#31052-aff in pt & rev in pt-SRJ
2026 S.D. 3

IN THE SUPREME COURT
OF THE
STATE OF SOUTH DAKOTA

* * * *

KEVIN WALTON and
JULIE WALTON, Plaintiffs and Appellants,

v.

HURON REGIONAL MEDICAL CENTER,
INC., WILLIAM J. MINER, M.D., and
JOHN AND JANE DOES, Defendants and Appellees.

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APPEAL FROM THE CIRCUIT COURT OF
THE THIRD JUDICIAL CIRCUIT
BEADLE COUNTY, SOUTH DAKOTA

* * * *

THE HONORABLE PATRICK T. PARDY
Judge

* * * *

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#31052

JENSEN, Chief Justice

[¶1.] Kevin Walton and his wife, Julie Walton, sued Huron Regional Medical Center (HRMC) and Dr. William Miner for medical malpractice, alleging Kevin suffered a hypoxic brain injury[1] from the administration of high dosages of opiates and the failure to properly monitor him while being treated for testicular pain. Following discovery, HRMC moved to exclude the testimony of Dr. Richard Adler, a causation expert witness designated by the Waltons, arguing his testimony was not reliable under SDCL 19-19-702. Dr. Miner joined the motion. The circuit court granted the motion and subsequently granted the motions for summary judgment filed by HRMC and Dr. Miner, concluding the Waltons could not generate a genuine issue of material fact on causation without expert testimony. The Waltons appealed. We reverse in part and affirm in part.

Factual and Procedural History

[¶2.] A brief history of Kevin's medical care is necessary to provide context for the Waltons' claims. At age 26, Kevin began reporting complaints of physical weakness. From 2005 to 2009, Kevin received medical tests and treatment related to these complaints, including two MRI brain scans, lab work, physical therapy, an evaluation for multiple sclerosis, a speech and language evaluation, an electroencephalogram (EEG), cardiac event monitoring, and two echocardiograms.

1. A hypoxic brain injury is a type of brain injury "characterized by a lack of oxygen to the brain" that can result in "severe physical, cognitive, and emotional changes[.]" *Anoxic and Hypoxic Brain Injuries*, Shepard Center, https://shepherd.org/treatment/conditions/brain-injury/types/anoxic-hypoxic/ (last visited Jan. 26, 2026).

Kevin was also diagnosed with Guillain-Barré syndrome during this time.[2] Kevin reported no similar issues until October 2013, when Kevin's medical records showed complaints of insomnia and other physical symptoms that continued through 2016. During this time, Kevin also underwent a psychiatric evaluation, clinic visits for neurology issues and insomnia, an echocardiogram, cardiac monitoring, a nuclear stress test, and a nuclear medicine cardiac study.

[¶3.] Kevin did not present with other medical issues until January 2018, when he began complaining of severe testicular pain. Kevin saw a urologist for his complaints, but no significant physical abnormalities were found. A bilateral spermatic anesthesia block was performed to treat the pain and determine the possible source of the pain.

[¶4.] On April 3, 2018, Kevin was admitted to HRMC by Dr. Miner, complaining of 10/10 testicular pain. Dr. Miner believed Kevin may have epididymitis, an infection of the tube at the back of each testicle carrying the sperm. Dr. Miner treated Kevin with antibiotics and steroids and placed orders to administer frequent dosing of hydromorphone, oxycodone, anti-inflammatories, and muscle relaxants for pain. The hydromorphone prescription contained the following note: "**HIGH ALERT DRUG** HR/BP/RR MONITOR[.]" Kevin was also prescribed trazadone at night, which he had been taking prior to his hospitalization for insomnia. Physician orders were entered to contact a physician if Kevin's

2. Guillain-Barré syndrome "is a condition in which the body's immune system attacks the nerves. It can cause weakness, numbness or paralysis." *Guillain-Barre Syndrome*, Mayo Clinic (June 7, 2024), https://www.mayoclinic.org/diseases-conditions/guillain-barre-syndrome/symptoms-causes/syc-20362793.

respiratory rate was greater than 26 and to administer supplemental oxygen to Kevin as needed to maintain an oxygen saturation above 90%. Periodic oxygen saturations were recorded during Kevin's three-day stay and registered between 92 and 98%. Kevin was discharged on April 5.

[¶5.] On the night of April 8, 2018, Kevin again presented to HRMC with complaints of 10/10 right testicular pain and mild left testicular pain. It is during this three-day stay at HRMC that the Waltons claim Kevin suffered a hypoxic brain injury due to the large dosages of opiates administered to treat his pain. The initial admission orders were entered by physician assistant Jacob Lyngaas and included an order that the physician should be notified for a respiratory rate greater than 26. Kevin's respiratory and oxygen saturation rates were monitored periodically during this three-day stay as well. Lyngaas also entered an order for the administration of 1 milligram of hydromorphone IV every 30 minutes as needed for pain. This order contained the same "HIGH ALERT DRUG" warning as was included in the order during his previous admission to HRMC. Pain-relieving and anti-inflammatory medications were also ordered. The orders were reviewed and co-signed by Dr. Gregory Wiedel on the morning of April 9. Dr. Wiedel also telephonically ordered that the hydromorphone dose be increased to 2 milligrams every 15 minutes as needed for pain and added other pain and muscle relaxant medication orders. Dr. Miner assumed care for Kevin later on the morning of April 9.

