ALBERT KING

LLOYD VS. FIRST CHOICE TRUCKING AND REPAIR, INC.

JANUARY 15, 2003

BIENENSTOCK COURT REPORTING & VIDEO

BINGHAM FARMS, MICHIGAN 248.644.8888

IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

JOY CECELIA LLOYD and CLARIDON LLOYD,
Plaintiffs,
vs. Case No.00-72171
Hon. Paul D. Borman
FIRST CHOICE TRUCKING AND REPAIR, INC.,
a foreign corporation, and WILLIE PAUL
JACKSON, Jointly and Severally,
Defendants.
/

PAGE 1 TO 104

The Videotaped Deposition of ALBERT KING,
Taken at 1301 West Long Lake Road, Suite 250,
Troy, Michigan,
Commencing at 10:20 a.m.,
Wednesday, January 15, 2003,
Before Kimberly H. Kaplan, CSR-5096.

APPEARANCES:

STEVEN M. GURSTEN
Gursten, Koltonow, Gursten, Christensen & Raitt, P.C.
26555 Evergreen Road
Suite 1530
Southfield, Michigan 48076-4362
(248) 353-7575
Appearing on behalf of the Plaintiffs.

WITOLD SZTYKIEL
Bigler, Berry, Johnston, Sztykiel & Hunt, P.C.
1301 West Long Lake Road
Suite 250
Troy, Michigan 48098-6348
(248) 641-1800
Appearing on behalf of the Defendants.

ALSO PRESENT:
Steven Binsfield - Video Technician

Troy, Michigan
Wednesday, January 15, 2003
10:20 a.m.

MARKED BY THE REPORTER:
DEPOSITION EXHIBIT NUMBERS 1-9
10:11 a.m.

VIDEO TECHNICIAN: This is the beginning of this videotaped deposition. The date is Wednesday, January the 15th, 2003. The time now is 10:20 a.m.

This is the case of Lloyd versus First Choice Trucking, et al., case number 00-72171. This videotaped deposition is taken of Dr. Albert King, located at 1301 West Long Lake Road, Troy, Michigan.

Madame Court Reporter, will you please swear in the witness?

ALBERT KING,
was thereupon called as a witness herein, and after having first been duly sworn to testify to the truth, the whole truth and nothing but the truth, was examined and testified as follows:

VIDEO TECHNICIAN: Thank you.

Counselors, will you please briefly introduce yourselves?

MR. GURSTEN: Steven Gursten. I'm here for Joy Lloyd.

MR. SZTYKIEL: And Witold Sztykiel on behalf of First Choice Trucking.

VIDEO TECHNICIAN: Thank you.

Please continue, Mr. Gursten.

MR. GURSTEN: Thank you.

This is the discovery deposition of Dr. Albert King, taken pursuant to notice, to be used for all purposes, under all applicable rules.

Mr. King my name is Steven Gursten. Hello.

THE WITNESS: Hi.

MR. GURSTEN: How are you today?

THE WITNESS: Good, thank you.

MR. GURSTEN: Good.

EXAMINATION

BY MR. GURSTEN:

Q. You have had a chance to have your deposition taken in the past?

A. Yes.

Q. Many times?

A. Yes.

Q. Okay. I am not here to try and trick you or confuse you. Basically, I'm just trying to ask you

Page 5

questions, so please, you will not offend me, in any way, if you don't understand one of my questions or you're not sure. Just stop me. I'll be happy to repeat it or rephrase it, okay?
A. Okay.
Q. Also, this is not meant to be too unpleasant an experience, so if you need to take a break, or get something to drink or what have you, please just let me know and I'll be happy to accommodate you any way I can.
A. All right.
Q. Fair?
A. Okay.
Q. If you don't understand my question, you'll stop me and tell me so?
A. Yes.
Q. And likewise, if you do answer one of my questions, is it safe to assume that you understood it, if you answered it?
A. Correct.
Q. Okay. Let's get started then. We've marked a number of exhibits. The first is your CV, your curriculum vitae? That's Exhibit Number 1.
A. Yes.
Q. Is this accurate and up-to-date?

Page 6

A. As of December of last year.
Q. Okay. So as of a few weeks ago?
A. Yes.
Q. Okay. And then, Exhibits 2 through 7 are five of the six papers that you listed on page four of your report, under the heading of references, with the caveat that the very last paper, which is titled A New Biomechanical Predictor for Traumatic Brain Injury a Preliminary Finding, that that is not here, but that you will provide it through your counsel, who has retained you, as soon as possible; is that correct?
A. Not quite correct. Reference number one in my report and reference number five, I did not provide.
Q. Okay. Would you then mind also providing those papers, as well, to your attorney?
A. Those are fairly lengthy. I may have to put it on a CD or something.
Q. Okay. As -- as long as we can try and accommodate each other -- the problem here is this: I'm not taking your discovery deposition two months before trial. I'm taking it a week and a half before trial and your trial deposition is noticed up one week from today and I need to make sure that my expert has a chance to review these papers, also, and I

Page 7

have a chance to review these papers before we take your trial deposition, so is there some time this week, preferably as early as possible, where you may be able to provide me these papers through your attorney?
A. The earliest I can do is, get a CD made tomorrow and deliver it to Mr. Sztykiel on Friday.
MR. SZTYKIEL: I have no objection if you just deliver it directly to his office.
THE WITNESS: Or I can Fed-Ex to you directly tomorrow.
MR. GURSTEN: That would be very helpful, thank you.
BY MR. GURSTEN:
Q. Okay. So with the caveat that you will provide those additional papers, the last exhibit, Exhibit Number 9, is the -- well, why don't you tell me what this is?
A. This is a simulation run using the articulated total body model, very similar to what Dr. Ziejewski did, but with our own data modified -- with a modified data set.
Q. This is obviously very thick. This is a computer program that you use, the articulated total -- total body --

Page 8

A. This is -- yeah. It's the same program as Dr. Ziejewski used.
Q. What I want to know then is, are all of the calculations, are all of the formulas, mathmatical equations that you have used in this case, and is all the raw data that you have input to make those calculations contained in Exhibit Number 9?
A. I don't know if the input is in there.
Q. Well, I need to know what the input is so I know what the output was and how you may have influenced it. How do I find out what the input was?
A. Well, I can give you those, too.
Q. By tomorrow again?
A. Yeah. I can put that on a CD, as well.
Q. What I want to know, then, is, is there any other underlying raw data, besides the input which you said you will provide to me by tomorrow, that is not contained in Exhibit Number 9?
A. Well, except for the input information.
Q. It has everything else?
A. Yes.
Q. Were there any other computer programs that you used?
A. Not -- not for this case, no.
Q. And just so I'm clear, and please forgive me if my

Page 9

questioning is dense, but when I'm talking about data input, I'm specifically looking for the input regarding height, weight, degree of seat stiffness, the headrest, the headrest height, etcetera.

A. Well, everything is in there except for some changes, such as seat back stiffness, but that would be in the input data set that we'll provide.

Q. Okay. Thank you, sir.

On page two of your report, if you'd be so kind to turn to it, around the middle of the page you use the word we, we have conducted a biomechanical analysis. Who is we?

A. Dr. Begeman and I.

Q. Now, Dr. Begeman is the one who does your calculations for you?

A. Yes.

Q. If I were to ask you specific questions regarding input data calculations, would you be able to answer them, sitting here today?

A. I'll try my best.

Q. You'll let us know if you can't?

A. That's right.

Q. Okay. Is there anyone else who has helped you, in any way, in compiling this report?

A. No.

Page 10

Q. If we could, let's just turn to -- towards the bottom of the page, under the heading, biomechanics of brain injury due to blunt impact. You have a sentence that states as follows: Recent results from our laboratory show that the use of a single input parameter to explain the mechanism of injury or as a tolerance measure, such as angular acceleration of the head, is unreliable and possibly erroneous. Does that appear?

A. Yes.

Q. And I read that accurately?

A. Correct.

Q. You also go on to state that -- in the next sentence, on the other hand, the response of the brain to an impact is a more reliable measure of injury. Does that also appear in your report?

A. Yes.

Q. And did I read that accurately?

A. Yes.

Q. Okay. Did you perform any brain modeling in this case?

A. No.

Q. Did you perform any type of study that would give you, quote, the response of the brain to an impact as a more reliable measure of injury?

Page 11

A. Oh, yes.

Q. What did you do?

A. That's involved in the approximately fourteen years of research, up to right now, in which we carried out three different experiments and one computer modeling study to come up with this -- this one result.

Q. Well, if you could be a little bit more specific, you didn't do brain modeling, so what exactly did you do here?

A. Well, I don't need to do anything here. I'm using my results and applying to this case. Doesn't have to be a specific input of any kind.

Q. Okay. When you talk, as you did in your report, in that second sentence that begins, on the other hand the response of the brain to an impact is a more reliable measure of injury, are you referring to brain modeling there?

A. Well, it's not -- it's not possible to get a brain response without using a model, but based on our understanding of the biomechanics, we now conclude that the response of the brain, how the brain is deformed, is more important than what you -- how you input the acceleration into the head as a measure of injury.

Page 12

Q. Okay. Apart from brain modeling, how would you determine that?

A. Well, we have also used high speed x-ray and measured the motion of the brain inside the skull during an impact, using a very high speed camera.

Q. So one of the two; high speed x-ray or brain modeling?

A. Yes.

Q. Okay. You say that those two methods, either brain modeling or high speed x-ray, are a more reliable predictor, correct?

A. Well, that -- like I said, there were three experiments and one -- one computer modeling study that resulted in this statement.

Q. I understand.

A. The two experiments, I already described to you. The model and the one experiment, I already described to you.

Q. Did you do a specific brain model in this matter?

A. No.

Q. Okay. So my question to you is: You have said that brain modeling or high speed x-rays are more reliable, but in this case, you did not perform either; is that accurate?

A. Yes. I said that I didn't have to because I didn't

Page 13

finish --
Q. That's not my question, sir.
A. I didn't finish answering my question -- the previous question about my studies because I have also used real human data from the National Football League, where football players are concussed and that is where the injury picture comes in. So based on the injury and -- and the computer model and the brain motion, we can conclude what I just concluded in that statement.
Q. Back to my question, though. I want to know, if you did not do brain modeling or high speed x-ray in this case --
MR. SZTYKIEL: You mean of Joy Lloyd's brain?
MR. GURSTEN: Yes.
MR. SZTYKIEL: Oh.
THE WITNESS: Well, like I told you, it's not necessary because --
BY MR. GURSTEN:
Q. Doctor, we're going to be here a long time.
A. I did not.
Q. If you can answer one of my questions simply, that might --
A. I did not.

