SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF KINGS: CIVIL TERM: PART 73

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NANCIA MYERS,

Plaintiff,

- against -

Index No.
004578/2014
Frye Hearing

SHAKEENA CULLER, BEACHSTONE BEVERAGE, INC., and ALBERTO ARROYO,

Defendants.

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360 Adams Street
Brooklyn, New York 11201
January 27, 2017

B E F O R E: THE HONORABLE PETER SWEENEY,
J U S T I C E

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Senior Court Reporter

MR. GREENWALD: If I may, your Honor, I'm mindful of the facts of the discussions we have had with reference to the motion to preclude Dr. Toosi from testifying have all been off the record and in chambers, so let me at least establish a record so we can have --

THE COURT: Sure.

MR. GREENWALD: I apologize for this, your Honor, but I'm going to be a little extensive in terms of procedurally where we are because I think it's important in terms of the context of this hearing today. And I do have some law to present to your Honor as well with reference to the equipment standards and also in response to some of the points raised in the preclusion motion. I'll try to be as brief as I can, your Honor. I won't be more than a few minutes but I really believe that I need to say so.

THE COURT: Mr. Rosenberg, I see you are standing up.

MR. ROSENBERG: I am, because if there is any law that he intends -- that's not the purpose of this hearing today, for him to now have a sur-reply, and he should have done this in his papers.

THE COURT: Look, at the end of the day, we are going to have a hearing and he's going to be allowed to supplement whatever arguments he has with any applicable law. If he does it in the beginning or the end, I don't

really see it as --

MR. GREENWALD: The only law I have, your Honor, number one, Lugo -- I'm going to hand up a package, your Honor, I have a package prepared. What's in the package is, first and foremost, the Lugo case, which, for the record, is --

THE COURT: It's a long case.

MR. GREENWALD: There is other cases appended behind it, your Honor. Unfortunately there is duplication, I wasn't paying much attention last night. Lugo versus New York City Health and Hospital, 89 A.D.3d 42. This case basically is presented to your Honor, it sets forth the standards for a Frye hearing, that's all it does. It basically sets the legal parameters for what we are going to do today, what's the applicable tests, the prongs of the test and apropos of which.

Quoting from the decision, when the Frye test is applied to a theory of causation, the Court's concern must be limited to making sure that within the scientific field of question, there is a substantive demonstrable objective basis for the expert's opinion. The focus of the inquiry should not be upon how widespread the theory's acceptance is, but instead should consider whether a reasonable quantum of legitimate support exists in the literature for the expert's views.

And there is another portion of this I would like to quote, your Honor, which basically sets forth the following: I'm quoting from the Lugo decision. Frye is not concerned with the reliability of a certain expert's conclusions, but instead with whether the expert's deductions are based on principles that are sufficiently established to have gained general acceptance as reliable. The Court's job is not to decide who is right and who is wrong, but rather to decide whether or not there is a sufficient scientific support for the expert's theory. General acceptance does not necessarily mean the majority of the scientists involved subscribe to the conclusion, rather it means that those espousing the theory or opinion have followed generally-accepted scientific principles and methodology in evaluating clinical data to reach their conclusions.

The other cases that are grouped behind it, your Honor, and I'll just refer to them by the Plaintiff's names, the Gonzalez decision, Legrand decision, Valentine and Plate. Several of these decisions, two of these decisions are where Dr. Toosi was --

MR. ROSENBERG: Judge, before we go on, can we have the witness go outside?

THE COURT: Fair enough.

MR. ROSENBERG: If he is going to go into this, he

shouldn't be here.

THE COURT: Mr. Toosi, can you please step out for a moment?

THE WITNESS: Yes, your Honor.

THE COURT: Go ahead, Mr. Greenwald.

MR. GREENWALD: Two of the decisions that I have supplied your Honor basically admitted Dr. Toosi to testify as a biomechanical expert and two of the decisions that I provided, aggregately five, there was a reversal in the Appellate Division upon preclusion of the biomechanical expert at the trial level. And essentially that's all the law that I have, I'm presenting to your Honor.

MR. ROSENBERG: In light of this late disclosure for the law, I just reserve my rights, Judge, to submit at a later time --

THE COURT: I will give you both an opportunity to submit whatever you want to submit to me following the hearing.

MR. ROSENBERG: Thank you.

THE COURT: Just so you all know, this is a Frye hearing to some extent and it's also just a hearing to another extent. And the non-Frye aspect of the hearing is as to whether there is a factual foundation based on the evidence that backs up his opinion.

Now, the Court is permitted to conduct a hearing

of that nature and that's part of what we're here to do today, okay.

MR. GREENWALD: Okay, apropos the last thing I was going to say in this vein in terms of the standards is there a four-prong test --

THE COURT: Are we back to Frye?

MR. GREENWALD: Yes. There is a four-prong test and the first prong is whether he is qualified in terms of his credentials and his educational background.

THE COURT: I'm going to cut you short, Mr. Greenwald, I would not blanketly preclude a biomechanical expert from testifying. There is ample support in the Court's view that supports the expertise, okay.

MR. GREENWALD: Okay.

THE COURT: But what exactly he's going to testify to and whether or not there is scientific support for that, that's another story. I'm not saying biomechanical engineering is junk science, that's not what I'm saying at all, all right. I do have some issue with whether or not he can form an opinion based on his review of the photographs. And I need to have this hearing to determine whether there is an ample factual basis for his opinion, all right. So those are my concerns and you can direct the hearing and the questions accordingly.

MR. GREENWALD: Your Honor, I appreciate that your Honor and thank you. This has been characterized in our discussions off the record, that he is solely relying upon a photograph or photographs.

THE COURT: From what I read, that's kind of how it was put to me, Counsel, with all due respect.

MR. GREENWALD: Well, it was put to you that way but the motion papers are before the Court and his report is before the Court, all right. And review of his report will disclose differently, that he relied upon two separate calculations, there are two separate equations. All right.

THE COURT: All right. Can we get to it?

MR. GREENWALD: I want to set the procedural setting very briefly, all right. There is one thing that I want to emphasize, and he's out of the room now, let the record reflect. You know, there has been much aspersions cast on his opinion off the record, all right. So bottom line is this: He reached a conclusion that the delta force here, and we're going to go into that in his testimony, the delta force here was 9.8 miles per hour, okay. And as he says in his report, this is giving the Plaintiff every benefit of the doubt in terms of the maximum, for instance --

THE COURT: Counsel, look, it sounds like you are doing a closing.

MR. GREENWALD: Your Honor, one point here.

THE COURT: Go ahead.

MR. GREENWALD: It says in the deposition of Mr. Arroyo, which he relied upon, and he also repeated that testimony, Mr. Arroyo, at the trial, that the accident happened at five miles per hour. He assumed that the accident happened at ten miles per hour and that's the kind of thing in terms of giving the Plaintiff every benefit of the doubt. And at the end of the day, the delta force that was 9.8 that he came up with. I would just point out one thing to you in that context, your Honor: No air bags deployed in the Plaintiff's car. And he's going to talk about the specifications for that Windstar and that's in his report as well.

THE COURT: Counsel, please.

MR. GREENWALD: It's like a QED, your Honor.

THE COURT: I can't stop you, can I?

MR. GREENWALD: It proves it's a combination of his calculations.

MR. ROSENBERG: Wait a second, he opined about air bags?

MR. GREENWALD: He sure did.

MR. ROSENBERG: Where is that?

MR. GREENWALD: Mr. Rosenberg, I've read the report, it's in the report that the air bags didn't deploy.

I mean, you've repeatedly characterized this off the record, that he relied on a single photograph, that's clearly not true, and review of the report will disclose that.

MR. ROSENBERG: Tell me the page in this report.

MR. GREENWALD: I really can't, it's in there. I'm sorry you haven't read the report but you mischaracterized it.

Finally, your Honor, let me just do this, then I'm going to call him to testify.

THE COURT: You got more?

MR. GREENWALD: Just procedurally, not as far as the context.

THE COURT: It sounded like content.

MR. GREENWALD: Let the record reflect, your Honor --

MR. ROSENBERG: If I may, before we even get to that, I know there is no jury here, but I don't see anything in there about air bags. Can you point to me? Just show me and I'll sit down. I don't see that.

MR. GREENWALD: Should I stop now and read the report?

THE COURT: It's really unnecessary to go through this right now.

MR. ROSENBERG: I don't want him going through

that if it's not in the report.

MR. GREENWALD: It's in the report. How many times do you --

THE COURT: Counsel, look, you know how to object to a question, so I'm going to let you object to questions if you feel they are inappropriate.

MR. ROSENBERG: All right, Judge.

MR. GREENWALD: Now procedurally, your Honor --

THE COURT: We are still on that?

MR. GREENWALD: I haven't gotten to that.

THE COURT: Oh, we didn't get to it yet.

MR. GREENWALD: I will be real quick, your Honor. We had a trial on liability in June, okay, there was a verdict for the Plaintiff, who was a passenger in my co-defendant's vehicle. It was a 50/50 finding, both defendants were found to be 50 percent responsible. It was a no-brainer, your Honor, that there was going to be a liability verdict with reference to this Plaintiff because she was a passenger. So clearly one of the vehicles at least was going to be held responsible. And with all due respect, this is Kings County, we have two vehicles involved in a collision at an intersection and it was basically a given by all attorneys present, and I assume your Honor, that both of the vehicles were going to be held in in such a circumstance, all right.

And apropos of which, you had to specifically ask this of Mr. Rosenberg when we were getting ready to do the damages trial, apropos of which no doctors, no doctors were set up to testify and we had to disband the jury for that reason because the Plaintiff wasn't prepared to go ahead on damages. And your Honor then set a date for October 13th for us to come back in and pick a jury and try the damages portion. And I got a call a couple days before that, asking me whether I was ready. And I had all my doctors lined up.

THE COURT: From him, not from me.

MR. GREENWALD: From Mr. Rosenberg. I had all my doctors lined up for the second time. And lo and behold, when I appeared in the courthouse in your Honor's courtroom, I'm presented with the specious preclusion motions, with no notice like this, okay. So that's what brings us here today. And one of the representations that was made off the record and in this setting was that there was no need to reply to these motions, that they were so ironclad, that they were so indisputable that not only did we not need a Frye hearing, but I didn't even have to respond, your Honor should just peremptorily preclude Dr. Toosi and Dr. Cohn, my radiologist. And the motion as to Dr. Cohn, if it is even possible, is even more specious than this motion.

So what brings us here today procedurally, this case should have been done in June and certainly should have been -- we should have tried the case in October. What brings us here today is apparently this motion, instead of trying their case, they are doing this, at the waste of the Court's time, waste of my time and the taxpayers' money, not to mention. That's where we are, I will put this on the record, all right. If they had a causal connection, your Honor, meaning if Dr. Merola was willing to testify there is a causal connection, then this case would have been over in June. So with that, your Honor, I call Dr. Toosi to testify.

THE COURT: You want to give Mr. Rosenberg an opportunity to address the Court --

MR. ROSENBERG: Judge, I didn't realize that we were here to reargue a motion to begin with where your Honor ordered that we have a hearing today. I wasn't prepared to come in and reargue something that was already decided.

THE COURT: So let's just go forward then. Let's get Mr. Toosi in and let's begin.

(Whereupon, the witness enters the courtroom and takes the witness stand.)

THE COURT CLERK: Can you raise your right hand.

Do you swear to tell the truth, the whole truth,

and nothing but the truth?

THE WITNESS: I do.

THE COURT CLERK: Can you please state your name and business address for the record, please.

THE WITNESS: Kevin Toosi, T-O-O-S-I. The address is 1407 McLaughlin Run Road, Pittsburgh, PA 15241.

THE COURT CLERK: Thank you so much, Doctor.

THE WITNESS: Thank you.

D R . K E V I N T O O S I, having been duly sworn by the Clerk of the Court, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. GREENWALD:

Q Good morning, Dr. Toosi.

A Good morning.

Q Have you brought with you material that had been provided to you to review with reference to your analysis in this case?

A Yes.

Q Do you have that with you? Could you take that out, please.

A Sure. I have two sets of materials, one is what I have been provided to perform the analysis for this case and the other one is the references that I cited at the end of my report.

MR. ROSENBERG: I can't hear him, Judge.

A The references that are cited at the end of my report.

THE COURT: Try to speak as loudly as you can, Mr. Rosenberg is having difficulty hearing.

THE WITNESS: I will do better.

Q As to the second one, at the conclusion of your report or behind your report, you cite the articles and publications, do you not?

A Yes, I did.

Q So the second binder that you are referring to, those articles and those publications, that's what's in the second binder?

A Yes, sir.

Q And what's in the first binder?

A The materials that I received to review for my analysis for this accident.

Q And could you please state for the record precisely what you did review, what's contained in that binder?

A Sure. What I have here is obviously a copy of my reports, but materials I have reviewed to start with, the police accident report, a Bill of Particulars, Amended Bill of Particulars, Second Amended Bill of Particulars, medical records pertaining to the Plaintiff, information regarding the vehicles involved in the accident including photographs of the Plaintiff's car and the deposition of parties involved.

MR. GREENWALD: Your Honor, I offer these binders in evidence, your Honor.

MR. ROSENBERG: I object. He's offering -- First off, I might add, Judge, that in the materials reviewed, if you look at the expert's report, there seems to be a couple things missing from what he claimed he reviewed and what's being offered into evidence, so that I have an issue with.

I'll give you an example, Judge. Medical records, are they certified?

THE COURT: Well, look, we understand that -- Look, this is a Frye hearing, okay. He's allowed to formulate his opinion based on hearsay for purposes of determining whether his opinion is factually based, okay. So I'm not accepting these materials for the truth of the matter asserted. I'm accepting them to see whether or not they establish at trial, the facts underlying these materials are established, that would serve as a foundation for his opinion, okay. We don't have to try the case here.

MR. ROSENBERG: No, I understand that, Judge, but he didn't review medical records in his report and now he says he reviewed medical records. Where is that in his report?

THE COURT: I have his report right in front of me.

MR. ROSENBERG: Look at the materials reviewed,

Judge, it's on Page 2. Do you see that in there?

THE COURT: I do see that. So now he went beyond his report.

MR. ROSENBERG: That's correct. So now I ask the Court to preclude him from referring or relying on that.

THE COURT: Counsel, you are being given an opportunity to hear his opinion in advance. This is not the trial. Certainly you will not be prejudiced if he's allowed to review additional items for purposes of forming his opinion. So I'm not going to preclude him at this juncture because it's not in his report.

MR. GREENWALD: Your Honor, if I may, the claim, among others, in the motion for preclusion is that he basically is relying on nothing, it's like he pulled this opinion out of thin air, your Honor.

THE COURT: Look, I don't want to argue everything.

MR. GREENWALD: What I'm presenting is the material --

MR. ROSENBERG: Judge, if he's going to go on, I ask that the witness be excluded from the room.

THE COURT: Exhibit 1 are the materials that you reviewed specific to this case, correct? That's one folder.

THE WITNESS: That's correct, your Honor.

THE COURT: And we will call the other folder Exhibit 2, which is various treatises which you believe support the science behind your opinion; is that correct?

THE WITNESS: That's correct.

THE COURT: So for purposes of this hearing, they will be received in evidence. And again, they are not being accepted for the truth of the matter asserted. They are being accepted solely to see if they establish that there is support for his opinion in the scientific community, to see whether or not his opinion has a factual basis. So let's go.

Q Dr. Toosi, have you ever practiced medicine?

A Yes, I have.

Q And tell me about that, what was your education with reference to the practice of medicine?

A I graduated from medical school in 1994 and then I practiced medicine for five years as a PCP, primary care physician, in Iran before coming to the United States, so that's my background as a medical doctor.

Q And in Iran, while you were practicing medicine for five years, as you said, did you treat any people that had been in accidents or had traumatic injuries coming from automobile accidents?

MR. ROSENBERG: Objection. Really, in Iran? Judge, he is not a licensed medical doctor in the

United States.

THE COURT: Overruled.

You can testify to your expertise, go ahead.

MR. GREENWALD: Again, your Honor, just to respond to this, they claim he had no qualifications. This is not --

THE COURT: All right, look --

MR. GREENWALD: This is what the motion is --

THE COURT: I'm not going to sit here and listen to you two argue for the next hour and a half, okay. Let's get some work done, all right.

Q Did you treat accident victims in Iran?

MR. ROSENBERG: Objection.

THE COURT: All right. Overruled, you can answer the question.

A Yes, I did.

Q And what kind of injuries did you treat, Doctor?

MR. ROSENBERG: Objection.

THE COURT: You can answer the question.

MR. ROSENBERG: Judge, he is not a medical doctor, he's not here testifying as a medical doctor.

THE COURT: Read the law, Counsel. Respect my ruling, all right, or don't, but that's my ruling.

A A variety of injuries from abrasions and contusions to fractures and so forth. So I have attended people involving car

accidents, yes.

Q Ever treat any patients that had herniated lumbar or cervical disks?

MR. ROSENBERG: Objection.

THE COURT: Overruled.

A Yes, I have.

Q Now Doctor, are you an engineer?

A Yes, I am.

Q Could you tell us about your education with reference to being an engineer?

A Sure. When I came to the United States, I started doing medical research instead of practicing medicine and it helped me get to some research projects in University of Pittsburgh. I earned as a result, as a by-product of my research, I earned a Bachelor in Science and a Master's in Science degrees in Bioengineering and I went on to get a Doctor of Philosophy, doctoral degree in Engineering, Ph.D. in Biomechanics in 2011 from University of Pittsburgh.

Q And so you have an M.D., albeit not from the United States, but you have an M.D. from overseas, correct?

MR. ROSENBERG: Objection.

THE COURT: What kind of degree did you have from Iran?

THE WITNESS: A medical degree, yes, your Honor.

Q Do you have a Bachelor of Science?

A Yes.
Q From where do you have a Bachelor of Science?
A University of Pittsburgh.
Q What do you have a Bachelor of Science in?
A In Bioengineering.
Q Do you have a Master's?
A Yes.
Q What do you have a Master's in?
A In Bioengineering from University of Pittsburgh.
Q Do you have a Ph.D.?
A Yes, I do.
Q And what do you have a Ph.D. in?
A Biomechanics also from University of Pittsburgh.
THE COURT: Tell the Court what that means, what is the field of biomechanics.
THE WITNESS: Biomechanics is simply the application of laws of physics and principles of engineering to living system in general, but more specifically for the human body. Forces and motions and interaction of human body with those forces and motions.
THE COURT: Okay.
Q Have you practiced as an engineer in the United States?
A Yes.
Q Could you tell us about your experience as an engineer?
A Well, after I received my Master's in 2005, I was hired

by a company, a scientific and consulting company in Philadelphia named Exponent for three years as an engineer. I was eventually promoted to scientist, but for three years I was working as an engineer as part of a team to design/perform crash tests, analyze them, analyze the results, publish the results and so forth for three years. So that was my first job as an engineer.

I eventually went back to University of Pittsburgh to get my Ph.D. in bioengineering and I did and I ended up becoming an adjunct professor in the University of Pittsburgh, which I still hold that position, and I also work as a consulting engineer in the field of biomechanics.

Q Do you teach biomechanical engineering?

A Yes, I do.

Q Tell us about that.

A I teach biomechanics on different levels, both for students and for graduate students. For the graduates, we also have some medical students interested in the research areas of biomechanics, attending my lectures and classes.

Q Have you published any articles in biomechanics?

A Yes, I have.

Q Can you tell us what publications you published?

A Sure. My publication has three major sections. One is based on the research that I have done during my Master's degree, so it's a by-product of my Master's thesis. And the

focus was the effect of the spinal cord injury on the function of the urinary tract, specifically urinary bladder. So there are a couple of peer-reviewed articles coming out of that research plus a bunch of presentations in seminars and scientific conferences.

The second phase was, as I mentioned, for the area that I was practicing as an engineer in Exponent, performing crash tests and so forth so I have a few publications out of that.

And then when I came back for my Ph.D., I had done testing of human subjects for the possibility of getting injured to upper extremity as a result of repetitive motions. For my dissertation specifically I worked on the effect of keyboarding, using mouse and keyboard and typing on the wrist and see if there is any correlation between extensive typing and carpal tunnel syndrome.

Q Now have you ever testified in a court of law as a biomechanical expert?

A Yes, I have.

Q On approximately how many occasions?

