IN THE COURT OF APPEALS OF THE
STATE OF OREGON

Susann M. THOENS,
Plaintiff-Appellant,
v.
SAFECO INSURANCE COMPANY OF OREGON,
Defendant-Respondent.

Multnomah County Circuit Court
091116530; A150983

Marilyn E. Litzenberger, Judge.

Argued and submitted February 12, 2015.

Shenoa L. Payne argued the cause for appellant. On the briefs were Meagan A. Flynn and Preston Bunnell & Flynn, LLP.

Thomas M. Christ argued the cause and filed the brief for respondent. With him on the brief were Julie A. Smith and Cosgrave Vergeer Kester LLP.

Before Nakamoto, Presiding Judge, and Egan, Judge, and Wilson, Senior Judge.

WILSON, S. J.

Judgment on claim for UIM benefits reversed and remanded, otherwise affirmed.

WILSON, S. J.

Plaintiff appeals a judgment in an action for personal injury protection (PIP) and underinsured motorist (UIM) benefits arising from a motor vehicle collision in which plaintiff's car was rear-ended. After the collision, plaintiff complained of injuries and received medical care. Defendant, plaintiff's insurer, paid PIP benefits for some of plaintiff's medical care after the collision, but it cut off those benefits after an independent medical examiner concluded that additional treatment that plaintiff received was not reasonable or necessary for injuries sustained in the collision. Plaintiff settled with the driver who rear-ended her for that driver's liability insurance policy limits and sought additional payments from defendant under her own UIM coverage, which had higher limits. When defendant refused to pay anything under plaintiff's UIM coverage, she brought this action alleging breach of contract with separate claims for failure to pay PIP benefits and failure to pay UIM benefits. The jury found for plaintiff on the PIP claim and for defendant on the UIM claim. Plaintiff appeals the general judgment, seeking reversal of the judgment and a remand for a new trial on her UIM claim.[1]

On appeal, plaintiff makes four assignments of error. In her first two assignments, she argues that the trial court erred in excluding evidence both of the liability policy limits of the driver who rear-ended her and her own UIM policy coverage limits. In her third assignment of error, plaintiff argues that the trial court erred in allowing one of defendant's expert witnesses to give testimony that she contends amounted to a comment on her credibility. Plaintiff's fourth assignment of error challenges the trial court's decision to admit the testimony of a biomechanical engineer that the forces in the collision were insufficient to cause plaintiff's alleged injuries. As explained below, we conclude that, given the way the issues were framed in the trial, the trial court erred in excluding evidence that would have allowed the jury to determine that the driver who rear-ended plaintiff was "underinsured." Accordingly, we reverse and remand for a new trial on plaintiff's UIM claim. We

[1] The PIP claim is not at issue in this appeal.

address plaintiff's other assignments of error because those issues may arise on retrial.

I. FACTS

We begin by stating the general facts regarding the collision and the subsequent dispute regarding plaintiff's insurance benefits. We later supplement those facts as necessary in our discussion of plaintiff's assignments of error.

Plaintiff and her husband purchased a motor vehicle insurance policy from defendant Safeco. The policy provided UIM coverage in the amount of $500,000. On November 28, 2007, plaintiff was stopped behind a school bus when another driver (Naylin) rear-ended her car. Following the collision, plaintiff received medical care for headaches, neck pain, pain down her right arm, blurred vision, and balance problems. Her initial treatment was provided by her husband, a chiropractor in whose office she worked. Plaintiff ultimately saw several other doctors and had surgery on four levels of her cervical spine. In addition to the spinal injury, at least some of her treating doctors attributed plaintiff's vision and balance problems to a brain injury and inner ear concussion sustained in the collision. Plaintiff's medical bills following the collision exceeded $200,000.

The liability insurer for Naylin paid plaintiff its policy limits of $50,000 in settlement of her claims against him. As previously noted, plaintiff sought additional payment under her UIM coverage from defendant Safeco, which denied payment. Defendant admitted that Naylin had been negligent and that his negligence caused the collision. It denied, however, that plaintiff had been injured in the collision as she alleged. Plaintiff thereafter filed this action to recover those and other benefits under her policy. As noted above, the jury returned a verdict for plaintiff on her PIP claim and for defendant on her UIM claim. Plaintiff now appeals.

II. DISCUSSION

A. *Rulings at trial on insurance coverage*

In her first two assignments of error, plaintiff argues that the trial court erred in excluding evidence of Naylin's

liability policy limits and evidence of her own UIM policy coverage limits. For the reasons stated below, we agree.

At trial, defendant moved *in limine* to exclude any evidence of the amount of plaintiff's UIM coverage limits on multiple grounds.[2] First, defendant asserted that such evidence was irrelevant because the jury needed to determine only what damages plaintiff incurred as a result of the collision, leaving to the court the calculation of the net judgment as a matter of law. Second, defendant argued that disclosure to the jury of the amount of plaintiff's UIM coverage would be unfairly prejudicial because it would emphasize the presence of insurance in the case (beyond Safeco's presence as a party) and the amount of the coverage would produce an "anchoring" effect that would tend to drive the jury's verdict higher than it would be without that evidence.[3]

Defendant also moved *in limine* to exclude any evidence of Naylin's liability policy limits or the fact that those limits had been paid to plaintiff. Again, defendant argued both that the evidence was irrelevant and that any relevance was substantially outweighed by unfair prejudice, confusion of the issues, the potential to mislead the jury, and undue delay. According to defendant, there are many reasons Naylin's insurer may have paid its liability limits to plaintiff apart from a determination by it that she had sustained serious injuries in the collision. If evidence of the settlement was admitted, defendant contended that it

[2] On appeal, defendant notes in its brief that its motion *in limine* was made part of the trial court file, but that it was including a copy of the motion in its supplemental excerpt of record. The parties agree that defendant's motion was before the court.

[3] Defendant had sought to have the entire matter tried as though the defendant in the action was Naylin, without the mention of an insurance policy at all. Plaintiff objected to that approach. Among other things, she argued that, had Naylin been the defendant, she would have pleaded more than her UIM coverage as damages. The trial court and the parties also acknowledged that Safeco did not stand in Naylin's shoes as to the PIP claim because of the "no fault" nature of PIP benefits and the presumption that medical expenses incurred in the first year after an accident were reasonable and necessary. *Ivanov v. Farmers Ins. Co.*, 344 Or 421, 185 P3d 417 (2008); ORS 742.524(1)(a). As a result, defendant's approach was rejected. We do not decide whether it would have been proper to follow defendant's suggestion to try the case as though it was an ordinary motor vehicle accident negligence case, at least as to the UIM claim. Nor do we decide whether it would be proper to follow defendant's suggested approach when only the UIM claim is tried on remand.

would have to call witnesses to explore the other insurance company's decision-making process.

The trial court granted both of defendant's motions and excluded any evidence concerning the amount of plaintiff's UIM coverage, the amount of Naylin's liability coverage, and plaintiff's settlement with Naylin's insurer.

