

**UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
TAMPA DIVISION**

SHEILA KNEPFLE,

Plaintiff,

v.

Case No. 8:18-cv-543-T-KKM-CPT

J&P CYCLES, LLC, et al.

Defendants.

ORDER

This products liability case centers on the retention system (straps and clasp) of a motorcycle helmet and whether the clasping mechanism (referred to as double D-rings) constitutes a design defect resulting in Plaintiff Sheila Knepfle's serious head injuries. Defendants J&P Cycles, LeMans Corporation, and HJC Corporation move to exclude testimony from Knepfle's expert witness John D. Lloyd, who Knepfle proffers for opinion testimony regarding the alleged design defect and causation. (Doc. 184). Similarly, Knepfle moves to exclude testimony from the defendants' expert witness David Thom, who they proffer for opinion testimony to rebut both of those issues. (Doc. 196).

Although Lloyd likely possesses the requisite qualifications to testify on these subjects, his methodology for arriving at his opinions is unreliable: his theory has not been tested by anyone other than himself; his theory has not been subjected to peer review and publication; the rate of error for his methodology is unknown; and his

methodology is not generally accepted in the scientific community. In fact, no one has ever conducted a study of his hypothesized design defect with the double D-rings clasping mechanism—including Lloyd. He simply theorizes that it is feasible that the rings would permit the straps to loosen when perpendicular to the straps. Yet he offers no evidence (including physics calculations) for support. As a result, the Court will grant the defendants’ motion to exclude Lloyd’s testimony.

On the other hand, Thom is qualified to testify about the issues in this case; his methodology for arriving at his opinions is reliable; and his testimony would help the jury decide the issues in this case. The Court will deny Knepfle’s motion to exclude Thom’s testimony.

Background¹

On February 16, 2014, Knepfle suffered serious injuries due to a motorcycle accident that occurred in Spring Hill, Florida. As Knepfle approached an intersection riding her motorcycle and wearing a Z1R Nomad Sinister half-shell helmet (Nomad helmet), the driver of a Mazda car turned left at the intersection. Knepfle collided into the side of the Mazda, hitting her helmeted head on the front passenger side of the Mazda and subsequently landing on the ground. Knepfle’s theory of liability turns on the helmet straps failing by becoming loose after her initial crash, thereby causing her head to smash unhelmeted onto the pavement and inflicting serious injuries. The

¹ This order discusses only those background facts needed to decide the *Daubert* motions.

defendants dispute that Knepfle landed unhelmeted on the pavement and, alternatively, even if she did, that Knepfle improperly secured the straps resulting in the helmet detaching after her initial impact with the Mazda.

Knepfle sued the defendants for strict liability, negligence, and negligent performance. (Doc. 46). According to her, the Nomad helmet “contained a manufacturing or design defect wherein the helmet would not stay securely on [Knepfle’s] head and would suddenly, and without warning, fly off of her head during ordinary and foreseeable use, and which ultimately caused [Knepfle] debilitating injuries and damages.” (*Id.* at ¶3).²

The *Daubert* motions here concern two of the parties’ respective experts. *See Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). The defendants seek to exclude the expert opinion of John D. Lloyd, who would testify in support of Knepfle’s theory about design defects in the Nomad helmet. Knepfle, on the other hand, seeks to exclude the expert opinion of David Thom, who would testify in support of the defendants’ case against liability.

The Court held a day-long evidentiary hearing on the parties’ *Daubert* motions. *See* (Doc. 236). During the hearing, each party obtained testimony from their proffered expert, and each proffered expert underwent cross-examination by opposing counsel. The Court also asked questions to Lloyd and Thom about their methodologies. The

² At the *Daubert* hearing, Knepfle conceded that she was pursuing only a design defect theory of liability, not a manufacturing defect theory.

parties submitted exhibits in support of their proffered expert's opinion or to attack the opinion of the opposing party's proffered expert. And the Court heard oral arguments from each party on their respective motions.

Daubert Standard

Federal Rule of Evidence 702 governs expert testimony. A court should admit expert testimony if the proponent of that testimony establishes the following:

- (1) the expert is qualified to testify competently regarding the matters he intends to address;
- (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated by *Daubert*; and
- (3) 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.

City of Tuscaloosa v. Harcros Chems., Inc., 158 F.3d 548, 562 (11th Cir. 1998) (footnote omitted).

An expert can be qualified to testify about certain matters based on his scientific training, education, or experience in the field. *See United States v. Frazier*, 387 F.3d 1244, 1260–61 (11th Cir. 2004).