Page 14

Q. -- save us a lot of time.
All right. So just so we're clear, because unfortunately, the transcript is now going to be a little bit wordy, I'm going to try and make it a little bit simpler. You've stated in your paper on page two, that brain modeling is a more reliable indicator, but you did not perform it in this case; is that true?
A. Correct.
Q. Okay. You say in that same heading, that, quote, single input parameters can be unreliable and possibly erroneous, true?
A. Yes.
Q. Okay. You didn't do brain modeling, true?
MR. SZTYKIEL: Well, he's saying he didn't do a model of Joy Lloyd's brain.
MR. GURSTEN: Right. I understand.
MR. SZTYKIEL: That doesn't mean he doesn't have a brain model.
MR. GURSTEN: I understand.
MR. SZTYKIEL: Okay.
THE WITNESS: Well, this is a general statement. It has nothing to do with any one particular person. This is a general statement that applies to any brain.

Page 15

BY MR. GURSTEN:
Q. Humor me.
A. Yes.
Q. Okay. You did not do brain modeling in this case?
A. No.
Q. What are you relying upon that you reached your -- your conclusions in this case? You said you did three experimental studies?
A. Three experimental studies and one computer model research program.
Q. And are those three experimental studies and one computer model research program contained in Exhibit 9?
A. No. It has absolutely nothing to do with Exhibit 9, except an estimate of the angular acceleration.
Q. Okay. Where are those studies?
A. Well, one of the studies is the first reference in the report, another study is the -- the second to last reference and the very last lower reference is a summary of the fourteen years of study that I just referred to.
Q. Is there anything else?
A. Is there anything else for what?
Q. That would serve as a basis for how you reached your conclusions in this matter.

Page 16

A. Well, fourteen years of research, it can't all be put on paper. That's --
Q. You've indicated the first study, the fifth study under references and then the sixth, which is a summary of your fourteen years of experience?
A. Yes.
Q. Okay. Would you agree, as a general principal, that if I, as a plaintiff attorney, or if I, as the plaintiff in a -- in a case, just want to show that the forces are sufficient to cause brain injury, that all I need to do is show it using one parameter?
A. Using one parameter, no. As I said, it's not -- not reliable. If you -- if you pick the input parameter, it's not reliable. If you put -- pick another one, maybe.
Q. Okay. I want to make sure I understand your answer. If I can show brain injury occurred using a single input parameter, do you believe that's sufficient for me to show brain injury?
A. No.
Q. Why?
A. Not input parameter.
Q. Why?
A. Because the brain really doesn't know what you're

Page 17

putting into the head. The brain only knows what -- it's injured when it -- it's deformed, so it's a deformation of the brain that causes the injury. Not the input.

Q. So you don't believe I could ever show brain injury using input parameters?

A. That's my new theory, yes.

Q. And when did you arrive at this new theory?

A. Not too long ago.

Q. How long ago?

A. Sometime last year.

Q. How many weeks or months ago?

A. No more than six.

Q. Six weeks, or six months?

A. Months.

Q. Has your new theory that you arrived at six months ago been replicated, been peer reviewed, been duplicated?

A. No. Nobody can duplicate our experiments.

Q. I see.

A. We have a unique x-ray equipment that nobody in the world has.

Q. I see. Let's -- if you would, just humor me a little bit longer because I want to keep talking about input parameters a little bit, okay?

Page 18

A. Okay.

Q. If you, as a defense biomechanical expert retained in a case, want to exclude brain injury as a possibility, would you agree with me that you have to exclude it as a possibility using all directions of movement, alone and combined?

A. Sure.

Q. In biomechanics, is this often referred to as the six degrees of freedom of movement? Or of motion, pardon me.

A. Well, the head, as a rigid body, has six degrees of freedom.

Q. Six degrees where it can move?

A. Yes.

Q. Do you agree that more than one motion can occur at one time?

A. I don't understand the question.

Q. Can you have more than one degree of motion; i.e., front, back, left, right and up, down, at one time?

A. Sure.

Q. Okay. No question?

A. No.

Q. Is it possible that you can have all six occur nearly at the same time?

A. Two different degrees, yes.

Page 19

Q. Would you agree with me that this can magnify the forces on the brain if more than one is occurring at one time?

A. Not necessarily.

Q. Is it possible?

A. Well, anything is possible, but we don't have data to demonstrate that.

Q. Well, let me ask you this: If I tug your arm, are the forces I would generate on your arm -- and I won't do this, by the way, but if I tug your arm, are the forces going to be less than if I tug your arm and twist it at the same time?

A. Well, forces are different. It -- one is a movement and one is a force, so I don't know what -- what are you talking about?

Q. Well, you have fourteen years of training and experience. Do you believe that that's a question that's somehow unfair?

A. Yeah.

Q. I'm asking you if forces --

A. It's technically incorrect.

Q. All right. If there's more than one zone of motion occurring on the body at one time, do you believe overall the forces will be greater than, or less than if there's only one degree of motion?

Page 20

A. Well, it depends on the motion. It could -- it could be less, it could be more.

Q. Which is it more likely to be, Doctor?

A. I can't tell you that. So many different types of motions, you've got to give me a specific motion, I can run the model, I can tell you that.

Q. You can't just answer that for me?

A. No.

Q. Using common sense, you can't just tell me that?

A. No.

Q. In the arm analogy I just gave you, you just can't say you're right?

A. No.

Q. Okay. Can we concede together, you and I, that as of today, biomechanics, as a science, is not capable of excluding the potential for brain injury because there is no reliable method that can include the cumulative effects of different parameters of movement?

A. Cumulative gets very confusing. If you would reword the question? I don't understand what cumulative means.

Q. I don't want to be unfair to you. As a doctor, how would you define cumulative?

A. Repeated impacts.

Page 21

Q. Okay. Let's use that definition in my question. Can you answer it now?
A. Well, people who suffer repeated impacts may have a lower tolerance to injury. Like NFL football players, they may get concussed a lot easier than somebody who's never been hit in the head before.
Q. Okay. Let me try my question one more time. Let's see if you can answer it now. Can we agree that as of today, biomechanics is not capable of excluding the potential for brain injury because there is no reliable method that can include the cumulative effects of different parameters of motion?
A. Well, you can say that we cannot exclude all of these parameters, but our recent data show that there are certain parameters that are better predictors of injury than others.
Q. Is that your recent data from six months ago?
A. Yes.
Q. Okay. Can I go so far as to say that the answer to my question is, generally yes?
A. No. It may have been generally yes before we came up with our results, but as of right now, my opinion is that we are homing in on predictors of injury, and therefore, we can exclude certain parameters.
Q. I understand you can exclude certain parameters, but

Page 22

I'm asking you about all of the different cumulative effects of different parameters of motion. Can you answer my question now, sir?
A. Your use the word cumulative again. You're saying, if I had multiple motions, is that what you mean? If that's the case, then I don't think it matters. It's not a question of how many directions of input you have to the head. Our studies show that the brain doesn't move any more if you rotate it from side to side as you rotate it from front to back, so --
Q. Okay. I want to be as fair to you as I possibly can, so let me repeat back to you what I think you've just said and correct me if I'm mistaken, please. Your answer to me would be, yes, I would agree with you as of six months ago that as of today, biomechanics was not capable of excluding the potential for brain injury because there was no reliable method that can include the cumulative effects of different parameters of motion?
A. Yes.
Q. And you feel that this new -- I don't know what you call it. This new --
A. Finding.
Q. -- finding of yours that has not been peer reviewed,

Page 23

tested or duplicated now somehow changes that answer.
A. Well, it's so new, how could it be peer reviewed? I just came up with it.
Q. So in other words -- and I think we're going -- we're closing in now together. Can we say that, yes, you're right, but there may be something new, we just have to experiment more to find out?
A. Yes.
Q. Okay. Do you agree that bony structures within different people's skulls are different, they're not the same in every person?
A. Correct.
Q. Do you agree that people's brains can differ?
A. Yes, a little bit.
Q. Do you agree that this is one reason why some people are more vulnerable to brain injury?
A. A brain is a brain. The vulnerability is probably more upon the medical history of the person than what the brain is like, unless the shape is radically different.
Q. I'm sorry, can you repeat that answer?
A. The brain is a brain. It's not nothing that you could make stronger or weaker.
Q. What about more vulnerable or susceptible?

Page 24

A. Susceptibility may be in the weakness in the blood vessels and so forth, but not in terms of the axons and the -- and the cells in the brain. I think their tolerance is pretty much the same from person to person.
Q. So in other words, you don't believe that differences in different people's brains or the bony ridges within the skull would affect an individual's susceptibility or vulnerability to brain damage?
A. The bony ridges is a -- is a -- is a myth somebody came up with. They have no -- no data absolutely to show that these are the causes of brain injury. Our data show that the bone -- that the brain does not slide very much with respect to the skull. Most of the motion in a brain is in the center of the brain and this business of sliding contusion is somebody's imagination.
Q. Let's turn to Joy Lloyd for a moment. Do you know the exact geometry of the internal surfaces of her skull?
A. No.
Q. Do you know if her brain is more vulnerable than the average person's brain to suffer brain injury?
A. No.
Q. Turning back to your report for a moment, you argue

Page 25

in your report against using Dr. Ziejewski's -- pardon me?

MR. SZTYKIEL: Dr. Z's.

MR. GURSTEN: You know what, I'm going to try and avoid having to say that throughout the deposition. Let me try that again.

MR. SZTYKIEL: I say Dr. Z's.

BY MR. GURSTEN:

Q. You argue against using Dr. Ziejewski's 1,800 rad/s per second squared as a tolerance limit for brain injury; is that accurate?

A. Yes.

Q. And when I say rad, I'm talking about radians --

A. Yes.

Q. -- per second squared.

Is it true, Dr. King, that Dr. Ommaya, as early as 1970, showed that humans can sustain brain injury at 1,600 radians per second squared?

A. It's in his paper, yes.

Q. And NHTSA uses 1,700 radians per second squared?

A. They don't have a standard by that number.

Q. You don't believe that NHTSA uses the 1,700 radians per second squared?

A. They may have used it, but I think they're equally wrong.

Page 26

Q. Okay. Does NHTSA have a standard?

A. For angular acceleration of the head, no.

Q. Does NHTSA have any standard, that you're aware of, that uses 1,700 radians per second squared?

A. No.

Q. You're not aware of any?

A. No.

Q. What is NHTSA?

A. The National Highway Traffic Safety Administration.

Q. Let's go back to Dr. Ommaya for a moment. Dr. Ommaya is someone that you cite in your -- in your references as a source, correct?

