

IN THE SUPERIOR COURT OF THE STATE OF DELAWARE

IN AND FOR NEW CASTLE COUNTY

MILTON DERRONE FRAZIER, JR. and)
ANDREW M. CLEMMONS) CIVIL ACTION NUMBER
)
Plaintiffs) 09C-06-047-JOH
)
v.)
)
JOSEPH LEOTTA, SJ TRANSPORTATION)
CO., and MILTON DERRONE FRAZIER)
)
Defendants)

Submitted: December 2, 2010
Decided: December 23, 2010

MEMORANDUM OPINION

*Upon Motion of Defendants to Exclude Expert Testimony
as to Dr. Ali Kalamchi - GRANTED*

*Upon Motion of Defendants to Exclude Expert Testimony
as to Michael Woodhouse, Robert Miller and Anthony Bocchichio -
RESERVED FOR FURTHER DEVELOPMENT AT TRIAL*

Appearances:

Francis J. Jones, Esquire, of Morris James, LLP, Wilmington, Delaware, Attorney for Plaintiff Milton D. Frazier, Jr.

James J. Woods, Jr., Esquire, of James J. Woods, Jr., P.A., Greenville, Delaware, Attorney for Plaintiff Andrew M. Clemmons

Vicki L. Shoemaker, Esquire, of Marshall Dennehy Warner Coleman & Goggin, Wilmington, Delaware, Attorney for Defendants Joseph Leotta and SJ Transportation Co.

Stephen F. Dryden, Esquire, of Robinson Grayson Dryden & Ward, Wilmington, Delaware, Attorney for Defendant Milton D. Frazier, Jr.

HERLIHY, J.

On the eve of trial the Court has been asked to exclude certain defense evidence relating to the force of impact between plaintiffs' car and defendant Joseph Leotta's tractor trailer truck; the goal of that to undercut plaintiffs' injuries claim. Plaintiff Milton Frazier was driving with plaintiff Andrew Clemmons as a passenger. They were crossing the Delaware Memorial Bridge headed toward New Jersey on their way to work. Leotta was driving in the same direction.

Leotta attempted to move from one lane to another and in the process the right side of his truck bumper came in contact with the rear left side of Frazier's 2008 Mazda 4 door sedan. The Mazda had been rented from Hertz.

The proffered testimony at issue would come from three experts, all listed by defense as witnesses who wrote two reports. Two experts co-authored a report which is dated July 27, 2009, and it and the other report reach the conclusion that the side impact between the truck and the Mazda was not significant and certainly not to the level supporting the extent of injuries each plaintiff claims.

The defense reports and the plaintiffs' motion raise again the vexatious issue of testimony seeking to equate minimal impact and minimal potential injury; or to rebut the extent of damages being claimed. While this kind of "biomechanical" testimony has been the subject of various opinions, the line-up of experts here is unique, without precedent in those opinions, and requires a novel analysis.

Discussion

The Delaware Rules of Evidence 702 and 705 govern the admissibility of expert testimony.¹ D.R.E 702 states:

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.²

The Delaware Supreme Court in *M.G. Bancorporation v. Le Beau*,³ incorporated the United States Supreme Court holdings involving the federal rules of evidence in *Daubert v. Merrel Dow Pharmaceuticals*⁴ and *Kumho Tire Co., Ltd. v. Carmichael*⁵ to the Delaware rules regarding the admissibility of expert testimony. Under D.R.E. 702, the trial judge must determine whether:

(1) the witness is qualified as an expert by knowledge, skill, experience, training or education; (2) the evidence is relevant; (3) the expert's opinion is based upon information reasonably relied upon by experts in the particular field; (4) the expert testimony will assist the trier of fact to understand the evidence or to determine a fact in issue; and (5) the expert testimony will not create unfair prejudice or confuse or mislead the jury.⁶

¹ *Empire Fin. Servs., Inc. v. Bank of New York (Delaware)*, 2007 WL 1677580, at *1 (Del. Super.).

² D.R.E. 702.

³ 737 A.2d 513, 522 (Del. 1999).

⁴ 509 U.S. 579 (1993).

⁵ 526 U.S. 137 (1999).

⁶ *Bowen v. E.I. Dupont de Nemours & Co.*, 906 A.2d 787, 795 (Del. 2006).