To determine whether an expert's methodology is reliable, courts consider:

- (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 1262 (citation omitted). Courts must consider these four factors, which come from *Daubert*, along with others tailored to the facts of the case. *Kumho Tire Co. v. Carmichael*,

526 U.S. 137, 150 (1999). The *Daubert* factors apply to testimony based on scientific knowledge as well as testimony based on technical or other specialized knowledge under Rule 702. *Id.* at 141. The party seeking to introduce the expert at trial bears the burden of establishing qualification, reliability, and helpfulness. *Frazier*, 387 F.3d at 1260.

Expert testimony generally helps the trier of fact to understand evidence or decide a fact at issue if the testimony “concerns matters that are beyond the understanding of the average lay person.” *Id.* at 1262. Expert testimony generally will not help the trier of fact if it “offers nothing more than what lawyers for the parties can argue in closing arguments.” *Id.* at 1262–63.

And, of course, simply because expert testimony meets the *Daubert* standard does not mean that the testimony is automatically admitted. *See id.* at 1263. Instead, courts must still consider whether that expert testimony satisfies the other Federal Rules of Evidence. *See id.*

The Defendants’ Motion to Exclude Lloyd’s Opinion

Knepfle proffered John D. Lloyd as an expert to testify that the Nomad helmet she wore is defectively designed because its double D-ring fastener rests on the side of a person’s chin—as opposed to directly parallel under the chin. According to Lloyd, when a helmet’s double D-rings are perpendicular with the chin, the straps are more likely to come loose due to lack of tension on the rings. That, in turn, means that the Nomad helmet is more likely to come off during an accident. Lloyd opines that is what happened here: Knepfle wore her Nomad helmet but, by design, the double D-rings

rested on the left side of her chin and thus the Nomad helmet came off after she first struck the Mazda. Knepfle was therefore unhelmeted when her head landed on the roadway. Lloyd would testify that his opinion is supported by the fact that, after visual inspection, he saw no visible damage to the back of Knepfle's Nomad helmet, which he would expect if the helmet remained on her head during the second impact with the pavement. *See* (Doc. 184-5).

The defendants argue that Lloyd's opinion fails to meet the *Daubert* standard. According to them, Lloyd failed to perform any acceptable testing to determine whether Knepfle's helmet was in place when her head struck the road after being ejected from her motorcycle. (Doc. 184 at 16). The defendants argue that no generally accepted test, professional article, or study supports Lloyd's opinion. (*Id.*). Instead, the defendants argue that Lloyd's opinion rests solely on his say-so that it is possible for the double D-rings to loosen when perpendicular to the straps. (*Id.*).

The defendants argue that Knepfle's methodology for forming his opinion is unreliable. The defendants point out that, unlike when he measured the front of the Nomad helmet, Lloyd failed to measure the rear of the EPS liner to find whether any compression resulted. (*Id.* at 17). According to the defendants, Lloyd failed to use the same methodology for measuring compression in the helmet's front and rear. (*Id.*). Instead Lloyd "eyeballed it." (*Id.*). Further, the defendants argue that Lloyd failed to identify any peer-reviewed study that supports his defect theory. (*Id.* at 18). The defendants argue that Lloyd also failed to investigate whether other similar accidents

occurred where the retention system of a motorcycle helmet fed back through double D-rings. (*Id.* at 18).

Lastly, the defendants contend that Lloyd failed to test his design defect theory. The defendants acknowledge that Lloyd performed a “demonstration” of his theory, but take issue with its validity:

For his demonstration, [Lloyd] suspended a helmet upside down (holding it by the retention straps) and manipulated the straps and D-rings to create an angle between the long and short straps. As the angle neared or reached perpendicular, the tension on the D-rings relaxed and allowed them to separate. Once separated, the webbing of the long strap could pull through the double D-rings.

(*Id.* at 19; citations omitted). The defendants argue that Lloyd failed to explain how his “demonstration” relates to this case. (*Id.*). Namely, they posit that Lloyd’s “demonstration” is inapplicable because it is impossible for straps of a tightened retention system to become perpendicular when the helmet is worn. (*Id.* at 20). Given his unreliable methodology, the defendants conclude that his opinion rests solely on his say-so and should be excluded. (*Id.*).

