, I took one slice and cut that one in half.

Q. Okay. Can you use the SEM microscope to look at the sample that was prepared for the light microscope?

A. No.

Q. Why is that?

A. Because -- well, you would have to -- I mean, you could, but it would -- I don't think I've ever done so. What it would involve doing is lifting the cover slip off. You'd have to peel the nuclear port filter off the glass, you risk destroying that, then you have to take that down, sputter coat that with gold. It would be a mess.

Q. It wouldn't give you an accurate count because you're fiddling with the filter, in essence?

A. Yes. And you run the serious risk of damaging the filter.

Q. Is SEM more or less sensitive at detecting asbestos bodies? It's a higher magnification?

A. Yes. It's a higher magnification, but -- and you're working at a higher magnification, so you might -- you might run the risk of perhaps overlooking an occasional asbestos body. So maybe SEM is a little bit less sensitive than light microscopy because in -- the other thing with our methodology is we don't -- with light microscopy if we don't -- again, we examine transects. We don't examine grids. We sort of examine the transects.

In a 100 -- in the filter in its entirety in the X axis, the filter in its entirety in the Y axis. If we don't see any asbestos bodies, then we will go and systematically examine the entire filter. We don't examine with SEM the -- if we don't see any asbestos bodies, we don't examine the entire filter. So we just use -- regardless, we stop at 100 fields.

Q. Oh, I see. So I misunderstood then. The filter itself, what you're looking at is not totally divided into a hundred fields?

A. No.

Q. There were more than a hundred fields, it's just that you -- for counting purposes, you count 100 fields?

A. We count a hundred fields at a thousand mags of magnification.
Q. How many fields are there at that magnification?
A. I don't know.
Q. Are we talking about 105 or are we talking about 10,000?
A. We could probably figure it out based on the area.
Q. Is it orders of magnitude more than a hundred?
A. It's -- again, I'm not -- I don't think -- it's not significantly more, no.
Q. Tell me what you mean by significant. In other words, is it a thousand? I guess -- let me rephrase it.
To the best estimate that you can give, what percent of the entire number of fields on the filter does a hundred represent?
A. Again, I'm not sure what the answer is.
Q. Okay. The normal range for your lab means what? Where did that come from? Do different labs have different normals?
MS. MILLER: Jerry, what do you mean by

0123

normal?
MR. KRISTAL: It says here, within our normal range.
MS. MILLER: I didn't know if you were reading off a report.
BY MR. KRISTAL:
Q. Yes. It says, our -- reference what our normal range of 0 to 20 asbestos bodies per gram. What do you mean by that?
A. That means if you were to examine -- and this was all work that was done by Dr. Roggli and Dr. Pratt a number of years ago -- and it means if you were to take the lung tissue of any of us in this room and assuming that none of us has a history of working as a spray insulator to pay our way through college or professional school, that all of us in this room would have somewhere between 0 and 20 asbestos bodies per gram. And that was worked out again by Dr. Roggli, examined and doing asbestos body counts on people with no history of asbestos exposure.
Q. Just so you -- of course I like you. I don't want you to be misquoted later on. You aren't saying that normal as compared to people

0124

who were asbestos sprayers, you were using that as an example, not as a true definition?
A. I was using that as an un -- probably rather than normal. The better phraseology would have been an unexposed control group.
Q. Right. Whatever the asbestos exposure

was?
A. No. With no -- the unexposed.
Q. No, I understand that. Okay. It seemed like you were comparing normal to asbestos sprayers, which is not what I think you meant to say.
A. No. What I'm trying to say is our range of normal values is based on an analysis of lung tissue in people with no known history of asbestos exposure and no evidence of pleural pulmonary asbestos disease.
Q. And that was from -- that was from 19 people? I'm trying to think of the number of people.
A. I can't remember what the number --
Q. I read that somewhere, also. Let me see if I can find it.
A. I'd have to go back and look. That preceded that article. This was done a number

0125

of years ago. I can't remember what his control group or how many individuals were examined in the control group. I think it was in the hundreds.
Q. Okay. And the -- although it doesn't say it in the report, at least I didn't see it, the fibers that were being counted had to meet the definition of being five microns or greater -- is it greater than five microns or five microns and greater?
A. Five microns and greater.
Q. In length. At least a three-to-one aspect ratio?
A. Right.
Q. And roughly parallel sides.
A. Yes. And yes, very much parallel sides.
Q. So that if there was a four micron fiber that was viewed, it would not be counted?
A. No.
Q. What I said was correct, right?
A. Yes.
Q. There was a double negative.
So when the report says no asbestos fibers were identified, to be more precise, no

