

STATE OF MICHIGAN
IN THE SUPREME COURT

PEOPLE OF THE STATE OF
MICHIGAN,

Plaintiff-Appellee,

v.

MILTON LEE LEMONS,

Defendant-Appellant.

Supreme Court Docket No. 163939

Court of Appeals No. 348277

Lower Court No. 06-004818-01-FC

AMICUS CURIAE BRIEF OF GENERAL MOTORS LLC

ORAL ARGUMENT NOT REQUESTED

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STATEMENT OF INTEREST OF AMICUS CURIAE

General Motors LLC (“GM LLC”) is an automotive manufacturer focused on advancing an all-electric future that is inclusive and accessible to all. GM LLC, its subsidiaries, and its joint venture entities sell vehicles under the Chevrolet, Buick, GMC, and Cadillac brands. GM LLC employs and consults biomechanical engineers to assist with designing and validating vehicles that comply with various United States and global vehicle safety standards—legal standards that are themselves often based on data and injury criteria developed using biomechanical scientific methods and tools. GM LLC utilizes biomechanical engineers to testify in cases involving motor vehicle crashes to help the trier of fact understand the physical forces involved and how they lead to specific injuries. GM LLC is likewise intimately familiar with the essential role biomechanical engineering holds in the development of the Federal Motor Vehicle Safety Standards, as General Motors Corporation helped lead the effort to develop biofidelic anthropomorphic test devices for the purposes of testing motor vehicle safety features and creating associated safety regulations. GM LLC is, therefore, uniquely positioned to provide this Court with insight into the critical role biomechanical engineering plays in the automotive industry and highlight some of the potential harms that could flow from an overbroad opinion questioning the general reliability and admissibility of biomechanical engineering in Michigan court proceedings.

INTRODUCTION¹

Biomechanical engineering is critical to the development, design, and validation of motor vehicles globally, and has been for many decades. Biomechanical engineering—and GM LLC, in particular—played an integral role in the development of the anthropomorphic test devices specified in the National Highway Traffic Safety Administration’s vehicle safety standards. The expert testimony of biomechanical engineers is likewise important, when necessary, to defend against product liability claims arising from the operation of production motor vehicles. Courts in this State and across the country have recognized that expert testimony based on biomechanical engineering can offer testable results consistent with a reliable, objective, and scientifically valid process.

Although GM LLC takes no position on this case, it requests that this Court, in assessing this appeal, bear in mind the vital role that biomechanical engineering plays in the automotive industry. An opinion that calls into question the general admissibility and reliability of expert testimony based on biomechanical engineering would not only be out of sync with the global automotive industry’s reliance on this scientific discipline, but also inconsistent with how courts in Michigan and elsewhere have generally admitted such testimony into evidence to assist the trier of fact in understanding the nature and causes of human injury in vehicle crashes.

¹ In accordance with MCR 7.312(H)(5), GM LLC discloses that its counsel is the sole author of this brief. Neither party nor their counsel made a monetary contribution intended to fund the preparation or submission of this brief.

ARGUMENT

I. **GM LLC relies on biomechanical engineers and anthropomorphic test devices in the development and design of its vehicles.**

GM LLC's biomechanical engineers are involved early on and often throughout the development of the company's motor vehicles, from validating prototypes to determining potential risks and how to mitigate them. The lower court opinions in this case are squarely in tension with how the global automotive industry relies on the accuracy and objectivity of these scientific methods and tools to develop modern motor vehicles and motor-vehicle systems.

GM LLC develops age-appropriate impact responses and injury assessment reference values from biomechanical engineering principles, including dimensional analysis and biological material properties of adults and children. Anthropomorphic test devices ("ATDs") are often a critical element of impact tests performed by GM LLC's engineers—whether for sled testing, full barrier testing, or simulations—and are used to evaluate and assess human kinematics and injury potential in numerous scenarios.

These tools, and the biomechanical methods and practices that are used to create them, are how automakers like GM LLC and suppliers throughout the automotive industry develop the sophisticated vehicle safety systems that reduce occupant injury risk in real-world crash events and certify that their vehicles and vehicle systems comply with exacting federal and global vehicle safety standards and regulations. In developing these systems, the biofidelity (human-like response) of ATDs and the accuracy of injury criteria in estimating the risk of injury to vehicle

occupants are essential, because even the smallest adjustment to the design of one of these systems may impact the vehicle's overall occupant safety.

Vehicle airbag systems, for example, must be designed to predict the onset of various types of crash events and effectively deploy airbag cushions throughout a vehicle so that they are positioned properly to reduce the risk of injury to occupants of different sizes and in different seating positions—all within windows of time measured in *fractions of seconds*. To design, develop, and validate these highly complex safety systems, GM LLC conducts a variety of tests, including testing of vehicles equipped with ATDs, which generates the data that GM LLC uses to test, validate, and certify the system's performance to internal, federal, and global safety requirements—themselves often based on injury criteria developed using ATDs and biomechanical engineers. In short, biomechanical engineers play a critical role throughout the development and validation of the company's motor vehicles.

II. Biomechanical engineering expertise is often crucial in complex litigation, such as product liability cases.

Biomechanical engineers' involvement is not limited to the design and development of motor vehicles, however. Though every case is determined on its record, biomechanical engineering experts regularly testify in cases involving motor vehicle crashes to help the trier of fact understand the physical forces involved and how they lead to specific injuries. See 1 *Engineering Evidence* (4th ed, March 2023 updated), § 2:30.50. Their "evaluation regarding the potential for a causal relationship between an alleged injury and a specific incident uses thorough analyses of the forces and accelerations during the incident, an understanding of the unique

tolerance level of the claimant's body, and a biomechanical analysis of the associated injury mechanisms and force magnitudes." Gushue et al., *Low Speed Impacts Effective Use of Biomedical Engineers*, For the Defense (July 2011). "Peer-reviewed scientific literature and learned treatises are then used to support the results of the biomechanical engineer's independent analysis regarding the incident and the alleged injuries." *Id.*

Michigan courts generally welcome biomechanical expert testimony for automotive product liability actions where the testimony meets the standards under MRE 702.² *Lopez v Gen Motors Corp* is illustrative. 224 Mich App 618, 635–638; 569 NW2d 861 (1997). There, a biomechanical expert testified about the operation of a vehicle's restraint system, which included examining the movement of dummies in test vehicles. *Id.* at 623. The Court of Appeals held that the testimony was relevant, and that the expert was qualified based on his engineering degree and experience. *Id.* at 636; see also *Owen v Conto*, unpublished opinion of the Court of Appeals, issued January 7, 2020 (Docket No. 345253), 2020 WL 91575, p *5 (rejecting plaintiff's request to find that in general, biomechanical engineers, as non-physicians, are not qualified to give opinions as to causation"); accord *Mannino v Int'l Mfg Co*, 650 F2d 846, 851 (CA 6, 1981) (admitting biomechanical engineering expert's testimony when

² "The admission of expert testimony requires that (1) the witness be an expert, (2) there are facts in evidence that require or are subject to examination and analysis by a competent expert, and (3) the knowledge is in a particular area that belongs more to an expert than to the common man." *Dept of Env'tl Quality v Waterous Co*, 279 Mich App 346, 381; 760 NW2d 856 (2008). A witness may be qualified as an expert by knowledge, skill, experience, training, or education. See MRE 702; *Mulholland v DEC Int'l Corp*, 432 Mich 395, 403; 443 NW2d 340 (1989).

the expert had a PhD in biomechanical engineering and conducted research on whiplash injuries to humans in motor vehicle accidents); *Laski v Bellwood*, unpublished opinion of the United States Court of Appeals for the Sixth Circuit, issued May 25, 2000 (Docket No. 99-1063), 215 F3d 1326 (admitting biomechanical engineer to offer causation testimony in an action involving a rear-end collision).³

And Michigan courts are not alone. In *Haynes v. Am Motors Corp*, for example, the Eighth Circuit upheld the admission of testimony of a biomechanics expert with a PhD in engineering about the causation of a plaintiff's injuries during a motor vehicle accident. 691 F2d 1268, 1273 (CA 8, 1982). The Ninth Circuit did the same in *Weber v. TMG Logistics, Inc*, a case involving an expert with a PhD in biomechanics who opined on whether a motorist's spinal injuries were caused by a motor vehicle collision. 805 Fed Appx 463, 466 (CA 9, 2020); see also *Pennsylvania Tr Co v Dorel Juvenile Grp, Inc*, 851 F Supp 2d 831, 841 (ED Pa, 2011) (biomechanical engineer was qualified to testify as expert in products liability action arising when minor sustained injuries in motor vehicle accident while sitting in child car seat); *Berner v*

³ Unpublished cases are attached as Exhibit A.

Carnival Corp, 632 F Supp 2d 1208, 1212–1213 (SD Fla, 2009) (collecting cases).⁴

That said, biomechanical engineering experts are not limited to automotive cases.⁵

⁴ Accord, e.g., *Yu–Santos v Ford Motor Co*, unpublished opinion of the United States District Court for the Eastern District of California, issued May 14, 2009 (Docket No. 06-cv-1773), 2009 WL 1392085, p *13 (“The court is not persuaded given that Defendants cite no legal authority for their proposition that only medical doctors are qualified to provide opinions on injury causation and biomechanics.”); *Dorsett v Am Isuzu Motors*, 805 F Supp 1212, 1224 (ED Pa, 1992), aff’d 977 F.2d 567 (CA 3, 1992) (holding that expert experienced in biomechanics could testify as to cause of injury sustained in rollover accident); *Shifrel v Singh*, 61 AD3d 401, 402; 874 NYS2d 910 (2009) (biomechanical engineer permitted to testify that it was unlikely that plaintiff’s left shoulder impacted the steering wheel); *Valentine v Grossman*, 283 AD2d 571, 572–573; 724 NYS2d 504 (2001) (biomechanical engineer should have been allowed to testify that the force in the accident was insufficient to cause a herniated disc); c.f., e.g., *Davis v Martel*, 790 So 2d 767, 771–772 (La App, 2001) (finding “manifest error” in the trial court’s admission of biomechanical expert with no foundation for his testimony); *Pacific Legal Found v Dept of Transp*, 593 F2d 1338, 1344 (DC Cir, 1979) (affirming NHTSA’s conclusion that airbags are effective safety features based on over 2,000 “carefully conducted [crash] tests” involving, among other things, 274 crash dummies).

⁵ Accord, e.g., *Dixon v Grand Trunk W R Co*, unpublished opinion of the United States District Court for the Eastern District of Michigan, issued Nov 8, 2017 (Docket No. 2:13-cv-14340), 2017 WL 5166868, p *7 (biomechanical engineering expert “may apply the general principles of biomechanics to the facts in the case and opine on how a hypothetical person’s body would respond to particular forces and what types of injuries would result”); *Green v Schutt Sports Mfg Co*, 369 Fed Appx 630, 639 (CA 5, 2010) (admitting biomechanical expert testimony about the way injuries could occur in football depending on how a tackle was made); *Kelham v CSX Transp, Inc*, 840 F3d 469, 471 (CA 7, 2016) (finding no error in the trial court’s admission of biomechanical engineer to testify about the impact of the “forward lurch” of a locomotive); *Phillips v Raymond Corp*, 364 F Supp 2d 730, 742 (ND Ill, 2005) (finding biomechanical engineer qualified to testify about the at-issue injury and related biomechanical issues in products liability action against forklift manufacturer where the expert had a Ph.D. in medical engineering and published multiple articles concerning bone mechanics and the mechanism of injuries); *Milliman v Mitsubishi Caterpillar Forklift Am, Inc*, 594 F Supp 2d 230, 237 (NDNY, 2009) (denying motion to strike biomechanical engineer as an expert and finding he was qualified because he had served as a professor in mechanical engineering, had published hundreds of articles, at least 50 of which pertained to issues concerning biomechanics, and had served as editor-in-chief of an international journal of health care engineering); *Council v State of Florida*, 98 So 3d 115 (Fla App, 2012) (finding biomechanical expert qualified to

The plaintiffs' bar has tried to challenge biomechanical testing using ATDs, specifically, for lack of reliability repeatedly over the years. But, again based on the facts before them, court after court has considered—and rejected—those nearly identical challenges. See, e.g., *Hernandez v Crown Equip Corp*, 92 F Supp 3d 1325, 1339 (MD Ga, 2015) (Hybrid III testing in tip-over accident satisfied *Daubert*); *Cosper v Ford Motor Co*, unpublished opinion of the United States District Court for the Northern District of Georgia, issued October 17, 2022 (Docket No 2:18-cv-189), 2022 WL 17908815, p *12; *Tucker v Evenflo Co, Inc*, unpublished opinion of the United States District Court for the Middle District of Florida, issued July 12, 2021 (Docket No. 6:20-cv-2), 2021 WL 4949122, p *8 (expert's use of Hybrid III to measure side impacts satisfied *Daubert*); *Jones v Raymond Corp*, unpublished opinion of the United States District Court for the Northern District of Mississippi, issued January 18, 2023 (Docket No 3:20-cv-308), 2023 WL 309055, p *13 (expert's ATD testing “meets the requisite threshold for expert testimony” in case involving falling forklift).

Put simply, GM LLC—and many others—rely on biomechanical engineering experts and ATDs to defend against product liability claims, and courts often recognize the validity and admissibility of this scientific expertise. While GM LLC appreciates these experts are evaluated in the record and takes no position in this specific case, an opinion from this Court (or the Michigan Court of Appeals) questioning the general reliability or admissibility of biomechanical engineering

testify in aggravated child abuse case); *Bowers v Norfolk S Corp*, 537 F Supp 2d 1343, 1377–1378 (MD Ga, 2007) (biomechanical engineer was qualified to testify as to general causation in action brought against railroad).

expertise and the use of biofidelic dummies would be out of step with how this evidence is routinely considered and admitted by Michigan courts and courts across the United States.

III. NHTSA's reliance on biomechanical engineers illustrates how useful biomechanical engineering expertise can be.

Automotive manufacturers are not alone in engaging biomechanical engineers in this area; indeed, the National Highway Traffic Safety Administration (“NHTSA”) relies on biomechanical engineering—including ATDs—to develop its Federal Motor Vehicle Safety Standards (“FMVSS”). The National Traffic and Motor Vehicle Safety Act of 1966 requires that these safety standards “be practicable, shall meet the need for motor vehicle safety, and shall be stated in objective terms.” See 49 USC 30111. Automotive manufacturers must comply with the mandatory minimum safety performance requirements identified in the FMVSS before introducing a new motor vehicle into the market. In addition to FMVSS compliance, NHTSA’s New Car Assessment Program (“NCAP”) evaluates vehicle safety beyond the FMVSS requirements. At times, a single crash test can be used to inform both FMVSS and NCAP assessments. See Exhibit B, NHTSA’s 2022 Interim Report to Congress: Crash Test Dummies at 3.

A critical element of both FMVSS and NCAP testing is often biomechanical engineering and ATDs, which are used to assess human injury potential in a crash.⁶

⁶ GM LLC is quite familiar with the development of the federal standards for ATDs. “NHTSA awarded GM a contract in 1972 for a dummy development program which was to synthesize and incorporate all of the known anthropomorphic and biomechanical data into a new dummy configuration suitable for automobile crash test applications. By the end of 1973, GM had developed the GM-ATD 502 50th

Originally developed in the late 1970's, the Hybrid III ATD has been refined and improved over the years as technology has improved. Even today, "Hybrid III dummies are the most commonly used test devices for assessing 'injury' in crash testing." Cing-Dao Kan et al, *Development of a 50th Percentile Hybrid III Dummy Model*, 4th European LS-Dyna Users Conference, 14 (2003).⁷ Hybrid III ATDs are the go-to choice for NHTSA, which uses five Hybrid III ATDs and a related CRABI ATD in its crash testing. See NHTSA's *Crash Test Dummies*, NHTSA, <https://www.nhtsa.gov/nhtsas-crash-test-dummies> (last accessed August 11, 2023). Notably, NHTSA uses the Hybrid III for the *sole rear-end collision testing* it performs. See *id.* (using Hybrid III for "Rear Impact / Head Restraints" testing on 50th percentile adult male).⁸

percentile dummy[.] . . . [Ultimately,] the agency chose not to pursue its development any further. GM, on the other hand, continued the development of the GM-ATD 502 dummy in the knee, chest and neck areas . . . The revised GM-ATD 502 dummy became known as the Hybrid III." *National Highway Traffic Safety Administration, Federal Motor Vehicle Safety Standards for Occupant Crash Protection; Notices of Proposed Rulemaking and Denials of Petitions for Rulemaking*, 50 Fed Reg 14580, 14602 (April 12, 1985). In 1983, General Motors Corp. petitioned NHTSA to allow the use of the biofidelic Hybrid III midsize adult male dummy as an alternate test device for FMVSS 208 compliance testing of frontal impact, passive restraint systems. To support their petition, GM made public to the international automotive community the limit values that they imposed on the Hybrid III measurements. NHTSA recognized the Hybrid III's design was "backed by extensive biomechanical data and documentation and the injury thresholds are the results of well[-]founded synthesis of current experimental research and accident data." *Id.* As of 1991, the Hybrid III became "the exclusive means of determining a vehicle's conformance with the injury reduction performance requirements of [FMVSS] 208." *Id.*

⁷ <https://www.dynalook.com/conferences/european-conf-2003/development-of-a-50th-percentile-hybrid-iii-dummy.pdf>.

⁸ Researchers also use the Hybrid III for all types of rear collision testing. See, e.g., Saczalski, et al, *Evaluation of Rear Impact Seat System Performance Using a Combined Load Neck Injury Criteria and Hybrid III Surrogates*, AM. Soc'y Mech.

NHTSA's current ATD specification reflects a judgment by the government that these devices, and the science of biomechanics generally, is scientific, biofidelic, and objective: "The design and performance criteria specified in this part are intended to describe measuring tools with sufficient precision to give repetitive and correlative results under similar test conditions and to reflect adequately the protective performance of a vehicle or item of motor vehicle equipment with respect to human occupants." 49 C.F.R. 572.2; see also 78 Fed Reg 225 (Nov 21, 2013) ("The scaling theories as well as the underlying anthropometric and biomechanical test data have ***all been vetted and released to the public domain.*** SAE methods have been used by NHTSA to assess the biofidelity of the majority of Part 572 ATDs and ***we find them to be sound, data-driven, and well-founded scientifically.***") (emphasis added).

At bottom, the codification of the use of ATDs for compliance testing of motor vehicles and motor vehicle components reflects NHTSA's acceptance of biomechanical engineering as reliable, scientific, and objective.

CONCLUSION

GM LLC, like many automotive manufacturers, relies on biomechanical engineers throughout the development of its motor vehicles, and courts routinely accept biomechanical engineering expert testimony when determining injury causation and how mechanical forces affect the human body. While GM LLC does not

Eng'rs, Int'l Mech. Eng'g Congress & Expo., at 65 (Nov 11, 2001); Viano & Parenteau, *Analysis of Rear Seat Sled Tests with the 5th Female Hybrid III* (1 SAE Int'l: Technical Papers 618, 2019).

take a position in favor of either party here, it requests that this Court bear in mind the vital role that biomechanical engineering plays in the automotive industry and the potential impact of an overbroad opinion from this Court questioning the reliability and admissibility of biomechanical engineering expertise in Michigan court proceedings.

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Dated: September 1, 2023

CERTIFICATE OF COMPLIANCE

I hereby certify that this document complies with the formatting rules in MCR 7.305(A) and MCR 7.212(B). The document contains 3,259 words, one-inch page margins, the font is Century Schoolbook, and the text is 12-point type and double-spaced (except block quotations and footnotes which are single-spaced).

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CERTIFICATE OF SERVICE

I hereby certify that on September 1, 2023, I electronically filed the foregoing papers with the Clerk of the Court using the Odyssey File and Serve system, which will send notification of such filing to all counsel of record and/or a copy will be sent via first class U.S. Mail to all counsel not listed on the Odyssey service list.

By: /s/ Brittney D. Kohn
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2022 WL 17908815

Only the Westlaw citation is currently available.

United States District Court, N.D.
Georgia, Gainesville Division.

Cindy COSPER, Individually as Surviving
Child of Ronnie Ammerson and Allan
Myers as Temporary Administrator of the
Estate of Ronnie Ammerson, Plaintiff,

v.

FORD MOTOR COMPANY, Defendant.

Civil Action No. 2:18-cv-189-RWS

|

Signed October 17, 2022

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ORDER

[RICHARD W. STORY](#), United States District Judge

*1 This case comes before the Court on Plaintiff's Amended Motion to Exclude Expert Opinions [Dkt. 115]. Ford responded to the motion [Dkt. 122] and Plaintiff replied [Dkt. 144]. Having considered the record, the Court enters the following order.

BACKGROUND


This case arises from a single vehicle rollover incident (“the subject accident”) on December 25, 2015 in Georgia. [Dkt. 141-1, at ¶ 1-2]. Cindy Cosper (“Plaintiff”) was driving a 2000 Ford Explorer 4x2 Sport Utility Vehicle (“the subject Explorer”). [Id. at ¶ 7]. Ronnie Ammerson was the front seat passenger. [Id. at ¶ 8]. While Ms. Cosper was driving, the Explorer drifted off the road shoulder. When Ms. Cosper tried to steer the car back onto the road, the rear-end of the car began to slide. [Dkt. 115, at 2]. Ms. Cosper then attempted a corrective steer. [See id.] During the counter-steer, the rear-end spun clockwise, the tires lost traction, and the Explorer rolled over. [Id.]

During the subject accident, the roof structure (passenger side) intruded into the occupant compartment. [Dkt. 141-1, at ¶ 159]. Mr. Ammerson suffered severe cervical spinal (C6/C7) fractures with [spinal cord trauma](#). [Id. at ¶ 141]. After months of rehabilitation, he was discharged to his home where he succumbed to his injuries by [pneumonia](#). [Id.] An autopsy concluded that the cause of death was acute right lung [pneumonia](#) as a result of cervical spine trauma/[quadriplegia](#) sustained in the subject rollover crash. [Id.]

Plaintiff filed her original Complaint on May 6, 2018 and her First Amended Complaint on January 7, 2020. [Dkt. 1-1, at 49]. In Count I, Plaintiff asserted three strict liability claims – design defect, manufacturing defect, and failure to warn. [Dkt. 49, at ¶¶ 31-44]. In Count II, Plaintiff raised four negligence claims – negligent design, negligent manufacture, negligent sale, and negligent failure to recall. [Id. at ¶¶ 46-47]. With respect to her negligent design claim, Plaintiff asserts “that the Explorer has insufficient handling and stability characteristics to prevent a rollover during emergency steering maneuvers, and that the vehicle suffered from insufficient crashworthiness in roof structure and safety belt design.” [See Dkt. 115, at ¶ 4]. In addition to wrongful death and general damages, Plaintiff seeks punitive damages. [Dkt. 49, at ¶¶ 51-54].¹

Plaintiff filed a Motion to Exclude Expert Opinions [Dkt. 113] on March 15, 2022 and an amended motion [Dkt. 115] on March 16, 2022. Plaintiff asks the Court to exclude several experts’ testimonies under [Federal Rules of Evidence \(“FREs”\) 401, 402, 403, and 702](#). [Id. at 3]. Ford responded [Dkt. 122] and Plaintiff replied [Dkt. 144].

DISCUSSION

The Court will grant Plaintiff's motion [Dkt. 115] in part. Plaintiff challenges the admissibility of the testimony of several experts under FRE 702 and  [Daubert v. Merrell Dow Pharm., Inc.](#), 509 U.S. 579 (1993). [Dkt. 115, at 3-5]. Plaintiff asks the Court to exclude the testimonies because they are unhelpful, irrelevant, or unsupported by scientifically valid data and objective methodology. [See *id.*] Plaintiff also appears to raise arguments under FREs 401, 402, and 403. [See, e.g., at 3, 6-7]. The Court acknowledges Plaintiff's attempt to justify exclusion on alternative grounds but will only evaluate the testimonies under *Daubert* at this stage.² Should Plaintiff wish to challenge Ford's experts' testimonies on other grounds, she may file a motion *in limine* or raise her objections at trial.


*2 The Court begins by setting out the relevant legal standard before turning to Plaintiff's challenges.

I. Legal Standard

Federal Rule of Evidence 702 governs the admissibility of expert testimony. It provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.


Fed. R. Evid. 702. The Supreme Court has directed that “an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation.”  [Daubert](#), 509 U.S. at 592 (citation omitted).

“Rule 702 requires district courts to perform a gatekeeping role concerning the admissibility of expert testimony.” [Giusto](#)

v. Int'l Paper Co., 2021 WL 5493494, at *7 (N.D. Ga. Nov. 23, 2021) (citations and quotations omitted). “The Court's role is to ensure that speculative, unreliable expert testimony does not reach the jury under the mantle of reliability that accompanies the appellate expert testimony.” *Id.* (citation and quotations omitted). However, the Court cannot “supplant the adversary system or the rule of the jury: vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Id.* (citation and quotations omitted).

The Eleventh Circuit has established a three-part test to resolve *Daubert* challenges:

- (1) whether the expert witness is qualified to testify competently regarding the matters he intends to address;
- (2) whether the methodology by which the expert witness reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and
- (3) whether the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

Id. (citing [Moore v. Intuitive Surgical, Inc.](#), 995 F.3d 839, 850-51 (11th Cir. 2021)). “While there is inevitably some overlap among the basic requirements—qualification, reliability, and helpfulness—they remain distinct concepts and the courts must take care not to conflate them.”  [United States v. Frazier](#), 387 F.3d 1244, 1260 (11th Cir. 2004) (citation omitted). To evaluate reliability, the court should examine:

- (1) whether the expert's theory can be and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error of the particular scientific technique; and (4) whether the technique is generally accepted in the scientific community.

Id. at 1261-62 (citation omitted).

“The proponent of the expert testimony shoulders the burden of establishing each element.” [Giusto](#), 2021 WL 5493494 at *7 (citation omitted). “The presumption is that expert testimony is admissible, so that once a proponent has made the requisite threshold showing, further disputes go to weight, not admissibility.” [Little v. Wash. Metro. Area Transit Auth.](#), 249 F. Supp. 3d 394, 408 (D.D.C. 2017) (citing [Daubert](#), 509 U.S. at 588).

II. Plaintiff's Motion to Exclude Expert Opinions [Dkt. 115]

*3 The Court will not exclude any of the challenged experts' testimonies. Plaintiff asks the Court to exclude several testimonies because they are “not supported with scientifically valid data, test results, scientific protocol, or objective methodology” [Dkt. 115, at 3]. Ford responds that its experts' testimonies are “relevant when measured against Georgia law, reliable when measured against what real automotive engineers do in the real world, and none of it is subject to exclusion under [Rule 403](#)” or [Rule 702](#). [Dkt. 122, at 2]. Ford further claims that the challenged testimonies are admissible because Plaintiff “opened the door to rebuttal through her defect theories and own expert testimony.” [Id.]

For the reasons set out below, the Court will admit most of the expert testimony at issue. Plaintiff's arguments under [Daubert](#) largely go to evidentiary weight or credibility and should thus be addressed on cross-examination.

A. Don Tandy's Expert Testimony

The Court will not exclude Don Tandy's (“Mr. Tandy”) testimony about Plaintiff's steering or his opinion about Static Stability Factor³ (“SSF”). Plaintiff argues that Mr. Tandy's opinions should be excluded because they lack a scientific foundation. [Dkt. 115, at 6-7]. In response, Ford asserts that Mr. Tandy's testimony satisfies [Daubert](#) and that Plaintiff's objections must be addressed on cross-examination. [See Dkt. 122, at 5, 7-8].

Expert testimony is admissible under [Daubert](#) if the expert (1) is qualified to testify; (2) bases their opinion on reliable methodology; and (3) if their opinion assists the trier of fact. [Giusto](#), 2021 WL 5493494 at *7 (citing [Moore](#), 995 F.3d at 850-51). For the following reasons, the Court agrees with Ford and finds that Mr. Tandy's testimony is admissible under [Daubert](#).

1. Testimony About Plaintiff's Steering Input

The Court will not exclude Mr. Tandy's opinion that Plaintiff steered the subject Explorer “violently”. Plaintiff asks the Court to exclude this portion of Mr. Tandy's testimony because he did not use tests or data to determine “the nature, degree and amount of steering [she] used” before the crash. [See Dkt. 115, at 5-6]. Ford responds that Mr. Tandy's testimony satisfies [Daubert](#) because he has enough “skill, training, and experience” to describe steering maneuvers and has a valid basis for his opinion. [See Dkt. 122, at 5].

Mr. Tandy's testimony is admissible. Mr. Tandy is qualified to testify about steering input because he is an automotive engineer, a professional driver, and has “test driven hundreds of vehicles under a variety of conditions, including limit or near limit maneuvers.” [Id. at 5 (citing Ex. A, at ¶¶ 4, 5)].

Mr. Tandy's testimony is also reliable even though it is not based on scientific tests or quantitative data. To evaluate reliability, “the trial judge must assess whether the reasoning or methodology underlying the testimony is scientifically valid and ... whether that reasoning or methodology properly can be applied to the facts in issue.” [Frazier](#), 387 F.3d at 1261-62 (citation and quotation marks omitted). “The same criteria which are used to assess the reliability of a scientific opinion may be used to evaluate the reliability of non-scientific, experience-based testimony.” [Id.](#) at 1262 (citing [Kumho Tire Co. v. Carmichael](#), 526 U.S. 137, 152 (1999)). For non-scientific expert testimony, “the trial judge must have considerable leeway in deciding ... whether particular expert testimony is reliable[]” and “may decide that [the] testimony is reliable based upon personal knowledge or experience.” [Am. Gen. Life Ins. Co. v. Schoenthal Fam., LLC](#), 555 F.3d 1331, 1338 (11th Cir. 2009) (internal citation omitted).

*4 Mr. Tandy's opinion that Plaintiff steered “violently” could be characterized as scientific and non-scientific expert testimony. Regardless, the opinion is reliable because it is based on Mr. Tandy's extensive experience testing the effect of steering inputs on Explorers' stability.⁴ [See Dkt. 103, at 6-7]; [Frazier](#), 387 F.3d at 1261-62. Mr. Tandy used this expertise and experiential knowledge to evaluate evidence of the subject accident. [See Dkt. 103, at 2-4 (listing Mr. Tandy's opinions based on the accident reconstruction)]. For these

reasons, Mr. Tandy does not rely on *ipse dixit* to support his opinion and his testimony rests on an adequate foundation. [Anderson v. FCA U.S., LLC](#), 2019 WL 826479, at *5 (M.D. Ga. Feb. 21, 2019) (“Certainly, an *ipse dixit* opinion, or ‘believe it solely because I said it,’ is inadmissible, but an expert offering an opinion based on experience is not asking a jury to believe it only because he says it.” (citation omitted)).

Mr. Tandy's opinion will also help jurors resolve issues relevant to this case. Helpfulness “concern[s] matters that are beyond the understanding of the average lay person.” [Edwards v. Shanley](#), 580 F. App'x 816, 823 (11th Cir. 2014) (quoting [Frazier](#), 387 F.3d at 1262). “[A] trial court may exclude expert testimony that is ‘imprecise and unspecific,’ or whose factual basis is not adequately explained.” [Cook ex rel. Est. of Tessier v. Sheriff of Monroe Cty., Fla.](#), 402 F.3d 1092, 1111 (11th Cir. 2005) (citation omitted). To be appropriate, a “fit” must exist between the offered opinion and the facts of the case. [McDowell v. Brown](#), 392 F.3d 1283, 1299 (11th Cir. 2004) (citing [Daubert](#), 509 U.S. at 591).

The average juror does not know about the factors precipitating rollovers. Mr. Tandy intends to testify about two of them, steering input and vehicle feedback. [See Dkt. 103, at 2-4]. His testimony will thus help jurors understand the relationship between Plaintiff's steering and the Explorer's handling during the accident. [See *id.* at 5]. Mr. Tandy's testimony also “fits” with this case because it will also help jurors evaluate causation and the alleged stability design defect. See [Brown](#), 392 F.3d at 1299. For these reasons, Mr. Tandy's testimony is admissible under [Daubert](#).

2. Testimony Critiquing SSF

The Court will admit Mr. Tandy's testimony about SSF. Plaintiff claims that Mr. Tandy failed to support his opinion questioning the reliability of SSF with “scientifically valid data, test results, scientific protocol, or objective methodology...” [Dkt. 115, at 6-7]. Plaintiff asserts that this portion of Mr. Tandy's testimony is unreliable and inadmissible and should be excluded under [Rules 401, 402, 403 and 702](#). [See *id.* at 6]. Ford responds that Mr. Tandy's opinion is admissible because it satisfies [Daubert](#) and Plaintiff's expert put the reliability of SSF at issue first. [Dkt. 122, at 6-7].

Mr. Tandy's testimony about SSF is admissible. Mark Arndt, Plaintiff's expert, put SSF at issue when he claimed that Ford knew it could improve the Explorer's stability by increasing its SSF. [Dkt. 141, at 62, 84 (citing Ex. 40, at 5)]. Ford may respond to Plaintiff's expert so long as the rebuttal testimony satisfies [Daubert](#). [Fair Fight Action, Inc., et al. v. Brad Raffensperger, et al.](#), 2020 WL 13565010, at *6 (N.D. Ga. Dec. 11, 2020) (stating that rebuttal experts need not “‘produce models or methods of their own,’ in rebutting the [opposing party's] expert opinions; however, they must satisfy [Daubert's](#) standards.” (citations omitted)). For the following reasons, the Court finds that the Mr. Tandy's testimony meets [Daubert's](#) requirements.

Mr. Tandy is qualified to testify about SSF. He is an automotive engineer who helped test and select the stability design for the Explorer. [See Dkt. 122, Ex. A, at ¶¶ 3]. Mr. Tandy has also researched the dimensional characteristics and dynamic handling qualities of the Explorer and similar vehicles. [See *id.* at ¶¶ 8-10].

*5 Mr. Tandy's testimony is reliable because his theory has been tested and subjected to peer review. [See Dkt. 103, at 4-5, 15 (describing rollover resistance studies conducted by the NHTSA and other researchers)]; see also [Quiet Tech. DC-8, Inc. v. Hurel-Dubois, UK Ltd.](#), 326 F.3d 1333, 1341 (11th Cir. 2003). To illustrate, Mr. Tandy relies on the NHTSA's finding that SSF is not an appropriate baseline standard for rollover resistance. [Dkt. 103, at 4-5]; [see Dkt. 122, Ex. A, at ¶ 11]. The NHTSA reached this conclusion after analyzing data from several rollover resistance studies. [See Dkt. 103, at 4-5]. Mr. Tandy also relies on the results of “tip up” tests he conducted on cars with various SSFs and his experience testing the Explorer's stability design. [See *id.* at 5-7, 13]. Taken together, these factors support reliability. See [Quiet Tech. DC-8, Inc.](#), 326 F.3d at 1341.

Finally, Mr. Tandy's testimony will help jurors understand SSF and its alleged relationship to the Explorer's handling and stability. Mr. Tandy's opinion will specifically benefit the “lay” juror, who is unlikely to know the scientific principles underlying a vehicle's stability design. The testimony could also help jurors decide which principles (such as SSF) most accurately predict rollover propensity. Finally, Mr. Tandy's testimony fits with one of the core issues in this case, i.e., whether Ford acted recklessly by not increasing the subject Explorer's SSF. [See Dkt. 141, at 59-64]. For these reasons, the Court will admit this portion of Mr. Tandy's testimony.

B. Roger Burnett's Expert Testimony

Mr. Roger Burnett's ("Mr. Burnett") testimony about restraints is also admissible. Plaintiff argues the Mr. Burnett's testimony is unreliable because he failed to support his claim that the Explorer's seat belt retractor would remain locked in a rollover. [Dkt 115, at 9]. Ford responds that Mr. Burnett's testimony is admissible because he is qualified, his testimony rebuts the TRW document,⁵ and his opinion is supported by scientific data. [Dkt. 122, at 8-9, 11-12].

Expert testimony is admissible under Daubert if the expert (1) is qualified to testify; (2) uses a reliable methodology; and (3) if their opinion assists the trier of fact. Giusto, 2021 WL 5493494 at *7 (citing Moore, 995 F.3d at 850-51). Mr. Burnett's testimony meets these three requirements.

Mr. Burnett is qualified to testify because he is a "Ford automotive engineer with expertise in a variety of areas including seat design and restraints." [Dkt. 122, at 8]. Mr. Burnett's testimony is also reliable. To determine reliability, the court may consider the following factors:

- (1) whether the expert's theory can be and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error of the particular scientific technique; and (4) whether the technique is generally accepted in the scientific community.





 Quiet Tech. DC-8, Inc., 326 F.3d at 1341.


Mr. Burnett rebutted TRW's warning by claiming⁶ that it relied on "highly disputed" research. [Burnett January 21, 2022 Dep., at 47:2-14 and 48:2-11]. Ford appears to argue that this statement, and Mr. Burnett's opinion in general, were based on research conducted by Mr. William Van Arsdell, another Ford expert. Mr. Van Arsdell testified that:

Other researchers described research in 200237 that established that Mr. Meyer's claims [that retractors can

come unspooled during rollovers] are incorrect, and that the Meyer paper and its underlying research are flawed. This 2002 research confirmed that in rollovers, once the retractor is locked, it will stay locked. I have conducted similar research in other matters that demonstrate and confirm that Mr. Meyer's premise is incorrect, and that with typical retractor designs (such as the subject retractor design), the retractor does not become unlocked and "pay out" webbing in rollover crashes.

*6 [Dkt. 122, at 11 (citing Dkt. 125, at 25-28)].

If Mr. Burnett relied on Mr. Van Arsdell's conclusions,⁷ his testimony has a reliable foundation. Despite Plaintiff's claims, "expert[s] may rely on the opinion of another expert so long as there is a reasonable belief that the other expert's opinion is reliable."  Hendrix v. Evenflo Co., Inc., 255 F.R.D. 568, 607 n. 75 (N.D. Fla. Jan. 28, 2009), *aff'd sub nom.*  Hendrix ex rel. G.P. v. Evenflo Co., Inc., 609 F.3d 1183 (11th Cir. 2010); *see also*  Fox v. Gen. Motors LLC, 2019 WL 3483171, at *8 (N.D. Ga. Feb. 4, 2019). Mr. Van Arsdell's testimony is reliable because it has been tested and is confirmed by peer-reviewed research: Mr. Van Arsdell testified that he conducted tests to confirm another researcher's finding that retractors cannot unspool during rollovers. [See Dkt. 108, at ¶ 54]; [see also Dkt. 122, Ex. H, at 23-30];  Quiet Tech. DC-8, Inc., 326 F.3d at 1341.