Knepfle counters that Lloyd’s testimony meets the *Daubert* standard and should be permitted. According to her, Lloyd is qualified to opine on his design-defect theory because he served as a senior researcher in biomechanics at the Department of Veterans Affairs and as a director of the biomechanics laboratory and traumatic brain injury research laboratory. (Doc. 192 at 5). Knepfle also points out that Lloyd has been published in peer-reviewed journals and has presented at conferences on the

biomechanics of head and brain injuries. (*Id.*) Knepfle asserts that Lloyd was a co-investigator on a National Institute of Health grant to develop a medical helmet designed to mitigate the risk of head and brain injuries for persons at risk of falling. (*Id.*) And Knepfle relies on the fact that Lloyd has testified multiple times in products-liability cases dealing with traumatic injuries and helmet design defects. (*Id.*) Knepfle contends that all the above qualifies Lloyd to opine on his design-defect theory. (*Id.* at 5–6).

Knepfle argues that Lloyd’s methodology is also reliable. According to her, Lloyd properly found that the strap on the Nomad helmet’s left side was too short for Knepfle to secure the helmet onto her head properly. (*Id.* at 2). Namely, Lloyd opined that defendant HJC failed to design the Nomad helmet according to anthropometric³ standards to allow the double D-rings to fasten underneath the wearer’s chin. (*Id.*) Knepfle contends that Lloyd’s opinion is “based on the science of anthropometry, the science of measurements, and proportions of the human body.” (*Id.* at 3). As a result, Lloyd opines that the double D-rings may loosen while worn the more the angle grows between the straps and the rings. In his opinion, if the retention system permitted the double D-rings to fasten under the wearer’s chin, they would remain nearly parallel to the straps and thereby prevent any possibility of loosening during normal wear. *See*

³ Anthropometry is “[a] system of measuring the human body, especially the size relationships among the different parts.” *Black’s Law Dictionary*, 112 (10th ed. 2014).

(Doc. 184-5). Based on the above, Knepfle argues that Lloyd’s opinion is scientifically reliable. (Doc. 192 at 6).

Lloyd satisfies two *Daubert* factors: He is qualified to testify about the alleged design defect in the Nomad helmet, and his testimony will help the jury decide whether the Nomad helmet was defective. Lloyd has a Ph.D. in “Ergonomics / Biomechanics” and currently serves as an assistant professor at the Department of Chemical and Biomedical Engineering, College of Engineering at the University of South Florida. (Doc. 192-1 at 9). He is a certified brain injury specialist. (*Id.*). In the past, he has worked as a “Director of Traumatic Brain Injury Laboratory / Program Specialist” at a Veterans Affairs hospital in Tampa, Florida, and he has worked as an “Ergonomics/Biomechanics Consultant.” (*Id.* at 9–10).

In addition, Lloyd has attended multiple professional courses and webinars on accident reconstruction and motorcycle crashes, and he is a member of numerous professional organizations, including the American Academy of Neurology, American Biomechanics Society, and American Society Mechanical Engineering. (*Id.* at 10–11). Lloyd served as a co-investigator on a \$1 million grant to research “Development of Headwear to Prevent Fall-Related Injuries in Elderly Persons.” (*Id.* at 14).

Lloyd’s credentials show that he is qualified to opine on his design defect theory. To be sure, most of Lloyd’s work is in ergonomics (*see* Doc. 192-1), which is less directly relevant to his opinion on the Nomad helmet compared to perhaps other areas of expertise. But that line of questioning goes to weight—not admissibility. Moreover, the

defendants put forth no argument that, assuming Lloyd's opinion meets the *Daubert* standard, his opinion would not help the jury decide whether the Nomad helmet was defectively designed. *See* (Doc. 184). Lloyd's opinion would surely assist the jurors in that regard. Additionally, at the *Daubert* hearing, the defendants stipulated that Lloyd is qualified to opine on his design defect theory except to the extent those qualifications relate to Lloyd's methodology. The Court therefore finds Lloyd satisfies two *Daubert* factors. The primary issue remains whether Lloyd's methodology is reliable. It is not.

The defendants seek to exclude Lloyd's opinion that (1) the Nomad helmet is defectively designed due to the placement of the double D-rings; (2) the Nomad helmet, because of the defect, was not on Knepfle's head when she landed on the roadway; and (3) Knepfle's lack of a helmet when her head hit the pavement caused her injuries. *See* (Doc. 184 at 1, 17). To arrive at this conclusion, Lloyd reviewed the traffic crash report of the accident, the Emergency Medical Services report of the accident, photographs of Knepfle's injuries, pictures of Knepfle's motorcycle damage, Knepfle's medical records, discovery about the Nomad helmet, and Knepfle's depositions. (Doc. 184-5 at 5).