In determining whether expert testimony should be admitted, the trial judge is considered a “gatekeeper” and must assess whether the evidence presented is reliable and relevant.⁷ The main objective is to ensure that the expert, whether basing his or her opinions on professional studies or personal experience, “employs in the courtroom the same level of intellectual rigor that characterizes the practice of the expert in the relevant field.”⁸ This means expertise in certain areas can be developed through ways other than being subjected to peer and publication or being found as “generally accepted.”⁹

The starting point for the discussion in this case is *Eskin v. Carden* in which the Supreme Court said:

We hold that trial 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.¹⁰

The Supreme Court went on to explain:

Eskin proffered Thibault’s testimony to link “the contention of slight damage to a contention tending to minimize the plaintiff’s physical injuries.” For that type of proffered testimony to be admitted, the proponent must first present reliable competent expert testimony relevant to the circumstances of

⁷ *McIlhenney v. Intermatic Inc.*, 2004 WL 440368, at *1 (Del. Super.).

⁸ *Ward v. Shoney’s, Inc.*, 817 A.2d 799, 803 (Del. 2003); quoting from *Kumho Tire*, 526 U.S. 137, 119 S. Ct. 1167, 143 L.Ed.2d 238 (1999).

⁹ *Kumho Tire* 516 U.S. at 151.

¹⁰ *Eskin v. Carden*, 842 A.2d 1222, 1225 (Del. 2004).

the particular case. *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. Neither here, nor, we suspect, in most cases, will the issue be the competency of an expert or whether the field of “biomechanics” is recognized scientific or technical field. The words of an expert qualified to opine within a recognized “field” do not automatically guarantee reliable, and therefore admissible, testimony, however. The inquiry will be whether the expert and the “field of expertise” itself can produce an opinion that is sufficiently informed, testable and in fact verifiable on an issue to be determined at trial. The trial judge must be satisfied that the generalized conclusions of the biomechanical expert are applicable to a particular individual. For example, did the expert consider the effect of pre-existing medical conditions and the unique susceptibility of a particular plaintiff to the injuries claimed? Does the “field” of biomechanical engineering adequately test for these highly individualized characteristics and document verifiable statistical result about which an expert within the field can render a trustworthy opinion in a particular case.¹¹

Continuing, the Supreme Court explained the applicability of “biomechanics” in automobile accident trials:

Biomechanics is defined as “the mechanical bases of biological, especially muscular, activity; also: the study of the principles and relations involved.” For purposes of simplicity, we define biomechanics as the study of the effects of forces and motion on the human body. Accordingly, we recognize that an individual demonstrating knowledge, skill, experience, training or education in the field of biomechanics may be qualified to testify *generally* about how the human body will react to the impact of forces exerted upon it during an automobile accident. The use of applied physics by trained engineers aided by computer simulations, control groups and crash test

¹¹ *Id.* at 1228. Citations omitted.

dummies, does create indicia of reliability and may be relevant and ultimately trustworthy in the circumstances of a given case.¹²

Finally the Supreme Court said:

We, therefore, hold 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.¹³

The Court must, therefore, examine the qualifications of the proffered experts and whether they can provide the requisite nexus to each individual plaintiff in this particular kind of accident. This case is not a rear-end collision or the “meeting” of two vehicles front to back, which distinguishes it from other cases wrestling with biomechanical testimony.

Leotta started to move his truck from the right lane second from the guardrail to the one adjoining it. In this instance, when the two vehicles came in contact with each other, plaintiff’s vehicle did not experience a major movement nor was it thrown against the guardrail on the bridge. Both vehicles continued a short distance into the land portion (off the bridge) of New Jersey. The Bridge Police were called and an accident report generated. After all that was done, plaintiffs proceeded to their job elsewhere in New Jersey.

¹² *Id.* at 1228-1229. (Citations omitted).

¹³ *Id.* at 1230.

The Court will review the co-authored report first.¹⁴ One author is Anthony Bocchichio (“Bocchichio”). He has a B.S. in mechanical engineering but is not licensed as an engineer in any state or commonwealth. The Court specially notes this because (1) it is unknown which portion of the July 27, 2009 report he wrote, and (2) if he is to offer engineering testimony, he is statutorily barred from doing so. Engineers are required to be licensed in this State, and engineer is defined as:

“Engineer” shall mean a person who, by reason of special knowledge and use of the mathematical, physical, and engineering sciences and the principles and methods of engineering analysis and design acquired by an engineering education, through graduation with a baccalaureate degree from a Council-approved 4-year educational program in engineering, in engineering technology or in science related to engineering, is qualified to begin the path to licensure.¹⁵

At one time, to testify as an engineer in a Court in this state one had to be licensed in Delaware.¹⁶ Since that opinion and that in *Burkett-Wood v. Haines*,¹⁷ the legislature has amended the statute regulating professional engineers to provide:

Nothing in § 2802 of this title shall be construed as prohibiting an otherwise qualified engineer, duly licensed under the laws of a state other than Delaware, from offering expert testimony in any action or proceeding in the courts of this State, consistent with the requirements of Delaware Uniform Rules of Evidence 702.¹⁸

¹⁴ Neither of the authors have been deposed despite the report’s available for over a year. This hampers the Court in its analysis of an importance issue.