A. Well, I cited the paper, just because that's where the number came from.

Q. Is that a paper that you have relied upon, in any way, in your report?

A. No. I have tried to say that that number is incorrect, outdated and totally useless.

Q. Okay. Now I'm starting to understand why Mr. Sztykiel hired you, sir.

A. I beg your pardon. This is an implication I do not like.

Q. I'm -- sir, please --

A. I do not like this --

Q. It's okay.

Page 27

A. -- because this is my own opinion, my true -- true opinion and -- and has nothing to do with why he hired me.

Q. I understand.

A. I said that a long time ago and I'm gonna say that whether he hires me or not, or whether you hire me.

Q. Noted.

A. This is totally unnecessary.

Q. Sir, I'm sorry. I was just having fun with -- with the other attorney.

A. You're not having fun at my expense.

Q. Certainly not, and I don't want you to think I was. Are you ready to continue, sir?

A. Yes.

Q. Okay. Would you like to get a glass of water, or a cup of coffee? Okay. Let's continue then, okay?

A. Okay.

Q. Okay. Is it true that Dr. Ommaya found, as early as 1970, not only that humans can sustain brain injury at 1,600 radians per second squared, but they can suffer very significant brain injury?

MR. SZTYKIEL: I guess I'm going to object to the use of the word found, in that that implies that he tested humans, and I don't know that he did. I mean, he may have concluded that, but I don't know

Page 28

that he did any testing on humans.

MR. GURSTEN: Well, this is a discovery dep.

MR. SZTYKIEL: Okay. I know.

MR. GURSTEN: Noted.

BY MR. GURSTEN:

Q. Go ahead, Doctor.

A. He did not find anything. He used monkey data and scaled it up to the human, using unreliable scaling methods and using unreliable methods to measure angular acceleration. This paper is very old, it's no longer valid and it should not be relied upon by anyone because this thing is thirty some years out of date.

Q. Well, I understand that's your opinion, but can we agree that people, including SAE and including NHTSA, have been relying on this paper for the past thirty years?

A. Because they don't have any other data to rely on and we are producing the new data now, to tell you that this is wrong.

Q. But the answer to my question is yes?

A. The question is that he did not find it, so it's no.

Q. Let me ask my question again, because I don't want to argue with you. I asked a very simple question

Page 29

and I think it can be answered more simply. Is it not true that that number has been relied on by NHTSA and the SAE for over thirty years?
A. Not relied on. Has been quoted. There are other numbers that have been quoted, so it's just one of the numbers that have been quoted.
Q. Okay. Can we agree that the numbers that Dr. Ommaya found as early as 1970 have been used by both NHTSA and by the SAE for the past thirty years, true?
A. I wouldn't even say it has been used.
Q. True --
A. It has been quoted.
Q. -- or false?
A. False. It has only been quoted.
Q. And how has it been quoted?
A. Dr. Ommaya said so. That's it.
Q. And why is it being quoted in the SAE papers and by NHTSA?
A. Because that's the only data that they had, at that time.
Q. Okay. Now, you have a new set of numbers that you came up with six months ago, correct?
A. No. There are many other papers that I've -- I have cited that have other numbers that people also quote.

Page 30

Q. And you have numbers yourself?
A. And I have numbers myself.
Q. That you came up with six months ago?
A. Which says that angular acceleration is not a reliable measure.
Q. But the federal government, NHTSA, have not chosen to adopt your numbers yet, either, have they? Have they?
A. I and the federal government do not get along because they don't want to listen to new information. That's all.
Q. Okay. Doctor, because it's almost 11:00 -- I -- I don't mind staying here all afternoon, but I don't want to have to go round and round with you, so my question is very simple, the federal government and NHTSA have chosen not to adopt your numbers yet, also, correct?
A. They don't even know about my numbers.
Q. They don't even know about it?
A. No.
Q. Okay. Continuing on page two, you indicate that, recent results from our laboratory. What recent results from your laboratory are you referring to?
A. Where are you?
Q. At the bottom of the page, second sentence, under

Page 31

the heading biomechanics of brain injury due to blunt injury. Second sentence begins, recent results from our laboratory show that the use of a single input parameter to explain the mechanism of injury or as a tolerance measure such as angular acceleration of the head is unreliable and possibly erroneous?
A. Well, I told you that.
Q. These are your numbers?
A. So summarized in this last paper.
Q. This is -- these are the numbers that you came up with six months ago?
A. Yeah. The findings I came up with.
Q. Okay. Are these the findings that are incorporated in the fifth paper under references, by Zang, et al, that recent advances in brain injury research, a new human head model development and validation?
A. No, it's in the last paper. It's summarized in the last paper.
Q. Just so I understand your answer, are you saying that this new model is not discussed in the prior paper I just mentioned to you?
A. The model is -- is part of my results and the model is discussed in the fifth reference, but --
Q. So the answer --

Page 32

A. These results is an accumulation of results over four studies that I think I summarized in the last paper.
Q. All right. So when you're talking about recent results from our laboratory, you just indicated that it's also discussed in the fifth paper that I just asked you about, true?
A. That's part of the recent results.
Q. Okay. Obviously, you are one of the authors of that paper?
A. Yes.
Q. Your name appears last?
A. Yes.
Q. I assume, you're somewhat familiar with it then?
A. Yes.
Q. Did that paper end with the following -- did it end with the following conclusions: More -- more experimental work is needed to see if this model is accurate?
A. Of course.
Q. Did it also end with the following quote: Well-documented real world head injury cases must be simulated and validated before this new tool can be used to predict head injury?
A. Yes.

Page 33

Q. This is the problem I'm having, Doctor, so hopefully, you can help explain it to me: You say on page two of your report that the response of the brain to an impact is a more reliable measure, but in this case, you never did it, true?
A. Correct.
Q. And that same model that you wrote about, you're saying it must be validated before it can be used to predict head injury, true?
A. No, no, that's not what I said. I said we need more validation. This model has been rigorously validated. This is the only model in the world that has been rigorously validated against all available data.
Q. Well-documented real world head injury cases must be simulated and validated before this new tool can be used to predict head injury. Am I reading that correctly?
A. That's in the last paper.
Q. I understand that.
A. Okay. That's in the --
Q. The paper from 2001?
A. That's in the last reference number six, real world data.
Q. Oh, I see.

Page 34

A. That's where --
Q. So now you're saying, you have the sufficient amount of real world data --
A. Fifty-three cases.
Q. -- and you can use this?
A. Yes.
Q. Fifty-three cases?
A. Yes.
Q. Is that it?
A. Is that it?
Q. Is that it?
A. Does anybody in the world have fifty-three cases of human concussion data?
Q. Let me ask --
A. You don't know biomechanics.
Q. I don't want to be disrespectful to you, Doctor, and I don't want to argue with you, so let's move on.
Do you have anything else in that paper, besides the fifty-three cases of NFL football players, that you've relied upon to back up your data?
A. No. That's -- that's a unique set of data nobody else in the world has.
Q. Oh, it's definitely unique and I'm going to ask you a lot about that later.

Page 35

Let's turn to page two again. On page two, under the second heading, biomechanical analysis by Dr. M. Ziejewski, you wrote, the parameters that he used to simulate the seat back were far too rigid. Where did you get that information about the rigidity of the back support?
A. That's in his data set.
Q. So you're talking about his numbers and you felt that they were far too rigid?
A. Yes.
Q. Where are your numbers going to be contained?
A. In the input data set I will supply you.
Q. That you will supply me by CD tomorrow?
A. Yes.
Q. Or disk?
A. Yes.
Q. Okay. You go on to say that, furthermore, the only restraints on the neck joints were minor viscous force. Where did you get that information?
A. Also from his input data set.
Q. And where is your input information?
A. It's also in the input data set I'll give you.
Q. Okay. Go to the last sentence of that paragraph. You write, at seven miles per hour and with the duration of sixty milliseconds the angular

Page 36

acceleration was 1,180 radians per second squared, correct?
A. Yes.
Q. I read that correctly?
A. Yes.
Q. Okay. How many calculations did you perform in this case?
A. Just this one here in Exhibit 9.
Q. Okay. If we change the number that appears here, seven miles per hour, and we made it eight, how would that change the angular acceleration?
A. It would probably go up a little bit.
Q. You didn't test it?
A. No.
Q. What about if we made it nine miles per hour?
A. It would go up some more.
Q. But you didn't test it?
A. No.
Q. What if we lowered the milliseconds from sixty to forty?
A. It would go up a little more.
Q. Dr. King, if you wanted to testify to a jury to exclude the possibility of brain injury in this case, wouldn't you want to use those different numbers and those different millisecond numbers to

Page 37

try and make it as bad as possible, so you could exclude it as a possibility?
A. No, because angular acceleration is not a measure of injury to the brain.
Q. Here we go back again to that, but --
A. I'm just --
Q. -- nevertheless, if you wanted to show that Dr. Ziejewski --
A. I'm not finished.
Q. Please, continue.
A. I'm just doing this simulation to show that tweaking the numbers just to get something like 1,850 radians per second is absolutely ridiculous.
Q. I understand that's your proposition that you're offering.
A. So it's not worth my time to try to prove anything using angular acceleration as a measure of injury, since it is not.
Q. Okay. I understand it is your opinion that you have offered us that it is, quote, ridiculous to use angular acceleration as a predictor for brain injury?
A. Correct.
Q. Okay. Nevertheless, there is at least some body of literature that would say it is not, quote,

Page 38

ridiculous, is there not?
A. Science is a continuously improving thing. You just -- if you just continuously rely upon old data, then we'll never get out of this.
Q. But you shouldn't also rely exclusively on unproven, untested, unreliable new data either?
A. This is proven and tested. We just have not had it published and peer reviewed yet.
Q. But we shouldn't have to rely on new, unproven, quote, junk science, in any case?
A. This is not junk science. I beg your pardon.
Q. I'm not talking about this. I'm just making a proposition of fact. Would you agree?
A. No.
Q. Science should not rely upon unproven junk science?
A. This is not junk science and we have -- we have data to show that and I'm pretty sure it will be published in due time.
Q. Okay. But it hasn't yet?
A. No.
Q. And all we have right now are your opinions?
A. Yes.
Q. Okay. And I'm asking you, is there not at least some significant body of literature that does use angular acceleration as a predictor for head injury?

Page 39

A. Yes. And even if they did their numbers ten times higher than what Dr. Z. proposed, so why -- that's why it's ridiculous to use angular acceleration as a measure. The numbers run from 1,600 hundred to 16,000 --
Q. Doctor, I really don't want to --
A. -- so which number is it?
Q. I really don't want to argue with you and I'm not trying to argue with you.
A. No, I'm not arguing. I'm just giving you the facts. You're --
Q. So I'm --
A. -- homing in on one paper. I'm telling you, there are other numbers out there that you don't home in on and it is totally unfair --
Q. So I'm going to ask you --
A. -- to say that.
Q. -- since you are an expert witness, if you believe your role in this matter should be independent and not biased or partisan to either side?
A. These are the facts. I'm not saying anything else.
Q. Do you agree that your role in this matter should be as an independent expert witness, you should not be biased or partisan to either side?
A. That's true.