The trial court described the nature of the trial to the jury venire before prospective jurors were questioned. With regard to the UIM claim, the court said:

> "The plaintiff's second claim for breach of contract alleges that Safeco promised to pay her the uninsured motorist benefits because the driver of the vehicle that collided with her didn't have adequate insurance himself to fully compensate plaintiff for her alleged damages.
>
> "[S]he alleges that as a result of Safeco's breach of that policy agreement, she's been damaged in the full amount of the underinsured motorist benefits that are available to her under her automobile liability policy with Safeco."[4]

The trial court gave a similar description of the UIM claim in its preliminary instructions to the jury before opening statements:

> "Plaintiff's second breach of contract claim alleges that Safeco promised to pay her underinsured, UIM benefits, because the driver of the vehicle that collided with [plaintiff] *** did not possess adequate automobile liability insurance coverage to fully compensate plaintiff for her damages.
>
> "As a result of Safeco's alleged breach, plaintiff alleges she has been damaged in the full amount of the uninsured motorist benefits available under her insurance policy with Safeco.
>
> "*****
>
> "In order to resolve the plaintiff's breach of contract claims, the jury must determine the amount of the plaintiff's health and medical expenses that were reasonably and necessarily incurred during the first 12 months following the accident; whether Safeco conducted a reasonable

[4] The court's reference to "uninsured" motorist benefits was not a mistake, even though Naylin was alleged to be underinsured, not uninsured.

> investigation before denying plaintiff's claim for PIP benefits; and, three, the total amount of damages that the plaintiff suffered as a result of Cody Naylin's negligence in causing the motor vehicle accident.
>
> "The jury's answer to these three questions will determine if the plaintiff is entitled to prevail on one or both of her breach of contract claims against Safeco."

Among the exhibits received in evidence was a letter from Safeco to plaintiff's attorney. The letter stated, in part, that Safeco could not determine whether plaintiff was entitled to UIM benefits because it did not know the amount of Naylin's policy limits. It also said, "If [Naylin's] policy limit does match or exceed [plaintiff's] UIM limit of [redacted] single limit per occurrence, [plaintiff] would not be entitled to recover any UIM benefits."[5]

At the end of the trial, the trial court proposed to instruct the jury that defendant stipulated both that Naylin was negligent in causing the collision and that he was underinsured. Defendant objected to the second half of that proposition and the court did not give its proposed instruction. It appears that defense counsel was using a comparison of Naylin's liability coverage and plaintiff's *damages* to determine whether Naylin was "underinsured." Thus, defendant took the position that Naylin was not underinsured if his liability coverage was sufficient to compensate plaintiff for any injuries she sustained in the collision. That analytic framework, although common, was incorrect.

As the Oregon Supreme Court explained in *Mid-Century Ins. Co. v. Perkins*, 344 Or 196, 179 P3d 633, *modified on recons*, 345 Or 373, 195 P3d 59 (2008), under ORS 742.502, whether a negligent driver is underinsured is determined by comparing that driver's liability coverage and the plaintiff's *UIM coverage*, not her damages.[6] Plaintiff was not entitled to any benefits under her UIM coverage unless the damages she sustained as a result of the collision exceeded

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[5] Defense counsel objected to the references in the letter to UIM limits, even though the specific dollar amount of the UIM coverage was redacted. Defendant does not cross-assign error to the admission of the letter into evidence.

[6] The letter from Safeco to plaintiff's lawyer uses the correct coverage-to-coverage comparison formulation for determining whether Naylin was underinsured.

Naylin's liability limits. Naylin was nevertheless "underinsured" in this case regardless of the extent of plaintiff's injuries and damages, because his liability limits were lower than plaintiff's UIM limits.

In its final instructions, the trial court described UIM coverage:

> "Underinsured motorist benefits are paid if any person covered by the policy is injured as a result of the negligence or fault of an underinsured driver. When that is the case, the injured person's own insurance company is required to pay the UIM benefits.
>
> "The amount of UIM benefits the insurance company must pay depends on the amount of damage the injured person is legally entitled to recover as economic and noneconomic damages from the owner or operator of an underinsured vehicle."

The trial court again described plaintiff's UIM claim:

> "[Plaintiff] alleges that Safeco promised to pay her UIM benefits if the person who was at fault for the motor vehicle collision did not have sufficient insurance to compensate [her] for all of the economic and noneconomic damages she sustained as a result of the November 28, 2007, collision.
>
> "Plaintiff further alleges that Safeco breached its insurance company contract with her by refusing to pay her any or all of the UIM benefits she was entitled to receive.
>
> "Based on the admissions of Safeco Insurance Company, plaintiff has met her burden of proving the following facts: One, that plaintiff had a valid, enforceable contract with Safeco.
>
> "Two, the plaintiff fulfilled all of her promises to Safeco under that contract.
>
> "Three, that Cody Naylin's negligent conduct caused the motor vehicle *** collision that involved plaintiff ***.
>
> "Therefore, in order for plaintiff *** to prevail on her second breach of contract claim against Safeco, she must prove each of the following facts by a preponderance of the evidence:

> "Number one, plaintiff suffered economic and noneconomic damages as a result of the negligence demonstrated by Cody Naylin on [the date of the collision].
>
> "Two, Safeco did not fulfill its promise to pay plaintiff UIM, underinsured motorist benefits, if she was injured in a motor vehicle collision that was the fault of an underinsured driver.
>
> "Three, plaintiff was damaged as a result of Safeco's breach of the parties' insurance contract.
>
> "*****
>
> "This question can only be answered after you have decided whether plaintiff's alleged injuries and damages were caused by the November 28th, 2007, motor vehicle collision. And if so, A, the amount of economic damage she sustained and, B, the amount of noneconomic damage she sustained."

In its instructions on causation, the trial court referred twice to the "underinsured motorist's" or "underinsured driver's" negligence.[7]

In the hybrid contract-tort fashion that the claims were presented to the jury, the trial court also told the jury that it need not determine whether Naylin was underinsured:

> "On the second claim for UIM benefits, if you find that [plaintiff] is entitled to prevail on her second claim for breach of contract related to UIM benefits, then you must decide how much she has been damaged as a result of Safeco's breach and denial of UIM benefits.
>
> "Those damages will be reflected in the amount of economic and noneconomic damages you find she suffered as a result of the November 28th motor vehicle—2007 motor vehicle collision, if any.
>
> "Whether *** Naylin's insurance benefits were sufficient or insufficient to compensate [plaintiff] for the injuries and damages you find she suffered as a result of his negligence should not play a part in your determination of the plaintiff's economic and noneconomic damages.

[7] Defendant excepted to some of the instructions because they could be understood by the jury as telling them that Naylin was, in fact, underinsured.

> "After you have determined the amount of these damages, if any, the Court will determine if the insurance benefits that were available to *** Naylin were sufficient or insufficient to compensate plaintiff for all of the damages she experienced as a result of the collision. This is no more than a simple mathematical calculation based on your findings, folks."

There were two questions on the verdict form related to the UIM claim. The first was question three: "Is Plaintiff *** entitled to prevail on her second breach of contract claim against Defendant SAFECO Insurance Company of Oregon related to UIM (Underinsured Motorist) benefits?" The jury was to answer that question yes or no. If it answered "yes," it was to answer the fourth question: "What are the plaintiff's damages resulting from the defendant's breach?" Spaces were provided to enter dollar amounts for economic damages and noneconomic damages.

Plaintiff acknowledges that, if the jury had been instructed that Naylin was an underinsured motorist and had been asked only to determine plaintiff's damages for her injuries sustained in the collision, there would have been no error in excluding evidence of Naylin's policy limits, the amount paid in settlement and the amount of plaintiff's UIM coverage. If damages found by the jury exceeded the policy limits amount paid by Naylin's liability insurer, the trial court would have entered judgment for plaintiff on the UIM claim in the amount of those damages, minus the amount paid by Naylin's insurer, up to the limits of plaintiff's UIM coverage.