¹⁵ 24 *Del. C.* § 2803(13).

¹⁶ *Livesay v. Heagy*, 2004 WL 3928262 (Del. Super.).

¹⁷ 2006 WL 1579770 (Del. Super.).

¹⁸ 24 *Del. C.* § 2802A.

Bocchichio's CV is not only mentions his college degree and his occupation as "Mechanical Engineer." Among his areas of expertise, he lists mechanical engineering and mechanical systems. On the record before the Court, Bocchichio's background may meet the definition of engineer under the Delaware Code.

This, therefore, means that he is not qualified to provide *engineering* testimony in this case. Since the July 27th report is written by him and Robert Miller, the Court is unable to say to what extent his testimony is inadmissible or admissible.

And that is the "rub," as Miller is an engineer who is registered in Delaware along with four other states. Curiously, for this discussion, Miller has a masters degree in mechanical engineering. Even if Miller were not licensed here, his licensure in the four other states sweeps him in under 24 *Del. C.* §2803A. In sum, as there is a qualified engineer who is able to testify as such, the Court must return to its analysis of the Miller-Bocchichio report.

Miller and Bocchichio examined the following written materials:

- Delaware River and Bay North Crash Form, No. 91-08-001740.
- Five (5) color photographs of damage of Mazda vehicle.
- Property damage repair estimate and purchase order.
- Deposition transcripts of testimony by:
 - Milton D. Frazier, Jr., February 19, 2010.
 - Andrew M. Clemmons, February 19, 2010.
 - Joseph Leotta, February 19, 2010.
- Expert AutoStats report: 2008 Mazda 6 4-door sedan.
- Vehicle Crush Stiffness Coefficients: Mazda 6, Left Side.¹⁹

¹⁹ Defts.' Resp. to Mot. to Excl., Ex. B, p. 2.

The report makes the following analysis of plaintiffs' Mazda:

The color photographs provided showed the rear left portions of a Mazda 6 four-door passenger car, red in color, with New Jersey registration plates. The photographs showed black material transfer to portions of the Mazda rear left body panel, fuel fill cover, and rear bumper cover. The photographs showed no remarkable deformation or damage to the vehicle body panel or bumper cover.

The repair estimate provided included the Hertz logo and indicated a repair for property damage in the amount of \$85.00. The estimate also indicated that the date of loss was on October 21, 2008 and was in regard to the Hertz case number 02-2008-11272. The purchase order also showed a total amount of \$85.00, an order date of October 21, 2008, and the description: Side Damage.

The review of the deposition testimony from the three individuals was summarized as follows:

During deposition testimony on February 19, 2010, Mr. Milton Frazier testified the following in regard to the subject incident:

- Witness was driving the subject Hertz rental car (Mazda) in right lane of Delaware Memorial Bridge into New Jersey.
- Mr. Andrew Clemmons was a passenger in the Mazda.
- Witness saw that the subject truck was changing lanes from the lane to the left into the left most lane.
- Witness sounded horn and sped up to try and get attention of truck driver, but there was a car in front of Witnesses car that prevented the Witnesses passing the truck.
- The truck sideswiped the rear quarter panel of the Mazda.
- Witness was traveling about 50 miles-per-hour prior to incident.
- Witness never saw the tractor-trailer turn signal.
- There was no room to the right; bridge edge was 2 feet way.
- Mazda was traveling 53-54 mph when Witness felt truck impact car.
- Left rear quarter panel of car came into contact with truck tire.
- Contact between vehicles was a split second and the car jerked.

During deposition testimony on February 19, 2010, Mr. Andrew Clemmons testified the following in regard to the subject incident:

- Witness was a passenger in the Mazda with Mr. Frazier driving.
- Mazda was in right lane of two open lanes northbound on Delaware Memorial Bridge.
- Witness had his head down eating breakfast when he heard Mr. Frazier yelling and sounding horn.
- Witness saw a tractor-trailer moving over next to the car.
- Mr. Frazier sped up to get out of trucks way, but there was a car ahead and there was no room to move to the right.
- Witness didn't see truck the truck blinker on .
- Impact was between left rear quarter panel of car and front part of trailer. Car was jarred, not scraped.
- After impact, both vehicles pulled over after exiting the bridge.