Page 40

Q. Okay. Let's go back to my question, please, and I'd like you to answer my question. Can we agree that there is a significant body of literature out there that uses angular acceleration as a predictor of head injury, true or false?
A. Well, yes. Not -- not as a predictor, but as a possible cause of brain injury.
Q. Okay. I understand that you choose not to believe in that as an indicator, nevertheless, I am asking you, did you ever plug in these different numbers either increasing the miles per hour or lowering their milliseconds to show that Dr. Ziejewski, or others who might believe that, are wrong and that head injury could not have occurred in this case; did you ever do that?
A. Well, you don't have to do that because --
Q. Doctor, please answer my question.
A. No, I did not.
MR. GURSTEN: Let's go off the record for a second.
VIDEO TECHNICIAN: Going off the record at 11:03 a.m.
(Off the record at 11:03 a.m.)
(Back on the record at 11:04 a.m.)
VIDEO TECHNICIAN: Back on the record at

Page 41

11:04 a.m.
MR. GURSTEN: Okay. Doctor, we're going to continue now.
BY MR. GURSTEN:
Q. Are you saying, or is it your opinion in this matter that Joy Lloyd was not injured, in any way, after being rear-ended by the defendant's semi truck?
A. Correct.
Q. That is your opinion?
A. Yes.
MR. SZTYKIEL: We're talking about brain injury, right?
MR. GURSTEN: No.
BY MR. GURSTEN:
Q. I asked if you were saying that Joy Lloyd was not injured, in any way, after being rear-ended by defendant's semi truck?
A. Correct.
Q. Just so we're clear, that is your opinion to this jury?
A. Yes.
MR. SZTYKIEL: And understand what he's asking you, Doctor, is, he's asking you to exclude orthopedic injuries. He's going above and beyond the brain. I mean --

Page 42

THE WITNESS: That's right. That's okay.
MR. SZTYKIEL: Okay.
BY MR. GURSTEN:
Q. You do not have the complete medical records of the twelve treating doctors who have been rendering care for Joy Lloyd; is that true?
A. That's true.
Q. You only have the emergency room record; is that true?
A. And a few subsequent records about neck pain.
Q. Okay. Since you don't have all of the medical records, is it fair to say that you found nothing in your review of the medical records themselves, that would indicate that Joy Lloyd was not injured in this case?
A. Well, this is a minor rear-end impact and there does not seem to be any sign of any permanent injury in her, and so subsequent medical records probably show all kinds of complaints, but I don't think they're related to that impact.
Q. Okay. Doctor, we're going to go round and round. My question to you was: Since you don't have all of the medical records in this case, is it fair to say that you would have found nothing in the medical records that would indicate that Joy Lloyd was not injured?
A. No permanent injury.
Q. I'm not sure you understand my question.
MR. SZTYKIEL: I know I don't.
BY MR. GURSTEN:
Q. You don't have a crystal ball, correct? You can't predict things, or read things if you don't have the documents. If you don't have the medical records, how can you say that you have found things in the medical records to say that Joy Lloyd was not injured?
A. From the medical records that I have, there is no sign of any permanent injury.
Q. What medical records are those?
A. The emergency records and the few other records shortly thereafter.
Q. How shortly thereafter?
A. In December of '99.
Q. So we're talking within one month of the motor vehicle accident?
A. Correct.
Q. Okay. We agree that you do not have the complete medical records, which are quite voluminous, of the twelve doctors who are rendering care to Joy Lloyd; is that true?

Page 43

Page 44

A. That's true.
Q. Is it fair to say that you have found nothing in your records, because you do not have them, that would lead you to opine that Joy Lloyd was not injured by reviewing the medical records --
A. Well, I didn't --
Q. -- is that true?
A. I didn't say that I would find nothing in there. I just said that based on the input acceleration -- input of the -- into the body at the -- in that accident, I do not believe that there can be any permanent injury.
Q. I understand that and we're going to get to that ad nauseam.
MR. SZTYKIEL: You know, I'll stipulate that he found nothing in records he didn't see.
MR. GURSTEN: That's fine, but I want to --
MR. SZTYKIEL: Okay.
MR. GURSTEN: -- establish his bias, and if he's going to go round and round with me, I want it on the record.
BY MR. GURSTEN:
Q. So Doctor, I'm going to ask you again --
MR. SZTYKIEL: It's a confusing question

Page 45

if you just say, isn't it true that you found nothing in something you didn't look at.

MR. GURSTEN: Well, that's -- that's why it's so preposterous and that's why I keep asking it.

MR. SZTYKIEL: No, no, I -- it's so long that I think -- but okay.

MR. GURSTEN: Noted, Witold.

MR. SZTYKIEL: I mean, I -- it took me three times to get it.

MR. GURSTEN: Well, let me -- let me try and clear it up.

BY MR. GURSTEN:

Q. Your opinion that Joy Lloyd was not injured in this case is not based upon your review of all of her medical records?

A. Correct.

Q. Okay. You are not a medical doctor?

A. No.

Q. You are not a trauma epidemiologist?

A. No.

Q. Do you hold yourself out as qualified to render opinions as an expert accident reconstructionist?

A. I do some accident reconstruction, but I'm not an exclusive expert in accident reconstruction.

Page 46

Q. Well, exclusive might mean one thing to someone and one thing to something else. Let me ask that again. Do you hold yourself out before Judge Borman to testify in court, to render expert opinions as an expert accident reconstructionist?

A. To a certain extent, yes.

Q. Okay. Do you investigate crashes routinely?

A. Not routinely, no.

Q. Do you do crush measurements?

A. Not routinely, no.

Q. Do you measure skid marks?

A. Not routinely, no.

Q. Do you -- do you perform investigations at the sites of crashes?

A. I used to.

Q. How long ago?

A. A long time ago.

Q. How long ago?

A. While I was a graduate student.

Q. How long ago?

A. Thirty some years ago.

Q. Do you conduct crash tests?

A. Yes.

Q. I'll ask the question again now. Based upon the different indicators I've just gone over with you, do you believe that you are qualified to render expert opinions as an accident reconstructionist in court?

A. Yes.

Q. Are you going to tell this jury that you have performed a medical examination on Joy Lloyd and that she was not injured in this crash?

A. No.

Q. Is it fair to say, Doctor, that since you don't even have her treatment records, you don't even know what all of her injuries actually are?

A. I -- I don't know what her complaints are, but since I'm trained in understanding of causation of injury, I can say that this accident did not cause any permanent injury.

Q. I understand that's your opinion. Nevertheless, can we say that since you don't have those medical records, you at least don't know what those medical records by the treating medical doctors for rendering care for her say are her injuries?

A. That's true.

Q. Okay. I would like you to please assume that Joy Lloyd suffered the following injuries: Traumatic brain injury, clinical depression, rotator cuff tear requiring surgery, blackouts, concussion of the

Page 47

Page 48

temporal bones via audiogram, frontal and parietal lobe injuries by PET scan, seven or eight different ophthalmologic surgeries, hearing loss, dizziness. I also would like you to assume, for purposes of my question, that she was awarded Social Security Disability to the date that she was rear-ended by this truck and she continues to receive twelve hours of attendant care every day. Further, that she is taking seven different prescription medications every day, over nineteen pills a day supervised by her treating psychiatrist. Now, are you aware of Joy Lloyd receiving medical treatment before she was rear-ended by this truck, for any of those injuries that I have described to you?

MR. SZTYKIEL: Because you haven't indicated it's a discovery only dep, I feel the need to -- object. I mean, if you're telling me you're not going to play this at trial, then I'll -- I'll not say anything, but until that time happens, I'm going to object to the mentioning of Social Security Disability benefits.

MR. GURSTEN: Okay. Noted.

BY MR. GURSTEN:

Q. Go ahead, Doctor.

A. Well, I'm aware of some of the problems she

Page 49

complained of in her deposition, but to me, this -- these are all not related to -- to that accident.
Q. Doctor, do you remember my question?
MR. SZTYKIEL: I think he's just asking you if you have any preaccident medical history.
THE WITNESS: If she had any --
MR. GURSTEN: Let's try this again, because I probably will be playing this for a jury. And I want to state, for the record, that your objection will be noted so you don't need to object. I'm going to ask this question again and I'd like you to answer my question.
BY MR. GURSTEN:
Q. Dr. King, I would like you to please assume the following, that Joy Lloyd suffered the following injuries as a result of being rear-ended by this truck: Traumatic brain injury, clinical depression, a rotator cuff tear requiring surgery, blackouts, concussion of the temporal bones by audiogram, frontal and parietal lobe injuries by PET scan, seven or eight different ophthalmologic surgeries, hearing loss and dizziness. I also want you to assume that she continues to receive twelve hours of attending care prescribed by her physician every day and that she takes seven different medications,

Page 50

nineteen pills every day, supervised by her treating psychiatrist. Now, my question to you, are you aware of Joy Lloyd receiving medical treatment before she was rear-ended by the defendant's semi truck for any of those injuries?
A. I do not have any records of that.
Q. Are you aware of her taking any type of prescription medication before she was rear-ended by defendant's semi truck?
A. No.
Q. Are you aware of her receiving any type of medical treatment, for any of those injuries that I have just described to you, before she was rear-ended by defendant's semi truck?
A. No.
Q. Are you aware of her receiving attendant care for assistance before she was rear-ended by defendant's semi truck?
A. No.
Q. Do you have any opinions, assuming you don't believe the defendant's semi truck caused these injuries, for what caused them?
A. What caused all of her problems? Well, if you -- if you throw in clinical depression, that could be a major cause of a lot of those problems and I don't

Page 51

think a rear-end impact would cause any clinical depression.
Q. Does clinical depression cause rotator cuff tears?
A. Rotator cuff tears do not occur in rear-end impact, so that's another --
Q. Do -- does clinical depression --
A. I have -- I have studied that --
Q. -- cause rotator cuff tears, Doctor?
A. I am not finished.
Q. I want you to answer my question, please. Does clinical depression --
MR. SZTYKIEL: He's allowed to finish his answer.
MR. GURSTEN: All right.
THE WITNESS: Rotator --
MR. GURSTEN: Go ahead.
THE WITNESS: -- cuff tears are not caused by rear-end collisions.
BY MR. GURSTEN:
Q. If the treating orthopedic surgeon in this case testifies, subject to foundation, that he has rendered treatment to hundreds of people who have suffered rotator cuff injuries as a result of being rear-ended in car crashes --
A. I'd suggest he come and take a biomechanics course

Page 52

from me because there's no biomechanical basis for that.
Q. That's your opinion?
A. That's always my opinion, because I teach that.
Q. I see. Just so we're clear, are you saying it is impossible to suffer a shoulder injury as a result of being rear-ended?
A. Virtually impossible.
Q. Is your report saying that it is impossible that Joy Lloyd was injured as a result of being rear-ended by the defendant's semi truck?
A. Virtually impossible.
Q. Virtually impossible is a different answer. Is your report saying it is impossible or just extremely unlikely that Joy Lloyd was injured as a result of being struck by the defendant's semi truck?
A. I would say extremely unlikely. I wouldn't like to use the word impossible.
Q. Would I be correct that your report is basically saying that it is possible not to be injured at higher levels of angular acceleration?
A. If you use angular acceleration as a measure, then I say that these angular accelerations are well within the limits of what the -- the NFL players are sustaining and so --

Page 53

Q. We're back to the NFL players?
A. Where brain injury is not a permanent injury.
Q. Is your report saying that it is not possible to be injured at these angular acceleration forces?
A. Correct.
Q. Okay. Can we agree that it is impossible for you to tell me how much force it would take to injure my client, Joy Lloyd, because you have never tested her to find out?
A. I don't want to answer questions that are double negatives. Can you do that again?
Q. Can you tell me how much force it would take to injure Joy Lloyd without testing her?
A. Well, I -- I find it impossible to answer that question. I cannot test a living human being. I don't know how to answer that.
Q. But you can test --
A. You want me to put her on the sled and test her?
Q. Doctor, I don't want to argue with you. I'm asking you --
A. I don't understand the question. What do you mean by testing her?
Q. Can you tell me the exact force it would take to injure her without testing her first?
A. I cannot test her and I cannot tell you that.