Lloyd also conducted his own inspections of the Nomad helmet and attended Thom's (the defendants' expert) inspection of the helmet. (*Id.*). In his inspection of the helmet, Lloyd observed superficial impact marks on the rear of the helmet. (*Id.* at 8). Lloyd opines that "[h]ad the helmet been on Ms. Knepfle's head at the time of impact the gouge marks would have been more substantial." (*Id.*). Lloyd noted that the helmet's retention strap is a "standard double-D fastener," which Knepfle used properly. (*Id.* at

9). While attending Thom’s inspection of the helmet, Lloyd observed compression of the EPS liner in the region over the right eye without fracture to the helmet’s outer shell (which is consistent with the undisputed evidence that she first hit the Mazda helmeted). (*Id.*) But Lloyd observed no compression or damage to the EPS liner in the helmet’s rear (indicating that she was unhelmeted when landing on the pavement). (*Id.*)

To support his theory of design defect, Lloyd measured Knepfle’s head circumference and found that the Nomad helmet was the correct size for Knepfle. (*Id.*) Lloyd instructed Knepfle to put on the helmet without adjusting the retainer strap, observing that the double D-rings lay against the left side of her chin “in a near vertical orientation.” (*Id.* at 10). Lloyd observed a similar orientation when the helmet rested on a headform (i.e., dummy). (*Id.*) According to Lloyd, when the retainer strap and double D-rings are perpendicular—as opposed to parallel with the chin—the rings cannot hold the strap as tightly and the strap is more capable of becoming loose. (*Id.*)

Lloyd opined that a properly designed helmet positions the double D-rings under the chin, which requires a proper measurement of the bitragion submandibular arc (the area between the left and right mid-ears, “across the submandibular landmark at the juncture of the jaw and neck”). (*Id.* at 11). Using data from the U.S. Army 1988 anthropometric survey, Lloyd believed that the strap holding the double D-rings on the Nomad helmet was too short—the Nomad helmet’s left strap measured at 102 millimeters, when, according to the Army data, it should have been between 132 and 138 millimeters. (*Id.* at 11–12). This incorrect length of the retainer strap allowed the

Nomad helmet to loosen because its orientation with the straps became perpendicular and caused it to come off Knepfle's head before she landed on the roadway. (*Id.* at 12).⁴

Lloyd performed a test using an apparatus with pendulum arms to determine the effect of an impact at 13 to 35 miles per hour on a headform wearing Department of Transportation (DOT) certified helmets. (*Id.* at 17). He conducted those tests in accord with published test methods. (*Id.*). Lloyd also performed unhelmeted impact tests. (*Id.* at 20). Comparing the data from helmeted and unhelmeted tests, Lloyd found that DOT certified helmets reduced linear acceleration, the Gadd Severity Index and Head Injury Criterion, and linear jerk. (*Id.* at 22). And Lloyd found that the impact duration for DOT helmets was 10.5 milliseconds while unhelmeted heads had an impact duration of 2.2 milliseconds. (*Id.*).

Lloyd performed a demonstration via Zoom for Knepfle's counsel to show how the incorrect orientation of the retainer strap impacted Knepfle's accident. (Doc. 184-8 at 58–62). During the demonstration, Lloyd used an exemplar helmet and showed how the retention strap feeds through the double D-rings when the rings are not perfectly parallel with the retention strap. (*Id.* at 58). Lloyd demonstrated that, when the double D-rings become parallel to the retention strap, the strap tightens when more force is applied. (*Id.* at 59). But when the rings are turned at an angle, then the retention

⁴ Lloyd's report also includes analysis on tests HJC performed on the Nomad helmet model. *See* (Doc. 184-5 at 13–16). But Knepfle's counsel agreed at the *Daubert* hearing that those tests were not relevant to whether Lloyd meets the *Daubert* standard. As a result, the defendants withdrew that portion of their *Daubert* motion.

straps “feeds through very easily with very little [force].” (*Id.*) He demonstrated this by “holding the left side of the helmet on the opposite side of the D rings and holding the retention strap and pulling.” (*Id.*) Lloyd held the helmet upside down during the demonstration. (*Id.* at 60). He “used two fingers to change the orientation of the double D rings, and . . . was able to pull [the long part of] the retention strap [from the right ear] through.” (*Id.*).

Lloyd does not know of any other accident in which the straps in a motorcycle helmet fed back through the double D-rings because of vertical orientation. (*Id.* at 61). He has not investigated whether other motorcycle helmets have a similar D-rings design. (*Id.*) And he admits that he has never testified to such an opinion in any court.

At the hearing, Lloyd, for the most part, reaffirmed the opinions stated in his report. He testified that the double D-rings retention system works like a slip knot, and that when the retention system is used improperly, the integrity of the system is compromised. Lloyd testified that epidemiological studies on motorcycle accidents fail to address the causation of any failures in retention systems. In other words, the reasons why helmets come off during accidents is an issue that has not been studied and therefore no scientific or academic literature supports his opinion. According to Lloyd, that lack of a study explains why he has no article to cite to support his theory. Lloyd also never identified any study that supports his theory of how a slip knot design could be compromised by the orientation of the straps.

