IN THE SUPERIOR COURT OF THE STATE OF DELAWARE

Luz Ortiz,	)	
	)	
Plaintiffs,	)	
v.	)	
	)	**C.A. No.: N18C-03-279 FJJ**
KATHERINE LEE SMITH, URGENT AMBULANCE SERVICE, INC., and EDS TRANSPORTATION SYSTEMS, INC.	)	
	)	
Defendants.	)	

DECISION ON PLAINTIFF'S MOTION IN LIMINE TO EXCLUDE BIOMECHANICAL TESTIMONY – GRANTED; ON PLAINTIFF'S MOTION IN LIMINE EXCLUDING MEDICAL TESTIMONY REGARDING A PRIOR ACCIDENT - DENIED

Plaintiff Luz Ortiz ("Ortiz") has brought the instant negligence lawsuit against Defendant Katherine Lee Smith and her employers (collectively "Defendants") for injuries Ortiz suffered due to an automobile accident which occurred on March 30, 2016 (the "accident.") While driving home from work on the date of the accident, Ortiz was traveling westbound on Hygeia Drive in Newark, Delaware. While Ortiz was stopped at a light waiting to merge onto Ogletown Stanton Road, her Chevrolet Cobalt was rear-ended by a Ford Econoline van being driven by Defendant Smith, acting within the scope of her employment for Ambulance Service, Inc. & EDS Transportation Systems, Inc.

Defendants have submitted testimony from two experts in this matter. First, Defendants have provided biomechanical expert testimony based on a Report authored by Dr. Sebastian Bawab, PhD and Dr. Michael Woodhouse, PhD. Defendants have separately submitted medical expert testimony ("Medical Testimony") of Dr. David T. Yucha, MD. Plaintiff has filed a Motion *in Limine* to exclude the biomechanical testimony. The Plaintiff has also moved to exclude Dr. Yucha from testifying about injuries that Ortiz sustained in a prior motor vehicle accident in 2011. For the reasons stated herein, the Plaintiff's Motion is **GRANTED** as to the biomechanical testimony, and the biomechanical testimony will be excluded. The portion of the Motion seeking to limit Dr. Yucha from testifying about plaintiff's 2011 motor vehicle accident and treatment relating to that accident is **DENIED**.

I. The Biomechanical Testimony

Defendants have proffered biomechanical testimony from Dr. Michael Woodhouse as evidence to show that the force involved in the accident could not have resulted in the injuries Ortiz allegedly suffered as a result of the accident. Dr. Woodhouse prepared a 26-page Report (the "Report" or "Vector Report") co-authored with Dr. Sebastian Bawab, PhD., on behalf of an investigative engineering & accident reconstruction firm called Vector Dynamics ("Vector.") The Vector Report assessed whether the "alleged injuries of Luz Ortiz are consistent" with the

physical impact Ortiz experienced as a result of accident. The Report states that Vector reviewed multiple pertinent pieces of evidence as factual background for the accident, including a police report prepared shortly after the accident, as well as medical records describing pre-existing medical conditions Ortiz had at the time of the accident and personal characteristics relevant to the physical impact of the accident, including Ortiz's height & weight. Using this information, the Report conducted a reconstruction of the accident and determined that "the alleged injuries [suffered by Plaintiff] are not consistent with the anatomical forces, torques, and accelerations sustained as a result of the [accident] on March 30, 2016" and that "the normal activities of daily living have reported bodily accelerations beyond that which would result from vehicular accelerations possibly experienced [by Ortiz in the accident] without any incidence of injury."

On February 10, 2020, Ortiz filed the current Motion *in Limine* ("Motion") to exclude the biomechanical testimony from the instant litigation. The Motion also challenges the admission of testimony relating to injuries and treatment Ortiz received as a result of a 2011 motor vehicle accident. Defendants' filed an Opposition to Ortiz's Motion on February 24, 2020.

On September 8, 2020 the Court held a hearing on the biomechanical aspect of Plaintiff's Motion. At that hearing Dr. Woodhouse offered testimony on his

opinions, conclusions and the basis for the same. Following that hearing, the parties each submitted an additional memorandum in support of their respective positions.