0126

asbestos fibers greater than five microns with an aspect ratio of three-to-one with parallel sides was identified?
A. Yes.
Q. Is it correct that individuals have different potentials to coat asbestos fibers?
A. Yes.
Q. And that some people are able to coat asbestos fibers very well?
A. Yes.
Q. And other people don't seem to be able

to coat asbestos fibers?
A. Yes.
Q. Is it correct that asbestos fibers -- strike that, asbestos bodies tend to form only on fibers which are 20 microns or more in length?
A. Yes.
Q. Is it correct that asbestos bodies are generally a poor indicator of the pulmonary chrysotile asbestos burden?
MR. SCRUDATO: Could you repeat that question?
BY MR. KRISTAL:
Q. Sure. Do you agree that asbestos

0127

bodies are generally a poor indicator of the pulmonary chrysotile asbestos burden?
A. Yes.
Q. Is that because most chrysotile fibers in the lung are less than 20 microns?
A. Well, let me back up. I think -- I'm not sure I -- I think I've changed my answer to asbestos bodies -- I think they're probably a poor indicator of exposure to chrysotile, but whether -- how much you can infer about chrysotile burden based on asbestos bodies I think is -- I'm not sure, because in general chrysotile burdens in the lung tend to be minimal.
Q. Let me give you a very precise statement and you just tell me if you agree or disagree as I've worded it, okay?
Do you agree or disagree that asbestos bodies are generally a poor indicator of the pulmonary chrysotile asbestos burden?
Do you agree or disagree?
A. I'm not sure I know the answer to that.
Q. Okay. But you do agree -- I'm trying to put in the words that you used -- that asbestos bodies are generally a poor indicator

0128

of chrysotile exposure?
You would agree with that?
A. Yes.
Q. Okay. And is that because most chrysotile fibers are less than 20 microns in length?
A. That's because I think chrysotile fibers tend to be longer than that and they tend to break down and get clear.
Q. Okay. So chrysotile fibers when they're inhaled are longer than 20 microns?
A. I believe so, yes.
Q. And then they break down into shorter fibers?
A. Yes.
Q. And they also break down into what are

called fibrils?
A. Fibrils.
Q. And fibrils are defined as what?
A. Less than five micron fragments.
Q. So chrysotile breaks down in the lung even if they come into the lung at longer than 20 microns into fibers that are both greater than five microns and into fibrils which are less than five microns?

A. Yes.
Q. In the article -- I think it was the 1,445 cases article -- there's mention of a potential referral bias.
A. Yes.
Q. Because of the nature of the practice being I think it said greater than 90 percent medical/legal referrals?
A. Yes.
Q. What is the nature of the bias, though? In other words, I understand there may be a bias, but in what way is it potentially bias?
A. Well, I think any time that you have -- that when you're looking at a study group and you can find some sort of parameter extraneous to the variable that you're studying, that confers a bias.
Q. Okay. And a bias in which direction? A bias towards higher fiber burdens that you're seeing in your lab, lower fiber burdens, different types of fiber burdens? In other words, what is the nature of the bias?
A. Well, I think the nature of the bias in this case is that historically this practice has examined lung tissue in people with significant

exposures to asbestos in shipyard workers, insulators, and more for the confirmation, the diagnosis, more often than not. Where causation wasn't being so much the issue, the issue was diagnosis. So I think that -- and these -- and I think that that in and of itself is -- in parts a bias on our study population.
Q. Right. I don't disagree with that. But what is the nature of the bias? Biasing towards what or away from what? Biasing towards seeing a lot of mesos? In other words -- I'm not trying to give you a hard time. I saw it in reference to the article.
A. And the other thing -- well, the bias is that these -- I think that we weren't dealing here with a lot of potential idiopathic mesotheliomas. These were all people I think who had -- the purpose of this article was not about the biology of mesothelioma, about asbestos attribution, it was about occupation.
And I think the fact that we were

dealing with a great many people say from the Baltimore area, all of whom were retained by Peter Angelos, that you were having a selection bias that incorporated perhaps an inordinate

amount of shipyard or steel yard workers from Sparrow's Point.