Even if Mr. Burnett did not rely on Mr. Van Arsdell's research, his testimony is still reliable. Mr. Burnett's report cites to documents describing the design and FMVSS certification of the Explorer's restraint. [Dkt. 107, at 4]. Mr. Burnett also relies on his participation in "numerous crash, sled, and drop tests" and "a surrogate review and spit demonstration utilizing a 2000 Explorer body mounted to a rotatable frame." [Id.]. These sources support reliability because they show that Mr. Burnett's opinion has been tested using generally accepted methodologies. [See  id.; Quiet Tech. DC-8, Inc., 326 F.3d at 1341.

Finally, Mr. Burnett's testimony will help the jury evaluate the alleged restraint defect, Ford's intent, and causation. Specifically, the testimony will help jurors assess the accuracy of TRW's claim that the Explorer's seatbelt could unspool during a rollover. [See *id.*] Jurors may also use Mr. Burnett's testimony to analyze Ford's intent in ignoring TRW's warning and keeping the original restraint design. [*Id.*] Finally, the testimony could help jurors determine whether the alleged restraint defect caused Mr. Ammerson's injuries. [*Id.*] For these reasons, Mr. Burnett's testimony is helpful and thus admissible under Daubert.

C. Expert Opinions Relying on NASS Data

The Court will only exclude one of the testimonies based on National Automotive Sampling System/Crashworthiness data ("NASS data"). Plaintiff asks the Court to exclude these testimonies because the NASS data "is derived from crashes that are not substantially similar to the subject accident." [Dkt 115, at 11]. Plaintiff thus asserts that the experts offer irrelevant conclusions that are "prejudicial and will likely confuse the jury." [See Dkt. 144, at 6-7].

*7 Ford argues that the testimonies are admissible because (1) the NASS data is relevant to "risk" in the risk/utility design defect analysis; (2) the experts all relied on scientific methodology and valid data to reach their conclusions; and (3) the testimonies are not subject to a "substantial similarity" requirement. [Dkt. 122, at 15-17, 20].

The Eleventh Circuit has established a three-part test to resolve Daubert challenges:

- (1) whether the expert witness is qualified to testify competently regarding the matters he intends to address;
- (2) whether the methodology by which the expert witness reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in Daubert; and
- (3) whether the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

Giusto, 2021 WL 5493494 at *7 (citing Moore, 995 F.3d at 850-51). For the reasons set out below, the Court finds that Mr. Tandy's testimony fails to satisfy the test set out in Giusto. However, Ms. Vogler and Mr. Burnett's testimonies are admissible.

1. Ms. Vogler's Testimony

Ms. Vogler's testimony is admissible under Daubert. Plaintiff objects to the following:

Proffered expert Michelle Vogler claims that the NASS data indicates that SVRA (single vehicle rollover accidents) such as occurred here are "infrequent", and that the NASS studies she relies on indicate that the risk of a front seat occupant fatal or serious injury increases with the number of rolls experienced, and that the majority (93%) of front outboard occupants who experienced a rollover in passenger cars and light trucks in the database received either moderate or no injuries.



[Dkt. 115, at 10 (citing Dkt. 106, at 11)]. Plaintiff argues that Ms. Vogler's testimony is not "relevant or helpful" because she relies on NASS data that was "derived from crashes not substantially similar to the subject accident." [*Id.* at 13].

Ford responds that Ms. Vogler was not required to rely on data from substantially similar crashes and that her opinion is helpful because it relates to gravity of risk in the risk/utility analysis. [Dkt. 122, at 13-14]. The Court agrees with Ford and finds that Ms. Vogler's testimony is admissible.

Ms. Vogler is qualified to testify about NASS data because she is "a licensed and registered professional mechanical engineer" [Dkt. 106, at 1]. Ms. Vogler's testimony is also reliable because NASS data is generally accepted as valid

by other experts in the field. See Quiet Tech. DC-8, Inc., 326 F.3d at 1341. Namely, the federal government collects NASS data and the NHTSA relies on it to make motor vehicle safety regulations. See 49 U.S.C. § 30169 (directing Secretary of Transportation to collect and submit annual reports of motor vehicle safety); Roberts v. Gen. Motors, LLC, 2015 WL 6955362, at *10 (E.D. Mo. Nov. 10, 2015) ("NHTSA and other highway safety organizations use the [NASS] databases for rule making regulatory activity, safety

standard assessment, and to see how vehicles perform in the field.”).

The Court further finds that Ms. Vogler's testimony satisfies Daubert's “helpfulness” prong. To be helpful, there must be a nexus between the offered opinion and the facts of the case.  Brown, 392 F.3d at 1299 (citation omitted). Testimony is not helpful “where a large analytical leap must be made between the facts and the opinion.” Id. (citing  Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997)). Ms. Vogler's testimony is adequately helpful because it provides information jurors may use to generally evaluate gravity of risk in their risk/utility analysis. [See Dkt. 122, at 13-14]. While the Court shares Plaintiff's concerns about the weight of Ms. Vogler's opinion, this does not mean her testimony is not “helpful” under Daubert. See Perau v. Barnett Outdoors, LLC, 2019 WL 2145513, at *3 (M.D. Fla. Apr. 24, 2019).



2. Mr. Burnett's Testimony

*8 Mr. Burnett's testimony is admissible. Plaintiff argues that Mr. Burnett cannot rely on NASS data to testify that there is no difference in fatalities, serious injuries, or ejections in rollover crashes for occupants wearing seat-integrated restraints (“SIRs”) versus occupants wearing conventional seatbelts.⁸ [Dkt 115, at 10]. As with Ms. Vogler, Plaintiff claims that Mr. Burnett's testimony is unhelpful because he did not control for rollovers that were substantially similar to the subject accident. [Id. at 11]. Ford argues that the testimony is admissible because it will help jurors evaluate gravity of risk. [See Dkt. 122, at 13-14].

The Court finds that Mr. Burnett's testimony is admissible under Daubert. Mr. Burnett is qualified to testify about restraints because he is an “automotive engineer with expertise in seat design and restraints.” [Id. at 8]. As explained above, the NASS data is reliable. Mr. Burnett's testimony will also help jurors evaluate specific issues in the case, such as the alleged restraint defect and the benefits of alternative designs. [See Dkt. 107, at 8]. Finally, Mr. Burnett relied on the NASS data to form an independent opinion about the effectiveness of SIRs, a specific issue in this case. [See Dkt. 141, at 71]; Anderson, 2019 WL 826479 at *6. For these reasons, the Court finds that Mr. Burnett's testimony is admissible under Daubert.

3. Mr. Tandy's Testimony

The Court will exclude Mr. Tandy's testimony. Plaintiff asks the Court to exclude Mr. Tandy's testimony that the rollover in this case was more severe than 99% of all rollover crashes.” [Dkt 115, at 11 (citation omitted)]. Plaintiff claims that Mr. Tandy's opinion is irrelevant and unhelpful because he relied on general NASS data instead of controlling for similarity to the subject accident. [See id. at 10-12]. Ford argues that Mr. Tandy's testimony is admissible because it will help the jury evaluate gravity of risk in the risk/utility analysis. [See Dkt. 122, at 13-14].

The Court finds that Mr. Tandy's testimony fails to satisfy Daubert because it will not help jurors resolve issues in this case. To be helpful, there must be a nexus between the offered opinion and the facts of the case.  Brown, 392 F.3d at 1299 (citation omitted). Testimony is not helpful “where a large analytical leap must be made between the facts and the opinion.” Id. (citing  Joiner, 522 U.S. at 146).

In Anderson, a defense expert sought to testify that, based on NASS data, the subject accident's impact was more severe than 99% of all frontal impact crashes. 2019 WL 826479 at *2. The plaintiff asked the court to exclude the testimony, claiming that it was “irrelevant because the NASS data [was] derived from crashes that [were] not substantially similar to [the plaintiff's], which could result in unfair prejudice, confusion, and a misled jury.” Id. at *5 (citation omitted). The court sustained the plaintiff's objections and excluded the testimony, reasoning:

[A]s [defendant] acknowledged at the motion hearing, it simply wants to use the data to “put in perspective the impact.” Id. at 29:13-19. In other words, [defendant] wants to show this was a bad crash, a point made abundantly clear by other evidence. Id. at 41:14-19. Although [defendant] argues that the data could be relevant to a risk utility analysis, it does not contend that the data were relevant to the design of the Jeep. Id. at 33:13-34:5. In other words, [defendant] does not argue that it did

not design the vehicle to withstand crashes in the most dangerous one percentile. *Id.* at 41:14-19. The Court agrees that the NASS data *could* be relevant to a risk utility analysis, but Toomey does not use the data for that purpose. [Defendant] just wants the jury to know in the abstract—and not in connection with any opinion rendered by Toomey—that this was a bad crash. *Id.* Lacking, at this point, any relevance to any legitimate issue, the Court agrees that Toomey's parroting of the statistical data should be excluded.

*9 *Id.* at 6.

As in *Anderson*, Mr. Tandy seeks to testify about the severity of the accident without connecting the data to the Explorer's design or any specific issue in this case. [See Dkt 122, at 14-15, 20]; cf. 2019 WL 826479 at *6. For example, Ford does not claim that it relied on NASS data to make design decisions. Mr. Tandy's testimony also does not show whether the subject accident was more severe than other Explorer or SUV rollovers. [See *id.*]. Finally, Mr. Tandy does not use the data to form an independent opinion relevant to the case. [See Dkt. 103, at 3]; see also *Anderson*, 2019 WL 826479 at *6. For the above reasons, the Court finds that Mr. Tandy's testimony will not help jurors evaluate Ford's intent or decide whether the risks of *the Explorer's* design outweigh its utility. Accordingly, Mr. Tandy's testimony is inadmissible.

D. Expert Testimony About Seatbelt Safety



The Court will not exclude Mr. Ram Krishnaswami (Mr. Krishnaswami) and Mr. Van Arsdell's testimonies about the safety benefits of seatbelts. Plaintiff asks the Court to exclude Mr. Krishnaswami and Mr. Van Arsdell's testimonies as general opinions that are irrelevant and misleading. [Dkt. 115, at 14]. Ford responds that Plaintiff's objections must be asserted in a motion *in limine* because they do not arise under Rule 702. [Dkt. 122, at 21]. Ford also argues that the seatbelt testimony is relevant to gravity of risk, an important factor in the design defect risk/utility analysis. [See *id.*]

The Eleventh Circuit has established a three-part test to resolve *Daubert* challenges. Expert testimony is only

admissible if the expert (1) is qualified to testify; (2) uses reliable methodology; and (3) if their opinion assists the trier of fact. *Giusto*, 2021 WL 5493494 at *7 (citing *Moore*, 995 F.3d at 850-51). The Court finds that Mr. Krishnaswami and Mr. Van Arsdell's testimonies satisfy these three requirements.

Mr. Krishnaswami and Mr. Van Arsdell are qualified to testify about restraint safety. Mr. Krishnaswami is qualified because he has “more than 25 years [of engineering experience] in the areas of systems safety engineering ... vehicle interior design and performance in crash, structural design, restraint system design ... analysis of test data...” [Dkt. 105, at 6-7]. Mr. Van Arsdell is qualified because he is a mechanical engineer with expertise in “evaluating the performance and implementation of seat belts, airbags, and child restraint systems, and assessing the crashworthiness of motor vehicles.” [Dkt. 108, at 1].

The Court also finds that both experts' opinions are reliable. Mr. Krishnaswami's testimony rests on research conducted by an objective third party for the NHTSA. [Dkt. 105, at 5]. Thus, Mr. Krishnaswami's theory has been tested and the data is generally accepted as valid by other experts in the field.

See  *Quiet Tech. DC-8, Inc.*, 326 F.3d at 1341. Mr. Van Arsdell based his opinion on several studies that analyzed accident data and concluded that compliance with the FMVSS leads to “lives saved.” [See Dkt. 108, at 5, n. 3-11]. Thus, his testimony is also grounded in scientific data and methodology “generally accepted in the scientific community.”  *Quiet Tech. DC-8, Inc.*, 326 F.3d at 1341.

*10 Mr. Krishnaswami and Mr. Van Arsdell's testimonies will also help jurors assess Ford's intent and the alleged restraint defect. To illustrate, Mr. Krishnaswami cites to Datalink studies that Ford allegedly relied on when selecting the Explorer's restraint. [See Dkt. 105]; [Dkt. 115, at 13-14]. The testimony will thus help jurors evaluate Ford's intent. Mr. Krishnaswami's testimony will also help jurors analyze risk because the cited data implies that injuries in rollover accidents are caused by improper use of seatbelts, not restraint design. [See *id.*]

Mr. Van Arsdell's testimony is helpful for similar reasons. Mr. Van Arsdell seeks to testify that “[s]eat belts that comply with the FMVSSs have been shown to be highly effective in reducing the risk of serious injury in reasonably foreseeable collisions.” [Dkt. 108, at 4]. This testimony will

help jurors evaluate Ford's claim that it did not act recklessly because the Explorer's restraint complied with the FMVSS and internal safety standards. [See Dkt. 109-1, at 15]. Mr. Van Arsdell's testimony will also help jurors determine whether the Explorer's restraint was defective even though it complied with the FMVSS. [See *id.*]. For the above reasons, the Court will admit Mr. Krishnaswami and Mr. Van Arsdell's testimonies.

E. Expert Testimony About Inverted Drop Testing

Finally, the Court will admit the expert testimonies based on inverted drop testing (“drop testing”). Plaintiff asks the Court to exclude several testimonies based on drop testing because they are irrelevant, lack a scientific basis, and are not based on substantially similar accidents. [Dkt. 115, at 17]. Plaintiff claims that the cited tests do not support Ford's experts' opinions because (1) Ford used a drop height, roll angle, and pitch angle that lacked a scientific basis and bore no relationship to the subject accident; and (2) Ford used test dummies that allegedly lacked biofidelity. [See *id.* at 18].

Ford responds that the challenged testimonies are admissible because they demonstrate “occupant kinematics” in rollovers and rebut Plaintiff's claim that Ford willfully and wantonly disregarded passenger safety. [Dkt 122, at 23-24]. Ford also argues that its experts were not required to rely on data from substantially similar tests because their testimonies only illustrate “the physical principles behind rollover accidents.” [Id. at 24 (citing [Heath v. Suzuki Motor Corp.](#), 126 F.3d 1391, 1396-97 (11th Cir. 1997))]. Finally, Ford claims that the biofidelity of its test dummies does not affect admissibility under *Daubert*. [Id. at 23-25]. For the following reasons, the Court finds that the challenged testimonies are admissible under *Daubert*.

1. Substantial Similarity Requirement

The challenged testimonies are admissible even though they are not based on tests conducted under substantially similar conditions to the subject accident. [See Dkt 115, at 15-19]. The Eleventh Circuit held in *Tran v. Toyota Motor Corp.* that, when tests or demonstrations are not offered to recreate the accident but only to illustrate physical principles, the substantial similarity doctrine does not apply. [420 F.3d 1310, 1316 \(11th Cir. 2005\)](#). The testimonies in this case do not purport to recreate the subject accident. [See Dkt. 115, at

10-11 (describing the testimonies Plaintiff objects to)]; [see also Dkt. 122, at 23]. The opinions all seek to demonstrate the comparative safety of the Explorer's roof, the benefits of alternative designs, and causation. [See *id.*] Accordingly, the Court holds that the experts were not required to rely on testing that was substantially similar to the subject accident.

2. Admissibility Under *Daubert*

*11 The testimonies are also admissible under *Daubert*. Expert testimony is only admissible if the expert (1) is qualified to competently testify; (2) bases their opinion on reliable methodology; and (3) if their opinion assists the trier of fact. [Giusto, 2021 WL 5493494 at *7](#) (citing [Moore, 995 F.3d at 850-51](#)).

The Court first finds that the “drop testing” experts are all qualified to testify. Mr. Burnett is an automotive engineer who has participated in and reviewed “numerous crash, sled, and drop tests” throughout his career. [Dkt. 107, at 4]; [Dkt. 122, at 8]. Ms. Vogler is a licensed and registered professional mechanical engineer and has a Ph.D. in Mechanical Engineering. [Dkt. 106, at 1]. Mr. Krishnaswami is qualified because he has “more than 25 years [of engineering experience] in the areas of systems safety engineering ... vehicle interior design and performance in crash, structural design, restraint system design ... analysis of test data...” [Dkt. 105, at 6-7]. Mr. Van Arsdell is qualified because he is a mechanical engineer with expertise in “evaluating the performance and implementation of seat belts, airbags, and child restraint systems, and assessing the crashworthiness of motor vehicles.” [Dkt. 108, at 1].

The testimonies are also reliable. Plaintiff does not dispute the reliability of drop testing in general, only certain variables Ford used in the tests. [See Dkt. 115, at 15-16]. Plaintiff's objections do not affect reliability, however, because they concern testing variables and not drop testing itself. “[I]n most cases, objections to the inadequacies of a study are more appropriately considered an objection going to the weight of the evidence rather than its admissibility.” [Quiet Tech. DC-8, Inc., 326 F.3d at 1345](#) (citation and quotation marks omitted); see [Perau, 2019 WL 2145513 at *3](#) (“Arguments attacking the absence of specific factors considered in an expert's methodology often bear on the weight, not the reliability, of the methodology.”).

The Court also finds that Ford's drop tests are reliable because they (1) used methodology generally accepted as valid by other experts and courts; and (2) produced scientific data that Ford's experts applied to facts at issue in this case. See, e.g., Ruark v. BMW of North America, LLC, 2014 WL 351640, at *9 (D. Md. Jan. 30, 2014) (holding that “inverted drop tests are a scientifically valid method for analyzing roof performance in rollover crashes....”); Frazier, 387 F.3d at 1261-62 (stating that a methodology is reliable if it produces scientific data that can be applied to facts at issue) (citation omitted); Fox, 2019 WL 3483171 at *6-8 (allowing Plaintiff's expert Brian Herbst to testify using inverted drop tests).

Finally, the challenged testimonies will help jurors evaluate scientific principles “beyond the understanding of the average lay person” and analyze design defect and causation issues in this case. See Shanley, 580 F. App'x at 823 (citation omitted); see also Brown, 392 F.3d at 1299 (citing Daubert, 509 U.S. at 591). To illustrate, Mr. Burnett relied on drop tests to find that, even if automakers reinforced roofs and thus reduced roof deformations, it would not decrease the risk of occupant injury in rollovers. [Dkt. 107, at 4]. Mr. Burnett's opinion will help jurors evaluate the alleged roof defect, the benefits of alternative designs, and causation. Ms. Vogler's testimony is helpful for similar reasons: she relies on drop testing to conclude that reinforcing the Explorer's roof would not prevent “injurious loading conditions.” [Dkt. 106, at 8]. Ms. Vogler's opinion will also help jurors understand scientific principles, such as the timing of “injurious loading” during a rollover. [See id.]

*12 Mr. Krishnaswami's testimony is useful for analyzing causation, scientific principles, and design defects. He relies on drop testing to opine that increasing a roof's strength to weight ratio (“SWR”) “will not prevent injuries [from roof deformation] in rollover crashes.” [Dkt. 105, at 4]. Mr. Krishnaswami also relies on the drop tests to illustrate scientific principles that allegedly contradict Plaintiff's expert's testimony on the same issue. [See id.] Finally, Mr. Van Arsdell's testimony will help jurors evaluate the alleged restraint defect and causation because it purports to show that alternative restraint designs would not prevent injuries like those incurred by Mr. Ammerson. [Dkt. 108, at 13].

For the reasons set out above, the Court will admit the testimonies based on inverted drop testing. Neither Ford

nor its experts claim that the drop testing recreates the subject accident, and the Court cautions Ford to avoid doing so at trial. Plaintiff should address her arguments about testing variables, evidentiary weight, and credibility on cross-examination.

3. Biofidelity of Ford's Dummies

The Court will also not exclude the challenged testimonies because they rely on tests that used non-biofidelic dummies. Plaintiff asks the Court to exclude the testimonies based on inverted drop testing because Ford “use(s) non-biofidelic test dummies that are not scientifically valid for replicating human motion or injurious loading.” [Dkt. 115, at 18]. Ford responds that Plaintiff's objections are not grounds for exclusion and that its test dummies met all relevant industry standards. [Dkt. 122, at 23-25].

Plaintiff's objections are not grounds for exclusion under Daubert. As held above, the challenged testimonies all meet Daubert's qualification, reliability, and helpfulness requirements. Plaintiff's objections do not affect admissibility because they concern the accuracy, weight, and credibility of the drop testing evidence. See, e.g., Delgado v. Unruh, 2017 WL 957437, at *10–11 (D. Kan. Mar. 13, 2017) (overruling objections to the reliability of crash experiments using healthy volunteers, embalmed cadavers, and test dummies, and concluding that these objections “relate to the weight of the evidence”); see also Ramirez v. Escajeda, 2021 WL 1131721, at *13 (W.D. Tex. Mar. 24, 2021). Accordingly, the Court will not exclude the drop testing testimonies on these grounds.

CONCLUSION

For the foregoing reasons, Plaintiff's Amender Motion to Exclude Expert Opinions [Dkt. 115] is **GRANTED in part** and **DENIED in part**. Plaintiff's Motion [Dkt. 115] is granted with respect to Mr. Tandy's testimony about NASS data. [See id. at 10-13]. Plaintiff's motion is denied as to the remaining challenges.

SO ORDERED this 17th day of October, 2022.

All Citations

Slip Copy, 2022 WL 17908815

Footnotes

- 1 For the reasons set out in the order ruling on Ford's Motion for Summary Judgment [Dkt. 109], the Court will only evaluate Plaintiff's motion [Dkt. 115] in light of her (1) Negligent Design Defect Claims; (2) Punitive Damages claim based on the Roof Design Defect; and her (3) Attorneys' Fees Claim.
- 2 The Court reserves the right to exclude the challenged testimonies on other grounds later in the litigation.
- 3 A scientific formula used to measure a vehicle's rollover propensity.
- 4 Mr. Tandy has extensive experience testing steering inputs in road reentry maneuvers. [See Dkt. 103, at 7]. The rollover in this case was precipitated by a road reentry maneuver. [See *id.* at 1].
- 5 TRW is the designer and manufacturer of the Explorer's safety belt retractor. "In 1996, four years before the subject vehicle was manufactured, TRW advised Ford in writing that [the Explorer's] conventional retractor would not remain locked in [a] rollover accident." [Dkt. 115, at 9].
- 6 The Court cannot confirm Mr. Burnett's statement because his deposition is not filed in the docket.
- 7 The Court cannot confirm whether Mr. Burnett relied on Mr. Van Arsdell's opinion because Mr. Burnett's deposition is not in the docket. The Court notes, however, that Mr. Van Arsdell did testify that he discussed his opinions and research with Mr. Burnett. [Dkt. 122, Ex. H, at 26].
- 8 The Explorer at issue had a conventional seatbelt.

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2017 WL 5166868

Only the Westlaw citation is currently available.

United States District Court, E.D.
Michigan, Southern Division.

Joseph DIXON, Plaintiff,

v.

GRAND TRUNK WESTERN
RAILROAD COMPANY, Defendant.

Case No. 2:13-14340

|

Signed 11/08/2017

Attorneys and Law Firms


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**OPINION AND ORDER
RESOLVING MOTIONS IN LIMINE**

STEPHEN J. MURPHY, III, United States District Judge

*1 The parties collectively filed 49 motions in limine: 43 from Defendant and six from Plaintiff. The Court has reviewed the motions and finds that a hearing is unnecessary.

As the Court noted at the Final Pretrial Conference when it urged the parties to avoid engaging in expensive and pointless pretrial motion practice: motions in limine serve particular purposes. By making evidentiary rulings ahead of trial, the Court can facilitate wise preparation by the parties and prepare a smooth path for trial—particularly by casting aside inadmissible evidence that might confuse or prejudice the jury. See  *Figgins v. Advance Am. Cash Advance Ctrs. of Mich., Inc.*, 482 F. Supp. 2d 861, 865 (E.D. Mich. 2007). Motions in limine are meant to deal with discrete evidentiary issues related to trial, and are not “procedural devices for the wholesale disposition of theories or defenses.” *Dunn ex rel. Albery v. State Farm Mut. Auto. Ins. Co.*, 264 F.R.D. 266, 274 (E.D. Mich. 2009) (citation omitted). For that reason, “[o]rders in limine which exclude broad categories of evidence should rarely be employed. A better practice is to

deal with questions of admissibility of evidence as they arise.” *Sperberg v. Goodyear Tire & Rubber Co.*, 519 F.2d 708, 712 (6th Cir. 1975).

The matters contained in the motions are largely uncontested. The parties' disputes arise over how the contested evidence will be used at trial. The reasons behind the parties' motions are not entirely misplaced; at trial, some of evidence will likely be excluded, or limited to particular purposes. But none of the evidence described in the motions is inflammatory or otherwise so irreversibly prejudicial that the jury could not be properly instructed on how to consider or disregard it. There is therefore little need to limit the introduction of evidence and testimony in advance, particularly on the scale urged by the parties. In contrast, granting even a modest portion of the relief sought in the parties' motions would create a minefield of predetermined yet open-ended evidentiary rulings; that disposition would lead to more disputes and sidebars at trial, rather than fewer—ironically resulting in the “mini trials” both parties profess a desire to avoid.

The Court will briefly resolve each of the pending motions with the foregoing reasoning in mind.

I. Defendant's Motions*MIL 1 (ECF 80)—Denied*

Defendant does not seek relief in the motion.

MIL 2 (ECF 81)—Granted

Plaintiff does not seem to oppose the relief requested and there is no relevance in testimony or argument that the Plaintiff is either entitled to or has received benefits from other sources.

MIL 3 (ECF 82)—Granted in part

In light of Plaintiff's concession in his response brief, he is precluded from offering evidence or mentioning Defendant's size, revenue, state of incorporation, or the location of its headquarters, other than for the limited purposes of (1) comparing it to other railroads which have implemented ergonomic controls and (2) showing that it has the resources to implement a particular program or control.

MIL 4 (ECF 83)—Granted

*2 In light of Plaintiff's concession in his response brief, he is precluded from making the erroneous claim that he must prove only “slight negligence.”

MIL 5 (ECF 84)—Denied

The protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. The parties may object to testimony concerning Plaintiff's behavior during trial and the Court will rule on the objections individually.

MIL 6 (ECF 85)—Denied without prejudice

The protections sought by Defendant are premature. If, after any testimony on damages but prior to closing arguments, Defendant remains concerned about the potential content of Plaintiff's closing argument, it may bring its concerns to the Court again, out of the jury's hearing.

MIL 7 (ECF 86)—Denied

The Defendant's concerns can be most properly and adequately addressed through jury instructions. A preemptive limit on testimony is unnecessary.

MIL 8 (ECF 87)—Denied

Defendant does not seek relief in the motion.

MIL 9 (ECF 88)—Denied

Defendant does not seek relief in the motion.

MIL 10 (ECF 89)—Denied

The Defendant's concerns can be most properly and adequately addressed through jury instructions, and, if necessary, objections. A preemptive limit on testimony is unnecessary.

MIL 11 (ECF 90)—Granted

The Defendant's payment of medical bills is irrelevant to the claims here. The Court will grant the motion. If Plaintiff wishes to revisit the issue, he may bring the evidence to the Court's attention on the morning he intends to introduce it, out of the hearing of the jury.

MIL 12 (ECF 91)—Denied

Evidence of safer alternatives could be relevant in determining whether Defendant was negligent. Defendant's insistence that Plaintiff has no such evidence may prove true,

but it is no reason to preclude such evidence wholesale and in advance of Plaintiff attempting to introduce it.

MIL 13 (ECF 92)—Granted in part, denied in part

Defendant conceded that at the time of its reply, Plaintiff still had "ample time to produce the exhibits and, if necessary, produce the witnesses through whom plaintiff intends to introduce them for supplementary telephone depositions." ECF 181, PgID 4080. Defendant therefore requested that the Court "exclude any exhibit not timely produced to its counsel." *Id.* at 4081. Some time has passed since the reply was filed, so the Court will mostly deny the motion without any finding of what specific pieces of evidence were or were not timely produced. The parties are ordered to confer as to what potential evidence Defendant still deems untimely produced and the Plaintiff must produce it.

MIL 14 (ECF 93)—Denied

The mere occurrence of a meeting or conversation is not protected by attorney-client privilege. Defendant may object if testimony elicited at trial encroaches on privileged communications.

MIL 15 (ECF 94)—Denied

Defendant does not seek relief in the motion.

MIL 16 (ECF 95)—Denied

The protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. Nevertheless, Plaintiff is cautioned that the trial is to focus on Plaintiff's actual claims, and the evidence in specific support of those claims. The Court will not hesitate to sustain objections if testimony veers into inadmissible matters.

MIL 17 (ECF 96)—Denied

*3 The Defendant's concerns can be most properly and adequately addressed through in-trial objections, if necessary. The scenario described by Defendant—wherein Plaintiff testifies that he would have lost his job had he raised safety concerns—likely lacks foundation and an objection would be sustained. Considering such a question and answer in the abstract, however, is not particularly helpful and granting the motion is therefore unnecessary. Both parties are cautioned against retracing at trial the circuitous path of arguments set forth in their briefs.

MIL 18 (ECF 97)—Denied

Defendant moved to “exclude claims governed by” the Railway Labor Act and argues that it would be inappropriate and inconsistent with federal law “to permit the jury to interpret” the collective bargaining agreement between Defendant and its employees. ECF 97, PgID 2733, 2736. Motions in limine are not the place to challenge claims, but rather, evidence likely to be made in support of those claims. The parties have not yet submitted their proposed jury instructions. Until the Court determines how it will instruct the jury, it would be premature to determine what evidence on this matter would or would not assist the jury.

MIL 19 (ECF 98)—Denied

The protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. The Court will not hesitate to sustain objections by Defendant if questioning by Plaintiff veers into impropriety or matters of inadmissibility.

MIL 20 (ECF 99)—Granted in part, denied in part

If either party intends to introduce evidence of injuries sustained by other employees, the party must alert the Court of its intent in advance—preferably first thing each morning of trial—out of the hearing of the jury. The Court will entertain specific objections based on dissimilarity at that time.

MIL 21 (ECF 100)—Denied

Defendant objects to a chart included in an expert witness's report that lays out the present value of general household services, per year, over time. Specifically, Defendant objects to the possible admission of the chart on the grounds that the expert who prepared it did not take into account what types of tasks Plaintiff actually needed or might need to have performed by someone else. Consequently, Defendant asserts that the “replacement cost” used is unreliable and inapplicable to Plaintiff.

Although the report lists 17 tasks as constituting “household services”, it is not clear how those definitions come to bear on the chart itself. A footnote to the report explains that the figures are “based on current replacement cost of \$20/hour”, ECF 100-2, PgID 2772, but makes no reference to the 17 itemized tasks. Rather, the figure is apparently a roughly discounted version of what a popular cleaning service typically charges—nothing more. *See* ECF 150, PgID 3670.

So the dispute over the evidence of what Plaintiff can and cannot do seems misplaced.

The chart is not complex; it calculates a simple equation on a line-by-line basis. Conceivably, a jury could prepare the same thing, once given the proper variables. The two most critical variables for the formula are the number of hours spent per day (column 3) and the replacement cost (column 4). A properly instructed jury could, however, substitute a different hourly replacement cost and the rest of the data chart could assist the jury in generating new present values. In other words, the report could serve as a template.

The Court will not preclude the admission of the report at this time. The Court may, however, reconsider its ruling once evidence of Plaintiff's need to pay for household service (or lack of such evidence) becomes apparent at trial. In the face of those changed circumstances, presenting the report to the jury may be more confusing than helpful.

MIL 22 & 28 (ECF 101)—Granted in part

*4 Plaintiff is precluded from offering evidence of the sale of his boat and house.

MIL 23 (ECF 102)—Denied

Defendant does not seek relief.

MIL 24 (ECF 103)—Denied

The requested preemptive limit on testimony is unnecessary. Plaintiff must, naturally, establish a foundation before eliciting the testimony of his witnesses. Defendant's concerns can adequately and more suitably addressed through objections and, if necessary, jury instructions.

MIL 25 (ECF 104)—Denied

The protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. There is little efficiency to be gained by precluding testimony related to an abstract phrase in advance of trial, while granting the motion might result in prejudice to Plaintiff. Defendant may object to testimony or argument during trial and the Court will rule on the objections individually.

MIL 26 (ECF 105)—Denied

There is no need to preliminarily admit evidence which the parties evidently dispute with vigor. Defendant may move

to admit the evidence in the normal course, subject to any objections raised by Plaintiff.

MIL 27 (ECF 106)—Granted

Contrary to Plaintiff's assertion, "Grandberry's own adherence to safe working procedures" is not "highly relevant to his credibility to testify regarding safety issues on the railroad," nor is "Grandberry's own attentiveness and competence as a supervisor ... probative regarding his knowledge of the actual working conditions encountered by Plaintiff." ECF 156, PgID 3731. Consistent with Rule of Evidence 608, Plaintiff may testify as to Grandberry's "reputation for having a character for truthfulness or untruthfulness," provided a foundation has been laid for such testimony. Under the same rule, "extrinsic evidence" of Grandberry's prior conduct—including the alleged accident referred to in Dixon's deposition—may not be used to "attack or support [Grandberry's] character for truthfulness."

MIL 29 (ECF 107)—Denied

The existence of the CN LIFE Rules go to Defendant's familiarity with ergonomics and willingness to take affirmative steps in avoiding ergonomic risks. The Rules are therefore admissible for those purposes. If presented for another purpose, Defendant may object and the Court will entertain the objection at that time.

MIL 30 (ECF 108)—Granted

Like many of the parties' motions in limine, Defendant's motion #30 reveals a contention rehearsed in Wayne County Circuit Court and likely to recur in the upcoming trial. In this circumstance, however, a preliminary ruling is appropriate. Plaintiff may ask Defendant's experts whether Plaintiff's experts were present during their inspections of the premises, but Plaintiff may go no further with questions on the topic. The testimony would have little value in revealing (or dispelling) "potential bias" and that there is no need to "correct any misapprehension by the jury that Plaintiff had a representative present, or was offered the opportunity to attend and declined to do so." ECF 158, PgID 3744. In contrast, a dispute in front of the jury, and subsequent explanation of the relevant rules, is likely to cause confusion.

MIL 31 & 38 (ECF 109)—Denied

*5 The Defendant's objections to the relevance of the reports are more suitably addressed through cross examination of

the expert witness. The materials may assist the jury in determining the reasonableness of Defendant's conduct under the circumstances.

MIL 32 (ECF 110)—Granted in part, denied in part

The protective measures sought by Defendant are mostly too ambiguous to meaningfully assist in conducting the trial. Plaintiff must, of course, lay a foundation before moving to admit any of the disputed literature. The parties are ordered to confer and narrow which items are likely to be offered and which will not; Defendant's parentheticals in its reply brief seem a good start in determining those that ought not to be offered.

Nevertheless, the Court will grant the motion insofar as it seeks to preclude Plaintiff from using non-admitted evidence as a mere "visual aid." Under Rule of Evidence 703, when a party wishes to offer facts or data relied upon by an expert that "would otherwise be inadmissible," the "proponent of the opinion may disclose them to the jury only if their probative value in helping the jury evaluate the opinion substantially outweighs their prejudicial effect." The Court has vetted Drs. Widmeyer and Andres and permitted them to testify as experts, but it does not follow that every source listed in their reports may be shown to the jury as a "visual aid" bolstering the experts' opinion, and there is no probative value in doing so.

MIL 33 (ECF 111)—Denied

There is no reason to exclude reference to the terms "cumulative trauma disorder" and "cumulative trauma injuries" and the Court will therefore deny Defendant's motion. To the extent witnesses refer to Plaintiff's diagnosed condition, however, they will use the terminology employed by his diagnosing physicians. Any other description will require laying additional foundation.

MIL 34 (119)—Denied

Photographs of other railyards are not categorically inadmissible. Such photographs may meaningfully and properly assist the jury in visualizing the conditions of Plaintiff's workplace—provided they are an accurate comparison. Plaintiff must, of course, lay a proper foundation prior to their admission.

MIL 35 & 36 (ECF 112)—Denied

The protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. Counsel for the two parties may have litigated prior, similar matters, but the trial in *this* matter has not yet begun. There is no basis to preclude the use of abstract phrases in yet-unmade arguments. Counsel will instead be ordered to comply not only with all applicable federal rules of procedure and evidence, but also to conduct themselves in a professional and fair-handed manner. The Court, and the public, will tolerate nothing less.

MIL 37 (ECF 113)—Granted

In light of Plaintiff's response that he "will not make any such argument," ECF 164, PgID 3832, the Court will grant the motion.

MIL 39 (ECF 114)—Provisionally granted

The Court is reticent to effectively resolve a question of claim preclusion via a motion in limine. Nevertheless, Defendant's argument under *Nickels* is persuasive. In light of the reasoning in *Nickels*, the question of ballast type and size would not seem to make Defendant's negligence under the FELA more or less probable. The Court will therefore grant the motion, subject to argument from Plaintiff prior to introducing testimony on the subject.

MIL 40 (ECF 115)—Denied

*6 Defendant has indicated to the Court's staff that Plaintiff has no intention of calling Defendant's former employee, Rodney Pendergraff, thus mooting the motion in limine. The motion, however, remains pending, so the Court must address it. Defendant insists that one of the State Bar of Michigan's Ethical Opinions (R-2) prohibited Plaintiff's counsel from communicating with Pendergraff. The opinion, however, explained that the applicable rule prohibiting contact with a represented party's employees (MRPC 4.2) does "not address communications with former agents and employees, and technically these should be no bar, since former employees cannot bind the organization[.]" ECF 115-5, PgID 2932. The opinion went on to admit that some jurisdictions have extended the communication prohibition to former employees who "continue to personify the organization even after they have terminated their employment relationship" or an employee who "still owes a duty to the organization, is privy to privileged information, entitled to attend meetings, or has an active ongoing relationship with the entity[.]" *Id.* at 2932–33. But the opinion concluded that these narrow exceptions

did not apply in the case of a nurse who cared for a plaintiff during the time of an alleged malpractice but was no longer an employee of the defendant. On the facts before the Court, there is no impropriety in Plaintiff's counsel communicating with the former employee Pendergraff.

