

559 S.E.2d 694 (2002)

263 Va. 315

Sarah A. JOHN, M.D.,

v.

Wong Shik IM.

Record No. 010759.

Supreme Court of Virginia.

March 1, 2002.

Gerald F. Ragland, Jr., Alexandria (Joseph L. Stark, on brief), for appellant.

John D. McGavin, Fairfax (Kenneth Falkenstein; Trichilo, Bancroft, McGavin, Horvath & Judkins, on brief), for United Services Automobile Association.

Alicia Lehnés Summers, Alexandria (David West & Associates, on brief), for State Farm Mutual Automobile Ins. Co.

Present CARRICO, C.J., LACY, KEENAN, KOONTZ, KINSER, and LEMONS, JJ., and COMPTON, Senior Justice.

695 *695 Opinion by Justice BARBARA MILANO KEENAN.

In this appeal, we consider whether the trial court abused its discretion in excluding evidence of a quantitative electroencephalogram (QEEG test) and the testimony of expert witnesses that was based on this evidence.

In July 1998, Sarah A. **John**, M.d., was a passenger in an automobile that was struck from behind by a vehicle driven by Wong Shik **Im**, an uninsured motorist. **John** filed a motion for judgment against **Im** and obtained service of process on uninsured monrtrist carriers State Farm Mutual Automobile Insurance Company and United Services Automobile Association Casualty Insurance Company (collectively, State Farm). **John** alleged, among other things, that as a result of the collision she "suffered severe permanent physical injury."

In support of her claim, **John** proffered expert testimony that was based on an analysis of a QEEG test performed on her after the accident. In a QEEG test, the electrical activity of the brain is measured and converted into a digital format to facilitate analysis of an to detect deviations from normal brain functioning.

John offered into evidence the de bene ease deposition testimony of Robert W. Thatcher, who holds a doctorate in psychology and was program director of QEEG testing at the Bay Pines Veterans Administration Hospital in Florida. Thatcher is a colleague of **John's** father, Dr. E. Roy **John**, and collaborated with him in developing QEEG testing and in writing several books and articles on this subject.

Based on the results of the QEEG test performed on **John**, Thatcher concluded that there was "very clear evidence" that **John** suffered an injury to her brain that was caused by a "rapid acceleration/deceleration" trauma was not necessarily caused by an automobile accident, but could have been caused by an assault or by "[a]ny number of events."

Thatcher also stated that he did not observe the QEEG test performed on **John**, but reviewed the test results he received from a person he identified as "Dr. Sitar." Thatcher was unaware of Sitar's occupation, including whether Sitar was a medical doctor or a physical therapist. Thatcher did not know anything regarding Sitar's training, how long Sitar had conducted QEEG tests, or whether Sitar personally performed the QEEG test on **John** or employed a technician for that purpose.

Thatcher testified that there are no "control conditions" required for accurate performance of a QEEG test, other than having a patient sit "with her eyes closed," and that the testing data indicated that **John's** eyes were closed when the test

was conducted. Although Thatcher was aware that **John** was taking the medications Neurontin and Ritalin, he did not know when she had last taken them before the QEEG test results, and that **John's** QEEG test results demonstrated "a very specific pattern" indicating a particular type of brain injury.

Thatcher also acknowledged that drowsiness in a patient can affect QEEG test results. However, when asked if **John** was drowsy during her QEEG test, Thatcher initially replied, "You would have to ask Dr. Sitar." Thatcher later stated that he knew "with certainty" that **John** had not been drowsy at the time of the test based on his review of **John's** QEEG test results.

In addition to Thatcher's deposition testimony, **John** also offered into evidence the de bene esse deposition testimony of **John K. Nash, Ph.D.**, a licensed psychologist. Nash testified that during his examination of **John**, she informed him that she had developed several symptoms after the accident, including slowed thinking and difficulty organizing her thoughts and concentrating.

696 Based on these symptoms, and on Thatcher's analysis of **John's** QEEG test results, Nash concluded that **John** had sustained a "mild traumatic brain injury that she suffered as a result of the impact and the sudden acceleration-deceleration of her head in *696 [the] car accident." Nash further testified that he was not a forensic psychologist or a medical doctor, and that the medications **John** was taking at the time of her QEEG test should be "taken into account" in analyzing her test results.