II. Admissibility of the Biomechanical Testimony is Governed by the *Daubert/Eskin* Framework

Admissibility of expert opinion evidence is governed by Delaware Rule of Evidence 702, which provides:

> If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Delaware uses the framework set forth by the Supreme Court of the United States in *Daubert v. Merrill Dow Pharmaceuticals*[1] to apply Rule 702.[2] In Delaware, admissibility of biomechanical expert testimony for automobile accident cases under the *Daubert* framework is governed by *Eskin v. Carden.*[3] Under *Eskin:*

> [T]rial judges may admit qualified biomechanical expert testimony regarding the physical forces involved in automobile accidents and the effect on the human body those forces may produce where the relevance, reliability and trustworthiness of that testimony is established by the proffer and is not outweighed by the danger of confusion of the issues or misleading the jury.[4]

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[1] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993).
[2] *M.G. Bancorporation, Inc. v. Le Beau,* 737 A.2d 513, 521–522 (Del.1999).
[3] *Marla R. Eskin, Administratrix of the Estate of Robert P. Chickadel v. Barbara A. Carden*, 842 A.2d 1222, 1225 (Del. Supr. Feb. 13, 2004).
[4] *Id.* at 1225

The Delaware Supreme Court further explained that admissible biomechanical testimony must be pertinent to the specific injuries suffered by the person effected by an accident:

> *Admissible* biomechanical testimony bridges the gap between the general forces at work in an accident determined by physical forces analysis (whether it be "physics" or "engineering") and the specific injuries suffered by the particular person who was affected by those forces. The testimony must provide definitive evidence that the physics of a particular accident did (or did not) cause a particular injury to a particular individual. A trial judge must closely scrutinize this testimony to be confident that it is trustworthy, i.e., relevant reliable and validated.[5]

Further, the Delaware Supreme Court has held that "a trial judge may admit biomechanical expert opinion that a particular injury did (or did not) result from the forces of an accident only where the trial judge determines that the testimony reliably creates a connection between the reaction of the human body generally to the forces generated by the accident and the specific individual allegedly injured or another determinative fact in issue."[6]

III. Ortiz's Contentions

In her Motion, Ortiz alleges that there are several specific defects with the biomechanical testimony that render it unreliable. Her arguments are:

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[5] *Id.* at 1228.
[6] *Id.* at 1229 (emphasis added.)

(a) The weight, model, and speed of the vehicle Defendant Smith was driving at the time of the accident are not in the record,

(b) The Report does not have a sufficient basis to support its contention that the vehicle driven by Defendant Smith was moving at a speed of 7 miles per hour when it struck Ortiz,

(c) The Report did not take Ortiz's pre-existing medical conditions at the time of the accident into account, and

(d) The report did not take into account the position of the Plaintiff's head at the time of impact.

A. The weight & model of the vehicle which struck Ortiz's car in the crash is included in a Collision Report.

Ortiz moves to exclude the biomechanical testimony on the basis that the weight of the vehicles involved in the accident is not in the record. Plaintiff further asserts that the vehicle which struck her was "not an Econoline but an ambulance which one can assume was manufactured and placed in or on a modified van chassis." Defendants assert that the weight and model of the vehicles involved in the accident were listed in an accident report prepared by Delaware state police, which was then used by the authors of the Report in preparing their calculations.

Defendants' Exhibit B is a State of Delaware Uniform Collision Report ("Collision Report") which describes the accident. The Collision Report lists the two vehicles involved in the accident as a 2005 Chevrolet Cobalt driven by Plaintiff & a

2009 Ford Econoline van driven by Defendant Smith. It is clear from the Collision Report that the vehicle which struck Plaintiff's car in the accident was a Ford Econoline van. Chart A of the Vector Report indicates that the Econoline van driven by Smith weighed 5,319 lbs., while Ortiz's Chevy Cobalt weighed 3,216 lbs. These exact vehicle weights are not reflected in the Collision Report, which only generically refers to the weight of both vehicles as "10,000 lbs. or less." The generic weights of the vehicles involved in the accident, however, are readily accessible, and Ortiz's contention that the calculations in the Vector Report did not accurately reflect the weight of the vehicles is unpersuasive. This component of the Vector Report does not weigh against admitting the Defendants' biomechanical testimony. Any challenge to the gross weight of either vehicle involved in the accident can be addressed on cross-examination.