A About 50 times.

Q Which courts have you been admitted as an expert to testify in biomechanics?

A Here in Kings, Bronx, Manhattan, Westchester, Queens, one was actually here in New York City, Connecticut, Florida, Pennsylvania, so many places actually.

Q And have you ever testified as a biomechanical expert in Judge Sweeney's courtroom?

A Yes, I have.

Q When was that?

A It was November 18, 2011. It wasn't in this room though, it was on the third floor, I believe, 366.

Q When was the science of biomechanics established?

A Well, biomechanics has been around for hundreds of years, it goes back actually to Leonardo da Vinci, the most known scientist and artist to actually correlate the function and structure of human body parts, so that's like the definition of biomechanics.

But modern biomechanics have been around for at least 50, 60 years. And by "modern," I mean biomechanics based on the development of the technology and other branches of science such as computer science and software. So last 50, 60 years biomechanics have been extremely active in terms of performing research and analyzing the result of those research projects. And many products that are used on a daily basis come as a result of those research products: Seat belts; air bags; car seats; helmets; many types of equipment, sports gear are coming from biomechanics; sneakers are byproducts of advancement in biomechanics. So the modern biomechanics have been around at least 50, 60 years.

Q Now in terms of what you reviewed to testify at this

trial and to render a report that you rendered, you reviewed deposition testimony, did you not?

A Yes, I did.

Q And did you review the testimony of one day at trial where three witnesses, the Plaintiff, the Co-Defendant, and Mr. Arroyo, the driver that I represent, testified as to what happened in this accident?

MR. ROSENBERG: Objection. Judge, show me where that is in the report.

MR. GREENWALD: Obviously it's not in the report, your Honor, because the report was rendered before that, as Mr. Rosenberg well knows. But hopefully Mr. Rosenberg is also aware of the principle that an expert can utilize evidence adduced at the trial in terms of his opinion that he's going to give to the jury.

MR. ROSENBERG: Judge, if I may, Judge, if you look at Dr. Toosi's report, it's devoid of mentioning anything to do with trial testimony. So clearly, Judge, he's beyond the scope of what they exchanged. We are not at a trial, Judge. We are at hearing to preclude him. So there is no supplemental report, there is nothing in addition. They had up until today because your Honor already heard argument from Mr. Greenwald that went on and on before we even started. So Judge, clearly that part should be precluded from his consideration. It's not in

here, it's way beyond the scope. So I'm at a loss because I don't know what he's going to say now.

THE COURT: Well, you're going to hear what he has to say so I'm going to allow him to testify.

Go ahead, Counsel.

Q You reviewed photographs?

A Yes, I have.

Q Tell me what photographs you reviewed.

A I believe I have 12 colored photographs of the Ford Windstar minivan that the Plaintiff was in at the time of the accident.

Q Did you review Bill of Particulars?

A Yes, I have.

Q There was an initial Bill of Particulars and a Supplemental Bill of Particulars, Doctor?

A Yes.

MR. ROSENBERG: Objection. Leading. Every single question he has asked so far today has been leading and I've let it go. But now I'm going to object to every question.

THE COURT: All right. He already told us what he relied on. And secondly, all these materials are set forth in his report. So unless you are asking him if he relied on any materials in addition to what he set forth in his report, you really don't have to do that, okay.

MR. GREENWALD: Your Honor, fine. I'm at the last one and there was an issue made with Mr. Rosenberg with reference to the medical, so let me at least do that.

THE COURT: All right.

Q Did you review 3101 expert witness disclosure reports to prepare you to render your report?

A Yes, I did.

THE COURT: Off the record.

(Whereupon, an off-the-record discussion was held.)

Q Just so the record is clear, I'm referring to a report by Dr. Jeffrey Klein and I'm referring to a report by Dr. Melissa Sapan-Cohn, did you review those reports?

A Yes, I did.

MR. ROSENBERG: Just note my objection to the last two questions. Again, they are both leading. I think Mr. Greenwald can get up there and testify as opposed to Dr. Toosi.

THE COURT: All right. Go ahead. Overruled. Next question.

Q Did you review the police accident report?

A Yes, I did.

Q And did you review the motion to preclude your testimony?

A Yes, I did.

MR. ROSENBERG: Objection. Judge, where is that in here? That's not in here either.

THE COURT: I already made my ruling.

MR. ROSENBERG: That he can testify to anything regardless?

THE COURT: You know what, you better stop, all right. I'm up to here already, all right. So let's go.

Q Doctor, you have your report handy?

A Yes.

Q Please turn to Page 2 of that report. Did you have any specific aims and overall purposes in terms of the thrust of this report, Doctor?

A Yes.

Q Could you tell us what those specific aims are?

A Well, of course the first step, like any other research project for me, would be gathering data or factual materials pertaining to the case, and that's what I did, which included actually medical summaries that are listed in the first specific aim on top of the Page 2.

Then the next step for me was to quantify the severity of the accident in terms of some unit, some numbers. Definition of impact as heavy or light or moderate doesn't necessarily mean anything in terms of, you know, engineering analysis. So as an engineer, you have to put a number on an event with specific unit so you can rely upon that and also pass it on to other

engineers, that was the second step. For that, of course, I performed analysis which is on the accident reconstruction or accident analysis in my report. One was a crush energy analysis based on the photographs that I investigated and the other one was a momentum analysis. Two different analyses based on different materials and different facts completely done separately and independently from each other.

So that was the second aim, as I said, to quantify the severity of the accident. Based on the findings of the first and second step, the third step for me was to understand the movement, the motions and forces involved with those motions for the Plaintiff inside that vehicle as a result of the impact. Obviously if there is no movement, there is no motion or energy being transferred, there wouldn't be any injury. So if there is some sort of motions and forces involved, then you have to find out in terms of determining that those are significant enough to cause -- and that was the next step, to understand what type of motions were involved and forces being transferred to the human body and other circumstances with that regard, seat belt, seat back and so forth.

Finally, based on these findings, step by step, my next aim was to understand, as I said, the forces and motions that were already analyzed and determined and quantified, are they significant enough, meaning are they beyond the threshold of damage to the human body parts, specifically those parts that

Plaintiff was claiming were injured in this accident, to draw a conclusion that if we have a certain amount of force, enough amount of force basically and certain mechanism to create those specific injuries in this accident, to draw a conclusion that they are caused by this accident. We are not having either significant amount of force or the certain mechanism to create those injuries, then it would be with a reasonable scientific certainty, if you have scientific certainty, that the accident was not the cause for the injury.

Q Now did you formulate an incident summary with reference to this case?

A Yes.

Q Why did you formulate an incident summary?

A I think I mentioned that everything starts with the facts regarding the accident, which cars were involved, what time did it happen, where it happened, how many people were sitting in the car, which direction they are traveling. So all those coming as the very basic facts that are the very first step for us to gather information, gather data and then take it from there. So incident summary was the very first thing that we did.

Q And what was the incident summary that you formulated with reference to your report in this case?

A I think we can see the summary, page --

Q Page 3?

A Page 3 of my report, it's coming from different sources, mostly police accident reports, the first responder attending the scene, seeing the vehicles at the scene, attending the people involved in this accident and reporting as an official, as an authority person, that was the main source, and summarize the finding from that police accident in that incident summary.

Q Now, there is a portion of your report that begins on the bottom portion of Page 3 entitled Claimed Injuries, why did you include that in your report?

A This is important for us to understand what you are analyzing here, what am I dealing with as a biomechanical engineer, is it forces required to require a disk herniation versus a rotator cuff tear or meniscal tear in the knee. It's important to know what parts of the body I'm focusing on to determine the force or the mechanism or both and come up with a conclusion eventually that the force and mechanism were significant enough to create that. So it would be very helpful to understand what type of injuries, you know, we are dealing with. And in this case, they are all focused on the neck and lower back, which are cervical spine and lumbar spine as listed in those legal documents.

Q And the next thing you did, Doctor, in your report commencing on Page 5 is you present a medical summary of Nancia Myers, the Plaintiff, what was the purpose of including

that in your report?

A Again we are dealing with the person that claims to be injured, so it is very important to understand, as I said, what type of injuries and who diagnosed them and where they come from. I did not prepare the report as a medical doctor, I was solely a biomechanical engineer analyzing this in terms of biomechanics. So I relied upon findings from the doctors who attended the person, who took the MRIs and reviewed them, perform surgeries, examined the patients and so forth. So that was a big part and it's always a big part of my analysis to understand what medical doctors have found in terms of their examinations and tests that they have done and it's always a part to help me understand again what I'm dealing with in terms of analyzing, in terms of causation and so forth.

Q Did you in part rely upon the reports of MRI examinations?

A Absolutely.

Q Did you rely at least in part on the operative report of the operation performed by Dr. Merola?

A Yes.

Q And you also relied upon reports of independent medical examinations, Doctor?

A Yes, sir.

Q And review of radiological films by Dr. Cohn?

A Yes.

THE COURT: Just to make it easy, all the medical reports that you relied upon are set forth in your report; is that correct?

THE WITNESS: Yes, sir.

THE COURT: Thank you.

Q Now, commencing on Page 7, next category in the report is vehicle information?

A Correct.

Q What's the function of this in your report, Doctor?

A As I mentioned, when we find out what type of accident we are dealing with, we need to gather information as much as we can to perform those analyses to quantify that. Obviously when there are vehicles involved, one major part of the information comes from the year, make and model of those cars and also their weight, geometry and some other specific data related to those specific model and make and that's the purpose of having them listed in this page along with the location and extent of damage to those vehicles.

Q Now the first vehicle you discussed was the 2002 Ford Windstar, is that the vehicle that the Plaintiff was a passenger in?

A Yes.

Q Now, you provided what's called a curb weight. What's a curb weight?

A Curb weight is a term coined by manufacturer actually,

car manufacturer, they make a car and it's ready to go full of gas by the curbside but without any occupants. So that's the car coming basically out of factory without any additional equipment or any after-market additions to that, and as I said, without any occupants or any passengers inside, that's the weight of the car that is full of fluid and tank full of fuel and so forth so ready to go, that's the definition of curb weight.

Q Now what was the curb weight that you found for the 2002 Ford Windstar?

A According to the manufacturer, the Ford company, the curb weight of that vehicle is 4,223 pounds.

Q And did you then add the weight of the occupants of the vehicle?

A Yes.

Q Now, with reference to the weight of the Plaintiff, what weight did you use?

A I used 197 pounds for Ms. Myers based on her medical records.

Q Okay. And what weight did you use for Ms. Culler?

A For him I did not have any medical records so I used an average weight for a male in his age.

Q And what weight was that?

A That was 165 pounds.

MR. ROSENBERG: Judge, if we may, can we have the

court reporter, before we go on, just read back the last like two sentences that the doctor said.

(Whereupon, the referred to portion of the record was read back by the Reporter.)

THE COURT: She.

MR. ROSENBERG: I just wanted to make sure I heard it correctly.

Q What was the total weight you found based on the calculations that you just advised us of, in terms of the weight of the Windstar at the time the accident happened?

A The total was 4,585 pounds.

Q Getting a little ahead of myself here, Doctor, but I have to ask you this at this juncture. Let's assume arguendo for a moment here that instead of being 165 pounds, which you told us you obtained from an average, let's say, for instance, that Ms. Culler was 185 pounds, okay?

A Okay.

Q So that would mean that the total weight of the Windstar would have been 20 pounds more based on the calculations, we are going to get into that, what kind of difference would that have made to your calculations if Ms. Culler is 20 pounds more than the estimated weight you provide to her?

MR. ROSENBERG: Objection. Again beyond the scope. Not even close to mentioning this in here, Judge.

THE COURT: All right. You can answer the question.

A Having 25, 30, 50, even up to 100 or 200 pounds would not make a significant difference. You will see few pages later we have some calculations or delta-V or changing velocity, the change up to 100 or 200 pounds would affect those numbers by a decimal point, meaning instead of 5.6, we may have 5.5 or 5.7. If it's lighter or heavier, it's not going to be a significant difference.

Q Thank you. Now with reference to the 1999 Freightliner, what was the curb weight for that vehicle?

A Well, this is a commercial truck so I didn't use curb weight for that vehicle for a couple reasons. First of all, it's not comparable to a passenger car that you only have the weight of the car and the weight of the passenger inside. Fuelled by fuel by itself could be a significant number for these big trucks, a full tank versus empty tank, equipment usually being added to those commercial trucks and vehicles.

And more importantly is some cargo, which is purpose of having that truck actually on the road, there is a possibility that car is fully loaded, which I didn't know about that. For those reasons, I chose to go with what we call in engineering term as GVWR, which stands for gross vehicle weight rating, which give you a range from coming from the manufacturer for an empty truck with no equipment, no fuel, no load, up to the point

that it is fully loaded, full tank of fuel and so forth. So I picked the maximum number provided by the manufacturer in terms of the range for a car that is allowed by law to be on the road. In this case, it was 26,000 pounds.

Q Just to clarify, the number that you put in this report, the weight that you assigned to the Freightliner, the 1999 Freightliner, that was the maximum number that that weight could have been based on the specifications?

A Yes.

Q And that would include it being fully loaded?

A Fully loaded with all the equipment that can carry, as many people that can get in the cab, full tank of fuel, everything, that possibly can be carried by that truck.

Q Now turn to Page 8, please, the next category is what you entitled accident analysis, could you tell us what your accident analysis was with reference to how the accident happened?

A I think I already touch upon that, that this is a major step in our analysis to put a number on accident, see how severe it was, quantify the severity of the accident. As I mentioned, I had enough information to perform not one, but two analyses regarding this accident to come up with what in terms of automotive engineers or biomechanical engineers or accident reconstruction field we call change in velocity or delta-V.

Delta stands for Greek letter for change and V stands

for velocity. So change in velocity or delta-V, very briefly this is a very good indicator of severity of an accident for occupant inside of the car if the car is being hit and its velocity changes. So the weight, prior velocity, the after velocity, all those things come to the equation and at the end you will have one single number that can give you a very good understanding of the severity of the accident, especially for passenger cars. So that was the aim for this accident analysis, to come up with that number or at least have an upper bound or maximum number based on the physical evidence.

Could have been obtained, done two ways. The first was the crush energy analysis, which is solely based on the damage observed in those photographs. I having in mind that I did not inspect the car but I had 12 colored, good-quality photographs of the vehicle that Plaintiff was riding in at the time and they were providing the location and extent of damage to the car. And they were ample and sufficient enough to help me perform this.

THE COURT: And those photographs are in what we marked as Exhibit 1; is that correct?

THE WITNESS: I believe so. I have the photos with me, we can compare.

THE COURT: The packet that you put in the folder marked as Plaintiff's 1?

THE WITNESS: It is, you are right, your Honor.

So the formulas are coming from textbooks of biomechanics and accident reconstruction. What I did was I had my observation in terms of numbers being delivered as a parameter for those calculations. I had an estimated length and depth for the crush to the Plaintiff's car and the angle that they made contact and I was able to obtain some vehicle specific data in terms of crush stiffness coefficients for the Windstar that have been obtained and determined previously by other engineers, I relied upon that. So basically I applied the numbers in this formula and I ended up getting a number less than ten miles per hour in terms of the changing velocity or delta-V of the Windstar as a result of the impact with that big truck.

Q Let me break down some of this here. You use in your formulas a capital L, which you say indicates crush width?

A Correct.

Q In terms of determining or the number that you utilize in crush width in analyzing this accident, can you explain to us what you did with that?

A Sure. As I said, I relied upon the photos. We have the photographs, I include three of them, not all 12. But we have 12 photographs based on the photographs you can make measurements of the photograph compared to an intact vehicle and make a decision. At this time it's very obvious that the point of impact is the left front corner of Windstar and the length of

damage or the contact is about 20, 25 inches. I mention that since I wasn't at the scene and I did not inspect the car myself, I just relied upon someone else's photos. I played very conservative, meaning that instead of 25 inches that I observed, I chose to go with 50, five-zero, inches of damage for the width just to exaggerate as much as possible, as much as the physical evidence allows me. So consider 25 inches on each way of that front bumper. Instead I'm just focusing on one focal point, I doubled that number to 50 inches to maximum the amount of energy that could have been delivered to the truck to the front of the Windstar.

Q Just so I'm clear here, the observable dent was about how wide?

A I would say less than 20 inches or 25 inches.

Q But you made that 50 inches?

A Yes.

Q And would that increase the amount of energy involved by increasing it from 20 inches to 50 inches?

A Absolutely, it makes it double, twice as big as 25.

Q So despite the fact that you could see about 20 inches, you used twice that amount, twice the amount of force in your formula?

MR. ROSENBERG: Objection.

Q Is that correct, Doctor?

THE COURT: He can answer the question.

A That's correct.

Q Fair enough.

Now, you say that and your report indicates that you reached a conclusion that there was a delta force of 9.8 miles per hour?

A Delta-V, yes, sir, not delta force. Sorry, just correcting you.

Q Is that the outer limits, is that an average, is that a medium or what is that number?

A Actually, as I said, since I was playing conservative based on this crush energy analysis, I concluded that it would be the maximum possible physical energy and delta force -- or delta-V, I'm sorry, or amount of force that has been delivered to the car. So that's not the range, that's like the upper limit of conservative, upper bound for that number. It could be less than that, just the way that the weight of the truck could have been less than 26,000 pounds, the extent of damage could have been easily less than 50 inches, although I exaggerate up to 50 inches. So by exaggerating all those numbers, stretching my imagination, I ended up getting something that could not be more than ten miles per hour.

Q By doubling the crush width, wouldn't it by definition mean that this number, this 9.8 that you arrived at, this delta force, 9.8 miles per hour, would have been more than was involved in the accident?

MR. ROSENBERG: Objection. Again leading.

THE COURT: All right. Rephrase the question.

Q You say that this is the outer limit?

A Yes.

Q What effect on that statement does the fact that, as you told us, you doubled the crush width? Explain to me how that mathematically plugs in here.

A So if you look at those formulas, there is bottom of Page 8 actually is smaller version of that, assuming a uniform damage across the length and it shows that L is like sitting in the middle so and is a linear correlation between those parameters. Meaning that if I double L, the whole energy on the left side would be double. If I go half of that, it would be half. So it means that you double one parameter, the outcome would be doubled. Triple, the outcome would be triple. It's very clear in the bottom of Page 8 if you double L, instead of 25 inches, to 50 inches, the energy that was transferred as a result of the impact, cause that much damage be doubled.

THE COURT: L is the width of the dent, so to speak?

THE WITNESS: That's correct.

THE COURT: Do you have the photographs that show the width? And show me what you mean by the width.

THE WITNESS: Actually if you look at those three, those are probably the best one.

THE COURT: I have black-and-white photocopies which really don't do me any good.

THE WITNESS: Can I hand you the page of my report which is printed in color.

MR. ROSENBERG: Judge, before you go on, can I just take a look? Because I have what you have.

THE COURT: For the record, let the record reflect that the witness is showing the Court a copy of Page 7 of his report with color copies of the photographs shown on that for each.

MR. ROSENBERG: Judge, before you even ask any questions, could I see it?

THE COURT: Yes, please.

MR. ROSENBERG: Thanks.

THE COURT: Mr. Toosi, when you told us you measured the width, show me what you measured, what the width is in terms of these photographs.

THE WITNESS: This is the best picture to describe it, your Honor. This area.

THE COURT: The middle photograph?

THE WITNESS: Yes. This area is less than 20 inches and that's part that made contact with --

THE COURT: So the width is the area of the vehicle that made contact with the other vehicle?

THE WITNESS: Yes, and one other fact.

THE COURT: So it's not the severity of the dent.

THE WITNESS: Just the length of the contact and then we have angle and then we have depth.

THE COURT: Okay, all right.

Q Doctor, do you have an opinion held within a reasonable degree of biomechanical certainty as to whether this accident, the delta force was actually less than 9.8 miles per hour that you used as the initial number in your report?

A Yes, I do.

Q And what is your opinion?

A As I listed in my report, bottom of Page 9, the result of the crush energy analysis clearly indicated that the change in velocity or delta-V of the Windstar could not be anything more than 9.8 -- I rounded up to ten -- could not be more than ten miles per hour as a result of the collision.

THE COURT: Counsel, you are going to get into the acceptance of these types of analyses?

MR. GREENWALD: Well, I will, your Honor.

THE COURT: Thank you.