[¶6.] At 7:20 am on April 11, Kevin was noted to have an abnormally low respiratory rate of 9 breaths per minute. A nurse documented that Kevin "was awakened from sound sleep to apply oxygen saturation monitor. Patient upon

awakening states he has level 5 pain and requests pain medicine. Patient educated about respiratory rate and narcotic use. Will repeat a narcotic as soon as safe to do so." The nurse documented that Kevin was "frequently drowsy, arousable, drifts off to sleep during conversation." Julie claims that the nurse told her that Kevin "was breathing like a man taking his last breaths" during this time.

[¶7.] At 8:38 am, Dr. Miner entered an order adding 10 milligrams of hydrocodone and 325 milligrams of acetaminophen every four hours as needed—with no parameters regarding when to give this medication in comparison to the previously ordered medications. Kevin was given two additional dosages of hydrocodone before he asked to go home and was discharged from HRMC at 2:30 pm.

[¶8.] Immediately after his discharge, Kevin began exhibiting new and unusual symptoms that Julie began to log. She reported that Kevin acted childlike, spoke with a stutter, and engaged in unconventional conversations. She also reported that Kevin displayed memory problems and confusion and appeared to be "choking all the time."

[¶9.] On April 16, 2018, Kevin attempted to return to work. His employer reported that Kevin had a stutter, blank eyes, and lack of balance and asked Julie to pick Kevin up. Julie logged similar problems almost every day for the following month. On May 12, Kevin and Julie attempted to go camping. Julie reported that Kevin was very unstable in the camper, could not cut his steak at supper, almost got lost walking to another camper, and choked badly that evening.

[¶10.] Kevin underwent numerous diagnostic tests and evaluations for these symptoms. An MRI brain scan taken on April 20 showed some fluid behind the left ear and mild sinus inflammation, but no abnormalities in the brain structure. On May 23, Kevin presented to Dr. William Rossing for a neurological evaluation. He described Kevin's condition as "atypical syndrome of encephalopathy,[3] fatigability, gait imbalance and some coordination deficits that also incorporate peculiar speech and language changes." An EEG of the brain, measuring electrical activity within the brain, did not show any abnormalities. On May 31, Kevin had a brain PET scan, providing detailed images of brain function and metabolism, which was also read as unremarkable.

[¶11.] Sometime in May or June, Julie noticed that Kevin was speaking in a foreign accent, which she described as similar to a Hutterite accent. On July 9, Kevin had another PET scan of his entire body and an MRI brain scan. Both were read as normal. An EEG taken on July 25 was also read as normal.

[¶12.] On September 26, Kevin presented to Dr. Lyle Christopherson, a psychiatrist, for a psychiatric evaluation. Due to the absence of any physiological or observable structural brain abnormalities in any of the diagnostic testing, Dr. Christopherson believed Kevin had conversion disorder, also known as functional

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3. "Encephalopathy is a group of conditions that cause brain dysfunction." *Encephalopathy*, Cleveland Clinic, https://my.clevelandclinic.org/health/diseases/encephalopathy (last updated Oct. 2, 2023). There are different types of encephalopathy, including hypoxic-ischemic encephalopathy (HIE) (a brain injury that occurs when the brain does not get enough blood and oxygen) and toxic encephalopathy (brain dysfunction caused by medications, street drugs, or poisons). *See id.*; *Hypoxic-Ischemic Encephalopathy (HIE)*, Cleveland Clinic, https://my.clevelandclinic.org/health/diseases/hypoxic-ischemic-encephalopathy-hie (last updated Sept. 8, 2023).

neurological disorder,[4] but did not reach a definitive diagnosis.

[¶13.] On November 14, Kevin presented to Dr. Joseph Matsumoto, a professor of neurology and movement disorder specialist, for a comprehensive neurological examination. Dr. Matsumoto diagnosed Kevin with functional neurological deficits, functional right leg weakness, and a functional speech disorder. Dr. Matsumoto described these conditions as "functional" because there were no observable structural or physiological changes to the brain explaining Kevin's symptoms.

[¶14.] On January 18, 2019, Kevin followed up with Dr. Rossing, who concluded that Kevin was likely suffering from a functional movement disorder. At a subsequent follow-up visit, Dr. Rossing diagnosed Kevin with "[f]unctional movement/neurologic disorder." Kevin also presented for follow-up medical treatment for ongoing testicular pain, various nerve blocks, another neurology evaluation, weekly psychotherapy visits, and a CT scan of the abdomen and pelvis.

