

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
BILLINGS DIVISION

EDWARD DUCHENEAUX and MAE
KELLER, as Co-Personal
Representatives of the ESTATE OF
PAUL DUCHENEAUX, DECEASED,

Plaintiffs,

vs.

LOWER YELLOWSTONE RURAL
ELECTRIC ASSOCIATION, INC., a
Montana Corporation d/b/a Lower
Yellowstone Rural Electric
Cooperative, et al.,

Defendants.

CV 19-6-BLG-TJC

ORDER

Plaintiffs Edward Ducheneaux and Mae Keller, as the co-personal representatives of the Estate of Paul Ducheneaux (“Plaintiffs”), bring this action against Lower Yellowstone Rural Electric Association, Inc., d/b/a Lower Yellowstone Rural Electric Cooperative (“LYREC”) and Elliot Equipment Company (“Elliot”). Plaintiffs assert claims for wrongful death and survival based on negligence and strict liability, after Paul Ducheneaux was killed when the bucket lift truck in which he was working tipped over. (Doc. 24.)

Presently before the Court is Plaintiffs’ Motion to Partially Exclude Testimony and Opinions of Elliott’s Expert, Stuart B. Brown, Ph.D. (Doc. 95.)

The motion is fully briefed and ripe for the Court’s review.¹ (Docs. 101, 104.)

I. LEGAL STANDARD

Federal Rule of Evidence 702 controls the admissibility of expert opinion 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.

“For expert testimony to be admissible under Rule 702, it must satisfy three basic requirements: (1) the expert witness must be qualified; (2) the testimony

¹ At the motion hearing on November 30, 2020, the Court took the instant motion under advisement after hearing oral argument from the parties. (Doc. 171 at 72-80.) At that time, the Court indicated it may set a *Daubert* hearing on the motion. Upon further review of the parties submissions and Dr. Brown’s expert report, however, the Court concludes the record is sufficient to rule on the motion without the need for an additional hearing. District Courts are not required to hold a *Daubert* hearing if it has an adequate record before it to make its ruling. *United States v. Alatorre*, 222 F.3d 1098, 1100 (9th Cir. 2000).

must be reliable, and; (3) the testimony must be relevant.” *Johnson v. Am. Honda Motor Co. Inc.*, 923 F.Supp.3d 1269, 1272 (D. Mont. 2013). The trial court acts as a gatekeeper by excluding evidence that does not meet standards of relevance and reliability. *Id.* The proponent of the testimony bears the burden of establishing by a preponderance of the evidence that the testimony is admissible under Rule 702. *Lust v. Merrell Dow Pharm. Inc.*, 89 F.3d 594, 598 (9th Cir. 1996).

Expert opinion testimony “is reliable if the knowledge underlying it has a reliable basis in the knowledge and experience of the relevant discipline.” *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir. 2010). Assessing reliability requires the Court to consider whether the testimony reflects “scientific knowledge,” whether the expert’s findings were “derived by the scientific method,” and whether the expert’s work product was “good science.” *Johnson*, 923 F.Supp.3d at 1272. The focus of the 702 inquiry “must be on the principles and methodology underlying an expert’s testimony, not the conclusions.” *Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1228 (9th Cir. 1998).

II. DISCUSSION

Elliott retained Stuart B. Brown, Ph.D. to testify as a mechanical engineering expert in this case. (Docs. 94-1; 101-1 at ¶ 1.) Dr. Brown issued two reports, setting forth several opinions, including an opinion about the head injury

Ducheneaux suffered in the accident. (Docs. 94-1; 94-2.) The only portion of the opinion that Plaintiffs contest here is Dr. Brown's "hard hat" opinion.

Dr. Brown's expert report indicates he "performed three engineering analyses of the truck with the boom and outriggers in the measured configuration immediately before the accident." (Doc. 94-1 at 22.) Those analysis included a "Rotational Velocity Analysis." (*Id.* at 30-32.) Under the "Rotational Velocity Analysis" section of his report, Dr. Brown explained in pertinent part:

The kinetic energy of an average male head with a weight of 10 pounds at 22.4 ft/sec is approximately 106 J, and at 28.9 ft/sec is 177 J. Analysis of hard hat impact energies and injury correlation indicates that a hard hat would provide significant reduction in head injury at these energies. Deposition testimony of Terrance King indicates that Mr. Ducheneaux was not wearing a hard hat at the time of his accident.

(*Id.* at 32.)

Dr. Brown then opined:

- Operating the truck on the elevated dirt pad increased the velocity of the end of the boom where Mr. Ducheneaux was located from 22.4 feet per second to 28.9 feet per second. The kinetic energy of the platform increased by a factor of 67 percent.
- At these velocities and kinetic energies, the possibility of significant head injury would have been significantly reduced had Mr. Ducheneaux been wearing a hard hat.

(*Id.* at 33.)

In reaching his opinion that a hard hat would have significantly reduced Ducheneaux's injuries, Dr. Brown avers that he relied on an article published in

2014 entitled “The effect of hardhats on head and neck response to vertical impacts from large construction objects,” Sunderman, B., et al., *Accident Analysis and Prevention*, 2014, pp. 116-124. (Doc. 101-1 at ¶ 6.) The Sunderman article discussed a study that measured the dropping of objects from various heights onto the head of a test dummy with and without a hard hat. (Doc. 96-3.)

Plaintiffs argue Dr. Brown’s “hard hat” opinion should be excluded because Dr. Brown is not qualified to offer a medical opinion concerning causation of injuries, his opinion lacks adequate factual support and is, therefore, not reliable, and his opinion is irrelevant. Elliott counters that force and energy calculations are well within Dr. Brown’s competence and do not constitute improper medical or causation opinions. Elliott further contends Plaintiffs’ challenges to Dr. Brown’s testimony go to its weight, rather than its admissibility.

