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Daubert Meets the Real World: Admissibility of Causation Testimony by Treating Physicians Under Section 490.065

By Tim McCurdy

The treating physician is often the holy grail of expert witnesses. The treating physician has the credentials of a medical witness, without the perceived bias of a retained (*i.e.*, paid) medical expert. Many of the appealing attributes of the treating physician as a witness also create hurdles for the admission of causation opinions. The treating physician is focused first and foremost on treating the patient – which might not require a detailed investigation of the potential causes of the patient's condition. The treating physician often relies on the history of the patient, and when a clear temporal relationship between accident and injury exists the physician may have no reason to further investigate causation. Finally, the treating physician often relies on their education, training, and experience as a basis for opinions, as opposed to reliance on scientific publications.

With Missouri's adoption of the federal expert witness standard in personal injury cases,¹ Missouri courts must now assess the admission of treating physician causation testimony under the “*Daubert* standard.” Named after the United States Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,² the *Daubert* standard focuses on the reliability of the expert's methodology when determining admissibility. Mention of *Daubert* often conjures images of day-long “mini-trials” where experts argue over the meaning of footnotes in scholarly articles – an image poorly suited to the realities of both the day to day practice of medicine and a circuit court judge's crowded trial docket.

This article addresses what will likely be one of the most common

evidentiary issues under Section 490.065 – the application of the *Daubert* standard to the admission of causation testimony by treating physicians. For nearly twenty-five years, federal courts have applied *Daubert* and its progeny to determine the admissibility of causation testimony by treating physicians.³ As such, this article turns to federal appellate court decisions to provide a framework for assessing the reliability of causation testimony by treating physicians under the *Daubert* standard.⁴

The admissibility of treating physician causation testimony is inherently fact specific, but a review of

federal cases shows certain common principles. First, the differential diagnosis method is a reliable methodology that can satisfy the *Daubert* standard. Second, to be reliable the physician must show that they have “ruled in” potential causes of the plaintiff's injuries, and then “ruled out” other potential causes. Third, primary reliance on the plaintiff's history and a temporal relationship between accident and injury will not be grounds to exclude the physician's opinion, provided the physician also considered other factors as part of a reliable differential diagnosis. Fourth, the *Daubert* standard does

1. In 2017, Mo. Rev. Stat. § 490.065 was recently amended to adopt the Federal Rules of Evidence for all cases other than domestic relations, juvenile, probate, and non-jury matters. Sections 490.065.2(1), (2), (3), and (4) are identical to Federal Rules of Evidence 702, 703, 704, and 705 respectively. Section 490.065.2(1) adopts the “*Daubert* standard” set forth in Rule 702 verbatim. The section provides as follows:
(1) 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.
2. 509 U.S. 579 (1993).
3. For an excellent discussion of the issues presented by treating physicians providing causation testimony, and federal cases addressing those issues, see Hon. William P. Lynch, *Doctoring the Testimony: Treating Physicians, Rule 26, and the Challenges of Causation Testimony*, 33 REV. LITIG. 249 (Spring 2014).
4. See *e.g.*, *State Bd. of Registration for Healing Arts v. McDonagh*, 123 S.W.3d 146, 155 (Mo. *en banc* 2003) (stating cases interpreting the federal rules provide useful guidance to interpret Missouri's expert witness standard but cautioning that, although illustrative, the federal courts' interpretation of their rules of evidence does not control Missouri's interpretation of Section 490.065, even when the rules themselves are nearly identical).

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not preclude an expert from relying on their education, training, and experience to offer opinions (without reliance on scientific publications), so long as the expert demonstrates why reliance on education, training, and experience is a sufficient basis to support a properly performed differential diagnosis.

I. "Expert" Causation Testimony by a Treating Physician Under Section 490.065

As an initial matter, a treating physician must be offering opinion testimony to fall under the requirements of Section 490.065. Missouri courts have noted "[t]he treating physician is first and foremost a fact witness, as opposed to an expert witness."⁵ As such, a treating physician who limits testimony to the treatment the physician provided would not necessarily fall under Section 490.065 if the court determined the physician did not offer any opinions.⁶ Once the treating physician takes the next step and offers an opinion on causation, however, federal courts have repeatedly held causation testimony by a treating physician must satisfy the *Daubert* standard to be admissible.⁷