MIL 41 (ECF 116)—Granted

In light of Plaintiff's agreement with the relief sought, the phrase "workers' compensation" or any variant thereof shall be redacted from exhibits presented to the jury.

MIL 42 (ECF 117)—Granted

As with the motion concerning Pendergraff, Defendant has informed the Court's staff that Plaintiff will not be calling Steven Lilly, but again, the motion remains pending. Defendant claims that Steven Lilly was not timely disclosed as a witness. Plaintiff does not dispute the claim, but insists that there is no prejudice to Defendant because it is aware of Lilly and his likely testimony through a previous lawsuit. In the 6th Circuit, "Rule 37(c)(1) mandates that a trial court sanction a party for discovery violations in connection with Rule 26(a) unless the violations were harmless or were substantially justified." *Sexton v. Uniroyal Chem. Co. Inc.*, 62 Fed.Appx. 615, 616 n.1 (6th Cir. 2003). Plaintiff may insist that transcripts from prior cases are just as good as deposing a witness anew in anticipation of a new trial—but that does not make it so. Defendant is entitled to fair warning of the witnesses to be presented at trial and the opportunity to depose those witnesses. Plaintiff has provided no defense for his untimeliness and his efforts to downplay the prejudice to Defendant only make the failure to disclose the witness more baffling. Steven Lilly will not be permitted to testify at trial.

MIL 43 (ECF 118)—Denied



The the protective measures sought by Defendant are too ambiguous to meaningfully assist in conducting the trial. Defendant seeks to preclude Plaintiff, "his counsel, his representatives, and his witnesses" from making direct or indirect references to a "conspiracy" to suppress information about ergonomics in railroad work. ECF 118, PgID 3087. There would be inadequate foundation for Dr. Andres—or any of Plaintiff's other witnesses—to testify to such a charge but the Court will nevertheless refrain from granting the motion in limine. Plaintiff is cautioned against soliciting baseless testimony in front of the jury.

II. Plaintiff's Motions

MIL 1 (ECF 120)—Granted

Plaintiff believes Defendant has video surveillance of him at work. Defendant does not admit whether it has footage, but during discovery, refused to turn any over on the grounds of attorney-client privilege. Plaintiff is worried that Defendant will introduce footage as impeachment evidence at trial, and moves to preemptively preclude its admission. Plaintiff cites cases (though none in this circuit) in which courts have precluded undisclosed surveillance tape, even for solely impeachment. The Court is satisfied that video surveillance in this case (in contrast to prior statements, records, etc.) may be particularly deceiving; springing it on opposing counsel at trial can be especially difficult to address. The video is excluded.

MIL 2 (ECF 121)—Granted in part, denied in part

The records relating to Plaintiff's filing for benefits under the RBR are not, categorically, more prejudicial than probative; neither are the records of RBR doctors who examined him. As explained in the above ruling on Defendant's second motion in limine, there is little relevance in testimony or argument that the Plaintiff is either entitled to or has received benefits from other sources. But the Court rejects Plaintiff's argument that *Eichel* forbids any information whatsoever concerning RBR benefits. There, the district court excluded evidence that the plaintiff "was receiving \$190 a month in disability pension payments under the Railroad Retirement Act"  *Eichel v. N.Y. Cent. R. Co.*, 375 U.S. 253, 253 (1963). The Supreme Court agreed with the determination and concluded that "the likelihood of misuse by the jury clearly outweigh[ed] the value of this evidence"—that is, evidence of the payments.  *Id.* at 255. The Supreme Court's formal holding was that the district court "properly excluded the evidence of disability payments." *Id.* (emphasis added). The Court must do the same here. Neither party may admit evidence that Plaintiff did indeed receive benefits, and in what amounts. Any otherwise-admissible evidence which reveals information about eligibility for benefits or the actual receipt of benefits shall be redacted.

MIL 3 (ECF 122)—Denied

*7 Although prior, similar injuries are not a prerequisite for finding that Defendant was negligent, their sparsity or non-occurrence is not irrelevant. Plaintiff's concerns about

confusing the jury are more properly remedied through jury instructions, not by barring relevant evidence.

MIL 4 (ECF 123)—Granted in part, denied in part

The Court thoroughly reviewed the parties' arguments and held a hearing on the matter a year ago. At that time, the Court believed that the issues in dispute might narrow as the parties prepared for trial and better determined precisely what testimony might be provided at trial and, consequently, whether any of it was legitimately objectionable. The Court therefore denied the motion without prejudice and anticipated a narrower challenge when renewed. Unfortunately, the present motion is no more narrow, and raises the same three issues. The filing is accordingly in all likelihood sanctionable.

A. Dr. Wojcik's causation testimony.

Dr. Wojcik is a biomechanical engineer, and her expert testimony is therefore limited to that discipline. She may apply the general principles of biomechanics to the facts in the case and opine on how a hypothetical person's body would respond to particular forces and what types of injuries would result. She may not testify about the cause of Plaintiff's specific injuries.

B. Wojcik's and Brookings's Allegedly Incomplete Reports

The experts' mere proviso that more specific disagreement with Dr. Andres would "be addressed in future deposition and/or trial testimony" does not render the reports incomplete. Wojcik and Brookings may testify at trial and their reports may be admitted into evidence. Testimony beyond what is reasonably contained in those reports, however, will not be permitted. Because Defendant has not yet elicited any testimony that might exceed the opinions in the report, a ruling at this time would be premature.

C. Dr. Wojcik's Supplemental Report

Wojcik's very brief supplemental report contains no new theories and is therefore most accurately described as a supplement under Rule 26(e)(2), rather than an additional report under 26(a)(2). It was therefore not untimely. New *opinions* derived from the sources within the supplement—or any other source—are inadmissible.

MIL 5 (ECF 124)—Denied

A preemptive limit on the testimony is unnecessary and premature. Plaintiff's concerns can be more suitably addressed through objections if Defendant actually attempts to introduce testimony on Plaintiff's finances.

MIL 6 (ECF 125)—Granted in part, denied in part

Evidence concerning Plaintiff's **obesity** is relevant in light of the expert testimony that such a condition can be a cause of **osteoarthritis**. If Defendant can lay a foundation that other health problems are known causes of **osteoarthritis**, the evidence may likewise be admissible. Otherwise, evidence of

Plaintiff's other health problems will be admissible only for the purposes of determining Plaintiff's future work prospects and as impeachment evidence insofar as it goes to Plaintiff's untruthfulness. Consistent with Defendant's response brief, any reference to Plaintiff receiving or being counseled for a DUI shall be redacted from materials shown to the jury.

***8 SO ORDERED.**

All Citations

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United States District Court, N.D.
Mississippi, Oxford Division.

Rodney JONES, et al., Plaintiffs

v.

The RAYMOND CORPORATION, Defendant

CIVIL ACTION NO. 3:20-CV-308-SA-RP

I

Signed January 18, 2023

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ORDER AND MEMORANDUM OPINION

Sharion Aycock, UNITED STATES DISTRICT JUDGE

*1 On November 18, 2020, Rodney Jones and Deangela Battle initiated this civil action by filing their Complaint [1] against The Raymond Corporation. The parties have engaged in extensive motion practice, and there are currently ten pending Motions [109, 111, 113, 115, 117, 119, 121, 123, 125, 127] in the case. Having reviewed the filings, as well as the applicable authorities, the Court is prepared to rule.

Relevant Factual and Procedural Background

Rodney Jones was previously employed by Abacus Corporation, a temp agency. Through this employment, Jones was contracted to operate a lift truck at a FedEx Supply

Chain warehouse in Olive Branch, Mississippi. On August 29, 2019, Jones was operating a lift truck when he was involved in an accident, during which his left foot left the operators' compartment of the lift truck. Jones' left leg was crushed. Due to the severity of Jones' injuries, doctors were forced to amputate his left leg below the knee. The Raymond Corporation manufactured the lift truck Jones was operating at the time of the accident. This lawsuit followed.

The lift truck which Jones was operating at the time of the accident was a Raymond 4250 counterbalanced stand-up narrow-aisle forklift. As stated by one of the Plaintiffs' designated experts, John Meyer: "The Raymond 4250 stand-up forklift is a compact machine that was designed and sold for use in tightly defined spaces such as the narrow-aisle warehouse environment ... It was expected to frequently be operated in a forks-trailing fashion with numerous stops, starts and other maneuvers." [119], Ex. 2 at p. 1-2.

For purposes of the present filings, there are three noteworthy components of this type of lift truck. There is a multi-function control handle which "controls direction (forward/reverse) and speed" and a steering tiller which is "utilized by the operator to steer[.]" [116] at p. 2. There is also a deadman pedal—a feature used for emergency stops—located in the area where the operator's feet are located.

To operate the lift truck, the operator places one foot (typically the right foot) on the deadman pedal and moves the multi-function control handle forward or backward in the direction the operator desires to go. To stop the lift truck, the operator moves the multi-function control handle "through neutral to the direction opposite his current path of travel." *Id.* at p. 3. This technique is referred to as "plugging." *Id.* In an emergency situation, the operator can also stop the lift truck "by quickly lifting his foot off the deadman pedal, which stops the truck in the shortest possible distance." *Id.* To the operator's left, there is an opening which is wide enough for the operator to enter or exit the forklift. The subject forklift did not have a door—thus, the opening remained open at all times, including during Jones' use of it.

Turning to the specific facts of this case, the Court quotes a portion of Raymond's Memorandum [116], which is in essence a summary of Jones' deposition testimony:

*2 Prior to the accident, Mr. Jones' right hand was on the multiple function

control, his left hand was on the steer, and his right foot was on the deadman (emergency brake) pedal. He did not remember whether he was leaning against the back pad in the compartment, but testified that he did not always do so. Mr. Jones testified that, as he was turning, he felt like he ran over something, which caused his body to jump and lose control of the steer. He claims he pulled up on the steer tiller in an attempt to stay in the truck, which according to him caused the lift truck to accelerate and hit a nearby rack. Mr. Jones' left foot was outside of the compartment at the time of impact and was crushed. Mr. Jones testified that he did not know how his left foot exited the compartment, and that he did not know exactly how his leg was crushed.

[116] at p. 5.

Jones asserts seven claims against Raymond, specifically contending Raymond should be held liable for: (1) defective design; (2) failure to warn; (3) negligence; (4) breach of express warranties; (5) breach of implied warranty of merchantability; (6) breach of implied warranty of fitness for particular purpose; and (7) strict liability. In addition to compensatory damages, Jones asserts a claim for punitive damages. Deangela Battle (Jones' wife) (collectively “the Plaintiffs”) also brings a loss of consortium claim.¹


The Plaintiffs have designated three experts, John Meyer, PhD, PE; Jason Kerrigan, PhD; and John Jeka, PhD. Each of these experts has prepared a written report. Raymond has filed separate Motions [109, 111, 113] as to each of them, seeking to strike their respective testimonies in full. Conversely, the Plaintiffs have filed dueling Motions [119, 121, 123] as to each of their own experts, seeking “a ruling from this Court that [the experts'] opinions and testimony ... meet the requirements of [Federal Rule of Evidence 702](#).” [120] at p. 1; [122] at p. 1; [124] at p. 1. On the other hand, the Plaintiffs have filed Motions [125, 127] seeking to exclude the testimony of Raymond's experts, Kathleen A. Rodowicz, PhD and Michael Rogers, PE.

Raymond has also filed a Motion for Summary Judgment [115], as well as a separate Motion for Partial Summary Judgment [117] which relates solely to the Plaintiffs' punitive damages claim.

Analysis and Discussion

The Court will first address the parties' respective requests to exclude the opposing party's experts. Then, the Court will resolve Raymond's requests for summary judgment.








I. Expert Testimony in General





The parameters of admissible expert testimony are set forth in [Rule 702 of the Federal Rules of Evidence](#). [FED. R. EVID. 702](#);  [Johnson v. Arkema, Inc.](#), 685 F.3d 452, 459 (5th Cir. 2012). The Rule provides:




A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

[FED. R. EVID. 702](#).

“In  [Daubert](#), the Supreme Court ‘explained that [Rule 702](#) assigns to the district judge a gatekeeping role to ensure that scientific testimony is both reliable and relevant.’ ”  [Johnson](#), 685 F.3d at 459 (quoting  [Curtis v. M & S Petroleum, Inc.](#), 174 F.3d 661, 668 (5th Cir. 1999);  [Daubert v. Merrell Dow Pharm., Inc.](#), 509 U.S. 579, 597, 113 S. Ct. 2786, 125 L. Ed. 2d 459 (1993)). The first prong—reliability—“mandates that expert opinion ‘be grounded in the methods and procedures of science and ... be more than unsupported speculation or subjective belief.’ ”  [Id.](#) (quoting  [Curtis](#), 174 F.3d at 668;  [Daubert](#), 509 U.S. at

590) (additional citation omitted). As to the relevance prong, the testimony must “assist the trier of fact to understand the evidence or to determine a fact in issue.”  *Pipitone v. Biomatrix, Inc.*, 288 F.3d 239, 245 (5th Cir. 2002) (citation omitted). The proponent must “demonstrate that the expert’s ‘reasoning or methodology can be properly applied to the facts in issue.’ ”  *Johnson*, 685 F.3d at 459 (quoting  *Curtis*, 174 F.3d at 668;  *Daubert*, 509 U.S. at 592-93).

*3 The proponent bears the burden to establish that the proposed expert testimony meets this standard. See  *Curtis*, 174 F.3d at 668 (quoting  *Moore v. Ashland Chem., Inc.*, 151 F.3d 269, 276 (5th Cir. 1998)); see also *Andrews v. Rosewood Hotels & Resorts, LLC*, 575 F.Supp.3d 728, 733 (N.D. Tex. 2021) (“The burden is on the proponent of the expert testimony to establish its admissibility by a preponderance of the evidence.”). Importantly, the district court’s role as gatekeeper “is not meant ‘to serve as a replacement for the adversary system: Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.’ ” *Andrews*, 575 F.Supp.3d at 735 (quoting  *Primrose Operating Co. v. Nat’l Am. Ins. Co.*, 382 F.3d 546, 562 (5th Cir. 2004) (additional citations omitted).

A. Preliminary Issue

Prior to addressing the parties’ specific requests to exclude certain expert testimony, the Court will address one preliminary matter at the outset. The Plaintiffs have filed three separate Motions [119, 121, 123] concerning *their own* experts. All of these Motions [119, 121, 123] make essentially the same argument—specifically seeking “a ruling from this Court that [the experts’] opinions and testimony ... meet the requirements of [Federal Rule of Evidence 702](#).” [120] at p. 1. Although the Plaintiffs state that they “do not seek to have [the experts’] opinions admitted before trial,” they do request a finding that if any of the three experts are offered as an expert in the trial of this matter, that “the opinions identified herein meet the demands of [Rule 702](#).” *Id.*

The District Court for the Middle District of Florida, in a case involving many of the same attorneys who represent the Plaintiffs in the case *sub judice*, denied motions of this precise nature (involving the same experts) on procedural grounds. *McHale v. Crown Equip. Corp.*, 2021 WL 289346,

at *2 (M.D. Fla. Jan. 28, 2021). In *McHale*, the district court concluded:

Plaintiffs seek to admit, and Crown seeks to exclude, expert opinions of John Meyer, Ph.D, P.E. In summary, as Crown correctly contends, *Plaintiffs’ motion is premature*. Even if Meyer is permitted to testify as an expert, Plaintiffs must lay the proper foundation for his opinion testimony at trial.

Id. (emphasis added).²

This Court recognizes that *McHale* is not binding. However, the Court finds its reasoning persuasive. The Plaintiffs’ requests are premature and, in essence, ask the Court to issue an advisory opinion as to the admissibility of the potential expert testimony of the Plaintiffs’ own experts. The Court will not do so. However, the Court will hereinafter analyze Raymond’s arguments in opposition to the proposed testimony, thereby addressing many of the potential issues associated with the testimony.

The Motions [119, 121, 123] are DENIED. The Court will address the admissibility of any offered expert testimony at trial so that all considerations, such as whether there has been a proper foundation, can be taken into account.





B. Plaintiffs’ Expert John Meyer, PhD, PE

The Plaintiffs timely designated John Meyer to testify as an expert in support of their claims. Raymond has filed a Motion [109] seeking to strike Meyer’s proposed testimony in full.

*4 Meyer submitted a written report which contains fifteen opinions and conclusions, but Raymond has summarized and classified those opinions into four categories of alleged ways that the lift truck was defective: “(a) it lacked a door that would trap the operator into the operator’s compartment, (b) its pedal design was defective, (c) it lacked a presence sensing switch in the backrest, and (d) the multifunction control joystick allows an operator who loses balance to accelerate the forklift rearward.” [110] at p. 1. Raymond raises four separate arguments as to why it believes Meyer should be precluded from providing any expert testimony at trial.

First, Raymond contends that Meyer “is not qualified to offer design opinions related to the Raymond Model 4250 because he has no relevant experience, education, or training related to the design and operation of lift trucks, particularly the Model 4250.” [110] at p. 2. Raymond makes numerous sub-arguments in support of this contention, emphasizing that Meyer has never designed a stand-up lift truck, never designed a component of a stand-up lift truck, never designed a warning or instruction for a stand-up lift truck, and (prior to being retained by the Plaintiffs' counsel) never worked on any matters involving stand-up lift trucks. Raymond also notes that Meyer has never published any written work regarding forklifts and that he is not an expert lift truck operator.

Meyer's curriculum vitae (“CV”) is attached to his written report. The Court has reviewed it carefully and notes that Meyer's qualifications include extensive education, experience, affiliations, and honors. Furthermore, Meyer provided copies of extensive documentation he reviewed and considered in developing the opinion listed in his report.

As to Raymond's contention that Meyer's testimony must be excluded because he has never specialized solely in stand-up lift trucks, the Plaintiffs direct the Court's attention to a relatively recent per curiam Fifth Circuit opinion.  [Cedar Lodge Plantation, LLC v. CSHV Fairway View I, LLC, 753 F. App'x 191 \(5th Cir. 2018\)](#). In that case, Cedar Lodge, an entity that owned property adjacent to the Fairway View Apartments, filed suit against Fairway View on the basis that a pond on Cedar Lodge's property had become contaminated due to “the negligence of Fairway View ... [which] resulted in the discharge of harmful or hazardous substances, pollutants, or contaminants, including raw sewage, onto Cedar Lodge's property.”  [Id.](#) at 194. The district court found that Cedar Lodge's environment expert (Suresh Sharma) “was not qualified to offer reliable expert testimony because his experience was related to the resolution of hazardous waste matters for commercial and industrial facilities, rather than sewerage systems for apartment complexes or multi-family residential communities.”  [Id.](#) at 195. On appeal, the Fifth Circuit reversed this decision, noting that “Sharma has extensive experience in analysis and evaluation of environmental contaminants, the area in which he was offered as an expert, ... *His lack of specialization in sewage facilities for multi-family residential units like those in this case does not render his testimony unreliable.*”  [Id.](#) at 195-96 (emphasis added).

Similarly here, although Meyer may not have specifically specialized in stand-up lift trucks, he has experience in engineering design, product design, accident investigation, and accident reconstruction. The Court rejects Raymond's argument that Meyer is not qualified. Raymond's concerns as to any of Meyer's perceived deficiencies may be addressed at trial through cross-examination, but they do not constitute appropriate reasons to altogether exclude Meyer's testimony. To the extent Raymond seeks exclusion of Meyer's testimony on this basis, its request is denied.

*5 Next, Raymond contends that all of Meyer's opinions are unreliable because: “None of his design opinions are based on the application of a reliable engineering methodology[.]” [110] at p. 2. Raymond emphasizes that Meyer “conducted no testing in this case” and “the bulk of [his] work in this case merely involved reviewing materials provided to him[.]” *Id.* at p. 6, 7. Further, Raymond notes:

Though Dr. Meyer claims he performed “analysis” of whether certain of his alternative designs would have made a difference in Mr. Jones' accident, he lacks critical data points to make such a determination. Specifically, Dr. Meyer does not know the speed of the subject lift truck at the time of impact. Nor does Dr. Meyer know how close the subject lift truck was to the point of impact when Mr. Jones removed his left foot from the operator's platform.

Id. at p. 7 (citations and emphasis omitted).

As noted above, Meyer identified four separate theories as to how the lift truck was defective—(1) that the lift truck should have had a door; (2) that there should have been a brake pedal under each foot; (3) that there should be an operating presence sensing switch in the backrest; and (4) that the multifunction control handle should have been designed so that it would not accelerate when an operator pulls it in an emergency situation as occurred in this case. Meyer identified alternative designs for each of these areas—the inclusion of a door, a modified pedal design which is similar to the pedals of an automobile, the inclusion of a sensor in the backrest which

would ensure “that the operator remains in the most stable operating position,” and a modified control handle which “does not accelerate when the joystick is pulled on towards the opening of the operator compartment as the operator falls out[.]” [165] at p. 11-13.

Regarding Raymond's argument as to Meyer's lack of knowledge as to the precise speed of the lift truck at the time of the accident, “an expert's knowledge of the specifics of a crash ‘go primarily to the weight, not the reliability, of his opinions.’ ” [Hankins v. Ford Motor Co.](#), 2011 WL 6046304, at *3 (S.D. Miss. Dec. 5, 2011) (quoting [Betts v. General Motors Corp.](#), 2008 WL 2789524, at *6 (N.D. Miss. July 16, 2008)). Stated differently, “an expert's role or lack thereof in testing a defective product (or its proposed remedy, etc.) typically goes toward weight.” [Wells v. Robinson Helicopter Co., Inc.](#), 2015 WL 1427528, at *2 (S.D. Miss. Mar. 27, 2015) (citing [Hankins](#), 2011 WL 6046304 at *4).

Despite Raymond's contentions, the Court is satisfied that Meyer's proposed testimony satisfies [Daubert](#). Meyer's report sets forth in significant detail the methodology which he used, including the materials which he reviewed, in reaching his conclusions. Meyer engaged in a reconstruction of the accident and ultimately concluded: “My reconstruction of this event allows me to reach four primary conclusions, to a reasonable degree of engineering certainty, as to the causal link between the design of the forklift and Mr. Jones' injuries.” [119], Ex. 2 at p. 37. The report then goes on to explain the conclusions.

Having considered Meyer's report, the Court rejects Raymond's argument that Meyer's opinions are altogether unreliable. The Court will not exclude Meyer's proposed testimony on this basis, but Raymond will be permitted to question Meyer regarding the same at trial.

*6 Raymond's third argument relates solely to Meyer's opinion concerning the need for a door. Specifically, Raymond contends that “Meyer's door opinions are unreliable because they are universally rejected by the relevant scientific community.” [110] at p. 15. In urging the Court to exclude this opinion, Raymond argues that the safety standards promulgated by the American National Standards Institute (“ANSI”) “specifically requires that lift trucks such as the Model 4250 be designed with open operator compartments.” *Id.* at p. 16. Raymond specifically directs the Court's attention to a case originating from the District Court for the Northern

District of Ohio, wherein that court excluded the plaintiff's expert, Thomas Berry, from testifying in a case against Raymond involving nearly synonymous facts. [Lawrence v. Raymond Corp.](#), 2011 WL 3418324 (N.D. Ohio Aug. 4, 2011).

In [Lawrence](#), the plaintiff sought to admit Berry's opinion that the lift truck “was defectively designed because it did not have a latching rear door.” *Id.* at *6. In finding that the opinion should be excluded, the district court emphasized that “Berry claims to have originally formulated his opinion while working on a project for ATI and there is no clear statement of the amount of work ATI did in connection with litigation and it is unclear where the project Berry worked on when he formulated his opinion concerning latching rear doors was connected with litigation.” *Id.* The district court further explained flaws in Berry's testing, such as incomplete statistical analysis and the fact that his physical testing as to the potential damages that could occur did not “establish that the [machine] is riskier without a latching door than with one. Without even addressing design flaws, Berry has only addressed the potential damage from one of the two types of accidents and one aspect of the alternative design.” *Id.* at *7. Specifically noting Berry's “lack of detail and reliance on obviously incomplete data and testing,” the district court found his methods to be unreliable. *Id.* at *8. The district court also noted that “no manufacturer offers standard rear doors, let alone a latching door,” such as the one for which Berry advocated. *Id.* Overarching all of this analysis was the general rule in the Sixth Circuit that “if a proposed expert is a quintessential expert for hire, then it seems well within a trial judge's discretion to apply the Daubert factors with greater rigor.” *Id.* at *6 (quoting [Johnson v. Manitowoc Boom Trucks, Inc.](#), 484 F.3d 426, 434 (6th Cir. 2007)) (internal quotation marks omitted). The district court excluded Berry's testimony, and that ruling was affirmed on appeal. See [Lawrence v. Raymond Corp.](#), 501 F. App'x 515, 518 (6th Cir. 2012).

This Court finds [Lawrence](#) distinguishable. First, the district court there applied a heightened rigorous standard since Berry was a quintessential expert for hire. This was in accordance with Sixth Circuit law, but Raymond cites no such authority from the Fifth Circuit, nor does it argue that the Court should apply such a standard here. Furthermore, this Court does not have the same concerns with Meyer's methods in the case

sub judice as the *Lawrence* court did, which included the utilization of incomplete data and testing as to only some damages. In short, *Lawrence* is inapposite.

Recognizing Raymond's arguments, the Plaintiffs emphasize that “[a]s just one example of a door suggested by Dr. Meyer, Raymond sells a door that is designed to fit the Raymond 4250 forklift. Raymond offers a full door assembly that includes the door, hinges, screws, pad, decal, and guard. If this door assembly was installed on Jones's forklift he would not have been injured.” [165] at p. 11-12 (internal citations omitted). The Court finds this argument to be persuasive.

*7 Although *Lawrence* is distinguishable, the Court notes that Raymond points to many other cases wherein experts seeking to testify against it have been excluded by various courts across the country. See, e.g., *Brown v. Raymond Corp.*, 318 F.Supp.2d 591, 599 (W.D. Tenn. May 4, 2004) (excluding expert on the basis that “while [the expert's] hypotheses are capable of being tested, they have not been ... He has no basis for concluding that the forklifts are unreasonably dangerous based on design defect.”). For their part, the Plaintiffs point to numerous cases across the country wherein courts have permitted testimony of this precise nature as well. See, e.g., *Vazquez v. Raymond Corp.*, 2019 WL 176106, at *4 (Jan. 11, 2019) (denying motion to exclude testimony of Thomas Berry); *Reinard v. Crown Equip. Corp.*, 2018 WL 547239, at *1 (N.D. Iowa Jan. 24, 2018) (denying motion to exclude experts (including Thomas Berry) because “after reviewing the [plaintiffs'] extensive responses to the motions to exclude the testimony of these experts, my ‘preliminary assessment’ is that these experts are qualified to state their proffered opinions, the reasoning and methodology underlying the challenged opinions are scientifically valid, and the experts' reasoning and methodology can be applied to the facts in issue.”). While it will not compare and contrast the facts of every one of these cases to the case *sub judice* (and the list provided above is not an exhaustive one), the Court feels compelled to note its cognizance of them, considering that the parties expend considerable time in their briefs referring to the cases which have been decided in their favor.

However, considering the specific facts of *this* case and having taken into account Raymond's arguments, the Court finds that exclusion is *not* warranted at this time. The Court finds particularly persuasive the District Court for the Middle District of Florida's holding on this topic in *McHale*:

In Opinions 1, 2, 3, 4, and 7, Meyer opines that McHale's injury resulted from the lack of a door, which constitutes an unacceptable risk of injury, and that the addition of a door or right brake pedal would reduce risk. Crown's challenge to these opinions focuses on the rejection of the ‘door theory’ by some courts under *Daubert*. See, e.g., *Dhillon v. Crown Controls Corp.*, 269 F.3d 865 (7th Cir. 2001). However, in reaching his opinions, Meyer relies on testing, data, and alternative designs that were not considered in *Dhillon*. Further, courts in this Circuit have found that ‘where the proposed alternative design has been produced and put to practical use in the industry, the expert does not need to personally test it to satisfy *Daubert*.

McHale, 2021 WL 289346 at *3 (some internal citations omitted).

This Court likewise finds that Meyer has explained his reliance on testing, data, and alternative designs in reaching his conclusions. Although the Court is aware of Raymond's arguments in opposition to Meyer's testimony, they do not warrant exclusion but can instead be addressed through cross-examination.

The Court also feels compelled to address another contention raised by Raymond:

Even in the cases in which Plaintiffs' counsel was able to persuade trial judges to permit door opinions to be presented to the jury, the jury returned verdicts all in favor of either Raymond or Crown. In other words, these door opinion[s] have either been excluded pretrial or rejected by jurors at the end of a trial. Given Dr. Meyer's lack of any experience with lift truck design or testing, the Court should not waste its precious trial time in this instance.

[110] at p. 15 n. 8.

This argument misses the mark. The Court's role at this stage of the proceedings is to act as a gatekeeper to ensure that reliable and relevant testimony is presented to the jury—not

to invade the province of a jury. See, e.g., *Coleman v. BP Exploration & Prod., Inc.*, — F.Supp.3d —, 2022 WL 2314400, at *3 (E.D. La. June 28, 2022) (quoting *U.S. v. 14.38 Acres of Land, More or Less Situated in Leflore Cnty., Miss.*, 80 F.3d 1074, 1077 (5th Cir. 1980)) (“[I]n determining the admissibility of expert testimony, the district court must accord the proper deference to ‘the jury’s role as the proper arbiter of disputes between conflicting opinions.’”). The Court rejects this argument in full.³

*8 For these reasons, Raymond’s Motion [109] to strike the expert testimony of Meyer is DENIED.

C. Plaintiffs’ Expert Jason Kerrigan, PhD

In his written report, Kerrigan provides the following overarching opinion:

In general, it is my opinion that the subject forklift, and, more generally, standup counterbalanced forklifts, are unreasonably dangerous. The subject forklift incorporates several design features that present unreasonable risks to operators including the absence of restraints and an occupant compartment door, the location of the open occupant compartment doorway, the configuration of the right-hand controls, and the location of the “deadman” brake. All of these deficiencies could have been mitigated by the use of alternative designs that were readily available at the time the forklift was designed and which would not have negatively affected the utility of the forklift for its primary purposes of lifting, carrying and lowering materials.

[162], Ex. 5 at p. 7.

Kerrigan also notes his awareness that defense experts in other similar cases “have argued that standup forklifts should not have doors because doors would increase operator egress time beyond the available time operators have to safety exit a

moving forklift at the time of a tip-over or off-dock accident.” *Id.* at p. 14. He notes that defense experts often rely on results from accident tests performed with anthropomorphic test devices (“ATDs”) to “predict human injury risk in such accidents [and] show that severe injuries can occur when occupants stay on forklifts during off-docks and tip-overs.” *Id.* However, Kerrigan holds the opinion that ATD testing is not substantially similar to the manner in which accidents of this nature actually occur and therefore should not be utilized as a basis in making engineering decisions.

Raymond attacks Kerrigan’s opinions on multiple fronts, contending that he should be prohibited from testifying altogether. First, Raymond contends that Kerrigan “is not qualified to offer lift truck design opinions.” [112] at p. 9. Raymond concedes that Kerrigan is a biomechanical engineer with extensive experience but takes the position that he “lacks any relevant experience, education, or training related to the design or operation of stand-up lift trucks,” specifically emphasizing that he has never designed a forklift truck and has only himself spent a minimal amount of time physically on a forklift. *Id.* The Court finds noteworthy one particular point of clarification in the Plaintiffs’ Memorandum [163]—specifically, they state that “Dr. Kerrigan is not offering ‘design’ opinions in the traditional sense. Rather, he explains how the alternative designs Dr. John Meyer offers would have prevented or reduced the likelihood of Jones’s injuries.” [163] at p. 5.

This clarification is noted and will be enforced at trial. To the extent Raymond seeks to prohibit Kerrigan from offering design opinions, the request is granted. However, the Court finds that he is otherwise qualified to testify regarding the alternative designs offered by Meyer and his opinion as to the effect those designs would have had.

*9 Next, Raymond contends that Kerrigan’s “design opinions are unreliable for the reason that, other than the concept phase, he did not engage any of the engineering methodology which, by his own admission, is necessary to the design process.” [112] at p. 10. Raymond further emphasizes that Kerrigan “has admitted that he cannot offer the requisite causation opinions that are necessary to make [his] *ipse dixit* design concepts relevant to this case. He only offers opinions that the proposed alternative designs might have made a difference in Mr. Jones’ accident—not that they would have made a difference.” *Id.* at p. 12.

The Court rejects these arguments. Despite Raymond's characterization of his methodology (or lack thereof), Kerrigan's report is thorough and explains the steps in which Kerrigan engaged to reach his opinions. Regarding the likelihood that the alternative designs would have prevented Jones' injuries, it is not required that an expert be absolutely certain that an alternative design would have prevented any particular injury. *See, e.g., Daubert*, 509 U.S. at 590 (“[I]t would be unreasonable to conclude that the subject of scientific testimony must be ‘known’ to a certainty; arguably, there are no certainties in science.”). But Kerrigan's report clearly includes his opinion that “[i]f [the subject forklift] had incorporated design details that were readily available at the time of Mr[.] Jones' injury, it is my opinion to a reasonable degree of engineering certainty that Mr. Jones would not have been injured.” [162], Ex. 5 at p. 5. This is sufficient.

Raymond then raises the argument that Kerrigan's “door opinions are unreliable because they are universally rejected by the relevant scientific community, and he may not simply be a outhpiece for other non-testifying witnesses.” [112] at p. 12. Raymond admits that this is the same argument raised in connection with Meyer. The Court has already addressed it above and sees no need to address it further. However, the Court does again emphasize the clarification noted above—particularly, that Kerrigan's testimony regarding alternative designs will be limited to “how the alternative designs Dr. John Meyer offers would have prevented or reduced the likelihood of Jones's injuries.” *See* [163] at p. 5.

Next, Raymond asserts that Kerrigan's criticisms of Raymond's utilization of ATD testing should be excluded because they are not generally accepted by the relevant scientific community. To summarize, Kerrigan's opinion on that issue is that Raymond should not rely upon ATD testing because it is not indicative of real-world accidents of this nature. In reaching this conclusion, Kerrigan engaged in several steps which are set forth in his report and summarized in the Plaintiffs' Memorandum [163]. Kerrigan essentially engaged in six steps: (1) analyzed previous ATD testing of Raymond and other forklift manufacturers; (2) reviewed research on history and development of ATD devices; (3) analyzed the ability of the ATDs in the forklift ATD testing to predict human injury; (4) analyzed whether the ATD testing mimicked what happens to forklift operators in real-world accidents; (5) analyzed the use of ATDs to predict injury potential and compared that information to how ATDs are used in forklift testing; and (6) conducted research to determine the veracity of Raymond's claim that a real-life

human would not be able to take self-protective measures before a tip-over or off-dock.

After employing these steps, Kerrigan reached the conclusion that ATD testing should not be utilized because the ATDs do not accurately mimic human behavior as it would actually occur in an accident. Raymond counters by emphasizing that Kerrigan's theory has only garnered minimal support, he “has no alternative solution for testing,” and “ATD use in this specific context has been peer-reviewed and accepted by the relevant scientific community.” [112] at p. 14.

*10 Although well-aware of Raymond's arguments in opposition to Kerrigan's opinions, the Court finds that they go to the weight that a factfinder should assign to the opinions—not their admissibility. Kerrigan has engaged in a thorough process to reach his conclusion and explained the same in his report. Raymond can challenge Kerrigan's opinions and credibility on cross-examination at trial. *See Daubert*, 509 U.S. at 596. The Court notes that the District Court for the Northern District of Georgia recently reached the same conclusion in a forklift accident case involving Raymond: “The proper remedy for Defendants' concerns about Dr. Kerrigan is to challenge the weight of the testimony and his credibility at trial.” *Vazquez*, 2019 WL 176106 at *4.

Lastly, Raymond makes a brief argument that “Kerrigan's review of Crown accident data is unreliable and irrelevant.” [112] at p. 15. Raymond contends that Kerrigan should have looked to accident reports from prior Raymond accidents—as opposed to data from Crown. On the other hand, the Plaintiffs assert that Raymond does not keep such data. The Court finds that this issue can be resolved at trial and does not constitute a basis for exclusion at this time. The argument is rejected.

Kerrigan's design opinions will, consistent with the explanation provided above, be limited. To the extent Raymond's Motion [111] sought such a limitation, it is GRANTED. The Motion [111] is DENIED in all other respects.

D. Plaintiffs' Expert John Jeka, PhD


John Jeka holds a master's degree in psychology and a PhD in neuroscience, and much of his professional experience involves studying human balance. In his report, Jeka sets forth six primary opinions:

- (1) The operation and use of stand-up forklifts present challenges to the operator's balance.
- (2) The operator's response to balance disturbances associated with stand-up forklift operation foreseeably includes movement of the operator's left foot to the operator's left.
- (3) The operator's movement of his left foot as an aid to balance is not voluntary.
- (4) The plaintiff operator's left foot, more likely than not, to a reasonable degree of scientific certainty, moved leftwards as part of an automatic balance retention process, immediately prior to the event, indicating and precipitating a loss of balance that [led] him to partially fall from the forklift resulting in the injuries suffered by the Plaintiff.
- (5) Manufacturers of standup forklifts must recognize that the left foot can leave the operator compartment due to an **involuntary** balance response and need to protect the operator accordingly.
- (6) From a balance point of view, the design changes suggested by Dr. John Meyer, Ph.D. make sense and more likely than not, had they been implemented on the forklift being operated by the Plaintiff Mr. Jones would have made [a] difference in the outcome of the event and protected him from injury.


[160], Ex. 3 at p. 4 (emphasis in original).