Lloyd performed the same demonstration with an exemplary helmet for the

Court as he did for counsel via Zoom. He flipped the helmet upside down and pulled on straps when they were parallel to the double D-rings, showing that he could not pull them apart. In contrast, he pulled on the double D-rings at an angle causing them to become perpendicular to the straps, showing that the retention system more easily separates. According to Lloyd, the strap with the rings (the retainer strap) on the Nomad helmet model is too short, thereby allowing a nearly perpendicular angle as the straps bend upward from the wearer's chin to connect with the rings. This design defect by HJC stems from its failure to consider anthropometric data about the size of women's bitragion submandibular arcs. For that exact reason, Lloyd testified that the Nomad helmet came off Knepfle's head during the accident.

Lloyd testified about tests that the DOT and the Snell Foundation perform on motorcycle helmets. According to him, those tests fail to evaluate retention systems in "real-world conditions." To illustrate his point, Lloyd played a video that he had created displaying how much a motorcycle helmet moves on a headform when tested in real-world conditions. In that video, the headform wore a motorcycle helmet with a retention system parallel to the chin. When the Court asked whether he performed the same test as in the video on a headform wearing a helmet with a perpendicular retention system, Lloyd admitted he had done no such test. When the Court asked Lloyd whether he has performed tests to analyze his hypothesis about perpendicular retention straps coming off during accidents, he also admitted he had not. According to Lloyd, that kind of testing would require more in-depth investigation and funding. When the Court

asked Lloyd whether other scientists, studies, or peer-reviewed articles had the same criticisms of the DOT and Snell Foundation tests (i.e., that the tests are not performed in real-world conditions), Lloyd said that his criticism is so common-sensical that it is not published.

Lloyd testified that, with respect to various helmet sizes, only half-shell helmets (shorties) have short straps: all other helmets have straps that rest parallel with the chin. He hypothesized that that is why helmets tend to come off more frequently in accidents involving shorties, but no study supports that claim. Instead, Lloyd reiterated that studies do not say why helmets come off during accidents.

Lloyd also testified about the visible inspection he performed on the Nomad helmet. He reiterated that he saw no compression of the EPS liner in the back of Knepfle's helmet. Lloyd testified that that lack of visual compression meant that Knepfle was not wearing the helmet when her head hit the roadway because he estimated she was traveling at thirteen miles per hour. Based on his experience, Lloyd would have expected to see compression in the rear of Knepfle's helmet with that speed. In other words, any damage to the rear of the helmet would be visible to the naked eye. But, in an answering one of the Court's questions, Lloyd testified that it is possible for there to be damage to the EPS liner that cannot be seen visually (i.e., to the naked eye). He later equivocated on this point.

Lastly, Lloyd testified about Knepfle's injuries from the accident. According to him, if the helmet had been on Knepfle's head when she struck the roadway, she would

not have sustained an injury to the back of her head requiring bandaging. As the factual basis for this opinion, Lloyd relied on the EMS report that documented she was treated with some bandage to the back of her head after the accident.

On cross-examination, Lloyd stood on his expertise and anthropometric data to support his opinions. He confessed that he reviewed only one deposition in preparing his opinion: Knepfle's. And Lloyd admitted that he never measured Knepfle's bitragion submandibular arc. Nor did he ask Knepfle to tighten the retention strap when she wore the Nomad helmet. As a result, Lloyd does not know where the double D-rings would rest if the helmet were properly secured. Worse yet, Lloyd agreed that some degree of angle of the retention straps is likely acceptable and safe. What precisely, he did not know. With respect to his opinion on why he believes shorties tend to come off more frequently than other helmets (i.e., perpendicular-resting retention systems), Lloyd testified that he has no study or data to support that opinion.

Knepfle fails to meet her burden of establishing the reliability of Lloyd's methodology. With respect to his opinion based on anthropometric data, Lloyd cited no peer-reviewed studies or publications analyzing his theory about helmet sizes and the bitragion submandibular arc or how those measurements impact where double D-rings should clasp. Lloyd testified no one has tested or published an article discussing his theory about shorties coming off during motorcycle accidents more frequently than other sized helmets. In fact, Lloyd himself has not even tested that theory or published about it. Because of the lack of testing to his theory on shorties, the rate of error for

any testing technique is unknown. And Knepfle put forth no evidence, either through Lloyd's testimony or supplemental documentation, showing that Lloyd's technique is generally accepted in the scientific community. Although Lloyd and Knepfle point to the U.S. Army data underlying Lloyd's conclusion about bitragion submandibular arcs, neither Lloyd nor Knepfle show that others in the scientific community use that same data to arrive at the same or similar conclusion. And that is hardly surprising given that the U.S. Army data was not collected to study motorcycle helmets. *See* (Doc. 184-5 at 12).