II. Is the Expert's Methodology Reliable?

The duty of the trial court, acting as gatekeeper, to independently assess the reliability of the expert's methodology is the key component of the *Daubert* standard. In *Daubert*, the United States Supreme Court set forth a non-exclusive list of factors to assess the reliability of expert testimony: (1) can the expert's technique or theory be tested?; (2) has the technique or theory been subject to peer review and publication?; (3) is there a known or potential error rate for the technique or theory?; (4) are there standards and controls for the technique?; and (5) has the technique or theory been generally accepted in the scientific community?⁸

The factors listed in *Daubert* are not an exclusive checklist that must be rigidly met by each expert. Rather, they are examples provided by the Supreme Court for trial courts to de-

cide the overall question of reliability.⁹ In *Kumho Tire Co. v. Carmichael*, the Supreme Court emphasized that, depending on the type of case, the factors set forth in *Daubert* could be critical, or they might not apply at all.¹⁰ "[W]hether *Daubert's* specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine."¹¹ As the Eighth Circuit noted, application of the *Daubert* standard "is meant to be flexible and fact specific, and a court should use, adapt, or reject *Daubert* factors as the particular case demands."¹²

A. Reliability of the Differential Diagnosis Method

When confronted with the realities of the practice of medicine and the requirements of the *Daubert* standard, federal courts have repeatedly held a properly conducted medical differential diagnosis satisfies the *Daubert* standard.¹³ A differential diagnosis is "[t]he method by which a physician determines what disease process caused a patient's symptoms. The physician consid-

ers all relevant potential causes of the symptoms and then eliminates alternative causes based on a physical examination, clinical tests, and a thorough case history."¹⁴ Courts have found the differential methodology reliable by noting it has been subjected to peer-review, and it is a generally accepted scientific methodology.¹⁵ In fact, "differential diagnoses are 'presumptively admissible' and 'a district court may exercise its gatekeeping function to exclude only those diagnoses that are scientifically invalid.'"¹⁶

B. Analysis of the Differential Diagnosis Method to Admit Causation Testimony

Understand the difference, however, between a treating physician testifying "I examined the patient and diagnosed him with X," and the significant next step of "and I believe Y caused it." In fact, some federal courts refer to a "differential diagnosis" and a "differential etiology" to distinguish between a treating physician forming a diagnosis to treat the plaintiff, and the process of scientifically attempting to determine

5. *Beatty v. St. Luke's Hosp. of Kansas City*, 298 S.W.3d 554, 559 (Mo. Ct. App. W.D. 2009) (quoting *Brandt v. Med. Def. Assocs.*, 856 S.W.2d 667, 673 (Mo. en banc 1993)).
6. *See, e.g., Whelan v. Missouri Public Service, Energy One*, 163 S.W.3d 459, 462-63 (Mo. Ct. App. W.D. 2005) (holding the trial court erred by excluding testimony of a treating psychiatrist called solely for the purpose of describing the care and treatment provided to the plaintiff, without offering an opinion on causation).
7. *See, e.g., Brooks v. Union Pacific R. Co.*, 620 F.3d 896, 900 (8th Cir. 2010); *Musser v. Gentiva Health Servs.*, 356 F.3d 751, 756-57 (7th Cir. 2004).
8. 509 U.S. at 593-594.
9. For example, the 2000 Advisory Committee Notes listed numerous additional factors that have been used by federal courts to assess an expert's reliability: (1) is the expert testifying based on work conducted independent of litigation, or were the opinions developed solely for litigation?; (2) has the expert unjustifiably extrapolated from an accepted premise to an unfounded conclusion?; (3) has the expert accounted for obvious alternative explanations?; (4) is the expert being as careful as the expert would be outside of litigation; and (5) is the field of expertise known to reach reliable results? Fed. R. Evid. 702 advisory committee's note (2000).
10. 526 U.S. at 150.
11. *Id.* at 153.
12. *Unrein v. Timesavers, Inc.*, 394 F.3d 1008, 1011 (8th Cir. 2005).
13. *See, e.g., Tedder v. American Railcar Industries, Inc.*, 739 F.3d 1104, 1108 (8th Cir. 2014).
14. *Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 260 (6th Cir. 2001).
15. *See, e.g., In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717, 758 (3rd Cir. 1994).
16. *Tedder*, 739 F.3d at 1108 (quoting *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001)).

the cause of the plaintiff's ailment.¹⁷ Furthermore, a physician simply stating they hold the causation opinion to "a reasonable degree of medical certainty," without demonstrating the reliability of the physician's methodology to reach that opinion, may not be enough to ensure admission.¹⁸

Whether termed a "differential diagnosis" or a "differential etiology," under the *Daubert* standard the court must review the differential diagnosis performed by the treating physician to ensure it is reliable. This analysis is inherently case-specific, and the level of "gatekeeping" required of the trial court can vary depending on the type of injury and the complexity of the causation issue. As shown in the following federal cases, the court's review focuses on whether the physician has "ruled in" potential causes of an injury, and "ruled out" alternative causes for the injury.