Through the present Motion [113], Raymond raises two arguments for exclusion of Jeka's opinions. First, Raymond avers that Jeka is “not qualified to offer opinions about lift truck operation or lift truck operator balance.” [114] at p. 8. More particularly, Raymond concedes that Jeka “has general experience in the field of kinesiology, and with respect to human balance, but his education, training, and experience have never involved lift trucks until being retained by Plaintiffs' counsel about two years ago, and he has not done any work to connect his general expertise to the issues relevant in this case to lift truck operation.” *Id.*

The Court is unpersuaded. Similar to its finding in connection with Raymond's argument to exclude Meyer's testimony, the Court finds this argument to constitute as attempt to impose a specialization far too specific. As emphasized above, “[a] lack of specialization should generally go to the weight of the

evidence rather than its admissibility, and an expert witness is not strictly confined to his area of practice, but may testify concerning related applications.”  *Cedar Lodge*, 753 F. App'x at 195 (citations omitted). Jeka is certainly well-qualified, and the Court rejects Raymond's contrary contention.

*11 Rather, consistent with the applicable law as articulated by the Fifth Circuit, the Court will “assess whether the reasoning or methodology underlying the testimony is scientifically valid and ... whether that reasoning or methodology properly can be applied to the facts in issue.”

 *Id.* This leads the Court to Raymond's second argument—that Jeka's opinions “do not result from applying a reliable methodology[.]” [114] at p. 9. To support this argument, Raymond asserts that Jeka “engaged in no methodology at all, other than reading some materials that Plaintiffs' counsel found for him, and talking to Mr. Jones and accepting his statements as true.” [114] at p. 10.

The Court finds Raymond's argument to be an oversimplification. As the Plaintiffs emphasize, Jeka's report sets forth his qualifications related to human balance, discusses the operation of a standup forklift and its connection with human balance, and explains how humans “respond naturally when it is anticipated that they are about to experience a challenge to balance.” [161] at p. 6. The Plaintiffs contend that he then “relates all of these issues to the available research on human balance.”  *Id.* Jeka thereafter reaches the conclusion that Jones' left foot moved leftward as part of an automatic balance retention process.

The Court finds that Jeka should be permitted to testify on this topic, as his opinions are relevant and reliable and will ultimately assist the trier of fact. In its Memorandum [114], Raymond emphasizes that “Dr. Jeka spent just 3.66 hours on the conference talking with Mr. Jones and writing his report. He spent another 1.85 hours preparing for his deposition.” [114] at p. 4 (citations omitted). In the Court's view, this goes to the weight which should be assigned to his testimony and can be properly addressed through cross-examination.

Although finding that Jeka should be permitted to testify as to most of his opinions, the Court does note an area that Jeka will not be permitted to delve into. First, the Court notes again the sixth conclusion in Jeka's report:

- (6) From a balance point of view, the design changes suggested by Dr. John Meyer, Ph.D. make sense and more likely than not, had they been implemented on the forklift being operated by the Plaintiff Mr. Jones would have made [a] difference in the outcome of the event and protected him from injury.

[160], Ex. 3 at p. 4.

When specifically questioned about this opinion in his deposition, Jeka provided the following response: “You know, I think having a door on there would have been a good idea. But *I'm not a design expert, so I shouldn't really be commenting on that in a strong way.*” [113], Ex. 2 at p. 25 (emphasis added).

The Court finds Jeka's admission telling. As emphasized above, Jeka is qualified to provide expert testimony on human balance. He is not an engineer, and he has not otherwise shown that he is qualified to provide any design opinions. Therefore, the Court finds that he is not qualified to testify on that particular topic. In essence, the Court will permit Jeka to testify regarding human balance—the area in which he is an expert—but he cannot testify about design defects or other areas that clearly exceed the scope of his expertise.

To the extent Raymond seeks exclusion of the sixth opinion listed in Jeka's report, the request is GRANTED. In all other respects, Raymond's Motion [113] is DENIED.

E. Raymond's Expert Kathleen A. Rodowicz, PhD, PE
Raymond designated Kathleen A. Rodowicz, a biomechanical engineer, as one of its experts. Rodowicz prepared a written report which, after setting forth the reasoning and methodology employed, states the following ten conclusions:

- *12 (1) Mr. Jones voluntarily placed his left foot outside, to the left, and below the operator compartment of his lift truck prior to the impact with the wooden pallet/racking, consistent with him attempting a fend-off maneuver;

- (2) The position and orientation of Mr. Jones' left foot and leg at the time of his injury is inconsistent with a loss of balance or with him “broadening his stance” as a result of a challenge to his balance;
- (3) Mr. Jones' left foot and leg injuries occurred primarily due to medial-lateral compression of his left foot and leg as his foot and leg were compressed between the wooden pallet/racking and his lift truck;
- (4) Had Mr. Jones remained within the operator compartment of his lift truck during the subject accident, he would not have been injured;
- (5) The operator compartment of the subject lift truck provides an operator with a base of support that is sufficient for him to react to the motions of the truck in such a way that he can maintain his position within the operator compartment during normal operating procedures;
- (6) Plaintiffs' experts provide no data to establish that a dual-pedal design or an occupant presence sensor in the back pad would have prevented or mitigated Mr. Jones' injuries;
- (7) Dr. Kerrigan has not provided design details regarding his hypothetical restraint designs and no data to support his opinion that such a design would have prevented Mr. Jones' injuries during the subject accident;
- (8) There are no data to indicate that the presence of a rear door would prevent an operator from volitionally placing a lower extremity outside of the running lines of a lift truck or from involuntarily pushing the door open and placing the lower extremity outside of the running lines of the truck during an alleged loss of balance, as Dr. Jeka opines. If Mr. Jones' lift truck had been equipped with a rear door and he moved outside the operator compartment prior to the impact, his left foot and leg would still have been at risk of comparable injury.
- (9) As demonstrated by ATD testing and simulations conducted by myself and others, an operator who remains within the operator compartment of a stand-up lift truck during an off-dock or tip-over event is at risk of sustaining a serious or greater injury, including a fatal [head injury](#).
- (10) The use of the Hybrid III ATD and/or a computational model of the Hybrid III ATD to examine injury potential

during lift truck industrial accidents is a methodology that has been accepted by the scientific community and published in the peer-reviewed literature.

[125], Ex. 2 at p. 27-28.

Of these opinions, the Plaintiffs take issue with Rodowicz being permitted to testify in three broad areas. The first two contentions are that “[a]ll of Dr. Rodowicz's opinions that an operator compartment safety guard door, on a Raymond 4250 forklift, will make the forklift less safe should be excluded” and that “all of Dr. Rodowicz's opinions that a human being will be seriously injured or killed if they go off a loading dock in a Raymond 4250 forklift should be excluded.” [126] at p. 6, 8. The Plaintiffs' main concern with these broad categories is that the opinions are based on ATD testing—they argue that “what is learned from ATDs propped up in falling forklifts does not fit a case in which the issue is what happens to human beings in falling forklifts.” [126] at p. 10. For clarification purposes, the Court notes that Rodowicz herself describes the ATDs as “crash test dummies[.]” [125], Ex. 2 at p. 18. The Plaintiffs emphasize that the ATD “does not act like a human” and that Rodowicz “does not know how her recreated event compares to real off-dock events.” [126] at p. 13-14.

*13 The Court cannot accept the Plaintiffs' contentions. According to Rodowicz and (at least implicitly) admitted by the Plaintiffs, ATD testing has been peer-reviewed and published and is generally accepted in the relevant scientific community. Rodowicz dedicated a significant portion of her report to explaining the utilization of ATDs to evaluate injury potential in various contexts, such as motorcycles, bicycles, trains, and buses.

The Plaintiffs may certainly emphasize on cross-examination the points raised in their Memorandum [126]. But the Court declines to altogether exclude the testimony, as it meets the requisite threshold for expert testimony.

Lastly, the Plaintiffs assert that “[a]ll of Dr. Rodowicz's opinions as to how and why Mr. Jones exited the forklift, including those to the effect that Mr. Jones intentionally exited the forklift, should be excluded.” [126] at p. 18. They contend that it would be improper for Rodowicz to “argue to the jury that Mr. Jones ‘volitionally’ (i.e. intentionally) put his limb into harm's way.” *Id.* at p. 19. Raymond contends that, in making this argument, the Plaintiffs misconstrue Rodowicz's opinions. Specifically, Raymond states that Rodowicz “does not comment on Mr. Jones' *intent* in her report, and will not

comment on Mr. Jones' *intent* in her testimony.” [147] at p. 21 (emphasis in original).

The Court sees nothing to exclude at this time. Certainly, Rodowicz should not be permitted to testify as to Jones' personal, subjective intent at the time of the accident, but her report, in the Court's view, does not do so. Should she attempt to testify on that topic at trial, the Court will address it at that time.

The Court rejects the Plaintiffs' arguments as to Rodowicz's opinions and her anticipated testimony. The Motion [125] is DENIED.

F. Raymond's Expert Michael Rogers, PE

Raymond has also designated as an expert Michael Rogers, a mechanical engineer. Rogers prepared a thorough report, at the conclusion of which he lists twelve opinions. For the sake of brevity, the Court will not list all twelve opinions since the Plaintiffs do not attack all of them; instead, the Court will focus on the opinions which the Plaintiffs seek to exclude. As stated by the Plaintiffs, the following opinions should be excluded:


- (1) All of Rogers' opinions that an operator compartment safety guard door, on a Raymond 4250 forklift, will make the forklift less safe should be excluded;
- (2) All of Rogers' opinions that there are no forces or movements associated with the use of the Raymond 4250 forklift, that can cause, or contribute to, a loss of balance should be excluded;
- (3) All of Rogers' opinions as to how and why Mr. Jones exited the forklift, including those to the effect that Mr. Jones intentionally exited the forklift, should be excluded;
- (4) All of Rogers' opinions about the statistical likelihood of a Raymond [M]odel 4250 forklift, as well [as] other kinds of standup forklifts, to be involved in an accident should be excluded;
- (5) All of Rogers' opinions about the history and bases of the ANSI/ITSDF B56.1 voluntary standards relating to ingress and egress should be excluded.

[128] at p. 3.

Concerning Rogers' opinions that adding a guard door would make the forklift less safe, the Plaintiffs first argue that Rogers' opinion should be excluded because he is not an expert on human actions. Raymond counters by noting that Rogers is an expert in accident reconstruction, which is precisely what he did in this case. The Court agrees with Raymond. Rogers' report explains in great detail the accident reconstruction efforts in which Rogers engaged and his theory as to how the accident occurred. Rogers is qualified to opine on that topic.

*14 Additionally as to this topic, the Plaintiffs argue that the methodology underlying Rogers' opinion is not scientifically reliable. This argument is again based upon the Plaintiffs' disapproval of ATD testing. However, as explained above, there has been no contention that such testing is not the generally-accepted standard by the relevant scientific community. The Plaintiffs may cross-examine Rogers as to that topic, but the Court will not exclude the testimony.

Next, the Plaintiffs seek to exclude “all of Rogers' opinions that there are no forces or movements, associated with the use of the Raymond 4250 forklift, that can cause, or contribute to, a loss of balance[.]” [128] at p. 23. To be clear, Rogers' opinion on this topic is essentially that if an operator follows the appropriate training, there are no forces that would act to cause a limb to leave the compartment during normal operation and, as applied to this case, “[t]he forces acting on Mr. Jones would not cause a loss of balance or force any part of his body out of the compartment.” [150] at p. 4.

This contention again goes to the accident reconstruction which Rogers performed. The report clearly explains the methods in which Rogers engaged to reconstruct the accident and thereafter concluded that “Jones most probably inadvertently steered the lift truck towards the rack, and accelerations from normal operation including steering are not sufficient to cause a loss of balance to an operator who has four or five points of contact.” [150] at p. 8 (citations omitted). The Court finds that Rogers is sufficiently qualified to provide this opinion, which is based upon his accident reconstruction and his experience with forklifts of this nature. Again, the Plaintiffs' concerns can be adequately addressed through vigorous cross-examination. See  *Daubert*, 509 U.S. at 590.

Third, the Plaintiffs ask the Court to exclude Rogers' opinions “as to how and why Mr. Jones exited the forklift, including

those to the effect that Mr. Jones intentionally exited the forklift[.]” [128] at p. 25.

The Court addressed this issue above in connection with the Plaintiffs' Motion [125] relating to Kathleen Rodowicz. As concluded in connection with that request, the Court agrees that Rogers should not (and will not) be permitted to testify as to Jones' subjective motive. However, the Court does not read the report as to render such an opinion. For example, as emphasized by the Plaintiffs in their Memorandum [26], Rogers' report specifically states “[w]hat is clear is that Mr. Jones steered the truck towards the rack, but it is unknown why he did.” [127], Ex. 3 at p. 20.

Rogers will be permitted to testify regarding his accident construction, but he will not be permitted to testify about Jones' subjective motivation at the time of the accident. If he attempts to do so, the Court will take up that issue at trial.

Fourth, the Plaintiffs contend that Rogers should not be permitted to opine about the statistical likelihood of a Raymond Model 4250 forklift (or other types of standup forklifts) being involved in an accident. The Plaintiffs' entire argument on this point is as follows:

Rogers intends to opine that the Raymond model 4250 is safe based on Bureau of Labor Statistics data on forklift incidents. He cannot share this data, or any opinion based on this data, because the data includes all kinds of forklifts. Rogers is unable to discern what percentage of the incidents relate to standup forklifts as compared to the other classes of industrial trucks included in the data.

*15 [128] at p. 26 (internal citations omitted).

Raymond responds by emphasizing the manner in which Rogers uses the statistics: “Mr. Rogers uses this information to make a general point about the importance of operator training, as dictated by OSHA. The downward trend in accidents after OSHA instituted training requirements shows a correlation between increased training and decreased accidents.” [150] at p. 15.

The Court agrees with Raymond. This information would likely be helpful to assist a jury in understanding the need for training and the industry as a whole. Any concerns regarding the testimony can be resolved through cross-examination.

Lastly, the Plaintiffs request exclusion of Rogers' opinions regarding “the history and bases of the ANSI/ITSDF B56.1 voluntary standards relating to ingress and egress[.]” [128] at p. 26. On this point, the Plaintiffs contend that Rogers should not be permitted to testify about the B56.1 committee's decision that doors should not be included on standup forklifts which are utilized in warehouses such as the one where Jones was injured. The Plaintiffs emphasize that the B56.1 standards “are voluntary standards, not government standards, and that doors are not mentioned anywhere in the standards.” [128] at p. 26.

Raymond emphasizes that Rogers has extensive knowledge about the B56.1 safety standards because he is a sitting member of the committee. In his report, Rogers explains the history of the committee's consideration of doors.

The Court will defer ruling on this issue at the current time but will instead take up the issue at trial (outside of the presence of the jury if necessary) so that the appropriate foundation and context can be taken into account. Subject to that one caveat, the Plaintiffs' Motion [127] is DENIED.⁴

II. Summary Judgment

Raymond has filed two separate Motions for Summary Judgment [115, 117]. The Court will address them separately.

A. First Motion for Summary Judgment [115]

Raymond's first Motion for Summary Judgment [115] seeks dismissal of all claims and is intertwined with its Motions to Strike [109, 111, 113] addressed above regarding the Plaintiffs' experts. In particular, Raymond argues that those experts should be excluded from testifying and “[w]ithout expert testimony of the purported defects and causation, their claims fail as a matter of law.” [116] at p. 1. This argument is based upon the fact that lift truck designs and defects fall beyond the scope of layman's knowledge and require expert testimony. *See, e.g.,* [Brown v. Ford Motor Co.](#), 121 F.Supp.3d 606, 612 (S.D. Miss. 2015) (granting summary judgment in favor of defendant after plaintiff failed to present expert testimony to support design defect theory).

Because the Court has already rejected Raymond's arguments to exclude the testimony of the Plaintiffs' experts—the only basis for Raymond's present request—the Motion [115] is DENIED.

B. Second Motion for Summary Judgment [117]


*16 Raymond's second Motion [117] relates only to the Plaintiffs' punitive damages claim. In the Complaint [1], the Plaintiffs contend that, despite being aware that lift trucks of this nature are dangerous and numerous operators have been injured while utilizing them, Raymond has refused to modify its design, incorporate necessary safety features, and/or incorporate necessary warnings. Raymond contends that the Plaintiffs have no evidence to satisfy the requisite threshold for punitive damages.



Summary judgment is warranted when the evidence reveals no genuine dispute regarding any material fact and that the moving party is entitled to judgment as a matter of law. *FED. R. CIV. P. 56(a)*. Rule 56 “mandates the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial.” *Nabors v. Malone*, 2019 WL 2617240, at *1 (N.D.

Miss. June 26, 2019) (quoting [Celotex Corp. v. Catrett](#), 477 U.S. 317, 322, 106 S. Ct. 2548, 91 L. Ed. 2d 265 (1986)).

“The moving party ‘bears the initial responsibility of informing the district court of the basis for its motion, and identifying those portions of the record which it believes demonstrate the absence of a genuine issue of material fact.’ ” *Id.* (quoting [Celotex](#), 477 U.S. at 323). “The nonmoving party must then ‘go beyond the pleadings’ and ‘designate specific facts showing that there is a genuine issue for trial.’ ” *Id.* (quoting [Celotex](#), 477 U.S. at 324). Importantly, “the inferences to be drawn from the underlying facts contained in the affidavits, depositions, and exhibits of record must be viewed in the light most favorable to the party opposing the motion.” [Waste Mgmt. of La., LLC v. River Birch, Inc.](#), 920 F.3d 958, 964 (5th Cir. 2019) (quoting [Reingold v. Swiftships, Inc.](#), 126 F.3d 645, 646 (5th Cir. 1997)). However, “[c]onclusory allegations, speculation, unsubstantiated assertions, and legalist arguments are not an adequate substitute for specific facts showing a genuine issue for trial.” *Nabors*, 2019 WL 2617240 at *1 (citing [TIG Ins.](#)

Co. v. Sedgewick James of Wash., 276 F.3d 754, 759 (5th Cir. 2002)) (additional citations omitted).

“Mississippi law does not favor punitive damages; they are considered an extraordinary remedy and are allowed within caution and within narrow limits.”  *Warren v. Derivaux*, 996 So.2d 729, 738 (Miss. 2008) (citations and internal quotation marks omitted). “Punitive damages should be awarded in addition to actual or compensatory damages where ‘the damages sustained import insult, fraud, or oppression and not merely injuries, but injuries inflicted in the spirit of wanton disregard for the rights of others[.]’ ”

 *Id.* (quoting  *Bradfield v. Schwartz*, 936 So.2d 931, 936 (Miss. 2006)). The primary purpose of punitive damages is to punish the wrongdoer and deter similar future misconduct.

 *Union Carbide Corp. v. Nix, Jr.*, 142 So.3d 374, 378 (Miss. 2014).

In the *McHale* case referenced multiple times above, the District Court for the Middle District of Florida, although permitting the plaintiffs' general liability claims to proceed to trial, granted summary judgment on the plaintiffs' request for punitive damages. See *McHale*, 2021 WL 808860 at *5. The district court specifically held that “although Plaintiffs raise several factual disputes as to the existence of a design defect and causation, the disputes are not material to the resolution of Plaintiffs' claim for punitive damages. Rather, the record demonstrates that, because Plaintiffs have not shown that Crown's conduct constituted ‘intentional misconduct’ or ‘gross negligence,’ punitive damages are not warranted.” *Id.* The court ultimately concluded that “even if there are factual disputes about the benefits or risks involved with the addition of a door on the [forklift], the possibility that an alternative design might prevent some injuries is insufficient to establish that [the defendant's] conduct constituted intentional misconduct or gross negligence.” *Id.* at *6.

*17 Although recognizing that *McHale* is in no way binding, this Court finds its reasoning on point. Here, the Plaintiffs have pointed to no specific evidence that Raymond engaged in intentional misconduct or wanton disregard for the safety of its consumers. Further, while the Plaintiffs challenge Raymond's reliance on ATD testing, there has been no dispute that Raymond did in fact engage in such testing, nor have the Plaintiffs raised any dispute that such testing is generally accepted in the industry. The Plaintiffs may ultimately prevail on their general theories of liability, but they have not come forward with any evidence to demonstrate that this case is one which warrants the extraordinary remedy of punitive damages.

Raymond's Motion [117] is GRANTED. The Plaintiffs' punitive damages claim is dismissed.

Conclusion

For the reasons set forth above, Raymond's Motion to Strike Meyer's Testimony [109] is DENIED; Raymond's Motion to Strike Kerrigan's Testimony [111] is GRANTED IN PART and DENIED IN PART; Raymond's Motion to Strike Jeka's Testimony [113] is GRANTED IN PART and DENIED IN PART; the Plaintiffs' Motion to Exclude Rodowicz's Testimony [125] is DENIED; and the Plaintiffs' Motion to Exclude Rogers' Testimony [127] is DENIED. The Plaintiffs' Motions [119, 121, 123] as to their own experts are DENIED.

Raymond's Motion for Summary Judgment [115] is DENIED. Raymond's Motion for Partial Summary Judgment [117] as to punitive damages is GRANTED. The Plaintiffs' punitive damages claim is DISMISSED *with prejudice*.

SO ORDERED, this the 18th day of January, 2023.

All Citations

Slip Copy, 2023 WL 309055

Footnotes

- 1 New Hampshire Insurance Company, the company that provided workers' compensation insurance coverage for Abacus Corporation at the time of the accident, has filed an Intervenor Complaint [40], asserting entitlement to reimbursement for payments made to Jones as a result of this accident.

- 2 For the sake of clarity, the Court notes that Crown Equipment Corporation—the defendant in *McHale*—is one of Raymond's competitors in the forklift market. As discussed in more detail below, there have been numerous lawsuits filed across the country (many of which have been filed by the same counsel representing the Plaintiffs in the case *sub judice*) against both Raymond and Crown for injuries of this nature.
- 3 Raymond also raises an argument that Meyer's testimony should be excluded because he is “simply parroting the defect opinions of other purported experts, including Mr. Berry[.]” [110] at p. 17. The Court sees no need to address this issue in great detail, as it has already explained above its finding that Meyer has himself engaged in appropriate methodology to support his opinions. This argument is rejected.
- 4 The parties are directed to raise the issue associated with Rogers' testimony at trial, and the Court will take up the matter as necessary at that time.

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UNPUBLISHED OPINION. CHECK
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Court of Appeals of Michigan.

Vincent OWEN, Plaintiff-Appellant,

v.

Dennis CONTO, Luther Logistic Transportation LLC,
and Luther Leasing LLC, Defendants-Appellees,
and
State Farm Mutual Automobile
Insurance Company, Defendant.

No. 345253

|

January 7, 2020

Macomb County Circuit Court, LC No. 2016-001536-NI

Before: Riordan, P.J., and Jansen and Stephens, JJ.

Opinion

Per Curiam.

*1 Plaintiff Vincent Owen (plaintiff) appeals as of right the trial court's Order Granting No Cause of Action after a jury verdict of no cause of action. The jury specifically determined that plaintiff was not injured when his vehicle was sideswiped by a semi-truck driven by defendant Dennis Conto (defendant) who was at the time working for defendant Luther Logistic Transportation, LLC or Luther Leasing, LLC. We affirm.

I. BACKGROUND

This case arises from a motor-vehicle accident that occurred on June 26, 2015. Plaintiff was travelling in the right lane on Mound Road in a 2009 Impala when defendant, who was driving a semi-truck, entered plaintiff's lane, sideswiped plaintiff's vehicle, and pushed it over the curb onto the grass. Defendant kept driving and had to be stopped by other drivers approximately a mile and a half away from the accident. He claimed he did not know that his vehicle had struck plaintiff's. Witness at the scene, Angela Jackson, and responding officer,

Timothy Kulhanek, testified that plaintiff did not report being hurt in the accident. An ambulance was not called and plaintiff proceeded to his place of employment. Plaintiff soon left work to go to the emergency department for neck and back pain. He was discharged with a diagnosis of strains and contusions. Plaintiff, still experiencing pain, sought chiropractic care, physical therapy and steroid injections before eventually undergoing what would be the first of three surgeries to his neck, back and pelvis. In May 2016, plaintiff filed a complaint against defendant and defendant's employer. Plaintiff alleged that defendant was negligent in his operation of the semi-truck, that his employer Luther was negligent under a theory of vicarious liability and negligent in hiring defendant. Plaintiff pled an additional claim for first party benefits against State Farm Mutual Automobile Insurance Company.¹

Defendants Conto and Luther admitted liability and the case proceeded to trial on the issues of causation and damages. Plaintiff filed a motion in limine to strike or limit testimony from defendants' biomechanical expert Brian Weaver, P.E. on the basis that Weaver was unqualified to offer an opinion as to the causation of plaintiff's injuries because he lacked a medical degree. Defendants responded that Weaver was to offer testimony within his expertise concerning the physical forces at play during an accident. The court denied the motion and held that plaintiff could challenge Weaver's expertise at trial. Plaintiff also filed a motion in limine to Prohibit Improper Arguments, Evidence, and Statements at Trial regarding alleged attorney referred treatment. The court denied that motion finding that it was premature and that the issues could be handled at trial. At trial, testimony was elicited from the parties, witnesses to the accident, the orthopedic surgeons who treated plaintiff, the independent medical examiners, and the testimony of biomechanical expert Weaver.

*2 The jury, in response to a special jury verdict form, found that plaintiff had not sustained a physical injury and the court entered a judgment for No Cause of Action. Plaintiff moved unsuccessfully for judgment notwithstanding the verdict (JNOV). On appeal, plaintiff raises the same issues he raised in his motion for JNOV or a new trial. He asserts three errors: admission of Weaver's testimony; admission of and evidence of his bankruptcy; and denial of his motion for JNOV. He argues that the court erred when it failed to grant him JNOV due to defendants' theory of attorney-driven treatment which denied him a fair trial. He also argues that

the jury's verdict of no physical injury was against the great weight of the evidence.

II. ATTORNEY-DRIVEN TREATMENT

A. STANDARD OF REVIEW

“This Court reviews de novo the trial court's decision to grant JNOV, and, if reasonable jurors could have reached different conclusions, the jury verdict must stand.” *Nelson v. Dubose*, 291 Mich. App. 496, 499; 806 N.W.2d 333 (2011). We “review the evidence and all legitimate inferences in the light most favorable to the nonmoving party.” *Wilkinson v. Lee*, 463 Mich. 388, 391; 617 N.W.2d 305 (2000). “A trial court should grant a motion for JNOV only when there was insufficient evidence presented to create an issue for the jury.” *Attard v. Citizens Ins. Co. of Am.*, 237 Mich. App. 311, 321; 602 N.W.2d 633 (1999).

“The grant or denial of a motion for a new trial rests in the discretion of the trial court and will not be disturbed on appeal absent an abuse of discretion.” *Vargo v. Denison*, 140 Mich. App. 571, 573; 364 N.W.2d 376 (1985).

When reviewing an appeal asserting improper conduct of an attorney, the appellate court should first determine whether or not the claimed error was in fact error and, if so, whether it was harmless. If the claimed error was not harmless, the court must then ask if the error was properly preserved by objection and request for instruction or motion for mistrial. If the error is so preserved, then there is a right to appellate review; if not, the court must still make one further inquiry. It must decide whether a new trial should nevertheless be ordered because what occurred may have caused the result or played too large a part and may have denied a party a fair trial. If the court cannot say that the result was not affected, then a new trial may be granted. Tainted verdicts need not be allowed to stand simply because

a lawyer or judge or both failed to protect the interests of the prejudiced party by timely action. [*Reetz v. Kinsman Marine Transit. Co.*, 416 Mich. 97, 102-103; 330 N.W.2d 638 (1982).]

B. ANALYSIS

Plaintiff argues that defendants' counsel engaged in misconduct by arguing that plaintiff's medical treatment was attorney driven because the argument was based on speculation. He further argues that the introduction of this speculative theory denied him a fair trial. We disagree.

“While a lawyer is expected to advocate his client's cause vigorously, parties are entitled to a fair trial on the merits of the case, uninfluenced by appeals to passion or prejudice.”

Bd. of Co. Rd. Com'rs of Wayne Co. v. G.L.S. LeasCo., Inc., 394 Mich. 126, 131; 229 N.W.2d 797 (1975) (quotation marks and citation omitted). “Irrelevant, disparaging and accusatory remarks divert the attention of the jury from the merits of the case.” *Id.* at 138. The repetitive nature of the attack is what creates the increased probability of prejudice. *Id.* at 131. When “the theme is constantly repeated so that the error becomes indelibly impressed on the juror's consciousness, the error becomes incurable and requires reversal.” *Reetz*, 416 Mich. at 111; See *Stuedle v. Yellow & Checker Cab. & Transfer Co.*, 287 Mich. 1, 12; 282 N.W. 879 (1938) (“We think the course of misconduct was so persistently followed that a charge of the court in an effort to obviate the prejudice would have been useless.”). In deciding whether to reverse, we look for “a deliberate course of conduct on the part of counsel ... aimed at preventing [the other party] from having a fair and impartial trial.” *Stuedle*, 287 Mich. at 11-12.

*3 We begin our review with an analysis of the claimed error surrounding the evidence regarding the relationship between the plaintiff's counsel's law firm and the plaintiff's health care providers. It is relevant to the case whether the plaintiff's course of healthcare was influenced in any way by factors other than legitimate medical judgment. Therefore, if counsel had a good faith belief that evidence existed regarding such non-medical factors, including financial gain for the

health care providers, it would not be misconduct to introduce argument and questions in that regard. In this case, defendants had a filing from federal court that listed 105 cases in which Dr. Kornblum had both treated clients represented by the Morse law firm and testified on the patients' behalf over a five-year period. Thus, counsel had a basis other than speculation for inquiry into this relevant area. Dr. Kornblum emphatically denied such relationships.

The conduct of defense counsel did not deny plaintiff a fair trial. The issue of attorney referrals appeared in four ways during this trial: 1) in opening argument, 2) during plaintiff's cross-examination, 3) during Dr. Kornblum's cross-examination, and 4) during closing arguments. As we noted above, the issue of attorney referrals was relevant to the case and counsel had a good faith basis upon which to ask questions in this regard. This line of questioning did not, however, prove very productive for the defense. Dr. Kornblum denied the existence of a referral relationship and an affidavit was introduced from plaintiff's treating chiropractor which also denied any attorney referral relationship. Additionally, plaintiff affirmatively stated that he had no idea why he was referred by his treating chiropractor to Dr. Kornblum's office and that he was not referred to the chiropractor by the Morse firm. A majority of defense counsel's comments regarding attorney referrals was in opening and closing arguments. The opening statements foreshadowed evidence that the defense believed would be introduced, if only by the federal court filing, and the closing argument referred to evidence that was in fact introduced at trial. Defense counsel drew inferences favorable to his client from that evidence. The plaintiff argued opposite inferences. Ultimately, the jury was instructed that these portions of the trial were not evidence. The trial court did not err in declining to grant a JNOV based upon this line of inquiry or argument.

III. SUFFICIENCY OF THE EVIDENCE

A. STANDARD OF REVIEW

“This Court reviews de novo the trial court's decision to grant JNOV, and, if reasonable jurors could have reached different conclusions, the jury verdict must stand.” *Dubose*, 291 Mich. App. at 499. We “review the evidence and all legitimate inferences in the light most favorable to the nonmoving party.” *Wilkinson*, 463 Mich. at 391. “A trial court should grant a motion for JNOV only when there was insufficient

evidence presented to create an issue for the jury.” *Attard*, 237 Mich. App. at 321.

B. ANALYSIS

Plaintiff argues he is entitled to JNOV or alternatively a new trial because the jury determination that plaintiff had not sustained a physical injury was contrary to the medical evidence in this case. We disagree.

In relevant part, *MCR 2.611(A)(1)* provides that

A new trial may be granted to all or some of the parties, on all or some of the issues, whenever their substantial rights are materially affected, for any of the following reasons:

(e) A verdict or decision against the great weight of the evidence or contrary to law.

* * *

(g) Error of law occurring in the proceedings, or mistake of fact by the court.


The evidence in this case did, in fact, support the existence of a significant medical condition for which the plaintiff required surgery. However, there was evidence from which a jury could decide that the 2015 accident did not cause that physical condition. Jackson and the responding officer at the scene both testified that plaintiff reported he was not hurt. Plaintiff was able to drive himself down the road where defendant was stopped, then to work, and later to the hospital. Weaver opined that plaintiff's diagnosed medical conditions were not from the 2015 car accident because neither the force nor the motion in that accident were consistent with the diagnoses that necessitated his surgeries. Images of plaintiff's cervical spine taken on April 27, 2012, showed some degenerative abnormalities, *arthritis*, and signs of *old trauma*. Plaintiff's MRI and *CAT scan* taken on the day of the accident only revealed degenerative conditions and plaintiff was released from the hospital with a diagnosis of strains and contusions. Dr. Singer opined that plaintiff had some preexisting arthritic or longstanding changes of the neck, thoracic spine and lumbar spine that were jarred or rattled and that he experienced a soft tissue strain of the neck as a result of the accident. Dr. Delano opined that there was no imaging evidence that would suggest the body suffered trauma in the June 2015 accident. Dr. Drouillard did not find any objective evidence of trauma in the plaintiff's films.

*4 On the other hand, there was also evidence introduced that plaintiff was physically injured by the 2015 car accident. Dr. Munk opined that more likely than not, plaintiff's back or SI joint pain was caused by the accident because plaintiff self-reported the pain beginning after the June 26, 2015 car accident. Dr. Delano testified that an August 17, 2015 MRI of the thoracic spine showed some edema or swelling at the T7 level that he believed was a disc herniation into the bone that could have been caused by "trauma or heavy lifting or any number of things." Dr. Kornblum also opined that because plaintiff did not have neck problems in 2013 and 2014, he thought the extent of the herniations in plaintiff's neck at C4-5 and C5-6 were caused by the 2015 accident.

The jury chose to believe the defense experts and find that the plaintiff did not sustain an injury in the 2015 accident. The verdict was not against the great weight of the evidence and was supported by competent evidence. JNOV or the grant of a new trial was inappropriate and the court did not err in refusing to grant the motion.

IV. EXPERT TESTIMONY

A. STANDARD OF REVIEW

We review the trial court's decision to admit evidence for an abuse of discretion.  *People v. Bergman*, 312 Mich. App. 471, 492; 879 N.W.2d 278 (2015). "A trial court abuses its discretion when it chooses an outcome that is outside the range of reasonable and principled outcomes." *People v. Orr*, 275 Mich. App. 587, 588-589; 739 N.W.2d 385 (2007).

B. ANALYSIS


Plaintiff argues the trial court abused its discretion in allowing defendants' biomechanical expert, Brian Weaver, to testify regarding whether plaintiff sustained an injury from the accident because the expert was not medically qualified to render an opinion as to the cause of specific injuries and his opinion was further inadmissible under MRE 702. We disagree.



The admissibility of expert testimony is governed by MRE 702. Notably, the court did not make a pretrial ruling as to the



admissibility of Weaver's testimony under MRE 702. In any event, the rule provides:

If the court determines that 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 on 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.

"The admission of expert testimony requires that (1) the witness be an expert, (2) there are facts in evidence that require or are subject to examination and analysis by a competent expert, and (3) the knowledge is in a particular area that belongs more to an expert than to the common man."

 *Dept. of Envtl. Quality v. Waterous Co.*, 279 Mich. App. 346, 381; 760 N.W.2d 856 (2008). "The party that proffers the expert bears the burden of persuading the trial court that the expert has specialized knowledge that will aid the factfinder in understanding the evidence or determining a fact in issue."

 *Davis v. Link, Inc.*, 195 Mich. App. 70, 73-74; 489 N.W.2d 103 (1992). A witness may be qualified as an expert by knowledge, skill, experience, training, or education. MRE 702;  *Mulholland v. D.E.C. Int'l Corp.*, 432 Mich. 395, 403; 443 N.W.2d 340 (1989). "An expert who lacks 'knowledge'

in the field at issue cannot 'assist the trier of fact.'"  *Gilbert v. DaimlerChrysler Corp.*, 470 Mich. 749, 789; 685 N.W.2d 391 (2004). However, "[g]aps or weaknesses in the witness' expertise are a fit subject for cross-examination, and go to the weight of his testimony, not its admissibility."  *Wischmeyer v. Schanz*, 449 Mich. 469, 480; 536 N.W.2d 760 (1995).

*5 The trial court did not abuse its discretion in admitting Weaver's expert testimony. The substance of Weaver's testimony was scientific, technical and not common knowledge to the average person. Weaver's testimony was

probative of a fact at issue at trial, whether the accident caused plaintiff's injuries, specifically his herniated discs. Weaver was further qualified to testify about how forces and motion impact the body, in this case the spine, by nature of his knowledge, experience, training, and education on the subject. In addition to his engineering degree in mechanics and biomechanics, Weaver had a master's degree in the specialty of orthopedics. He was specially trained to investigate vehicle accidents. He had studied "the intervertebral disc as a function of both posture and muscle activation to protect the disc." He had published work "on the effect of strengthening the back to decrease the likelihood of obtaining disc herniation." Weaver was very clear to tell the jury that he was not a doctor and that he did not diagnose injuries, but rather tried to explain their causes. Plaintiff's contention that Weaver was not qualified to give an opinion on causation because he lacked a medical degree highlights a weakness or gap in Weaver's expertise that was subject to cross-examination. Weaver was otherwise qualified to render an opinion grounded in biomechanics. His opinions were based upon sufficient facts and data and the product of reliable principles and methods. Weaver's opinions began with his review of facts and data in evidence.² Specifically, he used photographs, police reports, depositions, medical records, and plaintiff's biometrics, to opine that plaintiff's diagnosed medical conditions were not from the 2015 car accident because he did not sustain the required motions and force consistent with his diagnoses. Weaver relied on the laws of physics and the principles of dynamics, peer reviewed biomechanical studies, computer models, simulated test devices, statistical data of vehicle crash testing, and his training and experience in reaching this conclusion.

We reject plaintiff's request to find that in general, biomechanical engineers, as non-physicians, are not qualified to give opinions as to causation. The only published case cited by plaintiff for Michigan that excluded a biomechanical engineer's expert testimony at trial was *People v. Unger*, 278 Mich. App. 210; 749 N.W.2d 272 (2008). In *Unger*, the biomechanical engineer's testimony was excluded not only because he was not a physician, but also because his theory as to how the victim's injury occurred was "based on conjecture and [was] inconsistent with the facts in evidence" *Id.* at 249. The same circumstances do not apply here where Weaver's opinion was not based on conjecture, multiple physicians agreed with his report, and his conclusion that the herniations were not caused by the accident was consistent with the facts in evidence.