During deposition testimony on February 19, 2010, Mr. Joseph Leotta testified the following in regard to the subject incident:

- Witness was driving about 45 mph at time of incident; Witness had slowed down and intended to change lanes behind a silver car.
- Witness was driving in second lane, intended to merge to right lane.
- Witness saw a silver car to the right at the tractor and a red car about 100 ft behind and to the right, activated right turn signal.
- When silver car was ahead of the truck, Witness saw the red car behind his vehicle, so Witness began to change lanes.
- Witness then saw a red flash next to the truck and changed back into second lane.
- The red car pulled over after bridge, so Witness also pulled over.
- There was a mark on the back fender of the car from the truck tire.²⁰

One of both experts personally inspected the truck involved in this incident, albeit 20 months later. The Mazda was not available for inspection so an “exemplar” 2004 model was used to measure the relationship of the suspect impact point on the truck with

²⁰ *Id.* at pp. 3-5.

the damaged area on the Mazda. Those measurements led to this conclusion:

The photographs of the subject Mazda in combination with measurements taken from an exemplar Mazda 6 indicate that the contact damage to the subject Mazda extended from the center of the fuel fill cover to the upper portion of the rear bumper cover; between approximately 24 and 34 inches from the ground. The contact damage to the Mazda extended horizontally from the approximate center (top) of the rear wheel well to the top rear corner of the rear bumper cover, a longitudinal distance of approximately 36 inches (Figure 4).²¹

And the report's analysis states:

Analysis

Based on review of available materials and inspection of both the subject truck and an exemplar Mazda, CED was able to perform a conservative analysis of both lateral and longitudinal changes in velocity (Delta-V) experienced by the subject Mazda during contact with the Mack tractor-trailer.

CED was also able to conservatively calculate the time period during which the two vehicles were in contact with each other, based on measurements, photographs, and Witness testimony. The photographs of the subject Mazda in combination with CED's measurement of an exemplar Mazda 6 showed that the truck bumper was in contact with the side of the subject Mazda for a longitudinal length of approximately 36 inches. Based on Witness testimony, Mr. Leotta stated he was traveling approximately 45 mph when the subject Mazda passed his truck on the right, while Mr. Frazier testified he was traveling 53-54 mph at the time of contact with the subject truck. The Mazda was traveling approximately 8 to 9 mph faster than the Mack truck. Based on a speed of 8 to 9 mph over a contact distance of 36 inches, the two vehicles were in contact with each other for a time period of 0.227 to 0.255 seconds, or approximately one quarter (0.25) seconds.

The Crush Stiffness data for a Mazda 6 was generated based on a side-impact crash test of a similar Mazda 6. Since the contact with the subject

²¹ *Id.* at p. 8.

Mazda was to the rear quarter panel and bumper cover and resulted in only aesthetic damage, with no permanent deformation, CED was able to conclude conservatively that the lateral impact between the subject Mack truck and Mazda 6 was no greater than 2 mph, yielding a maximum possible delta-V of 2 mph.

The longitudinal delta-V was calculated from the friction force applied to the side of the subject Mazda such to impart a force that would slow the subject Mazda in the longitudinal direction. Data from the Expert AutoStats report included the curb weight for a 2008 Mazda 6 as 3128 pounds (lb) and an additional weight of 400 lb was added to account for two adult male occupants and vehicle fluids (oil, fuel, etc.) yielding a total weight of 3528 lb. A conservative friction coefficient of 0.4 (nylon on polished steel, dry) was used for the plastic truck bumper wing sliding on the painted surface of the Mazda. A conservative normal force between the truck bumper and Mazda body panel was calculated based on the maximum lateral force the Mazda could withstand without being displaced laterally, utilizing a drag factor of 0.8 for the Mazda tires on a dry roadway. The maximum normal force available between the two vehicles would have been 2822 pounds-force. Based on the conservative friction coefficient, maximum available normal force, and previously-calculated time period, the Mazda vehicle experienced a maximum change in velocity of 1.8 mph; a deceleration from an initial speed of 54 mph to 52.2 mph.²²

And the conclusion states:

Conclusions

Based on the investigation of the Frazier-Leotta incident, CED Investigative Technologies, Inc., is able to state the following conclusions within a reasonable degree of engineering certainty:

1. Contact between the two subject vehicles was limited to the front right edge of the Mack truck bumper contacting the rear left side of the Mazda vehicle.

²² *Id.* at pp. 9-10.

2. The Mack truck and Mazda vehicle were in contact with each other for a time period of approximately 0.25 seconds.
3. The lateral change in velocity of the Mazda vehicle during contact with the Mack truck was no greater than 2.0 mph.
4. The longitudinal change in velocity of the Mazda vehicle during contact with the Mack truck was not greater than 1.8 mph.²³

Some of the above would clearly fall into the type of testimony only a duly statutorily qualified engineer could give. More importantly, however, the report would appear to provide a sufficient relevant nexus to this specific accident.