MR. GREENWALD: I will do it right now, your Honor.

THE COURT: This one in particular.

Q Is there a school of thought with reference to the delta-V, is this an established science?

THE COURT: I understand delta-V, all right, but

calculating delta-V from photographs, that's what I'm interested in.

Q Is it generally accepted practice in the field of biomechanics to calculate the delta-V from looking at photographs?

A Yes.

THE COURT: One photograph, i.e., the photograph of one of the vehicles involved in the accident.

Q The photographs of the vehicle that the Plaintiff was a passenger in.

THE COURT: Yes.

A Yes.

Q Could you explain to us?

A Yes, it relies based on two scientific disciplines that they are both established and accepted. One was the calculation, as I mentioned, the crush energy analysis. If you can have the depth and length and the angle or a good reasonable estimate of that, those numbers are coming from performing photogrammetry, which simply means making measurements of the photograph; that is an established technique in field of accident reconstruction and you can find it in textbooks of accident reconstruction. And highway patrols, police officers use them every day in their techniques to understand how the accident happened and so are accident reconstructionists, so based on two --

MR. ROSENBERG: Judge, he didn't do that, there is no photogrammetry here.

THE COURT: You are going to have your opportunity.

MR. ROSENBERG: He is testifying to something that's not even in his report.

THE COURT: What are the variables that you considered in calculating the delta-V just based on the crush energy analysis? I know you just told us the width of the contact.

THE WITNESS: That's correct.

THE COURT: What are the other variables that went into the calculation?

THE WITNESS: There are two more, one is the angle and the other one is the depth.

THE COURT: The depth of what?

THE WITNESS: The crush, the crush, how much that part that we are talking about, those 50 inches length of the bumper went in as a dent.

THE COURT: So those are the three variables that went into your --

THE WITNESS: Major parameters.

THE COURT: -- crush energy analysis.

THE WITNESS: Yes, sir.

THE COURT: And you're going to tell us how you

came up with the other two, correct?

THE WITNESS: Absolutely. As I said, I did not have a chance to inspect the car. So photographs give me a good basis of an understanding of the location of the accident, I'm sorry, of the crush and where the accident happened. If you can see the major crush happening at the left front corner of the Windstar. It's very clear from the photographs that I have, all 12 of them; three of them are depicted in the report.

THE COURT: Those are the three best?

THE WITNESS: The best, summarizing shot and then the location, focus and also the extent of damage.

THE COURT: Stop right there. Does anybody have the blowups, if there are blowups.

MR. GREENWALD: I have not made blowups yet, your Honor.

THE COURT: Do you have anything that I could have in front of me other than --

MR. GREENWALD: Other than the pictures that he has, no, your Honor.

THE WITNESS: I have the actual photographs, your Honor.

THE COURT: This one is one?

THE WITNESS: That's correct.

THE COURT: And this one?

THE WITNESS: Yes.

THE COURT: And those I'm assuming are the two best?

THE WITNESS: They are the best, showing the location because the other one showing the bumper just a little bit dislodged, not even broken. So to complete answering your questions, your Honor, the other two parameters are the angle and the depth.

MR. ROSENBERG: Judge, just before we go on, you asked him this question, I just want to make sure I'm clear. Is it his testimony that there is only three variables that go into delta-V?

THE COURT: With respect to the crush energy analysis?

MR. ROSENBERG: Correct. Is that yes, there are only three variables?

THE COURT: I believe that's what he said.

THE WITNESS: Parameters coming from the photographs, yes.

THE COURT: So when you calculate delta-V based on a crush energy analysis, before you do that, you have to plug in the variables and there is only three that you plug in, which is the length of the contact, the angle of the contact --

THE WITNESS: Yes.

THE COURT: -- and the stiffness of the material?

THE WITNESS: And the depth. So those are three parameters coming from the photographs or from the inspection. And then on top of that we have two you just mentioned, two more parameters that they are stiffness coefficient for that specific vehicle.

THE COURT: So four variables all together.

THE WITNESS: Three and two, five total.

MR. GREENWALD: I was going to go through each element of his equation.

THE COURT: Go ahead.

Q Let's do it this way, what is the PDOF, what is that?

A Well, actually that's not part of the equation. But to answer your question, it's the principal direction of force, meaning that direction that occupant eventually is going to move toward as a result of the impact. That's a very major component for the analysis, but not for calculating the delta-V. It's after, it's like a step after delta-V, when you know the location of damage and extent of damage and the duration of force is being established, then you can use it for the occupant kinematics down the road.

Q I'm going to get into the other parts, but in a certain sense, delta-V is a starting place and then you go to other calculations, correct?

A Exactly.

Q And you also have a second set of calculations and we're going to get to that too, which is momentum analysis, correct?

A That's correct.

Q In your crush energy analysis, in your report, you talk about a six-point damage profile equation, what is that?

A Well, as I said, it's the very established methodology that when you have extended length of damage, it has been suggested and eventually accepted and now been established and being used on a daily basis to have six points across the whole length, that you can see some intrusion or deformation that observed by the inspector through the photographs or by looking at the car.

But also having in mind that if those numbers are all close or what we call uniform deformation, meaning that the depth across the length is not much different, is not going in and out and is not irregular, it has been suggested that we can actually simplify that large equation to something smaller like a mathematical simplification of that big formula based on the fact that, first of all, it is not extended amount of length we are talking about. 20, 25, I push it up to 50, but we know that is not extended. More importantly, is not irregular. You look at the front corner of the -- left front corner of the car, you see that there is no area that you can point out and say look at this, we have more intrusion and formation than other parts.

MR. ROSENBERG: Judge, he mentioned it is suggested, who suggested it?

THE COURT: You could ask him that.

MR. ROSENBERG: Okay.

Q Is there something that you utilize called an equivalent barrier velocity, or I think you used another phrase in the report, kinetic energy equivalent speed?

A Yes.

Q What is that?

THE COURT: Are we going into the second analysis?

MR. GREENWALD: No, we are still on the first one, Judge.

A It's the other page, that's the whole purpose of finding the length, the degree, the depth to put in this equation, along with the coefficient. So we have like three parameters going from the photographs or from the inspection and then we have two parameters coming from studies that have been done that the specific vehicle, in this case for a Ford Windstar, and give you what I have put in my calculations at A and B in Page 9. So those numbers are coming from studies that have been done already, mostly by federal government agencies.

So we have enough information not to put the numbers in this equation to come up with that energy. That energy is what we just mentioned that's equal to the amount of energy that would have been delivered to the car if it was running through a

barrier or through a wall instead of to another car, which is not the case and I'm getting there. But that is the first step, let's assume, that the car is being running into a wall or to a solid, rigid barrier and sustained the same amount of damage that we observed in this case.

So that's going to give you the number that we call equivalent barrier velocity or kinetic energy, I put down again, the amount of energy is the same. But that's not necessarily the case because we know that is between two cars and cars are having some structures that deform but goes back to normal, they are not like a solid barrier. So there is a difference. For that there is an extra step added to this, that when you calculate this energy, that's coming from the crush, then you have another multiplication, another formula that have been accepted the fact to bring to the account now here we go, now we have a car making contact with another car, another vehicle and there is some elasticity involved, meaning some part of that bumper is going in, but it's coming back. And you can't necessarily see it after the accident but you have to bring it into account that it absorbed some energy anyhow.

And that was the large formula on Page 9 when you multiply that equivalent barrier velocity by 1 plus E. E being an indicator of the relative elasticity of the collision, that's the car's coefficient of restitution. So you multiply that, that will give you the delta-V or change in velocity as a result

of that crush, which is caused by the impact.

Q And what are crush stiffness coefficients and how do they factor in?

A That's excellent question. Each car has certain structures or I should say each category of the cars, in compacts cars, versus sedans, versus SUVs, they have different structures, the weight, and equipment on those cars are different. As such, when they are involved in an accident, they sustained different type of damage. Of course it depends also on the location of damage on the car, the front stiffness of the car is different from the rear stiffness of the same car and it's different from the side stiffness of the same vehicle.

So when you are going to perform such an analysis, you would like to have the best number possible for that specific car that comes from the same manufacturer, same model, hopefully same year, although certain years manufacturers make the same car again and again. From 2002 to 2007, Ford Windstar was the same car being manufactured again and again with the same design, same materials. Maybe some bells and whistles change in the car, but that's what is called a sister clone. I used the sister clone number for 2002 Ford Windstar for our car, which was a 2006 Ford Windstar, so because they are in the same range and numbers are compatible. So that's the coefficient of stiffness for a car that's been part of the safety analysis, I mentioned federal agencies, why they do that, because whenever a

car is being manufactured, they are being tested.

I believe everybody has seen those car commercials where a car is being driven to a barrier or other cars with crash dummies inside and all those equipment attached to it. So those tests are being done on a daily basis to understand the safety of the vehicle during the impact, side impact, rear, you name it. So those numbers are out there because those tests have been performed by engineers and those numbers and tests are analyzed and validated so we can use those numbers for any other accident that the same car has been involved.

Q Now, did you make a second analysis --

THE COURT: Are you done here? Are you going to get into the acceptability of all these equations and whatnot?

Q Doctor, are the equations that you have just spoken about, are they generally accepted within the community in which you teach, in which you write, and which you work?

A Absolutely.

Q Could you explain for how long they have been accepted and what is their status?

A The crush energy analysis has been established last 30 years. So the same basic formula of A and B for those coefficients are changing because the cars are being manufactured differently every day and they are being tested every day. But the basic formula and basic understanding

between the relationship, between the velocity and energy as a result of crush has been established and has not changed the last 30 years or so.

Q Are these formulas, these factors that we've been discussing, are they utilized by car manufacturers to build vehicles?

MR. ROSENBERG: Objection. Leading again.

THE COURT: You can answer, if you know.

A Yes.

Q Could you explain how car manufacturers use the exponents, the factors that we were discussing in the manufacture of motor vehicles?

A They perform independently from the federal agencies. Any car manufacturer would perform, before producing and presenting a new line of vehicle, would perform those crash tests, in, you know, in the facility of the manufacturing company. And they would come up with those numbers and understand that what are the weaknesses and strength of the car. So they are the first line actually of testing those vehicles and they are using the same type of methodology that had been used eventually by other engineers and agencies to understand. So that's very first line of testing the car, the manufacturer who makes the car tested first to understand the strong and weak points of their product.

Q And for how long have car manufacturers been using

these factors and these coefficients?

A As I said, the last 30, 40 years.

Q Doctor, did you make a second analysis, a second calculation called momentum analysis?

MR. ROSENBERG: Judge, just note my objection. He didn't answer your -- You had asked -- All he talked about was -- Did you ask in detail as to where this comes from?

MR. GREENWALD: I'm not going to respond to that, your Honor.

THE COURT: Good. So far you are.

MR. GREENWALD: Apparently he wasn't here for the last ten minutes mentally.

Q Could you explain to us what momentum analysis is?

A Yes, that was the second analysis that I performed for this case and it's based on very well-known law in physics that you can find it in almost any textbooks of physics. Laws of conservation of momentum basically means that momentum being transferred from one object to another during a collision but it doesn't fade away, it doesn't go away, it doesn't disappear, it just transferred just like energy. So it's like a different form of momentum being transferred but it doesn't die, doesn't go away. Based on that principle that has been accepted forever, engineers are able to calculate the change in velocity as a result of the impact knowing that the transfer of the momentum from one vehicle to another one would cause change in

velocity of the second vehicle. So if you have a good understanding or estimated weight of either vehicle and a good understanding of the velocity of the vehicles at the time of impact, or at least the difference between the velocity of two objects at the time of impact, then you can easily calculate the change in velocity of both objects as a result of that condition.

Q There was once a man named Isaac Newton, correct, sir?

A Absolutely.

Q And we have something today called Newtonian physics?

A Yes.

Q Could you explain how Newtonian physics is a part of momentum analysis?

A Well, it's exactly combination of the three laws of physics or Newton's laws of physics. That, first of all, an object that is stationary would remain stationary, wouldn't change velocity unless there is an impact or otherwise. The moving object would continue to move at the same velocity unless there is an impact or there is an extent of force, that's the first law.

The second one tells us how to calculate that force. So force is equal to mass times acceleration. And acceleration is change in velocity divided by time.

And eventually and finally, the last one, the third one tells us that there is equal but opposite reaction for any

action. So it means that the same amount of force that was delivered to one vehicle is equal to the amount of force delivered to the other one. You combine all those, you come up with these formulas that I put in here and use them by estimating the mass or weight of the vehicles and their velocity or more importantly the difference between their velocity, what we call closing velocity.

Because if two objects are moving or at least one of them is moving and you don't know the exact velocity of that object, the most important part for this formula is to understand how fast they were moving relative to each other, with respect to each other. If they are both moving, one at 15, the other one at ten, and if they make contact, the closing velocity is only going to be five miles per hour, the difference between 15 and ten. It's not from the one from behind is running at 15 miles per hour, if the one in front is moving at ten, they only make contact at five miles per hour. That's very important, that's closing velocity, and that's what I use in this case and for this momentum analysis.

Based on the fact that we know that the Ford Windstar was equipped with frontal air bag and none deployed in the car as a result of the impact. As such, it could not have been traveling or the closing velocity could not have been more than ten miles per hour as a result of the impact. So that was used along with the exaggerated weight of the truck at 26,000 pounds

and estimated weight of the Windstar to calculate the change in velocity for both vehicles.

Q What was the conclusion of your momentum analysis with reference to this case?

A In terms of the change in velocity of the Ford Windstar, I came up with number 9.6 miles per hour, close to 9.8 that I obtained from crush energy. Both put it at under ten miles per hour so they were completely consistent.

Q And are you familiar with the specifications for the 2002 Windstar with reference to the deployment of the frontal air bags?

A Yes, according to the manufacturer.

MR. ROSENBERG: Again, Judge, objection, it's not in his report.

THE COURT: But again you could testify.

A Based on the information I obtained coming from the manufacturer, that carrier, make, model, was equipped with frontal air bag, so that's a fact coming from company who make the car.

Q And under what conditions would those frontal air bags deploy according to the specifications of the vehicle?

A It happens at something between nine to 15 miles per hour and there is a range because of the discrepancy between the weight of the object that is making contact. In this case, I should pick actually nine miles per hour because of the

significant difference between the weight of the Windstar and the weight of the truck, so I should pick actually the bottom line or the minimum amount of velocity required to cause air bag deployment, but I match it up by one mile again trying to do as much as the physical evidence allows me. Even though he is making contact with a 26,000-pound vehicle, instead of nine, I chose ten and the numbers are still consistent, that's the basis for that. So again, it's a range, it could be anything between nine and 15, but closer to the bottom line just because this vehicle is much lighter than the truck.

Q Based upon your review of deposition testimony and trial transcripts, did air bags deploy in the Windstar in this accident?

A No, it did not.

Q And what does that tell you with reference to the calculations that you've made and the results that you reached?

A As I explained --

MR. ROSENBERG: Same objection.

THE COURT: You could answer.

A As I explained, it gives me the understanding that the change -- I'm sorry, the closing velocity for the impact could not be more than ten miles per hour.

Q Now there is a portion of your report that talks about occupant kinetics -- kinematics?

A Kinematics.

Q What is occupant kinematics?

A It's a scientific term or technical jargon, it simply means that occupants inside the car move around as a result of the impact. So it talks about motions and forces associated with an impact and a collision happening to the occupants, that's the definition of occupant kinematics. As I said, based on understanding of the severity of accident and determining that PDOF, that relation earlier, principal direction of force, we move on to understand the motion of the occupant inside the car as a result of the impact. The car was impacted at the left front corner, I'm talking about the Ford Windstar. As a result, the forward velocity of the Windstar dropped and decreased immediately because of the impact. By how much? By approximately ten miles per hour. Based on what? Based on the analysis that we have already done. So we know that they are making contact at the left front corner and the damage and all of these numbers, they were approximately a maximum of ten miles per hour.

So when the velocity of a car or a vehicle decreased as a result of impact, for a fraction of second, for a split of second, for a very short period of time, the occupant inside the car continued to move in the same direction that the car was moving before the impact. So they are all moving forward until the car makes contact. For that fraction of second, they continue to move forward. So it caused some sort of like

relative -- there is discrepancy. So the car is slowed down but they are moving forward. It creates some relative motion of the occupants inside the car, that is again called occupant kinematics.

In this case, we know that Plaintiff was wearing her three-point seat belt as a passenger in the car, which means that even though her body is moving forward and slightly to the left toward the point of impact, that's PDOF, left front corner is being contacted, everybody in the car move in that direction. Mainly forward but also at the same time there is a component to the left.

The overall motion is being reduced by the friction between the body and the seat, but more importantly is going to be eventually arrested by the three-point seat belt which consisted of a shoulder harness and a lap belt. Meaning that the torso is being held by the shoulder harness and the lower body, lower extremities, hips and anything beyond would be stopped by the lap bent from moving forward significantly.

It is usually about an inch or two slack to the seat belt before it locks. It's like common knowledge, everybody in a car has experienced that. You suddenly move, you feel like you move about an inch, then you are being held, stopped in place. The body could have been moved by an inch or so forward, that being stopped by the shoulder harness and lap belt combined. By then body goes back and her torso makes contact

and shoulders make contact with the seat back and the head being stopped by the headrest and that would be end of the motion.

Q Let me stop you one moment.

A Please.

Q The force going back relative to the force going forward, could you discuss that, please?

A Sure. It has been studied and determined that force of the primary impact for contact usually accompanied by about two-thirds of kinetic energy or moving energy. So if you are moving forward at about ten or nine miles per hour, when you are coming back, two-thirds of that energy is already gone because of that movement, sudden movement, being stopped by the seat belt and so forth. Then there is about one third, like 30, 40 percent of that energy left that will help you, the body goes back. So if you are talking about like going forward at 9, 10 miles per hour, going backward would be about three, 3.5 miles per hour.

Q Again to interrupt you for a moment, Doctor, when you go back, when her body went back into the seat, is that seat padded?

A The seat is padded and it has a frame and it's part of safety design to absorb the remainder of the energy through the padding and through the frame, that's why you come to stop at that point and going back to basically very close to what you or your body or the occupant's body were seated to begin with, the

original seated position. So going back, forward and backward and going back almost to approximate seated position where you start.

Q Now you use a phrase in your report, you use a word hyperflexion, what is hyperflexion?

A Flexion is a term meaning bending. Any part of body that bends, we can use the term flexion. If it's being flexed beyond what to tolerate, then it would be termed hyperflexion. The opposite would be extension in the different direction, so that would be bending at the opposite of flexion would be extension, bending in the other direction. Again there is a term hyperextension which means bending or extending beyond the natural physiological range of motion that the body can tolerate in a regular situation.

Q You pre-staged my next question. My next question was you used a phrase in your report physiological limits, what does physiological limits mean?

A That's activities of daily living, that's what we do every day without hurting ourselves, that's the limit of our activities. We can push ourselves a little bit, going to the gym, weight-lift or do something like that. Sports are good examples of, you know, trying to extend the limit. But certain point, body cannot tolerate any more motion, any more bending, any more forces. So up to that limit, it's being called physiological range of motion.

Q Doctor, do you have an opinion based upon your review of this case, within a reasonable degree of biomechanical certainty, as to whether the forces that were exerted upon the Plaintiff in this accident would have caused her to exceed her physiological limits?

A I do.

MR. ROSENBERG: Objection.

THE COURT: No. You can answer the question, go ahead.

Q What's your opinion?

A My opinion is that this accident did not provide the mechanism or forces to cause movement of the body beyond physiological range of motion.

Q Doctor, do you have an opinion based upon your review of this case, held within a reasonable degree of biomechanical certainty, as to whether the Plaintiff would have experienced hyperflexion of her cervical or lumbar spine in this accident?

MR. ROSENBERG: Objection.

THE COURT: You can answer the question.

A I have an opinion and I believe that she did not experience hyperflexion of cervical or lumbar spine as a result of impact.

Q Can you give us the basis for those two opinions, Doctor?

A Yes. We started gathering facts, reviewing materials

and performing analysis, and understand how much force was exerted to her body and in which direction she was moving, how severe the accident was and the limits of her motions. And also understanding which parts of body we are dealing with; as I mentioned, that's why I review medical records. When you put all those things together, there was no indication that she could have, based on the amount of force, could have gone beyond physiological range of motion. And as such, she did not experience the mechanism required to cause disk herniation in the cervical and lumbar spine. So the force was not there and the mechanism did not exist. So those are two legs of understanding what injury can happen as a result of an accident.