Page 54

Q. The answer is, you cannot tell me that?
A. No.
Q. Can we agree that different people have different injury thresholds?
A. Yes.
Q. Can we agree that a twenty-five-year-old, 250 pound, 6'3" inch football player is less likely to be injured in the same car crash as a forty something year-old woman, who is 5'4" and let's say weighs 140 some pounds?
A. That depends on the injury. If it's a brain, it's probably the same.
Q. What about the rest of the body?
A. If it's a rib cage, no, she's weaker.
Q. What about your neck?
A. Yeah, she's weaker in the neck, as well.
Q. Back?
A. Yeah, she's weaker in the back.
Q. Shoulder?
A. Yes.
Q. You're saying that it would take exactly the same force to injure a 250 pound NFL linebacker who runs a four, five, forty as it would to injure a forty something year-old woman who weighs 140 some pounds and is 5'4" inches?

Page 55

A. That's not what I said. I said about the brain, it's the same.
Q. You're saying for the brain?
A. Yes.
Q. I'm going to ask you about a number of different factors and I want to -- you to tell me whether these factors can affect injury threshold in a rear-end automobile crash.
Height of the occupant?
A. Possibly, depending on his headrest.
Q. Body weight?
A. What injury are you talking about?
Q. Injury thresholds in a rear-end crash.
A. For what?
Q. Doctor, it's a real simple question.
MR. SZTYKIEL: No. He means for what injury; head injury --
MR. GURSTEN: I know.
MR. SZTYKIEL: -- neck injury?
THE WITNESS: For body? Which part of the body.
BY MR. GURSTEN:
Q. If you would like, I will go through all eight different injuries that Joy Lloyd has claimed, but I'm asking you right now as a general proposition

Page 56

regarding each of these indicators.
A. You're talking about Joy Lloyd specifically?
Q. I'm talking -- I'm asking you about general propositions, if these are different indicators of vulnerability for someone who may have different vulnerability for injury thresholds as a result of being rear-ended in an auto crash?
A. Are you talking about the very minor kind of a crash we talk -- we have here?
Q. Are there any other qualifications you want to make before I ask you these questions?
A. Well, I don't know. You -- you ask the questions. I just want to tighten the limitations so that we don't go all over the map.
Q. Okay. Why don't you humor me again first and let me just ask you, the following questions are accepted generally as indicators of increased vulnerability to injury thresholds, in general, in rear-end auto cases. Ready?
A. What's the question?
Q. Is gender one of the factors that can affect -- that can affect injury threshold?
A. In general, yes, but in this minor accident, no.
Q. What about height?
A. Same thing.

Page 57

Q. What about the occupant's fitness level?
A. Same thing.
Q. What about gender and age?
A. In general, yes, but in this case, because it's so minor, no.
Q. What about osteoporosis and arthritis?
A. Arthritis can cause pain but not permanent injury.
Q. Is arthritis one of the factors that can affect injury threshold?
A. No, it's just causing pain. Pain is not necessarily equal to injury.
Q. What about osteoporosis, Doctor?
A. It can cause fracture, but not in this case.
Q. What about head position?
A. It can make -- increase the motion a little bit, but again, in this case, it's insignificant.
Q. What about body position?
A. Same thing.
Q. Prior injuries?
A. That depends on what prior injuries. I can't tell you.
Q. Okay. Well, let's assume, in this case -- let's assume the person, the occupant of the vehicle had had a triple laminectomy of her neck, would that increase her vulnerability?

Page 58

A. Triple laminectomy -- if it wasn't fused, yes. If it was fused, probably not.
Q. What about seat position?
A. I don't think that's too important. Maybe the seat back angle may be more important.
Q. What about stiffness?
A. Stiffness of what?
Q. The seat.
A. The stiffer the seat, the more head rotation you'll get, head angular acceleration you'll get.
Q. Head restraint position?
A. The farther back it is, the lower it is, you get higher angular acceleration.
Q. Whether someone is wearing a seat belt and a lap restraint?
A. Probably minimal difference.
Q. What about whether somebody is anticipating the crash or not?
A. There's a recent study that said that anticipation helps a little bit, but the startle effect is probably minimal.
Q. Vehicle weight and velocity?
A. That goes to the severity of the impact. The more -- the heavier the impacting vehicle, the more severe the impact.

Page 59

Q. Vehicle plasticity and elasticity?
A. That's a minor factor.
Q. Road friction?
A. That's a minor factor.
Q. Brake application?
A. That's not too important.
Q. Vehicle heights and impact angles?
A. The higher the bumper of the impacting vehicle, if it doesn't intersect with the bumper of the impacted vehicle, then the impact severity -- impact severity is lower.
Q. Torque?
A. I don't understand what torque means. What torque? Torque applied to what?
Q. You can't opine whether torque -- the degree of torque at impact can affect injury threshold in a rear-end crash?
A. You mean, twisting of the vehicle? A lot of these things in these minor cases are what I call symptom-producing factors, which can induce temporary pain, but not permanent injury because of preexisting arthritic conditions.
Q. What about torque?
A. It can maybe induce more pain temporarily, but not a permanent injury.

Page 60

Q. What about sheering?
A. Same thing.
Q. Tension?
A. Same thing. It's not gonna cause any permanent injury, in this case.
Q. Are any of these factors that you and I have just gone over, and I think we've just gone over about twenty to thirty of them, do any of them affect your conclusions about injury threshold in this rear-end auto crash?
A. No. They're all well within the activities of daily living, so there's no -- there's no injury.
Q. Let's turn to your NFL study, please. Under conclusions, your second conclusion is that there is recent data from the NFL, and that's been discussed in your paper, correct?
A. Yes.
Q. Page two and the top of page three, correct?
A. Yes.
Q. And that was your analysis of fifty-three cases of mild concussion among NFL football players, correct?
A. Yes.
Q. Using game films?
A. Yes.
Q. Is Joy Lloyd a football player in the NFL?

Page 61

A. No.
Q. Does Joy Lloyd have the same average height, weight, gender or age as a football player in the NFL?
A. No.
Q. Does she have the same level of fitness?
A. No.
Q. Can we agree that NFL players have almost freakish size, speed and strength relative to the average population?
A. Yes.
Q. Do you believe Joy Lloyd has the same size, speed and strength versus the average population?
A. She's average, probably.
Q. Probably?
A. Yeah.
Q. Have you performed any calculations, or is that just your guess?
A. Well, I have no idea what the -- her specific brain properties might be, but she -- normally, everybody has average properties. That's all you can assume.
Q. These fifty-three cases of football players were compiled using game film, correct?
A. Yes.
Q. They were not crash tested?
A. No.

Page 62

Q. They were not put in like target vehicles that Joy Lloyd was in and struck by like bullet vehicles like the semi truck that struck her, true?
A. True.
Q. Doctor, do you believe that a statistician who would be used in a scientific study to investigate differences in probability of injury for various groups would find that your study of fifty-three football players from the NFL would be an adequate sample size?
A. I don't know what you -- what are you asking me?
Q. Do you believe that fifty-three NFL players is a sound and adequate sample size to draw conclusions relative to the average population?
A. Absolutely. We do --
Q. And do you believe --
A. We do --
Q. I'm sorry, continue to answer.
A. We do -- we draw conclusions from a lot less cadaver studies all the time. Fifty-three is a huge number for our -- for our analysis.
Q. Do you believe that a statistician, someone who has a doctorate in methodology of research, would agree with you, that fifty-three NFL players represents an adequate sample size to draw conclusions about

Page 63

differences in probability of injury for various groups within our population?
A. I sure hope so, because we published with less numbers in the past.
Q. What is a confidence interval?
A. That's the interval in which you have confidence that this might occur within a certain probability.
Q. Is it generally accepted using statistical criteria that the confidence coefficient in studies should be set at .95?
A. Yes.
Q. Would you agree that, in general, statistical design of an experimental investigation calls for random selection of subjects from the population to which inferences should be drawn?
A. If you can do that, yes.
Q. When this condition has been met, it is then possible to form interval estimates of population parameters?
A. Well, the -- our argument is that the brain is a brain, whether you're an NFL player or -- you're a human being. Your brain tolerance is -- is the same, and therefore, it doesn't matter whether you select them from the NFL players or Joe Blow on the street, so we are doing random selection.