Nevertheless, the Court cannot say the report fully passes muster. There do not appear, however, to be portions which would require peer review, etc. The one questionable area is the comparison of a 2004 Mazda to the 2008 Mazda Frazier was driving. Perhaps it is the copy of the pictures in the report supplied to the Court, or something else which creates the uncertainty of the validity of the comparison. Maybe the facts must be “fleshed out” at trial in the form of voir dire. Without question, Miller is competent to testify as an engineer and Bocchichio may have the competence to testify within his field of expertise, but he cannot testify as an engineer. The Court has no way of knowing which person wrote which part of the report or would testify about which part at trial. Based on the record before it, the Court finds both Miller and Bocchichio are potentially qualified and may have testimony relevant to the specific case at hand. Their

²³ *Id.* at 11.

expected testimony is admissible. Only a more fully developed record will ultimately determine their qualifications and admissibility.

As this July 27th Miller-Bocchichio report was foundation for Michael Woodhouse's report, the Court must examine his credentials and his report next. It is important to note that the admissibility of Woodhouse's findings and conclusion is premised on the Miller-Bocchichio report.

Woodhouse is not an engineer, and, of course, is not licensed anywhere as an engineer. His professional work history in part reveals:

Senior Biomechanist, CED Investigative Technologies Inc., 2000-present

President, Biodynamic Research Laboratories, Inc., 2001-present

Principal Biomechanist, BioMx Corporation, Norfolk, Virginia, 1997-present

Principal Biomechanist, SEA LTD, Millersville, Maryland, 1997-present

Principal Biomechanist, FTI Corporation, Annapolis, Maryland, 1995-1997

Research Associate Professor of Orthopedics, Eastern Virginia Medical School, 1990-present

Principal Biomechanist, Bon Secours Mary Immaculate Hospital, 1998-2001

Corporate Member, Virginia Modeling, Analysis & Simulation Center, Old Dominion University, College of Engineering & Technology, 2000-2005

Tenured Full Professor of Biomechanics & Director of Sports Therapy/Industrial Medicine, Norfolk State University, 1983-1999

He has a Ph.D. from Old Dominion, "Emphasis in Biomechanics." The Court is unsure exactly what that means. Woodhouse lists among his areas of expertise, "Injury mechanics and causation relating to impacts," "Orthopedic and industrial biomechanics," and "High and low speed auto impact injuries." Clearly, without the benefit of a hearing, what such titles mean, their relevance and its nexus to the case is unknown.

Background review is needed to provide context to reviewing his report of July 29th. Woodhouse lists what he reviewed:

- Complaint;
- Plaintiffs' Complaint with Affirmative Defenses;
- Police Report;
- Documents from Hertz regarding damage to the Mazda;
- Color photographs of the Mazda;
- Mr. Leotta's February 19, 2010 deposition transcript;
- Mr. Frazier's February 19, 2010 deposition transcript;
- Mr. Clemmons' February 19, 2010 deposition transcript;
- Mr. Frazier's medical records;
- Mr. Clemmons' prior and current medical records; and
- Anthony L. Bocchichio's July 27, 2010 accident investigation report.²⁴

Woodhouse provides a summary of the medical information he has on each plaintiff:

Mr. Frazier

Brian Chandler, D.C., provided an October 22, 2008 report in which he indicated Mr. Frazier presented as a 28 year-old male with complaints of bilateral lower lumbar pain. Mr. Frazier's height was 5 feet 11 inches and his weight was 260 pounds. Reportedly, Mr. Frazier was a restrained driver at the time of the subject MVC. Following his evaluation, Dr. Chandler diagnosed Mr. Frazier with lumbar sprain, strain and lumbar subluxation. Dr. Chandler subsequently recommended Mr. Frazier for chiropractic treatments. According to his billing statement, Mr. Frazier's chiropractic treatment began on October 23, 2008 and continued with several weekly treatment until March 12, 2009.

Jeffrey Myers, M.D., provided a February 18, 2010 report in which he examined Mr. Frazier and review his medical history. Following his evaluation, Dr. Myers assessed Mr. Frazier with chronic low back pain, myofascial pain, muscle spasm, and somatic dysfunction as a result of the October 21, 2008 MVC. Dr. Myers also indicated that Mr. Frazier's condition was permanent and that his prognosis for recovery was poor.

Ali Kalamchi, M.D., provided a March 9, 2010 report in which he diagnosed Mr. Frazier with a resolved lumbar sprain. Dr. Kalamchi also

²⁴ Defts.' Repl. to M. to Exc., Ex. A, p. 2. Curiously, he lists the July 27th report as Bocchichio's.

indicated that Mr. Frazier's clinical examination was completely normal and that he did not sustain permanent impairments.

Mr. Clemmons

Prior Medical Records

Mr. Clemmons' medical history was significant for severe abdominal contusion, right knee joint laceration, cervical sprain, and cerebral concussion at the age of 4 years (as a result of falling off his bike and being struck by a car on July 16, 1985). He was admitted to the Medical Center of Delaware, Christiana Division and discharged on July 25, 1985.