Q Doctor, based upon your review of this case, do you have an opinion held within a reasonable degree of biomechanical certainty as to whether Plaintiff Nancia Myers was caused to sustain the injuries that you've listed here that were gleaned from her Bill of Particulars?

MR. ROSENBERG: Objection.

THE COURT: You can answer the question.

A Yes, I do.

Q And what is your opinion, Doctor?

A In the absence of significant amount of force and the absence of the mechanism required to cause cervical and lumbar disk herniations, my opinion, with a reasonable degree of biomechanical certainty, is that the accident did not provide

either force or mechanism to create those claimed injuries in this accident.

Q Doctor, do you have an opinion based upon your review of this case, held within a reasonable degree of biomechanical certainty, as to whether the Plaintiff could have sustained an aggravation or exacerbation of preexisting herniations or bulging disks or spinal disk pathology as a result of the forces on her that were caused to happen in this accident?

MR. ROSENBERG: Objection.

THE COURT: All right. Overruled.

You can answer the question.

A Yes, I do.

Q And what's your opinion, Doctor?

A This accident did not provide again force and mechanism to even exaggerate the preexisting condition that she was suffering at the time of the accident.

Q And again, what's the basis for that opinion?

MR. ROSENBERG: Same objection.

THE COURT: You could answer.

A Again we talk about the forces, we talked about the direction of movement, we talked about seat belt and seat back. You have to draw a big picture, not just one single factor, not one parameter. Put them all together along with the findings coming from the medical doctors. Not my findings, those are coming from medical doctors, board-certified radiologists,

surgeons, you put them all together, there was no indication that anything posttraumatic and acute happened to her cervical and lumbar spine. As such, even exaggeration would not be related to this accident.

MR. GREENWALD: I have nothing further.

THE COURT: I have some questions but I'll let you go first.

MR. ROSENBERG: Before I go, Judge, I would like to look at his material.

THE COURT: Fair enough.

(Whereupon, a brief recess was taken.)

CROSS-EXAMINATION

BY MR. ROSENBERG:

Q Good morning, sir.

A Good morning.

Q Sir, before I even begin, how much are you being paid to come into court today?

A $300 an hour.

Q Okay. And when did you get here?

A I'm sorry?

Q When did you arrive?

A This morning.

Q Okay. And you came from Pittsburgh this morning?

A Actually I'm coming from Boston.

Q I'm sorry?

A From Boston.
Q You came from Boston this morning?
A Yes.
Q How did you get from Boston to here?
A I flew.
Q Okay. So when did your clock started running, when did it start running for this case?
A When I get to the airport.
Q In Boston?
A Yes.
Q Okay. What time did you get to the airport in Boston?
MR. GREENWALD: Your Honor, if I may, we're not in front of a jury.
THE COURT: He's still allowed to, I guess, impeach him.
MR. GREENWALD: You know what, if this was the way it was going to go, I would have done this on direct as I always do in front of a jury.
THE COURT: Let him answer the question.
A 6:30.
MR. GREENWALD: It doesn't seem to be part of the Frye hearing, your Honor.
THE COURT: What, credibility and all that stuff?
MR. GREENWALD: Yeah. And I read a bunch of transcripts over the last few days of Frye hearings and no

one did that. This is the first I've seen it.

THE COURT: It's unique to Mr. Rosenberg.

Q Yesterday were you in Boston or were you in Pittsburgh?

A I was in Boston.

Q Okay. When did you start, if at all, reviewing this file for the testimony that you are giving so far?

A I think about two weeks ago.

Q Okay. So two weeks ago, when you started reviewing, how many hours did you put in to review from that point in time until today?

A I don't have it in mind but I have a log that I keep.

Q Give us an approximation.

A Maybe five, six hours for preparation.

Q I'm sorry?

A For preparation, five, six hours, maybe a little bit more, less.

Q Okay. And just so I'm clear, every single thing that you relied upon are in those two binders, correct?

A That's correct.

Q There is no other records, there is no other papers or anything to do with this case anywhere else other than in those two binders, correct?

A In one binder that I have all the articles that are here, but there are a couple of textbooks that I couldn't bring with me. So there may be two textbooks that we are missing. I

brought two of them, there are two more that just didn't fit in my book bag.

Q Two textbooks?

A Two textbooks.

Q What are the names of those two textbooks, the ones that you did not bring? What are you looking at, Doctor?

A The list of my references at the end of my report to see what I have not brought with me. I think number 11 is not here and also number --

Q Are you telling this Court that footnote number 11 is a textbook?

A Yes, is a manual. And also number 37, which is a relatively thick book.

Q And that's it?

A That's it.

Q Everything else is here?

A I believe so.

Q Okay. When you say you believe so, do you want to take a minute and make sure?

A No, I think that's it.

Q Doctor, are your billing records here?

A My billing?

Q Your billing?

A No.

Q Then you didn't bring everything, correct?

A You asked me something that I have listed in my report.
Q No, that's not what I asked you.
MR. GREENWALD: Objection. That's exactly what you asked him.
THE COURT: All right, billing records not here. Next question.
Q Are there any other records relative to this case that are not here, other than your billing records?
MR. GREENWALD: Objection, your Honor. His billing records don't have anything to do with his analysis.
THE COURT: Let him ask the question.
You can answer the question.
A I may have some notes. My laptop is not here. I have notes that I've written by hands perhaps that I'm not even sure. But I brought everything that is related to my analysis, yes.
Q Okay. Did you have a conversation with Mr. Greenwald or someone from his office about this case at any time from the day you were retained until today?
A Yes.
Q Okay, did they send you information?
A Yes.
Q What information did they send you?
A All the information that I have reviewed for my report plus some testimonies from the trial, I believe, that was

delivered after the report and they are not listed in my report.

Q Oh, okay. And can you take out those supplements for the trial testimony, please.

A The supplements that was provided after?

Q Can you take out the testimony that you looked at from the trial?

A That is something I don't have with it with me.

Q So you didn't bring them either?

A Because they were not part of my report.

Q I understand that, but did you look at them?

A I did.

Q Did you use that to prepare yourself for this today, today's testimony?

A Not preparation. Preparation was solely for my report and they were not part of my report. I didn't review them before providing the report.

Q So did you look at them?

A I did.

Q So you looked at them for pleasure and not for this report?

MR. GREENWALD: Objection to the form, your Honor.

THE COURT: Counsel, I think he made it clear, and he'll correct me if I'm wrong, that all the materials pertaining to this case that he looked at are in the folder which has been received in evidence.

THE WITNESS: Up to the point that report was provided, your Honor.

THE COURT: Yes, up until the point that the report was provided.

Q Doctor, the testimony that you've given so far today, did you base any of that on the trial testimony?

A No.

Q Just so I'm clear, so nothing of your testimony today was based upon the trial testimony, correct?

A That is correct.

Q Okay. Doctor, tell us the articles that you participated in writing, can you tell us how many of them were with respect to motor vehicle accidents?

A The peer-reviewed articles --

Q Doctor, you have six articles that you wrote, correct?

A That's correct.

Q Tell us which of those six articles involves motor vehicles.

A One of them.

Q And that one article that you have, Doctor, you would agree with me that that one article is when you were a student, correct?

A That's not correct.

Q Well, Doctor, when did you write that one article on motor vehicles?

A You are talking about when it was published. I'm talking about when I performed that. I performed that analysis and was part of the report for that paper when I was working for Exponent back in Philadelphia. And when I left eventually they went on to publish that. At that point, I was a fellow at the University of Pittsburgh, also working on my Ph.D., as a Ph.D. candidate.

Q Doctor, yes or no, were you a student at the time you participated in the one motor vehicle accident article that you --

MR. GREENWALD: Objection. It's not a yes-or-no question, as Mr. Rosenberg knows. He is working, he was a student, you know. One good turn deserves another.

THE COURT: The bottom line is when you wrote the article, you were still going through your Ph.D., correct?

THE WITNESS: Yes.

THE COURT: Thank you.

Q Doctor, you would agree with me that that one article on motor vehicles that you participated in, you weren't the primary author in that, correct?

A When it was published, that's correct. Actually, I was the lead author --

Q You answered my question.

THE COURT: All right.

Q Doctor, you would agree with me that that one article

that you wrote dealing with motor vehicle accidents, you would agree with me that that didn't involve the spine, correct?

A That is correct.

Q It involved upper extremities, correct?

A Correct.

Q So you would agree with me that you have never written an article that's been published, okay, dealing with the spine, correct?

A That is correct.

Q Doctor, you would also agree with me that the presentations that you've given -- How many presentations have you given? Let's list it in the CV.

A I have to count them, just like what you do. I think about 15 or 16.

Q And can you point to us out of those 15 or 16, out of 16 presentations, can you tell us which ones involve motor vehicle accidents and the spine?

A I don't believe any of them.

Q Okay. So you would agree with me that all the presentations you've given, that of course are listed on your CV --

A Right.

Q -- and the articles that you published, not one of them involves the spine and a motor vehicle accident, correct?

A That's correct.

Q Doctor, I want to skip to something, if I can, regarding the occupant of the vehicle. In this case, the Plaintiff.

A Sure.

Q Doctor, did you inspect the vehicle?

A I did not.

Q Did you go to the scene?

A No.

Q Did you look at an exemplar of the 2002 Windstar?

A No.

Q Did you look at the 1999 Freightliner?

A No.

Q Did you ever look at the damage estimates for the Windstar?

A I don't believe so. I don't have it with me so I don't think so.

Q Would you agree with me you didn't look at any damage estimates also for the Freightliner, correct?

A Yes.

Q Okay. So Doctor, seat belts, they have been known to fail, yes or no?

A Yes.

Q In this case, do you know whether or not that seat belt failed?

A I have no information indicating that it failed.

Q Well, Doctor, you're aware that in this case that the Plaintiff's body came in contact with the dashboard, correct?

A That's their testimony.

Q Correct, that's their testimony. What I would like you to do now is point to the testimony that says that that didn't happen?

A What didn't happen?

Q That she didn't hit the dashboard.

A I'm not sure I understand your question.

Q Doctor, is there any testimony that you've read that she did not come into contact with the dashboard?

A No, just her testimony.

Q I'm sorry?

A Just her testimony saying that she did.

Q Okay. So Doctor, would you have reason to disagree with her testimony, do you have anything to base that on?

A If she was belted, which is also her testimony, it's not consistent with the function of the seat belt to allow you, the front passenger, to go that far as a result of ten miles per hour car accident to make contact with dashboard.

Q Well, Doctor, you would agree with me that if the seat belt didn't function properly, then she would, correct?

MR. GREENWALD: Your Honor, there is absolutely no evidence, Mr. Rosenberg is fully aware, that the seat belt malfunctioned. This is a specious cross-examination.

THE COURT: You could answer the question.

Go ahead, answer the question.

MR. ROSENBERG: I did.

THE COURT: Not you, Mr. Rosenberg. You asked the question.

MR. ROSENBERG: I thought you said you could ask. I'm sorry.

A Can you repeat the question?

THE COURT: Repeat the question.

MR. ROSENBERG: Could she read it back?

THE COURT: Yes.

(Whereupon, the referred to portion of the record was read back by the Reporter.)

MR. ROSENBERG: I'll rephrase.

Q Doctor, you would agree with me that if she hit the dashboard, then her seat belt didn't function properly, correct?

MR. GREENWALD: Objection to the form, your Honor. And again there is no testimony to support this, Mr. Rosenberg is fully aware.

THE COURT: Doctor, assuming she hit the dashboard and assuming she was subject to the forces that you came up with, would that lead you to the conclusion that the seat belt was not operating properly?

THE WITNESS: What does it mean "operating properly," your Honor?

THE COURT: Would she have been allowed to hit the dashboard if the seat belt was operating properly?

THE WITNESS: If it was operating properly, she wouldn't make contact with the dashboard.

MR. GREENWALD: Your Honor, may I add it also is possible that she wasn't telling the truth that she hit the dashboard, that's also a possibility that wasn't encompassed in his question.

Q Doctor, would you agree with me that if her body hit the door, the passenger's side door of the vehicle, her seat belt wouldn't have been functioning properly, correct or not?

MR. GREENWALD: Objection to the form.

A That's not correct.

MR. GREENWALD: It sounded like a conundrum.

Q Doctor, is it your testimony then that -- You know what, strike that.

Doctor was the testimony at all about the Plaintiff, Nancia Myers, coming into contact with the side, with the passenger door?

A I can check and answer you in a second.

Q Sure.

A That's her testimony, her right shoulder came in contact with the door.

Q Okay. So you would agree with me that nowhere in your report did you make note that she hit the dashboard and hit the

passenger door, correct?

A I have to check but I believe I did not.

Q Okay. And you left that out of your report because of why?

A While she may have made contact with the door, and I don't disagree with that, so it is possible to be belted in an up-front collision like this, going forward and to the left, being stopped by the belt, come back and to the right, there could be some touch on the right-hand side. So it is possible, first of all, so it's not impossible.

Q You would agree with me that that's what she testified to, correct?

A Again, I don't disagree with that testimony, that's what I'm saying.

Q Doctor, do you know how she was seated in the vehicle at the moment of impact?

A What do you mean how?

Q How was she seated? Was she seated straight ahead, was she seated to the left, to the right or some other direction? How was she positioned?

A Again I have to check her testimony.

Q Sure, go ahead.

A I believe she didn't testify to what or how she was seated.

Q And Doctor, you would agree with me that that wouldn't

matter, how she was positioned in the vehicle in terms of your analysis, correct?

A Generally speaking, the overall direction of movement of her body, no, it wouldn't make a difference.

Q So just so I'm clear, it's your testimony it wouldn't matter if she was turned to the left, turned to the right, bending down, it wouldn't make a difference in your analysis, correct?

A Again, generally speaking for the overall duration of movement of her body, it wouldn't matter that she went to the right or left or bent forward. I'm talking about the whole body movement which I explained in occupant kinematics.

Q I'm not asking generally. With respect to this case --

A Same case.

Q -- would it matter, okay, if she were turned to the left, sitting sideways on the seat, would that matter?

A Not really.

Q Doctor, would it matter how much she weighed?

A It does.

Q Okay. And that's important to know, right?

A That's right.

Q Does it matter what the weight of the driver of the vehicle is?

A Again.

Q Yes or no, Doctor?

MR. GREENWALD: In what respect? In what respect, your Honor, does it matter? In what respect?

THE COURT: Counsel, you can have your right to redirect, all right. Let him ask his questions.

MR. GREENWALD: Your Honor, I object to the question, it's meaningless.

THE COURT: Can I see both of you up here very quickly.

(Whereupon, an off-the-record discussion was held at the bench.)

Q Doctor, can you take out of your reference book any article or any authoritative document that you brought with you to support the fact that a position of a passenger in a vehicle doesn't factor into a biomechanical analysis? Please tell us what reference you use.

MR. GREENWALD: Objection to the question, your Honor.

THE COURT: All right. If he could answer the question, he could answer it. If he can't, he can't, he'll let us know.

A Actually, that's what I was trying to say, your Honor. I am not clear about the purpose of this question, it's a little compound. Can you rephrase it for me, please? What do you mean one article or articles to show that? What are you looking for, what type of scientific findings you are referring to?

Q Doctor, I want you to point out any article that you have brought with you that says that the position of a person involved in a motor vehicle accident doesn't play out in terms of biomechanics in analysis?

A Well, the first of all, this is not my testimony. I explained that generally it doesn't matter but it's not completely out of question where the person is seated. So --

Q This is why I'm asking --

A I answered three times that general movements of the person wouldn't be affected.

THE COURT: Obviously we know where the person is seated, I would assume that comes into play. How the person is seated, whether they are turned one way or the other or bending forward, I mean those are the three possibilities, all right.

MR. ROSENBERG: That's why I'm asking him that.

MR. GREENWALD: Your Honor, why do we have to depend on possibilities? We have testimony and what she said was -- So why don't we use the actual evidence as opposed to just heckling him and, you know, creating these conundrums? That's all this is about.

THE COURT: Gentleman, let's get through this. I assume you are coming back after lunch, right? Go.

Q Doctor, can you please take out the authority that you have regarding seat belts and their play of one to two inches

that you testified to. Tell us what article you brought with you that substantiates that.

THE COURT: Do you have anything in the packet that's been marked into evidence to show that seat belts have a give of approximately one to two inches?

THE WITNESS: No, that was common knowledge as an engineer in the field of automotive engineers, no. It's a common knowledge. It's not like one article talking about slack, there might be, but it wasn't something significant in my analysis.

Q So you don't have it, correct?

A I don't have it with me, no.

Q Doctor, can you take out the pictures of damage to the truck?

A The truck?

Q Yeah, the truck.

THE COURT: We know there is no pictures of the truck.

A I don't have that.

MR. GREENWALD: Your Honor.

Q Were you aware that pictures were taken of the truck?

MR. GREENWALD: Your Honor, I object to this. This is beyond the parameters of this hearing, as Mr. Rosenberg is fully aware. This is not cross-examination at a Frye hearing, this is heckling,

that's all it is, he is heckling.

THE COURT: You don't want to get through this either, I assume.

Are you aware that there were photographs of the truck?

THE WITNESS: I don't even know, your Honor.

Q Doctor, would pictures of the truck, the other vehicle involved in the accident, be helpful for your analysis?

A Yes, it would be.

Q Okay. Doctor, at the point of impact, what part of the truck was involved in the accident?

A My understanding is the right rear passenger's side of the truck.

Q And would you agree with me that at the points of impact, the vehicle went under the truck?

A It's possible.

Q Well, I'm asking you, are you aware of that?

A Not for sure because I didn't see the photographs of the truck so I'm not sure.

Q Did you read the testimony?

A That's the testimony.

Q Did anybody else make you aware that there was an overlap or an underlap, the vehicle went under the truck?

MR. GREENWALD: Objection to the form. The vehicle didn't go under the truck. The headlight went into

the wheel well. What's "under the truck" mean?

THE COURT: You know what, gentlemen --

Do you really think it's appropriate to just keep yelling out, Mr. Greenwald?

MR. GREENWALD: No, your Honor. I don't think it's appropriate for him the way he is conducting himself.

THE COURT: Try to deal with it. Just remember that I know what I'm looking for. Don't worry about it, Mr. Greenwald, I know what I'm looking for. Just let him ask these questions.

Q What angle did this accident happen at vis-a-vis the car, what angle was it at?

A It was happening at something between 30 to 45 degrees. I aim for 45 degrees to maximize the amount of energy.

Q And you know that because of what?

A Because of the location of the contact, you look at the left front corner of the Windstar, that's where they made contact. It's not a flat area.

Q Doctor, you would agree with me there was no testimony as to the angle, correct?

A That's correct.

Q There was no testimony as to what part of the Windstar came in contact with what part of the truck, correct?

A That's correct, but testimonies are just part --

Q Yes or no, there was no testimony to that?

A I said yes, that's correct.
Q Doctor, would you also agree with me that there was damage along the driver's side of that vehicle?
A Where?
Q Take a look at your pictures.
A You show me where you see the damage.
Q Doctor, before you ask me a question, why don't you look at the pictures.
MR. GREENWALD: Objection to the form. It's a fact in controversy now.
THE COURT: Do you see any damage to the driver's side of the Windstar in the photographs that you have?
THE WITNESS: Besides that left front corner, I can see scratches but it's no deformation, your Honor.
MR. ROSENBERG: I didn't ask for deformation.
THE COURT: You see scratches?
THE WITNESS: Scratches, yes, I see.
Q What's the length of those scratches along the driver's side? Tell us how far it went, what's the length?
A About 60 inches or so.
Q Sixty inches?
A Yes.
Q Doctor, you would agree with me that 60 inches of the left side of the vehicle were involved in this accident as well, correct?

A No, I don't agree with that.
Q So then it's your testimony that you are ignoring that, correct?
MR. GREENWALD: Or it existed before.
THE COURT: Well, do we know if it existed before. All right.
So you didn't take that into consideration, right?
THE WITNESS: No.
THE COURT: The scratch on the side, all right.
THE WITNESS: Yes, I did not.
THE COURT: All right.
Q The scratches on the side, Doctor, what was the width of that scratch as well? You told us the length, tell us the width.
A Half an inch, maybe less. I'm just looking at -- I never measured them the way I measured the front, so just like estimation.
Q You measured the front damage?
A From the photographs, yes.
Q When you measured it, did you use a yardstick?
A No.
Q How did you measure it?
A On the photographs.
Q You measured it on the photographs?
A Yes.