Q. I understand. So you're saying the bias is to the nature of the occupations involved?

A. Yes.

Q. Okay.

A. Yes, the bias is -- again, that we weren't looking at all the mesotheliomas that had ever walked through the door at Duke Hospital since they opened the doors, but looking at --

Q. It wasn't a random sample?

A. We're looking at -- yes. We're looking at a very nonrandom sample, but a sample on a physician whose practice is overwhelmingly in asbestos litigation. So you were looking at a sort of preselected group of people.

Q. And overwhelming with respect to a particular occupation?

A. Exactly.

Q. So if I'm understanding you then, what you were giving a reader a heads up is that this break down of occupations and break down of job descriptions in our lab is not necessarily

representative of what --

A. It's non-random.

Q. Non-random, okay. Now, I understand. I really didn't know what the bias you were talking. It seemed bias, but I just didn't know in what way.

(Whereupon, Sporn Exhibit 8, a report, was then received and marked for identification.)

BY MR. KRISTAL:

Q. I marked as Exhibit 8, I believe it's a copy of your report. Although, it's unsigned and the one in your folder is signed with a surgical pathology report attached and a fax page; is that correct?

A. Yes.

Q. Let me mark as Exhibit 9 your curriculum vitae.

(Whereupon, Sporn Exhibit 9, curriculum vitae, was then received and marked for identification.)

BY MR. KRISTAL:

Q. I meant to ask you, on the Xerox copy from the Fleckner folder, which is Exhibit 6 of the counting, the sticky itself, as I

understand it now, which is not a Xerox copy of anything, is the separate count for the light microscopy asbestos body count?

A. Yes. And then there's also my annotation that there was no asbestos bodies -- this corresponds to -- the sticky corresponds to the -- in black, that's Dr. Roggli's handwriting. The blue handwriting is mine. And I want to make sure that I understood the blank here where it said AB for asbestos bodies, and it said there were no asbestos bodies seen in a hundred consecutive thousand sealed, yes.

Q. Okay. Exhibit 9 is a copy of your curriculum vitae. I'm sure -- although I haven't compared it, it is the same as what's in your manila folder. I think it was. I'll give you a copy of it and ask you if that is correct.

A. Yes.

Q. Okay. Is your current position at Duke a tenure track position?

A. Yes, it is.

Q. And what are the steps for you to get tenured? You're now an assistant professor of pathology?

A. Yes.

0134

Q. What's the next step up?

A. Associate professor.

Q. And then full professor?

A. Full professor.

Q. And is that the tenured position?

A. Well, no. You get -- the next step is associate professor with tenure.

Q. Okay. What's the difference in ranking? What distinguishes an assistant professor from an associate professor from a full professor? How well the chairperson likes you?

A. Not so much your chair. It's how much the advancement promotion tenure committee likes you. You are obliged to serve somewhere between seven and 13 years at the assistant professor level without tenure. And then you end up getting together with -- your application for tenure is provided to the advancement promotion and tenure committee by your chairman based on your academic achievement, your service to Duke, to the medical center, the medical center to the university and humanity in its entirety, and they decide whether you are worthy of being tenured.

0135

Q. Okay. Were your four years of college consecutive?

A. No. There was a -- my college career actually spanned six years, and it was not consecutive.

Q. Right. I was trying to figure out if you were born in '57, you would have graduated high school sometime around '74 or so, and then you graduated college in '82. So tell me what you did after graduating high school through your college graduation.

A. Okay. After graduating from college -- I graduated from college -- actually from high school in 1976.

Q. Okay.

A. I attended Carleton College in Northfield, Minnesota, and after two seasons of football decided I couldn't take it -- I couldn't take it anymore. And so I -- at that point I thought I was going to be a marine biologist, since you asked, and I went out and studied -- I took some courses at University of Southern California Institute for Marine and Coastal Studies on Catalina Island.

After some soul searching, I decided

0136

that being a marine biologist was probably not going to happen. I took some time off. I worked in an operating room in Washington, D.C., my hometown. And I applied to colleges. In 1979 I joined -- I matriculated to the University of Vermont, and I graduated in 1982.