With respect to his opinion that the Nomad helmet came off Knepfle's head before she landed on the roadway, Lloyd's methodology lacks reliability. Lloyd performed a visual inspection of the rear of Knepfle's helmet and concluded that there was no EPS liner compression to that area. But Knepfle put forth no evidence showing that visual inspections are generally accepted means of testing EPS liner compression. Instead, Lloyd testified that the industry standard for measuring EPS liner compression is 3D scanning or using calipers. What is more, Lloyd testified that it is possible for there to be compression to the EPS liner that cannot be seen to the naked eye.⁵ Further, Lloyd never measured Knepfle's bitragion submandibular arc, nor did he ask her to tighten the Nomad helmet when it was placed on her head so he could see where the straps rested. And Knepfle put forth no evidence showing that Lloyd's demonstrations

⁵ Lloyd later changed this testimony and said that any EPS liner compression would be seen visually.

to counsel and the Court are generally accepted ways of testing his theories about short helmets. Put simply, Lloyd's methodology is not reliable under the *Daubert* standard.

When asked what other factors—besides the four from *Daubert*—support finding Lloyd's methodology reliable, *see Kumho*, 526 U.S. at 150, Knepfle identified none. Instead, she argued that the U.S. Army data Lloyd used for his theory about bitracion submandibular arcs shows general acceptance in the scientific community. And counsel argued that the physical evidence after the accident, particularly the blood on the back of Knepfle's head, supported Lloyd's methodology. But those arguments miss the point. Simply using scientifically gathered data to form an opinion does not mean that the methodology is reliable: the issue is whether others in the relevant scientific community use that data to form the same kind of opinion. *See Frazier*, 387 F.3d at 1262. As Lloyd admitted, they do not. And Lloyd himself performed no testing and provided no data to support his opinion that blood on Knepfle's head necessarily means that the Nomad helmet came off.

Knepfle fails to show that Lloyd's theory about the design defect in the Nomad helmet has been tested; that his theory has been subjected to peer review and publication; that there is a known rate of error for Lloyd's technique; and that Lloyd's technique is generally accepted in the scientific community. Knepfle also fails to show that visual inspections are a reliable way to measure EPS liner compression. And Knepfle fails to identify any other factor that would otherwise render Lloyd's methodologies reliable. At bottom, Knepfle argues that this case amounts to differences

in expert opinions. Although true, one opinion derives solely from unreliable methodologies and therefore the Court will not permit the jury to consider it. The defendants' motion to exclude Lloyd's opinion is granted.

Knepfle's Motion to Exclude Thom's Opinion

The defendants' proffered David Thom as an expert who would testify that the Nomad helmet was on Knepfle's head when she landed on the roadway after colliding with the Mazda. Thom would support this opinion by pointing to 3D scans he performed on Knepfle's Nomad helmet and on an exemplar helmet (the same model as Knepfle's helmet that he bought online). According to him, the scans revealed damage to the front of Knepfle's helmet, and his scans revealed compression in the EPS liner in the back of Knepfle's helmet. Thom would testify that the damage to the front of Knepfle's helmet and the compression in the back of her helmet (both of which were not present in the exemplar helmet's scans) show that Knepfle had her helmet on when she landed on the roadway. Specifically, Thom would testify that the damage to the front of the Nomad helmet is consistent with Knepfle's impact against the Mazda and the compression in the back of the helmet is consistent with the back of Knepfle's head landing on the roadway after colliding with the Mazda. So Thom would opine that Knepfle's Nomad helmet was on her head throughout the accident.

Knepfle argues that David Thom's opinion (the defendants' expert) fails to meet the *Daubert* standard. According to her, Thom is not qualified to testify about whether the Nomad helmet stayed on her head after the initial impact with the Mazda. *See* (Doc.

196). Knepfle also argues that Thom is not qualified to testify about the cause of her brain injuries after the accident. (*Id.* at 4). Knepfle argues that Thom’s methodology for arriving at his conclusion (i.e., his testing) is unreliable. *See (Id.* at 5–11). And Knepfle tries to keep out various other opinions. *See (Id.)*.