State Farm filed a motion in limine seeking to exclude the testimony of Thatcher and Nash. State Farm asserted that the expert testimony should be excluded because, among other reasons, it lacked a proper foundation. State Farm also argued that the expert testimony was inadmissible because QEEG testing had not been established as reliable scientific evidence under the evaluation criteria set forth in Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993).

The trial court entered an order excluding the testimony of both Thatcher and Nash.^[1] Relying on our decision in Tittsworth v. Robinson, 252 Va. 151, 475 S.E.2d 261 (1996), the trial court held that "there were potential testing variables, including, but not limited to, the medication that Dr. **John** was taking at the time of the test, which could affect the outcome of the test that ... cannot be appropriately accounted for." The order further stated that the QEEG testing technique relied on by Thatcher did not meet the criteria for scientific reliability set forth in Daubert.

The trial court also held that Nash's testimony was inadmissible because it was based on Thatcher's analysis of the QEEG test results. The court excluded Nash's testimony on the additional ground that Nash was not qualified to make a medical diagnosis or to state a medical opinion that **John's** injury was related to the automobile accident.

Upon trial of the case, the jury awarded **John** \$10,700 in damages, and the trial court entered judgment on the jury verdict. **John** appeals from this judgment.

John argues that the trial court abused its discretion in excluding the testimony of Thatcher and Nash on the grounds that the evidence lacked a sufficient foundation. **John** contends that the QEEG test, on which this testimony was based, is an "objectively verifiable" physical test, and that the effect of any testing conditions on the results obtained was a matter subject to cross-examination.

In response, State Farm asserts that the trial court properly excluded the disputed expert testimony because the testimony lacked a sufficient factual basis, did not take into account all testing variables, and did not assess the effect of those variables on the test results. State Farm also argues that the trial court properly ruled that Nash was not qualified to render a medical diagnosis or to give a medical opinion regarding the cause of **John's** injuries. We agree with State Farm's arguments.

In civil cases, expert testimony generally is admissible if it will assist the trier of fact in understanding the evidence. See Code §§ 8.01-401.1 and -401.3; Keese v. Donigan, 259 Va. 157, 161, 524 S.E.2d 645, 647 (2000); Tittsworth, 252 Va. at 154, 475 S.E.2d at 263. However, the admission of expert testimony is subject to certain basic requirements, including the requirement that the evidence be based on an adequate foundation. *Id.*; Tarmac Mid-Atlantic, Inc. v. Smiley Block Co., 250

Va. 161, 166, 458 S.E.2d 462, 465 (1995). The decision whether to admit such testimony is a matter committed to the trial judge's sound discretion, and we will reverse a trial court's determination in this regard only when the court has abused its discretion. Lockheed Info. Mgmt. Systems Co. v. Maximus, Inc., 259 Va. 92, 111, 524 S.E.2d 420, 430 (2000); Virginia Power v. Dungee, 258 Va. 235, 258, 520 S.E.2d 164, 177 (1999); Tarmac, 250 Va. at 166, 458 S.E.2d at 465.

Expert testimony is inadmissible if it is speculative or founded on assumptions that have an insufficient factual basis. Keesee, 259 Va. at 161, 524 S.E.2d at 648; Tittsworth, 252 Va. at 154, 475 S.E.2d at 263; Tarmac, 250 Va. at 166, 458 S.E.2d at 466. Such testimony is also inadmissible when an expert has failed to consider all variables bearing on the inferences to be drawn from the facts observed. ITT Hartford v. Virginia Financial Assoc., 258 Va. 193, 201, 520 *697 S.E.2d 355, 359 (1999); Tittsworth, 252 Va. at 154, 475 S.E.2d at 263; Tarmac, 250 Va. at 166, 458 S.E.2d at 466.

In reviewing a trial court's ruling on the admissibility of expert testimony, we are limited to an examination of the record before us. Greater Richmond Transit Co. v. Wilkerson, 242 Va. 65, 68 n. 2, 406 S.E.2d 28, 31 n. 2 (1991); see McDonald v. National Enterprises, Inc., 262 Va. 184, 195, 547 S.E.2d 204, 211 (2001); Commonwealth v. Williams, 262 Va. 661, 669, 553 S.E.2d 760, 764 (2001). Thus, in deciding this appeal, we decline **John's** request that we consider several articles concerning QEEG testing that she failed to submit to the trial court.