Mr. Clemmons' prior medical history was also significant for lymphoid hyperplasia of the small bowel (March of 1986), Salter Type II fracture of the right distal tibial shaft (November of 1992), and cervical, thoracic/lumbar sprain/strain with muscle spasm (November of 1999). Reportedly, Mr. Clemmons was the restrained driver involved in a November 17, 1999 MVC. Dr. Chandler provided Mr. Clemmons with chiropractic treatments beginning on November 19, 1999 and continued with several weekly treatments until August 8, 2001.

Mr. Clemmons was also diagnosed with left C8-T1 radiculopathy in January 2000 and a small partial tear of the infraspinatus tendon insertion with curved acromion in February of 2000.

Current Medical Records

Dr. Chandler provided an October 22, 2008 report in which he indicated Mr. Clemmons presented as a 28 year-old male with complaints of bilateral lower lumbar pain. Mr. Clemmons' height was 5 feet 8 inches and his weight was 195 pounds. Reportedly, Mr. Clemmons was the restrained front seat passenger at the time of the subject MVC. Following his evaluation, Dr. Chandler diagnosed Mr. Clemmons with thoracic and lumbar sprain and strain as well as thoracic and lumbar subluxation. According to his billing statement Mr. Clemmons' chiropractic treatment began on October 23, 2008 and continued with several weekly treatments until August 21, 2009.

Mark Cooper, M.D., provided a January 14, 2009 magnetic resonance image (MRI) report of Mr. Clemmons' lumbar spine in which he indicated the presence of L5-S1 bilateral disc herniation and desiccation.

Dr. Myers provided a February 18, 2010 report in which he examined Mr. Clemmons and reviewed his medical history. Following his evaluation, Dr. Myers assessed Mr. Clemmons with chronic thoracic and low back pain, myofascial pain, muscle spasm, and somatic dysfunction as a result of the October 21, 2008 MVC. Dr. Myers also indicated that Mr. Clemmons' condition was permanent and that his prognosis for recovery was poor.

Dr. Kalamchi provided a May 27, 2010 report in which he diagnosed Mr. Clemmons with nonspecific lower back symptoms. Dr. Kalamchi also indicated that Mr. Clemmons' clinical examination was completely normal and that he did not sustain permanent impairment.²⁵

Woodhouse then offers his "Biomechanical Analysis" and conclusion:

Biomechanical Analysis

Based upon the Mazda's computed velocity change, and considering Mr. Frazier's and Mr. Clemmons' individual body segment anthropometries, the calculated forces and accelerations sustained about their involved anatomical segments were not sufficient to exceed noninjurious thresholds. Mr. Frazier's and Mr. Clemmons' injuries, as reported in the respective medical records, are not consistent with the anatomical forces, torques and accelerations sustained as a result of the October 21, 2008 MVC. It should be noted that normal activities of daily living have reported bodily accelerations beyond that which would result from vehicular accelerations possibly experienced in the subject MVC without any incidence of injury.

Anatomical forces of the nature resulting from the Mazda's computed forward and lateral (left-to-right) accelerations are not consistent with the injuries reported in Mr. Frazier's and Mr. Clemmons' medical records. For example, vertebral strengths have been reported to increase moving caudally from 1.5 kilonewtons (kN) at C-3, to 2.0 kN at T-1, 2.5 kN at T-8, 3.7 kN at T-12, and 5.7 kN at L-5. Ultimate strength values have been shown to

²⁵ *Id.* at 2-3.

increase by 380 N for each vertebra from L-1 to L-4. Additionally, Mertz and Patrick reported that the tolerance limits of moment at the occipital condyles is 190 N-m for flexion and 57 N-m for cervical extension. The forces demonstrated in the present case were well below these values and are not consistent with the injuries alleged by Mr. Frazier and Mr. Clemmons.

CED's biomechanical analysis incorporated the use of a Mathematical Dynamic Model (MADYMO), wherein a 50th percentile Hybrid III male anthropomorphic testing devices (ATD) were scaled relative to the heights and weights of Mr. Frazier and Mr. Clemmons and placed within representative seats with headrests... The ATDs were restrained with 3-point lap and shoulder analytical belts and 1 longitudinal and 1 lateral acceleration pulses were applied to the ATDs for biomechanical analyses. MADYMO simulations were performed to compare occupant kinematics and kinetics with vehicular dynamics. Anatomical torques, forces and accelerations were calculated and compared with human physiological tolerance levels for head, neck, and torso injury.