1. *Best v. Lowe's Home Centers, Inc.*

For example, in *Best v. Lowe's Home Centers, Inc.*,¹⁹ the Sixth Circuit reversed the district court's exclusion of causation testimony by a treating otolaryngologist who testified inhalation of chemical fumes caused the

plaintiff's loss of the sense of smell. In *Best*, pool cleaning chemicals spilled on the plaintiff's face and clothes. The plaintiff went to the emergency room that day, and four months later sought treatment from the otolaryngologist. The plaintiff reported experiencing irritation to his nasal passages and mouth after the exposure, and he eventually lost his sense of smell. The doctor could not inspect the plaintiff's mucous membranes for physical damage due to their location inside the nasal passage.²⁰

The plaintiff's physician subsequently performed a standardized test of the plaintiff's sense of smell.²¹ The plaintiff's score was consistent with the loss of the sense of smell (although the defense noted the plaintiff's score was only one point away from "malingering," and the physician had never administered the test before).²² The otolaryngologist also reviewed a Material Safety Data Sheet (MSDS) for the chemical at issue, which stated it should not be inhaled, and prolonged or repeated contact could cause irritation.²³ The physician did not know how much of the chemical the plaintiff had been exposed to, and he also did not know the threshold level of expo-

sure that would be necessary to cause a loss of smell.²⁴

The treating physician subsequently testified the exposure to the chemical caused the plaintiff's loss of smell.²⁵ The district court excluded the doctor's causation opinion, finding in part that the physician had relied too heavily on the temporal relationship between the plaintiff's exposure and the onset of symptoms.²⁶

In reversing the district court's exclusion of the treating physician's causation testimony, the Sixth Circuit joined the "overwhelming majority of the courts of appeals" in recognizing differential diagnosis as "'an appropriate method for making a determination of causation for an individual instance of disease.'"²⁷ In doing so, the Sixth Circuit cautioned that not every opinion that is reached via a differential diagnosis will necessarily meet the reliability requirements of *Daubert*.²⁸ The Sixth Circuit held a treating physician's causation opinion is reliable and admissible when the physician:

1. objectively determines, to the extent possible, the nature of the plaintiff's injuries;
2. "rules in" one or more potential causes of the injury using a valid methodology; and
3. "rules out" alternative causes to reach a conclusion as to which cause is most likely.²⁹

The physician must also provide a "reasonable explanation" for why any alternative cause suggested by the defense is not the sole cause of the injury.³⁰

Applying this test to the plaintiff's treating physician, the Sixth Circuit concluded the treating physician's use of a differential diagnosis satisfied the requirements of *Daubert*.³¹ The Sixth Circuit noted the physician first "ruled in" potential causes of the loss of smell to include a virus, a tumor or surgery involving the brain, certain medications, or exposure to chemicals. The physician also noted the cause of loss of smell is sometimes unknown.³² Having first "ruled in" potential causes of the condition, the otolaryngologist

17. See, e.g., *Myers v. Illinois Central Railroad Company*, 629 F.3d 639, 644 (7th Cir. 2010); *Tamraz v. Lincoln Elec. Co.*, 620 F.3d 665, 673-74 (6th Cir. 2010).

18. See, e.g., *Tamraz*, 620 F.3d at 671 (stating "[u]nder these circumstances, it makes no difference that Dr. Carlini purported to find 'manganese-induced parkinsonism' in Tamraz 'with a reasonable degree of medical certainty.' Whatever Dr. Carlini understood by 'with a reasonable degree of medical certainty,' the phrase – the conclusion by itself – does not make a causation opinion admissible.").

19. 563 F.3d 171 (6th Cir. 2009).

20. *Id.* at 174.

21. *Id.*

22. *Id.*

23. *Id.*

24. *Id.* at 175.

25. *Id.* at 176.

26. *Id.*

27. *Id.* at 178 (quoting *Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 260 (6th Cir. 2001); *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 263 (4th Cir. 1999)).

28. *Id.* at 179.

29. *Id.* at 179 (citing *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717, 760 (3d Cir. 1994)).

30. *Id.*

31. *Id.* at 180.