Q. And then from there you went --

A. And then I went straight -- after following the summer break after 1982 I joined or I got accepted to Georgetown, the medical school, where I went straight through four years of medical school at Georgetown. I'm really --

Q. I'm taking so many depositions lately, I'm getting my experts confused. Are you the guy who's the medical examiner in North Carolina, or am I thinking of someone else?

A. To the annoyance of my wife, I've had these little side ventures here and there.

Q. So you graduate Georgetown in '86?

A. Again, I had no thoughts of going into pathology. At that point I was -- my main interest was in -- was in chest disease. I did a fellowship in chest disease in critical care medicine at Georgetown University Hospital. And by that point I had a -- couldn't wait to get

0137

out of DC. I found a nice hospital in Bremerton, Washington, which is about as far away from Washington, DC, as you can get.

Q. Is that where you met Dr. Hammar?

A. That's where I met Dr. Hammar. And it became clear to me that really the science of chest disease and the science of trauma were more interesting to me than the actual taking care of patients so afflicted. And I -- Sam and I talked -- I talked about potential additional

training where I might go for this and he recommended Duke. And so I flew out from Bremerton, I met Victor Roggli, and began my residency at Duke.

I was appointed as one of the county medical examiners here. And there was a chance for me to do a full-time forensics fellowship, because, again, I'm interested in trauma as well. And I spent the whole academic year of '94 and 1995 at the office of chief medical examiner down the road in Chapel Hill, and I continued on as one of their forensic pathologists until I joined the faculty at Duke.

Q. And then you became board certified in pathology in the year 2000?

0138

A. Yes.

Q. Was that the first time you had taken the pathology boards?

A. Yes, it was. I was combining anatomic path and forensic path, so I first had to take the anatomic path boards, which I passed, and then the forensic boards, and I passed them the first time.

Q. What was your role in the updated version of the text with respect to the chapter on mesothelioma?

A. I was the senior author.

Q. I know. But did you take the first chapter and just try to tweak it a little and update it a little because it certainly wasn't written whole cloth from scratch?

A. It pretty much was written whole -- a great deal of it was written from scratch. When the -- I followed the same general format, but a great deal of the staging hadn't been published in '92, and I had the -- all the advances in immunohistic chemistry hadn't been -- the antibodies that are now used for diagnosing mesothelioma, those really didn't come into clinical practice until '96, '97, four years

0139

after the first edition of the book.

Q. Okay. But are you saying that certain sections you wrote pretty much from scratch and other sections you took what had previously been written and then tweaked it up?

A. Updated it.

Q. Updated.

A. Yes.

Q. Because some of the sentences are word for word and the paragraphs are the same?

A. Yes.

Q. And the odds of that happening from scratch would be minimal.

A. No. Yes, I think -- there's a certain -- of the historical elements and nothing

clearly had been changed, so my -- the newer parts related strictly to diagnostic techniques.

Q. In terms of the immunohistic and --

A. Exactly.

Q. Okay.

A. And again, some of the staging and the clinical outcomes.

Q. How did you get involved in this case? In other words, you got a call from Paul or somebody called you at some point?

0140

A. Yes.

Q. And tell me how that came about.

A. It's my recollection that Paul called me last spring and would I be interested in reviewing a couple of cases involving mesothelioma to dentists.

Q. Did you know who Paul was before that?

A. No.

Q. Had you met him at any point in time?

A. No, I hadn't.

Q. Did you ask him how he got your name or why you?

A. No, I didn't.

Q. I'm going to ask you some questions, but, in essence, what I'm going to ask you is a number of items if you agree or disagree with what I'm saying.

MR. SCRUDATO: You mean you're looking for yes or no answers?

BY MR. KRISTAL:

Q. If you can answer them yes or no, fine; if you can't answer them yes or no, let me know.

Do you agree or disagree that asbestos exposure is indisputably associated with the development of mesothelioma?

0141

A. I agree.

Q. Do you agree or disagree that mesothelioma is strongly associated with occupational and paraoccupational exposure to asbestos?

A. I agree.

Q. Do you agree or disagree that a wide variety of occupational and environmental exposures have been implicated as the source of the exposures causing mesothelioma?

MR. SCRUDATO: I'll object to the form of the question. Just because it's loaded with a number of terms, Jerry, that are really undefined. But go ahead and answer the question, if you understand it.

THE WITNESS: Please read it to me again.