Considering that Mr. Frazier and Mr. Clemmons were reportedly restrained at the time of the subject MVC, the coupling effect of the Mazda's restraint system enabled Mr. Frazier and Mr. Clemmons to maintain a less severe deceleration during their longitudinal and lateral accelerations. Because they were restrained, considerably less biomechanical force would have been experienced than if they had not been restrained and had impacted the vehicle's interior component. Further, due to the direct contact of the lap and shoulder belt with the trunk and pelvic segments, the use of the Mazda's restraint system provided for an earlier and more effective deceleration of the shoulders, thorax, and pelvis. As a result of the more effective deceleration, motions of other body parts (such as the head and extremities), were less likely to transfer energy to the interior components of the Mazda.

Moreover, the occurrence of disc rupture as a result of impact loading on the spine is considered improbable for one single loading event, unless the event is accompanied by multiple bony injuries to the spine. Vertebral bodies normally fracture prior to the rupture of an adjacent disc. Brinckmann noted that even in severely weakened lumbar discs, the possibility of rupture was considered remote at 1 kN of compressive loading. Spontaneous rupture of spinal discs has been reported when the vertebral column was compressed and flexed both laterally and sagittally to approximately 64 degrees with an

average load of 5,449 N or 1224.4 pounds of force. Given the present accident scenario, the forces experienced by Mr. Frazier and Mr. Clemmons were well below these values, and the injuries they alleged are not consistent with the severity of impact sustained as a result of the subject MVC.

An assessment of the human body's ability to generate force, conserve force, and transfer energy through muscles and joints, which might result in injury, is performed by analyzing joint reaction forces and moments, body segments, and their respective kinetics and kinematics. From this viewpoint, and given the present accident scenario, Mr. Frazier's and Mr. Clemmons' medical records do not provide any biomechanical evidence directly relating their alleged injuries to the subject MVC. In the present case, vehicular accelerations of this magnitude and direction correlate with minimal bodily forces experienced by vehicle occupants; these forces are considered well within normal human physiological tolerances.

Conclusions

CED's opinions are given within a reasonable degree of scientific certainty and will be based upon training, education and experience in the field of biomechanics, along with a review of the aforementioned file materials.

- The forces experienced by Mr. Frazier and Mr. Clemmons were well below injury tolerance levels cited. The alleged injuries are not consistent with the anatomical forces, torques, and acceleration sustained as a result of the MVC of October 21, 2008.²⁶

The Court has omitted Woodhouse's footnotes. One observation is whether these materials in his footnotes are ones upon which persons in his field rely. He also refers to testing, and again it is not discernable from his report if the type of testing he recites is that which is accepted in this field.

There is another point which *Eskin v. Carden* makes clear, and it has direct

²⁶ *Id.* at pp. 4-6. Citations omitted.

relationship to this case. Carden and plaintiff Clemmons here had prior medical histories.

Based on *Eskin*, a biomechanist must take that into account as exemplified in this passage:

Carden had lower back surgery in April 1997. In December 1998 she was involved in this automobile accident. She sought medical attention at an emergency room for a burning sensation in her lower back and tingling in her legs. After a regimen of rehabilitation with at least two medical doctors, she sought relief through another back surgery. The physician who performed the surgery opined that the auto accident caused Carden's injury and the course of treatment she had to undergo after December 1998. Carden's physician testified that the accident was 75% responsible for her current condition. Further, the record reveals that Eskin's medical expert *agreed* that this accident aggravated Carden's pre-existing back injury. Neither physician testified about the forces involved in the accident, nor about how Carden's body may have specifically reacted to those forces. Neither physician relied upon any impeachable assumptions about those forces or their effect on Carden's body in forming their opinions that the accident aggravated Carden's pre-existing back injury.

The April 1997 surgery both resulted from, and created, a pre-existing medical condition. That highly individualized fact calls into question the reliability of using general biomechanical principles to prove directly that the forces in the accident could not have caused Carden's specific injury. That question is particularly telling here, since both parties' medical experts agreed that this accident aggravated Carden's pre-existing back injury. That fact highlighted the need to examine carefully Thibault's proffer for reliability and to balance its relevance against the danger of confusing and misleading the jury.

Thibault is not a physician and, not surprisingly, he neither reviewed Carden's medical records nor examined her. Thibault did not review any deposition testimony of Carden. He did not question her about the accident itself, or her body position at the time of the collision. His conclusion that her lower back injury could not have been caused by the minor forces involved in the accident plainly did not take into account her particular pre-existing condition and proclivity to further injury. On this record, it is fair to say that Thibault had neither the competency nor the opportunity to consider these idiosyncratic circumstances. No evidence of record suggests

that *any* expert in his field would be competent, or would have taken the opportunity, to do so. Nothing in the records suggests that Thibault or anyone else in the field of biomechanics has performed reliable testing to validate such an opinion if proffered by any expert in this field. As one author has noted:

Sometimes there is a zone of genuine scientific knowledge possessed by a field, but some or many of its members step outside of that zone and make assertions that exceed their field's empirically tested knowledge.