The defendants argue that Thom is qualified to opine on how Knepfle used the Nomad helmet during the accident, and they clarify that Thom will not provide any medical diagnosis or medical opinion. *See (Doc. 191 at 4–10)*. Instead, Thom “will identify the helmet damage from the impact, explain how that damage occurred, how the damage indicates the orientation of [Knepfle’s] head, and how those factors line up to establish a causal relationship with the frontal location of the brain injury (on which all of the experts agree).” (*Id.* at 9). The defendants argue that this opinion “falls squarely within Mr. Thom’s field of expertise.” (*Id.*). And the defendants contend that Thom’s methodology for arriving at his opinion is reliable. (*Id.* at 10–17).

Knepfle raises various evidentiary objections in her motion. *See (Doc. 196)*. But many are not relevant to a *Daubert* analysis. As a result, Knepfle’s counsel at the hearing narrowed the issues relating to Thom’s opinion. For purposes of a *Daubert* analysis, Knepfle challenges Thom’s methodology of using a 3D scanner to test for EPS liner compression; Thom’s methodology of going on a test ride to evaluate the retention system of exemplar helmets; and Thom’s ultimate opinion on the medical cause of Knepfle’s head injuries.

In their response and at the hearing, the defendants conceded that Thom will

not provide a medical opinion. (Doc. 191 at 9). The Court will accept this concession because, as discussed in more detail below, opinions about the cause of Knepfle’s injuries fall outside of Thom’s area of expertise. *See Cordoves v. Miami–Dade Cnty.*, 104 F. Supp. 3d 1350, 1358 (S.D. Fla. 2015) (Altonaga, J.) (“[T]he expert may testify only about matters within the scope of his or her expertise.”) (citing *City of Tuscaloosa*, 158 F.3d at 562). Although his resume shows he has some experience with head-injury analysis, that experience is much less than his experience with analyzing and testing headgear. *See* (Doc. 191-5 at 20–25). And he lacks formal medical education of any kind. (*Id.*). As a result, the Court will exclude Thom’s opinions about the medical cause of Knepfle’s head injuries.

To support her argument for exclusion on the remaining grounds, Knepfle points to what she views as a number of shortcomings in his methodology: Thom relied on a “test ride” conducted by him and his coworker to determine whether Knepfle properly wore her helmet; and Thom used 3D scanning to measure EPS liner compression in Knepfle’s Nomad helmet.

To begin, Thom is clearly qualified to testify as an expert witness. Knepfle stipulated to that fact at the *Daubert* hearing. Thom has a bachelor’s degree and master’s degree in “Safety Science”; he has attended multiple training sessions on motorcycle safety and motorcycle accident reconstruction; he serves as a senior consultant at Collision and Injury Dynamics, Inc., where he provides helmet design and accident performance consultation; he has taught on motorcycle helmet safety; he is a member

of multiple professional organizations, including the American Society for Testing and Materials, where he won the “Development of Off-Road Motorcycle and ATV Helmet Standard Award” in 2014; and has been published multiple times on the topic of motorcycle accident reconstruction, motorcycle safety, and motorcycle helmets. (Doc. 191-5 at 20–25). Thom’s education and experience show that he is qualified to testify as an expert on these matters under *Daubert*. See *Green v. Goodyear Dunlop Tires, N. Am., Ltd.*, No. 08-472-GPM, 2010 WL 747505, at *4–5 (S.D. Ill. Mar. 2, 2010) (Murphy, J.) (finding Thom qualified to testify about the adequacy of a motorcycle helmet the plaintiff wore during an accident).

Further, Thom’s testimony about the Nomad helmet will unquestionably help the jury decide facts at issue—a point Knepfle does not dispute in her motion. See (Doc. 196). Like Lloyd, the real issue is whether Thom’s methodology is reliable.

To determine whether Knepfle’s helmet was on her head when she landed on the roadway, Thom performed 3D scans of Knepfle’s helmet and an exemplar helmet for comparison. (Doc. 196-1 at 4–5). Thom found two crush areas (areas where the helmet liner is thinner because of an impact) in Knepfle’s helmet that were not in the exemplar. (*Id.* at 5). The first impact area was at the “right front edge underlying the scuff mark on the exterior.” (*Id.*). The second impact area “corresponds to the abrasion at the rear of the helmet.” (*Id.*). Thom measured the maximum crush in both impact areas to be approximately five millimeters, and he found that the crush areas “go all the way to the edge of the EPS liner at front and rear respectively.” (*Id.*). Thom also

inspected the retention system in Knepfle’s helmet and found “no damage to any of the retention components, but the strap showed two distinct set points where it had been routinely fastened during use.” (*Id.*). Based on these observations, Thom concluded that “[w]e know that the helmet was on Ms. Knepfle’s head [when she landed on the roadway] because the EPS liner was compressed at the rear.” (*Id.* at 9).