32. *Id.* at 181.

then “ruled out” a virus and a tumor or surgery as potential causes.³³ The physician also ruled out the plaintiff’s ten medications as a potential cause based on his experience with patients taking those medications.³⁴ The defense argued the physician had failed to adequately “rule out” the plaintiff’s medications as a cause because the physician admitted he was unfamiliar with one of the ten medications taken by the plaintiff (notably, the defense did not provide any evidence that the tenth medicine could actually cause a loss of smell).³⁵ Rejecting this argument, the Sixth Circuit noted “doctors need not rule out every conceivable cause in order for their differential diagnosis-based opinions to be admissible.”³⁶

As further evidence of the reliability of the physician’s differential diagnosis, the Sixth Circuit noted the physician had administered an objective test to determine if the plaintiff had lost his sense of smell.³⁷ The defense argued the test was unreliable because the physician had never administered it prior to this patient, the plaintiff’s score was only one point away from the range for malingering, and the physician did not have knowledge of statements made by the plaintiff to the emergency room physician.³⁸ The Sixth Circuit rejected these arguments, noting that so long as the physician employed a reliable methodology, any factual short-comings in those opinions were the subject for cross-examination, and not exclusion, of the opinion.³⁹ While the defense argued no published material confirmed inhalation of the chemical caused loss of smell, the Sixth Circuit noted “there is no requirement that a medical expert must always cite published studies on general causation in order to reliably conclude that a particular object caused a particular illness.”⁴⁰ The Sixth Circuit noted admissibility did not require a “perfect” methodology – rather, the expert must use the same level of intellectual rigor used in the expert’s field outside of litigation.⁴¹ The Sixth Circuit concluded the treating physician “performed as a competent, intellectually rigorous treating physician in identifying the most likely cause” of the injury.⁴²

2. *Turner v. Iowa Fire Equipment Co.*

By contrast, the Eighth Circuit, in *Turner v. Iowa Fire Equipment Company*,⁴³ performed a similar analysis to decide a treating physician’s causation testimony based on a differential diagnosis methodology did not meet the reliability requirements of *Daubert*. In *Turner*, a fire suppression system accidentally discharged a chemical (consisting primarily of baking soda) into the deli area of a grocery store, covering the plaintiff.⁴⁴ The plaintiff subsequently complained of a rash, blisters, nose bleeds, and shortness of breath. When the shortness of breath continued the plaintiff saw a pulmonologist, who diagnosed her with a hyperreactive airway disorder.⁴⁵

The pulmonologist subsequently testified exposure to the fire suppressant most likely caused the plaintiff’s airway disorder.⁴⁶ The pulmonologist relied in large part on the plaintiff’s lack of symptoms before the exposure, and the temporal relationship between the exposure and the symptoms.⁴⁷ The pulmonologist readily admitted, however, that he did not attempt to determine if other potential exposures in the plaintiff’s

history may have caused the respiratory problems.⁴⁸ The pulmonologist agreed his primary concern had been to treat the patient, as opposed to determining the cause of her condition.⁴⁹ Based on a misreading of the MSDS for the fire suppressant, the pulmonologist also mistakenly opined a chemical contained in the fire suppressant caused the injury when, in fact, the fire suppressant did not contain that chemical.⁵⁰ The pulmonologist only hypothesized the baking soda contained in the fire suppressant may have caused the injury when he learned the other chemical was not actually found in the fire suppressant.⁵¹

In affirming the district court’s exclusion of the pulmonologist’s testimony, the Eighth Circuit agreed a properly performed differential diagnosis by a treating physician can satisfy the reliability requirements of *Daubert*.⁵² In *Turner*, however, the pulmonologist readily admitted he did not attempt to rule out other potential causes of the plaintiff’s injury.⁵³ Instead, the pulmonologist emphasized his primary concern had been treating the patient.⁵⁴ The failure to “rule out” other potential causes of the condition, combined with the pul-

33. *Id.*

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.* at 180.

38. *Id.*

39. *Id.*

40. *Id.* at 180-181 (quoting *Kudabeck v. Kroger Co.*, 338 F.3d 856, 862 (8th Cir. 2003)).

41. 563 F.3d at 181 (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999)).

42. 563 F.3d at 181-182.

43. 229 F.3d 1202 (8th Cir. 2000).

44. *Id.* at 1205.

45. *Id.*

46. *Id.*

47. *Id.*

48. *Id.* at 1206.

49. *Id.*

50. *Id.* at 1206-07.

51. *Id.*

52. *Id.* at 1208.