[¶15.] On August 12, 2019, Kevin began rehabilitation at The Brain Injury Rehabilitation Center (the Center) in Rapid City. A progress report from the Center listed Kevin's cause of trauma as hypoxia, primarily based on the history provided by the Waltons. Kevin underwent a neurological evaluation at the Center and was diagnosed with mild neurocognitive disorder and unspecified adjustment disorder. On November 4, Kevin was discharged from his weekly psychotherapy visits

4. Dr. Adler agreed with defense counsel that conversion disorder is a "mental health condition that causes physical symptoms because the brain converts the effects of a mental health condition into disruptions of the brain or nervous system" and typically a patient will "complain of physical symptoms for which a medical provider cannot determine the cause[.]"

against professional advice. On November 11, Kevin underwent a surgical procedure for the removal of his left testicle.

[¶16.] The Waltons commenced this action against HRMC and Dr. Miner, alleging that HRMC and Dr. Miner were negligent in overprescribing opiates to Kevin and failing to monitor him, resulting in Kevin suffering a hypoxic brain injury during his hospitalization. HRMC and Dr. Miner denied any negligence, further denied that Kevin suffered a hypoxic brain injury, and alleged that Kevin suffers from conversion disorder.

[¶17.] The Waltons designated, among others, Dr. Kenneth Stein, a board certified physician in internal and emergency medicine, and Dr. Joseph Wu, a psychiatrist, as expert witnesses. The Waltons later withdrew Dr. Wu as a testifying expert.

[¶18.] Dr. Stein prepared a report stating, "The amount of opiate medications that were ordered (by Dr. Weidel and then continued by Dr. Miner) and that were administered by the nursing staff at HRMC [w]ould best be described as massive." Dr. Stein also opined that it was a breach of the standard of care for Dr. Miner to administer massive dosages of hydromorphone to Kevin; for HRMC nursing staff to fail to inquire whether the dosages of hydromorphone were ordered correctly; for Dr. Miner and HRMC to administer these high dosages "on a regular medical/surgical ward without continuous monitoring of oxygen saturation and respiratory rate[;]" for HRMC nursing staff to fail to recognize that Kevin was suffering from toxicity related to the high dosages and combination of hydromorphone and other sedative medications; and for HRMC nursing staff to administer additional sedating

medications after Kevin had been noted to have a low sedation score and a respiratory rate as low as 9 breaths per minute.

[¶19.] The Waltons later retained Dr. Adler, a psychiatrist, as a testifying causation expert. Dr. Wesley Center, a psychologist, was also retained to read a quantitative electroencephalography (qEEG) test that was considered by Dr. Adler in arriving at his opinions. As discussed in more detail later, the *Daubert* motions filed by the defendants to exclude both doctors' opinions focused primarily on the qEEG, as well as other quantitative analysis testing conducted by Dr. Adler.

[¶20.] A qEEG quantitative analysis test digitally quantifies the raw EEG signals from the brain's cortex and compares this information to statistically normative population groups to identify patterns of dysfunction in the subject's brain functioning. As Dr. Center explained in a deposition:

> QEEG is when we take the EEG data, we quantify it, filter it, digitally process it, create displays, spectral analyses, database comparisons, so it's the use of the EEG in a digitized form to more easily be able to depict that activity, localized activity, and to make some statements about what may or may not be happening.

The qEEG is peer reviewed and used in clinical settings to understand and confirm certain diagnoses, but is not considered a primary diagnostic tool. Dr. Adler also used Neurocloud-VOL and Neurocloud-PET tests in his work on Kevin's case. These quantitative analysis tests quantify the MRI and PET brain scans, comparing them to statistical data to provide information about the brain structure and function.

[¶21.] Before preparing his report, Dr. Adler met with Kevin and Julie to collect various information about Kevin, including a social history, developmental

history, family of origin, educational history, marital history, occupational history, financial status, legal history, psychiatric history, medical history, and current medication use. In addition to the quantitative analysis tests, Dr. Adler conducted several screening and psychological tests on Kevin, including the Draw a Clock Test, Gudjonsson Suggestibility Scale, CNS Vital Signs (CNS-VS) neurocognitive assessment,[5] Personality Assessment Inventory, Impact of Events Scale, Behavior Rating Inventory of Executive Function, Adult Behavior Checklist, a symptom screen, and a mental status examination.

[¶22.] Dr. Center conducted the qEEG assessment based upon another EEG taken by a neurologist. Kevin completed a questionnaire and was given a CNS-VS by Dr. Center. In conducting the qEEG assessment, Dr. Adler asked Dr. Center to consider whether the qEEG showed any indications of either hypoxic brain injury or a traumatic brain injury from a 2003 or 2004 snowmobile accident—from which Kevin self-reported he was hospitalized and had jaw surgery. Dr. Center opined that Kevin's qEEG revealed patterns suggesting a traumatic brain injury and that Kevin's inability to control or regulate his emotions were "consistent with his CNS VS results, self-reported symptoms, and history of hypoxemia." However, Dr. Center noted that he was unable to determine, from the qEEG results which were suggestive of a trauma-based injury, whether the snowmobile accident or the alleged hypoxic event at HRMC may have caused the injury.