Page 64

Q. When this condition has been met, it is possible to form interval estimates of population parameters?
A. Yes.
Q. In order to investigate differences in probability of injury for various groups within the population, an adequate size sample of members from each group must be used in a like rear-end collision experiment in order to establish sufficiently narrow confidence intervals?
A. No. That's bologna. We are talking about head angular acceleration here and if that's what your tolerance measure is, then it doesn't matter how you got hit. It's the angular acceleration that we're talking about.
MR. GURSTEN: Counsel, at this point, I'm going to reserve the right to call a statistician as a rebuttal witness at time of trial.
BY MR. GURSTEN:
Q. Doctor, my question to you is very simple.
MR. SZTYKIEL: So long as you let me depose him before you call him.
BY MR. GURSTEN:
Q. My question to you is very simple.
MR. GURSTEN: Well, as a rebuttal witness, if he testifies to this and it's actually admitted

Page 65

by the judge in court.
BY MR. GURSTEN:
Q. My question to you, Doctor, is simple. Do you believe a Ph.D. statistician would say that your sample size of fifty-three NFL male football players allows you to draw valid inferences to the general population, and to Joy Lloyd with specificity?
A. Well, I don't know why you'd bring in a statistician. They know nothing about biomechanics.
Q. Doctor --
A. So I don't think that's a legitimate question.
MR. GURSTEN: Would you read back my question, please?
(The requested portion of the record was read by the reporter at 11:29 a.m.)
THE WITNESS: Yes, I think so, if I can convince him that the NFL football players' brain is no different than Joy Lloyd's brain.
BY MR. GURSTEN:
Q. Do you believe that your sample size of fifty-three NFL football players and its data that you've derived from it, assuming that you meet indicators of statistical reliability, Doctor, do you believe that that data allows you to prove that it was impossible for Joy Lloyd to be injured, or just that

Page 66

it was unlikely for Joy Lloyd to be injured?
A. I don't like to use impossible. It's extremely unlikely.
Q. It is still possible that Joy Lloyd would have been injured?
A. Yeah. A rock can drop on my read right now. That's also possible.
Q. It was still possible for Joy Lloyd to be injured, true or false?
A. True.
Q. Turn to your fifth conclusion. Have you had a chance to review it, Doctor?
A. Yes.
Q. Are you saying that her head striking the glass behind her was a good thing, that it helped lessen the severity of the impact?
A. Yes.
Q. Do you believe it would also then be a good thing if we move car windshields to two inches in front of our heads when we drive?
A. No, no. It's only a good thing because it broke.
Q. You're saying it's a good thing that her head broke the glass?
A. Yes.
Q. If her head did not break the glass, would that have

Page 67

increased or decreased the severity of the forces on her brain?
A. Increased.
Q. If it did not break?
A. Correct.
Q. How do you know the glass had been scratched prior to the accident?
A. Because Dr. Nyquist did the whole series of experiments and that's how he concluded that. Unless he scratched the glass, he cannot break it.
Q. Did Dr. Nyquist use this vehicle in his sample population?
A. No.
Q. Did he use the year of this vehicle?
A. No. Close. It was eighty something.
Q. Did he use either volunteers or crash test dummies?
A. Dummies. He used dummies.
Q. Did those dummies have the exact height, weight characteristics as Joy Lloyd?
A. It doesn't matter.
Q. Did --
A. Just a matter of --
Q. -- those crash test dummies have the same height --
A. No.
Q. -- and weight --

Page 68

A. No.
Q. -- as Joy Lloyd?
A. No.
Q. Did those dummies have the same skull -- inside of their skull formation, same brain, same vulnerabilities or susceptibilities to injury as Joy Lloyd?
A. No. He wasn't looking for brain injury. He was looking for head acceleration.
Q. Doctor, I want you to assume that I step off of a curb every day on my way to work with no problem for ten years, and then one day I step off that curb and I turn my ankle. Can we first agree that an injury did not occur to my ankle in those first ten years of me stepping off the curb?
A. Yes.
Q. Can we agree that an injury did not occur the first couple thousand times that I stepped off that curb?
A. Correct.
Q. But can we agree that an injury may have occurred on the 2001st time that I stepped off that curb?
A. Yes.
Q. Can we agree that a biomechanical engineer can be hired to say that it is unlikely that I will turn my ankle by stepping off a curb?

Page 69

A. I don't think so.
Q. Can a biomechanical engineer be hired after the fact, after I have already turned my ankle, to say that I could not have turned my ankle?
A. No.
Q. And that's because it's already occurred, correct?
A. Correct.
Q. I would like you to assume, Doctor, in the hypothetical I'm about to give you that there is approximately a one in one million chance that someone will die in a plane crash, which is actually pretty accurate to the real numbers, but I'd like you to assume that hypothetical, okay?
A. Okay.
Q. Do you think it would be helpful to a jury to have an expert testify in a plane crash death case, for that jury to hear an expert say that it is very unlikely that someone will die in a plane crash?
A. That's true. It's very unlikely.
Q. Can we agree that if the expert testifies that most people, or the average person will not die in a plane crash, do you believe that will be helpful or not helpful to a jury in a plane crash death case?
A. I don't understand the question. I don't know what you're driving at.

Page 70

Q. Oh, I think it's pretty clear. Let me ask that again. If we have a plane crash death case, do you think it's helpful to a jury to hear testimony from an expert that it's very unlikely for someone to die in a plane crash?
A. No, it's not helpful.
Q. And do you think it would be likewise helpful for a jury to hear an expert testify that most people, or an average person would not die in a plane crash? Do you think that would be helpful in a plane crash death case?
A. An average person will not die in a plane crash? An average person will die in a plane crash. I don't understand the question.
Q. Let me try this again. Do you believe it would be helpful for a jury to hear, in a plane crash death case where someone is already dead, from an expert who would opine that because the chances of dying in a plane crash are one in one million, that it is very unlikely, or that the average person will never die in a plane crash?
A. No, I don't think experts will say that.
Q. Can we agree that such testimony from an expert would be ridiculous in the face of a pathologist who is testifying that someone is already dead?

Page 71

A. Sure.
Q. If we can agree that the odds of someone dying in a plane crash are one in one million beforehand, what are the odds or the likelihood of someone dying in a plain crash once that person is already dead?
A. A hundred percent.
Q. If, in a very low speed or low impact damage car vehicle -- let me strike that and start over.

In, if a low speed or low damage impact car crash case the chance to be hurt is very unlikely, but treating doctors have already testified and found that that person was injured, can we agree that such testimony would be likewise ridiculous?

MR. SZTYKIEL: I'm going to object to the form of the question in that my expectation is, is that treating physicians will testify only that it is their opinion that the plaintiff has been injured.

MR. GURSTEN: Noted.

Let me ask that question again because I -- I plan on playing this back.

BY MR. GURSTEN:
Q. My question to you is this, Doctor: If in a low speed or low damage car crash case, do you believe

Page 72

it would be helpful for a jury to hear that the chances of someone being hurt are very unlikely when treating doctors have already indicated that that person is injured?

MR. SZTYKIEL: Same objection.

THE WITNESS: First of all, I do not believe doctors are qualified to correlate the injuries to the event. They can note dysfunctions and maybe symptoms related to whatever you call injury, but we are the ones who study injury and the cause of injury, and it's based on the cause and the input that I'm saying that it's unlikely. It's got nothing to do with statistics. It's got nothing to do with what the doctor says. I'm saying, the injury is not caused -- whatever it is, is not caused by this accident.

BY MR. GURSTEN:
Q. Let's assume the Federal Rules of Civil Procedure and the Rules of Evidence disagree with your opinion --
A. Well, I'm sorry, but the Federal Rules do not understand the Daubert. They just always believe in the doctor and they think the engineer is not trained to do this, but actually, the engineer is the only one -- the biomechanical engineer is the

Page 73

only one who can give you causes of injury. Nobody else.
Q. I understand that's your opinion, Doctor.
A. That's a fact of life.
Q. I see.
A. That's our training. You have -- has every -- every doctor been trained to understand causation of injury? Do they teach that in the medical school? They do not.
Q. I think they do.
A. They go by history and that's not reliable.
Q. Let's -- let's go back to my question, please. Do you remember my question, sir?
MR. SZTYKIEL: I think he answered it, actually.
MR. GURSTEN: Well, maybe. I'll -- I'll take an answer now, though, because I don't believe he did.
BY MR. GURSTEN:
Q. Do you remember my question or would you like me to repeat it, sir?
A. I think I've just answered whatever you say and that's it.
Q. Well, that's not it.
A. Not gonna answer it again.

Page 74

Q. Well, this is my discovery deposition, so --
A. Then you better --
Q. Let's try one more time, with all respect, and listen to my question and tell me if you can answer it without giving me your opinion on what doctors should or should not be able to testify to under the Rules of Evidence.
A. Because your question is not according to the facts of what the engineers are supposed to do, and therefore, your question is wrong.
Q. Well --
A. You cannot base it on what the doctors say.
Q. Doctor --
A. The doctors --
Q. -- I've already heard you.
A. So I said, if you -- if you rely on the doctors' opinion, I said it doesn't matter. It's not reliable.
Q. Are you done?
A. Yes.
Q. Okay. If, in a low speed or low damage car crash case, the jury hears testimony that it is very unlikely that someone could be injured, can we agree that such testimony would also be ridiculous in the face of treating medical doctors testifying as to

Page 75

the injuries that that person has already suffered --
A. I do not --
Q. -- true --
A. -- agree with --
Q. -- or false?
A. False.
Q. And your opinion is that is false because you say that a medical doctor is not qualified to testify as to causation of the injuries that he or she is treating his patients for?
A. Correct.
Q. True?
A. True.
Q. Can we agree, in this case, your opinions regarding the likelihood of Joy Lloyd being injured or not injured are just as helpful as it would be for the jury to hear an expert testify regarding likelihood of dying in a plane crash, where the person has already been found dead by a pathologist?
A. That's a ridiculous comparison. I do not go by statistics. I go by data, by the data I have. She was not --
Q. Are statistics a form of data? Are statistics a form of data?

Page 76

A. Well, you're talking about --
Q. Are statistics a form of data?
A. You're just twisting my words. I'm sorry, I don't play games with you.
Q. Doctor, are statistics a form of data?
A. Yes, but I'm not talking about epidemiological data.
Q. I see. You are not a medical doctor?
A. That doesn't matter.
Q. You are not a trauma epidemiologist?
A. We've been through that.
Q. Am I correct?
A. Yes.
Q. Okay. Turn to your conclusion number six, please. Have you read it?
A. Yes.
Q. Have you reviewed it?
A. Yes.
Q. Do you believe that you are qualified to render opinions to a jury regarding medical diagnoses or injuries without being a medical doctor?
A. I don't do diagnosis.
Q. Okay. You state in your conclusion, any symptoms of a mild traumatic brain injury of Ms. Lloyd should be temporary and reversible --
A. Yes.