B. There is sufficient support for the Report's claim that the Defendant's van was traveling at a speed of 7 MPH when it struck Ortiz's vehicle.

Ortiz next claims that the Vector Report's contention that the "Econoline impacted the rear of the Cobalt at a closing speed of 7 [miles per hour]" is unsupported by the record. In their opposition papers, Defendants contend that "the [Vector] Report provides a detailed analysis of how [the striking speed of the Econoline van driven by Defendant Smith] was determined based on vehicle damage and supported expert calculations."

The Vector Report states that McHenry Simulation Model Collision Accident Reconstruction software from 2019 "was used to perform an accident reconstruction in order to determine the forces and movement" involved in the crash, and that "based upon the circumstances of the incident and the damage observed on the Cobalt and their computed damages… the Econoline impacted the rear of the Cobalt at a closing speed of 7 mph." I find that the defense's methodology is sufficiently reliable to satisfy the requirements of *Daubert* because this methodology is typically used by accident reconstruction experts.

C. The biomechanical testimony will be excluded because it does not account for Plaintiff's pre-existing medical conditions

Ortiz contends that the biomechanical testimony should be excluded on the basis that the testimony only offers generalized conclusions about the physical forces involved in the accident, and does not take Ortiz's individual medical history into account. Defendant's Opposition claims that the testimony is based on "consideration of plaintiff's personal factors including her age, height, weight, and medical conditions."

The Report states that its authors considered Ortiz's pre-existing medical conditions at the time of the accident. Dr. Woodhouse confirmed this fact at the hearing.[7] In fact, Dr. Woodhouse described plaintiff's pre-existing condition as

[7] Hearing Tr., at 9 ("[The Court]: . . . did you also review Ms. Ortiz's prior medical history? [Dr. Woodhouse]: We did.")

"very extensive."[8] However, upon closer examination of Dr. Woodhouse's testimony, it is clear that the data he relied upon does not take the Plaintiff's *specific, individualized* pre-existing conditions at the time of the accident into account. Dr. Woodhouse testified that the testing he relied upon involved crash dummies.[9] Dr. Woodhouse further acknowledged that the crash test dummies he relied upon do not take anyone's pre-existing physical conditions into account.[10] When asked how these tests using crash dummies account for pre-existing conditions, Dr. Woodhouse responded that he used comparative thresholds utilized by the Federal Motor Vehicular Safety Standards. When questioned further, Dr. Woodhouse confirmed that the Federal Motor Vehicular Safety Standards were also based on crash dummies.[11] The following exchange occurred between Dr. Woodhouse and the Court during the September 8, 2020 hearing:

> THE COURT: What I'm trying to figure out is, how does a person's preexisting condition get factored into what they're doing?
>
> I mean, you say your body of science can't do that, and I understand that, based on not testing with humans in crashes. How are they able to extract that data?

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[8] *Id.* ("[Dr. Woodhouse]: [Ms. Ortiz] had a very extensive premorbid history, and I reviewed it and they were listed in my report. And then her post-collisional medical history was also reviewed, and that was summarized in my report.")
[9] *Id.* At 12.
[10] *Id.* At 34 ([The Court]: Dr. Woodhouse, let me cut to it to make sure I understand what you're telling me. The crash test dummies, they don't account for anybody's pre-existing physical condition. Is that right? [Dr. Woodhouse]: That's correct.")
[11] *Id.* At 35.

> THE WITNESS: Judge, they cannot. They are hamstrung, as well as I am. We have to use the instrument that's the most validated biofidelic instrument that we have on earth. And the only thing that we can compare it to, Judge, is a randomized sample of humankind, and that would be how we look at the probability of injury, whether someone is falling in the first, second or third percentile of a randomized distribution of a population.

In other words, all of the data relied upon by Woodhouse involved crash dummies. As Dr. Woodhouse himself admitted, these crash dummies do not have the characteristics of people with pre-existing conditions.[12] This Court does not believe that Dr. Woodhouse's conclusion that the physical forces involved in the accident were not powerful enough to cause Ortiz's alleged injuries is sufficiently particularized enough to Ortiz's prior medical history to be reliable and trustworthy. The effect of physical forces on one person may be significantly different from the effect that the same forces would have on another person with a different medical history. When general forces are described in the context of explaining a specific injury, the jury may extrapolate general forces to the specific case at hand. Unless Plaintiff's pre-existing medical history is taken into account, this can potentially be misleading and prejudicial.[13]

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[12] *Id.* At 34 ("[The Court]: The crash test dummies, they don't account for anybody's preexisting physical condition. Is that right? [Dr. Woodhouse]: That's correct.")