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5. The CNS-VS test is used to "assess a broad spectrum of brain function performance or domains[,]" including, among others, verbal memory, visual memory, psychomotor speed, motor speed, reaction time, and reasoning. *Clinical Practice*, CNS Vital Signs, https://www.cnsvs.com/ClinicalPractice.html (last visited Jan. 26, 2026).

[¶23.] After reviewing Dr. Center's report, including his analysis of the qEEG, Dr. Adler utilized the quantitative analysis tests, along with other data and information, to arrive at a differential diagnosis of mild neurocognitive disorder due to drug-induced hypoxemia. Dr. Adler testified in a deposition that he did not use the quantitative testing to diagnose hypoxia, but rather to determine whether there was a biological basis for the neurological deficits Kevin presented. He stated:

> [C]onversion disorder says, the diagnostic criteria -- there is no physiologic basis. There is no organic basis. There is no evidence that would account for the clinical presentation of these deficits.
> . . .
> [The quantitative analysis testing] shows us that in terms of neurocognitive functioning, not structure, functioning that something is amiss.
> . . .
> This is the qEEG, without a doubt, of somebody who is quite afflicted [with a biologic abnormality in the brain].

Regarding his differential diagnosis method, Dr. Adler explained that the two possible explanations offered for Kevin's condition were hypoxia or conversion disorder. Based upon all of the information available to him, he had ruled out conversion disorder and ruled in hypoxia to a reasonable degree of medical certainty.

[¶24.] In their motion to exclude the opinions of Dr. Adler and Dr. Center, HRMC argued that the doctors' methodology and conclusions were unreliable under SDCL 19-19-702 and the *Daubert* standard. The motion focused on the unreliability of the quantitative analysis testing considered by Dr. Adler in arriving at his opinions. The Waltons resisted the motion as to Dr. Adler, but withdrew Dr. Center as a testifying expert.

[¶25.] Following a hearing, the court issued a memorandum decision granting the motion to exclude the entirety of Dr. Adler's opinions. HRMC and Dr. Miner subsequently filed separate motions for summary judgment, arguing the Waltons could not present the necessary causation evidence on their claims for malpractice in the absence of Dr. Adler's opinions. The Waltons resisted the motions and filed a motion for reconsideration of the court's *Daubert* ruling.

[¶26.] At a hearing on the motions, the circuit court initially considered the Waltons' motion for reconsideration and denied the motion.[6] The circuit court also heard argument on the summary judgment motions and subsequently granted summary judgment in favor of both defendants.

[¶27.] The Waltons appeal, raising several issues, which we restate as follows:

1. Whether the circuit court abused its discretion when it granted the motion to exclude the testimony of Dr. Adler.

2. Whether the circuit court erred when it granted summary judgment to the defendants.

6. HRMC and Dr. Miner argue the circuit court properly denied the Waltons' motion for reconsideration, without considering the merits, because the Waltons sought to introduce new evidence that could have been initially presented in resisting the *Daubert* motion. Our review of the circuit court's *Daubert* ruling is based entirely on the initial motion and the Waltons' resistance to that motion. As such, we decline to consider any of the additional submissions from the Waltons in the motion for reconsideration. We need not consider the propriety of circuit court's decision denying the motion for reconsideration based upon our resolution of the *Daubert* issue.

Standard of Review

[¶28.] "We review a trial court's 'decision to admit or deny an expert's testimony under the abuse of discretion standard.'" *State v. Fisher*, 2011 S.D. 74, ¶ 42, 805 N.W.2d 571, 580 (citations omitted). An abuse of discretion "is a fundamental error of judgment, a choice outside the range of permissible choices, a decision, which, on full consideration, is arbitrary or unreasonable." *State v. Pretty Weasel*, 2023 S.D. 41, ¶ 28, 994 N.W.2d 435, 441 (citation omitted). We review a circuit court's decision on "a motion for summary judgment under the de novo standard of review." *North Star Mut. Ins. v. Korzan*, 2015 S.D. 97, ¶ 12, 873 N.W.2d 57, 61 (citation omitted). "Summary judgment is appropriate 'if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.'" *Id.* (citation omitted).

1. Exclusion of Dr. Adler's opinions.

[¶29.] The Waltons argue the circuit court misapplied SDCL 19-19-702 to the testimony of Dr. Adler. Specifically, the Waltons assert the circuit court conducted too narrow of an analysis by excluding all of Dr. Adler's opinions based solely upon the quantitative analysis testing. They argue the court failed to consider whether Dr. Adler's causation opinions, formed through a differential diagnosis methodology, were reliable. They further contend that Dr. Adler's use of the quantitative

analysis testing, along with other information to support his differential diagnosis analysis, was both relevant and reliable.[7]

[¶30.] SDCL 19-19-702 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.

[¶31.] "The burden of demonstrating that the testimony is competent, relevant, and reliable rests with the proponent of the testimony. The proponent of the expert testimony must prove its admissibility by a preponderance of the evidence." *Tosh v. Schwab*, 2007 S.D. 132, ¶ 18, 743 N.W.2d 422, 428 (citation omitted). The defendants' *Daubert* motion did not challenge Dr. Adler's competence or the relevance of his opinions. Instead, they argued Dr. Alder's methodology in relying upon the quantitative analysis testing was unreliable.