MR. KRISTAL: Sure. It's a sentence from the 1,445 case -- let me see if I can find it.

MR. SCRUDATO: Are all these sentences taken from that article?
MR. KRISTAL: Not necessarily.
MR. SCRUDATO: Okay.
BY MR. KRISTAL:

0142

Q. Let me read the first two sentences and see if you agree or disagree since you're an author.
Quote, The association between mesothelioma and prior asbestos exposure is undisputed, end quote. That's the first sentence. Do you agree with that?
A. Yes.
Q. Quote, A wide variety of occupational and environmental exposures have been implicated as the source of this exposure, end quote.
A. I agree.
Q. Still agree. Okay.
Mesothelioma may be related to brief low level or indirect exposures to asbestos.
A. I agree.
Q. A threshold level of exposure below which mesothelioma will not occur has not been identified.
A. I agree.
Q. Numerous reports document mesothelioma risks associated with particular exposures?
A. I agree.
MR. SCRUDATO: Object to the form of the question. Go ahead.

0143

BY MR. KRISTAL:
Q. In the article, Exhibit 1, the 1,445 cases, there's some extended discussion about the Australian mesothelioma register.
Do you know what I'm talking about?
A. Yes.
Q. Do you find that the Australian mesothelioma register is a reliable source of information with respect to mesothelioma?
A. Yes.
Q. Do you agree that pleural plaques and mesothelioma require less exposure to asbestos than is typically associated with the development of asbestosis?
A. Yes.
Q. Do you agree that mesothelioma is a signal malignancy?
A. Yes. Yes, I do.
Q. Do you agree that mesothelioma is a devastating disease?
A. Yes.
Q. Do you agree that mesothelioma is a dreaded and highly lethal disease?
MR. SCRUDATO: I'll object to the form of the question, but --

0144
THE WITNESS: Yes, I agree with that.
BY MR. KRISTAL:
Q. Okay. Do you agree that the diagnosis of mesothelioma is met with a considerable amount of nihilism by clinicians?
A. Yes.
MR. SCRUDATO: What are these --
MR. KRISTAL: It's called the lightning round.
MR. SCRUDATO: All right.
MS. MILLER: What was that word? I didn't hear it.
MR. KRISTAL: N-I-H-I-L-I-S-M.
THE WITNESS: I wrote that phrase, so I agree with that.
MR. KRISTAL: That's why I'm asking.
Do you agree that the risk for development of mesothelioma --
(Discussion off the record.)
BY MR. KRISTAL:
Q. Do you agree that the risk for development of mesothelioma increases dramatically with time from initial exposure?
A. Yes.
Q. Do you agree that asbestos is a
0145
powerful mesothelial carcinogen capable of inducing DNA damage alone?
A. Yes.
Q. Do you agree that nonrandom chromosomal abnormalities, including translocations, rearrangements, and marker chromosomes, have been identified in both experimental asbestos induced and human malignant pleural mesothelioma?
A. Yes.
Q. Do you agree that in animal studies using SEM that it was demonstrated that chromosomes were frequently entangled with, adherent to, severed or pierced by long curvilinear fibers, and this effect was more pronounced for chrysotile than for crocidolite asbestos?
A. I don't know the answer to that question.
Q. Do you agree that in studies with cultured human mesothelioma -- strike that.
Do you believe that in studies with cultured human mesothelial cells with chrysotile there were significant increases in numerical and/or structural chromosomal abnormalities?
0146
A. I don't know the answer to that.
MR. KRISTAL: Okay. If we can take a five-minute break and I'll review my materials. I'm pretty much done.

(Whereupon, a recess was then taken.)
BY MR. KRISTAL:
Q. The 1,445 cases article, does that have significance in terms of your opinions in these cases? And if so, can you tell me what it is or what they are.
A. I was just curious to see if reviewing that and reviewing our database, if there was health care workers, and specifically dentists -- because they're to my knowledge the only health care workers with the potential for exposure in the course of their practice to be exposed to asbestos.
Q. And I think you said there was one case found on the database, none referenced in the article?
A. Right.
Q. And the significance of that standing opinion you may render in this case is what? In other words, was it a curiosity?
A. It was a curiosity. I just wanted to