We agree with plaintiff that, as the case was framed for the jury, however, exclusion of the evidence was error. The court's instructions came close to eliminating the question of whether Naylin was underinsured, but they fell short of precluding the jury from reaching the question. The concept of "underinsured motorist" was before the jury and the jurors were left with the impression that plaintiff was required to prove that Naylin was an "underinsured motorist." Defendant refused to stipulate to that fact. One of the exhibits explained the method for determining whether was Naylin was underinsured (comparing his liability coverage with plaintiff's UIM coverage). But because the trial

court's *in limine* rulings excluded evidence of the amounts of Naylin's liability insurance coverage and plaintiff's own UIM coverage, the jurors had no evidence from which they could determine that Naylin was "underinsured." Remand for a new trial is required. Because the remaining assignments of error raise evidentiary issues that may arise on retrial, we address them as well.

B. *Testimony of defendant's medical expert about "emotional overlay"*

In plaintiff's third assignment of error, she argues that the trial court erred in allowing defendant's expert witness to give testimony that she contends amounted to a comment on her credibility. We disagree.

At the beginning of the trial, plaintiff moved *in limine* to exclude any testimony or evidence that "plaintiff is not credible as a witness or injured party." Defendant conceded that motion, and the court granted it.

Defendant called Dr. Scott Jones, an orthopedic surgeon, as one of its expert witnesses. Jones had not examined plaintiff, but he had reviewed her medical records, including numerous imaging studies, an accident reconstruction report, photographs, a psychological report and the perpetuated testimony of plaintiff's spinal surgeon. Jones testified that, in his opinion, plaintiff's cervical spine surgery was not reasonable, necessary, or related to the collision on November 28, 2007. He offered four reasons for his opinion: (1) there was not enough force in the collision to cause injury to the spine; (2) plaintiff's presentation "had emotional components displayed, which are red flags and a bit disturbing"; (3) the imaging studies of plaintiff's spine showed nothing more than degenerative change typical for a woman of plaintiff's age; and (4) there were "no objective and consistent physical exam findings that would suggest a specific pain generator * * * that would be causing the expression of symptoms." Plaintiff did not object to that testimony.

After direct, cross, and re-direct examination of Jones, the trial court permitted the jurors to submit questions in writing, as it had for other witnesses. One juror submitted this question, which the trial court read aloud:

> "You stated that there was *** 'disturbing emotional overlay[]' *** that you said was a *** 'red flag[.]'
>
> "Can you describe what that emotional overlay was and why, in your opinion, it was a red flag to you? What do you base your opinion on?"

The trial court had a discussion with Jones, outside the presence of the jury, to confirm that he could answer the question without violating the court's earlier ruling *in limine* prohibiting any witness from opining about plaintiff's credibility. The trial court explained to Jones that she had disallowed testimony from another physician about "malingering" and "somatoform disorders." Jones sought clarification of the court's limitations, including whether he could refer to the findings on physical examination by another defense expert (Dr. Williams), and the need to avoid the terms "malingering" and "somatoform disorder." The trial court concluded that Jones could answer the juror's question without violating its rulings.

Plaintiff objected to the juror's question. The trial court overruled the objection, and Jones answered the question by pointing to two things: (1) plaintiff's description of the collision was inconsistent with the physical evidence and "show[ed] a dramatization"; and (2) her responses to certain tests performed by Williams were inconsistent with an anatomical cause or "unexplained by things that can actually happen to the tissues of the body." "[T]here's something else that explains the reaction, something else besides anatomy and it's usually emotion."

Jones testified that an emotional component to presentation of pain or weakness is common: "I see claimants and my own patients like this all the time where their emotions are driving their presentation." But he described plaintiff's presentation as "rather pronounced," and said that it raised a "red flag" prompting him to request that an MMPI (a "psychological-emotional test") be done.

We reject defendant's argument that plaintiff did not preserve her challenge to the admission of that evidence. We conclude that Jones's answer to the juror's question was not an impermissible comment on the veracity of plaintiff, or of any other witness. "Emotional overlay" or "functional

overlay" has been described by the Oregon Supreme Court as "the psychological component of [an] injury" that "manifests itself in the pain and discomfort [a person] continues to experience after the structural causes of his injury are no longer apparent." *Barrett v. Coast Range Plywood*, 294 Or 641, 664, 661 P2d 926 (1983) (citing *Stedman's Medical Dictionary* (4th ed 1976)). Plaintiff's own witness had already testified about the *absence* of emotional overlay. Plaintiff's spine surgeon, Dr. Rick Delamarter, testified pursuant to questions by plaintiff's attorney that plaintiff was not "overly focused on physical symptomology," she did not have "subjective overlay or over-magnification," and her subjective complaints were not "out of proportion to the actual physical findings."[8] Delamarter testified he had no doubt that the pain and debilitating symptoms plaintiff reported to him were "real" and he did not "at any time *** feel that there were psychological factors that caused her to be an unreliable historian regarding her pain—complaints of pain."[9]

Jones never testified that he believed that plaintiff was lying about her symptoms, that they were not real *to her*,[10] or that she was "faking." He simply stated that, in his opinion, plaintiff's physiological complaints were psychological or emotional—rather than anatomical—in origin. Such testimony does not violate the long-standing rule in Oregon courts that one witness may not comment on the credibility of another, other than as permitted under OEC 608.

We also reject plaintiff's argument that Jones's testimony was impermissible because the jury might take it as a comment on plaintiff's credibility, even if it was not expressly cast as such. The cases in which Oregon appellate

[8] Delamarter's testimony was perpetuated before trial and the video recording was played to the jury.

[9] Defendant did not object to any of that testimony, which had been perpetuated before trial. Neither does defendant suggest on appeal that the trial court should have stricken the testimony *sua sponte*.

[10] It is worth noting that another defense expert, neurologist Dr. Reed Wilson, testified before Jones. Wilson testified without objection that he believed the medical treatment plaintiff had received after a month or so following the collision had been a disservice to her because it had "convinced her that she's seriously injured" and "is severely impaired."

courts have held that testimony may be inadmissible if it is "tantamount to" an opinion that the expert believes a witness is telling the truth generally fall into two categories. The cases in the first category are those in which the expert describes the presence or absence of indicators of truthfulness or deception. *See, e.g.*, *State v. Keller*, 315 Or 273, 285, 844 P2d 195 (1993) (holding inadmissible testimony from a medical doctor that there was "no evidence of leading or coaching or fantasizing" during an interview with an alleged child victim); *State v. Milbradt*, 305 Or 621, 756 P2d 620 (1988) (psychologist should not have been permitted to testify that he saw no evidence or indicators of deception). The second category of cases are those in which the expert's opinion is ultimately nothing more than a conclusion that the expert believes the witness that an event occurred in the past. *See, e.g.*, *State v. Southard*, 347 Or 127, 218 P3d 104 (2009) (diagnosis of child sexual abuse in the absence of physical findings on examination inadmissible under OEC 403). The testimony of Jones fell in neither category.

In most—if not all—jury trials, the jurors must choose among competing versions of events and decide whom to believe. The jury may reject the testimony of a witness because it concludes that the witness is being intentionally untruthful. But the jury may also reject testimony because it concludes that the witness *believes* he or she is telling the truth, but was unable to accurately perceive an event or simply misremembers it. Testimony is not inadmissible solely because it calls into question whether the trial testimony or earlier statement of another witness may not be reliable, or because it offers an alternative explanation for a witness's perception—including a perception of pain.