V. EVIDENTIARY ERROR

A. STANDARD OF REVIEW

We review the trial court's decision to admit evidence for an abuse of discretion. *Bergman*, 312 Mich. App. at 492. "A trial court abuses its discretion when it chooses an outcome that is outside the range of reasonable and principled outcomes." *Orr*, 275 Mich. App. at 588-589.

B. ANALYSIS

Plaintiff argues that the trial court abused its discretion in admitting his 2005 bankruptcy at trial because it "had no substantial relation and is not material to this case." We disagree.

Generally, "[a]ll relevant evidence is admissible" and "[e]vidence which is not relevant is not admissible." MRE 402. Plaintiff's contention that the evidence must have a "substantial relation" to the case reads more into the rule than what is required. Relevant evidence is evidence having "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." MRE 401. MRE 403 provides, "[a]lthough relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence." "Evidence bearing on a witness's credibility is always relevant[.]" *In re Dearmon*, 303 Mich. App. 684, 696; 847 N.W.2d 514 (2014). "Evidence that shows bias or prejudice on the part of a witness is always relevant." *Powell v. St. John Hosp.*, 241 Mich. App. 64, 72; 614 N.W.2d 666 (2000). "Testimony ... which touches the bias or interest of the witness[] is always admissible, and can be shown upon his cross-examination, and, if denied by him, can be proven on rebuttal; the proper foundation being laid for such proof." *Swift Electric Light Co. v. Grant*, 90 Mich. 469, 475; 51 N.W. 539 (1892).

MRE 608(b) provides:

Specific instances of the conduct of a witness, for the purpose of attacking or supporting the witness' credibility, other than conviction of crime as provided in Rule 609, may not be proved by extrinsic evidence. They may, however, in the discretion of the court, if probative of truthfulness or untruthfulness, be inquired into on cross-examination of the witness (1) concerning the witness' character for truthfulness or untruthfulness, or (2) concerning the character for truthfulness or untruthfulness of another witness as to which character the witness being cross-examined has testified.

*6 In this case, evidence of plaintiff's fraud in a prior bankruptcy was raised during plaintiff's cross-examination. Defendants argued the evidence was admissible under [MRE 608\(b\)](#) as a specific instance of a judicial determination of credibility. Plaintiff opposed admission of the evidence on the ground that it was more prejudicial than probative because it was over 10 years ago. The court held that it had "no choice but to allow this evidence in." We do not read this statement as the court believing that it had no discretion as to the admission of the evidence but, instead as an expression that the nature of this evidence, lying in a court proceeding, was such that it was relevant, probative and admissible in this case. The court's decision was not an abuse of discretion. Plaintiff's credibility was one of the central issues in this case. There were multiple factual determinations to be made regarding his truthfulness of the injuries he suffered, when they occurred, and to what

extent they impaired his daily activities. Similarly, plaintiff's credibility was central to his motive for bringing this suit and the truthfulness of his claims for damages.

Plaintiff further claims that the evidence unfairly prejudiced him by interjecting extraneous considerations of greed that played off defendants' theory of attorney driven referrals. However, it was just as likely that the evidence garnered sympathy for plaintiff and, as decided above, defense counsel's conduct was not so egregious as to deny plaintiff a fair trial.

Plaintiff also contends that "[t]he defense of this case resulted in a verdict based on bias, sympathy (for Defendants), anger and/or shock and, as such, the verdict cannot be permitted to stand as much as anyone seeks to give deference to a jury." Plaintiff fails to identify in what ways the defense created bias, sympathy, anger and shock. Accordingly, this undeveloped contention is abandoned. See [In re J.S. & S.M.](#), 231 Mich. App. 92, 98; 585 N.W.2d 326 (1998) ("The failure to brief the merits of an allegation of error is deemed an abandonment of an issue.").

At the end of plaintiff's brief, he argues that the combination of all the errors in his trial amount to him being deprived of a fair trial. Sometimes, "[t]he cumulative effect of a number of minor errors may require reversal." [Stitt v. Holland Abundant Life Fellowship](#), 243 Mich. App. 461, 471; 624 N.W.2d 427 (2000). However, since we found no error, plaintiff's cumulative error argument is without merit.

Affirmed.

All Citations

Not Reported in N.W. Rptr., 2020 WL 91575

Footnotes

- 1 Plaintiff's claim against State Farm was dismissed from this action and handled outside of court through arbitration.
- 2 [MRE 703](#) provides that "[t]he facts or data in the particular case upon which an expert bases an opinion or inference shall be in evidence."

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2021 WL 4949122

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 United States District Court, M.D. Florida,
 Orlando Division.

Sharon Gail TUCKER, as Guardian
 of V.C., a minor child, Plaintiff,

v.

EVENFLO COMPANY, INC., Defendant.

Case No. 6:20-cv-2-PGB-GJK

|

Signed 07/12/2021

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ORDER

PAUL G. BYRON, UNITED STATES DISTRICT JUDGE

*1 This cause is before the Court on the following:

1. Plaintiff's *Daubert* Motion to Exclude Testing Performed by Defendant Evenflo and Expert Opinions Based Thereon (Doc. 74);
2. Defendant Evenflo Company Inc.'s Memorandum in Opposition to Plaintiff's *Daubert* Motion (Doc. 88);
3. Plaintiff's Motion to Strike the Declarations of William Van Arsdell and Mark Sochor (Doc. 100); and
4. Defendant Evenflo Company Inc.'s Memorandum in Opposition to Plaintiff's Motion to Strike (Doc. 109).

Upon consideration, Plaintiff's Motion to Strike (Doc. 100) and *Daubert* Motion (Doc. 74) are due to be denied.

I. BACKGROUND

This case arises from a motor vehicle accident that occurred in April 2016, during which a Chevrolet Impala struck the rear driver's side of a Honda Odyssey. (Doc. 98, ¶ 8). Minor child, V.C., was seated in an Evenflo Big Kid Booster Seat Child Restraint System (hereafter "**Big Kid**," or "**Booster Seat**") and was using the seatbelt system. (*Id.* ¶ 9). V.C. was seriously injured during the accident, and this lawsuit follows. (*Id.* ¶ 57).

Plaintiff asserts four causes of action: negligence, strict liability, fraudulent misrepresentation, and fraudulent concealment. (*Id.* ¶¶ 60–96). Plaintiff alleges that the Big Kid was designed to have side "wings" and arm rests which "provided only the perception of side impact protection." (*Id.* ¶ 27). Plaintiff further avers that Evenflo ran side impact tests on the Big Kid, using test dummies designed to replicate children of various ages and sizes, and found "the dummy's head moved violently towards the direction of force at high velocity." (*Id.* ¶¶ 27(a)–(d)). Similarly, the side impact tests revealed that the dummy's "upper torso moved violently towards the direction of force at high velocity," and that the shoulder belt repositioned itself off of the shoulder and moved down the arm and mid-torso of the Anthropomorphic Test Dummies ("**ATDs**") as the dummy moved towards the direction of force." (*Id.* ¶¶ 27(e)–(f)). The testing also revealed the "thorax/torso of the dummy struck the armrest with extreme velocity and flexed over it." (*Id.* ¶ 27(g)).

Plaintiff alleges that Evenflo knew from its side impact testing involving "3 and 6-year-old ... ATDs but with five-point harnessed restraints [that] ... the five-point harness seats did a much better job of keeping the head and upper torso contained within the confines of the child restraint system than the Big Kid did." (*Id.* ¶ 31). The balance of Plaintiff's contentions address information considered by Evenflo concerning the appropriate age to transition a child from a five-point restraint to a Big Kid Booster Seat and Evenflo's alleged failure to pass this information to the consumer. (*Id.* ¶¶ 34–53).

Based on Plaintiff's theory of the case, the jury will be required to consider, in part, whether the Big Kid seat caused or contributed to V.C.'s injuries, whether V.C. properly routed the seat belt, and whether the Booster Seat when properly used is less effective in minimizing occupant movement during a side impact than a five-point harness. Defendant Evenflo's expert Dr. Van Arsdell directed Evenflo engineers and technicians to conduct ten case-specific side impact tests, which Plaintiff now seeks to exclude. (Doc. 74, p. 1). Plaintiff

alleges that the side impact tests are intended to recreate the crash and are designed to prove, at least in part, that V.C.'s seat belts were "misrouted" and "slack" at the time of the crash, which caused her injuries. (*Id.*) Plaintiff does not challenge the qualifications of Dr. Van Arsdell or Dr. Sochor, but she argues that Evenflo's side impact tests are not substantially similar to the subject crash sequence and must be excluded.¹ (*Id.* at pp. 7, 17–19).

*2 Plaintiff asserts the following challenges to the side impact testing conducted by Evenflo:

1. Dr. Van Arsdell failed to identify an acceptable, reliable methodology for recreating a specific far-side side impact crash that would allow for the evaluation of injury to a child;
2. Dr. Van Arsdell "rigged" the first 7 tests by artificially tightening the seat belts to "2 to 4 pounds" of tension;
3. Contrary to Dr. Van Arsdell's assertion that he put "zero" pounds of tension and "3 inches of slack in the belt" for the test where the seatbelt was "misrouted," the documents reveal 4 pounds of tension;
4. Dr. Van Arsdell "rigged the ATD set-up" by placing the ATD arm down and inside the armrest "where it would strike the armrest during the test, load the armrest with the ATD's 50+ pound weight, stress the Big Kid's plastic and ... affect how the ATD moves;
5. Dr. Van Arsdell used a Hybrid III 6-year-old ATD even though "there is no US ATD currently agreed upon or approved to have biofidelity for far-side impacts;"
6. Four of Big Kid seats used in the side impact testing were "expired," and Evenflo's corporate representative testified "you would not use the seat past that date;"
7. Dr. Van Arsdell opines the crash forces were "unusual," but he fails to explain how he factored this into his tests and fails to factor in the 180-degree counterclockwise spine after impact;
8. Dr. Van Arsdell dismantled part of an exemplar Honda to take measurements and photographs of the roof support that holds the seat belt retractor and "D" ring but fails to state that the test fixture properly replicates the exemplar Honda;

9. The fixture Evenflo built to hold the seat belt retractor and D ring is "extraordinarily robust" and is not substantially similar to V.C.'s Honda;

10. Dr. Van Arsdell used one Honda seat for all side impact tests but does not disclose where he obtained the seat or whether it was inspected between tests to check for damage or stresses; and

11. Dr. Van Arsdell never opines that the testing is substantially similar to the crash.

(*Id.* at pp. 7–15).

Plaintiff also submits that the side impact tests are flawed because Dr. Van Arsdell does not limit testing to Big Kid boosters or the 6-year-old ATD, opting to conduct tests using a 10-year-old ATD and a 5th percentile female ATD. (*Id.* at p. 15). Plaintiff also challenges Dr. Van Arsdell's placement of accelerometers in the "lower neck" of the ATD to measure forces, arguing that the experts know the neck data does not correlate to injury.² (*Id.* at p. 16).

Defendant Evenflo asserts that Dr. Van Arsdell "made clear in his expert report that the testing was not an attempt to recreate the accident, but rather an attempt to evaluate engineering and physical principles relevant to the case." (Doc. 88, p. 2). Evenflo further observes that the Court has discretion to provide a limiting instruction to the jury to ensure they do not consider the side impact tests as a recreation of the accident. (*Id.*) Defendant submits that Dr. Van Arsdell's methodology is followed by experts in his field, noting that he relies on testimony of eye witnesses, police reports and scene videos, an inspection of the subject Big Kid seat and the vehicle, sled testing performed by Evenflo in its ordinary course of business, the use of surrogates, and the ten case-specific sled tests.³ (*Id.* at p. 4). Defendant submits that each sled test had a different and specific purpose, including the following:

- *3
1. To confirm and illustrate the principle that a test dummy will not wind up lying entirely on its left side after a severe side impact crash if properly restrained in a seatbelt/Big Kid (Test 2);
 2. To confirm and illustrate the principle that a test dummy can wind up lying on its left side if the seatback is reclined, the seatbelt is routed behind (instead of in front of) the armrest post of the Big Kid, and the seatbelt has a few

inches of slack, i.e. if the seatbelt/Big Kid are not used properly (Tests 1 & 3);

3. To confirm and illustrate that seatbelt markings on the accident Big Kid are not similar to those found on a Big Kid with a properly used seatbelt that has been exposed to a severe side impact forces, but rather are similar to those found where a seatbelt is not used properly (Tests 1–3);

4. To confirm and illustrate the principle that the movements of a 6-year-old occupant in a seatbelt/Big Kid in a severe side impact crash will be similar to the movements of a 10-year-old or an adult not using a booster seat, and thus the older and larger occupants also will be exposed to a risk of injury because of the very nature of the crash, not because of the booster seat (Tests 4–6); and

5. To confirm and illustrate the principle that a 6-year-old dummy in seatbelt/booster is exposed to similar forces on the upper spine as compared to a dummy in a 5-point harness seat (Tests 7–10).

(*Id.* at pp. 7–8).

In responding to Plaintiff's *Daubert* motion, Defendant offers sworn declarations from Dr. Van Arsdell and Dr. Sochor. (Docs. 88-1, 88-5). Evenflo contends the declarations are offered to “address the Plaintiff lawyers’ criticisms and to correct the erroneous impression that their opinions were based solely on the testing.” (Doc. 109, p. 2). That is, Defendant argues that the declarations “merely provide further explanation, clarification or justification for opinions already contained in the expert reports.” (*Id.* at p. 9). Plaintiff, however, characterizes the declarations as untimely and improper supplements to the experts’ Rule 26 reports and maintains that it offers new opinions. (Doc. 100, p. 1). Accordingly, Plaintiff moves to strike the declarations. (*Id.*)

II. LEGAL STANDARDS

A. *Daubert*

Federal Rule of Evidence 702 permits “[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education” to testify in the form of an opinion.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993), the Supreme Court explained that Rule 702 imposes an obligation on a trial court to act as gatekeeper, to ensure that all scientific testimony or evidence

admitted is not only relevant, but reliable. District courts are charged with this gatekeeping function “to ensure that speculative, unreliable expert testimony does not reach the jury” under the mantle of reliability that accompanies “expert testimony.” *McCorvey v. Baxter Healthcare Corp.*, 298 F.3d 1253, 1256 (11th Cir. 2002). Thus, the party offering an expert opinion has the burden of establishing three criteria: qualification, reliability, and helpfulness. See *McClain v. Metabolife Int'l, Inc.*, 401 F.3d 1233, 1238 (11th Cir. 2005).

*4 First, the witness must be “qualified to testify competently regarding the matters [s]he intends to address.” *Rink v. Cheminova, Inc.*, 400 F.3d 1286, 1291 (11th Cir. 2005). Indicia of an expert's qualifications may be evidenced by education, training, work experience, publication in the pertinent field, and membership in professional societies. See *Am. Tech. Res. v. United States*, 893 F.2d 651, 656 (3d Cir. 1990). Second, the expert witness must employ “sufficiently reliable” scientific methods or principles to form her opinions.

Rink, 400 F.3d at 1291. The reliability of an expert's methodology can be evaluated by considering a wide range of factors, including: (1) whether the expert bases her opinion on sufficient facts or data; (2) whether the expert unjustifiably extrapolates her research to reach an unfounded conclusion; (3) whether the expert considers or accounts for contradictory studies or data; (4) the extent to which the methods used rely on the expert's subjective interpretations; and (5) whether the expert is being as careful as an expert in the same field would be in conducting professional work outside the context of paid litigation. See *Daubert*, 509 U.S. at 593–94; FED. R. EVID. 702 advisory committee notes to 2000 amendments.

In forming the basis of his opinion, an expert may rely on “facts or data in the case that the expert has been made aware of or personally observed.” FED. R. EVID. 703. To that end, the facts or data on which an expert forms his opinion need not be admissible for his opinion to be admitted as long as these facts and data are of the type that experts in his field normally rely upon in forming an opinion on the subject at hand. *Id.* Third, the expert's testimony must “assist the trier of fact to understand the evidence or to determine a fact in issue.” *Daubert*, 509 U.S. at 591. Expert testimony helps where it concerns matters beyond the ken of the average juror and will allow the jury to understand the evidence or to resolve a factual dispute. See *Kumho Tire*, 526 U.S. at 148–49. Conversely, there will be no need for an expert's

opinion where the jury can decide a disputed issue through the application of common sense or simple logic considering the evidence and testimony presented at trial. See [Dhillon v. Crown Controls Corp.](#), 269 F.3d 865, 871 (7th Cir. 2001). Further, like all evidence and testimony, an expert's opinion must be relevant to an issue in the case and must hold probative value that outweighs the concerns listed in Rule 403. See [Daubert](#), 509 U.S. at 591.

In determining the admissibility of expert evidence, “it is not the role of the district court to make ultimate conclusions as to the persuasiveness of the proffered evidence.” See [Rosenfield v. Oceania Cruises, Inc.](#), 654 F.3d 1190, 1193 (11th Cir. 2011) (internal quotation marks omitted). Indeed, cross examination, contrary evidence, and instruction on the burden of proof are the proper tools for challenging questionable expert evidence. *Id.* It is ultimately the burden of the party who offers the expert to show that his opinion is admissible, and the party must do so by a preponderance of the evidence. See [Rink](#), 400 F.3d at 1292.

B. Expert Declarations

When a party submits a declaration prepared by an expert witness after the deadline for disclosing expert reports that contain new opinions or restructure the original expert opinions, they may be stricken as untimely. [Walker v. Yamaha Motor Co.](#), No. 6:13-cv-1546, 2016 WL 7325525, at *2 (M.D. Fla. Jan. 20, 2016). “However, affidavits, which merely provide further explanation, clarification or justification for opinions already contained in expert reports and that are used to combat an attack upon the expert's methodologies have been allowed.” *Id.* The issue is whether the expert's “untimely” declaration frustrates the purpose of Rule 26(a) (2) which is “to provide the opposing part[y] [a] reasonable opportunity to prepare for effective cross-examination and [to] arrange for expert testimony from other witnesses.” [SFR Servs. LLC v. Electric Ins.](#), No. 8:19-cv-2013, 2021 WL 1193284, at *3 (M.D. Fla. Mar. 30, 2021). “That said, an expert ‘need not stand mute’ in response to an opposing party's efforts to exclude his testimony by way of a *Daubert* motion.” *Id.* at *4 (citation omitted). This is because, “to hold otherwise would render expert witness practice ‘even more expensive and unwieldy’ because it would force an expert ‘to anticipate and rebut every possible criticism’ in advance.”⁴ (*Id.*).

III. DISCUSSION

A. The Declarations

*5 Dr. Sochor's declaration is three-pages long and offers no new opinions. (Doc. 88-5). Only paragraphs 6 and 7 of the declaration mention his opinions. (*Id.*). In paragraph 6, Dr. Sochor explains that he would hold the same causation opinions even without the challenged sled testing. (*Id.* ¶ 6). And in paragraph 7, Dr. Sochor responds to Plaintiff's argument that he, along with Evenflo's corporate representative and Dr. Van Arsdell, testified in a different case that there is no established injury threshold for neck loads. (*Id.* ¶ 7). Dr. Sochor clarified that the purpose of the side impact or sled testing conducted in this case is only for comparative purposes. (*Id.*). That is, the tests compare loads a dummy will experience in the Big Kid booster seat and another seat, as opposed to proving injury causation. (*Id.*). This clarification does not amount to a new opinion, and Dr. Sochor's declaration is properly before the Court for consideration.

As discussed in detail above, Plaintiff advances approximately 13 challenges to the admissibility of the case-specific side impact tests performed at the direction of Dr. Van Arsdell. In response to Plaintiff's characterization of the purpose of the side impact tests, and to explain and clarify how the side impact tests were configured—including the selection of ATDs, the construction of the fixture on which the seat belt retractor and D ring are affixed, the use of “expired” Big Kid seats, and the placement of the lower neck accelerometer—Dr. Van Arsdell prepared a 17-page declaration. (Doc. 88-1). The sheer length of Dr. Van Arsdell's declaration does not equate with the submission of new or supplemented opinions. The declaration is long, because of the number of Plaintiff's challenges to the side impact testing, and the amount of Dr. Van Arsdell's opinions resulting from the testing. Moreover, it is true that a party is under no obligation to depose an expert retained by the opposition and may rely on the expert's report, but most of the challenges to Dr. Van Arsdell's opinions and the case-specific sled tests could have been addressed at a deposition which may have obviated the need for his declaration. Stated differently, Dr. Van Arsdell cannot be expected to “anticipate and rebut every possible criticism” to his opinions in advance and account for those criticisms in his report. [SFR Servs. LLC](#), 2021 WL

1193284, at *4. Nor is he required to “stand mute” in response to an opposing party's effort to exclude his testimony. *Id.*

Plaintiff is correct that Dr. Van Arsdell's declaration references a number of publications. (Doc. 100, p. 4). For example, Dr. Van Arsdell writes that “[s]led testing is well established as a valid method of performing far-side impact testing, as cited in peer reviewed literature.” (Doc. 88-1, p. 6). Dr. Van Arsdell cites 10 publications in support of this proposition. (*Id.* at n. 4–15). The Court finds these citations to be surplusage in that Plaintiff does not contend sled testing is not a valid method for conducting side impact testing.⁵ The publications do not advance a new theory, and the citations do not explain, clarify, or justify Dr. Van Arsdell's opinions regarding the case—specifically about side impact tests.⁶ Accordingly, Dr. Van Arsdell is precluded from relying on these publications at trial.⁷ The balance of Dr. Van Arsdell's declaration is clearly offered to explain, clarify, or justify opinions contained in his expert report and to place Plaintiff's characterization of the case-specific testing in context.⁸ This is entirely proper. Accordingly, the Plaintiff's motion to strike Dr. Van Arsdell's declaration is denied.

IV. The *Daubert* Challenge

*6 Plaintiff submits that the case-specific side impact testing performed at the direction of Dr. Van Arsdell is intended to recreate the accident. (Doc. 74, p. 4). With that, Plaintiff concedes that the jury is not likely to confuse a sled test with a real car accident when the tests are offered to demonstrate scientific principles and are performed with a generic seat bench and seat belts. (*Id.* at p. 5). Plaintiff asserts that Dr. Van Arsdell's admits in his report that the testing was designed to be “similar to the subject crash.” (*Id.*) (citing Doc. 74-9, ¶ 26). Accordingly, Plaintiff argues that the case-specific side impact testing must be substantially similar to the subject accident, citing [Burchfield v. CSX Transp., Inc.](#), 636 F.3d 1330, 1336–37 (11th Cir. 2011). (Doc. 74, p. 6). A fair reading of Dr. Van Arsdell's report, however, contradicts Plaintiff's characterization of the subject sled testing:

These [case-specific] tests were not performed to evaluate or precisely recreate the subject crash; rather they were performed to evaluate and compare kinematics, excursions and neck forces observed with varying

restraint use and misuse in a serious crash similar to the subject crash...

(Doc. 74-9, ¶ 26). Dr. Van Arsdell specifically disavows the notion that the case-specific side impact tests are designed to recreate the accident and offers that they only demonstrate scientific principles. As such, the sled tests need not be substantially similar to the subject accident. Regardless, and to avoid any potential confusion by the jury over the purpose of the side impact tests, the Court will provide the jury with a limiting instruction that is attached as an appendix to this Order.

Setting aside the issue of substantial similarity, Plaintiff asserts the case-specific tests still fail to satisfy *Daubert*. In response, Defendant Evenflo contends the *Daubert* challenge is not supported by Plaintiff's expert witness, Mr. Whitman, and consists solely of argument by Plaintiff's counsel. (Doc. 88, pp. 6–8). While it is true that Mr. Whitman's expert report is not cited in support of Plaintiff's *Daubert* motion, Defendant fails to cite precedent holding that a *Daubert* challenge must be supported by the movant's expert. While testimony from an opposing expert would no doubt assist the Court in evaluating the *Daubert* factors, the burden of persuasion, applying the preponderance of the evidence standard, rests with the party who offers the expert to show that his opinions are admissible. [Rink](#), 400 F.3d at 1292. Accordingly, the Court will address Plaintiff's substantive objections to Dr. Van Arsdell's opinions.


Plaintiff first urges the Court to exclude the sled tests, because Dr. Van Arsdell testified that “[t]here is no US industry standard or consumer metric test developed to consistently evaluate occupant protection in far-side impacts.” (Doc. 74, p. 7, n.10). That said, Dr. Van Arsdell does not posit in his report that it is impossible to evaluate occupant protection in far-side impacts; he only acknowledges that there is no US industry standard or consumer metric test governing this evaluation. The reliability of an expert's methodology is examined considering a wide range of factors, as discussed above. Here, Dr. Van Arsdell states that “[i]t is well-established that injury and fatality rates increase as delta-V increases” and that “[a] delta-V of 25 mph, and peak acceleration of 33 g's, is more severe than what NHTSA has proposed for the FMVSS 213 side impact test at 19.3 mph.” (Doc. 74-9, ¶¶ 128, 132). While there is apparently no consensus, Dr. Van Arsdell claims “there is a great deal of literature discussing far-side occupant injury.” (*Id.* ¶ 135). The absence of a national or industry

standard, therefore, is not fatal to the admissibility of an expert's opinion.⁹

*7 Turning next to the manner in which the side impact tests were conducted, Plaintiff claims that Defendant “rigged” the first 7 tests by “artificially tightening” the seat belts to “2 to 4 pounds” of tension. (Doc. 74, p. 7). Plaintiff argues that FMVSS 209 requires the Honda seat belt retractor to put between .23 and 1.6 pounds of tension on the seat belt, so that the “inflated tension levels” would not be found in the subject van. (*Id.* at p. 8). In his declaration, Dr. Van Arsdell explains that the Evenflo technicians did not artificially tighten the seat belt and that the 2 to 4 pounds of tension occurred naturally “due to the shoulder belt being routed through the D-ring on one end and routed through the latch plate on the other end.” (Doc. 88-1, ¶ 15). Dr. Van Arsdell further clarifies that the FMVSS 209 specification does not equate retraction force to belt tension. (*Id.*). The Court is satisfied that based on the record evidence, the seat belt tension recorded by Defendant Evenflo's technician(s) does not undermine the reliability of the test methodology.

Plaintiff also takes issue with Dr. Van Arsdell's claim that the 2 to 4 pounds of seat belt tension was used only in tests with the seat belt properly routed using the Big Kid seat and without slack whereas the “misrouted” test employed zero pounds of tension and 3 inches of slack in the seat belt. (Doc. 74, p. 9). Plaintiff notes that the pretest photos depict what appears to be 3 inches of slack, yet the technician documented 4 pounds of tension in both belts. (*Id.*). Plaintiff suggests that this inconsistency undermines the reliability of the testing. (*Id.*). Dr. Van Arsdell clarifies in his declaration that the technician's scrivener's error caused the log to reflect 4 pounds of tension, when the test was actually performed with zero pounds of tension and 3 inches of slack. (Doc. 88-1, ¶ 16). The Court finds that based on the record, the scrivener's error does not render Dr. Van Arsdell's methodology unreliable.

Plaintiff asserts that Dr. Van Arsdell “rigged the ATD set-up” by placing the ATD arms down and inside the armrest of the Big Kid booster seat instead of a straight-out position, above the armrest, the latter being consistent with Evenflo's test methodology. (Doc. 74, p. 10). Dr. Van Arsdell explains that he “was not using the standard Evenflo protocol, [and that] [t]he setup for this case was more representative of a crash scenario of the type involved in this case than Evenflo's standard setup.” (Doc. 88-1, ¶ 17). Dr. Van Arsdell further justifies the placement of the ATD's arms by claiming that the “placement of the arms did not have any significant effect on

the test outcome.” (*Id.*). While Dr. Van Arsdell acknowledges his decision regarding the placement of the ATD's arms is a deviation from Evenflo's standard setup, the “Court's role as gatekeeper is not intended to supplant the adversary system or the role of the jury: “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking ... [otherwise] admissible evidence.” *Taylor, Bean & Whitaker Mortg. Corp. v. GMAC Mortg. Corp.*, 5:05-CV-260, 2008 WL 3819752, at *5 (M.D. Fla. Aug. 12, 2008) (quoting  *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1311–12 (11th Cir.1999)).

The next critique of Dr. Van Arsdell's case-specific testing concerns his decision to use a Hybrid III 6-year-old ATD even though “there is no US ATD currently agreed upon or approved to have biofidelity for far-side impacts.” (Doc. 74, pp. 10–11). Plaintiff also criticizes his use of a 10-year-old ATD and a 5th percentile female ATD, asking what is the point of these tests? (*Id.* at p. 15). In his report, Dr. Van Arsdell discusses the use of ATDs for gathering crash data:

During a side impact, occupants of different sizes, large and small, interact similarly with the vehicle seat belt. A large child or adult would interact similarly with the shoulder belt as compared to what V.C. would have experienced *if* she were properly restrained. If properly restrained by a properly routed and properly adjusted snug seat belt, a larger occupant will move in the direction of the crash forces and the body will move relative to the shoulder belt in a way that is similar to how V.C. would have moved in the subject crash if she had been properly restrained. For Tests 4, 5 and 6, larger 10-year-old and 5th-percentile female ATDs were properly restrained either with a belt-positioning booster and vehicle seat belt or with just the vehicle seat belt. These tests support the above opinion.

*8 (Doc. 88-1, ¶ 73) (footnotes omitted).

Dr. Van Arsdell also opined that lap/shoulder belts are designed to fit and offer protection for occupants from larger children to large adults. (*Id.* ¶ 76). Therefore, Dr. Van Arsdell concludes that the “[o]ccupant kinematics of a child properly using a BPB in a far-side impact are similar to those of an adult in a lap/shoulder belt.” (*Id.* ¶ 77). He goes on to opine that “[b]ecause human children are so different from one another ..., ATDs are typically better at establishing scientific results for comparing one specific crash to another specific crash.” (*Id.* ¶ 80). To drive home the efficacy of ATDs in side impact testing, Dr. Van Arsdell submits that Plaintiff’s expert, Mr. Whitman, has used this model ATD in his own testing, and argues that “[t]his ATD is appropriate for comparative purposes, to assess kinematics and loads.” (Doc. 88-1, ¶ 18).

Plaintiff’s theory of the case includes the premise that Evenflo knew that a 5-point harness did a more effective job of keeping a child’s head and torso contained within the confines of the restraint system than the Big Kid booster seat. Dr. Van Arsdell’s case-specific testing is designed to test scientific principles showing the occupant kinematics of individuals of various sizes, including when positioned in a 5-point harness seat, and to demonstrate that V.C. would have been exposed to similar or higher forces had she been seated in a 5-point harness, assuming she was properly restrained in the booster seat. (*Id.* ¶¶ 90, 98, 115). Therefore, Dr. Van Arsdell’s use of ATDs to test occupant kinematics and to measure forces and loads sustained in the side impact crash is sufficiently reliable to satisfy *Daubert*.

Plaintiff also challenges Dr. Van Arsdell’s injury causation opinions to the extent he relies on “lower neck” data generated using an accelerometer, because there are no “generally-accepted injury values in terms of neck-loading for child restraints.” (Doc. 74, pp. 15–16). In his report, Dr. Van Arsdell states that tests 6 through 10 were conducted with “the 6-year-old sized HIII ATD with an instrumented (6-axis) lower neck load cell, properly seated on the Big Kid and then restrained in a Graco Nautilus in harness mode.” (Doc. 74-9, ¶ 30). It is clear from Dr. Van Arsdell’s report that neck load is not measured to establish injury causation. Rather, neck load is measured to assess the “[r]isk and utility associated with BPBs and CRSs with 5-point harnesses.” (*Id.* ¶¶ 63, 63(b)). Dr. Van Arsdell concludes that the “[d]ata also shows that neck tension can be lower in a BPB as compared to a CRS with a 5-point harness.” (*Id.* ¶¶ 64(e), 70, 71, 71(a), 79, 97(b), 115).¹⁰

*9 The balance of Plaintiff’s *Daubert* challenge goes to whether the Big Kid seat used in the case-specific testing was expired, whether the roof support that holds the seat belt retractor and D-ring properly replicate the exemplar Honda, whether the test results are compromised by the use of one Honda seat (of unknown origin) for all tests, and Dr. Van Arsdell’s failure to support his claim that the subject accident was unusual. (Doc. 74, pp. 11–14). Dr. Van Arsdell responds to each of these issues in his declaration.¹¹ The Court notes that none of these criticisms of the test methodology warrant exclusion of the case-specific tests. Of course Plaintiff may inquire into the effect, if any, of any aspect of the case-specific testing on cross-examination and may present contrary expert testimony to the extent that such testimony has been properly disclosed.

V. CONCLUSION

For these reasons, Plaintiff’s *Daubert* Motion to Exclude Testing Performed by Defendant Evenflo and Expert Opinions Based Thereon (Doc. 74), and Plaintiff’s Motion to Strike the Declarations of William Van Arsdell and Mark Sochor (Doc. 100) are **DENIED**.

DONE AND ORDERED in Orlando, Florida on July 12, 2021.

APPENDIX

Members of the Jury:

You are about to hear testimony concerning side-impact testing performed by the defense, and you may see video recordings of the side-impact testing, which is also called sled testing.

Please be advised that the side-impact testing performed at the request of Evenflo’s expert witness, Dr. Van Arsdell, is not intended to recreate the unique circumstances of the accident that injured V.C. The sled tests are designed and intended to demonstrate or to test certain engineering or scientific principles.

As with all evidence presented during the course of this trial, you have the right to give the evidence and testimony concerning the evidence, including the Defendant’s side-impact testing, whatever weight you think it deserves.

However, you are instructed that Defendant's side-impact testing does not re-create the accident that injured V.C.

All Citations

Slip Copy, 2021 WL 4949122

Footnotes

- 1 Plaintiff also moves the Court to exclude “all opinions and exhibits they reference or rely in any way on the tests.” (Doc. 74, p. 1, n. 1).
- 2 Plaintiff also argues that gaps in the numerical sequence of side impact tests suggests the defense conducted tests that were not produced in discovery. (Doc. 74, p. 14, n.19).
- 3 Defendant notes that Plaintiff does not object to the following material considered by their experts: the surrogate studies, sled tests conducted by Evenflo in its ordinary course of business, sled testing conducted in other cases and produced in discovery, or evidence that the kinematics of an ATD bigger than V.C. is similar to V.C.’s kinematics. (Doc. 88, pp. 4–5).
- 4 When an expert's declaration serves to supplement his report, the Court must determine whether the supplement is timely under Rule 26(e). *SFR Servs. LLC*, 2021 WL 1193284, at *4. The Court may permit an otherwise untimely supplemental report or declaration to stand if the failure to abide by the Court's established deadline was “substantially justified or harmless.” *Id.* Since the Court finds the declarations of Dr. Van Arsdell and Dr. Sochor do not offer new opinions, the Court will not address whether the timing of the declarations is substantially justified or harmless.
- 5 The same reasoning applies to Dr. Van Arsdell's citation to websites which support his claim that “all major child seat manufacturers perform sled tests, including side impact sled tests.” (Doc. 88-1, p. 7, n. 16–19).
- 6 By contrast, Dr. Van Arsdell's cites a document titled “Gary Whitman Restraint System Analysis Report, Arias v. FCA” involving sled testing performed by Plaintiff's expert using a vehicle seat bench and testing speeds and directions to justify his case-specific testing. (Doc. 88-1, p. 7, n. 20).
- 7 The Court has not determined if any of the publications listed by Dr. Van Arsdell in his declaration also appear in his expert report. If any of these publications are cited in his expert report, Dr. Van Arsdell may rely upon them at trial.
- 8 Dr. Van Arsdell's declaration clarifies (to the extent it was necessary) that the testing was performed to evaluate Mr. Whitman's opinion that V.C. was properly secured in the Big Kid seat (Doc. 88-1, ¶¶ 4, 8), that the testing demonstrates the lack of damage to the booster seat is consistent with a misrouted seatbelt (*Id.* ¶¶ 6, 9), to explain how the 2 to 4 pounds of tension occurs during testing (*Id.* ¶ 15), to clarify the meaning of an “expiration date” on the Big Kid seat (*Id.* ¶ 20), to clarify why there are gaps in the numerical sequence of the tests (*Id.* ¶26), and to explain that a test technician's scrivener's error resulted in recording 4 pounds of tension in test number 69664 (*Id.* ¶ 16). Plaintiff is correct that at times Dr. Van Arsdell recounts hearsay statements, but an expert may rely on hearsay under certain circumstances. The Court reserves judgement on whether Dr. Van Arsdell's reliance on hearsay statements of a test technician is admissible at trial.
- 9 Dr. Van Arsdell's report describes the methodology used in the case-specific testing, including that the “testing was done on an exemplar Honda Odyssey third-row bench seat, with Odyssey service replacement seat belts, and with belt anchorage locations (retractor, D-Ring, outboard anchor and buckle) similar to the locations in the subject Odyssey third-row seating position.” (Doc. 74-9, ¶ 26). Dr. Van Arsdell selected a “delta-V of

approximately 23 mph, a peak acceleration of approximately 23 g's, a pulse of 85 milliseconds and a principle direction of force (PDOF) of approximately -80%" as outlined by Plaintiff's accident reconstructionist. (*Id.*). Moreover, the third-row seatback was placed in an upright and reclined setting during the testing. (*Id.*).

- 10 While Dr. Van Arsdell's report is clear as to the purpose of the lower neck load data, he reaffirms in his declaration that "[t]hese tests were designed to compare neck loads, not to assess injury thresholds." (Doc. 88-1, ¶ 19). Moreover, he clarifies that "[c]omparative load testing ... is routinely performed by experts in my field to assess the relative safety performance of restraint systems." (*Id.*).
- 11 Dr. Van Arsdell clarifies in his declaration that the Big Kid seat was stored in a warehouse without exposure to light or extreme temperatures to be available for testing if necessary. (Doc. 88-1, ¶ 20). He also clarifies that the sled fixture is designed to be robust, consistent with FMVSS 213, to withstand repeat testing. (*Id.* ¶ 23). And the Honda third-row bench seat used in the testing is consistent with industry practice. (*Id.* ¶ 25). Finally, Dr. Van Arsdell clarifies why there are gaps in the test sequence numbers. (*Id.* ¶ 26).

2009 WL 1392085

Only the Westlaw citation is currently available.
 United States District Court,
 E.D. California.