0147

see if we in fact --

Q. Right. But it doesn't affect your ultimate opinion on causation one way or the other?
A. No.
Q. Anything else from the 1,445 case article?
A. No.
Q. And the other article in folder number 4, the Srebro, S-R-E-B-R-O, Roggli, and other article, what's the significance of that, if anything, to your opinions?
A. The significance of that was just to see how many -- knowing that there was a bit of chain -- a difference in the methodology between Sam Hammar, who didn't examine uncoated fibers, and our lab, which does examine uncoated fibers, to see if there was a -- to reinforce to me that there's not a huge population out there with normal asbestos body counts who have increased tissue asbestos levels in the form of uncoated fibers.
Q. Anything else?
A. No.
Q. In the 1,445 case article -- I want you

0148

to look at this one while I look at the other one. The 7 -- the Table 7, the various fiber lung burden analyses.
If I'm reading this chart correctly, the asbestos bodies per gram are in thousands?
A. Where, please?
Q. There's -- the first column of Table 7 asbestos bodies per gram, and there are numbers

next to each industry and occupation, right?
MR. SCRUDATO: You're talking about Table 7?
MR. KRISTAL: Yes.
MR. SCRUDATO: And you're talking in the left-hand column, asbestos bodies, AB/gram, and there's a footnote there.
THE WITNESS: Times ten to the third.

BY MR. KRISTAL:

Q. Which is a thousand?
A. Yes.
Q. So if I'm trying to read this correctly, for example, shipbuilding, where it has 1.08, that means a thousand eighty?
A. Yeah.
Q. Yes?
A. Yes.

0149

Q. And then you give the range of asbestos bodies?
A. Uh-hum.
Q. Yes?
A. Yes.
Q. And it goes from .006 to 436, so there were individuals in your population in the shipbuilding industry who had mesothelioma who had six asbestos bodies per gram?
A. Yes.
Q. Okay. So there's a range there?
A. Yes.
Q. All right. And maybe you know, maybe you don't know, why did you select the median as opposed to the mean?
A. I'm not sure why we decided to do pro test statistically.
Q. Okay. And are all the other counts -- I mean, I can do the numbers, I just want to understand -- all of them would be multiplied by a thousand to actually find the number?
A. Correct.
Q. Okay. And same thing, in the parentheticals are the ranges?
A. Correct.

0150

Q. So you just move it three decimal points to the left and you got what you need?
A. Yes.
MR. KRISTAL: That's all I have, unless there are other questions by other folks, and I may have some follow-ups. But I thank you for your time.
THE WITNESS: You're welcome.
MR. SCRUDATO: I have one question for you.

EXAMINATION BY MR. SCRUDATO:

Q. Dr. Sporn, based upon your review of the records and based upon your analysis of the lung tissue in the Fleckner case, did you see in either the Mass or the Fleckner case, Dr. Sporn, any objective scientific evidence that Mass or Fleckner, in fact, had an asbestos fiber burden in their lungs that was above your laboratory's normal range?

MR. KRISTAL: Object to the form of the question.

THE WITNESS: No.

MR. SCRUDATO: That's all I've got.

MS. MILLER: I have two questions.

EXAMINATION BY MS. MILLER:

Q. Dr. Sporn, Mr. Kristal asked you earlier about the normal range that your lab uses between zero and 20 asbestos bodies per gram. As far as you know, is that same range used by other labs throughout the country?

A. It's used by Sam Hammar. I'm not sure about other labs.

Q. Do you know if it's used by Dr. Dobson?

A. I don't know.

Q. But it's used by Dr. Hammar?

A. Yes.

Q. Are you aware of other -- of studies that actually have a normal range of higher than that?

A. I've heard them mention anecdotally, but there are some people who believe that only a minority or -- and this certainly isn't the dogma at Duke -- but there are some people in the thoracic oncology community who believe that a minority -- not a minority, but a smaller fraction of asbestos -- of mesotheliomas are

asbestos-related. But then when you look at their control value population, they have 500 asbestos bodies per gram of wet lung, which is ridiculous.

Q. Mr. Kristal also asked you about the difference between what you found between using light microscopy and SEM. Using light microscopy you found 13.3 and by using SEM you found either zero or less than three asbestos bodies; is that correct?

A. That's correct.

Q. And either way, you counted fibers that are still well below the standard and the normal range; is that correct?

A. Those are still within normal range in our laboratory.

MS. MILLER: Thank you.