The trial court did not err in posing the juror's question to Jones, or in allowing his answer.

C. *Testimony of defendant's biomechanical expert*

In her final assignment of error, plaintiff argues that the trial court erred in denying her motion *in limine* to "exclude any biomechanical testimony." For the reasons below, we conclude that the trial court did not err in allowing defendant's biomechanical expert to testify at trial.

There is no dispute that any testimony of a biomechanical expert about the forces experienced by the occupants of cars in collisions would be scientific in nature and subject to the trial court's gatekeeping function. As requested by plaintiff, the trial court conducted a hearing under OEC 104 regarding the admissibility of biomechanical testimony from defendant's expert, Bradley Probst.[11]

At the outset of the OEC 104 hearing, the trial court asked plaintiff's counsel to explain his objection. Counsel said that "the methodology and techniques utilized by Mr. Probst in testifying that the forces associated with a motor vehicle collision are not sufficient to cause injury to an occupant of a car are essentially based on junk science." Asked by the court whether plaintiff was also challenging Probst's credentials, counsel stated, "[I]t should be part of the inquiry."

In the OEC 104 hearing, Probst described his education and training, including a bachelor's degree in engineering, a master's degree in biomedical engineering and all academic coursework required for a Ph.D. in biomedical engineering, including medical school courses in orthopedics, bone mechanics, and biologic materials. Probst also described his work for the Office of Naval Research in developing a computer model of the human head and cervical spine to determine how it responds to "accelerations or forces" and the automobile crash tests that he had conducted. He testified that he had conducted approximately 100 automobile crash tests, including computer simulations, and had investigated "upwards of a thousand" different types of "automotive-related injuries." Probst listed 14 states, including Oregon, in which he had been qualified to testify as an expert.

[11] The OEC 104 hearing occurred on the fifth day of trial, when Probst was scheduled to arrive from out of state to testify. Because of the absence of expert discovery in civil cases in our state courts, plaintiff did not know the identity of defendant's expert until the first day of trial, and. did not have Probst's report until the time of the OEC 104 hearing. Nevertheless, it is obvious from the testimony plaintiff elicited from her own witnesses, including testimony perpetuated before trial, that she knew generally the nature of Probst's methods and probable conclusions.

Probst described the work that he had performed in connection with the case as a "biomechanical injury assessment analysis," in which "[w]e're looking to see if there's a causal relationship between an injury and an event." He characterized his approach as a multi-step process through which he reached separate conclusions about the speed change imparted to plaintiff's car in the collision, the forces transmitted to her body in the car, plaintiff's tolerance for forces applied to her body in her daily life before the collision, and whether others had been injured in collisions, or test crashes with the same impact. He reached the overall opinion that "there is not a causal relationship between the claimed injuries and this incident, that there was not an injury mechanism created."

The admissibility of scientific or expert evidence typically involves the application of three key rules in the Oregon Evidence Code: OEC 401, OEC 702, and OEC 403. OEC 401 defines relevant evidence as "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." (OEC 402 provides that, in general, relevant evidence is admissible and irrelevant evidence is inadmissible.) There is no dispute in this case that the causal connection between the collision and plaintiff's claimed injuries was a "fact that is of consequence to the determination of the action." Likewise, there is no dispute that, if the forces sustained by plaintiff's body in the collision were insufficient to cause the injuries she alleged, it was less probable that the collision caused the injuries. Probst's ultimate opinion was relevant in that sense.

The primary source of a trial court's gatekeeping function with respect to expert testimony is OEC 702. That rule provides:

> "If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise."

OEC 702. Scientific, technical, or other specialized knowledge will not assist the trier of fact if it is not sufficiently

valid or reliable to warrant the unusually high degree of persuasive power that it is likely to have, especially with a jury. *State v. O'Key*, 321 Or 285, 291, 899 P2d 663 (1995).[12]

Even if scientific or technical evidence is relevant and sufficiently reliable to be helpful to the finder of fact, it may nevertheless be excluded under OEC 403.[13] Plaintiff did not raise an objection to Probst's testimony under OEC 403 at trial, nor does she make an argument under OEC 403 on appeal. Therefore our focus, like plaintiff's, is on whether defendant established that Probst's testimony met the threshold of reliability to be admissible. We review the trial court's ruling on an OEC 702 issue for errors of law, *Jennings v. Baxter Healthcare Corp.*, 331 Or 285, 301, 14 P3d 596 (2000), and conclude that the trial court did not err in admitting Probst's testimony.

1. *Scientific reliability of a biomechanical analysis*

Probst's methodology consisted of first determining the force applied to plaintiff's vehicle when the Naylin vehicle struck it. He made that calculation using photographs and repair estimates. Probst's second step was to calculate how that force was transmitted to the driver's seat, using principles of physics and taking into account the construction of the car and its components. He then analyzed how plaintiff's body would have been affected by that force, given her "body habitus, her height, weight, how she was seated inside the vehicle, [and] what type of restraint" was used. As

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[12] As the Oregon Supreme Court noted in *O'Key*,

> "[t]he [United States] Supreme Court denominated scientific validity as the linchpin of admissibility because validity relates to whether the methods in question are capable of measuring what they purport to measure. *Daubert* [*v. Merrell Dow Pharmaceuticals, Inc.*, 509 US 579, 590 n 9, 113 S Ct 2786, 125 L Ed 2d 469 (1993),] recognized that reliability and validity differ as scientific measures. Whereas validity describes how well the scientific method reasons to its conclusions, reliability describes the ability of the scientific method to produce consistent results when replicated."

321 Or at 301 n 19 (internal citation omitted).

[13] OEC 403 provides:

> "Although 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 or needless presentation of cumulative evidence."

part of that step, Probst determined "how much force and/or motion is applied to the various joints and various tissues."

In the next step in Probst's method, he looked at how the forces experienced by plaintiff's joints and tissues, as determined by the prior steps, compared to plaintiff's "personal level of tolerance as well, based upon events that we know she could perform without injury and that she performed multiple times."[14] And finally, Probst compared the forces that he calculated plaintiff's body had experienced in the collision to "known level of human tolerance" based on studies of vehicle collisions and crash tests as well as his own study of human tissues and how they respond to various stresses.

At the OEC 104 hearing, defense counsel asked Probst about several of the established criteria for determining whether proffered scientific evidence is sufficiently reliable to be admissible under OEC 702.[15] Defense counsel asked Probst if his theory or technique could be or had been

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[14] There was abundant evidence that before the collision plaintiff had been very physically active and fit. Among other things, she worked out regularly doing both aerobic exercise and weight lifting, did landscaping work around her home, and rode and cared for horses.

[15] The factors to be considered by the court include the seven factors set forth in the text of the opinion in *State v. Brown*, 297 Or 404, 417, 687 P2d 751 (1984) (the technique's general acceptance in the field; the expert's qualifications or stature; the use which has been made of the technique; the potential rate of error; the existence of specialized literature; the novelty of the invention; and the extent to which the technique relies on the subjective interpretation of the expert). They also include the "somewhat overlapping additional factors" listed in a footnote of the *Brown* opinion (the potential rate of error in using the technique; the existence and maintenance of standards governing its use; the presence of safeguards in the characteristics of the technique; analogy to other scientific techniques whose results are admissible; the extent to which the technique has been accepted by scientists in the field involved; the nature and breadth of the inference adduced; the clarity and simplicity with which the technique can be described and its results explained; the extent to which the basic data are verifiable by the court and jury; the availability of other experts to test and evaluate the technique; the probative significance of the evidence in the circumstances of the case; and the care with which the technique was employed in the case at hand). *State v. Lyons*, 324 Or 256, 271 n 20, 924 P2d 802 (1996) (citing *Brown*, 297 Or at 417-18 n 5). Finally, there are two additional factors enunciated in *O'Key*, 321 Or at 306 n 28 (the nonjudicial uses and experiences with the process or technique, and the extent to which other courts have permitted expert testimony based on the process or technique).