Page 77

Q. -- true? That's what appears there.
We've already discussed that you have performed no testing on Joy Lloyd to find out how much force it would take to injure her brain, true?
A. True.
Q. We can agree that you know nothing about her genetic predisposition, how her brain metabolizes glucose, chemical reactions within her brain, the bony ridges inside her skull, or any other factors in the literature, whether you agree with them or not, that may indicate an increased vulnerability to traumatic brain injury because you've never tested her, true?
A. Well, I cannot test her, so that's true.
Q. Your assumption here is that my client is average, true?
A. Yes.
Q. An assumption which you've just admitted you've done no testing to disprove, true?
A. I think it's your burden to prove she's not average.
Q. An assumption that you have made, that you have done no testing to disprove, true?
A. I told you, I cannot do any testing on a live human, so I don't think I can answer that question. That's not possible. How can I test her? It's ridiculous. You cannot ask questions that I cannot perform -- on

Page 78

things I cannot perform.
Q. These are assumptions that you have made about Joy Lloyd and you have no data from any testing to disprove it?
A. I have data from fifty-three cases of brains --
Q. Yes, of NFL football players. I'm aware of that.
A. Which -- which show that these numbers are much higher than what Dr. Z. claims they are.
Q. Okay. My question to you is, because I think we've already gone over this before, that Joy Lloyd is not -- does not have the same physical characteristics; height, weight, gender, size as an average NFL football player, true?
A. True. But the brain is a brain. You can --
Q. Is that true, Doctor?
A. Yes.
Q. Okay.
A. But the brain is a brain, so you cannot say that just because I have brawn, I have better brains. That's ridiculous.
Q. What I am saying is that because you have, quote, better brawn, that your brain may be less vulnerable to injury from an impact than someone who is more vulnerable because of size, weight, gender, size or genetic predisposition?

Page 79

A. Doesn't matter. We're talking about the angular acceleration here.
Q. No, we're not.
A. Yes, we are.
Q. I'm talking in general.
A. The brain is sensitive to angular acceleration. It doesn't care how big the brain is or how strong the body is. This is all irrelevant. You're just --
Q. Doctor, do you believe you're acting like an advocate again? Are you being fair and evenhanded right now?
A. Yes, of course.
Q. Okay.
MR. GURSTEN: Read back my question, please.
(The requested portion of the record was read by the reporter at 11:48 a.m.)
BY MR. GURSTEN:
Q. In general, is that a proposition that we can agree with?
A. No. We're not comparing Joy Lloyd butting heads with an NFL player. That's not what --
Q. In general --
A. That's not what we're talking about and that's what you're leading to and I don't think that's true.

Page 80

Q. Doctor, with all respect, since you don't have a crystal ball and you can't read my mind, at least not as well as you think you can, is the statement of fact that I just made accurate or inaccurate?
A. Inaccurate, as far as the brain is concerned.
Q. Accurate regarding everything else but the brain?
A. Yes.
Q. Your size, your weight, your height, your gender, your age --
A. Given the same angular acceleration, it's the same thing.
Q. What if it's not the same angular acceleration?
A. Then all bets are off.
Q. Okay. What if there are multiple various motions on the brain at one time, are all bets also off?
A. No. That doesn't really matter.
Q. Well, why are all bets off?
A. If you have a more severe impact, then of course, the conditions are different, but if -- if the NFL player and Joy Lloyd suffers the same angular acceleration, they have the same injuries or no injury.
Q. But there are more ways to injure their brain besides just angular acceleration, correct?
A. Correct.

Page 81

Q. What are some of the other ways where the brain can be injured in a rear-end car crash, besides angular acceleration?
A. If you hit your head real hard on something.
Q. Okay. What else?
A. That's about it.
Q. Okay. Do you note in your report that Joy Lloyd hit her head on the glass behind her?
A. Yes.
Q. Okay. Going back to your conclusion number six, you say that any symptoms of mild traumatic brain injury should be temporary and reversible, do you not?
A. Yes, I do.
Q. Okay. Do you believe you know more about brain injury and are better qualified to opine upon whether it should be temporary and reversible than the treating board certified medical doctors who are rendering treatment to Joy Lloyd for her brain injury?
A. I'm not saying that.
Q. Okay. When you say should be temporary and reversible, can we agree that there are cases where it is not temporary and reversible?
A. I'm only saying that based on the data I have.
Q. Okay. Your fifty-three --

Page 82

A. NFL players --
Q. -- NFL football players?
A. -- have mild concussions that are reversible and not permanent.
Q. Doctor, I will go so far as to say that most cases of mild traumatic brain injury do get better over time. Is that something you would agree with?
A. Yes.
Q. However, we can both agree that there are still a number of cases that do not get better over time, true?
A. Well, that goes to the other problems of clinical depression and symptoms of clinical depression that mask as -- as a brain injury and -- according to the --
Q. Are you testifying --
A. -- lectures I've been to -- and according to the lectures I've been to with neuropsychologists, they have a hard time with this.
Q. Are you testifying as a biomechanic, or as a medical doctor now?
A. I'm testifying based on what I've heard from lectures on clinical depression masking as brain injury.
Q. With all respect, I don't believe you're qualified

Page 83

to render such opinions based upon what you may have heard at a lecture. My question to you is simple, Doctor --
A. That's -- that's all I have.
Q. Okay. My question to you is simple. Can we agree that even though many cases will be temporary and reversible, that there are still cases of mild traumatic brain injury that are not?
A. I don't know.
Q. You do not know?
A. I cannot tell you that.
Q. You wrote in your report, am I not reading this correctly, any symptoms of a mild traumatic brain injury should be temporary and reversible? You wrote that, did you not?
A. Yes.
Q. Okay. When you wrote that, were you writing that as a biomechanical engineer, or were you writing that as a medical doctor?
A. Biomechanical engineer.
Q. Okay. Then I'm asking you as a biomechanical engineer, does the medical literature not reflect that although many cases of mild traumatic brain injury do improve over time, as you say are temporary and reversible, that there are still many

Page 84

cases that are not; is that true?
MR. SZTYKIEL: I'm going to object as to form and foundation. He's issued an opinion with respect to this specific case and you're asking him as a general proposition.
MR. GURSTEN: If you're going to stipulate that he is not qualified to render such an opinion to a jury, then I'll withdraw it.
MR. SZTYKIEL: Well, he is, in this particular case. As a general proposition, I don't know. I don't --
MR. GURSTEN: All right. Then your objection is noted.
BY MR. GURSTEN:
Q. Doctor, please answer my question.
A. Well, based on the information that I have, these are reversible injuries, if there was one, and if there are other cases around that -- that appear to be permanent, then I would say that there may be other causes besides that, which is my next sentence. And so I don't think you can absolutely say there was an injury. As far as I'm concerned, the biomechanics of this is not sufficient to cause injury.
Q. We've heard. My question is, going back to your

Page 85

sixth conclusion, did you or did you not use the word should in saying that any symptoms of mild traumatic brain injury such as Joy Lloyd suffered here, should be temporary and reversible?
A. Yes.
Q. And I am asking you, are there not cases where such mild traumatic brain injury is not temporary and reversible?
A. Well, there again, it is -- it's a highly unlikely case, but it's possible. I'm not saying it's impossible, but it should --
Q. Do you believe that you are more qualified or less qualified than the board certified medical specialists treating her for traumatic brain injury to opine upon whether the mild traumatic brain injury is temporary and reversible in this case or not?
A. I don't treat patients so I cannot answer your question.
Q. Are you even familiar enough with the medical literature concerning mild traumatic brain injury to tell me what percentage of people who sustain mild traumatic brain injury do go on to have -- to improve where it's temporary and reversible and what percentage do not?

Page 86

A. No.
Q. Should, as you used it here, is your opinion as to what most, or the majority of people should do after sustaining such injury?
A. Yes.
Q. You did not medically examine or treat Joy Lloyd?
A. No.
Q. You are not in a position, sitting here today, to tell us what the effects are on Joy Lloyd today of her traumatic brain injury, true?
A. That's right.
Q. Okay. Your next sentence, persistent symptoms of a brain injury are more likely attributable to other psychological conditions of the plaintiff, such as clinical depression?
A. Yes.
Q. Can we agree that you are, once again, giving medical opinions here?
A. That's just based on what I've learned from my psychologist when I asked him --
Q. Okay.
A. -- why there is symptoms of brain injury if there's no cause for it and he said it's very hard sometimes to find out whether depression is the cause of it rather than a true organic brain injury.

Page 87

Q. Do you believe that these opinions that you have heard from an unnamed psychologist that you have asked have enough indicators of trustworthiness and reliability that you should be able to opine upon them to a jury?
A. These are --
Q. They're in your report, aren't they?
A. Yes.
Q. Okay.
A. These are --
Q. Are you qualified to render medical opinions --
A. It's not --
Q. -- about Joy Lloyd?
A. It's not a medical opinion. It's just an explanation.
Q. It's a possible explanation?
A. Well, she does have clinical depression.
Q. But that's one possible explanation that you chose to explain her symptoms of brain injury?
A. Correct.
Q. There are other possible explanations that you chose not to put down in your report?
A. I don't have a whole history. She might have banged her head on something else. I don't know.
Q. In fact, all you have are the medical records from

Page 88

her first month after she was rear-ended by the truck three years ago?
A. Yes.
Q. You have nothing else?
A. That's right.
Q. Do you believe that a board certified psychiatrist, physiatrist, neurologist or neuropsychologist would be more qualified than you to opine upon whether the persistent symptoms of a brain injury are more likely attributable to other psychological conditions of the plaintiff, such as clinical depression, as you wrote in your conclusion number six?
A. Well, all I'm saying is that if they diagnose that, they certainly don't know what caused it.
MR. GURSTEN: Would you please read back my question?
(The requested portion of the record was read by the reporter at 11:59 a.m.)
THE WITNESS: They are qualified to diagnose something, but not the cause.
BY MR. GURSTEN:
Q. So you believe that three and a half years later, without any medical records concerning her treatment, you're qualified to render opinions as to

Page 89

what's the cause of the symptomology in Joy Lloyd as you did in your report, sir?

MR. SZTYKIEL: I think not what is, but what isn't.

BY MR. GURSTEN:

Q. As you wrote in your report.

A. I'm saying what the cause is, is -- is not -- not related and if --

Q. No, that's not what you said. You said that the persistent symptoms of a brain injury are more likely attributable to other psychological conditions of the plaintiff, Joy Lloyd, such as clinical depression. That's what you wrote, isn't it?

A. Yes.

Q. Okay. I'm asking you, sir, as a biomechanical engineer, if you feel that you're qualified to render such an opinion three and a half years after the crash, without any of her medical records, about what is the cause of her symptomology as you did in your report?

A. Well, based on my -- based on what I know, I think I -- I'm just providing a plausible explanation.

Q. A possible explanation?

A. Yes.

Page 90

Q. Based upon what you were told by a psychologist?

A. Yes.

Q. Okay. Doctor, are you familiar with the book, Low Speed Automobile Accidents, by Dr. Allen Watts?

A. No.

Q. If Dr. Watts takes the position that the fiftieth percentile male stands a fifty percent chance of injury at a Delta V of 7.5 miles per hour and that although the probability of injury is reduced as the speed is reduced below 7.5 miles per hour, it cannot be said that a specific person did not suffer injury even at speeds as low as two to three miles per hour Delta V?