RE-EXAMINATION BY MR. KRISTAL:

Q. When Paul asked you the question embedded in there was something -- the phrase objective scientific evidence. Do you recall that?

A. I don't.

MR. KRISTAL: Can you read back that question because I want to follow-up on that.

(Whereupon, the above-requested question was then read by the reporter.)

BY MR. KRISTAL:

Q. Now that we re-read the question, there was the phrase objective scientific evidence in the question, right?

A. Yes, there was.

Q. And by that did you take that to mean what the counts were?

A. What the counts were, what was being -- he also mentioned about in medical records, you know about -- or did I misunderstand?

Q. Why don't we go back and read it again. I just want to get a clear record as to what you're talking about about objective scientific evidence. Do you need the question read back?

A. One more time.

Q. It's not a problem.

(Whereupon, the above-requested question was then read by the reporter.)

THE WITNESS: And I said no.

BY MR. KRISTAL:

Q. Okay. In the phrase -- in the question any objective scientific evidence that either Mass or Fleckner had an asbestos fiber burden in their lungs above normal for your lab, what are you talking about? What did you understand objective scientific evidence to mean?

A. I would mean that if the medical records had, in fact, demonstrated that either one of these gentlemen had pleural plaques, then I would have said, well, no, in fact, I would have predicted that they would have had tissues asbestos levels in excess of our normal range of values.

If -- and then with the counts themselves, the counts themselves were objective scientific evidence that were, in fact, within our level of expected normal ranges.

Q. Anything else?

A. Not that -- I think that's it.

MR. KRISTAL: Okay. That's all I have. I just wanted to understand what you were talking about.

(Discussion off the record.)

MR. KRISTAL: Just for the record, I am

requesting what we had talked about earlier in the deposition, which are the PowerPoints or

materials that Dr. Sporn has yet to try to

locate and also a copy of the database that Dr. Sporn went to to search for dentists.

THE WITNESS: In what form would you like those?

MR. SCRUDATO: Well, wait a minute. We understand the request. We'll discuss that and work that out with you.

MR. KRISTAL: Okay. But just -- I don't want to beat a dead horse. What are the options of the form? If it's going to be produced then we don't have to have a zillion conversations?

MR. SCRUDATO: I don't want to do this on the record.

(Discussion off the record.)

MR. KRISTAL: To the extent documents are produced that were within the scope of the dep, we obviously reserve our right to seek further questioning.

MR. SCRUDATO: Okay.

MR. KRISTAL: And Paul reserves whatever rights that every other defendant has at the same time.

(Whereupon, the deposition concluded at 1:35 p.m.)

* * * * *

I hereby CERTIFY that I have read

the foregoing pages, and with the exception of the changes on the errata sheet, that they are a true and accurate transcript of the testimony given by me in the above-entitled action on November 15, 2005.

DR. THOMAS ARTHUR SPORN

Sworn to before me this
day of , 2005.

Notary Public

0158

STATE OF NEW YORK)
SS:
COUNTY OF ERIE)

I, MICHELE CANNATA-SMITH, a Notary Public in and for the State of New York, County of Erie, DO HEREBY CERTIFY, that the Examination Before Trial of DR. THOMAS ARTHUR SPORN, was taken down by me in a verbatim manner by means of Machine Shorthand on November 15, 2005, that the proceedings were taken to be used in the above-entitled action.

I further CERTIFY that the above-described transcript constitutes a true, accurate and complete transcript of the testimony.

MICHELE CANNATA-SMITH, RPR, CRR
Notary Public

0159

INDEX

DR. SPORN: PAGE:

EXAMINATION BY MR. KRISTAL 6
EXAMINATION BY MR. SCRUDATO 150
EXAMINATION BY MS. MILLER 151
RE-EXAMINATION BY MR. KRISTAL 152

0160

EXHIBIT INDEX

SPORN EXHIBITS:	PAGE:
1, an article	12
2, an article	14
3, deposition notice	16
4, a folder containing documents	17
5, a Duke University folder - Mass	18
6, a Duke University folder - Fleckner	18
7, a 7/19/05 letter	31
8, a report	132
9, curriculum vitae	132

REQUESTS

DESCRIPTION:	PAGE:
Transcripts in other cases	9
PowerPoints	20
Review of Dr. Roggli's database	40
Section of book with references	52