As the Oregon Supreme Court explained in *Marcum v. Adventist Health System/West*, 345 Or 237, 245, 193 P3d 1 (2008),

tested. He responded, "each *** sub-step that I performed has accepted methodologies that have been tested and published in the literature." When asked whether his methodology had been subject to peer review and publication, Probst testified:

> "[E]very step that I took, meaning the accident reconstruction, the biomechanical injury assessment, looking at injury mechanisms, looking at general tolerance of human beings and the personal tolerance of this individual, the methodology that I employed in each of those steps has been peer reviewed and has been published."

He cited several studies that he said supported and corroborated his methodology and conclusions, which he said had been "published quite widely."

Defense counsel also asked Probst about the potential rate of error for his methodology. Probst never gave a rate of error for any individual step, or for his methodology as a whole. He acknowledged, however, that "with each step there is some obviously potential for error." He also testified that "the manner in which I perform my analysis I always attempt to make this an absolute worst-case scenario. So if there is any error, *** the impact severity would actually be less severe" and "any rate of error would be to the plaintiff's benefit."

Defense counsel then asked Probst about the degree of acceptance of his methodology in the relevant scientific community. Probst testified that the Society of Automotive Engineers and its Stapp Car Crash Conference "hold regular meetings and conferences discussing accident reconstruction and injury analysis and injury potential or injury prevention." He also testified:

> "[E]very automotive manufacturer [employs] biomedical engineers to determine *** how to build a safer vehicle.

> "[t]hose factors, however, are not an exclusive checklist, and the existence or nonexistence of any particular factor may enter into the final decision on admissibility, but need not necessarily do so. Underlying the various considerations and factors described by the court is the fundamental question of the scientific validity of the general propositions utilized by the expert."

(Internal quotation marks and citations omitted.)

> "And then the Department of Transportation actually has a Department of Biomedical Engineering because if we're, you know, setting standards as to what is and is not safe, meaning how much force can be transmitted to an occupant, at what level does an injury actually occur based upon accidents, that's the realm of the biomedical engineer. They're setting these standards."

Plaintiff's counsel cross-examined Probst in the OEC 104 hearing about whether there were specific published, peer-reviewed articles supporting either his methodology in general, or establishing the threshold of force required to cause specific injuries (especially inner ear concussion and disk herniation) in particular. On some of the points, Probst cited specific works that he contended supported his methodology, while on others, he relied on a more general assertion that numerous studies had shown that in collisions involving forces at the level of those in the collision, there were no measureable injuries.

At the end of the OEC 104 hearing, the trial court ruled that Probst's testimony was admissible:

> "He testified that with respect to the general degree of acceptance that *** this type of work is done by national agencies related to product safety used by the auto manufacturing industry in building, designing, testing their cars and cited numerous pieces of literature, textbooks, articles that explain and review *** the methodology used to reach his conclusion.
>
> "And based on the expert's background, education and experience I find that he is qualified to give the opinion that is being proffered."

In his testimony before the jury, Probst largely repeated his testimony from the OEC 104 hearing and also elaborated on both his background[16] and methodology.

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[16] Probst testified that he had "specialized in what is called direct or inertial trauma of the human body, how a body is injured or how to prevent injuries." He listed his professional society memberships (the Society of Automotive Engineers, the American Society of Mechanical Engineers, the Association for the Advancement of Automotive Medicine and the American Society of Safety Engineers). He also described more extensively his (and his firm's) work including designing military vehicle safety systems to protect occupants from forces coming from various directions, and to better protect the occupants of armored

Probst never purported to determine what speed of impact, change in car speed, or level of force would be necessary to cause the injuries claimed by plaintiff. Rather, he testified that he determined what forces her body experienced in this particular collision and then analyzed whether those forces were sufficient to produce the claimed injuries (whether there was "a known injury mechanism"). The latter step was done in three ways: (1) comparing the forces in the collision to the forces plaintiff's body experienced in her daily life before the collision; (2) comparing the forces in the collision to the strength or tolerance of the tissue in the body parts involved as a matter of human anatomy; and (3) reviewing the literature of crash tests to determine whether such injuries were ever reported by test subjects in collisions with the same forces.

Probst gave the jury an analogy to help them understand his methodology:

> "[I]f you have a bridge and you see an 18-wheeler drive across it and you're in a little Smart car, you know you can cross that bridge and it's not going to collapse because you're way below the strength of that bridge.
>
> "So that's what we're looking at here. Now, it doesn't tell me exactly how strong that bridge is, but I don't need to know that to know that my little Smart car can go across right after an 18-wheeler. So, yeah, we're looking at can you withstand this specific event, not when something is actually going to occur."

In estimating the force to the rear of plaintiff's car (a 2005 Mercedes E320) in the collision, he described the only damage to it as a scratch on the bumper cover, information derived from photographs and repair estimates. Probst testified that he compared that damage to the damage sustained by a substantially similar model car (a 2003 Mercedes E500) struck from the rear at a known speed of 4.99 miles per hour in crash tests. The cars in the test sustained more damage than a scratch to the bumper. From

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vehicles from the energy from mine blasts transmitted through the vehicle. Probst's firm, he testified, was also working on a project for the National Institute of Health to develop restraint systems for ambulance workers that would allow them the necessary freedom of movement to work on patients being transported while protecting them in a collision.

that information, Probst concluded that the speed change experienced by plaintiff's car was less than five miles per hour at impact.[17]

Plaintiff argues that even the first step in Probst's methodology—estimating the impact speed from photographs and repair estimates—is invalid. We reject that argument based on the testimony of plaintiff's own expert on that subject. Before the OEC 104 hearing concerning Probst's testimony, plaintiff called Michael Freeman, a Ph.D. forensic epidemiologist who had practiced at one time as a chiropractor and is certified as a collision reconstructionist. Freeman made an estimate of the speed at impact:

> "Having reconstructed over 3,000 crashes, having conducted full-scale crash testing of more than a 120 vehicles and having coauthored the book for the site of Automotive Engineers on crash testing, I have a very good idea of the elasticity and resiliency of these cars and how much of an impact they can withstand before they start to show damage beyond the bumper. So it—it would—it's based on my experience as a crash reconstructionist."

He estimated the speed of the Naylin vehicle at impact as "five to ten miles per hour *** derived from the amount of damage." He testified that he was "aware of what the damage level was," although he did not say that he had personally examined the car or looked at the list of repairs that were actually done, as plaintiff asserts Probst was required to do.