Q Can you show us those calculations on your measurements?

A No, I said that I don't have my notes or my laptop with me.

Q So you knew you were coming today and you knew you were going to be asked about your calculations of your measurements and you didn't bring that with you?

A No, I wasn't asked.

Q Did he ask you to bring other records with you?

A No. Actually, I did everybody a favor to bring them, I didn't have to.

THE COURT: All right. Doctor, how did you measure it? You had all the photographs.

THE WITNESS: I measured photogrammetry, your Honor. Remember we talked that we have the front of the car, we have specific structures we know the length and the comparison with those structures, so that's photogrammetry.

Q Doctor, can you point to where in your report you talked about photogrammetry?

A Not specifically, not specifically.

Q Well, Doctor, you would agree with me that photogrammetry is a scientific way of measuring photographs, correct?

A That's correct.

Q Okay. So show me where in your report you even mention that you scientifically use photogrammetry for your measurements?

A First of all, it's photogrammetry. First of all, I didn't have to mention that. I used it and I got my numbers.

Q Doctor, what I'd like you to do is can you pull out of your references one study of a Ford Windstar 2002 and a 1999 Freightliner accident that was performed?

A There is not such an article.

Q Okay. I'd like you to pull out of your references any article or any reference with respect to a car and a truck, an accident?

A I'm not sure if I have anything such that.

Q Okay. I'd like you to pull out of any of your references any off-front impact testing that was done with a Ford Windstar?

A Again science doesn't work this specific --

Q Doctor, is there such a study, yes or no?

A First of all, it wasn't yes or no.

Q Is there such a study?

THE COURT: If you know there is such a study, you can answer yes or no.

A There is no such study.

MR. GREENWALD: Your Honor, at this point I have an objection based on Lugo. It says in that case,

your Honor, New York courts have also applied Frye tests to assess the reliability of an expert's stated causation in a particular case. For this category of expert opinion testimony, it is not necessary --

MR. ROSENBERG: Can he --

MR. GREENWALD: Sorry to undermine you with the law.

MR. ROSENBERG: Can he leave the room? This is improper, Judge.

MR. GREENWALD: He is heckling him.

THE COURT: Heckling, all right. Gentlemen, you want to come back at 2:15.

MR. GREENWALD: Your Honor, I want to finish quoting from the case --

THE COURT: Come back at 2:15, all right. Obviously you don't want to have this hearing in any sort of controlled, professional manner, right?

MR. GREENWALD: Your Honor, whether or not there is a study, whether or not there is an exact other case is irrelevant.

THE COURT: Counsel, let him ask his questions, all right, that's all.

MR. GREENWALD: Even if they are improper, your Honor, even if they are beyond --

THE COURT: You say they are improper, all right.

MR. GREENWALD: No, Lugo says they are improper.

THE COURT: All right. 2:15, gentlemen. I'm done, all right. Thank you.

A F T E R N O O N S E S S I O N.

THE COURT: Now gentlemen, I don't want to go through what I went through this morning. He's going to ask the question. If you have an objection, you'll make an objection, simply say "I object." If you want to make a record of your objection, you'll be given the opportunity, all right.

MR. GREENWALD: Thank you, your Honor. I doubt I'm going to object at all based on what you're saying that you are interested in. There is no jury here.

THE COURT: Well, that's all true.

All right. Mr. Rosenberg, you may continue.

MR. ROSENBERG: Sure.

CROSS-EXAMINATION

BY MR. ROSENBERG: (Continued.)

Q Good afternoon, sir.

A Good afternoon.

Q Sir, I want you to assume that the Plaintiff, Ms. Myers' body came into contact with the dashboard and the right door, I want you to assume that.

A Okay.

Q Okay. With that assumption, does your opinion change

with respect to the causation or extent of Ms. Myers' injuries?

A No.

Q The medical records that you claim to have reviewed, do you have the records from her operative surgeon?

A What's the name of the doctor?

Q Merola.

A I have his operative note or summary.

Q You have what?

A The summary of operation that he had performed.

Q Other than that two-page document, do you have any other records from the treating surgeon?

A I don't believe so.

Q Okay, do you have any records from the treating physiatrist?

A What is the name?

Q Relief Medical or Dr. Coyne.

A I don't have such a thing.

Q Were you aware that she treated for years with that doctor?

A I believe I may have, I'm not sure. I don't have any record though.

Q Did you review those records?

A I did not.

Q Did you review her pharmaceutical records?

A No.

Q Did you review her pain management records?
A I don't think so.
Q Did you review any of the diagnostic testing that was performed?
A I have a few MRI reports.
Q Okay. And these MRI reports that you have, who gave them to you?
A I received with the rest of materials from the client.
Q Okay. When you were retained, was there a letter of retention of what they wanted you to do?
A I believe it was, yes, I do have.
Q And who retained you?
A Global Biomechanical Solutions, Incorporation.
Q And is that that one-page document?
A Yes.
Q Does it tell you what they want you to review?
A Not the review, but they asked me to prepare a biomechanical analysis expert report.
Q Okay. Did they tell you what you were expected to analyze?
A Again it's going to be a biomechanical analysis, anything that goes into that analysis.
Q What came with that retention letter?
A What?
Q What came with it?

A The case materials that I have with me.
Q Okay. In your book where you have the Examination Before Trial transcripts --
A I do.
Q In that book, you had an outline before it?
A Yes.
Q Who prepared that outline?
A I did.
Q Who highlighted that for you?
A I did.
Q And that outline that you prepared, when did you do that?
A When I received case materials.
Q Did you ever read the deposition transcript of the driver of the Windstar?
A The name is?
Q Culler.
A I don't think so, no. I don't have such a thing.
Q So just so I'm clear, the only two deposition transcripts you read is the passenger in the host vehicle?
A Yes.
Q And the driver of the truck, correct?
A That's correct.
Q Did you think it was important to maybe read the transcript of the driver of the car that the Plaintiff was a

passenger in?

A I believe I have asked, I don't think it was available at the point.

Q Who did you ask?

A The same person who sent me that piece of correspondence.

Q Okay. Can you pull that out and show us your request for that information?

A It was a verbal request, I probably called, maybe an e-mail, I don't recall. It wasn't written.

Q Who did you speak to or ask for that?

A Mr. Montalbano.

Q Would you agree with me that that's probably a pretty important component for a biomechanical engineer to look at and to read to formulate to an opinion?

A I agree with that, it was important.

Q Did you feel like you were missing something by not having that?

A I would love to have that, it didn't stop me from doing that. I had enough information to perform my analysis. But the more the merrier, I agree with that.

Q So, is it your testimony that it wouldn't have made a difference what was said in that host driver's deposition?

A No, because the testimony of the driver is not going to change the extent of damage to the left front corner of the

Windstar, so I have seen it already.

Q I want you to assume, just assume this, that the host driver said that she was going 100 miles an hour when this accident happened --

MR. GREENWALD: Your Honor, objection.

THE COURT: Go ahead, you can answer the question.

Q I want you to assume that, would that change your analysis of this case, if the host driver testified to that?

A Well --

Q Yes or no?

A Can I answer?

Q Yeah, yes or no?

A Well, it wouldn't change.

Q It would not change your opinion?

A No, because it's not consistent with the physical evidence.

Q That's not what I asked. It's just yes or no. So your answer is no, correct?

A The answer is no.

Q So regardless of what someone testified to, it wouldn't have changed your opinion?

MR. GREENWALD: Objection, your Honor.

A That's what you asked. I'm not going to agree with that, hundred miles per hour, just absolutely ridiculous, doesn't go with the physical evidence, so that's why I said not

any testimony.

MR. GREENWALD: Objection.

Q Would it make a difference in your analysis as to speed which would have been maybe testified to by the host driver, yes or no? Would that have changed your analysis or your opinion, I should say?

A It is possible, depends on the type of testimony, if it's consistent with physical evidence, it can come to account. Again it's so many factors and parameters involved, not just one testimony or one photo.

Q Okay. So just so I'm clear, depending on what was said at that deposition, that could change your testimony or your opinion, correct?

A I didn't say my testimony. I said my analysis.

Q Okay. And therefore, your opinion, correct?

A It is possible.

Q And before you testified today, did you ever ask to look at that testimony from the host driver?

A No because it was after my report was prepared, we didn't change anything at the point.

Q The information for the 2002 Windstar, where did you get the data on the 2002 Windstar?

A I think it was downloaded from a website.

Q Why don't you take a minute and go look and tell us where you got it from.

A It's from website named Edmunds.com.
Q Edmunds.com?
A Uh-huh.
Q When was that prepared by Edmunds for that vehicle?
A I don't know, we retrieved it on April 29, 2016.
Q Okay. When you say Edmunds.com, is that a recognized treatise?
A Recognized what?
Q Treatise. Is that authoritative in your field?
A Not authoritative, but it's a good piece of information. There are so many websites out there, they all bring information from cars --
Q Doctor, let me cut to the chase. Did you go to the manufacturer's own website Ford and determine or get any information on the 2002 Windstar?
A No, I did not.
Q Okay. Doctor, the Freightliner data, did you go to the Freightliner, the manufacturer, for that information?
A No, I did not.
Q You went to some other source to get that information?
A That's correct.
Q And that was also online?
A Yes, it was.
Q And that was done in 2016?
A That's correct.

Q And can you tell us with respect to the Freightliner and the weight of the Freightliner, do you know whether the Freightliner had exceeded the gross vehicle weight?

A I did not know that.

Q Okay. Would you agree with me that if the Freightliner had deviated from, went over the gross vehicle weight, that that would change your analysis?

A It would change, yes.

Q Would you agree with me that the weight that you use as an average of the driver of the host car, would you agree with me that you used the wrong component for that, you used male instead of a female?

A It was a mistake during my testimony, I didn't get a chance to correct it.

Q Just yes or no?

A I'm answering your question.

Q Was that a no?

A Not in my report, it was correct, that's your answer.

Q In your report it was correct?

A It was correct. It was an average female that age.

Q So your testimony was male and your report was female?

A Report is female and that's correct. I misspoke when I said a male.

Q Do you have any idea of the weight of Ms. Culler, the host driver?

A No, I don't.

Q Would it matter to you in your analysis and ultimately your opinion if she weighed 350 pounds?

A No, because I explained up to 200 pounds difference couldn't make any difference.

Q Okay. So would you agree with me that 350 is more than 150?

A I agree with that.

Q Okay. So does 350 exceed your limit, in your opinion?

A No, again it's just going to change it about a decimal point.

Q If she weighed 400 pounds, Ms. Culler, would that change your opinion?

A Again it would change that number by two decimal points instead of one. Instead of 5.5, it would be 5.7.

Q Just yes or no, would it change your opinion?

A Yes, it would.

MR. GREENWALD: Your Honor, I wish you would take judicial notice of the fact that men weigh more than women. If he used a man's figure, it means that he made her heavier with that average.

As far as Ms. Culler weighing 400 pounds --

MR. ROSENBERG: I thought we --

MR. GREENWALD: We've all seen Ms. Culler, we know she doesn't weigh that.

MR. ROSENBERG: Didn't you give him instructions?

THE COURT: I did. Again Counsel, there is no precision here, you know. But I know that. All these things will change regardless of how you change --

MR. ROSENBERG: That's the whole point, Judge.

THE COURT: I know that's the whole point. How much are they going to change, that's also the point. Obviously you change one variable in a mathematical equation, the outcome is going to be different. I know that, you don't have to tell me that.

Q Doctor, did you read the medical report from a Dr. Klein?

A Coyne?

Q Klein.

A Yes, I did.

Q You did?

A Yes.

Q Doctor, did you evaluate the causality of RSD in your analysis?

MR. GREENWALD: Your Honor, I have a motion pending with respect to this. I'm going to move to preclude any mention of this at trial. Certainly the way Mr. Rosenberg --

MR. ROSENBERG: Judge, I thought you instructed him to object or not object.

MR. GREENWALD: Your Honor, he is trampling over decency here, he really is.

THE COURT: He can answer the question, all right. This is not the trial, all right.

A So what is your question again?

MR. ROSENBERG: Can the court reporter read it back, Judge?

THE COURT: Yes, read it back.

(Whereupon, the referred to portion of the record was read back by the Reporter.)

A The part I didn't understand is RSD, what you refer to?

Q Have you ever heard that acronym, RSD, as an injury?

A I may have; I want to see what you mean.

Q Reflex sympathy- --

MR. GREENWALD: Sympathetic.

Q Sympathetic --

A Dystrophy, yes, I have heard.

Q Thank you.

A I have heard that term.

Q Did you analyze that injury, the causality or extent of that injury in your analysis?

A No, I did not.

MR. GREENWALD: Object to it as being classified as an injury.

THE COURT: Fair enough. He said no is the

answer. Next.

Q Sir, what I'd like you to do is take out out of your book, so that the Court could see, the articles or treatises or authority for off-frontal collisions, in the testing for off-frontal collisions?

A What I have is frontal in general, some of them may have off-front, some of them may not have.

Q Go ahead. Take out one of your authority and show it to the judge that says off frontal.

A In the title or inside?

Q I'm sorry?

A In the title of the article or inside the article?

Q Well, why don't you start with the title of the article. Did you find one study that analyzed off-frontal collisions?

A Again, I believe when they --

Q Doctor, this is very easy, it's yes or no.

A Yes, I am saying yes. I believe when they are covering frontal, it also includes off frontal, general topic.

Q Tell me which article it is that you are looking at.

A I have some of them in front of me that goes to Chandler, Wagner, Armstrong, those are --

Q Doctor, I'm not asking for the cite, I'm asking which article are you looking at?

A These are the articles.

MR. ROSENBERG: Judge, could I approach and see what article he is looking at?

THE COURT: Go ahead.

A You want that actual article?

Q Sure. Doctor, this article that you took out, that's from February 27th through March 2nd, 1995, entitled -- it's an SAE technical paper series, correct?

A Correct.

Q And it's called Data and Methods for Estimating the Severity of Minor Impacts. Can you please point where in the article you are referring to where they did testing for off-frontal collisions?

A This is the part that explains.

Q Can I see where you are looking at, Doctor?

A The configuration of the car, this one.

Q Doctor, where does it say off-frontal collision testing? And then I'm going to ask you also, after you answer that question, where is it with respect to a 2002 Windstar and a 1999 Freightliner?

A I already answered that, you are not going to find any specific article that talks about the 2002 Windstar and the Freightliner making contact, practically impossible.

Q I want you to read in words for the Court the article, that part of the article dealing with off-frontal collisions.

You know what, Judge, before I even get to that, tell

us, would you categorize this accident as an off-frontal collision, yes or no?

A Yes.

Q Okay. With that in mind, you would agree with me that there is testing for frontal collisions, correct?

A That's correct.

Q And there is testing for rear-end collisions, correct?

A That's correct.

Q There is testing for side collisions, correct?

A Exactly.

Q Now I want you to read where it says in that article in words, I want you to read to us where it discusses the analysis of off-frontal collisions?

A Well, you're not going to find specific such a thing even in this article or the textbook I have.

Q Doctor, please.

THE COURT: It's not in the article. Next.

Q It's not in the article?

A No. That's not the point.

THE COURT: Go ahead.

A The principle is the same. We are talking about frontal, frontal to head-on and off frontal.

THE COURT: Please let him finish.

A Just like the rear.

Q Was this a head-on collision, yes or no?

A It wasn't. It was an off frontal.

Q Was this an off-frontal --

MR. GREENWALD: Your Honor, can I --

THE COURT: Don't browbeat him. Let him answer the question.

MR. ROSENBERG: He did. He said it's not in there.

MR. GREENWALD: Your Honor, he was cut off.

MR. ROSENBERG: Judge, this is easy. Is it in here or not?

THE COURT: I'm telling you, I'm almost fed up.

Q Is it in there or is it not in there, off-frontal collision, in words?

A Frontal is. Off frontal may be or maybe not, I can go through one paragraph at a time. But frontal covers off frontal too, it's as simple as that.

Q Doctor, let's do it this way, Doctor, read it out loud the part that you are referring to that talks about off-frontal collisions. Read it.

A I never cited anything specifically for off frontal because it's a subcategory of frontal. I don't know which part you don't understand, it's very clear. Frontal with an angle, that would be off frontal. What is the difference? You have to consider for off frontal that there is a component of lateral involved and I did, that's why I'm saying there is a motion to

the left that's why I accept the testimony that when she came back, she made contact with the door because of that angle. So you have to bring it to --

Q Doctor, very simple, tell us what authority says that. Let me finish the question. Take out the authority that stands for what you just said, that it doesn't matter whether it's an off-frontal collision, a frontal collision, a side collision, take out the authority that says that.

A First of all, I don't agree with your word of authority, those are all research articles.

Q Take out an article.

A I am trying. The first one is here.

Q That says it doesn't matter?

A It doesn't say that because it does matter, it's a matter of physics.

THE COURT: I think I follow it. It's vectorial, going straight.

THE WITNESS: Thank you, your Honor.

THE COURT: And if there is an angle you are going to diminish it to some degree by the angle. And that's not rocket science.

THE WITNESS: Thank you.

THE COURT: I had that in freshman year of high school.

Q Doctor, tell us, the coefficient for stiffness, does it

matter if it's a frontal collision or a rear collision or a side collision?

A It refers --

Q Yes or no, does it matter?

A It matters.

MR. GREENWALD: Your Honor.

Q So now I want you to take that question that it matters and ask you to please take out the authority for an off-frontal collision.

A I don't like the word "authority" that you are using. I have research articles. I have textbooks that are talking about frontal, off frontal is just subcategory of frontal.

Q Read it out loud for the Court so that the Court and I --

A It's common sense. You don't need to hear that when an angle is involved, it is off frontal. It's common sense, it's common knowledge in engineering, you don't have to have an authoritative paper to show that.

Q Doctor, would you agree with me that -- I want you to turn to Page 9 of your report, Doctor. Take a look at the middle on the top, the middle number.

A Yes.

Q Do you see where it says, it has a null sign, which is a zero with a line through it?

A Yes.

Q What does that stand for?
A That's actually Greek letter of theta, that stands for angle, represents.
Q And you would agree with me that you inserted in there 45.0 degrees, correct?
A That's correct.
Q Doctor, I want you to tell the Court where you extrapolated 45 degrees?
A That's what I explained before, it's a high estimation of the angle. It could be 45, I maximize it to 45 because that's maximum number that in angle you can have.
Q Doctor, and you are basing that on three photographs?
A Three, four, 12, as many. One would be enough to understand that it was left-front corner of the car involved.
Q You're telling this Court that based on one photograph, you could determine that this was no more than a 45-degree-angle impact?
MR. GREENWALD: Your Honor, I'm objecting, mischaracterization. What he said is he is using the maximum --
MR. ROSENBERG: Judge, does he have to do that?
MR. GREENWALD: He said it two or three times, he is mischaracterizing.
THE COURT: Let's get to the bottom of it.
MR. ROSENBERG: In front of the witness --

MR. GREENWALD: Repeating what he said.

THE COURT: I think I'm done, I really do. We'll finish it another day, all right. You are going to keep yelling at each other, I don't have to sit here and listen to it, all right, I just don't. And I'm not going to. You want to bring him back another day and spend $300 an hour from Boston or Pittsburgh, go ahead.

Just let him answer the question, all right.

What's the question?

Q Doctor, you would agree with me that if you changed the degree, that would change the result, correct?

A Correct.

MR. GREENWALD: Objection.

THE COURT: Overruled.

Q So you would agree with me that accuracy is important in determining the final -- I don't want to use the word solution, the final delta-V?

MR. GREENWALD: Objection, your Honor. Mischaracterization.

THE COURT: It's a question.

Q Would the delta-V be affected by a different number for the angle?

A Yes.

Q Okay. And you would agree with me that your analysis, therefore, if you had a different delta-V than what you

determined, that would come about by changing one of the components, one of the numbers, correct?

A Correct.

Q Thank you.

Doctor, this 50-inch long estimation that you gave, are you telling this judge, this Court, that you came up with that by looking at a photograph, correct?

A I explained that based on the measurements, it couldn't be more than 25, 20 or 25 inches.