[¶32.] This Court determines the admissibility of expert testimony in accordance with *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

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7. The Waltons also argue the circuit court abused its discretion by relying upon certain erroneous factual findings in granting the motion to exclude the testimony of Dr. Adler, but we need not address these arguments given our determination under *Daubert*.

State v. Lemler, 2009 S.D. 86, ¶ 22, 774 N.W.2d 272, 280 (citation omitted). "The *Daubert* standard requires that the trial court ensure an expert's testimony 'rests on a reliable foundation and is relevant to the task at hand.'" *Id.* (citations omitted). We have stated that "an expert's opinion is reliable if it is derived from the foundations of science rather than subjective belief." *State v. Guthrie*, 2001 S.D. 61, ¶ 36, 627 N.W.2d 401, 416–17 (citing *Daubert*, 509 U.S. at 589–90).

[¶33.] In applying the *Daubert* standard, "the trial court must function as a gatekeeper." *Kostel v. Schwartz*, 2008 S.D. 85, ¶ 79, 756 N.W.2d 363, 387 (citations omitted). "[T]he district court's gatekeeping role separates expert opinion evidence based on 'good grounds' from subjective speculation that masquerades as scientific knowledge." *Glastetter v. Novartis Pharms. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (citation omitted). In this role, the court must "'screen the jury from unreliable nonsense opinions, but not exclude opinions merely because they are impeachable.'" *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1044 (9th Cir. 2014) (citation omitted).

[¶34.] In considering reliability,

> [a] circuit court may consider the following nonexclusive guidelines for assessing an expert's methodology: "(1) whether the method is testable or falsifiable; (2) whether the method was subjected to peer review; (3) the known or potential error rate; (4) whether standards exist to control procedures for the method; (5) whether the method is generally accepted; (6) the relationship of the technique to methods that have been established as reliable; (7) the qualifications of the expert; and (8) the non-judicial uses to which the method has been put."

State v. Huber, 2010 S.D. 63, ¶ 25, 789 N.W.2d 283, 290–91 (citation omitted). These factors are flexible and are "neither necessarily nor exclusively appli[cable] to

all experts or in every case." *Lemler*, 2009 S.D. 86, ¶ 24, 774 N.W.2d at 280 (quoting *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 141 (1999)).

[¶35.] In its memorandum decision, the circuit court aptly described the data and information Dr. Adler relied on and the differential diagnosis he conducted to arrive at his opinions:

> Dr. Adler, when approached with this matter, used a diagnostic method that is typically used in medicine. Dr. Adler (a) gathered some of the patient's history and symptoms; (b) performed physical examinations; (c) conducted diagnostic tests; (d) analyzed the results; (e) formed a differential diagnosis; (f) ruled out alternative explanations; and (g) arrived at a final diagnosis. Dr. Adler viewed Mr. Walton's medical history, including any pre-existing conditions and previous cognitive or emotional issues, witness statements from family members or caregivers, medical records from the alleged overdose on opioids, clinical observations, neuropsychological evaluations, and *imaging studies*.

[¶36.] However, rather than applying the *Daubert* reliability standards to this methodology, the circuit court considered only the reliability of the three quantitative analysis tests utilized by Dr. Adler as a part of his differential diagnosis. By considering only the reliability of the quantitative analysis testing, the court failed to apply *Daubert* to the differential diagnosis utilized by Dr. Adler to rule out conversion disorder, rule in hypoxia, and ultimately arrive at his causation opinions. Moreover, in considering the reliability of the quantitative analysis tests, the circuit court only analyzed whether these tests were reliable to diagnose hypoxia, not whether the tests provided reliable information for Dr. Adler to consider in making his differential diagnosis.

[¶37.] In his deposition, Dr. Adler explained his use of the quantitative analysis testing, particularly the qEEG, as part of his differential diagnosis to arrive at his causation opinions:

> Q: And just to be clear, you're not using, like, for instance, the qEEG as a way to establish definitive proof or objective proof that there's hypoxia, but you're just using it to show that there is some organic brain injury to rule out and to discredit conversion disorder and to show there's symmetry to -- to rule out that it's a -- just a TBI that is affecting Mr. Walton; is that correct?
>
> A: Yeah, plain and simple. Right, that's a good way of saying it. That's right. These are tools within the totality. They're never, never, no matter how fancy, a standalone tool. That's not how doctors do things. Doctors look at all the evidence, right. And you ultimately reach a diagnosis. That's how I've always done it and hope to always do it.

[¶38.] Although we have not explicitly considered whether a physician's use of a differential diagnosis methodology is reliable under *Daubert*, there is considerable case law on this issue in the federal courts. "Differential diagnosis, or differential etiology, is a standard scientific technique of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated." *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 262 (8th Cir. 1999) (citation omitted). "Most circuits have held that a reliable differential diagnosis satisfies *Daubert* and provides a valid foundation for admitting an expert opinion." *Turner v. Iowa Fire Equip. Co.*, 229 F.3d 1202, 1208 (8th Cir. 2000). "The circuits reason that a differential diagnosis is a tested methodology, has been subjected to peer review/publication, does not frequently lead to incorrect results, and is generally accepted in the medical community." *Id.* (citations omitted).