Freeman testified that, in approximately one in 200 "crashes like this," someone sustains an injury to a spinal disk. The "one in 200" number was derived from a study of the claimed injuries in collisions resulting in $500 to $1,000 in damage in which the speed at impact was derived from the amount of damage to the vehicle in costs of repair. Even

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[17] Probst distinguished the force transmitted to plaintiff's car from the speed at which the Naylin car was moving immediately before impact. Because plaintiff's car was substantially heavier than Naylin's car, to impart five miles an hour of speed change to plaintiff's car, the Naylin car would be travelling 13 miles per hour, according to Probst's calculations. In an impact at 13 miles per hour, the air bags in the Naylin car would have deployed. Since they did not, Probst opined that the speed change experienced by plaintiff's car was probably less than five miles per hour, although he still used the higher figure in estimating the forces experienced by plaintiff's body.

if Probst's method of calculating the impact speed was not substantially the same as that used by Freeman, the result of his calculation was the same. It was not error to permit Probst to testify to his estimate of the impact speed and speed change to plaintiff's car in the collision.

The heart of plaintiff's challenge is to the reliability of Probst's assertion that there is a known level of tolerance of human tissues that can be compared to the forces on plaintiff's body in the collision to determine whether the collision was capable of causing the claimed injuries. She further challenges the idea that the ability of her own specific tissues and joints to withstand the forces in the collision without injury can be established from her precollision activities.

Plaintiff does not contest the notions that some force is necessary to cause injury, that there is a body of scientific knowledge about the forces that certain human tissues and joints can normally tolerate, and that certain forces are known to be sufficient to cause injury. She presented such evidence in her own case.

Before the OEC 104 hearing, Delamarter, plaintiff's spine surgeon, testified that the collision (which he had been told was in the range of 15 to 20 miles per hour) "generated enough force to cause damage or compromise four levels of [plaintiff's] cervical spine." He acknowledged that some degree of force would be necessary to cause such injury, but went on to explain "even in the cervical spine, we see patients bend over and pick up soap in the shower and have cervical disk problems. So does it take some force? It does take an element of force."

Plaintiff's expert Freeman also testified that it is rare for the forces in a collision like the one in this case to cause disk injury:

> "I can tell you from the epidemiologic literature that disk injuries occur in about 1 in 200 crashes like this one. It's a *** relatively rare condition, because most people aren't hurt in a crash of—and this is a crash that's in the range of five to ten miles per hour impact speed, speed change."

Plaintiff complains on appeal that, although Probst cited several studies conducted by others to support his

methodology, "none of these [was] shown to the court or described with enough detail to determine that [the] methodology is scientifically valid." We are unaware of any requirement that all of the articles, texts, and other sources relied upon by an expert be shown to the trial court for an independent determination of whether they support the proffered testimony, and plaintiff cites us to no authority for that proposition.[18] "A trial court, acting as a gatekeeper, does not sit as a trier of fact to determine which side has presented the more credible (or more persuasive) expert or scientific evidence." *O'Key*, 321 Or at 301 n 18.

Plaintiff's counsel vigorously cross-examined Probst about the studies on which he had relied in both the OEC 104 hearing and when Probst testified before the jury. That cross-examination showed weaknesses in the support Probst cited, but it did not establish that there was no support for his methodology at all. This is precisely the situation in which the jury is given the task of deciding what weight, if any, to give to an expert's testimony. When the United States Supreme Court rejected the *Frye*[19] standard in favor of a more liberal framework for analyzing admissibility of scientific evidence under FRE 702, it noted the respondent's concern that the result would be a "'free-for-all' in which befuddled juries are confounded by absurd and irrational pseudoscientific assertions." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 US 579, 595-96, 113 S Ct 2786, 125 L Ed 2d 469 (1993). The Court responded:

> "In this regard respondent seems to us to be overly pessimistic about the capabilities of the jury and of the adversary system generally. 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. at 596.

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[18] On the other hand, we reject defendant's suggestion that plaintiff had a burden to produce evidence in the OEC 104 hearing. It is the proponent of the evidence who has the burden of satisfying the gatekeeper that the "unusually high degree of persuasive power" possessed by scientific evidence is "legitimate." *See O'Key*, 321 Or at 291.

[19] *Frye v. United States*, 293 F 1013 (DC Cir 1923).

We have expressed a similar view. In *Kennedy v. Eden Advanced Pest Technologies*, 222 Or App 431, 193 P3d 1030 (2008), the trial court had excluded expert testimony proffered by the plaintiff to establish that he had developed multiple chemical sensitivity from mercury in his dental fillings and had been injured as the result of exposure to a pesticide defendant had wrongfully applied to his property. The defendant offered evidence in the OEC 104 hearing that the condition the plaintiff claimed was not recognized in the medical community and that the plaintiff's expert's testimony had been ruled inadmissible by numerous courts as scientifically unreliable. The plaintiff offered evidence that *some* medical authorities recognized the condition and the expert had relevant education and training. The trial court excluded the evidence and we reversed.

Quoting the Oregon Supreme Court's case on the admissibility of the PCR methodology of DNA identification, we explained:

> "'[C]ontroversy within the scientific community is not necessarily a ground for exclusion of scientific evidence. In deciding whether to admit scientific evidence, a court need not resolve disputes between reputable experts; the evidence may be admissible even though a dispute exists. *** [T]he witness who testifies to an expert opinion is subject to cross-examination concerning how he or she arrived at that opinion, and the cross-examiner is to be given "great latitude" in eliciting testimony to vitiate the opinion.'"

222 Or App at 446 (brackets and omission in *Kennedy*) (quoting *State v. Lyons*, 324 Or 256, 278-79, 924 P2d 802 (1996) (quoting *Bales v. SAIF*, 294 Or 224, 235 n 4, 656 P2d 300 (1982))).

We also held:

> "[G]iven the Oregon legislature's strong policy to aid the trier of fact to understand the evidence presented at trial in the context of the parties' theory of the case, we believe that the legislature intended controversial evidence like [that of the expert] to be presented to the jury.
>
> "*** When qualified experts disagree about the validity of medical diagnoses or other scientific evidence, judges are in no better position to resolve that dispute than are

> juries. Rather, the usual techniques for truthfinding—cross-examination, presentation of contrary evidence, and instruction on the burden of proof—should be applied. In Oregon, we trust juries to be able to find the truth in the classic 'battle of the experts.'"

Id. at 451-52.

To be sure, in addition to the cross-examination that showed weaknesses and limitations in Probst's methodology, plaintiff had her own contrary evidence tending to show that Probst's technique should not be relied upon to determine whether plaintiff had suffered the injuries she claimed as a result of the collision. Such evidence went to the weight to be given to Probst's testimony, but not to its admissibility.

Plaintiff also argues that the studies that Probst relied on cannot be used to support the conclusions he purported to draw from them. She points out that many were done to study automotive safety, the sample sizes of some were small, there was an absence of controls for factors such as age, physical condition, body positioning, whether the test subject knew there would be a collision, and whether the subjects were live or cadavers. These are OEC 702 relevance matters. In other words, plaintiff argues that given the limitations of the studies on which Probst relied, they cannot be said to make his conclusions more probably true than not. We disagree.

Crash testing for the purpose of developing vehicles may be relevant to a determination of what forces may result in injury with a particular car design and certain types and speeds of collisions. Although such tests are not designed to learn whether a particular individual will be hurt in a collision, they may produce helpful information about the stresses experienced by the human body in a crash. The very purpose of the crash tests is to evaluate the forces generated on the vehicle occupants and the potential for those forces to cause injury.