The Court agrees with Plaintiffs that Dr. Brown lacks the qualifications to render an opinion that Ducheneaux’s head injury “would have been significantly reduced had Mr. Ducheneaux been wearing a hard hat,” and his opinion in that regard is not sufficiently reliable. “Even though an expert may be qualified in one area of expertise, he still may be precluded from offering opinions beyond that area of expertise, or that are not founded on a reliable methodology.” *U.S. v. W.R. Grace*, 455 F.Supp.2d 1181, 1188 (D. Mont. 2006).

It is undisputed that Dr. Brown, as a mechanical engineer, is qualified to opine on force and energy calculations. But Dr. Brown's opinion that a hard hat would have lessened Ducheneaux's head injuries is a medical causation opinion. It appears Dr. Brown has no experience in medicine or biomechanical engineering, and Elliot has offered nothing to show that Dr. Brown is qualified to provide medical causation testimony.

But even assuming Dr. Brown is qualified to offer his "hard hat" opinion, the Court finds his opinion lacks reliability. In *Daubert*, the Supreme Court listed the following nonexclusive factors that a court may also consider in assessing reliability: "(1) whether a theory or technique can be tested; (2) whether it has been subjected to peer review and publication; (3) the known or potential error rate of the theory or technique; and (4) whether the theory or technique enjoys general acceptance with the relevant scientific community." *W.R. Grace*, 455 F.Supp.2d at 1187 citing *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593-94 (1993). These factors are not determinative, and "may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony." *Kumho Tire Co., LTD. V. Carmichael*, 526 U.S. 137, 150 (1999). Nevertheless, with respect to Dr. Brown's hard hat opinion, the answer to each area of inquiry is negative. Dr. Brown's theory that a hard hat would have decreased the severity of Ducheneaux's head injury from his fall has

not been tested; it has not been subject to peer review and publication; the potential error rate is not known; and nothing has been presented to indicate the theory enjoys general acceptance with the scientific community.

Elliot argues, however, that the Sunderman article Dr. Brown relied upon has been peer-reviewed, and “Dr. Brown is not required to ‘re-invent the wheel’ for a topic that has already been studied (sic) and subjected to the rigors of the scientific community.” (Doc. 101 at 11.) But Dr. Brown’s theory in this case is not the same as that studied in the Sunderman article. The Sunderman article reported a controlled study that reviewed the effects of a concrete block dropped on the vertex of a hard hat from different heights. It did not attempt to measure the effectiveness of a hard hat in protecting someone from a fall, where any number of variables may affect the outcome.

But perhaps more importantly here, the 2000 Amendments to Rule 702 added the requirement that expert testimony must be based on “sufficient facts or data.” Fed.R.Evid. 702(b). According to the Advisory Committee Notes, Rule 702 therefore “requires an analysis of the sufficiency of underlying facts or data that is quantitative rather than qualitative.” *W.R. Grace*, 455 F.Supp.2d at 1187.

Elliott argues that Dr. Brown considered sufficient facts and data in arriving at his conclusions regarding the kinetic energy involved in the fall. Elliot also argues that the energy of an impact is the same regardless of whether a person’s

head moves to hit an object, or an object moves to hit their head. But even assuming the forces on a human head are the same whether an object falls onto the person, or the person falls to the ground, Dr. Brown fails to address any of the factual dynamics of the injury here. For example, Dr. Brown's opinion fails to address *how* his energy calculations translate to the injuries suffered by Ducheneaux, and how a hard hat would have reduced Ducheneaux's injuries in these circumstances. It is relatively obvious that a hard hat may protect an individual from an object falling directly on the crown of the head, but it is certainly not clear how it may do so in a fall.

Plaintiffs list several factors that Dr. Brown does not consider in forming his opinion, which may be relevant to the question of whether a hard hat would have lessened the severity of Ducheneaux's head injury, including: what was Ducheneaux's position and orientation in the bucket when it hit the ground; how did Ducheneaux's head react to the impact; what structures or objects did his head strike; would his hard hat have stayed on his head during the fall and through impact before his head struck an object. But it appears the critical factor Dr. Brown did not consider is the type and location of Ducheneaux's injuries and whether a hard hat would have protected the parts of his head that were injured. A postmortem CT of Ducheneaux's brain demonstrated "displaced bilateral skullbase fractures with disruption of the carotid canals bilaterally." (Doc. 104-1 at 1.) Dr.

Brown did not consider the type and location of this injury, whether a hard hat would have provided any protection to this area of the skull, or whether it would have been effective in reducing this type of injury to the head at this location. Rather, he simply makes the unsupported assertion that a hard hat would have significantly reduced the injury. The Court finds the analytical gap between the limited data considered and the proffered opinion is “simply too great.” *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146, (1997) (holding the court may exclude expert testimony if there is “simply too great an analytical gap between the data and the opinion proffered.”).

Accordingly, the Court finds Dr. Brown’s opinion that “the possibility of significant head injury would have been significantly reduced had Mr. Ducheneaux been wearing a hard hat,” is inadmissible.

III. CONCLUSION

Based on the foregoing, **IT IS HEREBY ORDERED** that Plaintiffs’ Motion to Partially Exclude Testimony and Opinions of Elliott’s Expert Stuart B. Brown, Ph.D. (Doc. 95) is **GRANTED**.

DATED this 31st day of March, 2021.



TIMOTHY J. CAVAN
United States Magistrate Judge