We hold that the record before us supports the trial court's determination excluding the challenged testimony. The initial deficiency in the foundation evidence was Thatcher's inability to identify the person who actually performed the QEEG test on **John**. Without this information, the testing conditions and procedures could not be ascertained.

A second deficiency in the foundation evidence was Thatcher's inability to account for the testing variables involving **John's** use of certain medications. In testifying concerning a prior study he had conducted on QEEG testing, Thatcher stated that the possible effects of medication on such tests should be considered with caution. However, Thatcher conceded that he did not know when **John** had last taken her Ritalin and Neurontin medications prior to the QEEG test. He also failed to state whether **John's** use of Ritalin could have had any effect on her QEEG test results. Finally, Thatcher testified that Neurontin can "globally affect" test results, but did not specify whether he observed such an effect in the results of the test performed on **John**.

A third deficiency in the foundation evidence concerned Thatcher's conflicting responses when asked about the testing variable of drowsiness. After acknowledging that drowsiness in a patient can affect some portions of QEEG test results, Thatcher first stated that he did not know whether **John** had been drowsy when the test was conducted, but later stated that he was certain that **John** was not drowsy at the time of the test. Based on these omissions and inconsistencies in the evidence, we hold that the trial court did not abuse its discretion in concluding that the evidence was insufficient to lay a foundation for the testimony of Thatcher and Nash involving the QEEG test performed on **John** and their conclusions based on the results of that test.

We also hold that the trial court properly excluded Nash's opinion testimony that **John** sustained a mild traumatic brain injury as a result of the automobile accident. An opinion concerning the causation of a particular physical human injury is a component of a diagnosis, which is part of the practice of medicine. Combs v. Norfolk & W. Ry. Co., 256 Va. 490, 496, 507 S.E.2d 355, 358 (1998). Nash was a licensed psychologist, not a medical doctor. Therefore, since Nash was not a medical doctor, he was not qualified to state an expert medical opinion regarding the cause of **John's** injury.^[2] See *id.* at 496-97, 507 S.E.2d at 359.

Because the testimony of Thatcher and Nash was inadmissible for the reasons stated above, we do not reach the merits of the issue whether that evidence also failed to meet the criteria for scientific reliability articulated *698 in Daubert, 509 U.S. at 589, 113 S.Ct. 2786. We note, however, that we have not previously considered the question whether the *Daubert* analysis employed by the federal courts should be applied in our trial courts to determine the scientific reliability of expert testimony.^[3] Therefore, we leave this question open for future consideration.

For these reasons, we will affirm the trial court's judgment.

Affirmed.

[1] The judge who rendered this decision was the Honorable R. Terrence Ney.

[2] We note that in *Velazquez v. Commonwealth*, 263 Va. 95, 557 S.E.2d 213 (2002), we recognized an exception to the general rule that only a medical doctor may render an opinion regarding the cause of a physical human injury. There, in a trial on an indictment alleging rape, a Sexual Assault Nurse Examiner (SANE) qualified as an expert witness on the subject of sexual assault injuries. The record showed that the SANE had been a registered nurse for 26 years, had received special training to qualify as a SANE, and had examined approximately 500 victims of sexual assault. We held, in relevant part, that although the SANE was not a medical doctor, she was qualified under the facts presented to render an expert opinion concerning the "causation of injuries in the context of an alleged sexual assault." *Id.* at 104, 557 S.E.2d at 218. Because our holding in *Velazquez* is limited to the unique context of a SANE's expert opinion concerning the causation of injuries in a sexual assault case, that holding does not change the general rule stated above that only a medical doctor may give an expert opinion about the cause of a physical human injury. See *Combs*, 256 Va. at 496-97, 507 S.E.2d at 358-59.

[3] Prior to *Daubert*, however, we discussed the trial court's role in making a threshold finding of scientific reliability when unfamiliar scientific evidence is offered. See *Satcher v. Commonwealth*, 244 Va. 220, 244, 421 S.E.2d 821, 835 (1992), cert. denied, 507 U.S. 933, 113 S.Ct. 1319, 122 L.Ed.2d 705 (1993); *Spencer v. Commonwealth*, 240 Va. 78, 97-98, 393 S.E.2d 609, 621, cert. denied, 498 U.S. 908, 111 S.Ct. 281, 112 L.Ed.2d 235 (1990).

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