Tracy YU-SANTOS, Plaintiff,

v.

FORD MOTOR COMPANY, et al., Defendants.

No. 1:06-CV-01773-AWI-DLB.

1

May 14, 2009.

West KeySummary

1 **Evidence**  [Accident reconstruction](#)**Evidence**  [Accident reconstruction](#)

Expert was qualified to testify about the existence of seat belt defects. Parent of two children killed in an automobile accident designated an expert on “occupant restraint systems” to testify on seat belt defects and injury causation. The expert followed a peer-reviewed methodology, relied on accident reconstruction, and conducted a first-hand inspection of the seat belts. He lectured on seat belts and accident reconstruction and authored numerous reports. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

6 Cases that cite this headnote

Attorneys and Law Firms

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MEMORANDUM OPINION AND ORDER
 GRANTING IN PART AND DENYING IN PART
 DEFENDANTS' MOTION FOR SUMMARY
 JUDGMENT AND ORDER DENYING DEFENDANTS'

MOTIONS TO EXCLUDE THE TESTIMONY OF
 WILLIAM BROADHEAD AND WILSON HAYES

ANTHONY W. ISHII, Chief Judge.

INTRODUCTION

*1 Plaintiff Tracy Yu-Santos (“Plaintiff”) has filed a wrongful death action against Defendants. Plaintiff’s action arises from a vehicle rollover accident of a 1998 Ford Explorer on December 25, 2004, in which her two children, Keilan Tito Santos (“Keilan”) and Tia Leilani Santos (“Tia”) were ejected and killed. Plaintiff has sued Defendants for defective design and manufacture of the seat belts. This case comes before the court on a motion for summary judgment or, in the alternative, for summary adjudication brought by defendants TRW Vehicle Safety Systems Inc. (“TRW VSSI”), TRW Automotive Holdings Corp. (“TRW AH”), TRW Automotive Inc. (“TRW AI”), and TRW Automotive U.S. LLC (“TRW AU”), (collectively “Defendants”). Defendants have also filed motions to exclude the testimony of Plaintiff’s experts William G. Broadhead (“Broadhead”) and Dr. Wilson C. Hayes (“Hayes”) pursuant to  [Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 \(1993\)](#). For the reasons that follow, this court grants in part and denies in part Defendants’ motion for summary judgment. Defendants’ motions to exclude the testimony of Broadhead and Hayes are denied.

FACTUAL BACKGROUND

The following facts are presented in the light most favorable to Plaintiff, the non-moving party.

On December 25, 2004, Christopher Miranda (“Christopher”) was driving Plaintiff’s 1998 Ford Explorer on Interstate 5 in Fresno County, California when he lost control of the vehicle. The vehicle left the roadway and overturned. Prior to the accident, Tia was sitting in the right front passenger seat and was wearing her seat belt. Keilan was sitting in the right rear passenger seat. Plaintiff’s and Defendants’ experts dispute whether Keilan was wearing his seat belt but Plaintiff and Robert Santos (“Mr.Santos”) have both testified in their depositions that Keilan always wore his seat belt. Daniel Torres-Santos (“Daniel”) was sitting in the left rear passenger seat and was also wearing his seat belt. Paloma Santos (“Paloma”) was sitting in the center rear passenger seat and

did not appear to have been wearing her seat belt. Christopher was in the driver's seat and was wearing his seat belt.

During the rollover, both of the Ford Explorer's passenger-side doors and the rear cargo door opened. Tia, Keilan, Daniel, and Paloma were fully ejected from the vehicle. Tia, Keilan, and Paloma were pronounced dead at the scene of the accident. Daniel was pronounced dead while en route to the hospital. Christopher was not ejected from the vehicle during the rollover and was the sole survivor of the crash.

The California Highway Patrol Central Division Multidisciplinary Accident Investigation Team's ("MAIT") supplemental report indicated that Tia's and Daniel's seat belt webbing had separated. Additionally, the MAIT report indicated that Keilan's seat belt buckle did not lock and unlock. Plaintiff testified during her deposition that Keilan's seat belt appeared to be functional prior to the accident.

PROCEDURAL BACKGROUND

*2 On December 19, 2006, Plaintiff filed an amended complaint against Defendants alleging that Tia's and Keilan's seat belts were defectively designed and manufactured and caused their deaths. Plaintiff also named her ex-husband Mr. Santos as a nominal defendant because, as the father of Tia and Keilan, he is an heir to their estate. Plaintiff's first cause of action alleges strict products liability. Plaintiff's second cause of action alleges negligence. Plaintiff's third cause of action alleges breach of warranty. Plaintiff's fourth cause of action alleges failure to warn. Plaintiff designated Broadhead to testify about whether the seat belts performed properly during the accident. Plaintiff designated Hayes to testify about how Tia and Keilan sustained their injuries.

On November 17, 2008, Defendants filed a motion for summary judgment as to all causes of actions or in the alternative, for summary adjudication. Defendants contend they are entitled to summary judgment as to the first and second causes of action because Plaintiff cannot establish the existence of any probable seat belt defect or injury causation. Defendants contend they are entitled to summary judgment as to the third cause of action because TRW VSSI did not have a duty to warn as a component part supplier. Defendants contend they are entitled to summary judgment as to the fourth cause of action because Plaintiff lacks privity with the Defendants.

On November 17, 2008, Defendants filed separate motions to exclude the testimony of Plaintiff's experts Broadhead and Hayes.

On December 1, 2008, Plaintiff filed oppositions to Defendants' motion for summary judgment and motions to exclude the testimony of Broadhead and Hayes.

On December 8, 2008, Defendants filed a reply to Plaintiff's opposition and evidentiary objections to Broadhead's and Hayes's declarations in support of Plaintiff's opposition. Defendants request that this court strike both declarations.

The court took the matter under submission on December 11, 2008.

On December 12, 2008, the court received a letter drafted by nominal pro se defendant Mr. Santos. In the letter, Mr. Santos expressed his concerns with Plaintiff's causes of action. Mr. Santos's letter was not styled as a motion, an affidavit, or a declaration.

On December 16, 2008, the clerk of the court mailed Mr. Santos a clerk's notice informing him that his letter needed to be styled as a motion and not a letter pursuant to Rule 7. The clerk of the court mailed the notice to Mr. Santos's last known address on file with the court.

On December 23, 2008, the clerk's notice was returned to the court because the address was incorrect. Subsequently, a clerk of the court emailed and telephoned Mr. Santos regarding this matter but was unable to contact him. *See* Minute Order dated January 27, 2009.

On December 15, 2008, Plaintiff filed a surreply in support of her opposition. Plaintiff's surreply is based on the ground that her opposition should not be stricken because it was timely filed. On December 16, 2008, Defendants filed an objection to Plaintiff's surreply and request that the surreply be stricken because Plaintiff did not request permission from the court to file a surreply.¹

LEGAL STANDARD

*3 Summary judgment is appropriate when it is demonstrated that there exists no genuine issue as to any material fact, and that the moving party is entitled to judgment

as a matter of law. Fed.R.Civ.P. 56(c); *Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 157, 90 S.Ct. 1598, 26 L.Ed.2d 142 (1970); *Fortyone v. American Multi-Cinema, Inc.*, 364 F.3d 1075, 1080 (9th Cir.2004); *Jung v. FMC Corp.*, 755 F.2d 708, 710 (9th Cir.1985). Where summary judgment requires the court to apply law to undisputed facts, it is a mixed question of law and fact. See *Sousa v. Unilab Corp. Class II (Non-Exempt) Members Group Benefit Plan*, 252 F.Supp.2d 1046, 1049 (E.D.Cal.2002). Where the case turns on a mixed question of law and fact and the only dispute relates to the legal significance of the undisputed facts, the controversy for trial collapses into a question of law that is appropriate for disposition on summary judgment. See *Union Sch. Dist. v. Smith*, 15 F.3d 1519, 1523 (9th Cir.1994); *Sousa*, 252 F.Supp.2d at 1049.

Under summary judgment practice the moving party

always bears the initial responsibility of informing the district court of the basis for its motion, and identifying those portions of “the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any,” which it believes demonstrate the absence of a genuine issue of material fact.

Celotex Corp. v. Catrett, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). “[W]here the nonmoving party will bear the burden of proof at trial on a dispositive issue, a summary judgment motion may properly be made in reliance solely on the ‘pleadings, depositions, answers to interrogatories, and admissions on file.’ “ *Id.* Indeed, summary judgment should be entered, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial. *Id.* at 322. “[A] complete failure of proof concerning an essential element of the nonmoving party’s case necessarily renders all other facts immaterial.” *Id.* In such a circumstance, summary judgment should be granted, “so long as whatever is before the district court demonstrates that the standard for entry of summary judgment, as set forth in Rule 56(c), is satisfied.” *Id.* at 323.

If a moving party fails to carry its burden of production, then “the non-moving party has no obligation to produce anything, even if the non-moving party would have the ultimate burden

of persuasion.” *Nissan Fire & Marine Ins. Co. v. Fritz Companies*, 210 F.3d 1099, 1102–03 (9th Cir.2000). If the moving party meets its initial burden, the burden then shifts to the opposing party to establish that a genuine issue as to any material fact actually exists. See *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586, 106 S.Ct. 1348, 89 L.Ed.2d 538 (1986); *Nissan Fire & Marine Ins.*, 210 F.3d at 1103; *Nolan v. Cleland*, 686 F.2d 806, 812 (9th Cir.1982); *Ruffin v. County of Los Angeles*, 607 F.2d 1276, 1280 (9th Cir.1979). A fact is “material” if it might affect the outcome of the suit under the governing law. See *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248–49, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986); *Thrifty Oil Co. v. Bank of America Nat’l Trust & Savings Assn.*, 322 F.3d 1039, 1046 (9th Cir.2002). A “genuine issue of material fact” arises when the evidence is such that a reasonable jury could return a verdict for the nonmoving party. See *Anderson*, 477 U.S. at 248–49; *Thrifty Oil*, 322 F.3d at 1046.

*4 In attempting to establish the existence of a factual dispute, the opposing party may not rely upon the mere allegations or denials of its pleadings, but is required to tender evidence of specific facts in the form of affidavits, and/or admissible discovery material, in support of its contention that the dispute exists. Fed.R.Civ.P. 56(e); *Matsushita*, 475 U.S. at 586 n. 11; *First Nat’l Bank*, 391 U.S. at 289; *Willis v. Pacific Maritime Ass’n.*, 244 F.3d 675, 682 (9th Cir.2001). However, the opposing party need not establish a material issue of fact conclusively in its favor. It is sufficient that “the claimed factual dispute be shown to require a jury or judge to resolve the parties’ differing versions of the truth at trial.” *First Nat’l Bank*, 391 U.S. at 290; *Hopper v. City of Pasco*, 248 F.3d 1067, 1087 (9th Cir.2001). Thus, the “purpose of summary judgment is to ‘pierce the pleadings and to assess the proof in order to see whether there is a genuine need for trial.’ ” *Matsushita*, 475 U.S. at 587; *Mende v. Dun & Bradstreet, Inc.*, 670 F.2d 129, 132 (9th Cir.1982).

In resolving a summary judgment motion, the court examines the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any. See Fed.R.Civ.P. 56(c); *Fortyone*, 364 F.3d at 1079–80. The court has the discretion in appropriate circumstances to consider materials that are not properly brought to its

attention, but the court is not required to examine the entire file for evidence establishing a genuine issue of material fact where the evidence is not set forth in the opposing papers with adequate references. See [Southern Cal. Gas Co. v. City of Santa Ana](#), 336 F.3d 885, 889 (9th Cir.2003); [Carmen v. San Francisco Unified Sch. Dist.](#), 237 F.3d 1026, 1031 (9th Cir.2001). The evidence of the opposing party is to be believed and all reasonable inferences that may be drawn from the facts placed before the court must be drawn in favor of the opposing party. See [Anderson](#), 477 U.S. at 255; [Matsushita](#), 475 U.S. at 587; [Stegall v. Citadel Broad, Inc.](#), 350 F.3d 1061, 1065 (9th Cir.2003). Nevertheless, inferences are not drawn out of the air, and it is the opposing party's obligation to produce a factual predicate from which the inference may be drawn. See [Mayweathers v. Terhune](#), 328 F.Supp.2d 1086, 1092–93 (E.D.Cal.2004); [UMG Recordings, Inc. v. Sinnott](#), 300 F.Supp.2d 993, 997 (E.D.Cal.2004). “A genuine issue of material fact does not spring into being simply because a litigant claims that one exists or promises to produce admissible evidence at trial.” [Del Carmen Guadalupe v. Agosto](#), 299 F.3d 15, 23 (1st Cir.2002); see [Galen v. County of Los Angeles](#), 477 F.3d 652, 658 (9th Cir.2007); [Bryant v. Adventist Health System/West](#), 289 F.3d 1162, 1167 (9th Cir.2002).

Finally, to demonstrate a genuine issue, the opposing party “must do more than simply show that there is some metaphysical doubt as to the material facts.... Where the record taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no ‘genuine issue for trial.’” [Matsushita](#), 475 U.S. at 587 (citation omitted). “A motion for summary judgment may not be defeated, however, by evidence that is ‘merely colorable’ or ‘is not significantly probative.’” [Anderson](#), 477 U.S. at 249–50; [Hardage v. CBS Broad. Inc.](#), 427 F.3d 1177, 1183 (9th Cir.2006). If the nonmoving party fails to produce evidence sufficient to create a genuine issue of material fact, the moving party is entitled to summary judgment. See [Nissan Fire & Marine](#), 210 F.3d at 1103.

*5 In the alternative, Defendants move for summary adjudication on Plaintiff's four causes of action if summary judgment is not granted. Summary adjudication is proper when a court does not enter judgment upon the whole case or for all of the relief requested by the moving party. See

[Fed.R.Civ.P. 56\(b\)](#). Rule 56 requires the court to ascertain what material facts exist without substantial controversy and issue an order accordingly. See *id.* At trial, such facts shall be deemed established. See [Fed.R.Civ.P. 56\(d\)](#).

DEFENDANTS' DAUBERT MOTION

I. Defendants' Arguments

Plaintiff designated Broadhead as an “occupant restraint systems” expert who will opine on seat belt defects and injury causation. Plaintiff designated Hayes to testify about the biomechanics² of injury causation and accident reconstruction analysis. Defendants contend that summary judgment is warranted because Plaintiff's experts' testimony is inadmissible under [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). Defendants move to exclude Broadhead's and Hayes's testimony pursuant to [Rule 702](#) on the grounds that they are not qualified and their methods are suspect.

Additionally, Defendants object to Broadhead's and Hayes's declarations in support of Plaintiff's oppositions on the following grounds: (1) vague and ambiguous; (2) irrelevant; (3) lack of qualifications; (4) contradicts prior testimony; (5) fails to comply with best evidence rule; (6) lack of foundation; (7) contains hearsay; (8) improper conclusion; (9) improper argument; and (10) lack of personal knowledge.³

II. Daubert Legal Standard

[Rule 702](#) governs the admissibility of expert testimony. Pursuant to [Rule 702](#), a witness qualified as an expert in “scientific ... knowledge” may testify thereto 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 to the facts of the case.” [Fed.R.Evid. 702](#).

The trial court acts as a gatekeeper to the admission of expert scientific testimony under [Rule 702](#). [Daubert](#), 509 U.S. at 579–580. The court must conduct a preliminary assessment to “ensure that any and all scientific testimony or evidence admitted is not only relevant but reliable.” [Id.](#) at 589. This two-step assessment requires consideration of whether (1) the reasoning or methodology underlying the testimony is scientifically valid (the reliability prong); and (2) whether the

reasoning or methodology properly can be applied to the facts in issue (the relevancy prong). [Id.](#) at 592–93; [Kennedy v. Collagen Corp.](#), 161 F.3d 1226, 1228 (9th Cir.1998).

Reliable testimony must be grounded in the methods and procedures of science and signify something beyond “subjective belief or unsupported speculation.” [Daubert](#), 509 U.S. at 590. The inferences or assertions drawn by the expert must be derived by the scientific method. *Id.* In essence, the court must determine whether the expert's work product amounts to “‘good science.’” [Daubert v. Merrell Dow Pharms., Inc.](#), 43 F.3d 1311, 1315 (9th Cir.1995) (“*Daubert II*”) (quoting [Daubert](#), 509 U.S. at 593). In *Daubert*, the Supreme Court outlined factors relevant to the reliability prong, including: (1) whether the theory can be and has been tested; (2) whether it has been subjected to peer review; (3) the known or potential rate of error; and (4) whether the theory or methodology employed is generally accepted in the relevant scientific community. [Daubert](#), 509 U.S. at 593–94. The Supreme Court emphasized the “flexible” nature of this inquiry. [Id.](#) at 594. As later confirmed in [Kumho Tire Co. v. Carmichael](#), 526 U.S. 137, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999): “*Daubert*'s list of specific factors neither necessarily nor exclusively applies to all experts or in every case. Rather the law grants a district court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination.” [Id.](#) at 141–42.

*6 The relevancy, or “fit,” prong requires that the testimony be “relevant to the task at hand, ... i.e., that it logically advances a material aspect of the proposing party's case.” [Daubert II](#), 43 F.3d at 1315 (quoting [Daubert](#), 509 U.S. at 597). Relevancy requires opinions that would assist the trier of fact in reaching a conclusion necessary to the case. *See* [Kennedy](#), 161 F.3d at 1230.

The *Daubert* analysis focuses on the principles and methodology underlying an expert's testimony, not on the expert's conclusions. [Daubert](#), 509 U.S. at 595. However, the Supreme Court has cautioned that “conclusions and methodology are not entirely distinct from one another.” [General Elec. v. Joiner](#), 522 U.S. 136, 146, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997). As such, “[a] court may conclude

that there is simply too great an analytical gap between the data and the opinion proffered.” *Id.* Nothing in either *Daubert* or the Federal Rules of Evidence requires the admission of opinion evidence connected to existing data “only by the ipse dixit of the expert.” *Id.*

III. Resolution Regarding the Admissibility of Broadhead's Expert Testimony

A. Broadhead's Qualifications


Defendants claim that Broadhead lacks the qualifications of an expert who can opine on seat belt performance and injury causation because Broadhead has never designed any seat belt components that have gone into automobile production and has never been employed by an automotive manufacturer. Defendants rely on [Paris v. Ford Motor Co.](#), No. 05–439 ACT–RLP, 2007 U.S. Dist. LEXIS 96627, *17, 2007 WL 4967217 (D.N.M. May 25, 2007) for this proposition. In *Paris*, however, the court excluded the seat belt expert's testimony because the methodology he used was deductive reasoning and because the expert testified that he did not have sufficient information to perform his analysis, including the lack of an accident reconstruction, surrogate study, and data about the seat position. The instant matter is distinguishable because Broadhead followed a peer-reviewed methodology (as discussed below in the methodology section), relied on an accident reconstruction, and conducted a first-hand inspection of the seat belts.

Defendants also contend that Broadhead is not qualified because he has never performed peer-reviewed, published research relating to the performance of seat belts in rollover accidents or been licensed as an engineer.

The court does not agree that Broadhead lacks the requisite credentials to testify about the existence of seat belt defects. Broadhead's curriculum vitae reflects he has a masters degree in mechanical engineering from the University of California, Santa Barbara. Broadhead states that he has lectured on seat belts and accident reconstruction and has authored numerous publication reports. *See* Broadhead Rule 26 Report; CV at pages 3–4. Broadhead has studied seat belts for over 30 years and has headed up numerous research programs for the National Highway Traffic Safety Administration (“NHTSA”). *Id.* Broadhead has also designed seat belt components under contracts with NHTSA. *See* Broadhead Decla. ¶ 5. Broadhead declares that his findings related to seat belt performance in rollover accidents have been published

and presented at two conferences. *See* Broadhead Decla. ¶ 3; CV at page 4.

*7 Additionally, Broadhead details that he has analyzed occupant restraint performance in hundreds of real world car accidents. *See* Broadhead Decla. ¶ 2. Broadhead declares that he has testified as an expert in restraint systems dozens of times in 20 states, including state and federal courts.⁴ *See* Broadhead Decla. ¶ 2. Accordingly, the court finds that Broadhead has sufficient “knowledge, skill, experience, training, or education” and overrules Defendants’ objections regarding his qualifications.⁵

Lastly, Defendants contend that Broadhead is not qualified because he lacked specific knowledge of the issues in this case. The court disagrees. Broadhead declares that in forming his opinions, he relied on and reviewed the subject traffic collision report, depositions of fact witnesses and investigators, a first-hand inspection of the subject vehicle and its seat belts, photographs of the subject vehicle, various materials produced by Ford, the subject vehicle’s CarFax Report, the NHTSA database, the 1998 Ford Explorer owner guide, and the decedents’ autopsy reports. *See* Broadhead Rule 26 Report at pages 2–3. Accordingly, Defendants’ contentions go to the weight accorded to Broadhead’s testimony and not its admissibility. *See*  *United States v. Garcia*, 7 F.3d 885, 889–90 (9th Cir.1993); *see also* *People v. Stuller*, 10 Cal.App.3d 582, 597, 89 Cal.Rptr. 158 (1970) (expert’s degree of knowledge is a matter affecting weight of testimony, not its admissibility). Thus, Defendants’ objections relating to Broadhead’s degree of knowledge of the issues are overruled.

B. Broadhead’s Methodology

Defendants challenge Broadhead’s opinions concerning the right front seat belt and right rear seat belt. For the right front seat belt, the methodology critique relates to the webbing and retractor. For the right rear seat belt, the methodology critique relates to the buckle.

1. Right Front Seat Belt Opinion

Broadhead offers two opinions regarding the right front seat belt: (1) the seat belt was defective either because it broke even though the webbing was not subjected to G forces beyond its design tolerance (as set by federal motor vehicle safety standards requirements on seat belt strength) or because the retractor failed to lock during the rollover

and improperly allowed excessive webbing to spool out, which in turn allowed a significant increase of the webbing lengths and excess G forces to be applied on the webbing. *See* Broadhead Decla. ¶ 16; and (2) the defective belt rendered Tia unrestrained and was the primary factor in causing Tia’s death. *See* Broadhead Rule 26 report at page 19.

a. Seat Belt Defect Opinion

i. Webbing Defect

Defendants contend that Broadhead’s opinion that the webbing broke even though it was not exposed to G forces beyond its design tolerance is unreliable because: (1) it is based on his mere observation of the broken webbing and not on a valid methodology; (2) he did not collect sufficient facts or data; and (3) he didn’t perform enough testing.

*8 The court disagrees. First, as the basis of his opinion, Broadhead states that he followed a fifteen page peer-reviewed vehicle inspection methodology. As part of the methodology, he observed and inspected magnified webbing fibers to determine whether the webbing broke as a result of tensile forces. *See* Broadhead Decla. ¶ 11. Broadhead also measured the seat belt and compared photos of Tia’s body with photos of the seat belt to determine at what length the seat belt failed. *See* Broadhead Decla. ¶ 10. Defendants provide no evidence that Broadhead’s methodology was invalid. Accordingly, the court finds that Broadhead employed sound methodology and overrules this objection.

Second, Broadhead opines that during the rollover, the webbing was not subjected to G forces that were beyond the design tolerance. Broadhead declares that he formed his opinion based on an accident reconstruction, his 30 years of seat belt performance experience, including the review of hundreds of car accidents, his engineering background, and his knowledge of forces involved in rollover accidents. Broadhead explains that federal motor vehicle safety standard 208 (“FMVSS 208”) allows up to 60 G forces on the occupant’s chest in frontal collisions before there is a significant risk of severe injury. *See* Broadhead Rebuttal Report at page 4; Decla. ¶ 7. Broadhead opines that it is rare to generate more than 10 G forces of vehicle acceleration during a rollover. *See* Broadhead Decla. ¶ 7. Broadhead states that lower G forces are placed on restraint systems during a rollover collision than a frontal collision because rollover collisions generate less acceleration than frontal collisions. *See* Broadhead Rebuttal Report at page 4; Decla. ¶ 7. Defendants’ experts estimate that 23 G forces were

sustained in the accident.⁶ Broadhead opines that assuming Defendants' estimate of 23 G forces, the seat belts would not have been subjected to forces at or approaching FMVSS 208 requirements of 60 G forces. *See* Broadhead Rebuttal Report at page 5.

Defendants do not provide any evidence that Broadhead's opinion that the webbing was not subjected to G forces beyond its design tolerance was not based on valid reasoning and methodology. Rather, it appears that Defendants' experts and Plaintiff's experts disagree as to the amount of G forces sustained at the time of the webbing fiber separation. Analysis of the credibility and weight of the experts' conclusions should be reserved for the trier of fact. Accordingly, the court finds that Broadhead employed sound methodology regarding his opinion that the seat belt was defective because it broke even though it was not subjected to sufficient G forces and overrules Defendants' objections.


Finally, Defendants criticize Broadhead for not performing any calculations, surrogate testing, or testing of the subject seat belts. Broadhead explains that he did not conduct surrogate analysis because it was unnecessary to the formation of his opinions. *See* Plaintiff's Opp. at page 11. Broadhead declares that he did not test the actual seat belts because testing of the webbing and retractor would destroy the evidence. *See* Broadhead Decla. ¶ 17 & ¶ 22.

*9 The court will not exclude Broadhead's testimony on the grounds that Broadhead should have conducted more testing. In most cases, objections to the inadequacies of a study are more appropriately considered objections going to the weight of the evidence rather than their admissibility. *U.S. Xpress, Inc. v. Great Northern Ins. Co.*, 2002 U.S. District Lexis 25379, *9, 2002 WL 31789380 (D.Minn. Dec. 9, 2002). If Defendants wish to explore issues that Broadhead did not test for, such as why he did not test the actual seat belt components, these issues can be covered by cross-examination. Thus, Defendants' objections regarding additional testing are overruled.

ii. Retractor Defect


Similar to the webbing opinion, Defendants contend that Broadhead's opinion that the retractor defectively failed to lock is based on an invalid methodology. Broadhead contends that he formed his retractor opinion by following the same 15 page peer-reviewed inspection methodology as he did with regard to his webbing opinion. Defendants, however, do not

provide the court with any valid argument that Broadhead's inspection methodology was unsound or one not generally accepted in the relevant scientific community.

Broadhead relies on peer-reviewed literature⁷ to support his opinion that retractors are most prone to allowing excessive webbing to spool out (webbing payout) during a rollover accident. Broadhead also cites to peer-reviewed literature to support his opinion that the reproduction and prediction of a lock/release event is impossible and as such one must look to the actual performance of the seat belt to determine if there is a spool out failure during the rollover. Defendants challenge Broadhead's reliance on peer-reviewed literature on the grounds that the articles are inadmissible hearsay. The court disagrees as an expert may base his opinion on inadmissible facts or data of a type reasonably relied upon by experts in his field. *See* Fed.R.Evid. 703; *see*  *Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d 863, 870 (9th Cir.2001). There is no showing in this record that reliance on professional literature is not the type of material that a seat belt expert would rely upon in forming his opinions.

Defendants also contend that Broadhead should have conducted testing of the subject retractor. Broadhead declares that he did not test the retractor because it could not be removed and tested without significantly degrading the condition of the physical evidence. *See* Broadhead Decla. ¶ 22. As discussed above with respect to the webbing, if the Defendants wish to explore why Broadhead did not test the subject retractor these issues can be covered by cross-examination. Accordingly, Defendants' objections are overruled.

Lastly, Defendants contend that Broadhead's testimony is unreliable because Broadhead could not identify any defect that more probably than not caused the seat belt failure.

Defendants rely on  *Gray v. General Motors Corp.*, 133 F.Supp.2d 530 (E.D.Ky.2001) for this proposition. In *Gray*, however, the court did not address the issue of admissibility of expert testimony under *Daubert*, but rather, addressed the sufficiency of evidence produced at trial in the context of a motion for a judgment as a matter of law. Therefore, *Gray* is not applicable to the court's *Daubert* analysis.

*10 Nevertheless, *Gray* is distinguishable because there the court criticized the seat belt expert because he could not identify a probable cause of the seat belt defect. The expert in *Gray* could only outline numerous possible problems with

the restraint system, which may have caused the failure. The instant matter is distinguishable because Broadhead declares that he examined and tested all the plausible explanations for the seat belt failure. Based on his examinations, Broadhead concluded that the only two probable and plausible causes for the seat belt failure was either a webbing defect or a retractor defect. *See* Broadhead Decla. ¶ 13–¶ 16. Broadhead further declares that either of these two causes constitute a defect. *Id.* Unlike the *Gray* expert, Broadhead was able to isolate the only probable causes and tilt the balance from possibility to probability. Moreover, Defendants fail to show that examining, testing and then eliminating other plausible causes to arrive at a probable and plausible cause is an invalid scientific methodology. Thus, the court overrules Defendants' objections.


b. Causation Opinion

Defendants challenge Broadhead's opinion that the webbing failure rendered Tia unrestrained and caused her to be ejected and suffer fatal injuries. Broadhead relies on a publication report that states that occupants that are ejected during a crash are fifty-eight times more likely to suffer fatal injuries than those that remain inside the car. *See* Broadhead Rule 26 report at page 5. Broadhead opines that if Tia had remained within the car's compartment, she would have been expected to survive. *See* Broadhead's Rule 26 report at page 19. Moreover, Broadhead notes that, out of the five occupants, the only surviving occupant was restrained by his seat belt, remained inside the vehicle, and suffered relatively minor injuries. Defendants do not contend that Broadhead's reliance on the statistical studies is unreliable. Instead Defendants merely disagree as to whether Tia would have survived if she had remained in the vehicle. Accordingly, the court finds Broadhead's testimony reliable as to causation and Defendants' objections are overruled.⁸

2. Right Rear Seat Belt Opinion

Broadhead offers three opinions regarding the right rear seat belt: (1) Keilan was wearing his seat belt; (2) the right rear buckle was defective because it would no longer hold the latch plate for which it was designed to hold under anticipated G forces. *See* Broadhead Decla. ¶ 19; and (3) the defective buckle rendered Keilan unrestrained and was the primary factor causing his death.

a. Seat Belt Usage Opinion

Broadhead opines that there is physical evidence on the seat belt components that are consistent with seat belt usage during the accident. *See* Broadhead's Rule 26 report at page 17. Broadhead declares that he used the same peer-reviewed methodology that he used on the right front seat belt to inspect the right rear seat belt. Defendants contend that Keilan was not wearing his seat belt during the accident and that damage to the buckle was not related to a failure during use. Defendants do not challenge Broadhead's methodology but rather disagree with his conclusion that Keilan was wearing his seat belt during the accident. The *Daubert* analysis focuses on the principles and methodology underlying an expert's testimony and not on his conclusions.  *Daubert*, 509 U.S. at 595. Defendants' mere disagreement with Broadhead's conclusion is not a sufficient reason to exclude his opinion under Rule 702. Thus, Defendants' objections are overruled.

b. Buckle Defect Opinion

*11 Defendants contend that Broadhead's opinion that the buckle was defective is unreliable because he merely observed the broken buckle and did not collect sufficient facts or data to support his opinion. The court disagrees. Broadhead declares that he inspected the buckle using the same 15 page peer-reviewed inspection methodology as discussed above to determine whether the buckle was defective. *See* Broadhead Decla. ¶ 18. Broadhead declares that the buckle would no longer hold the latch plate for which it was designed to hold. *See* Broadhead Decla. ¶ 19. Broadhead noted that there was no evidence or testimony that the buckle was inoperable prior to the collision. *Id.*

Defendants also contend that Broadhead's opinion is unreliable because he did not test the subject buckle. Broadhead declares that it was not necessary to conduct testing of the subject buckle in forming his opinion. *See* Broadhead Decla. ¶ 19. Broadhead also declares that testing of the subject buckle would risk degradation of physical evidence. *See* Broadhead Decla. ¶ 19. In addition, Broadhead declares that he formed his opinion that the buckle failed during the rollover by testing a new, right rear replacement buckle and disassembling it and comparing it to the actual buckle in question. *See* Broadhead Decla. ¶ 18. Broadhead declares that the replacement buckle had slight visual differences from the subject buckle. *Id.*

The court will not exclude Broadhead's testimony on the grounds that he should have conducted more testing. In most cases, objections to the inadequacies of a study are more

appropriately considered an objection going to the weight of the evidence rather than its admissibility. *U.S. Xpress*, 2002 U.S. District Lexis 25379 at *9, 2002 WL 31789380. Thus, there is no basis to exclude Broadhead's testimony regarding the buckle defect. Vigorous cross-examination, presentation of contrary evidence and careful instructions on the burdens of proof will address Defendants' concerns regarding Broadhead's testimony.

c. Causation Opinion

Defendants challenge Broadhead's opinion that the buckle failure rendered Keilan unrestrained and caused him to be ejected and suffer fatal injuries. For the same reasons as described above with respect to Tia, the court finds Broadhead's testimony reliable as to causation and Defendants' objections are overruled.

C. Evidentiary Objections to Broadhead's Declaration

Defendants object to Broadhead's declaration in support of Plaintiff's opposition on the grounds that his December 1, 2008 declaration contradicts his prior testimony. For example, Defendants compare Broadhead's declaration where he states: "I did measure operational aspects of the seat belt and in fact, in my report (photograph # 7) I show a critical measurement of the right front occupant's belt" (See Broadhead Decla. ¶ 10) with his deposition testimony where he states "[I] did not test the right front occupant's webbing material at all." See Broadhead Dep. 44:13–44:18. This alleged discrepancy on whether measuring constitutes testing does not appear to be wholly inconsistent testimony and does not provide grounds for striking Broadhead's declaration and instead provides grounds for vigorous cross-examination.

*12 The general rule is that a "party cannot create an issue of fact by an affidavit contradicting his prior deposition testimony." *Kennedy v. Allied Mut. Ins. Co.*, 952 F.2d 262, 266 (9th Cir.1991). This rule, however, must be applied with caution. *Id.* at 266. To apply this general rule, "the district court must make a factual determination that the contradiction was actually a sham." *Id.* at 267. Testimony is a sham only if it flatly contradicts earlier testimony in an attempt to create an issue of fact to avoid summary judgment. *Id.* Thus, testimony is not a sham if it merely elaborates upon, explains or clarifies prior testimony. *Messick v. Horizon Indus., Inc.*, 62 F.3d 1227, 1231 (9th Cir.1995). Broadhead's testimony does not appear to be flatly inconsistent testimony.

Defendants cite further examples of alleged discrepancies between Broadhead's deposition testimony and his December 1, 2008 declaration. The court has reviewed Defendants' multiple examples and finds them to be similar to the "testing" versus "measuring" example. That is, these are areas for cross-examination and do not warrant exclusion.

Defendants object that Broadhead arrives at improper conclusions and that his declaration includes statements that lack foundation. The court denies these objections because the focus of the court's inquiry is not whether the expert's opinion has the best foundation or whether they are correct, but whether the opinions are based on sufficient reasoning and methodology. See *Getter*, 66 F.3d at 1124 (*Daubert* doesn't require court to admit or exclude based on its persuasiveness). Defendants' objections that Broadhead's declaration contains statements that are vague and ambiguous, irrelevant, insufficient under the best evidence rule, and include improper arguments have been reviewed and are denied.

Defendants' object that Broadhead's reliance on peer-reviewed articles is improper because the articles are inadmissible hearsay. This objection is denied and has been addressed above. Lastly, Defendants' objections based on lack of expert qualifications pursuant to Rule 702 have been addressed above as well.

IV. Resolution Regarding the Admissibility of Hayes's Expert Testimony

A. Hayes's Qualifications

Defendants claim that Hayes lacks the qualifications of an expert who can opine on accident reconstruction because he does not teach accident reconstruction of rollovers, has never performed a full-scale crash test of an automobile, and has never performed peer-reviewed, published research relating to rollover accidents or been licensed as an engineer. The court does not agree that Hayes lacks the requisite credentials to testify about biomechanics injury causation and accident reconstruction.

Hayes's curriculum vitae reflects that he has a masters in mechanical engineering from Stanford University, and a Ph.D. in Theoretical and Applied Mechanics from Northwestern University, where his course work included advanced training in engineering dynamics and kinematics, and anatomy, physiology and biomechanics. For over forty

years, Hayes has taught medical students, engineers, forensic scientists, and accident reconstructionists, graduate and post graduate courses on the subject of injury biomechanics. Hayes is currently a professor of Mechanical Engineering at Oregon State University. Hayes has served as a professor of biomechanics at Harvard Medical School and as a professor of mechanical engineering and surgery orthopaedics at Stanford University. At Stanford University, Hayes established a crash test facility that was used to study occupant dynamics and injuries. Hayes details that he has authored numerous peer-reviewed publications, reports, books and lectures on biomechanics, injury causation and accident reconstruction, including rollover accident reconstruction. *See* Hayes CV at page 18. Hayes is also the founding editor of the *Journal of Orthopaedic Research*. Hayes declares that he has testified as an expert on accident reconstruction, occupant dynamics and injury biomechanics on 74 occasions and on 100 occasions with respect to medical causation in state and federal courts.⁹ *See* Plaintiff's Opp. at page 13. Given Hayes's forty years of biomechanical injury and accident reconstruction research and teaching experience, the court finds that Hayes is qualified to testify about biomechanics injury causation and accident reconstruction.

*13 Additionally, Defendants argue that Hayes is not qualified to testify about injury causation because he is not a medical doctor. The court is not persuaded given that Defendants cite no legal authority for their proposition that only medical doctors are qualified to provide opinions on injury causation and biomechanics.

Lastly, Defendants contend that Hayes is not qualified because he relied on the assistance of an engineer from his office who helped prepare the accident reconstruction. The court disagrees as the Federal Rules of Evidence specifically provide that an expert may rely on facts or data "perceived by or made known to the expert at or before the hearing." [Fed.R.Evid. 703](#).

Accordingly, the court finds that Hayes has sufficient "knowledge, skill, experience, training, or education" and overrules Defendants' objections regarding his qualifications.