[¶39.] "A reliable differential diagnosis typically, though not invariably, is performed after 'physical examinations, the taking of medical histories, and the review of clinical tests, including laboratory tests,' and generally is accomplished by determining the possible causes for the patient's symptoms and then eliminating each of these potential causes until reaching one that cannot be ruled out or determining which of those that cannot be excluded is the most likely." *Westberry*, 178 F.3d at 262 (citations omitted). The Eighth Circuit has consistently held "that experts are not required to rule out all possible causes when performing the differential etiology analysis" and that "a differential expert opinion can be reliable even 'with less than full information.'" *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 563–64 (8th Cir. 2014) (citations omitted). However, "[t]he conclusion that the opinion of a doctor who has engaged in few standard diagnostic techniques should be excluded unless the doctor offers a good justification for his or her conclusion is supported by the case law." *In re Paoli R.R. Yard PCB Litig.,* 35 F.3d 717, 761 (3d Cir. 1994).

[¶40.] In arriving at his causation opinions, Dr. Adler began his analysis with two primary diagnoses in mind—conversion disorder and hypoxic brain injury—because those were the two diagnoses of the medical professionals who reviewed Kevin's case. However, Dr. Adler also addressed and considered the possibility of a traumatic brain injury from the prior snowmobile accident.[8] From this starting

8. Dr. Center concluded the qEEG test was demonstrative of biologically-induced brain trauma. However, he was unable to differentiate whether this trauma was drug induced or the result of the 2003 snowmobile accident. Dr. Center was not asked to, and acknowledged that he was unable to, make a

(continued . . .)

point, Dr. Adler's report identified a variety of data sources he considered to arrive at his opinions on causation, such as an extensive medical history; direct observation; the records and information from Kevin's hospital stay; his before and after symptoms; and the psychological testing conducted by Dr. Adler, including interviews, self-report measures, performance measures, and "objective scans addressing both structural (e.g., MRI) and functional (e.g., QEEG, PET) aspects of brain functioning which were submitted for quantitative analyses using databases from suitable comparison groups."[9]

[¶41.] Dr. Adler's methodology in arriving at his differential diagnosis began with Kevin's medical history at HRMC. Dr. Adler believed based upon this history that the symptoms were indicative of a hypoxic brain injury as new symptoms

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(. . . continued)

medical diagnosis as to either cause based upon his limited role in Kevin's case. Dr. Adler addressed the possibility of a traumatic brain injury as part of his differential diagnosis and ruled out traumatic brain injury as a cause of his current neurological deficits based upon Kevin's medical history, the symptoms that arose immediately following his hospitalization at HRMC, and the psychological testing. As to Kevin's diagnosis of Guillain-Barré syndrome in 2005, there was no similar diagnosis after Kevin was admitted to HRMC in 2018, and Dr. Adler and Dr. Center testified that such a diagnosis typically lasts months rather than years and would not show up on a qEEG.

9. The defendants emphasize that Dr. Adler admitted he did not review all of Kevin's medical records before forming his causation opinions. While "performance of physical examinations, taking of medical histories, and employment of reliable laboratory tests all provide significant evidence of a reliable differential diagnosis, . . . a doctor does not always have to employ *all* of these techniques in order for the doctor's differential diagnosis to be reliable." *In re Paoli*, 35 F.3d at 758–59 (emphasis added). This is because "differential diagnosis is an ongoing process of making judgments about causation and then adapting those judgments as new information is acquired." *Id.* at 759.

developed immediately after his hospitalization. Dr. Adler relied upon both the hospital notes and history from Kevin's stay at HRMC that he considered as part of his diagnosis:

> So in short he was in [the] hospital. He was being given a number of different narcotics, that he was noted in particular at a certain point in the morning to have respirations of 9 per minute, that he did however at that moment have a[n oxygen] saturation of 93 percent, but that it was noted that his mental status and the nature of his breathing seemed to be altered.
>
> Despite the fact that he was in pain and requested additional medication, the nurse indicated that she was not going to give him additional medicine. And that he was noted sometime later still to let's say be impaired in some way in terms of his speech, his general appearance. And that later that day -- or when he was discharged, he had unusual aberrant, peculiar behavior.

[¶42.] Dr. Adler also testified that he considered Kevin's psychological testing, particularly CNS-VS test results, which showed cognitive performance deficits consistent with a hypoxic brain injury. Dr. Adler explained that the "considerable 'scatter' among the domain scores" from this test and the fact that Kevin's "notable areas of weakness include[d] Visual Memory, Psychomotor and MotorSpeed" were indicative of a mild traumatic brain injury.