Probst also testified that some of the studies on which he relied were large, some involved people in a wide range of ages (with and without preexisting conditions), and some of the test subjects were expecting a collision while

others were not. Once again, to the extent that there were weaknesses in the studies or lack of a close relationship with the conclusions Probst was drawing from them, those factors went to the weight that the jury should give his testimony, not to whether they should not hear it at all.

Delamarter testified that the amount of force necessary to cause injury varies from one person to the next:

> "[I]it is clearly different for different people. Again, as I mentioned, we've all seen people simply bending over picking up soap in the shower and—and have significant disk problems with that.
>
> "We also see 300-pound linemen running full speed into quarterbacks who don't get a herniated disk, and yet they can be taking off their shoulder pads and get a herniated disk in their neck. So, yes, it is different among different people. There are different tolerances among different people."

Freeman testified:

> "But if you look at a crash like this where there's very little damage, some people are hurt, some people aren't hurt. Looking at the car doesn't tell you anything about whether this person is hurt."

Freeman refuted Probst's methodology point-blank. Specifically, Freeman was asked, "Is there any scientifically reliable method that you're aware of through all of your research, study, and teaching that would allow some person to look at those photographs and divine whether or not a person who was involved in that collision suffered a motor vehicle—or suffered an injury?" He answered, "Absolutely not, because it's not predictive." He continued:

> "[W]hen we get down to that five- to ten-mile-per-hour range, it doesn't depend on how much force it is. It depends on who's there. Who's in the car, how susceptible they are.
>
> "* * * * *
>
> "I've got a case of somebody who sneezed and was quadriplegic from a disk injury after sneezing."

When asked whether he was "aware of any study out there that attributes a four-cervical disk injury associated

with a brain injury to a motor vehicle collision below ten miles an hour," Freeman answered, "Oh, sure. There's—there's tons of cases like that in the national database. *** [T]hat's not rare at all."[20]

Plaintiff argues that that testimony from her experts "made clear that there is no acceptance for Mr. Probst's premise that there is a level of force below which there can be no injury." Universal acceptance of a methodology or technique is not, however, a requirement for admissibility of scientific evidence. General acceptance in a particular field was the standard for admissibility established in *Frye v. United States*, 293 F 1013 (DC Cir 1923). That standard was repudiated by the Oregon Supreme Court in 1984 in *State v. Brown*, 297 Or 404, 687 P2d 751 (1984), and by the United States Supreme Court in 1993 in *Daubert*, 509 US 579, although it remains a factor to be considered in the OEC 702 analysis. And, as we have noted, a dispute among experts does not establish, by itself, that a technique or methodology is inadmissible as unreliable under OEC 702. For example, in *Kennedy*, 222 Or App 431, the defendant had put on extensive evidence at the OEC 104 hearing showing that the plaintiff's proffered expert and his diagnosis and methodology had been rejected by the mainstream medical community and his testimony excluded by numerous courts. None of that made the evidence inadmissible.

Furthermore, Probst was not alone in holding an opinion that the forces in the collision were insufficient to have caused plaintiff's claimed injuries. Jones, the defense orthopedist, also testified about the biomechanical aspects of a causation evaluation:

> "In this particular case I do not believe that muscular strains took place. I'm basing that opinion on the biomechanics of

[20] Freeman clarified this answer on cross-examination. Defense counsel asked, "I want you to point to one single study or even individual out there that has undergone a four-level cervical surgery and contended that they had brain damage all from a motor vehicle accident that's under ten miles per hour." Freeman answered:

> "I don't think I'd have any difficulty finding them in the—in the Nationwide Inpatient Sample, but as far as published studies, I can't tell you that any such study exists or doesn't exist. It's not something I've seen, I can tell you off the top of my head, but it's perfectly within reason."

> the crash, where I don't believe sufficient force was applied in this crash to create injury in human tissue based on the previous data and literature that I've discussed."[21]

Defendant's neurologist, Dr. Reed Wilson, testifying after Probst, conceded that plaintiff had sustained some sprain/strain injury in the accident. He further testified that, in his opinion, the accident had not caused the injuries to plaintiff's brain, spine, and inner ear as she alleged. In listing his reasons, he said, "I think the accident *** would have been insufficient to have caused these, number one." He further testified that it was not merely medically improbable, but "not possible" that a person in a five- to 10-mile-per-hour car accident could sustain injury to four cervical disks all requiring surgery, combined with traumatic brain injury.

Jones disagreed with Wilson that plaintiff had sustained *any* injury in the accident. He explained his disagreement:

> "I don't know if Dr. Wilson either had the data of how much force was applied in this crash or *** knows the

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[21] Earlier in his testimony, Jones was advised in a question that plaintiff's experts had testified that "there's no valid study or accepted scientific article on what force is necessary to injure a person in a motor vehicle accident." He was then asked, "Do you have an opinion as to if there is, in fact, valid scientific studies that have been done?" He answered:

> "I would disagree with that comment. And I would say there are two bodies of literature and experimentation that have been done which I think refute that comment.
>
> "One is the Society of Automotive Engineers data from really pretty much the 1990s, this question of are people harmed with low-impact or even close to no-impact motor vehicle accidents, specifically rear-end motor vehicle accidents.
>
> "And all of that data has shown over thousands of test subjects that not a single injury has ever been documented with test subjects that know they're going to be hit and those who don't know they're going to be hit in experimental situations. So in our career it's pretty much a done—done deal as—below a certain threshold we feel that *** lower amounts of force are not consistent with injury.
>
> "There's a whole other body of injury where people who have been subjected to high-grade trauma, really powerful forces and then sometimes if they die they've looked at their spines and have not seen disk herniations directly related to that type of force.
>
> "So there's been an extensive body of literature that has looked at this question of how much force is and isn't necessary [to cause injury]."

There was no objection to that testimony.

> literature about that. It's really not considered possible or probable that those types of injuries occur in these kinds of extremely low impacts where the impact force is really less than the activities of daily living."

The defense neuropsychologist, Jack Davies, opined on the possibility of plaintiff's claimed brain damage being caused by the collision. He called it "inconceivable."

There was some explanation in the evidence for how the experts could hold such diametrically opposed views about whether or not published studies showed injuries similar to plaintiff's caused by similar low-speed collisions. Freeman, the epidemiologist, reached an opinion that the collision had caused plaintiff's claimed injuries by using "but for" causation, which he described as "if you take this bad thing away from this person's life, would they still have this bad condition? Would it still be present? If the answer is yes, then A didn't cause B. If the answer is no, then A did cause B."

Freeman further explained the basis for his conclusion that the forces in the collision were sufficient to cause plaintiff's alleged injuries:

> "Because she was hurt by this crash. Because I've done a causal analysis and the causal analysis says, even though most people wouldn't get hurt, she did. And it was probably because of her susceptibility.
>
> "And so that *** secret factor that we don't know about what it takes to cause any of us injury until we're actually exposed to an injury force. That's already been tested on her. We already found out this crash exceeded her ability to resist injury."

In other words, Freeman accepted that plaintiff's injuries had occurred; he was looking at whether the collision caused them. He explained that the "national database," which he also described as the "Nationwide Inpatient Sample,"

> "is a sample of 20 percent of all hospital discharges in the United States. I have over 80,000,000 discharge visits on a server that I use to teach my students and do research from. I can pull up every single case of multiple-level disk surgeries and I can tell you what caused them."