The proponent of the expert scientific or technical testimony must establish its admissibility consistent with the *Cunningham* five step test. Indeed, this is what *Daubert* scrutiny is ultimately all about - to determine whether the testimony is trustworthy. That is, can its reliability be tested to validate it? "Expert testimony" can not be admitted with confidence that it is trustworthy solely because there exists a recognized scientific or technical field in which certain experts are appropriately credentialed. In this particular case, Thibault's testimony, while relevant to the human body generally, could not, without more, shed trustworthy light on the issue of whether the forces of this accident caused Carden's back injury. That is because the proffer did not establish that either Thibault or his "field" had performed tests that would validate the applicability of the general conclusion reached here to a particular "abnormal" human body. His testimony did not identify any percentage deviation from the "norm" or a recurring error rate to compensate for the out-of-the-ordinary person like Carden. Accordingly, there could be no assurance that Thibault's conclusion was not more than marginally in error.

For these reasons, the trial judge could properly conclude that there was a danger that the jury would be confused or misled into believing that Carden fell within the "field's" "one-size-fits-all" statistical range.

This risk plainly outweighed the relevance of Thibault's proffered testimony, because his proffered testimony did not create the special connection we require between evidence of common behavior and the facts of a specific case. If admitted, Thibault's testimony, focused on the norm, would have unfairly prejudiced Carden who, all the medical evidence established, did not have a normal, average human body, at the time of the accident. Thibault's

testimony did not connect the general biomechanical analysis of the physical forces involved in the accident to the unique medical history that provided the necessary, reliable link to Carden.²⁷

Unlike the expert in *Eskin*, Woodhouse examined all the of the relevant medical records of both plaintiffs or, at least, the plaintiffs do not seek to exclude his testimony based on any incomplete medical records review. Of equal importance, Woodhouse was aware of Clemmons' prior medical history, including prior cervical/thoracic/lumbar sprain with muscle spasm.

Unlike Carden, however, Clemmons' prior medical history, to the extent made known to the Court, indicates (1) he was fully recovered from his prior injuries, (2) the prior injury did not make him more susceptible to any injury he may have suffered in this accident, and (3) the claimed injury or injuries in this accident did not aggravate a pre-existing condition or conditions.

Woodhouse reaches his conclusions with knowledge of Clemmons' prior medical history. Yet there remains a key issue and one taught in *Eskin*. Woodhouse's report refers to crash tests or deceleration tests using two "dummies." Like *Eskin*, it is doubtful either "dummy" was set up in a way to reflect pre-existing conditions; an obvious impossible task. The Court is unable to say with sufficient certainty that Carden and Clemmons medical situations are or are not materially different. Further testimony is needed on that issue, as well as the "norm" issue noted in *Eskin*.²⁸

²⁷ *Eskin* 842 A.2d at pp. 1230-1232.

²⁸ *Eskin v. Cardin*, 842 A.2d at 1231.

One key issue remains. Is Woodhouse's testimony such that it can only be given by a duly licensed engineer (in Delaware or elsewhere)? The Court is inclined to say that it is not. Woodhouse appears to rely upon engineering expertise to reach his biomechanical conclusions.²⁹ Is this typical for a biomechanist? That is not discernible from his report. Voir dire will be needed to determine whether Woodhouse may testify.

In short, the Court, at this stage, can neither exclude or allow the compound testimony of Miller, Bocchichio and/or Woodhouse. The record needs further development.

Plaintiffs' motion also seeks to exclude Dr. Ali Kalamchi's testimony. His report of May 27, 2010³⁰ suggests he would opine there was not enough force in the accident to cause Frazier's alleged injuries. Beyond his extensive training and experience, however, no one has suggested Dr. Kalamchi has special training or expertise in the biomechanics of auto accidents.³¹

Consequently, he will not be permitted to opine about any relationship between the damage to the Mazda or the reports of any of the three above individuals - if admitted - and the injuries claimed.

²⁹ The Court is aware that in *Livesay v. Heagy*, *supra* p. 6 and *Burkett-Wood v. Haines*, *supra* p. 6, this Court said a biochemist falls within the definition of engineer. The Supreme Court in *Eskin* did not seem to go that far. See *Eskin*, 842 A.2d at 1228-29.

³⁰ Defts.' Resp. to M. to Excl., Ex. C.

³¹ *Livesay v. Heagy*, *supra* at p. 6.

Conclusion

For the reasons stated herein, defendants' motion to exclude as to Dr. Kalamchi is **GRANTED**, but as to Woodhouse, Miller, and Bocchichio, it is reserved for further development at trial.

IT IS SO ORDERED.

J.