Q In your estimation, you doubled it just on the safe side?

A Conservative estimate.

Q But you didn't take into account the 60-inch mark on the left side of the vehicle, correct?

A Because there was no evidence telling me --

Q Yes or no.

THE COURT: Just say you didn't.

A I did not. And he knows because he already asked me.

THE COURT: So you didn't take that into consideration?

THE WITNESS: That's correct.

THE COURT: By the way, why didn't you take that into consideration?

THE WITNESS: Because there is no other evidence telling me that it was definitively part of the accident.

From the testimony or from the police accident report, police was very clear saying the point of impact and location of most damage was left-front corner of the car. And then they have four other squares that can add additional damage, if they observed any damage as a result of the impact, and it's all empty. So I relied upon the police officers who attended the scene. I wasn't there, he was, so I relied upon his experience and his report.

Q So just so I'm clear, you relied upon a one-page police report of a diagram that was drawn?

A It has a lot of information, that one page, yes.

Q So it didn't matter to you that you saw damage that was, in your estimation, 60 inches long on the driver's side, since it wasn't in the police report, you didn't consider that; is that true?

A Yes, no testimony --

Q Is that true?

A That's true and no testimony --

Q Thank you.

A -- backed it up.

Q Thank you.

A You're welcome.

Q Sir, by looking at those three pictures that were in your report, was there any damage to the engine compartment of that vehicle?

A It doesn't matter.
Q Just yes or no.
A You can't see it from those photos, but it doesn't matter.
THE COURT: All right. He doesn't know. Next question.
Q Doctor, the two inches that you estimated of the depth of that, you did that by looking at those three pictures that are attached to your report?
A Yes.
Q And you did that by visually looking at the pictures, you could determine the depth, is that what you're telling us?
A Yes, because the depth was zero from those photos. Two is a very generous --
Q Doctor, did you use any instruments in measuring the depth?
A No.
Q Did you use any instruments in measuring the length that you inserted to get this 50 inches, yes or no?
A Not instruments.
Q Did you use, other than visually --
A Yes.
Q Did you use anything?
A Yes.
Q What did you use?

A Microsoft Excel.
Q Microsoft Excel?
A Yes, sir.
Q Can you take out those data that you used from Microsoft Excel? Take it out.
A I don't have the program with me.
Q So you didn't bring that with you?
A No, I didn't.
Q Did you bring the data that you used in compiling that, yes or no?
A Those are photos, yes, I do have them.
Q The data from Excel, is there a spreadsheet attached to that?
A No.
Q Where was that?
A I don't have the spreadsheet with me.
Q What did you do with it?
A It's still on my laptop somewhere.
Q So you knew you were coming today but you didn't bother printing it out?
A No, I didn't need it, I have the report and I have the results with me.
Q Doctor, just so I'm clear, you would agree with me there is not one single study involving a 2002 Windstar and a 1999 Freightliner on an off-frontal collision, correct?

MR. GREENWALD: Your Honor, didn't we just do this rigorously?

THE COURT: Asked and answered. Fair enough.

Q Doctor, this particular accident, you would agree with me that the vehicle involved in this accident, the Windstar, went a distance under the truck, correct?

MR. GREENWALD: Objection, your Honor.

THE COURT: Well, based on your review of the deposition testimony, was that your understanding how this accident occurred?

A That's their testimony, right, that's my understanding, that's what they testified.

Q And did you consider that as part of your opinion?

A No.

Q So you didn't consider the fact that the Defendant's testimony was that he observed the vehicle pulling out from under the truck, you ignored that, correct?

A Yes, because there was no damage.

Q Yes or no, you ignored that?

A I ignored that, yes, because it wasn't important.

Q Doctor, tell the Court what speed the truck was going at at impact?

A I don't know the exact. I believe there is testimony, I'm going to refresh my memory before answering that. I think the testimony of the driver is that the maximum rate of speed

was about 15 miles per hour.

Q And where are you getting that from, Doctor?

A His testimony.

Q Can you read it? Read the testimony that says that.

A Page 45.

What was the maximum rate of speed that you attained on your truck?

Around 50.

Where did you reach that maximum speed?

On Queens Boulevard.

Q Doctor, where did the accident happen? Let me save you some time. The accident didn't happen on Queens Boulevard, did it?

MR. GREENWALD: Objection, your Honor.

A It was at the corner.

THE COURT: Let him answer the question.

Where did it happen?

A Based on the police accident report, it was on the corner of Queens Boulevard and 83rd Avenue, while they are both turning right at the same time.

Q Doctor, is it your understanding that the truck driver was traveling at impact 15 miles an hour?

MR. GREENWALD: Objection, your Honor.

THE COURT: Was that factored into any of the calculations you discussed?

THE WITNESS: No, your Honor. He said 15, it's not inconsistent, but I didn't use that 15, no.

THE COURT: So the 15 doesn't even come into play here?

THE WITNESS: No, it doesn't.

Q So Doctor, as far as your calculations were concerned, it didn't matter to you what the parties said the speed of the truck was going at, is that your testimony?

MR. GREENWALD: Objection, your Honor.

THE COURT: For what analysis, Counsel?

Q For any analysis that you used?

A That's a very good question.

Q Yes or no, did it matter?

A It did matter.

THE COURT: It did?

THE WITNESS: It did matter, relatively speaking. And I can explain it. It is not a yes or no.

THE COURT: It mattered. He doesn't want to know the rest of the answer.

THE WITNESS: Okay.

Q Doctor, the speed of the Windstar at impact, what was the speed that the Windstar was going at?

A I don't know that.

Q Did you think that was important for your calculations or no, yes or no?

A You can't limit that, I'm not going to answer yes or no to that question.

Q No problem, then don't answer.

A I'm not going to.

Q Doctor, would your opinion change if the speed of the Windstar was 35 miles an hour?

MR. GREENWALD: Objection, your Honor.

A That number by itself is not --

THE COURT: You can answer the question.

Q Yes or no.

A Is not necessarily inconsistent with my testimony, so it's possible, yes.

Q How about 50 miles an hour?

MR. GREENWALD: Objection, your Honor.

THE COURT: Go ahead. You can answer the question and stop it there.

A It is possible that Windstar was going 50 and truck was going 40. At the end, closing velocity, as I explained earlier is ten miles an hour. That's why 35 and 50 and 20 doesn't matter.

Q Doctor, I want you to show us one study that was ever done for a vehicle going under a truck at impact, point to a study.

MR. GREENWALD: Objection, your Honor.

A I don't have that study with me because it doesn't

apply to this accident.

Q When you say it doesn't apply, that would mean that you would ignore the testimony of the parties that were involved in this accident, correct?

A That's not correct.

MR. GREENWALD: Objection, your Honor.

A That's not correct. I heard that testimony, it doesn't apply to the calculations.

Q Doctor, can you tell us where did you get the frontal crush stiffness coefficient from?

A I downloaded it from a site, Neptune Engineering.

Q From where?

A Neptune Engineering, Incorporation.

Q That's not a government website, is it?

A That's not, but they perform the test.

Q It's not, correct?

A I said yes, it's not.

Q Thank you. Doctor, what I'd like you to do is please take out the off-frontal crush stiffness coefficient, can you take that out, off frontal.

A I don't think I have off frontal.

Q Okay. Would it be fair to say that you only have frontal, correct?

A That's correct because off frontal is frontal.

Q Would you agree with me, Doctor, that this is not a

frontal collision?

A I disagree.

Q Doctor, you would agree with me that your report says the foregoing information indicates that the Ford experienced an off-frontal collision, you wrote that in multiple places in your report, correct, yes or no?

A Yes.

Q Okay. What I'd like you to do is go through your report and point to one place in your report where you called this a frontal collision?

A This is an off frontal, which is a subcategory of frontal. This is the fifth time I'm explaining that, I'm not going to say it again.

Q Doctor, take out --

THE COURT: Try not to fight with him. Let him ask his question. Go ahead.

Q Doctor, I want you to take out any article you brought with you today, okay, and read to us that it doesn't matter that it was an off-frontal collision.

THE COURT: We went down this road already, Counsel.

Q Doctor, the crush stiffness coefficient that you used was for frontal collision, correct?

A Yes.

Q That's not the same for side collision, correct?

A That's correct.
Q It's a different stiffness, correct?
A Correct.
Q And it's a different stiffness for the rear of the car too, correct?
A That's true.
Q So you would agree with me that the driver's corner, which consists of the front of the car and the side of the car, has a different coefficient than the front and the side, correct?
A That's not correct.
Q Okay. Doctor, again, point us to one study that says it's a subcategory.
MR. GREENWALD: Objection. Asked and answered.
THE COURT: Fair enough. Next. Next.
Q Doctor, air bag deployment --
A Yes.
Q -- you talked about that, correct?
A Yes.
Q Doctor, what I'd like you to do is I want you to take out one study that you brought with you here today for an off-frontal collision regarding air bag deployment?
A There is no such a thing.
Q There is none, correct?
A Off frontal is frontal so it's covered.

Q So just so I'm clear, you are telling the judge that a frontal collision is the same as an off-frontal collision, correct?

MR. GREENWALD: Objection, your Honor.

THE COURT: Look, we've been through it, next.

Q Doctor, is there a reason why in your report you use the words off-frontal collision?

A Yes.

MR. GREENWALD: Objection, your Honor.

THE COURT: Go ahead. Next question.

Q Doctor, you would agree with me that biomechanical engineers differentiate between frontal collisions and off-frontal collisions, correct?

A To certain point, yes.

Q And the reason why they differ, Doctor, you would agree with me is it's a different mechanical-type accident, correct, frontal versus off frontal?

A No, just because of the movement of the occupant that you have to bring to account that it happens at angle, it's not straight forward.

Q It's the same then?

A Otherwise the same.

MR. GREENWALD: Your Honor, again, all day he is mischaracterizing. Takes the answer and mischaracterizes it.

THE COURT: Please.

Enough with this frontal versus off frontal.

Q Doctor, in air bag deployment, are you aware that an air bag doesn't deploy on a side collision, a frontal air bag?

MR. GREENWALD: Is counsel testifying, your Honor?

THE COURT: Does an air bag deploy on a side collision?

Q A front air bag deploy, yes or no.

A It is possible, depends on the angle.

Q Is that a usual --

A Typically, no.

Q Would you agree with me that a corner, meaning the side of a vehicle in the front of the vehicle, the corner would affect how an air bag would deploy and not deploy?

A There are sensors for frontal air bags in that corner that you are talking about.

Q So what I want you to do now is take out the 2002 Ford Windstar evidencing the sensor in the left-front corner, show us the data.

A It says it has frontal air bags --

Q Show us the data.

A -- there are six sensors at six points and one is in that corner.

Q Show us the data for that, show us the authority for that.

A It's a common knowledge when you know air bag system, when you know front bumpers, you know that it is common knowledge, it doesn't come from one piece of paper.

Q Then it should be easy. So therefore there had to have been testing done for left corner frontal air bag deployments, take out the study.

A There is no study for left corner front air bag --

Q But there are studies for frontal collision, correct?

A Yes, because they are in the same category.

Q There are studies for frontal collisions and air bag deployment, correct?

A Yes.

Q In fact, Doctor, would you agree with me that every study that you have in that book is titled front collision and air bag deployment?

A Yes, because off frontal is frontal.

Q It doesn't say off frontal, does it?

THE COURT: Again Counsel, you made the distinction 100 times. Enough with respect to the difference.

Q Doctor, the speed of the host vehicle, does it matter what the speed of the host vehicle was going for air bag deployment, yes or no?

A It's not yes or no, I can't, because you are going to cut my answer, so I'm not going to answer yes or no.

Q Doctor, for a frontal collision, take out the data for frontal collisions and air bag deployment, that you have. Take it out. Take it out.

A Take out what?

Q Take out the data that you have for speeds of 2002 Windstars for frontal air bag deployment?

A It's not for Windstar, it's general, it's not specifically one vehicle.

Q Take it out. Show us what you have.

A One of those textbooks that I don't have with me, your Honor, but it's available, probably you can find it.

Q I just wanted to know what you have.

A I don't have it with me.

Q You make citations in your report for air bag deployment?

A Yes.

Q Take those out, let's take a look at them.

A I mentioned at the beginning I don't have two textbooks with me, it's one of them.

Q Which textbook is that?

A It's the manual. I have to read.

Q Sure, go ahead.

A It's my reference number 11, it's an SAE book by R.W. Rivers, Seat Belt and Air Bag System Manual for Traffic Crashing Investigation and Reconstruction, published in 2002.

Q Doctor, when you were measuring the photos --
A Yes.
Q What I'd like you to do is tell us -- I had mentioned earlier about -- and I pronounced it wrong, it's photogrammetry, are you familiar with that?
A Yes.
Q Can you point to the data that you used when you performed that method. Show us.
A The data is the photo.
Q Well, Doctor, you would agree with me there is authority that says that this is a whole system in which to use photogrammetry, correct?
A For advanced crashes there are, you are right, different type of camera.
Q You agree with me that you didn't follow the protocol for what we call photogrammetry?
A For advanced photogrammetry, no, because I didn't need to, it's just a simple accident, damage limited to the bumper.
Q Show us where it says you don't have to do for determining crush?
A It's a matter of common sense. I have nothing to show that says that you can't use that, it's based on the experience of --
Q You told us before that you measured it.
A Yes, I did.

THE COURT: One at a time, please.

Q Doctor, tell us how you measured it.

A I said that I uploaded the photos to the Excel and I used that, there are some measuring tools and some calculations that you can put on the spreadsheet and that's what I did.

Q Show me the authority that says that that's the way to do photogrammetry.

A It doesn't come from the authority.

Q Just so I'm clear --

THE COURT: Doctor, I'm trying to follow this. Somewhere you got to get a measurement, correct?

THE WITNESS: That's correct.

THE COURT: The measurement of the front bumper?

THE WITNESS: Yes.

THE COURT: Did you go about doing that for this car?

THE WITNESS: Yes.

THE COURT: Do you remember what sort of measurement you obtained to compare it to the measurement of the area where the car was dented?

THE WITNESS: Comparing this car with the intact car not been in an accident, you can find easily in public domain from those websites that we talked about, the Windstar that is intact, like those commercial --

THE COURT: In other words, at some point you

obtained a measurement?

THE WITNESS: Yes.

THE COURT: Do you remember what portion of the vehicle you obtained a measurement for to compare it with the area that was impacted?

THE WITNESS: I believe in this case it was the front bumper of the Windstar and specifically the license plate, on top of that, which is always six by 12 inches in North America anyway.

Q Can you tell us the width of the front bumper, what was the width of it, the total width?

A I can look at the numbers, I didn't memorize it.

Q Go ahead, go look at it.

A Sure. And the whole length of the bumper was not necessary. I think in this case what the focus was was the license plate, because the whole bumper was not involved.

Q Doctor, just tell us what the full length of the bumper was.

A If I can find my reference. The overall width part of the exterior measurements of the car is 76.6 inches.

Q I didn't ask that. I asked the front bumper.

A The front bumper couldn't be --

Q Doctor, you said you measured the front bumper, what is the length of the front bumper?

THE COURT: You don't have the front bumper in

your materials, Doctor?

THE WITNESS: No, I don't have it with me, your Honor, no, but I have general numbers with me.

Q So you put this general number into the Excel program, is that what you are telling the judge?

A No.

Q Did you put a specific number in?

A I did.

Q But you just don't happen to have that number with you, correct?

A That's correct, I don't have it, it's on the spreadsheet.

Q Doctor, tell us if you could, please, just take out the article or any reference in that binder that conclusively correlates the delta-V force with bodily injuries in motor vehicle accidents, can you take that out?

A There is not one uniform article that you are looking for to connect everything.

Q Take out any one.

A I have articles that explain the severity of the accident in frontal, four people, while seat belted, I have three or four of them. And then I have articles to explain how much force required for disk herniation to be caused. As a scientist you have to connect the dots. There is not one single article to explain what's going to happen to driver or passenger

of Windstar.

THE COURT: I lost the question. Do you want him to produce the articles that he has that shows the amount of force that causes a herniated disk?

MR. ROSENBERG: Exactly.

THE COURT: Go ahead.

Q Could I look at those?

A Please.

Q Doctor, is it your opinion that these three articles that you took out --

A These three articles are talking about the accident parts, when we are talking about either frontal or side impacts, the motions and forces involved, this is --

Q Doctor --

A I explained that there is not going to be one article to have everything in one just for your sake of argument. This is not -- you are not going to find such an article.

THE COURT: Go ahead. What's the question?

Q Doctor, you would agree with me there is no study that says, that correlates the delta-V forces with motor vehicle accident injuries, you would agree?

A I just handed to you -- you picked the one in the middle, there are two more, why didn't you look at them? It's right here.

The Effects of Frontal Collision Delta-V and Restraint

Status on Injury Outcome, it couldn't get any more specific than this, your Honor.

THE COURT: All right.

A Why didn't you take a look at this?

Q You said frontal collision, correct?

A Yes, which is off frontal.

THE COURT: Frontal and off frontal. Once you have calculations based on a frontal collision, can you extrapolate the forces that would be involved if there was an angle involved in the collision?

THE WITNESS: Yes.

THE COURT: So whenever you know the initial force, the frontal force, all you have to do is to calculate the force --

THE WITNESS: That vector that you mentioned, yes, vector that coming off that, yes.

THE COURT: So once you know the angle of the collision, that's enough information for you to now calculate an off-frontal collision?

THE WITNESS: That's the only thing that separate an off-frontal from a head-on frontal.

THE COURT: And the angle is what you would use to calculate the delta-V on an off-frontal collision?

THE WITNESS: That's correct.

THE COURT: All right.

MR. GREENWALD: Your Honor, he testified here that 45 degrees he chose is the one with the most force applied to it, he has testified to that, your Honor.

THE COURT: Well, all right. Is that true?

THE WITNESS: It is, your Honor, because --

THE COURT: The most forward force?

THE WITNESS: Exactly. The angle changes between 0 and 45, so 45 would be the most. If it's more than 45, then it's going to be from the other normal --

THE COURT: Talking about the biggest angle that would propel somebody forward?

THE WITNESS: Exactly, exactly. And it wasn't measured from the photographs, as I put it in my report, it's like a higher estimate of what it could be.

THE COURT: So this is the highest number that it could be?

THE WITNESS: It could be 35 degrees.

THE COURT: But 45 --

THE WITNESS: Is the max.

THE COURT: It can't be more than that.

THE WITNESS: Exactly.

Q Doctor, what was the speed of the Windstar before impact, right before impact?

A You asked me and I already told you that I don't know.

Q Doctor, what would be the speed of the Ford Windstar

after impact?

A It changed by less than ten miles an hour; whatever it was, it decreased by ten.

Q What was the miles per hour that the Windstar was traveling at immediately after impact?

A As I said, it changed by ten miles per hour, I don't know from what to what, but it dropped by ten miles per hour.

Q Doctor, wouldn't you agree with me that the coefficient of restitution -- you are familiar with that, right?

A Yes.

Q Would you agree with me, Doctor, that in order to calculate that, you need to know the speed before impact and after impact to properly analyze that?

A No, not necessarily. That's one way to do it, I agree.

Q Doctor, show me an authority, show me an article that says it's done any other way other than what I just said. Show me.

A It's not an article that you are looking for. This is established methodology to calculate the delta-V. Delta-V is the difference between the velocity before and after.

MR. GREENWALD: Can he finish his answer?

THE COURT: Let him finish.

MR. ROSENBERG: That's not what I'm asking.

MR. GREENWALD: Your Honor, can he finish his answer?

THE COURT: Just so I understand your question, Counsel, you want him to show you an article where delta-V can be calculated absent information about the speed of the vehicle?

MR. ROSENBERG: No, the coefficient of restitution is what I want.

THE WITNESS: You were asking about speed, I'm confused now.

THE COURT: I'm confused also.

Q Doctor, do you know what the coefficient of restitution is?

A Yes, I do.

Q Would you agree with me that in order to calculate that, you need to know the speed before impact and immediately after impact?

MR. GREENWALD: And he already answered maybe it's not necessary.

THE COURT: Maybe that's true for whatever he is talking about, I don't know if it's true or not. I don't know if it matters.

But go ahead, Doctor, you can answer.

A That's one way to calculate, I agree.

Q Okay. Show me an article or show me some authority that says there is another way to calculate the coefficient of restitution?