[¶43.] Additionally, Dr. Adler explained that Kevin's symptoms did *not* meet the criteria under the Diagnostic and Statistical Manual of Mental Disorders, 5TR edition (DSM-5TR) for conversion disorder:

> 1. One or more symptoms of altered voluntary motor or sensory function.
>
> 2. Clinical findings can provide evidence of incompatibility between the symptom and recognized neurological or medical conditions.

3. Another medical or mental disorder does not better explain the symptom or deficit.

4. The symptom or deficit results in clinically significant distress or impairment in social, occupational, or other vital areas of functioning or warrants medical evaluation.

Jessica L. Peeling & Maria R. Muzio, *Functional Neurologic Disorder*, National Library of Medicine, https://www.ncbi.nlm.nih.gov/books/NBK551567/ (last updated May 8, 2023).

[¶44.] Dr. Adler acknowledged that Kevin meets the first and fourth criteria because of his "leg trouble" and the limitations that prevent him from working and engaging in vital areas of life. Dr. Adler ruled out conversion disorder, however, because, in his view, Kevin does not meet the second and third criteria for a conversion disorder diagnosis. Relying on the psychological testing and Kevin's history, Dr. Adler opined that Kevin does not meet the second diagnostic criterion because conversion disorder is "well-known to be associated with a history of psychiatric problems and also co-occurring psychiatric disorders, which [Kevin] does not have" and that the psychological testing shows "the absence of a preoccupation of vast somatic symptoms . . . typical of conversation disorder; anxiety; depression -- none of it's there." Additionally, Dr. Adler explained Kevin's foreign accent syndrome was incompatible with conversion-based foreign accent syndrome because the latter is most often functional rather than biologically based. He explained that conversion-based foreign accent syndrome is uncommon in men, and there were no known conversion-based foreign accent syndrome cases prior to 2005, and only fifteen such cases since 2005.

[¶45.] As to the third criterion under the DSM-5TR, Dr. Adler explained that another medical or mental disorder, hypoxia, better explains the symptoms. Dr. Adler testified that most of the other providers primarily relied upon the absence of abnormalities shown on the brain scans but failed to conduct the battery of psychological testing that he carried out. He further testified that the absence of past similar symptomology in kind and degree, before the large dosages of opiates were administered to Kevin in 2018, supports hypoxia as a better explanation for Kevin's symptoms.

[¶46.] Dr. Adler also noted that the abnormalities identified by Dr. Center in a reading of the qEEG were suggestive of a physical cause for Kevin's symptoms rather than an unexplained conversion disorder. He testified these abnormalities did not establish a diagnosis of hypoxia, but rather were useful to provide information about brain function and brain abnormalities that may not be observable in the various brain scans. Dr. Adler explained that the qEEG report was created by uploading an EEG to a computer program for analysis of the brain's electrical activity and comparison to a normalized control group and was subsequently analyzed by Dr. Center, who is certified in reading qEEG reports.

[¶47.] Dr. Center testified at his deposition that qEEG has been tested and used extensively in clinical settings to identify mild traumatic brain injuries. He also referred to many peer-reviewed articles discussing the use of qEEG in a clinical setting for mild traumatic brain injuries and the known error rates for using qEEG to demonstrate brain abnormalities. The Waltons also submitted a 2020 peer-reviewed article, which provides that "[q]EEG is used for the following conditions:

post-concussion syndrome, mild or moderate traumatic brain injury, attention deficit disorder, schizophrenia, depression, alcoholism, tinnitus and for monitoring the therapeutic response to psychotropic drugs."[10]

[¶48.] The defendants highlight the seeming inconsistencies between the qEEG and EEGs conducted on Kevin during the months following his hospitalization at HRMC. Specifically, the EEGs were all read to be normal, while the qEEG was suggestive of some biologically-based trauma. In this regard, Dr. Center testified that the standard of care to test for signs of hypoxia through an EEG would require it to be conducted within hours or days after the toxic exposure. He explained that the medical literature is clear that a hypoxic exposure would not likely show up on an EEG after this time.

[¶49.] Although the circuit court addressed the reliability of the qEEG testing considered by Dr. Adler, the court did so in the context of considering its reliability to diagnose hypoxia. But the record clearly establishes that neither Dr. Adler nor Dr. Center used the qEEG testing to diagnose Kevin with hypoxia, and they both specifically rejected the qEEG as a tool to provide a specific diagnosis. Dr. Adler testified that in considering the qEEG he was not using it to diagnose hypoxia, but

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10. HRMC cites to several decisions from other jurisdictions, which have excluded expert opinions relying upon qEEG testing. However, the cases are distinguishable from the present case because the experts in those cases solely used a qEEG to diagnose certain conditions. Additionally, many of the cited cases applied the "general acceptance" standard from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). This Court previously applied the *Frye* standard. *See State v. Wimberly*, 467 N.W.2d 499, 505 (S.D. 1991). However, in *State v. Hofer*, we expressly adopted the Supreme Court's *Daubert* standard and held that general acceptance in the scientific community is no longer required. 512 N.W.2d 482, 484 (S.D. 1994); *see also State v. Moeller*, 1996 S.D. 60, ¶ 52, 548 N.W.2d 465, 479.

to consider whether there were brain wave patterns suggestive of a biological cause of Kevin's neurological deficits. Dr. Center acknowledged the absence of any known error rates, peer reviews, or proven reliability for qEEG testing as the sole diagnostic tool for hypoxia, but stated that studies show the qEEG testing provides valid, reliable, and clinical applications, meeting peer review standards, to identify abnormalities in brain function, such as those existing in this case.