[13] See *Rizzi v. Mason*, 799 A.2d 1178, 1181-82 (Del. Supr. May 22, 2002) aff'd 843 A.2d 695 (Del. 2004) (excluding biomechanical testimony for failing to "establish[] a correlation between the force (or lack of force) generated upon impact and Plaintiff's injuries.")

It is clear that the dummies utilized in the accident reconstruction which formed the basis of Dr. Woodhouse's report did not reflect any of Plaintiff's pre-existing medical conditions. There is a significant chance that the general forces at play in the accident would be compounded for Ortiz. "Extrapolating from general biomechanical principles to demonstrative evidence that supports or disproves injury to an individual may not be reliable in every case."[14] As *Eskin* notes, "if [a] crash test dummy . . . is replaced with a uniquely susceptible driver, [general scientific] indicia of reliability become a façade."[15] For this reason, the Delaware Supreme Court has held that "a trial judge may admit biomechanical expert opinion that a particular injury did (or did not) result from the forces of an accident only where the trial judge determines that the testimony reliably creates a connection between the reaction of the human body generally to the forces generated by the accident and the specific individual allegedly injured or another determinative fact in issue."[16] Since the record demonstrates that the dummies used do not reflect Ortiz's specific medical history, it is possible that Ortiz may have been a uniquely susceptible driver whose injuries were not fully captured by the accident reconstruction. Accordingly, Defendants have failed to establish the reliability of the biomechanical testimony. Admitting the testimony may mislead or confuse the jury for failing to take that

[14] *Eskin*, 842 A.2d at 1230.
[15] *Id.*
[16] *Id.*

possibility into account. Therefore, Plaintiff's Motion with respect to the biomechanical testimony is **GRANTED**. The biomechanical testimony will not be admitted.[17]

MOTION TO EXCLUDE MEDICAL TESTIMONY

In connection with this litigation, Defendants had Dr. David Yucha, MD, perform a medical examination of Plaintiff. Plaintiff's Motion seeks to exclude Dr. Yucha from testifying about an automobile accident in 2011 involving Plaintiff and treatment which Plaintiff received as a result of that accident. According to Plaintiff, the only injury she sustained as a result of her 2011 accident was to her left foot, which required surgery. In the instant case, Plaintiff alleges that she suffered back, neck, and knee injuries as a result of the 2016 accident, but has not alleged any injuries to her left foot. Plaintiff argues that any testimony from Dr. Yucha concerning her 2011 accident will be either irrelevant or unduly prejudicial, since she has not alleged any injuries to her left foot in the present litigation.

In the report that Dr. Yucha prepared in connection with his examination of Ortiz, he notes emergency room treatment immediately following Plaintiff's accident on May 21, 2011 which references neck and back pain. Dr. Yucha's Report

[17] Plaintiff also argues that the biomechanical testimony should be excluded because Dr. Woodhouse's accident reconstruction did not take the fact that plaintiff's head was turned to the left at the time of the collision into account. In and of itself, the failure to account for the position of Ortiz's head at the time of the accident might not be a basis to exclude the prosed testimony. But, when coupled with the failure to account for Plaintiff's pre-existing medical conditions, this constitutes an additional reason to exclude the testimony. *See DiVirgilio v. Eskin.* 2005 WL 2249530 (Del.Super.Ct., June 29, 2005).

also references a July 29, 2011 EMG on Plaintiff's lower extremities. These records and history are relevant to the causation of plaintiff's injuries. The prejudice of the records is not outweighed by its relevance. The question of the importance of these records and an explanation of them goes to the weight of this evidence, not its admissibility. Plaintiff's Motion with respect to Plaintiff's 2011 motor vehicle accident and the treatment associated with that accident is **DENIED**.

SO ORDERED this 26th day of October, 2020.

Francis F. Jones, Jr., Judge

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