THE COURT: What is the coefficient of restitution?

Q Doctor, tell the judge what the coefficient of restitution is.

A It's a measure of elasticity of an accident. Meaning that when two cars make contact, if it happens at less than 20 miles per hour, some of the structures in those vehicles absorb the energy and then they let it go and go back not completely to the normal size and shape they were, but part of that is going to be going back to normal. So part of the energy is going to be elastic, going back and bouncing forward. For that, if it happens at less than 20 miles an hour, you have to bring into account that not a hundred percent of energy is going to push the bumper, some of them is going to be dissipated.

THE COURT: In the actual crush?

THE WITNESS: Exactly. So you have to bring it into account, unless it happens at more than 20 miles per hour, that's established in the field, that everything is going to be absorbed by both vehicles, there is not going to be any elasticity, any coming back close to the original size or shape. That is like a percentage, the number is between zero and one. One is going to be completely hundred percent elastic, that technically doesn't happen unless that less than one point mile per hour, so it wouldn't be even considered a real impact. And zero would

be more than 20 miles per hour. So any other accident between zero and 20 miles per hour is going to have a number, the percentage less than one that correlates with that accident.

Q Show me the article that says there is a different way to calculate it?

A I have an article that specifically talk about calculation of the coefficient of restitution. Here you go. There are the formulas in this that explains that one way is what you said and then there is another way that is --

Q Read it to the judge, that part of it.

A I can't read the formula, but I will let you take a look at it, your Honor.

THE COURT: I don't want to look at it.

Q Read the part, just so we have a good record of this, read the part that says there is another way to calculate the coefficient of restitution.

A It doesn't say another way, it explains all the way you can do in one article.

Q Doctor, all those pages don't say how to calculate the coefficient of restitution?

A They do, this is all about calculating.

Q Doctor, you told us that one of the ways is determining the speed before and after, correct?

A That's correct.

Q The other way to calculate it is in that article?
A Yes, right here.
Q Read it.
A Closing velocity, come here and take a look at.
Q Doctor, read where it says there is another way to calculate the coefficient of restitution.
A It doesn't say another way, your Honor, it just talk about one method used to do it. It's not method number one, method number two.
THE COURT: I got you. Go ahead.
Q Doctor, you talked about federal government testing?
A Yes.
Q Point to one article in there that discusses the federal government testing that you referred to before. You know what, let me rephrase it.
What federal government testing did you refer to?
A The one that was performed on Windstar and the numbers.
Q Can you take it out.
A I have the results of that study, not the whole report.
Q Sure, why don't you take out the results of the study.
A The study was done on July 11th, 2005.
THE COURT: There is no questions, Doctor.
Q Can I see it?
A Here you go.
Q Could I see the front of it? You said this is a

government study?

A I said this is the results of that study. I said I don't have the report of the government study.

Q So you don't have the report?

A No.

Q So what am I looking at?

A The results of A and B coefficient of stiffness for that car based on the results of the Windstar test.

Q Doctor, this that you handed me is not a government study, correct?

A I said that I only have the results. I didn't say I have the government study on here.

Q Where does it say on here that these are the results of a government study?

A It doesn't say, but I know because I went to that website and downloaded and I even can give you the date and name for that.

THE COURT: It's your testimony that these were the results of the government study?

THE WITNESS: Yes, I can find the results, actually you can find the whole thing, it's available to everybody.

Q But you didn't bring that with you, right?

A No, I didn't need.

Q Doctor, you would agree with me that this particular

structure referred to front, not off frontal, correct?

A I'm not going to answer that.

Q Take a look at it. I want you to tell the Court.

THE COURT: They did it on front, I get it.

Q Okay. Doctor, can you tell us what records you reviewed for Plaintiff's physical condition that existed before this accident happened?

A I don't have anything.

Q Do you have any knowledge whatsoever as to what her physical well-being was before this accident happened?

A No. All I have is in my report from the medical doctors who have seen her.

Q I didn't ask that. I asked did you have an opinion in part of your review of this file as to what her physical well-being was before this accident?

A I don't know.

Q Well, Doctor, you would agree with me that, I think you talked about it on the direct, about studies being performed on participants, correct?

A On?

Q Participants.

A Yes.

Q And Doctor, can you show us, show the Court, what study you referred to regarding the physical well-being of people after accidents or involved in accidents?

MR. GREENWALD: Your Honor --

THE COURT: I don't get the question.

MR. ROSENBERG: Sure, I'll rephrase.

MR. GREENWALD: Can I object?

THE COURT: He is withdrawing the question, there is no reason to object.

MR. GREENWALD: Your Honor, Lugo says that there is no need for specific studies, it's general principles. It's right in the decision, your Honor.

Q Doctor, can you point to any authority that you have as to any testing done of live people for off-frontal impacts?

A Again, they are covered frontal and I have them with me, yes.

Q Can you pull that study out for frontal? Can you pick the best one, Doctor?

A It's not a competition, they just --

Q Pick an article of a frontal collision study that was done of live people.

A Sure, any of them.

Q Can you show me?

A 30-Mile Per Hour Front-Rear Crash With Human Test Persons.

Q Can I see it?

A Yes.

Q Doctor, is this a central front impact, yes or no?

A Probably, yes.

MR. GREENWALD: Your Honor, how many times can we go over this?

THE COURT: Is this study based on a frontal impact? Yes? Correct?

THE WITNESS: Yes.

MR. ROSENBERG: Judge, central front.

THE COURT: Central front. Is there a difference between a central front and a front?

THE WITNESS: Not essentially, no.

Q Not what?

A Not essentially, no, they are the same. There is a degree involved that you have to bring into account, that's it.

Q Doctor, show me this study that you pulled out, show me where this was a live passenger that was studied?

A Live passenger?

Q Sure, as opposed to a crash dummy.

MR. GREENWALD: Objection, your Honor, based on Lugo.

THE COURT: Hold on a second. Is this a crash dummy test here, Doctor?

THE WITNESS: It's a crash test with human being, your Honor.

THE COURT: I'm sorry?

THE WITNESS: With human being.

THE COURT: With live human beings?

THE WITNESS: Yes. Each of the three driver's test results, each of the three drivers underwent three sled tests and one vehicle-to-vehicle crash without suffering any health impairment or other adverse effects.

Q Doctor, I didn't ask that. Front passengers, not drivers.

A Passengers, no, they are drivers.

Q Okay. Can you point to one study of a frontal collision involving passengers of live people that were done?

A I'm not hundred percent sure I have it with me, I can take a look for sure.

THE COURT: Just so I get this right, in the actual study they put a driver in the car, I assume they seat-belted the driver?

THE WITNESS: Yes.

THE COURT: And then they collided another vehicle into the rear of that car?

THE WITNESS: At 30 miles per hour.

THE COURT: At 30 miles per hour.

THE WITNESS: Yes. Those things are not allowed anymore, they can't do it, I don't know why.

Q While we are discussing this, can we get the name of the study they just referred to and what year it was?

A It's by R. Wagner in 1979, it's pretty old.

THE COURT: Where was it, in the United States?

THE WITNESS: Yes.

Q 1979?

A Yes. I'm not sure if I have any specific passengers, but it doesn't matter because --

THE COURT: Three people?

THE WITNESS: Yes. In that case there is more studies. In that 30 miles per hour, it was only three.

Q So just so I'm clear, there are no studies that you're aware of involving testing of passengers, correct?

A Again it might be, I have to go through them one by one. I don't have any recollection to have just for passengers.

THE COURT: I'm just trying to figure this out. What do you extrapolate from that study? Three people, all right, so they didn't get a herniated disk as a result of the collision --

THE WITNESS: Well, it wasn't just that, your Honor, mostly it was cited along others that you can see here, just to demonstrate that occupant kinematics that I will explain, for that we don't need more than three or five hundred, it's not like statistical analysis, it's not about just the disk herniation. I don't think I cited for disk herniation. These numbers for human tests, along with others like crash dummies and cadavers, just perform to show that the duration of movement that I'm talking about.

THE COURT: You're not citing the study as proof that a collision at 30 miles an hour would not result --

THE WITNESS: Not necessarily, I have other articles to show that.

THE COURT: You got that, Counsel?

MR. ROSENBERG: I'm sorry?

THE COURT: He's not offering these studies to show that you would not suffer a herniated disk if you were involved in an accident such as the one study in the study? He's offering them just to show the dynamics of the forces on the body as a result of the collision.

A It's not the only purpose of the study, let's make it clear.

Q Doctor, what damage was done to the host vehicle, the Windstar, when the Windstar was backed up after that accident happened?

A Backed up to --

Q The Windstar was backed up from under the truck, what damage was sustained to the Windstar?

MR. GREENWALD: Objection to "under the truck," your Honor.

Q As a result of the backing up?

THE COURT: If you know the answer.

A I don't know the answer, your Honor.

Q Doctor, were you aware that there was testimony

regarding damage to the Windstar as a result of backing a vehicle up after the accident, yes or no?

A I don't recollect. No, I don't have a recollection.

Q Well, Doctor --

A I can take a look at the testimony if you want to.

Q Doctor, did you read the testimony of the driver of the Freightliner?

A I did.

Q Okay. I want you to take a look at the testimony of the driver of the Freightliner.

A Sure.

MR. GREENWALD: Trial testimony?

MR. ROSENBERG: Yes, let's take a look at the trial testimony.

MR. GREENWALD: I'm going to object to the trial testimony. He already elicited from him that he didn't rely on it.

MR. ROSENBERG: I didn't. You did.

THE COURT: Counsel, interject the fact that you want him to consider and ask if that would change his analysis in any way.

MR. ROSENBERG: Sure.

Q Would that change your analysis if you knew that damage took place from this vehicle as a result of the vehicle being separated from the truck?

A I assume all the damage that I observed was as a result of the impact, the initial impact, the impact --

Q That's not my question. My question is would it change your analysis if you knew the damage happened from the vehicle being separated from the truck?

A Then I have to subtract it from there so it would be even less severe. It would be less severe. Yes, it would effect.

Q Doctor, do you know what damage took place to this vehicle from the impact, initial impact?

A I assumed all the damage that I observed was from the initial impact, that's another thing to maximize it. So if it happened because of two impacts, so half of the damage was going in, half of the damage was coming out, that means severity of the accident was half in each impact.

Q Doctor, do you know anything about that?

A No, I assumed that the whole observed damage was due to the initial impact.

MR. GREENWALD: And your Honor, that is only to the benefit of the Plaintiff. Because if the damage is sustained backing up, that's not impact damage, so again it's maximum.

THE COURT: That's what you have. I have some questions that I really want to get to.

MR. ROSENBERG: Go ahead, Judge.

THE COURT: I just want to summarize a couple of things, make sure I have --

THE WITNESS: Sure.

THE COURT: -- a clear understanding of what's going on.

Let's talk just about the crush energy analysis.

THE WITNESS: Okay.

THE COURT: Now let's go to Page 9.

THE WITNESS: Sure.

THE COURT: Now in the very top of Page 9, there appear to be six variables, L --

THE WITNESS: Theta.

THE COURT: Theta C, A, B and G, correct?

THE WITNESS: Correct.

THE COURT: Are those the only six variables that you use in calculating delta-V based on the crush energy analysis?

THE WITNESS: Plus the weight of the vehicle that eventually come to account under that square root.

THE COURT: So the only other variable was the weight?

THE WITNESS: The weight, yes, and that's it.

THE COURT: All right. So let's go over this.

THE WITNESS: There are only six parameters because G is just calculated based on A and B, it's not an

independent parameter.

THE COURT: G is a function of A and B?

THE WITNESS: It's a by-product of A and B, then we have the mass or weight.

THE COURT: Six variables?

THE WITNESS: Yes.

THE COURT: So we already went over how you obtained the length and how you effectively doubled it. Let's go to theta, the angle. Now, when you use 45 degrees again, just so I'm clear, that's the maximum amount that you could use to get the highest delta-V?

THE WITNESS: Exactly.

THE COURT: All right. Now we go to C, the depth of the damage to the car?

THE WITNESS: Yes.

THE COURT: And two inches, how did you get that? From a visual inspection of the photographs?

THE WITNESS: When you look at the third photograph, your Honor, you could see that the front bumper and the front bumper on the corner underneath the left headlight is dislodged.

THE COURT: Okay.

THE WITNESS: And it doesn't show any penetration to the other part, which is the fender. So it give me understanding that it couldn't be more than one or two

inches, because of that and because that front headlight did not break either, so it could not be more than two again. Again I'm exaggerating by the two. As you can see, there is no real dent on the bumper.

MR. ROSENBERG: Judge, the front headlight did --

THE COURT: Let me have my shot. I'm the one that has to understand this.

So let's go back to L where you put in 50 inches.

THE WITNESS: Yes.

THE COURT: Now you included the scratch that you see along the side of the vehicle, the one that he pointed out, Mr. Rosenberg, would that measurement change in any way?

THE WITNESS: Not this L, but I can use the same formula on that length.

THE COURT: Let's say you included the scratch.

THE WITNESS: Yes.

THE COURT: And you wanted to now change L, what would you change it to if you included that?

THE WITNESS: That's what I'm saying, we don't actually change this L. We just can repeat the same calculation for the other surface. So this one is for the frontal part, that is on the front surface of the car. Let's assume that it was a contact on the side, first of all, the coefficient of stiffness for the side is

different, it's much lower. Second, we don't have that two inches of depth. The only thing that is significant is the 60-inch length of that scratch that I don't have any evidence that it was part of the accident, but let's assume that.

THE COURT: Let's assume it was.

THE WITNESS: If we can do that based on that 60-inch, I have to do the recalculation. But just knowing that the side of the car, and I have the numbers with me, much more rigid than the front of that, I know that the amount of energy would be at least one third or one fourth of what I have here for the frontal.

THE COURT: Let's go to A where you have 330, what do you call that, pound feet per inch?

THE WITNESS: Pound force per inch.

THE COURT: Where did you get that?

THE WITNESS: A and B are coming from the results that I just handed to counsel, coming from those studies done by federal agencies, I just had one page results. A and B are coming from, those they are recorded at the end of the study when they inspect the car after the crash.

THE COURT: All right. And this is specifically a Ford Windstar?

THE WITNESS: Ford Windstar.

THE COURT: All right. And those studies that you

relied upon, you deem them reliable?

THE WITNESS: Absolutely.

THE COURT: And do biomechanical engineers routinely rely on those studies in doing these types of analysis?

THE WITNESS: Yes, your Honor, on a daily basis.

THE COURT: All right. And let's go to other weight. We already went into how you calculated the weight?

THE WITNESS: Yes.

THE COURT: All right. So once you determined these variables, you do the math and you come up with the delta-V, correct?

THE WITNESS: Exactly, you just plug in the numbers. So finding the right number, reasonable number, would be the key actually.

THE COURT: So that takes care of --

THE WITNESS: Crush energy.

THE COURT: Now let's go to momentum analysis. Tell me all the variables that you considered in coming up with your calculations based on momentum analysis.

THE WITNESS: Weights of both vehicles, closing velocity, which is the difference between the speed of them at the time of impact, not the exact speed, whatever is the difference between the two velocities at the point of

impact. And E, right underneath closing velocity, you can see a little E at .103, that's coefficient of restitution that I just explained showed elasticity of the accident and can be calculated using the closing velocity, which I did.

THE COURT: All right. And just very briefly go over again how you came up with the closing velocity.

THE WITNESS: Based on the fact that Ford Windstar has frontal air bags, I assumed and I think it's a reasonable assumption, that the air bag -- we know that the car has air bags, that's a fact, I assumed it was functioning and it did not deploy based on the testimony of the Plaintiff, she was in the car, no air bag deployed.

THE COURT: Are there any air bags that would not deploy at ten miles an hour and greater?

THE WITNESS: Again, there is a range, your Honor, nine to 15. There is a possibility that it deploys at 12 or 13 or 15. But it has an algorithm that calculated over a fraction of second based on the impulse, which has something to do with the weight of the cars and the ratio, so it sends it --

THE COURT: What made you come up with the closing velocity that you used in this case?

THE WITNESS: Again, since the Windstar is way, way lighter than the truck, I should go with nine actually, with the lowest number.

THE COURT: Now let's just assume for argument's sake that you went with 15, what is that, the maximum standard allowed?

THE WITNESS: Yes.

THE COURT: How would that affect your calculation?

THE WITNESS: Instead of 9.6, perhaps we would have 11 or 12 miles per hour.

THE COURT: And if it was 11 or 12 miles an hour, would your opinion change in any way?

THE WITNESS: No because still in the range that doesn't deliver excessive amount of load or cause going beyond the physiological range of motion of the spine, so it wouldn't matter, no.

THE COURT: Now, at the end of the day, correct me if I'm wrong, what you did is you calculated the delta-V and then you rendered an opinion that given the delta-V and given the mechanics of what happened to the Plaintiff inside the car at the time of the collision, that her various injuries could not have been sustained, correct?

THE WITNESS: That's correct.

THE COURT: All right. Now what if she had preexisting conditions, would that affect your analysis in any way? Let's assume, for example, that she had degenerative disk disease and she was not healthy and her

spine wasn't as healthy as someone who would fall within the normal range.

THE WITNESS: Actually I believe that was the case, that she was not healthy based on the doctors who read the MRIs, I didn't see the patient. So I believe that she had those preexisting conditions. But when I came up with the numbers, the numbers are following the range of activities of daily living. For example, the amount of force on her lumbar spine, which is the lower back, was comparable to amount of force that if she would bend over to grab two gallon of milk at the same time. If she can get disk herniation from grabbing two gallons of milk at the same time in a grocery store, then she has more serious problems than this accident. So the numbers are falling or very close to the numbers comparable to activities of daily living and those activities of daily living, in general, for people even with degenerative disk disease do not create disk herniation in multiple levels.

THE COURT: Now you just told us an opinion about that, is that based on any study that you know of?

THE WITNESS: I have the studies, your Honor.

THE COURT: You have studies with people with degenerative conditions or just studies as to normal population?

THE WITNESS: I do have studies showing the effect

of degeneration of disk on the mechanics and mechanism of the disk, explaining that what happens to degenerative disk, it's less flexible because it is using some water basically and it becomes less elastic, less flexible.

MR. ROSENBERG: I didn't hear what study he was referring to.

THE COURT: You're going to get another shot.

MR. ROSENBERG: Okay.

THE WITNESS: Based on the studies that I have, the mechanism to create disk herniation as a result of one single load is when we have damage to structures near to disk, such as bone and other articulated joints. And there was nothing recorded by the doctor, again I'm relying on what they have found.

THE COURT: And just a couple last questions. The calculations that you used in your crush energy analysis, are principles that are commonly accepted in the field of biomechanical engineering?

THE WITNESS: Absolutely.

THE COURT: And same question with respect to your analysis concerning momentum analysis.

THE WITNESS: They both coming directly from the textbooks, your Honor.

THE COURT: Go ahead, Mr. Rosenberg.

CROSS-EXAMINATION

BY MR. ROSENBERG: (Continued)

Q Doctor, the air bag deployment in the Windstar --

A Yes.

Q -- was the Windstar, that Windstar that was involved in this accident, did it have an air bag in it?

A It did.

Q How do you know?

A I believe we have the VIN number of the car.

Q Do you know, Doctor? Just because the VIN number says it came equipped with that, do you know if it was still in there?

A There is no reason for me to believe otherwise.

Q I didn't ask that, I just asked very simply do you know if it was in the car --

A I believe it was.

THE COURT: Just so we don't waste a lot of time on this, is your belief that there was an air bag in the vehicle based on your knowledge as to what those vehicles were equipped with?

THE WITNESS: Yes, your Honor. Manufacturers told us that they put air bag in the car and I believe that it was still there. I didn't have any reason to believe otherwise.

THE COURT: So unless it was removed before the accident, you believe it was there --

THE WITNESS: Yes. Somebody disabled that maybe, I don't know.

Q That was my question, do you know?

A No, I don't.

Q Do you know whether or not if it was in the vehicle, whether it was working properly or not?

A Again I don't know that.

Q Okay. Doctor, the 60-inch long, that you used, that word, 60 inches long damage to the driver's side of the vehicle, you would agree with me that an impact with the truck, based on what you know, that would have been -- both vehicles would have been perpendicular to each other at that point to cause that damage, correct?

THE COURT: Parallel.