At the hearing, Thom testified that using 3D scanning to measure compression in EPS liners is the preferred methodology in the scientific community. Thom also testified that he performed various scans on the helmet—not just one. On cross-examination, Thom testified that, at the time of his deposition and preparing his report, he did know the error rate of his 3D scanning program.

Thom’s methodology for arriving at his opinion that Knepfle’s helmet was secured on her head when she landed on the roadway is reliable. Comparing a subject helmet with an exemplar via 3D scanning is an acceptable methodology according to peer-reviewed papers and studies. *See* (Doc. 191-5 at 8–9). In fact, Thom has used 3D scanning multiple times over the last ten years to conduct testing of this kind using a standard software program (ScanStudio). (*Id.* at 10). Better yet, Lloyd even testified that 3D scanning is the industry standard for measuring compression in EPS liners.

During the hearing, Knepfle argued that the margin of error in Thom’s 3D scanning is substantial; therefore, Thom’s method for testing compression is unreliable. Knepfle also contended that Thom’s multiple scans of the helmets show that he was not confident in the error rate of his scanning program. And she argued that Thom’s

lack of knowledge about the origin of the exemplar helmet (which he bought on eBay) casts doubt on the result of the 3D scanning because the exemplar could have been previously damaged.

Knepfle's arguments are unpersuasive. Even assuming as true that the error rate of Thom's 3D scanning is substantial, the error rate of a scientific technique is only one factor to consider with respect to a methodology's reliability. *See Frazier*, 387 F.3d at 1262. The Court places more value on the general acceptance in the scientific community of 3D scanning to measure EPS liner compression. In his affidavit supporting his report, Thom cites multiple publications discussing 3D scanning of helmets. (Doc. 191-5 at 8–9). Moreover, both Thom and Lloyd testified at the hearing that 3D scanning is the industry standard for measuring compression in EPS liners. As a result, Knepfle's arguments fail. Thom's 3D testing for a comparison between the Nomad helmet and the exemplar helmet is a reliable methodology.⁶

Knepfle's objections to Thom's opinion generally go to the weight the jury should give his opinion—not admissibility. Any alleged shortcomings in his methodology could be attacked through cross-examination. *See Daubert*, 509 U.S. at 596

⁶ At the hearing, Knepfle put forth a new argument attacking the reliability of the 3D scanning: that using only one exemplar helmet is too small a sample size to produce statistically significant results. But Knepfle conceded that she never made that argument in her motion and abandoned further questioning on that point. *See Higgins v. New Balance Athletic Shoe, Inc.*, 194 F.3d 252, 260 (1st Cir. 1999) (“The district court is free to disregard arguments that are not adequately developed”); *Resolution Tr. Corp. v. Dunmar Corp.*, 43 F.3d 587, 599 (11th Cir. 1995) (“[T]he onus is upon the parties to formulate arguments”).

(“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.”). For example, the error rate in Thom’s testing or his lack of knowledge on the origins of the exemplar could be brought out through cross-examination.⁷

In the end, Thom’s methodology for arriving at his opinion that the Nomad helmet was on Kneple’s head when she landed on the roadway is reliable. Kneple’s motion to exclude Thom’s expert testimony is denied.

Conclusion

John Llyod is qualified to testify about an alleged designed defect in the Nomad helmet, and his testimony would help the jury decide a fact at issue. But his methodology for arriving to his conclusion is unreliable. Therefore, the defendants’ motion to exclude Lloyd’s expert testimony (Doc. 184) is **GRANTED**.

David Thom is qualified to testify on whether it is likely that Kneple’s helmet stayed on throughout her accident. His methodology for arriving at his opinion is reliable. And his testimony would help the jury decide a fact at issue. Therefore, Kneple’s motion to exclude David Thom’s expert testimony (Doc. 196) is **DENIED**.

⁷ Thom discussed in his report and testified about a test ride where he and a surrogate wore exemplar helmets that were the same model as the Nomad helmet and drove around on motorcycles for an extended period of time. At the hearing, the defendants conceded that the test ride performed to test the durability of the Nomad helmet model’s retention system is not part of a *Daubert* analysis. Further, they agreed that there is no need for Thom’s testimony about the test ride and that they will not seek to introduce it.

Lastly, Knepfle's motion for oral argument as to the motion to preclude Thom (Doc. 197) is **DENIED as moot**, given that the Court already held oral argument.

ORDERED in Tampa, Florida, on May 7, 2021.



Kathryn Kimball Mizelle
United States District Judge