[¶50.] In addition to the qEEG testing from Dr. Center, Dr. Adler also relied upon the Neurocloud-VOL and Neurocloud-PET quantitative testing as part of his differential diagnosis. Dr. Adler testified that the Neurocloud tests did not provide any new information but were consistent with the information in the qEEG report from Dr. Center.

[¶51.] In terms of the reliability, the Waltons did not present evidence to meet their burden that Neurocloud-VOL and Neurocloud-PET meet the *Daubert* reliability standard. In his deposition, Dr. Adler testified that he did not know whether Neurocloud-VOL and Neurocloud-PET had been tested for accuracy or reliability, had been subjected to peer review and publication, or had a known rate of error. Further, the Waltons could only point to three European hospitals where Neurocloud-PET has been validated in clinical environments. The circuit court also noted discrepancies between the results of the various diagnostic tests conducted on Kevin that are known to be reliable and the results of the Neurocloud tests. Based upon the record, we cannot say the circuit court abused its discretion in determining the Waltons had not presented evidence of the reliability of these Neurocloud tests

and in excluding Dr. Adler's testimony concerning these two quantitative analysis tests.

[¶52.] Nonetheless, given the other reliable methodology Dr. Adler utilized to arrive at a differential diagnosis of hypoxic brain injury, including the qEEG, the circuit court abused its discretion in excluding his opinions. In particular, the court failed to apply the *Daubert* reliability standards to the differential diagnosis methodology, including all of the information and data relied upon by Dr. Adler, to arrive at his opinions. "When a trial court misapplies a rule of evidence, as opposed to merely allowing or refusing questionable evidence, it abuses its discretion." *Guthrie,* 2001 S.D. 61, ¶ 30, 627 N.W.2d at 415 (citation omitted). We reverse the circuit court's decision excluding Dr. Adler's opinions and testimony, including the qEEG evidence, but affirm the circuit court's decision excluding his testimony concerning the Neurocloud-VOL and Neurocloud-PET tests.

2. Grant of summary judgment to the defendants.

[¶53.] "In order to prevail in a suit based on negligence, a plaintiff must prove duty, breach of that duty, proximate and factual causation, and actual injury." *Hanson v. Big Stone Therapies, Inc.*, 2018 S.D. 60, ¶ 25, 916 N.W.2d 151, 158 (citations omitted). "'[I]n medical malpractice cases[,] . . . negligence must be established by the testimony of medical experts,' because a verdict in a malpractice case cannot be based on 'speculation and conjecture.'" *Kostel*, 2008 S.D. 85, ¶ 61, 756 N.W.2d at 383 (citation omitted). The element of negligence at issue in the summary judgment motions below was causation.

> In negligence cases and especially in malpractice cases, proof of causal connection must be something more than consistent with

> the plaintiff's theory of how the claimed injury was caused. The burden is on plaintiff to show that it is more probable that the harm resulted from some negligence for which defendant was responsible than in consequence of something for which he was not responsible.

Hanson, 2018 S.D. 60, ¶ 34, 916 N.W.2d at 160 (citation modified) (citations omitted). "Causation is generally a question of fact for the jury except when there can be no difference of opinion in the interpretation of the facts." *Id.* (citation omitted).

[¶54.] After excluding the opinions of Dr. Adler, the circuit court determined the Waltons could not present the necessary expert testimony to create a genuine issue of material fact on causation. Having reversed the circuit court's *Daubert* ruling, we conclude the opinions of Dr. Stein and Dr. Adler create a genuine issue of material fact on causation.

[¶55.] In his report, which has not been challenged, Dr. Stein testified to several breaches of the standard of care, as well as a general statement that the combination of the high dose opioids given to Kevin greatly increased his risk for hypoventilation, hypoxemia, respiratory arrest, and death. Additionally, Dr. Stein stated, to a reasonable degree of medical certainty, the breaches of the standard of care on behalf of HRMC and Dr. Miner were the direct cause of Kevin's injuries. Further, Dr. Adler opined that Kevin has a hypoxic brain injury and that "[t]his disorder is the *direct and proximate result* of the subject events which are the focus of the pending lawsuit." (Emphasis added.) Therefore, we reverse the circuit court's entry of summary judgment in favor of HRMC and Dr. Miner.

[¶56.] For the reasons discussed, we affirm in part and reverse in part and remand for further proceedings consistent with this opinion.

[¶57.] SALTER, DEVANEY, and MYREN, Justices, and KERN, Retired Justice, concur.

[¶58.] GUSINSKY, Justice, not having been a member of the Court at the time this action was considered by the Court, did not participate.