MR. ROSENBERG: I'm sorry, parallel.

A Exactly parallel, I agree with that.

Q Yes.

A If it happens with any other vehicle, it has to be parallel, yes.

Q Doctor, I want you to assume that the damage came from this accident on the driver's side.

A Let's assume that.

Q You would agree with me that that would change the component for angle on Page 9 in your calculation, correct?

A I don't agree with that. If you assume that those

damages that we see on the side are as a result of the impact, it's going to be on top of the damage, front.

Q I didn't ask that. I asked very simply the angle of the Windstar and the angle of the truck --

A I was answering your question.

Q -- would have been parallel?

A It would change, no, it would change, that's what I'm saying. They made contact and after that the angle would change afterward, they became parallel.

Q Well, Doctor, how do you know that the impact to the front of the vehicle occurred first before the impact to the side of the vehicle? Do you know that?

A First of all, I don't believe that the side was damaged as a result of this impact.

MR. ROSENBERG: Judge --

A You asked me hypothetically.

THE COURT: Just for purposes of the question, assume that it was.

THE WITNESS: If I assume that, it's going to be actually sideswipe collision based on the length and lack of any depth and it's very uniform, 50, 60, 70 inches, whatever it is, it's very uniform, completely parallel.

THE COURT: Like you said, if the 45-degree impact occurred first, then --

THE WITNESS: Eventually they become parallel. If

we assume, so you would add it to the front. It wouldn't actually remove the frontal part anyway.

MR. GREENWALD: And the 45-degree again is the maximum force. Why is he going around and around on this for?

Q Doctor, yes or no, do you know whether or not the impact to the left corner of the vehicle happened first or second with respect to the impact, the damage to the driver's side, that 60-inch long --

MR. GREENWALD: Objection. No factual foundation whatsoever.

THE COURT: Tell us. You don't know, you don't have personal knowledge one way or the other?

THE WITNESS: I believe that only one impact happened to the car, that was the left front of it.

Q Doctor, point to one study anywhere in there that says that by changing the angle, okay, doesn't change the delta-V?

THE COURT: He didn't say that, Counsel.

Q Well, Doctor, you would agree with me that the angle that you use, that 45-degree angle --

A Yes.

Q -- that was an estimation, correct?

A I agree.

Q Okay. Doctor, if it was more than that angle --

MR. GREENWALD: It's really idiocy, your Honor.

THE COURT: Please, please.

Q Doctor, if it was more than that, the angle, that would change the delta-V, correct?

A It couldn't be more than 45.

Q I didn't ask you that. I asked you if it were more.

A It couldn't be more, you are asking the impossible.

Q Would it change if it was more, yes or no?

A It wouldn't be more than 45 degrees.

MR. ROSENBERG: Judge, that's not my question.

Q If the angle was more than 45 --

THE COURT: If the angle changes, the delta-V calculation of course changes, I understand that.

THE WITNESS: I agree with that.

MR. ROSENBERG: So why is he not answering that?

THE COURT: He's answering that.

MR. ROSENBERG: No, he's not.

THE COURT: All right. Go ahead.

Q Doctor, tell us what damage happened underneath the bumper to this particular vehicle?

A Do we have photographs of underneath? It's not part of the crush energy analysis anyway, your Honor. I'm going to take a look at the photos.

Q Doctor, do you know whether or not there was a four-inch crush underneath the bumper to any parts of the vehicle behind the bumper?

MR. GREENWALD: Objection. No factual foundation yet again.

THE COURT: What is the question again, Counsel?

Q What damage was sustained behind the bumper to the vehicle?

A For the crush energy analysis, your Honor, you use observed damage, what you can see; it has nothing to do with underneath and I don't know what's underneath because I didn't need to know and I don't.

MR. ROSENBERG: What's the answer, Judge?

THE COURT: He doesn't know.

MR. ROSENBERG: That's what I thought.

Q Doctor, can you point to one study that you have regarding people with degenerative disease that was conducted, that were involved in accidents, and their outcomes, motor vehicle accidents?

A I have studies showing effect of degeneration on the function of the disk, not necessarily in a car accident.

Q I'm sorry?

A Not necessarily in car accident, but changes. There is not, Counsel, I explained to you, there is not one article to explain everything at once.

MR. ROSENBERG: Judge, can he just answer the question. Either there is or there isn't.

THE COURT: A specific study that dealt with

delta-V and its effect on people with degenerative disk disease?

MR. ROSENBERG: Yes.

THE WITNESS: There is not such a thing, your Honor.

THE COURT: He knows of no such study.

THE WITNESS: No.

Q Doctor, would you agree with me that someone in a grocery store with degenerative disk disease that's performing daily activities of living can lift a package up and sustain a herniated disk?

A It is possible.

Q Okay. So, is it your testimony that someone that twists wrong in a vehicle could not sustain a herniated disk?

A See --

Q Yes or no?

MR. GREENWALD: Objection. There is no factual foundation.

THE COURT: I understand where he is going with this. Let him go. Go ahead.

Q Yes or no?

A It's not yes or no answer. It may happen but it requires more than just that, not any accident.

THE COURT: It may happen, there is your answer.

Q Doctor, do you know whether or not that happened in

this case, when she twisted and hit the door of the vehicle and the dashboard?

MR. GREENWALD: No such testimony, your Honor.

MR. ROSENBERG: There is testimony.

MR. GREENWALD: There is no such testimony.

THE COURT: All right, look, look, look. Assuming that she twisted inside the vehicle and hit the dashboard and then the door, so assume that to be true, what's your question?

Q Could she have sustained a herniated disk from that?

A No.

Q Okay. Show me the study that says that someone can sustain a herniated disk from twisting in a car after hitting this door and the dashboard.

MR. GREENWALD: While she is wearing a seat belt?

MR. ROSENBERG: Yes.

Q Show me a study.

A You have to show me a study that shows by twisting with a seat belt can cause it --

Q Doctor, you would agree with me that there was testimony that you read that the Plaintiff hit the dashboard, correct?

A That's her testimony.

Q And you would agree with me that there was testimony that you read that the Plaintiff came into contact with the

door, her passenger's side door, correct?

A Yes.

Q Would you agree with me that -- strike that.

I want you to assume she hit the dashboard and the door, I want you to assume that, is it your testimony that those impacts with the door and the dashboard would not in any way cause a herniated disk?

MR. GREENWALD: While she was wearing a seat belt?

MR. ROSENBERG: No, that's not my question.

MR. GREENWALD: That's her testimony, which you don't want to include in there.

THE COURT: Let him answer the question.

Go ahead, Doctor.

A I believe even if we assume that, which I can't assume because it's not consistent with the physical facts and evidence, it wouldn't cause, because the doctor that you referred to couldn't find any traumatic findings in the MRIs, it's as simple as that.

Q I didn't ask that.

A You asked me if I believe --

Q That's not close to what I asked.

MR. GREENWALD: That was perfectly responsive, your Honor.

THE COURT: You got a new theory.

MR. ROSENBERG: It's not a new theory.

THE COURT: Not a new theory, but a failsafe.

Q Doctor, for the coefficient of restitution --

A Yes.

Q -- what baseline number did you use for that in your calculation? Take it out, look at your report, what number did you use that went into your calculation?

A .103.

Q Doctor, is there a reason why you used a different number on Page 9 when you were figuring that out?

A It has to be a typo because restitution is going to be the same for both.

Q Doctor, you would agree with me that that typo affects your calculation, correct?

A I don't know, I have to check. But look at this, look at this.

Q Doctor, yes or no?

A It could, I agree, it could.

Q Would it affect your calculation?

A It could, but look at this. I'm using a bigger number, so the numbers are exaggerated by mistake.

THE COURT: Would it affect this calculation?

THE WITNESS: Yes, it would change.

MR. ROSENBERG: Judge, he is using different numbers for the coefficient of restitution, it's not even the same.

MR. GREENWALD: Bigger numbers, your Honor.

THE WITNESS: I used bigger numbers if it's just typo when transferring from the Microsoft Excel.

THE COURT: Off the record.

(Whereupon, an off-the-record discussion was held.)

THE WITNESS: On Page 9 I used a higher number so if I put back 103, it would be even less than 9.8 miles per hour, maybe by decimal, maybe it would be 9.7. But yes, it would change, the short answer to your question, yes, it would change.

THE COURT: Doctor, we want to get out of here, I recommend the short answers.

THE WITNESS: I will do my best.

THE COURT: The best answer of all is a yes or no at this time.

MR. ROSENBERG: I'm almost done, I'm at the end.

Q Doctor, I know that your attorney asked on direct whether or not this Court --

A He is not my attorney, by the way, I'm sorry.

MR. GREENWALD: Thank you for that, Doctor, thank you.

Q The lawyer that prepared you for your testimony today --

THE COURT: All right, whatever.

MR. GREENWALD: I resent that, cheap shot.

A Mr. Greenwald, he has a name, let's go with that.

THE COURT: Mr. Greenwald.

Q Doctor, Mr. Greenwald asked you whether or not this Court, you have testified here before, before this judge?

A Yes.

Q How many times were you precluded from testifying before this judge?

A Before Judge Sweeney, never.

Q That's not true. If I told you that the man that was sitting here before in this courtroom earlier, on his case you were precluded from testifying, did you know that?

THE COURT: Just so you know, Counsel, he was precluded because of a late disclosure, okay.

THE WITNESS: Thank you, your Honor. I didn't even know that.

MR. GREENWALD: Let the record reflect that's yet another cheap shot.

MR. ROSENBERG: We are going to get to this.

MR. GREENWALD: More cheap shots.

Q How many other cases have you been precluded from testifying?

A I believe I have been precluded three times and one of them was reversed by the appellate court.

Q Do you remember the names of those three cases that you

were precluded from?

A I definitely remember the one that was reversed, it was Gonzalez.

Q What was the name of that case?

A The name of the Plaintiff was Gonzalez and I'm trying to think of two others.

Q That case that was reversed, was that in New York?

A Yes.

THE COURT: Off the record.

(Whereupon, an off-the-record discussion was held.)

THE WITNESS: I was precluded with Judge Silber once and the case was Singh, I believe. I can't remember the first one, it was in Staten Island.

THE COURT: So in your entire history as an expert in biomechanical engineering, you were precluded on three occasions?

THE WITNESS: Yes, your Honor, unless it was something like what you mentioned that I didn't even know about that being precluded because like the photos were not exchanged. When I went through the Frye hearing, I only precluded three times.

Q Just one other question, Doctor. The truck that was involved -- actually a couple of questions. The truck that was involved in this accident, do you know what damage was sustained

to the truck?

A You asked me before, I said I don't know.

Q Okay. And Doctor, do you know the extent of the damage that was sustained?

A I said I don't know.

MR. GREENWALD: Your Honor, that's the same question.

Q Do you know the length of the damage that was sustained?

MR. GREENWALD: Again it's the same question.

A I don't know.

THE COURT: You don't know anything about the damage, correct?

THE WITNESS: That's correct.

Q Doctor, the weight of the truck that was involved in this accident, what was the weight of that truck at the time that this accident happened?

THE COURT: Well, we went through the weight, Counsel.

MR. ROSENBERG: No, no, no, I didn't ask him that specific question.

THE COURT: I understand. He doesn't know the exact weight. He used the maximum weight that's allowed on the road for this truck, right?

THE WITNESS: Correct.

Q The maximum weight that you used, that would be the gross vehicle weight, correct?

A Correct.

Q Do you know what this vehicle -- when you say the gross vehicle weight, is that something that you observed from a website of the Freightliner? Where did you get that number from?

A From somewhere, I don't remember where it was coming exactly. You have like my citation. It was a website that had information about the Freightliner, that make and model.

Q Do you know whether or not that vehicle -- what the weight -- Can you give us any idea what the weight of that vehicle was at the time that this accident happened?

MR. GREENWALD: Your Honor, that is right in his report and I brought it out on direct.

THE COURT: Again, Counsel, he doesn't know the weight. He used a figure.

MR. ROSENBERG: Judge, I know he used a figure.

MR. GREENWALD: Fully loaded with gas, full occupancy, full, I mean, it's the maximum. Again, you know, he doesn't know so he used the maximum.

Q Doctor, do you know what the vehicle was carrying?

A What?

Q Do you know what was in the vehicle, what was in it?

A I don't know.

Q Do you know what the weight of the driver of the vehicle was?

A I don't know.

Q Do you know how many people were in the truck?

A I don't know.

Q Do you know in the minivan, the Windstar, do you know if there was a load in the back of that Voyager -- that Windstar?

A It would just make it heavier.

Q I didn't ask that. I just asked you do you know --

A I assumed there was nothing in the car except two occupants.

Q I'm sorry?

A I assumed there was nothing, no equipment, no extra weight, just because it would make it heavier and less prone to the damage and to energy so I assumed the lightest weight possible.

Q I didn't ask you that. Thank you for volunteering. Let's talk a little bit about that.

MR. GREENWALD: Again, your Honor, he gave every benefit of the doubt to the Plaintiff.

THE COURT: Let's get this over with, it's getting late.

Q Doctor, is it your testimony that the weights of the vehicles are not used in components of your calculations?

A I use the reasonable estimate of the weight.

Q So the answer is yes, you did use the weights in part of your calculation, correct?

A I sure did.

Q Okay. So if the weights were wrong in what you used in your calculation, that would of course affect the result, correct?

A That's correct.

MR. ROSENBERG: Judge, I don't have any other questions.

MR. GREENWALD: Off the record.

(Whereupon, an off-the-record discussion was held.)

REDIRECT EXAMINATION

BY MR. GREENWALD:

Q You did an injury analysis, Doctor?

A Yes.

Q And could you tell us from a biomechanical viewpoint, tell me the components of your injury analysis?

A Sure. Two major components of injury analysis to understand the magnitude of force and the mechanism involved in the accident, for those specific parts. Force comes from the accident analysis or accident reconstruction and delta-V. And mechanism comes from the movement of person inside, being belted, moving at angle, going far. I believe she didn't make

contact with the dashboard, even her testimony if she did, going back, making contact with the seat back and the door, the passenger's door, it didn't create significant amount of motion for her body and for her spine to go beyond what she could tolerate on a daily basis in activities of daily living. As such, we didn't have enough force, we didn't have the right mechanism to create disk herniation, multiple disk herniations in the absence of damage to adjacent bony structures as recorded by board certified radiologists. Without any acute traumatic findings in those MRIs, it's physically impossible to have injury as a result of this impact.

MR. ROSENBERG: Judge, I move to strike the entire part of his answer, it's not responsive to even the question.

THE COURT: Next question. I'll accept it and you can ask a follow-up if you need to.

Q And Doctor, are you telling us that were the herniations or bulging to result from this accident, that there would also have been damage shown on diagnostic radiological testing to surrounding structures?

A Yes.

MR. ROSENBERG: Objection.

Q Was there any damage --

THE COURT: Overruled.

You can answer, go ahead.

Q Doctor, based on your review of the reports, the MRI reports performed of MRI testing of the Plaintiff's spine, did they reveal any damage in those diagnostic tests which would have revealed to you that there was sufficient force supplied to the spine to have herniated the disk or caused the bulge?

A They didn't have any, zero findings.

Q What is edema, Doctor?

A Edema is an accumulation of interstitial water or fluid as a result of inflammation, trauma or radiation or any change in function in a structure, any injury.

Q If an MRI examination was taken approximately one month following a traumatic event and there is a claim that the intervertebral disks were herniated in that accident, there was sufficient force supplied to the spine to herniate those disks, would you expect to see edema in the spine and the surrounding area?

A Absolutely.

Q Was there any edema observed on any MRI film?

MR. ROSENBERG: Your Honor --

THE COURT: Why don't you keep him to his biomechanical expertise. Are you going to use him as a doctor now? You are going to have your doctors. You could go into this with your doctors.

MR. GREENWALD: Your Honor, this is why I didn't understand what you said to me before.

THE COURT: No, no, no. You didn't get to the studies equating delta-V and injuries, that's all I was talking about, not the whole medical analysis. And by the way, you are not going to call him for that?

MR. GREENWALD: No, of course not.

THE COURT: All right, fine.

MR. GREENWALD: I'm just trying to comply with what your Honor felt he was missing from his testimony.

THE COURT: Look, when you finished questioning, you didn't get into whether or not there was any studies dealing with delta-V and injury, all right. Now we are beyond that. His testimony, as I understand it, is the delta-V that you were subject to was such that it's the same as everyday forces that you would be subject to in normal life, all right. So let's leave it at that.

MR. GREENWALD: I'm fine with that, your Honor, absolutely fine with that.

Q Doctor, I'm going to ask you one question here and then I'm going to sit down. When you didn't have specific information with reference to speed or the weight of the vehicles, Doctor, the estimates and the angulation of the impact, the figures that you used, why did you use those figures, the estimates that you used?

A First of all, I stick with the numbers that are still reasonable. If there is an assumption made, it should be

reasonable. If there is some sort of estimate, it has to be reasonable. At the same time, for the numbers that I didn't know and I was making estimations and assumptions and presumptions, I aimed for the worst-case scenario in the favor of Plaintiff just to make sure that I'm not missing any facts from this case that's going to mislead me to a wrong conclusion. So all numbers are exaggerated to the point and in favor of Plaintiff to aim for worst-case scenario and that's basically what I have done.

MR. GREENWALD: Thank you, Doctor.

THE COURT: You're welcome.

RECROSS-EXAMINATION

BY MR. ROSENBERG:

Q Doctor, I know we talked earlier about RSD and you said that your analysis did not include that injury, correct?

A Correct.

Q Did your analysis include an injury called brachial plexus injury?

A No.

Q Do you know what that is?

A Yes.

Q And were you asked not to comment on that, yes or no?

A I was asked to perform a biomechanical analysis, which I did. Biomechanical analysis requires some information that I can compare my finding with them. I did not have any finding

coming from biomechanical literature in relation of -- in terms of relation between a car accident and those medical terms that you mentioned. So I have nothing to compare this accident with and that's what I stayed away from.

Q Doctor, the brachial plexus injury, where did you see that in your review?

A I don't even remember seeing it or maybe I have, but it wasn't part of my analysis, that's what I'm saying.

Q You heard it before today, correct?

A Oh, yeah, absolutely. I'm talking about the medicals here, I'm not sure that I have even seen them in the medical records.

Q And the RSD, you heard that before today in this case as well, correct?

A Again, I'm not sure because it wasn't a goal or an objective for me, I may have.

Q Doctor, did you read Dr. Klein's report that you said you reviewed?

A Yes.

Q Okay. Was there a mention of RSD in there?

A I didn't see it in my summary. I can take a look again and make sure that I'm not making a mistake.

MR. GREENWALD: Your Honor, let me make this easy. In Dr. Klein's report, Dr. Klein says that she, Ms. Myers, should go back to her doctor and get checked out to rule

out RSD. And on that basis, they served a Supplemental Bill of Particulars claiming that there was a diagnosis. And I move to preclude this on that basis.

THE COURT: I remember this.

MR. GREENWALD: That's not a diagnosis.

THE COURT: Any more questions, Mr. Rosenberg?

MR. ROSENBERG: I just want an answer.

THE COURT: He said no, he didn't consider the RSD.

THE WITNESS: I still can't see here, here in my summary.

THE COURT: So it's not part of your analysis?

THE WITNESS: No.

Q Doctor, is it your testimony that someone cannot sustain a herniated disk, even with minimal forces, if they twist the wrong way, is that your testimony?

A Again you are asking very general question. I answered those questions with regard to this case. I'm not going to --

Q Doctor, this is a very simple question.

A It's actually a very loaded question.

Q Let me try and rephrase it then.

A Please do so.

Q Can someone sustain a herniated disk from a minimal type force?

A It is possible.

MR. ROSENBERG: Thank you.

THE COURT: All right. Thank you, everybody.

By the way, you are resting?

MR. ROSENBERG: I'm sorry?

THE COURT: You have no witnesses or anything that you wish to call?

MR. ROSENBERG: This is purely him.

THE COURT: You are resting, you have nothing else?

MR. GREENWALD: That's it, your Honor.

THE COURT: Thank you. You'll hear from me.

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CERTIFIED TO BE A TRUE AND ACCURATE TRANSCRIPT OF THE ORIGINAL MINUTES TAKEN OF THIS PROCEEDING.

Susie Sanchez-Smith

SUSIE SANCHEZ-SMITH
Senior Court Reporter