53. *Id.*

monologist's lack of knowledge of the chemical contents of the fire suppressant, led the Eighth Circuit to agree the differential diagnosis performed by the pulmonologist failed to satisfy the *Daubert* standard.⁵⁵

The different outcomes in these two cases demonstrate key areas for inquiry when a treating physician relies on a differential diagnosis to offer a causation opinion. In *Best*, the otolaryngologist "ruled in" numerous potential causes of the plaintiff's condition, and then "ruled out" nearly all of the potential causes other than the chemical exposure. The otolaryngologist also administered a standardized test to confirm the diagnosis. While the defense argued the otolaryngologist had not ruled out all potential causes, and the test was unreliable, the Sixth Circuit determined any deficiencies raised by the defendant were grounds for cross-examination, as opposed to exclusion, of the expert. By contrast, in *Turner*, the pulmonologist readily admitted he did not attempt to "rule out" other potential causes of the plaintiff's condition, and he originally formed his opinions based on a misunderstanding of the chemical composition of the material. The treating physician's inability to articulate a process of scientifically "ruling in" potential causes and then "ruling out" alternatives led to exclusion of the expert's testimony.

C. Reliance on Patient History and Temporal Relationship

A treating physician often relies on the history provided by the plaintiff

and the temporal relationship between an accident and the onset of symptoms to diagnose and treat a patient. Defendants frequently challenge this reliance on patient history and temporal relationship by noting inaccuracies in a plaintiff's history, or by arguing the physician failed to look for additional factors to turn a temporal relationship into a causal relationship. The flexible nature of the *Daubert* standard enables the trial court to determine if reliance on these factors satisfies the standard. Depending on the circumstances, inaccuracies in the plaintiff's history or reliance on the temporal relationship between accident and injury may be grounds for cross-examination instead of exclusion of the expert. Conversely, a treating physician's causation opinions may properly be excluded if the trial court determines the physician's differential diagnosis was unreliable.

For example, in *Tedder v. American Railcar Industries, Inc.*,⁵⁶ the Eighth Circuit affirmed the district court's decision to allow causation testimony based on a differential diagnosis when the physician, the defense argued, relied primarily on the plaintiff's history and the temporal relationship between the accident and the plaintiff's complaints. In *Tedder*, the plaintiff immediately complained of back pain when he was knocked off a table and into a metal pipe stand.⁵⁷ The plaintiff's medical expert testified he performed a differential diagnosis to conclude the accident caused the plaintiff's back pain. The differential diagnosis in-

cluded the fact the plaintiff reported having no back pain prior to the accident, and experienced immediate pain after the accident.⁵⁸

At trial, the defendant established through cross-examination that the physician did not know the plaintiff had a history of three prior back injuries.⁵⁹ On re-direct, the physician testified that, so long as the plaintiff was not experiencing pain prior to the most recent injury (which was established by the testimony of seven lay witnesses), the prior back injuries did not change his opinion.⁶⁰ The defense argued the physician performed an inadequate differential diagnosis because he had failed to "rule out" the plaintiff's prior back injuries as a potential cause of his injury.⁶¹

The Eighth Circuit rejected the defense's argument, noting the physician did consider those injuries once they were brought to his attention, and the physician adequately "ruled out" those prior injuries as a potential cause of the plaintiff's condition because he had been pain-free prior to the accident.⁶² The Eighth Circuit also rejected the defendant's claim that the physician had only relied on the plaintiff's description of symptoms and the temporal connection between the accident and symptoms.⁶³ Noting "[p]atient-reported symptoms may support part of a diagnosis as long as that diagnosis also incorporates other sources of information," the Eighth Circuit described the additional information and tests the physician relied on, including leg-raise tests, a CT scan, and reports from other physicians.⁶⁴

By contrast, in *Bland v. Verizon Wireless, (VAW) L.L.C.*,⁶⁵ the Eighth Circuit affirmed the district court's exclusion of the treating physician's causation testimony even though the plaintiff couched the testimony in terms of a differential diagnosis. In *Bland*, the plaintiff's treating physician testified inhalation of Freon had caused the plaintiff's exercise-induced asthma.⁶⁶ The plaintiff argued the physician's opinion should be admitted because the physician performed a differential diagnosis. The Eighth Circuit held this argument failed because the physician admitted that in the majority of

54. *Id.*

55. *Id.* at 1208-09.

56. 739 F.3d 1104 (8th Cir. 2014).

57. 739 F.3d at 1107.

58. *Id.*

59. *Id.*

60. *Id.*

61. *Id.*

62. *Id.* at 1109.