B. Hayes's Accident Reconstruction Opinion¹⁰

Defendants contend that Hayes's accident reconstruction opinions are unreliable because Hayes did not personally inspect the subject vehicle and because he did not personally examine the accident scene. This court disagrees with

Defendants' arguments as they fail to challenge Hayes's methodology. In his Rule 26 report, Hayes outlines the peer-reviewed accident reconstruction methodology that he followed in forming his opinion. *See* Hayes Decla. ¶ 17, ¶¶ 25–26. Hayes declares that he followed a peer-reviewed methodology to determine the vehicle's speed at the point of initiation of the rollover event, the speed of the vehicle at the point of loss of control, and the approximate number of rolls in the rollover event. *Id.* Hayes also declares that the methodologies he employed are universally accepted in the accident reconstruction community, are published, have been subjected to peer-review, and have known and acceptable error rates. *See* Hayes Decla. ¶ 26.

Defendants also argue that his opinions are unreliable because he could have collected more facts or data to support his opinions. However, Hayes declares that prior to performing his analysis, he reviewed the traffic collision report, the coroner's reports, interviews and depositions of fact witnesses and investigators, photographs of the accident scene and the subject vehicle, rollover research literature, debris evidence documentation, and measurements taken by investigating officers. *See* Hayes Decla. ¶ 26. Also, although Hayes did not personally inspect the subject vehicle, Hayes's engineering associate did conduct a personal inspection of the vehicle. As described above, Hayes's reliance on his engineering associate's work does not invalidate Hayes's opinions.

Accordingly, the court finds that Hayes employed a reliable peer-reviewed methodology and overrules Defendants' objections with respect to Hayes's methodology.

C. Hayes's Biomechanics Injury Causation Opinion

Defendants argue that Hayes's biomechanical injury causation opinions are unreliable because Hayes did not collect sufficient facts and because he did not conduct a surrogate study. This court is not persuaded. In his Rule 26 report and rebuttal report, Hayes describes the peer-reviewed biomechanical injury methodology that he followed in forming his opinion that seat belt failure dramatically increases the likelihood of severe injury or death. Hayes relies on epidemiological research that indicates that ejected occupants are 6.2 times more likely to sustain a fatal injury in a rollover collision than unrestrained occupants. Hayes further relies on peer-reviewed studies that corroborate these statistics.

*14 Defendants also criticize Hayes for not calculating the G forces that were placed on the occupants' seat belts during

the accident in his initial Rule 26 report. The court will not exclude Hayes's testimony since Dr. Hayes provides his methodology and conclusion regarding the G forces that were placed on Tia's seat belt in his rebuttal report.

Accordingly, the court finds that Hayes utilized a reliable methodology and overrules Defendants' objections with respect to Hayes's biomechanical injury causation methodology.

D. Evidentiary Objections to Hayes's Declaration

Defendants object to Hayes's Declaration in support of Plaintiff's opposition on the grounds that his December 1, 2008 Declaration contradicts prior testimony. The court has reviewed Defendants' multiple examples of alleged discrepancies and does not find them to be wholly inconsistent testimony. Testimony is a sham only if it flatly contradicts earlier testimony in an attempt to create an issue of fact to avoid summary judgment. [Kennedy](#), 952 F.2d at 267. Therefore, Defendants' examples do not provide grounds for striking Hayes's Declaration but rather provides grounds for vigorous cross-examination.

Defendants object that Hayes arrives at improper conclusions and that his Declaration includes statements that lack foundation. The court denies Defendants' objections on these grounds because the focus of the court's inquiry is not whether the expert's opinion has the best foundation or whether they are correct, but whether the opinions are based on valid reasoning and methodology. See [Getter](#), 66 F.3d at 1124 (*Daubert* doesn't require court to admit or exclude based on its persuasiveness). Defendants' objections that Hayes's Declaration contains statements that are vague and ambiguous, irrelevant, insufficient under the best evidence rule, lack of personal knowledge and include improper arguments have been reviewed and are denied. Lastly, Defendants' objections based on lack of expert qualifications pursuant to [Rule 702](#) have been addressed above.

DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

I. Undisputed Material Facts

Both parties in this case submitted a separate statement of undisputed material facts ("SUF"). After examining the

record, the court has determined that the relevant undisputed material facts are as follows:

1. TRW AH, TRW AI nor TRW AU were not responsible in any way for the right rear seat belt assemblies, or any components thereof, installed in the 1998 Ford Explorer.
2. Plaintiff has produced no evidence of a probable design defect in the right front seat belt webbing.
3. Plaintiff did not purchase the subject vehicle or any components from TRW VSSI.

II. Claims Against TRW AH, TRW AU, and TRW AI

In order to bring a valid products liability claim, Plaintiff must prove that the Defendants produced, manufactured, sold, or were in some way responsible for the product. [DiCola v. White Bros. Performance Products, Inc.](#), 158 Cal.App.4th 666, 677, 69 Cal.Rptr.3d 888 (2008). Defendants contend that TRW AH, TRW AU, and TRW AI did not design, test, manufacture, distribute, sell, or play any role in the design or manufacture of any seat belt assemblies or components. See Jeffrey A. Jenkins Decla. ¶ 4; SUF in Support of Motion ¶ 1. Plaintiff responds that she has no information with which to dispute this statement. Plaintiff admits that she does not possess any evidence linking TRW AH, TRW AU, and TRW AI to the seat belts and does not oppose the dismissal of TRW AH, TRW AU, and TRW AI. See Plaintiff's Opposition at page 6.

*15 Therefore, summary judgment is granted as to all claims against Defendants TRW AH, TRW AU, and TRW AI.

III. Claims Against TRW VSSI

A. First Cause of Action—Strict Products Liability

A manufacturer is strictly liable for injuries resulting from the use of its product if the product was defectively designed, defectively manufactured, or distributed without adequate warnings. [Arnold v. Dow Chemical Co.](#), 91Cal. App. 4th 698, 715 (2001). Here, Plaintiff asserts that TRW VSSI's right front and left rear seat belts were defectively designed, contained various manufacturing defects, and did not contain adequate warnings.

1. *Plaintiff has Raised a Triable Issue of Fact Regarding her Design Defect Claim*

a. *Right Rear Seat Belt Buckle and Right Front Seat Belt Retractor*

Defendants argue that Plaintiff cannot establish the existence of any probable seat belt defect or injury causation. Plaintiff contends that the right front seat belt retractor and right rear seat belt buckle were defectively designed. To prevail in a design defect cause of action on a theory of strict liability under the risk-benefit test,¹¹ a plaintiff has to present evidence that her injury was proximately caused by the product's design. [Barker v. Lull Engineering Co.](#), 20 Cal.3d 413, 429, 143 Cal.Rptr. 225, 573 P.2d 443 (1978); [Moreno v. Fey Manufacturing Corp.](#), 149 Cal.App.3d 23, 27, 196 Cal.Rptr. 487 (1983). In the instant matter, each party presented conflicting expert testimony on the issue of causation as described more fully in the court's *Daubert* analysis. The court found that Plaintiff's experts' opinions on the issue of causation were admissible. Proximate cause may be decided as a matter of law if the facts are undisputed and there is only one reasonable inference that can be drawn from them. [Bigbee v. Pacific Tel. & Tel. Co.](#), 34 Cal.3d 49, 56, 192 Cal.Rptr. 857, 665 P.2d 947 (1983). Here, the parties' experts dispute whether the alleged seat belt defects caused Plaintiff's injury. This presents the court with a disputed issue of material fact. A jury could consider the parties' competing evidence and reasonably conclude that the seat belt's design caused the Plaintiff's injury. Therefore, Plaintiff has made her prima facie case of proximate causation.

TRW VSSI attempts to impose upon Plaintiff an obligation to prove the presence of a defect. California law states the contrary. Once Plaintiff makes a prima facie showing that the injury was proximately caused by the product's design, the burden shifts to the Defendant to prove that the design was not defective. [Barker](#), 20 Cal.3d at 431, 143 Cal.Rptr. 225, 573 P.2d 443; [Moreno](#), 149 Cal.App.3d at 27, 196 Cal.Rptr. 487. Therefore, TRW VSSI needs to prove that the benefits of the design outweigh the risks of the design. *Id.* When making this determination, the jury may consider many factors, including: (a) the gravity of the potential harm resulting from the use of the product; (b) the likelihood that this harm would occur; (c) the feasibility of an alternative safer design at the time of manufacture; (d) the cost of an alternative design; and (e) the disadvantages of an alternative design. [Gonzalez v. Autoliv ASP, Inc.](#), 154 Cal.App.4th 780, 786–87, 64 Cal.Rptr.3d 908 (2007). TRW VSSI offered no evidence that the benefits of the design outweighed its

inherent risks. The court finds that TRW VSSI has failed to meet its burden to prove, as a matter of law, that the benefits of the seat belt design outweigh its risks. Accordingly, a triable issue exists for the jury to determine whether the risks of the seat belt design outweigh its benefits.

*16 TRW VSSI contends in a footnote that it is insulated from Plaintiff's allegations of a design defect under the component supplier doctrine. TRW VSSI relies on [Wiler v. Firestone Tire & Rubber Co.](#) for its position. 95 Cal.App.3d 621, 629, 157 Cal.Rptr. 248 (1979). TRW VSSI's reliance on *Wiler* is misplaced, however, because *Wiler* held “[a] component part manufacturer may be held liable for damages caused by a component part which was defective at the time it left the component part manufacturer's factory.” [Wiler](#), 95 Cal.App.3d at 629, 157 Cal.Rptr. 248; *see also* [Gonzalez](#), 54 Cal.App.4th at 789–90, 63 Cal.Rptr.2d 191. The component manufacturer defense requires a showing that the component part standing alone is not defective. [Gonzalez](#), 54 Cal.App.4th at 788, 63 Cal.Rptr.2d 191. Here, TRW VSSI has not shown that there was no defect in the component part. Accordingly, TRW VSSI is not relieved from liability as the alleged defect is in the component part.

Lastly, TRW VSSI asserts that Plaintiff must prove the existence of a feasible alternative design. California law does not support TRW VSSI's position. *See* [Bernal v. Richard Wolf Medical Instruments Corp.](#), 221 Cal.App.3d 1326, 1335, 272 Cal.Rptr. 41 (1990) (Plaintiff does not have to prove the existence of a feasible alternative design); *see also* [Gonzalez](#), 54 Cal.App.4th at 791, 63 Cal.Rptr.2d 191 (same). The court is unpersuaded by TRW VSSI's reliance on [Baker v. Chrysler Corp.](#), 55 Cal.App.3d 710, 716, 127 Cal.Rptr. 745 (1976) and [Gray](#), 133 F.Supp.2d 530 (E.D.Ky.2001). First, *Baker* was overruled by the California Supreme Court in *Barker v. Lull Engineering*, which explicitly states that a plaintiff does not have to prove an alternative design. Second, *Gray* is not applicable as it applies Kentucky law.



Accordingly, the court denies Defendant's summary judgment as to Plaintiff's design defect claims regarding the right rear seat belt buckle and right front seat belt retractor.

b. *Right Front Seat Belt Webbing*

Plaintiff has abandoned her design defect claim with respect to the right front seat belt webbing when she admits “Plaintiff has produced no evidence of a probable design defect with respect to the right front seat belt webbing.” See Plaintiff’s SUF ¶ 5.

Accordingly, the court grants Defendant’s summary judgment as to Plaintiff’s right front seat belt webbing design defect claim.

2. Plaintiff has Raised a Triable Issue of Fact regarding her Manufacturing Defect Claims

Plaintiff contends that the right front seat belt retractor and webbing and right rear seat belt buckle contain manufacturing defects. TRW VSSI contends that Plaintiff fails to establish the existence of any probable defects in the right rear or right front seat belts. To establish a manufacturing defect claim, a plaintiff must prove that the defendant manufactured the product, the product contained a manufacturing defect when it left the defendant’s possession, that the product was used in a way that was reasonably foreseeable to the defendant, that the plaintiff was harmed and that the product’s defect was a substantial factor in causing the plaintiff’s harm.  *Stephen v. Ford Motor Co.*, 134 Cal.App.4th 1363, 1367–71, 37 Cal.Rptr.3d 9 (2005). The Supreme Court has defined a manufacturing defect as one that differs from the manufacturer’s intended result or from other ostensibly identical units of the same product line.  *Barker*, 20 Cal.3d at 429, 143 Cal.Rptr. 225, 573 P.2d 443.

*17 Here it is undisputed that TRW VSSI manufactured the seat belts. See Defendant’s SUF ¶ 5. The Defendant does not argue that the seat belt was used in a way that was not reasonably foreseeable to the Defendant or that the Plaintiff was not harmed. The parties dispute whether the seat belts contained a manufacturing defect and whether the product’s defect was a substantial factor in causing Plaintiff’s harm.

a. Right Front Seat Belt

As described in the court’s *Daubert* analysis, Plaintiff’s experts essentially opine that the right front seat belt is defective either because the webbing itself contained a manufacturing defect or because the retractor contained a manufacturing defect. Plaintiff’s experts opine that the webbing contained a manufacturing defect because it broke even though the webbing was not subjected to G forces beyond its design tolerance (as set by federal motor vehicle

safety standards requirements on seat belt strength). See Broadhead Rule 26 Report at page 11; Hayes Decl. ¶ 35; Hayes Rebuttal Report ¶¶ 8–15. Broadhead opines that the retractor contained a manufacturing defect because the retractor failed to lock during the rollover and improperly allowed excessive webbing to spool out, which in turn allowed a significant increase of the webbing lengths and excess G forces to be applied on the webbing. See Broadhead Decla. ¶¶ 13–16; Broadhead Rebuttal Report at pages 3–4.

TRW VSSI essentially contends that Plaintiff fails to establish the existence of any probable defects in the right front seat belt because Plaintiff’s experts testify in terms of possibility and not probability. In the court’s *Daubert* analysis, the court addressed each of TRW VSSI’s arguments, including the possibility versus probability argument and rejected them. Plaintiff and TRW VSSI each presented conflicting expert testimony on the issue of whether a product defect was present in the seat belts and as to the issue of causation.¹² Because the court found that Plaintiff’s experts’ opinions on the issue of product defect were admissible, the court is presented with a disputed issue of material fact. A jury could consider the parties’ competing evidence and reasonably conclude that the right front seat belt contained manufacturing defects. The determination of the credibility and weight of the expert’s conclusions should be reserved for the trier of fact. In such a situation, summary judgment is not appropriate.

Accordingly, the court denies summary judgment as to Plaintiff’s right front webbing manufacturing defect claim.¹³

b. Right Rear Seat Belt

Plaintiff’s expert opines that Keilan was wearing his seat belt. See Broadhead Decla. ¶ 19. TRW VSSI’s experts dispute whether Keilan was wearing his seatbelt. However, Plaintiff’s expert opined that the seat belt showed signs of usage. See Broadhead’s Rule 26 report at page 17. Additionally, both of Keilan’s parents testified that Keilan always wore his seat belt. See Robert Santos Dep. at 12:14–20; 35:14–16; 38:8–23; Tracy Santos Dep. at 16:14–24; 17:15–17; 44:5–8. As such, the court is presented with a disputed issue of material fact regarding whether Keilan was wearing his seatbelt, which is an issue reserved for the trier of fact.

*18 Plaintiff’s expert also opined that the right rear buckle was defective because it would no longer hold the latch plate for which it was designed to hold under anticipated G forces. See Broadhead Decla. ¶ 19. TRW VSSI essentially contends

that Plaintiff fails to establish the existence of any probable defects in the right rear seat belt because Plaintiff's expert's opinion is based on the mere observation of the broken buckle. In the court's *Daubert* analysis, the court has addressed each of TRW VSSI's arguments and rejected them. Plaintiff and TRW VSSI each presented conflicting expert testimony on the issue of whether a product defect was present in the seat belt. This presents the court with a disputed issue exists.

As such, summary judgment is not appropriate. Accordingly, the court denies summary judgment as to Plaintiff's right rear seat belt manufacturing defect claim.

3. Injury Causation as to Tia and Keilan

Plaintiff's experts opine that the failure of the seat belts to restrain Tia and Keilan was a substantial factor in causing their death. “[A] tort is a legal cause of injury only when it is a substantial factor in producing the injury.” *Soule v. GM Corp.*, 8 Cal.4th 548, 580, 34 Cal.Rptr.2d 607, 882 P.2d 298 (1994). “A substantial factor in causing harm is a factor that a reasonable person would consider to have contributed to the harm. It must be more than a remote or trivial factor. It does not have to be the only cause of the harm.” *Raven H. v. Gamette*, 157 Cal.App.4th 1017, 1025, 68 Cal.Rptr.3d 897 (2007) (quoting Judicial Council of California Civil Jury Instructions No. 430).

TRW VSSI contends that the severity of the rollover superseded any purported seat belt defect as the cause of Plaintiff's damages. TRW VSSI is correct that “if the violence of a crash is the efficient cause of plaintiff's injuries to the extent that it supersedes other factors, such as defective design and makes them immaterial, plaintiff cannot recover.” *Endicott v. Nissan Motor Corp.*, 73 Cal.App.3d 917, 926–27, 141 Cal.Rptr. 95 (1977). Plaintiff's experts, however, opined that if Tia and Keilan had remained restrained by their seat belts within the car's compartment, they would not have received fatal injuries. See Broadhead's Rule 26 report at page 19. Plaintiff's experts also provided statistical evidence that indicated that ejected occupants are 6.2 times more likely to sustain a fatal injury in a rollover collision than unrestrained occupants. See Hayes Rule 26 Report and Rebuttal Report.

Additionally, Plaintiff in her opposition contends that significant differences exist between the parties as to the severity of the accident, including the number of rolls experienced by the vehicle. Thus, a factual dispute exists regarding the severity of the accident and whether the

alleged seat belt defects caused Plaintiff's injury. Whether a defendant's conduct actually caused an injury is a question of fact that is ordinarily for the jury.” *Raven*, 157 Cal.App.4th at 1029, 68 Cal.Rptr.3d 897.

*19 Accordingly, the court denies summary judgment as to Plaintiff's manufacturing defect claims.

B. Second Cause of Action–Negligence


TRW VSSI is challenging Plaintiff's negligence claim based on the same strict liability arguments that have been rejected by the court. In order to prevail on a negligence claim, Plaintiff must show that Defendant owed her a legal duty, breached that duty and that the breach was a proximate or legal cause to her injury. *Merrill v. Navegar, Inc.*, 26 Cal.4th 465, 477, 110 Cal.Rptr.2d 370, 28 P.3d 116 (2001). In the context of a products liability lawsuit, “[u]nder a negligence theory, a plaintiff must also prove ‘an additional element, namely that the defect in the product was due to negligence of the defendant.’ ” *Id.* at 479, 110 Cal.Rptr.2d 370, 28 P.3d 116. For the same reasons as discussed above, the court finds TRW VSSI's arguments unavailing and finds that a jury could reasonably conclude that a product defect existed and was a substantial factor in Tia's and Keilan's deaths.

Accordingly, the court denies summary judgment as to Plaintiff's negligence claim.


C. Third Cause of Action–Breach of Duty to Warn


TRW VSSI argues that it had no duty to warn as a component part supplier. Plaintiff contends that TRW VSSI has a duty to warn users of the inherent dangers in their product, namely the lack of crash worthiness of the seat belts.


“[A] manufacturer owes a foreseeable user of its product a duty to warn of risk of using the product.” *Powell v. Standard Brands*, 166 Cal.App.3d 357, 362, 212 Cal.Rptr. 395 (1985). The failure to warn may constitute a design defect. *Wright v. Stang Manufacturing Co.*, 54 Cal.App.4th 1218, 1230, 63 Cal.Rptr.2d 422 (1997); *Gonzalez*, 154 Cal.App.4th at 786–87, 64 Cal.Rptr.3d 908. Plaintiff must prove that the Defendant did not adequately warn of a particular risk that was known or knowable in light of the generally recognized and prevailing best scientific and medical knowledge available at the time of manufacture


and distribution.”  *Anderson v. Owens–Corning Fiberglass Corp.*, 53 Cal.3d 987, 1002–03, 281 Cal.Rptr. 528, 810 P.2d 549 (1991).



Under the component parts doctrine, a manufacturer of a product component is not liable for injuries caused by the finished product into which the component is incorporated *unless* the component itself was defective at the time it left

the manufacturer.  *Jimenez v. Superior Court*, 29 Cal.4th 473, 480, 127 Cal.Rptr.2d 614, 58 P.3d 450 (2002) (emphasis added). In *Jimenez*, the court rejected the manufacturer's component parts defense and reasoned that “the policies underlying strict products liability in tort ... are equally applicable to component manufacturers and suppliers.”

 *Id.* at 479–80, 127 Cal.Rptr.2d 614, 58 P.3d 450. The court held that a manufacturer of component parts that were installed in homes could be subject to failure to warn liability.

 *Id.* at 480, 127 Cal.Rptr.2d 614, 58 P.3d 450. In the instant matter, Plaintiff is alleging that the Defendant's seat belt itself was defective when it left the manufacturer's factory. Additionally, the court has found that a triable issue exists as to presence of a defect. As such, the component part doctrine does not shield TRW VSSI from liability.

*20 TRW VSSI also argues that it is immune from liability because the seat belts it supplied were integrated into the vehicle by Ford, a sophisticated buyer. The court disagrees. A component manufacturer can be held strictly liable even if it did not assemble or integrate the component parts into the final product. As stated in *Jimenez*, “The issue is not whether the product was sold fully assembled or in parts, but rather whether the defect that resulted in the alleged damage existed when the [product] left the manufacturer's control.”  *Id.* at 480, 127 Cal.Rptr.2d 614, 58 P.3d 450. Again here the Plaintiff alleges that a defect in the Defendant's product itself caused the harm.

Defendant relies on *Artiglio v. General Electric Co.* to support its position.  61 Cal.App.4th 830, 839, 71 Cal.Rptr.2d 817 (1998). *Artiglio*, however, is distinguishable because there the court held that a manufacturer of raw silicone used by *breast implant* manufacturers had no duty to warn *breast implant* recipients of the potential hazards where the silicone materials were substantially changed during the manufacturing process.  61 Cal.App.4th at 839, 71 Cal.Rptr.2d 817. In *Artiglio*, the raw silicone manufacturer

had a limited role in developing and designing the end product as the silicone was used in a wide variety of products and not just *breast implants*. In *Artiglio*, the implant manufacturer had to cook the silicone into gel and silicone shells, inject the gel into shells, and package the implants. The *Artiglio* court stated, “these substantial manufacturing and marketing processes, over which [the silicone manufacturer] had no control, would plainly diminish the utility of any warning [the silicone manufacturer] might attempt to provide consumers.”

 *Id.* at 840, 71 Cal.Rptr.2d 817.






In the instant case, TRW VSSI did not supply a raw material, such as silicone. Rather, TRW VSSI manufactured and distributed seat belts for the purpose of providing car manufacturers with occupant restraint systems. Moreover, unlike *Artiglio*, Ford did not substantially alter the seat belts into a completely different finished product, over which the Defendant had no control. Thus, TRW VSSI is not relieved of liability by virtue of the fact that Ford installed the Defendant's seat belts in the vehicle.

Accordingly, the court denies summary judgment as to Plaintiff's failure to warn claim.


D. Fourth Cause of Action–Breach of Warranty



Defendant argues that Plaintiff's breach of warranty claim fails because privity of contract is required between Plaintiff and TRW VSSI. Plaintiff argues that TRW VSSI expressly and impliedly warranted the subject vehicle to be free from defects and that privity of contract is not required under the facts of this case.

The “general rule is that privity of contract is required in an action for breach of either express or implied warranty.”



See  *Blanco v. Baxter Healthcare Corp.*, 158 Cal.App.4th 1039, 1058–59, 70 Cal.Rptr.3d 566 (2008) (quoting  *All West Electronics v. M–B–W*, 64 Cal.App.4th 717, 724, 75 Cal.Rptr.2d 509 (1998)); see  *Burr v. Sherwin Williams Co.*, 42 Cal.2d 682, 695, 268 P.2d 1041 (1954). Specifically, a plaintiff alleging breach of warranty claims must stand in “vertical privity” with the defendant. See  *Kennedy v. Baxter Healthcare Corp.*, 43 Cal.App.4th 799, 810–11, 50 Cal.Rptr.2d 736 (1996);  *Osborne v. Subaru of America, Inc.*, 198 Cal.App.3d 646, 656, 243 Cal.Rptr. 815 (1988). Vertical privity means that the plaintiff and the defendant must “occupy adjoining links in the distribution chain.”





 *Kennedy*, 43 Cal.App.4th at 810–11, 50 Cal.Rptr.2d 736;

 *Osborne*, 198 Cal.App.3d at 656 n. 6, 243 Cal.Rptr. 815. “For example, the distributor is normally in vertical privity with the manufacturer, and the ultimate retail buyer is normally in vertical privity with the dealer. But if the retail buyer seeks warranty recovery against a manufacturer with whom he has no direct contractual nexus, the manufacturer would seek insulation via the vertical privity defense.”

 *Osborne*, 198 Cal.App.3d at 656 n. 6, 243 Cal.Rptr. 815. Nevertheless, there are exceptions to the privity requirement such as reliance on the manufacturer's written representations in labels or advertising materials. See  *Fieldstone Co. v. Briggs Plumbing Products, Inc.*, 54 Cal.App.4th 357, 369 n. 10, 62 Cal.Rptr.2d 701 (1997).

*21 Here, it is undisputed that Plaintiff did not purchase the seat belts directly from TRW VSSI nor did she purchase her vehicle from Defendant. Thus, the chain of distribution was Defendant to Ford, Ford to car dealer and car dealer to Plaintiff. Plaintiff and Defendant do not occupy adjoining links in this chain as they are separated by at least two links.

See  *Kennedy*, 43 Cal.App.4th at 810–11, 50 Cal.Rptr.2d 736;  *Osborne*, 198 Cal.App.3d at 656 n. 6, 243 Cal.Rptr. 815. Accordingly, there appears to be insufficient privity for Plaintiff's warranty claims.

Plaintiff relies on  *Williams v. Volkswagenwerk Aktiengesellschaft*, 180 Cal.App.3d 1244, 1267, 226 Cal.Rptr. 306 (1986) and  *Greenman v. Yuba Power Products, Inc.*, 59 Cal.2d 57, 27 Cal.Rptr. 697, 377 P.2d 897 (1963) for the proposition that privity is not required in a products liability action where the action is based in tort and not in contract. *Williams* and *Greenman* however, are based on the narrow exception identified in *Fieldstone*, where the plaintiff suffered damages from the use of a product marketed by the defendant. See  *Williams*, 180 Cal.App.3d at 1267, 226 Cal.Rptr. 306;  *Greenman*, 59 Cal.2d at 61, 27 Cal.Rptr. 697, 377 P.2d 897. Unlike *Williams* and *Greenman*, Plaintiff does not allege that TRW VSSI marketed the seat belts.¹⁴

Accordingly, summary judgment is granted as to Plaintiff's breach of warranty claims.

ORDER

Based on the above memorandum opinion, the court ORDERS that:

1. Defendants' motions to exclude the testimony of Plaintiff's experts Broadhead and Hayes are DENIED.
2. Defendants' evidentiary objections to Broadhead's and Hayes's declarations are DENIED.
3. Defendants TRW AH, TRW AU, and TRW AI's motion for summary judgment on Plaintiff's first, second, third, and fourth causes of action is GRANTED and Plaintiff's first, second third, and fourth causes of action against Defendants TRW AH, TRW AU, and TRW AI are dismissed with prejudice.
4. Defendant TRW VSSI's motion for summary judgment on Plaintiff's first cause of action, strict liability-design defect regarding the right rear seat belt buckle and right front seat belt retractor, is DENIED.
5. Defendant TRW VSSI's motion for summary judgment on Plaintiff's first cause of action, strict liability-right front webbing design defect claim is GRANTED.
6. Defendant TRW VSSI's motion for summary judgment on Plaintiff's first cause of action, strict liability-right front webbing manufacturing defect claim is DENIED.
7. Defendant TRW VSSI's motion for summary judgment on Plaintiff's first cause of action, strict liability-right rear seat belt manufacturing defect claim is DENIED.
8. Defendant TRW VSSI's motion for summary judgment on Plaintiff's second cause of action, negligence, is DENIED
9. Defendant TRW VSSI's motion for summary judgment on Plaintiff's third cause of action, failure to warn, is DENIED.
10. Defendant TRW VSSI's motion for summary judgment on Plaintiff's fourth cause of action, breach of warranty, is GRANTED.

IT IS SO ORDERED.

All Citations


Not Reported in F.Supp.2d, 2009 WL 1392085

Footnotes

- 1 Defendants contend in their reply briefs that Plaintiff's oppositions should be stricken from the record and that Plaintiff should not be heard in opposition because Plaintiff untimely served her oppositions in violation of L.R. 78–230. Although, Plaintiff electronically filed and served her oppositions fourteen (14) days before the hearing, rather than personally serving Defendants or electronically serving Defendants seventeen (17) days before the hearing, this court will not strike the oppositions nor dismiss Plaintiff's case.

Under L.R. 78–230, an untimely *filed* opposition may result in the party not being heard at oral argument. In the instant matter, Plaintiff timely filed her oppositions but did not timely serve her oppositions.

Parties who are untimely served may request additional time. Here, Defendants did not request additional time and given the Defendants' detailed reply briefs, additional time does not appear to be necessary. Thus, the court finds that the Defendants were not prejudiced by Plaintiff's untimely service of her oppositions.
- 2 Hayes was designated to testify as to the mechanics of how Tia and Keilan received their fatal injuries in the accident.
- 3 The court's admissibility ruling on Plaintiff's experts' testimony is only for purposes of Defendants' motion for summary judgment. This ruling does not preclude the parties from raising new, subsequent, pre-trial evidentiary objections, such as motions in limine. If a timely objection is made, the court will rule at that time.
- 4 Additionally, the court takes judicial notice that on March 26, 2008, in a vehicle collision case, this court denied Defendant Takata Seat Belts Inc.'s motion to exclude Plaintiff's expert's (Broadhead) opinion that the seat belt web guides were defective. Case No. CV F 06–1539 LJO–SMS. Judge O'Neill reasoned that although there appeared to be a discrepancy in Broadhead's deposition testimony, the discrepancy provided grounds for vigorous cross-examination. Judge O'Neill further noted that “ultimately it will be up to the trier of fact to make the finding of which opinion the expert has, whether it has merit, and whether the witness has credibility.”
- 5 Further, Broadhead declares that he has never been excluded from testifying as an expert on any basis. See Broadhead Decla. ¶ 2.
- 6 Broadhead disagrees with Defendants' seat belt expert's (Greg Miller) claim that 23 G forces were sustained in the accident. Broadhead opines that 23 G forces are excessive and inaccurate because Greg Miller misapplied tensile force equations in rollover accidents. See Broadhead Rebuttal Report at page 3. Nevertheless, for purposes of Defendants' motion to exclude Broadhead, Broadhead accepts Greg Miller's 23 G force estimate.
- 7 “Dynamic Analysis of ELR Retractor Spoolout,” Steven E. Meyer, et. al. and “Rollover Ejection While Wearing a Lap & Shoulder Harness: The Role of the Retractor,” David A. Renfroe.
- 8 Defendants also contend that Broadhead's testimony will not assist the jury in understanding the evidence pursuant to Rule 403. Rule 403 allows the court to exclude relevant evidence if “its probative value is substantially outweighed by the dangers of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.” The

court has broad discretion in assessing admissibility under Rule 403.  *Getter v. Wal-Mart Stores, Inc.*, 66 F.3d 1119, 1124 (10th Cir.1995). For the reasons described above, Defendants' objections are overruled as Broadhead's testimony will aid the jury in understanding the evidence and is not substantially outweighed by any of the countervailing factors set forth in Rule 403.


- 9 Defendants also contend that Hayes is unqualified to testify in this case because he has been twice excluded from providing expert testimony in Maricopa County, Arizona and Cameron County, Texas. The Maricopa County state court order reveals that Hayes was allowed to testify as to his biomechanics opinion but was prohibited from expressing “medical opinions.” It appears that his medical opinion was excluded because it was duplicative of other medical experts. The Cameron County state court order does not indicate whether that case presented similar facts to those present in the instant matter, and therefore is not instructive in this matter. Thus, Defendants' objections relating to Hayes's previous disqualifications are overruled.
- 10 Hayes was retained to evaluate the evidence in this case and perform an accident reconstruction to determine: (1) the speed of the vehicle prior to the loss of control; (2) the speed of the vehicle at the time of the rollover trip; (3) the vehicle kinematics during the rollover event; (4) the occupant kinematics of Tia and Keilan Santos during the rollover event; and (5) whether Tia and Keilan would have sustained fatal head, neck, and chest injuries had their seat belts not failed to restrain them inside the vehicle. See Hayes Rule 26 report.
- 11 Plaintiff and TRW VSSI agree that the risk-benefit test applies as opposed to the consumer expectation test.
- 12 The court discusses the issue of causation more fully below.
- 13 The court does not intend to imply that Plaintiff will be meritorious in this action. Rather, the state of the evidence demonstrates that a fact finder could reasonably conclude that a manufacturing defect existed in the seat belts.
- 14 Plaintiff also relies on  *Elmore v. American Motors Corp.*, 70 Cal.2d 578, 75 Cal.Rptr. 652, 451 P.2d 84 (1969). However, *Elmore's* holding is in the context of a strict liability claim where privity is not a requirement. As the discussion in *Elmore* does not involve warranties, it is inapposite.

Exhibit B

INTERIM REPORT TO CONGRESS

September

2022

Section 24221(a) of the Bipartisan Infrastructure Law mandated a GAO study to evaluate the availability and use of crash test dummies. Section 24221(b) of the BIL also directed the Administrator of the U.S. Department of Transportation's National Highway Traffic Safety Administration to transmit to Congress an interim report that identifies (1) the types of crash test dummies used by the NHTSA in the Federal Motor Vehicle Safety Standards and the New Car Assessment Program, (2) how each type of test dummy is tested with respect to seating position, and (3) any crash test dummies that the Administration is actively evaluating for future use in the FMVSS or NCAP.

Crash Test Dummies

INTERIM REPORT TO CONGRESS ON CRASH TEST DUMMIES

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Executive Summary

Section 24221(a) of the Bipartisan Infrastructure Law (BIL) mandated a GAO study to evaluate the availability and use of crash test dummies. Section 24221(b) of the BIL also directed the Administrator of the U.S. Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) to transmit to Congress an interim report that identifies (1) the types of crash test dummies used by the NHTSA in the Federal Motor Vehicle Safety Standards (FMVSS) and the New Car Assessment Program (NCAP), (2) how each type of test dummy is tested with respect to seating position, and (3) any crash test dummies that the Administration is actively evaluating for future use in the FMVSS or NCAP. Appendix A contains the full statutory language.

Safety is the top priority for the DOT and NHTSA and equity in safety outcomes is central to our mission across all categories of drivers. NHTSA's use of crash test dummies dates to the 1970s, when the first dummy was codified into the FMVSS 49 CFR Part 572. Since that time, NHTSA has regulated numerous other dummies that range in age, size, and sex, from children, to small females, to midsize males. NHTSA recently released a report examining sex disparities in crash fatalities resulting from similar physical impacts.¹ The recent study contains encouraging findings on reductions in fatality risk disparities in newer model year vehicles. The overall difference in fatality risk between male and female occupants dropped from 18.3 percent for model year 1960-2009 vehicles to 2.9 percent for model year 2015-2020 vehicles. While this reduction is noteworthy, any remaining disparity is unacceptable, and NHTSA is committed to eliminating it through effective approaches. Crash dummies will be a vital tool in that effort.

Use of an expanded array of crash test dummies in NHTSA's crash tests has helped to reduce crash fatalities. This report provides an overview of the current crash test dummies used in NCAP as well as in compliance testing under the FMVSS, and those being developed and evaluated for future use. In addition, pursuant to § 24221(b), this report describes the Administration's plans for implementing these dummies and the associated challenges and recommendations. Finally, this report discusses the ways in which we develop and use various computer simulation tools in our research to bolster our crash test program as a supplement to physical crash tests.

Introduction

The FMVSS identify mandatory minimum safety performance requirements for motor vehicles and certain motor vehicle equipment in the United States. Vehicles and equipment manufactured for sale in the United States must be certified to comply with all applicable FMVSS. In addition to FMVSS compliance, NCAP is a consumer information program that evaluates vehicle safety beyond the mandatory requirements. At times, a single crash test can be used to inform both FMVSS and NCAP assessments. Critical elements of both FMVSS and NCAP testing are crash test dummies, which are used to assess human injury potential in a crash.

NHTSA's use of crash test dummies dates to the 1970s, when the first dummy was codified into NHTSA's regulation for Anthropomorphic Test Devices (ATD)², 49 CFR Part 572. Since that time, as the FMVSS and

¹ Noh, E. Y., Atwood, J. R. E., Lee, E., Craig, M. J., (2022) Female crash fatality risk relative to males for similar physical impacts (Report No. DOT HS 813 358). Washington, DC: National Highway Traffic Safety Administration.

² The technical term for a crash test dummy is 'Anthropomorphic Test Device.'

NCAP have evolved, NHTSA has codified numerous other dummies that range in size, age, and measurement capability, ranging from midsize adult males to small adult females to infants, toddlers, and older children. In addition, NHTSA has continually conducted research into advancements in crash safety, including the development of advanced dummies that better represent the interaction of vehicle occupants with modern restraint systems, such as force-limited three-point seat belts and air bags.

Current Crash Test Dummies

Regulated crash test dummies are documented in 49 CFR Part 572; ‘Anthropomorphic Test Devices.’ Motor vehicles and motor vehicle equipment are tested for compliance with the FMVSS using these crash test dummies. The design and performance criteria specified in 49 CFR Part 572 are intended to describe measuring tools with sufficient precision to give repeatable and correlative results under similar test conditions. Additionally, the criteria specified ensure the dummies adequately evaluate the protective performance of a vehicle or item of motor vehicle equipment with respect to human occupants in a reproducible manner. The same criteria will be applied to all dummies under development prior to their use in testing. The current crash test dummies, their respective test conditions, and their seating positions are comprehensively tabulated in Appendix B and summarized herein. Figures of select full-vehicle FMVSS and NCAP tests are further provided in Appendix C. NHTSA tests the female test dummies in the same seating positions as male dummies where occupant body type has a bearing on crash outcome. The dummies used in crash tests are selected to address safety concerns identified in field and test data accounting for occupant demographics, occupant seating positions, and crash direction and speed.