A. I don't even know if that's authoritative, what this guy's background is --

Q. I'm not asking you about that.

A. I know. I --

Q. I'm asking you, with fourteen years as a biomechanical engineer, whether you agree or disagree?

A. I disagree. It's just a wide ranging statement. It's totally --

Q. Do you agree --

A. -- unfounded.

Q. Do you agree or disagree that there is no established minimal threshold of force required to cause injury in an individual?

A. Oh, there is. Of course there is. There is always the activities of daily living. Accelerations sustained in activities of daily living are usually noninjurious, like you -- if you just -- it's very hard to injure yourself if you walk into a wall, but if you run into it, you will.

Q. Doctor, I'm familiar with all of those studies of daily living, such as the Allen study and the Murray study and all of the others. Haven't they all been basically discredited in the last five years?

A. No. It's -- doesn't --

Q. Do you believe that they hold value here --

A. Sure, they do.

Q. -- when we're talking about the forces of Joy Lloyd in a rear-end semi truck, car crash?

A. Yes.

Q. Okay. What is the minimal threshold of force required to cause Joy Lloyd brain damage?

A. That's not known.

Q. What is the minimal threshold of force required to cause Joy Lloyd to tear her rotator cuff?

A. Well, that's not known either.

Q. What about a concussion of her temporal bones?

Page 92

A. A concussion of what?

Q. Her temporal bones.

A. Bone cannot be concussed.

Q. You don't even know what that is, do you? Do you know what --

A. Temporal bone is part of the skull. How do you concuss a bone?

Q. Have you ever heard of an audiogram test?

A. Yes.

Q. Okay. If as a result of her audiogram it showed that she had a concussion of her temporal bones --

A. Temporal bones?

Q. You don't understand, do you? Okay.

What is the minimal threshold of force required to cause brow and eyelid ptosis to Joy Lloyd?

A. Brow and eyelid --

Q. Paralysis, Doctor.

A. Paralysis?

Q. Yes. She's had seven to eight surgeries for it. You don't have the medical records, but I want you to assume that's true. I'm asking you, what is the minimal threshold of force required to cause that?

A. That I don't think has ever been studied.

Q. Okay. So you can't opine upon it?

Page 93

A. Well, I don't even know that that's necessarily related. I don't see the relationship at all.
Q. I want you to assume that the treating surgeon has performed seven to eight surgeries on her brow and her eye in this case, and I'd like you to assume that there was some medical reason why he performed those surgeries and I want you to assume that he is directly relating those surgeries to this car crash case. Do you know the minimal threshold of force required to cause such an injury?
A. I would say that would be a very severe impact that would cause that. This is not something that you can injure a local -- a nerve like this. This is --
Q. Just so we're clear, Doctor, are you accusing her orthopedic surgeon who did a rotator cuff surgery and her ophthalmologic surgeon -- her neurophthalmologist who's performed seven or eight eyelid and brow surgeries, of medical malpractice, of committing surgeries for no reason?
A. I'm just saying that they don't know the cause. They can do the treatment all they want --
Q. Okay.
A. -- but to opine on the cause -- on a cause, relating it to some accident, I think it's quite irresponsible on their part.

Page 94

Q. Are you aware of any such problems before she was rear-ended by the defendant's semi truck?
A. I'm not --
Q. Okay. Can you offer --
A. -- aware of anything.
Q. Can you offer any opinion as to what did cause these injuries?
A. No, but --
Q. Okay. Can we agree that all of these injuries that you and I have gone over with her; traumatic brain injury, the rotator cuff, the others, are all highly dependent upon the susceptibility of the occupant?
A. You can be susceptible. You can be an eggshell plaintiff, but it's just not very likely to tear your rotator cuff --
Q. Now we're going back --
A. -- in a rear-end collision.
Q. -- to likely or not. I'm asking you, can we agree that a lot of it depends upon the susceptibility of the occupant? Is that a true statement?
A. Yes. Of course.
Q. Okay. Do you agree that crash testing at the US naval base in San Diego has demonstrated that an occupant leaning forward, away from the head restraint by as little as two inches, could increase

Page 95

their peak head acceleration by as much as forty percent?
A. I don't -- I'm not aware of any naval base in San Diego that did any crash testing. I don't know where you got that from.
Q. That's not my question.
A. But you said naval base in San Diego. I --
Q. Okay.
A. There is no naval base in San Diego that does crash testing.
Q. Doctor, I want you to assume that there is a paper, that as a result of crash testing at the US naval base in San Diego, that it demonstrated that an occupant leaning forward, away from the head restraint by as little as two inches, could increase their peak head acceleration by as much as forty percent. Do you agree or disagree with that statement?
A. In a rear-end -- minor rear-end impact? It's possible.
Q. Okay. Now, you've mentioned repeatedly in your testimony today about your fifty-three NFL football players. I want to ask you about a study that I believe, and you may be familiar with, is the largest population study of individuals with

Page 96

crash-related injuries to date. This is a study by Farmer in 1998, who found that in his report of rear impact crashes in thirty-seven states, that his findings revealed that approximately thirty-four percent of the men and forty-four percent of the women were injured in crashes with property damage of less than $1,000.00. Is that a finding that you agree or disagree with?
A. I would disagree with these findings because their definition of injury is pain, and to me, pain is not necessarily equal to injury, and therefore, these -- these statistics are suspect. It's very easy to have pain because of degeneration. Most people have spinal degeneration, so as long as they complain of pain, they check it as injury and that is -- makes it rather unreliable, unless you can show it's a permanent injury of some kind, and if you go to that, you'll find that that's a very small number.
Q. That's your answer?
A. Yes. My studies in neurophysiology of pain tells me that this is all wrong because they do not go in depth to research the difference between pain and injury. To you lawyers, it may be the same thing, but to us biomechanical engineers, it's quite different.

Page 97

Q. Well, to doctors it's the same thing, also, after they treat somebody following a rear-end car crash, isn't it, Dr. King?
A. I don't know how they define it, but for us, we have to see an actual injury.
Q. Okay. Let me rephrase that. If medical records, Doctor, as a result of this study, if they reviewed medical records of people who reported pain, and these medical records reflected by the treating doctors that they were injured in thirty-seven states --
A. That's --
Q. -- or approximately -- let me finish, please -- where approximately thirty-four percent of the men and forty-four percent of the women reported injuries to their medical doctors in crashes with property damage of less than $1,000.00, is that a finding that you agree with, or disagree with?
A. I still disagree with, because --
Q. Can we agree that that finding has a sample size that is rather larger than your sample size of fifty-three NFL football players?
A. That's irrelevant because they don't --
Q. Can we agree that that --
A. No, I cannot agree.

Page 98

Q. -- sample size is larger than your fifty-three football players?
A. It's irrelevant. I can agree with you, but it's irrelevant.
Q. This study also found that crashes with less than $500.00 in reported damage accounted for twenty-three percent of the men and eighteen percent of -- excuse me -- twenty-three percent of the women and eighteen percent of the men who reported injuries, is that something you agree with or disagree with?
A. I -- same thing. I don't agree with those numbers.
Q. Do you agree with the following statement, Dr. King: That low probability of injury in a general population does not help determine the presence of injury in an individual after that individual has already been injured?
A. If -- that depends on what you define as injury. That's a major problem here. If pain is equal to injury, yeah, sure. But pain is not --
Q. What about if -- what about if injury is equal to injury as regarded by the treating medical doctor?
A. That's not necessarily a -- a good definition --
Q. Okay.
A. -- because they -- they see pain, that call it injury right away.
Q. Doctor, do you believe that you're being biased right now?
A. No.
Q. Okay.
A. I read medical records all over the place and every time they come in, they always refer to it as an injury, whether it's -- it's just a symptom or whether it's an organic injury, it's still an injury in the medical records. It doesn't matter.
Q. Do you believe that your opinion as a biomechanical engineer should be substituted over a treating physicians' regarding the medical diagnosis or cause of pain of their patient?
A. I'm not gonna argue with the diagnosis nor the treatment, but the cause of the injury and the cause of pain, I think our studies are more detailed than what they know about causes of pain.

MR. GURSTEN: Kim, would you read back my question, please?

(The requested portion of the record was read by the reporter at 12:13 p.m.)

BY MR. GURSTEN:
Q. Isn't that what you're doing right now, Doctor, you're substituting your opinion over that of the

Page 99

Page 100

treating medical doctors? So my question is --
A. No. I'm -- I'm making a differentiation between the permanent injury and just a symptom of pain because those are different.
Q. How do you know, one or two years post crash, if an injury is going to be permanent?
A. How do I know?
Q. How can you say that?
A. Based on the severity of the impact and based on what we know about what the input accelerations are.
Q. But we can agree --
A. This is not a concussive injury that's permanent.
Q. But we can agree -- you and I are both aware of cases where there has been extremely high amounts of vehicle damage and the occupants have basically walked away without injury, correct?
A. Yes.
Q. And we can also agree, likewise, that there have been cases where there has been relatively low amounts of vehicle damage and the occupants have been severely injured, true?
A. That's very rare.
Q. But that happens, true?
A. Yes.
Q. Okay. When you say it's very rare, aren't your

opinions in this case similar to the expert who is testifying in a plane crash death case, that an average person would probably not have been killed when a pathologist has already testified that that person is dead?

MR. SZTYKIEL: Objection, asked and answered about three times.

THE WITNESS: No, it's -- we're talking about a specific input to the case and not a plane crash and so that's -- that's a wrong analogy.

BY MR. GURSTEN:

Q. Doctor, one more question. I have your -- I have your report regarding all of the cases that you've testified in. Can we agree that all of them, except for one, have been on behalf of defendants?

A. In the last four years, yes.

MR. GURSTEN: No more questions.

MR. SZTYKIEL: Can we go off the record?

VIDEO TECHNICIAN: Going off the record at 12:20 p.m.

(Recess taken at 12:20 p.m.)

(Back on the record at 12:31 p.m.)

MR. SZTYKIEL: For the record, as opposed to doing any redirect of Dr. King at this time or direct of Dr. King, I'm just going to do that when

we do his video deposition next week.

MR. GURSTEN: I have no problem with that.

(The deposition was concluded at 12:32 p.m. Signature of the witness was not requested by counsel for the respective parties hereto.)

CERTIFICATE OF NOTARY

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

I, Kimberly H. Kaplan, a Notary Public in and for the above county and state, do hereby certify that the above deposition was taken before me at the time and place hereinbefore set forth; that the witness was by me first duly sworn to testify to the truth, and nothing but the truth; that the foregoing questions asked and answers made by the witness were duly recorded by me stenographically and reduced to computer transcription; that this is a true, full and correct transcript of my stenographic notes so taken; and that I am not related to, nor of counsel to either party nor interested in the event of this cause.

Kimberly H. Kaplan, CSR-5096
Notary Public,
Oakland County, Michigan
My Commission expires: August 5, 2004

INDEX TO EXAMINATIONS

INDEX TO EXHIBITS