63. *Id.*

64. *Id.* (citing *Kudabeck v. Kroger Co.*, 338 F.3d 856, 862 (8th Cir. 2003)).

65. 538 F.3d 893 (8th Cir. 2008).

66. *Id.* at 896.

patients the cause of exercise-induced asthma is unknown.⁶⁷ The physician could not reliably say the exposure to Freon was the most probable cause of the injury when the cause of exercise-induced asthma is most often unknown.⁶⁸ The Eighth Circuit further noted the physician failed to “rule-out” alternative causes by investigating or analyzing other potential exposures, and the physician did not know either the level of the plaintiff’s exposure, or the level of exposure necessary to cause injury.⁶⁹ The physician could have buttressed her opinion with any personal experience she had with treating patients following a similar exposure, but the physician admitted she had never treated a patient with a similar exposure.⁷⁰

Lacking a known cause of exercise-induced asthma in most instances, and without an analysis of other potential causes or personal experience with similar patients, the Eighth Circuit concluded the physician relied too heavily on the temporal relationship between the exposure and the patient’s onset of symptoms.⁷¹ The Eighth Circuit noted a strong temporal relationship can be powerful evidence of causation, but it is often only one of several factors.⁷² In this case, the temporal relationship between exposure and illness could not overcome the deficiencies in the physician’s methodology and the lack of scientific support for her theory.⁷³

D. Reliance on Experience of the Physician Instead of Scientific Literature

The Supreme Court’s reference in *Daubert* to peer-reviewed publications has led to numerous challenges against treating physicians who rely on their education, training, and experience to offer causation opinions, without citing to medical publications to support those opinions. Like all other *Daubert* factors, a physician’s failure to cite to scientific publications to support the physician’s opinions does not mandate exclusion of the physician’s testimony – so long as the physician can explain why reliance on education, training, and experience is a reliable basis to support a reliable differential diagnosis.

For example, in *Granfield v. CSX Transp., Inc.*, the First Circuit affirmed the district court’s admission of testimony by the plaintiff’s orthopedic surgeon that a repetitive motion injury caused the plaintiff’s tennis elbow.⁷⁴ The defendant challenged the doctor’s testimony, in part, because he failed to base his opinion on any peer-reviewed publications.⁷⁵ The First Circuit noted “[t]he mere fact of publication, or lack thereof, in a peer-reviewed journal is not a determinative factor”⁷⁶ The plaintiff’s expert had treated over 2,000 cases of tennis elbow in his career, and he employed a differential diagnosis method in forming his causation opinion.⁷⁷ The First Circuit reiterated that the use of a differential diagnosis by a medical expert is a proper scientific technique for medical expert testimony, and the district court did not err in admitting the physician’s testimony.⁷⁸

By contrast, a physician’s personal experience might not be enough to establish causation if the theory lacks scientific support. For example, in *Hendrix v. Evenflo Company, Inc.*,⁷⁹ the Eleventh Circuit held an expert’s experience and training was an insufficient basis for the expert’s opinions when those opinions lacked scientific support. In *Hendrix*, the Eleventh Circuit affirmed the district court’s exclusion of expert testimony that attempted to establish a causal link between a car accident and a child developing autism.⁸⁰ After deter-

mining the scientific literature relied on by the plaintiff did not support their theory, the Eleventh Circuit found the plaintiff’s medical expert could not cure deficiencies in the scientific evidence by relying solely on his experience and training.⁸¹

III. Conclusion

Until Missouri appellate courts develop their own jurisprudence regarding the admissibility of causation testimony by treating physicians, federal appellate decisions provide guidance for the attorney who is either seeking to admit or exclude a treating physician’s causation opinions. While opinions should still be expressed to “a reasonable degree of medical certainty,” counsel should go further to explore the methodology used by the treating physician. Assuming the physician utilized a differential diagnosis method, counsel should seek out which factors the physician “ruled in,” and how the physician “ruled out” alternative causes to form a causation opinion. The physician’s ability to articulate this methodology will likely determine the admissibility of the opinions.

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67. *Id.* at 897.

68. *Id.*

69. *Id.* at 898.

70. *Id.*

71. *Id.* at 898-99.

72. *Id.*

73. *Id.*

74. 597 F.3d 474, 486-487 (1st Cir. 2010).

75. *Id.* at 486.

76. *Id.*

77. *Id.*

78. *Id.*

79. 609 F.3d 1183, 1201 (11th Cir. 2010).

80. *Id.*

81. *Id.*