Adult Female

The **Hybrid III 5th Percentile Adult Female Frontal Crash Test Dummy** (HIII-05F) was introduced into 49 CFR Part 572, Subpart O in 2000. The HIII-05F represents a small adult female and has a seated height of 78.7 cm (31.0 in) and weight of 49.1 kg (108.0 lbs). Current test modes where the HIII-05F is specified for use include FMVSS No. 208 “Occupant Crash Protection” and frontal impact in NCAP. As part of FMVSS No. 208, the HIII-05F is utilized in belted and unbelted conditions for the driver and right front passenger seating positions. Three FMVSS 208 dynamic frontal crash tests are conducted with the HIII-05F: 1) two belted dummies in a vehicle that impacts a full-width rigid barrier at an impact angle of $0 \pm 5^\circ$ at a speed of 56 km/h; 2) two unbelted dummies in a vehicle that impacts a full-width rigid barrier at an impact angle of $0 \pm 5^\circ$ at a speed of 32-40 km/h; and 3) two belted dummies in a vehicle that impacts a deformable barrier that is offset from the center of the vehicle by 40% at an impact speed of 40 km/h and at an impact angle of 0° . In addition, consistent with FMVSS No. 208, the HIII-05F is used in out-of-position static air bag deployment tests. The frontal NCAP test is similar to the first FMVSS No. 208 test condition, except that the impact angle is 0° and the dummy is in the right front passenger seat position only.

The **Side Impact Dummy (SID)-IIs 5th Percentile Adult Female Side Crash Test Dummy** (SID-IIs) was introduced into 49 CFR Part 572, Subpart V in 2006. The SID-IIs represents a small adult female and has a seated height of 79.0 cm (31.1 in) and weight of 44.5 kg (98.1 lbs). Current test modes where the SID-IIs is specified for use include FMVSS No. 214 “Side Impact Protection” and side impact in NCAP. This dummy is tested in two FMVSS 214 conditions: 1) moving deformable barrier impacting a vehicle at 27° at 53 km/h (32.9 mph) (SID-IIs is in the struck-side rear passenger seat); and 2) vehicle impacting a 254 mm (10 in) diameter rigid pole at an angle of 75° at 0-32 km/h (0-20 mph) (the SID-IIs is in the struck-side driver’s seating position or in the struck-side right front seating position). The side moving

deformable barrier NCAP test condition is the same as the first FMVSS No. 214 test condition but conducted at an elevated speed of 62 km/h (38.5 mph). In the side pole NCAP test condition, the physical test configuration is the same as in FMVSS No. 214. Also, in the NCAP tests, the SID-IIs is utilized in belted out-of-position conditions.

Adult Male

The **Hybrid III 50th Percentile Adult Male Frontal Crash Test Dummy** (HIII-50M) was introduced into 49 CFR Part 572, Subpart E in 1986. The HIII-50M represents a mid-sized adult male and has a seated height of 88.4 cm (34.8 in) and weight of 77.7 kg (171.0 lbs). Current test modes where the HIII-50M is specified for use include FMVSS No. 208 "Occupant Crash Protection" and frontal impact in NCAP. As part of FMVSS No. 208, the HIII-50M is utilized in the driver and right front passenger seating positions for two full-width frontal crash tests of a vehicle into a rigid barrier: 1) belted, 0° at 56 km/h (34.8 mph); and 2) unbelted, 0° ± 30° at 32-40 km/h (20-25 mph). The first test condition with the HIII-50M in the driver position also serves as the frontal NCAP test. The HIII-50M is also used in FMVSS 202a 'Head Restraints' for head restraint assessment.

The **EuroSID-2 with Rib Extensions 50th Percentile Adult Male Side Crash Test Dummy** (ES2re) was introduced into 49 CFR Part 572, Subpart U in 2006. The ES2re represents a mid-sized adult male and has a seated height of 90.9 cm (35.8 in) and weight of 72.0 kg (159.0 lbs). Current test modes where the ES2re is specified for use include FMVSS No. 214 "Side Impact Protection" and side impact in NCAP. The ES2re is belted and utilized in the driver or right front passenger seating positions in these side impact tests so that the dummy is always seated on the impacted side. This dummy is tested in two FMVSS 214 conditions: 1) moving deformable barrier impacting a vehicle at 27° at 53 km/h (32.9 mph); and 2) vehicle impacting a 254 mm (10 in) diameter rigid pole at an angle of 75° at 0-32 km/h (0-20 mph). The side NCAP condition is the same as the first FMVSS No. 214 test condition but conducted at an elevated speed of 62 km/h (38.5 mph).

Child

The **Civil Aeromedical Institute Newborn Infant Crash Test Dummy** (CAMI) was introduced into 49 CFR Part 572, Subpart K in 1993. Developed by the Civil Aeromedical Institute, this canvas-covered dummy represents a newborn infant and has a weight of 3.4 kg (7.5 lbs). As a representation of an infant, the CAMI has no representative "seated height." The CAMI is used in FMVSS No. 213 "Child Restraint Systems" in addition to more recent advanced dummies, such as the CRABI. The CAMI is also referenced in FMVSS No. 208 for testing of car beds.

The **Child Restraint Air Bag Interaction (CRABI) 12-Month-Old Child Crash Test Dummy** (CRABI) was introduced into 49 CFR Part 572, Subpart R in 2000. This dummy represents a 12-month-old child and has a seated height of 47.0 cm (18.5 in) and weight of 10.0 kg (22.0 lbs). The CRABI is used to evaluate air bag exposure to infants restrained in child safety seats that are placed in the front seat as specified in FMVSS No. 208, as well as air bag suppression testing. In total, there are 23 unique test conditions specified in FMVSS No. 208 using the CRABI. FMVSS No. 213 and FMVSS No. 213a also specify use of the CRABI to test child safety seat frontal and side crash protection.

The **Hybrid III 3-Year-Old Child Crash Test Dummy** (HIII-3YO) was introduced into 49 CFR Part 572, Subpart P in 2000. This dummy represents a 3-year-old child and has a seated height of 54.6 cm (21.5 in) and weight of 16.2 kg (35.7 lbs). The HIII-3YO is specified for use in FMVSS No. 208 for out-of-position and suppression testing, where two unique test configurations are specified. The HIII-3YO is also specified for use in FMVSS No. 213, as well as for out-of-position test conditions in NCAP.

The **Q3s 3-Year-Old Child Side Crash Test Dummy** (Q3s) has recently been finalized by NHTSA, with a final rule issued in November 2020 (49 CFR Part 572, Subpart W). This dummy represents a 3-year-old child and has a seated height of 55.6 cm (21.9 in) and weight of 14.5 kg (32.0 lbs). NHTSA issued a final rule in June 2022 incorporating the Q3s ATD into FMVSS No. 213a “Child Restraint Systems – Side Impact Protection.”

The **Hybrid III 6-Year-Old Child Crash Test Dummy** (HIII-6YO) was introduced into 49 CFR Part 572, Subpart N in 2000. This dummy represents a 6-year-old child and has a seated height of 63.5 cm (25.0 in) and weight of 23.4 kg (51.6 lbs). The HIII-6YO is specified for use in FMVSS No. 208 for out-of-position and suppression testing, where two unique test configurations are specified. The HIII-6YO is also specified for use in FMVSS No. 213, as well as for out-of-position test conditions in the side NCAP.

The **Hybrid III Weighted 6-Year-Old Child Crash Test Dummy** (HIII-6YO-W) was introduced into 49 CFR Part 572, Subpart S in 2004. This dummy represents a larger 6-year-old child and has a seated height of 63.5 cm (25.0 in) and weight of 23.4 kg (51.6 lbs). The HIII-6YO-W is specified for use in FMVSS No. 213 to test child seats.

The **Hybrid III 10-Year-Old Child Crash Test Dummy** (HIII-10YO) was introduced into 49 CFR Part 572, Subpart T in 2012. This dummy represents a 10-year-old child and has a seated height of 72.4 cm (28.5 in) and weight of 35.3 kg (77.6 lbs). The HIII-10YO is suited to test the upper load and height limits of safety restraints and is used in FMVSS No. 213 to test belt-positioning booster seats.

Crash Test Dummies Under Development

Adult Female

The **Test Device for Human Occupant Restraint (THOR) 5th Percentile Adult Female Frontal Crash Test Dummy** (THOR-05F) is currently being developed and evaluated by NHTSA. NHTSA has accelerated the development of the THOR-05F in this Administration. The THOR-05F represents a small adult female and has a seated height of 81.3 cm (32.0 in), approximate standing height of 151 cm (59.4 in), and weight of 49 kg (108.0 lbs). NHTSA has incorporated improved designs resulting from the development of THOR-50M related to the head, neck, thorax and lower extremities into the design of the THOR-05F. Additionally, the THOR-05F has other improved measurement capabilities over the HIII-05F, including face loads, clavicle loads, thorax displacement, abdominal pressure, acetabulum loads, and ankle displacements and loads. These measurements will permit evaluation of injury types not currently considered. THOR-05F may be used in in FMVSS No. 208 and NCAP frontal crash test conditions.

Currently, NHTSA is evaluating the THOR-05F’s biofidelity and durability, developing design updates to improve durability, developing injury criteria, and developing documentation in coordination with the manufacturer. The standardization of the THOR 5th (RIN: 2127-AM56) is expected to start in 2023.

The **World Side Impact Dummy (WorldSID) 5th Percentile Adult Female Side Crash Test Dummy** (WorldSID-05F) is currently under development. The WorldSID-05F represents a small adult female and has a seated height of 76.1 cm (30.0 in), approximate standing height of 151 cm (59.4 in), and weight of 48 kg (105.8 lbs). The WorldSID-05F incorporates all of the improved measurement capabilities and internal data acquisition systems of the WorldSID-50M. Possible test modes in which the WorldSID-05F may be used include FMVSS No. 214 and NCAP side impact testing.

Current NHTSA activities include evaluating the WorldSID-05F's biofidelity, evaluating new thoracic injury prediction instrumentation, and developing documentation. Completion of documentation is expected in 2025 to support a rulemaking decision.

Adult Male

The **THOR 50th Percentile Adult Male Frontal Crash Test Dummy** (THOR-50M) is currently being finalized by NHTSA for proposed inclusion in Part 572 and for use in FMVSS No. 208 as an optional test device. The THOR-50M represents a mid-sized adult male and has a seated height of 94 cm (37 in), an approximate standing height of 175 cm (68.9 in), and a weight of 76 kg (167.6 lbs). In comparison to the HIII-50M, the THOR-50M provides improved biofidelity (i.e., a measure of the dummy's ability to mimic a human-like response in a crash) in the thorax, shoulder, spine, knee-thigh-hip, lower leg and abdomen, as well as improved kinematic response to a frontal crash. Additionally, the THOR-50M allows for multi-point deflection measurements in the thorax and abdomen, upper and lower tibia load cells, and acetabulum load cells, all of which allow for measurement of new injury criteria.

NHTSA has active rulemakings concerning both the standardization of the THOR-50M (RIN: 2127-AM20) and allowing for optional use of the THOR-50M in place of the HIII-50M in FMVSS No. 208 (RIN: 2127-AM21). In addition to FMVSS No. 208 testing, possible uses for the THOR-50M include frontal NCAP tests.

The **WorldSID 50th Percentile Adult Male Side Crash Test Dummy** (WorldSID-50M) is currently being finalized by NHTSA for proposed inclusion in Part 572 and for use in FMVSS No. 214 as an optional test device. The WorldSID-50M represents a mid-sized adult male and has a seated height of 87 cm (34.3 in), an approximate standing height of 175 cm (68.9 in), and a weight of 74 kg (163.1 lbs). The WorldSID-50M offers improved lateral and oblique biofidelity in the thorax when compared to the ES-2re, improved biofidelity in the abdomen and pelvis, as well as the utilization of on-board data acquisition systems and multi-point deflection measurement in the thorax.

NHTSA is currently planning to publish a 49 CFR Part 572 NPRM in the Winter of 2022 (RIN: 2127-AM22), and plans to publish an NPRM for optional use of the WorldSID-50M in place of the ES-2re in FMVSS No. 214 at the same time (RIN: 2127-AM23). In addition to FMVSS No. 214 testing, possible uses for the WorldSID-50M include side NCAP tests. Finally, the WorldSID-50M is being evaluated for use in far-side test modes.

The **Biofidelic Rear Impact Dummy** (BioRID) is currently under development. The BioRID was initially developed in Europe and NHTSA is evaluating its potential use in the U.S. The BioRID represents a mid-sized adult male and has a seated height of 88 cm (34.6 in), an approximate standing height of 168 cm (66.1 in), and a weight of 78 kg (172.0). BioRID is the first dummy to have a continuous, articulated spine that can be instrumented in such a way that allows for the measurement of intervertebral rotations of the cervical spine. Hence, these measurements provide improved assessment of whiplash injury when compared to the HIII-50M.

NHTSA is evaluating the BioRID's biofidelity, developing injury criteria, and developing documentation. Potential applications of the BioRID include testing for FMVSS No. 202a "Head Restraints" and/or FMVSS No. 207 "Seating Systems." Completion of documentation is anticipated in 2024 to support a rulemaking decision.

Child

The **Large Omnidirectional Child (LODC) 10-year-old Child Crash Test Dummy** (LODC) is currently under development by NHTSA. The LODC represents a 10-year-old child and has a seated height of 68 cm (26.8 in), approximate standing height of 130 cm (51.2 in), weight of 34.6 kg (76.3 lbs), and is designed to represent both male and female children. The LODC offers a flexible thoracic spine resulting in more accurate head motion, a biofidelic abdomen with pressure sensors for instrumentation. Also, the LODC incorporates biofidelity characteristics derived directly from pediatric biomechanical data, includes omnidirectional instrumentation, and represents improved anthropometry of a 10-year-old child in comparison to the HIII-10YO.

Currently, NHTSA is completing testing and documentation development. The LODC is intended for use in FMVSS No. 213 and rear seat positions with or without a booster seat. Other possible test modes include FMVSS No. 208 and NCAP testing. Completion of documentation is expected in 2023 to support a rulemaking decision.

Challenges for Crash Test Dummy Implementation

Safety is NHTSA's top priority, and the agency is committed to developing advanced crash test dummies that enable a more comprehensive assessment of injury mechanisms and safety features in new model year vehicles. A crash test dummy on its own needs to be applied in a relevant crash test program with appropriate performance measures to be effective at promoting the development of safety countermeasures that reduce injuries and fatalities resulting from motor vehicle crashes. NHTSA takes great efforts to ensure that dummies are effective representations of motor vehicle occupants and have a human-like response, or are "biofidelic," in a crash. To this end, crash test dummy development is a complex and lengthy process requiring a cooperative approach between NHTSA and dummy manufacturers, involving numerous design iterations aimed at refining accuracy and precision to best reflect actual human kinematics and resulting injury measures in a crash. An assessment of a dummy's biofidelity includes, but is not limited to, anthropometry, mass properties, joint properties (e.g., range of motion), and response to crash forces.

Biofidelity must be weighed against other requirements, including durability, repeatability, and reproducibility of the dummy motion and injury prediction. Biofidelity and durability are often competing priorities. Developing a dummy that not only has a human-like response but also remains intact through multiple crashes is a considerable challenge and necessitates the previously mentioned iterative design process with manufacturers.

It is sometimes difficult to establish age, gender, and/or size specific injury criteria for different dummies in part due to the availability of test data from post-mortem human subjects with desired characteristics. In the past, this has often meant that injury criteria were scaled from one dummy size to another (e.g., 50th male to 5th female). Currently, NHTSA is attempting to collect additional age, size, and gender appropriate data for describing response and injury measures for different adult dummies.

Use of Computer Simulation to Supplement Physical Crash Tests

NHTSA has long supported the development of computer simulation models of humans, crash test dummies, and vehicles. These state-of-the-art tools can be used in studying injuries and injury causation

as well as developing more advanced vehicle structures and restraint systems. It is not feasible to run an actual crash test to answer every research question related to occupant safety. The overarching benefit of computer simulations is that they offer a fast, efficient, and comprehensive method to supplement safety research.

Computer simulation models (including finite element, lumped parameter, and machine learning) are commonly used among the vehicle safety community as part of vehicle design and crash safety assessment. Models of vehicles and their safety systems facilitate the evaluation and development of vehicle countermeasures (e.g., structures, air bags, seat belts) for an expanded range of simulated crash conditions, such as varying severities, impact directions, crash durations, etc. Further, occupant demographics such as age, gender, size, seating position, seating orientation, and posture can be considered in computer models. These modeling tools allow for research to expand out to other human demographics beyond the typical 5th percentile female and 50th percentile male used in crash tests (e.g., obese, elderly, etc.). Once adequately validated for their specific purpose, these vehicle and human models are often used together to analyze the effects of changing safety system designs and crash parameters on injury outcomes for varying occupant demographics.

While industry and researchers also use simulation models extensively, establishing standards and criteria for specific simulation tools to be used and accepted by all users for vehicle safety assessments presents challenges. There are many important considerations associated with these simulation techniques. Primarily, such models need to be validated in real-world or standardized, representative crash test conditions. How to validate these models more broadly for conditions that extend beyond performed physical test conditions also needs to be considered. Further, procedures for validating and qualifying simulation models would need to be standardized. Consistency of results would need to be evaluated and other computing considerations standardized. Finally, in a regulatory framework, NHTSA must ascertain the compliance of vehicles as they are produced in the real world, not as idealized computer models that may not represent the design and manufacturing process accurately.

Plans for Future Research

People can have different risks of injury in a crash. NHTSA's Annual Modal Research Plan³ outlines the research topics the Agency pursues, including those targeted to better understand and effectively address gender equity in crash safety outcomes. NHTSA is further developing a research plan that details several tracks to address the remaining disparities in crashworthiness safety testing and outcomes. These research efforts are specifically focused on female occupant crash safety, spanning field data analysis, tool development and demonstration application. In addition, as described above, human body modeling research efforts are underway to consider occupants and vulnerable road users of all ages, shapes, and sizes.

Previous NHTSA work has studied the fatality and injury risks for females and males. While males are overrepresented in overall fatalities, it is generally known that the overall risk-taking difference between males and females is a major confounding factor. To account for this, in a study by the agency⁴, NHTSA controlled for this dominant factor by focusing on comparable front-end crashes with similar

³ [RD&T Annual Modal Research Plans](#)

⁴ Kahane, C. J., (2013). Injury vulnerability and effectiveness of occupant protection technologies for older occupants and women. (Report No. DOT HS 811 766). Washington, DC: National Highway Traffic Safety Administration.

characteristics only, which found that females had an overall 17.0% and 28.8% increased fatality and nonfatal-injury risk, respectively, relative to males, when looking at all historical fatal crashes involving all vehicle model years dating back to the 1960s. While this study and its finding control for the dominant risk-taking difference, the result is very heavily dominated by crashes involving vehicles that pre-date generations of crashworthiness improvements introduced into newer vehicles. Therefore, the overall finding in the 2013 report does not reflect fatality and nonfatal-injury risk differences in modern vehicles. The majority (78%) of vehicles used in the 2013 study were not equipped with the latest generations of seat belts and air bags, and many were designed before NHTSA adopted the use of 5th percentile adult female test dummies in FMVSS crash testing. As such, the 17.0% and 28.8% increased fatality and nonfatal-injury risk, respectively, of females relative to males does not reflect the crash protection safety performance of today's vehicles.

To better understand the differences in risk for females versus males in crashes in newer model year vehicles, NHTSA recently updated the fatality risk results of the 2013 study to include the latest crash data, which includes substantially more vehicles equipped with seat belts, dual advanced air bags, and other countermeasures designed for a greater diversity of occupants. The update found that the relative risk of fatality between females and males has been reduced, especially when considering newer vehicles⁵. The increase in fatality risk for females relative to males for model year 2010-2020 vehicles was found to be $6.3 \pm 5.4\%$ and is significantly less than for model year 1960-2009 vehicles ($18.3 \pm 1.2\%$). For model year 2015-2020 vehicles, the estimated difference in fatality risk between females and males appears further reduced to $2.9 \pm 9.8\%$ percent for the average of drivers and right-front passengers; however, due to data scarcity, this statistic will need further observation. In addition to comparing model year ranges, the study also assessed relative fatality risk for different generations of occupant protection systems. For the latest generation of systems (dual air bags, seat belt pretensioners and load limiters), the estimated increase in female fatality risk relative to males was $5.8 \pm 3.8\%$, which is statistically significantly lower than for belted occupants in vehicles without those occupant protections ($21.0 \pm 3.5\%$). A 2015 NHTSA study⁶ demonstrated that three-point belts and air bags were equally effective in reducing fatalities for both males and females.

NHTSA is also using the largest and newest crash database systems, such as the National Automotive Sampling System-Crashworthiness Data System (NASS-CDS) and the Crash Injury Sampling System (CISS) to describe injury odds ratios for females versus males given a comprehensive set of crash, restraint, and occupant-related factors. Understanding the relative risk difference in crashes involving modern vehicles is relevant; design changes to modern vehicles must address female crash safety differences identified in the current vehicle fleet.

To better predict and prevent fatalities and injuries for female occupants involved in motor vehicle crashes, NHTSA has focused on developing tools such as advanced crash test dummies that are more human-like than current dummies. NHTSA is working with the dummy manufacturer to improve the durability of the advanced female dummies so they can be more robust and utilized in the many seating positions NHTSA seeks to assess for occupant crash protection.

⁵ Noh, E. Y., Atwood, J. R. E., Lee, E., Craig, M. J., (2022) Female crash fatality risk relative to males for similar physical impacts (Report No. DOT HS 813 358). Washington, DC: National Highway Traffic Safety Administration.

⁶ Kahane, C. J., (2015). Lives saved by vehicle safety technologies and associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger cars and LTVs – With reviews of 26 FMVSS and the effectiveness of their associated safety technologies in reducing fatalities, injuries, and crashes. (Report No. DOT HS 812 069). Washington, DC: National Highway Traffic Safety Administration.

In addition to being more biofidelic, the advanced crash dummies have improved instrumentation and sensing capabilities. For example, one important finding of our ongoing field data analysis is that women experience a higher rate of lower limb injuries than men. Current Hybrid III dummies do not have any ankle sensors that quantify loads during a crash, whereas advanced dummies such as the THOR-50M and THOR-05F are capable of measuring forces, moments, and angles in the ankle. NHTSA has recently accelerated the development of this measurement capability in the THOR dummies. While ankle injury criteria do not exist for the advanced dummies yet, NHTSA is working to collect the necessary data through postmortem human subjects (PMHS) testing. The combination of defining lower leg injury criteria and implementing these advanced dummies into testing programs will drive new vehicle countermeasures to reduce lower extremity injuries that will benefit all occupants. In the development of advanced female crash test dummies, NHTSA makes use of all available female-specific data for design, response, and injury criteria. Where female-specific data are not available, NHTSA has plans to collect those data through human subject and crash test dummy testing programs.

NHTSA plans to continue to support the development of computer models to aid in the improvement of crash safety. Specifically, NHTSA supports the Global Human Body Models Consortium's (GHBMC) development of finite element human body models (HBMs) and their use to study causes of injury, as described above. NHTSA is also using HBMs to assess possible benefits of developing new physical crash dummies (e.g., a female crash test dummy that is 50th percentile in size).

After the development and refinement of advanced dummies and human body models, NHTSA plans to conduct fleet testing to assess how the advanced dummies interact with vehicle systems. These main research areas (field data, tool development and demonstration application) are aimed at understanding where disparities exist in crash outcomes and how to better predict and prevent fatality and injury for all occupants involved in motor vehicle crashes. In addition, this research will support agency decisions regarding possible future updates to regulation and/or NCAP.

Recommendations and Conclusion

Despite the demonstrable improvements observed in crash outcomes in newer model years, any disparity in safety outcomes is unacceptable. NHTSA has long focused on developing advanced crash test dummies that are more human-like than current dummies and that have improved instrumentation and sensing capabilities. NHTSA recommends continuing field data statistical analyses to better understand current differences in fatality and injury risk based on demographic characteristics, including sex. Any identified differences can then inform the direction of dummy technology and HBM development. NHTSA recommends continued research on fleet testing and countermeasure studies to understand how vehicle safety systems can be optimized for safety based on demographic needs.

As required by Section 24221(b) of the BIL, this report documents crash test dummies currently used in the NCAP and testing relating to FMVSS and crash test dummies being actively developed and evaluated for future use. NHTSA has adopted numerous dummies that range in size and age, from child to small female to midsize male. NHTSA has continually conducted research into injury tolerance, advancements in crash safety and advanced dummies that better represent the interaction of vehicle occupants with modern restraint systems.

In addition, NHTSA has long supported the development of computer models of humans. Computer simulation has the potential to be used to supplement physical crash tests; however, many challenges

with this approach still exist. Finally, the Administration is executing comprehensive research plans to address disparities in crashworthiness safety testing. NHTSA will continue to focus on identifying where disparities exist in crash outcomes and how to better predict and prevent fatalities and injuries for all occupants involved in motor vehicle crashes.

Appendix A – Statutory Language

SEC. 24221. GAO REPORT ON CRASH DUMMIES.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Comptroller General of the United States shall conduct a study and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives a report that—

(1) examines—

(A) the processes used by the National Highway Traffic Safety Administration (referred to in this section as the “Administration”) for studying and deploying crash test dummies;

(B)(i) the types of crash test dummies used by the Administration as of the date of enactment of this Act;

(ii) the seating positions in which those crash test dummies are tested; and

(iii) whether the seating position affects disparities in motor vehicle safety outcomes based on demographic characteristics, including sex, and, if so, how the seating position affects those disparities;

(C) the biofidelic crash test dummies that are available in the global and domestic marketplace that reflect the physical and demographic characteristics of the driving public in the United States, including—

(i) females;

(ii) the elderly;

(iii) young adults;

(iv) children; and

(v) individuals of differing body weights;

(D) how the Administration determines whether to study and deploy new biofidelic crash test dummies, including the biofidelic crash test dummies examined under subparagraph (C), and the timelines by which the Administration conducts the work of making those determinations and studying and deploying new biofidelic crash test dummies;

(E) challenges the Administration faces in studying and deploying new crash test dummies; and

(F) how the practices of the Administration with respect to crash test dummies compare to other programs that test vehicles and report results to the public, including the European New Car Assessment Programme;

(2) evaluates potential improvements to the processes described in paragraph (1) that could reduce disparities in motor vehicle safety outcomes based on demographic characteristics, including sex;

(3) analyzes the potential use of computer simulation techniques, as a supplement to physical crash tests, to conduct virtual simulations of vehicle crash tests in order to evaluate predicted motor vehicle safety outcomes based on the different physical and demographic characteristics of motor vehicle occupants; and

(4) includes, as applicable, any assessments or recommendations relating to crash test dummies that are relevant to reducing disparities in motor vehicle safety outcomes based on demographic characteristics, including sex.

(b) INTERIM REPORT FROM THE ADMINISTRATION.—Not later than 90 days after the date of enactment of this Act, the Administrator of the Administration shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives a report that—

(1) identifies—

(A) the types of crash test dummies used by the Administration as of the date of enactment of this Act with respect to—

- (i) the New Car Assessment Program of the Administration; and
- (ii) testing relating to Federal Motor Vehicle Safety Standards;

(B) how each type of crash test dummy identified under subparagraph (A) is tested with respect to seating position; and

(C) any crash test dummies that the Administration is actively evaluating for future use—

- (i) in the New Car Assessment Program of the Administration; or
- (ii) for testing relating to Federal Motor Vehicle Safety Standards;

(2) explains—

(A) the plans of the Administration, including the expected timelines, for putting any crash test dummies identified under paragraph (1)(C) to use as described in that paragraph;

(B) any challenges to putting those crash test dummies to use; and

(C) the potential use of computer simulation techniques, as a supplement to physical crash tests, to conduct virtual simulations of vehicle crash tests in order to evaluate predicted motor vehicle safety outcomes based on the different physical and demographic characteristics of motor vehicle occupants; and

(3) provides policy recommendations for reducing disparities in motor vehicle safety testing and outcomes based on demographic characteristics, including sex.

Appendix B – Current Crash Test Dummies

Table 1. Characteristics of current crash test dummies defined in 49 CFR Part 572.

Crash Test Dummy	Defined In	Simulated Sex	Seated Height	Weight
Hybrid III 50 th Percentile Adult Male (HIII-50M)	49 CFR Part 572, Subpart E	Male	88.4 cm (34.8 in)	77.7 kg (171 lb)
ES-2re 50 th Percentile Adult Male (ES2re)	49 CFR Part 572, Subpart U	Male	90.9 cm (35.8 in)	72.0 kg (159 lb)
Hybrid III 5 th Percentile Adult Female (HIII-05F)	49 CFR Part 572, Subpart O	Female	78.7 cm (31 in)	49.1 kg (108 lb)
SID-IIs Small Adult Female (SID-IIs)	49 CFR Part 572, Subpart V	Female	79.0 cm (31.1 in)	44.5 kg (98.1 lb)
Civil Aeromedical Institute Newborn Infant (CAMI)	49 CFR Part 572, Subpart K	N/A*	N/A	3.4 kg (7.5 lbs)
CRABI 12-month-old child (CRABI)	49 CFR Part 572, Subpart R	N/A*	47 cm (18.5 in)	10 kg (22 lb)
Hybrid III 3-year-old child (HIII-3YO)	49 CFR Part 572, Subpart P	N/A*	54.6 cm (21.5 in)	16.2 kg (35.7 lb)
Q3s 3-year-old child (Q3s)	49 CFR Part 572, Subpart W	N/A*	55.6 cm (21.9 in)	14.5 kg (32 lb)
Hybrid III 6-year-old child (HIII-6YO)	49 CFR Part 572, Subpart N	N/A*	63.5 cm (25 in)	23.4 kg (51.6 lb)
Hybrid III Weighted 6-Year-Old Child (HIII-6YO-W)	49 CFR Part 572, Subpart S	N/A*	63.5 cm (25 in)	27.9 kg (61.6 lbs)
Hybrid III 10-year-old child (HIII-10YO)	49 CFR Part 572, Subpart T	N/A*	72.4 cm (28.5 in)	35.3 kg (77.6 lb)

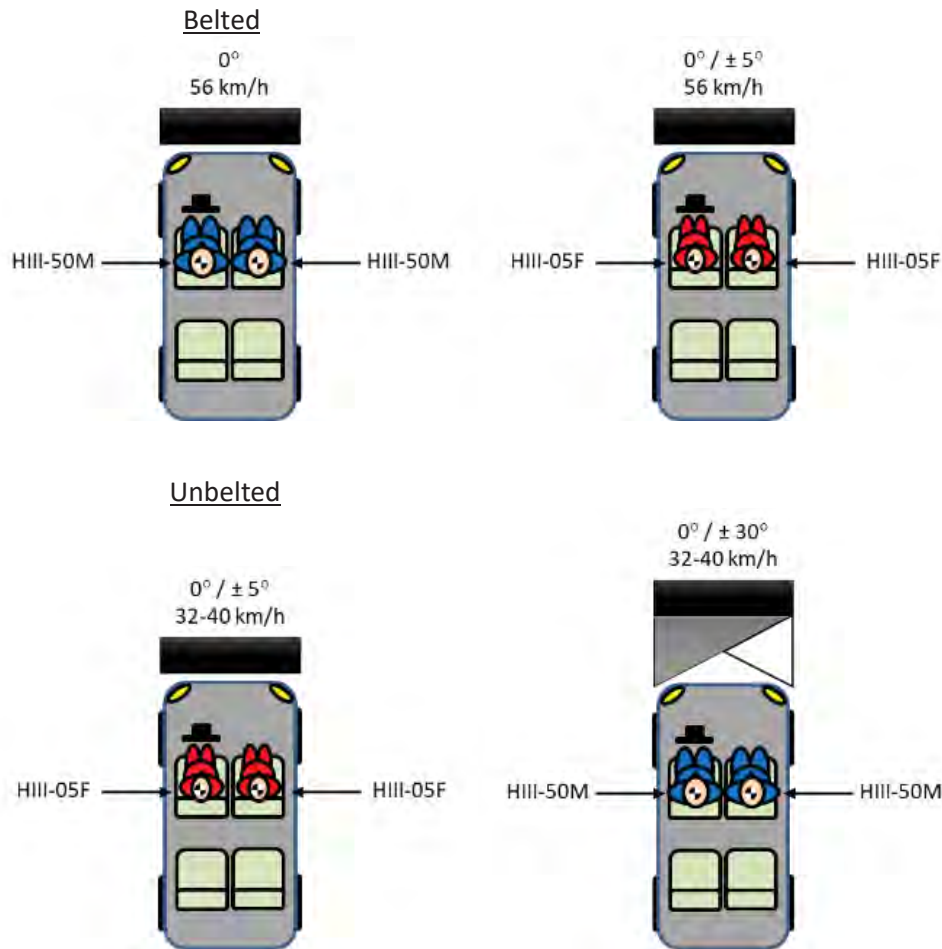
*Child dummies are designed to represent both female and male children.

Table 2. Test conditions and seating positions of current crash test dummies defined in 49 CFR Part 572. Figures of select full-vehicle FMVSS and NCAP tests are provided in Appendix C.

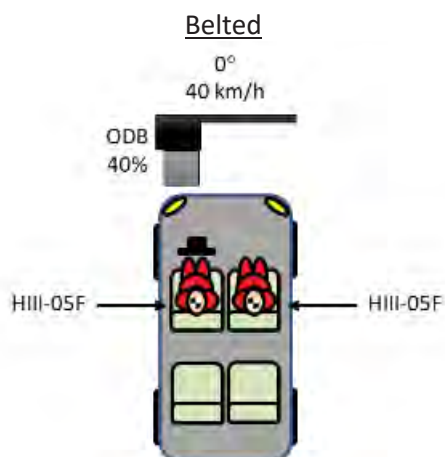
Appendix C – Figures of Select Full-Vehicle Crash Tests

Figures are not to scale.

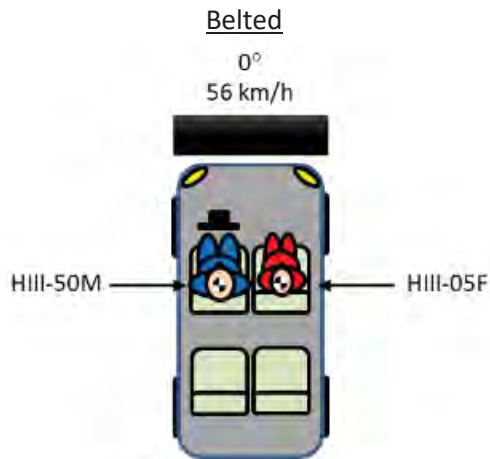
FMVSS 208, Full Width Frontal



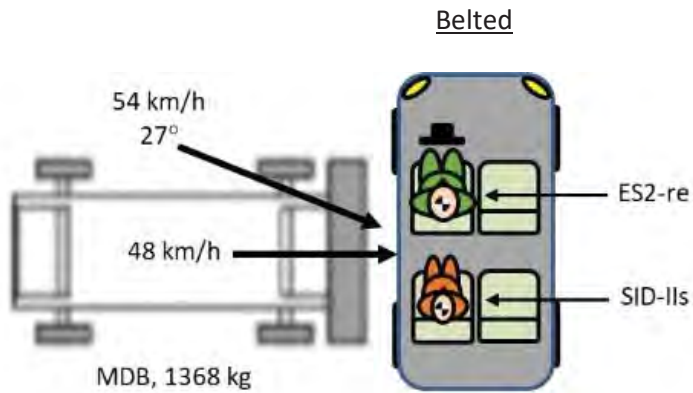
FMVSS 208, Offset Frontal



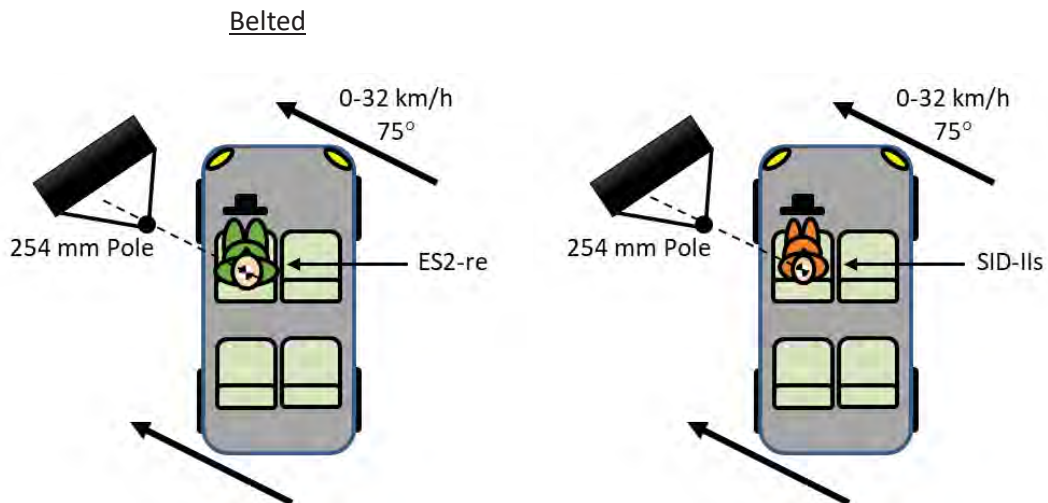
NCAP, Frontal



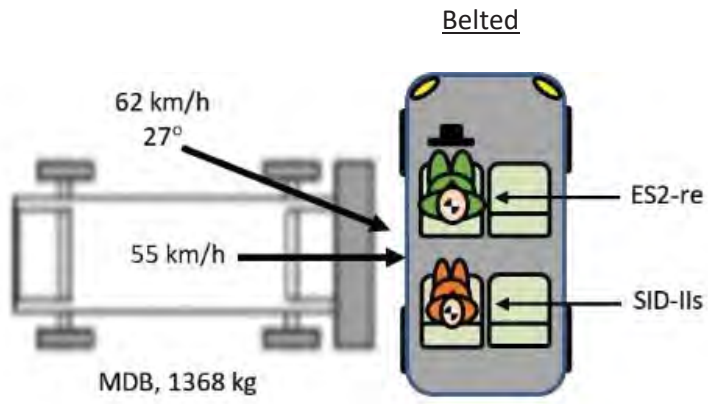
FMVSS 214, Side Barrier (Exemplar Left-Side Test)



FMVSS 214, Side Pole (Exemplar Left-Side Test)



NCAP, Side Barrier



NCAP, Side Pole