Because Freeman is not a medical doctor[22] and has not treated patients as a chiropractor in many years, we assume that he was not suggesting he could independently make a causation determination about the injury or disease that necessitated surgery for every patient in the database. Apparently, there was a causation determination made by a treating physician that was recorded in the database or Freeman inferred causation from other recorded information. In other words, if plaintiff's medical case had been included in the sample when she was discharged after her surgery by Delamarter, it would have appeared as a multi-level disk surgery "caused by" her collision.[23]

Although Probst used studies of collisions and reports of whether those collisions caused injuries, Freeman looked at reports of injuries and the circumstances surrounding their onset, including collisions. As Freeman described it, "instead of going out and getting the crashes and looking for the injury, we go out and get the injuries and then we ask about the crashes."

Probst also compared his analysis with that done by Freeman:

> "[T]he field of epidemiology is looking at a probability, if you will, of does an event cause an outcome. And the manner by which they do that is they take a very large sample population. They look at, you know, hundreds or thousands of events or people to see how the general population is going to respond to a general event.
>
> "What I've done is I've looked at a very specific event, meaning this incident here where we have a Honda Civic contacting a Mercedes Benz and I've looked at a very unique individual.
>
> "I've looked at [plaintiff], specifically how she was placed inside that vehicle, her seatbelt usage, her orientation and the direction of impact to determine specifically how much force was going to be placed on her body.

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[22] Defendant's brief mistakenly refers to Freeman as a neurosurgeon, but his testimony is clear on the point: "I've never had a license to practice as anything other than a chiropractor."

[23] It would not, however, have appeared as a surgery for injuries caused by a collision at less than 10 miles per hour because Delamarter was under the impression that the speed involved was 15 to 20 miles per hour.

> "So we're not looking at a general event and a general person. We're looking at something extremely specific just to this matter here."

In broad terms, most of defendant's expert witnesses disputed that plaintiff had been injured at all in the collision and they based that conclusion, in part, on the lack of injury-producing force. On the other hand, plaintiff's expert witnesses opined that the forces in the collision were necessarily enough to cause her claimed injuries because they concluded that she in fact had the injuries and the collision must have caused them, based on the timing of symptom onset and other factors.

Both parties cite us to cases from other jurisdictions on the admissibility of biomechanical testimony concerning the sufficiency of the forces in a collision to cause injury. There are three cases from the Washington Court of Appeals involving the admissibility of biomechanical testimony: *Johnston-Forbes v. Matsunaga*, 177 Wash App 402, 311 P3d 1260 (2013), *Stedman v. Cooper*, 172 Wash App 9, 292 P3d 764 (2012), and *Ma'ele v. Arrington*, 111 Wash App 557, 45 P3d 557 (2002). All three cases involved the testimony of Allan Tencer, a Ph.D. biomechanical engineer, about the forces that were generated in car collisions (usually based on his examination of photographs of the damage to the vehicles), and the capacity of those forces to cause injury. In *Ma'ele* and *Johnston-Forbes* (both involving rear-end collisions), the trial court allowed the testimony; in *Stedman* (in which the two vehicles collided along their right sides), the trial court excluded it. In all three cases, the Washington Court of Appeals affirmed, concluding that the trial court had not abused its discretion.

The Washington cases are not especially helpful here because, as we have noted, in Oregon, the trial court's ruling on an OEC 702 issue is reviewed for errors of law, not abuse of discretion. *Jennings*, 331 Or 285.

Likewise, the cases relied on by the *Stedman* court are not especially helpful. Specifically, the court in *Clemente v. Blumenberg*, 183 Misc 2d 923, 705 NYS2d 792 (NY Sup Ct 1999), applied the *Frye* test. The Virginia Supreme Court in *Tittsworth v. Robinson*, 252 Va 151, 475 SE2d 261 (1996),

used a different set of factors than those used in Oregon to determine the admissibility of scientific evidence.[24] Finally, the Colorado Court of Appeals applied an abuse of discretion standard in *Schultz v. Wells*, 13 P3d 846 (Colo App 2000).

Defendant cites us to *Eskin v. Carden*, 842 A2d 1222 (Del 2004), but the Delaware court also used an abuse of discretion standard to review the trial court's admission of scientific evidence.

In sum, we conclude that Probst's biomechanical analysis is scientifically valid for purposes of OEC 702.

2. *Probst's qualifications to testify*

Apart from the scientific validity of Probst's methodology, plaintiff also challenges his qualifications to testify.[25] Plaintiff argues that Probst's ultimate opinion is one of "medical causation." She cites *Barrett*, 294 Or 641, for the proposition that expert medical testimony is generally required on the question of a causal connection between accident and injury. Probst, plaintiff contends, was not qualified to give "expert medical testimony." We disagree.

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[24] The Virginia Supreme Court explained its factors as follows:

> "Such testimony cannot be speculative or founded upon assumptions that have an insufficient factual basis. Such testimony also is inadmissible if the expert has failed to consider all the variables that bear upon the inferences to be deduced from the facts observed. Further, where tests are involved, such testimony should be excluded unless there is proof that the conditions existing at the time of the tests and at the time relevant to the facts at issue are substantially similar."

252 Va at 154, 475 SE2d at 263 (internal citations omitted).

[25] Plaintiff argues that this is an integral element of the scientific validity analysis, citing *Brown*, 297 Or at 417, which lists "[t]he expert's qualifications and stature" as the second factor to be used to "determine the relevance or probative value of proffered scientific evidence under OEC 401 and OEC 702."

OEC 702 provides:

> "If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise."

Where the person who developed the methodology or technique is not the testifying witness, we think it is clearer to separate the question of whether the "scientific, technical or other specialized knowledge will assist the trier of fact" (validity) from the question whether the "witness [is] qualified as an expert by knowledge, skill, experience, training or education" (qualification).

Even if medical expertise is required to give a diagnosis of an injury or its cause, Probst did neither. He did not testify that plaintiff did or did not have any particular diagnosis, injury or condition, or if she did, what caused it. His opinion was limited to whether the forces on her body in the collision would have been sufficient to cause her *any* injury, given the forces she experienced in her other activities without injury and given human tolerances generally.

In Oregon courts, there is a "preference for examining the knowledge of each expert witness regarding the subject of his or her testimony, rather than adopting a rigid rule tied to a particular degree or specialty." *Trees v. Ordonez*, 354 Or 197, 211, 311 P3d 848 (2013) (biomedical engineer qualified to testify about the standard of care for a neurosurgeon installing a plate in plaintiff's cervical spine); *see also State v. Rogers*, 330 Or 282, 4 P3d 1261 (2000) (neuropsychologist qualified to testify about possible causes of defendant's frontal lobe dysfuntion; citing numerous cases).

Probst established adequate "knowledge, skill, experience, training [and] education" to qualify him to calculate and testify to the impact speed in the collision, the forces transmitted to plaintiff in her car in the collision, the forces plaintiff's body experienced in her daily activities before the collision, and the forces generally tolerated by human joints and tissues without injury as reflected in the literature in his field. The trial court did not err in finding Probst qualified to testify.

III. CONCLUSION

In sum, the trial court erred in excluding evidence that would have allowed the jury to determine that the driver that rear-ended plaintiff was "underinsured." However, the court did not err in allowing one of defendant's expert witnesses to testify regarding "emotional overlay," nor did it err in admitting the testimony of a biomechanical engineer that the forces in the collision were insufficient to cause plaintiff's alleged injuries. Accordingly, we reverse and remand the portion of the general judgment relating to plaintiff's UIM claim and otherwise affirm.

Judgment on claim for UIM benefits reversed and remanded; otherwise affirmed.