UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK
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MARY TARDIF,

Plaintiff,

-v-

CITY OF NEW YORK,

Defendant.
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13-CV-4056 (KMW)

OPINION & ORDER

KIMBA M. WOOD, United States District Judge:

Defendant has moved *in limine* to preclude trial testimony from four expert witnesses whom Plaintiff Mary Tardif seeks to call. (ECF No. 388.) Those experts include neuroradiologist Gregory J. Lawler, neurologist Ranga C. Krishna, life care planner Linda Lajterman, and economist Mark P. Zaporowski. Defendant argues that the proposed testimony should be excluded as not based upon reliable methodology within the meaning of Rule 702 of the Federal Rules of Evidence and *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993). Defendant also contends that the evidence would not be relevant pursuant to Rule 401 of the Federal Rules of Evidence or helpful pursuant to Rule 702, but does not question the qualifications of the four experts.

The experts provided written reports and copies of their *curricula vitae* (CVs). (ECF Nos. 412-1, 412-2, 412-4, 412-5.) One expert, Dr. Krishna, also provided an Addendum Report to address criticisms raised by Defendant. (ECF No. 412-3.) Defendant did not depose Plaintiff's experts or seek to rebut their conclusions by proffering expert witnesses of its own.

The Court ordered Plaintiff's experts to submit supplemental affidavits detailing the methodologies they used and the reliability of those methodologies; Defendant was given an

opportunity to submit a rebuttal. These submissions are now before the Court. (ECF Nos. 448-1, 448-2, 452-1, 457-1, 477.)

Neither party moved to hold a hearing on *Daubert* issues.

For the following reasons, Defendant's motion is GRANTED in part and DENIED in part.

LEGAL STANDARD

The admissibility of expert testimony is determined pursuant to the "liberal standard" of Rule 702 of the Federal Rules of Evidence. *Nimely v. City of New York*, 414 F.3d 381, 395 (2d Cir. 2005). A court's Rule 702 analysis includes consideration of three factors: (1) the qualifications of the expert, (2) the reliability of the expert's methodology, and (3) the helpfulness of the expert's proposed testimony to the trier of fact. *See id.* at 397. "The proponent of expert testimony carries the burden of establishing its admissibility by a preponderance of the evidence[.]" *Choi v. Tower Rsch. Cap. LLC*, 2 F.4th 10, 20 (2d Cir. 2021). The Court nevertheless begins with the assumption that "a well[-]qualified expert's testimony is admissible," *In re Zyprexa Prods. Liab. Litig.*, 489 F. Supp. 2d 230, 282 (E.D.N.Y. 2007) (Weinstein, J.), and "exclusion of such testimony is the exception rather than the rule," *Tardif v. City of New York* ("*Tardif I*"), 344 F. Supp. 3d 579, 596 (S.D.N.Y. 2018) (Wood, J.) (internal quotation marks omitted).

Despite the relatively permissive standard that Rule 702 establishes for expert testimony, district judges continue to play an important "gatekeeping role" by "ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Daubert*, 509 U.S. at 597. The judge must make sure that an expert witness "employs in the courtroom the

same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

In determining the reliability of an expert's methodology, a "district court should consider the indicia of reliability identified in Rule 702, namely, (1) that the testimony is grounded on sufficient facts or data; (2) that the testimony is the product of reliable principles and methods; and (3) that the witness has applied the principles and methods reliably to the facts of the case." *Amorgianos v. Nat'l R.R. Passenger Corp.*, 303 F.3d 256, 265 (2d Cir. 2002) (internal quotation marks omitted). This inquiry is "a flexible one," *Daubert*, 509 U.S. at 594, that may vary substantially depending on the type of expertise in question. The Court in *Daubert* provided a non-exclusive list of factors that may be considered, as appropriate: "(1) whether a theory or technique has been or can be tested; (2) 'whether the theory or technique has been subjected to peer review and publication;' (3) the technique's 'known or potential rate of error' and 'the existence and maintenance of standards controlling the technique's operation;' and (4) whether a particular technique or theory has gained general acceptance in the relevant [expert] community." *United States v. Williams*, 506 F.3d 151, 160 (2d Cir. 2007) (quoting *Daubert*, 509 U.S. at 593–94). The *Daubert* opinion expressed confidence in the ability of the adversary system to deal with questionable expert testimony, in most instances. *See Daubert*, 509 U.S. at 596 ("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."). Still, when "there is simply too great an analytical gap between the data and the opinion proffered" or an opinion is "connected to existing data only by the *ipse dixit* of the expert," a court may exclude a proffered opinion. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

An expert's testimony must also be helpful, in that "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." Fed. R. Evid. 702(a). "[T]he district court should not admit testimony that is 'directed solely to lay matters which a jury is capable of understanding and deciding without the expert's help.'" *United States v. Mulder*, 273 F.3d 91, 101 (2d Cir. 2001) (quoting *United States v. Castillo*, 924 F.2d 1227, 1232 (2d Cir. 1991)).

Finally, expert testimony must satisfy Rule 403's balancing requirement: that the probative value of evidence not be substantially outweighed by risks such as unfair prejudice or misleading the jury. *See* Fed. R. Evid. 403. Expert testimony can be particularly difficult for a lay juror to evaluate, and thus may have "unique weight . . . in a jury's deliberations." *Nimely*, 414 F.3d at 397. A court must thus scrutinize expert testimony closely for the risk of prejudice.

DISCUSSION

I. Dr. Gregory J. Lawler

Plaintiff offers Dr. Gregory J. Lawler, M.D. as an expert witness. Dr. Lawler is a board-certified radiologist and neuroradiologist who earned a medical degree from New York Medical College and has thirty years of experience in radiology. (Rezvani Decl., Ex. A ("Lawler Reports") at 5, 7, ECF No. 412-1.) He is a former Clinical Instructor of Image Guided Spine Procedures for neuroradiology fellows at Yale Medical School and a co-author of an article in the peer-reviewed *Journal of Magnetic Resonance Imaging*. (*Id.* at 5, 11.)

Dr. Lawler produced two reports describing the results of imaging of Ms. Tardif's brain. The first report, written in July 2021, was based on Dr. Lawler's review of magnetic resonance imaging ("MRI") of Ms. Tardif's brain in July 2021 in comparison with the results of a 2018 MRI. (*Id.* at 3.) The July 2021 MRI used techniques including diffusion tensor imaging

("DTI"). (*Id.*) Dr. Lawler identified in Ms. Tardif's right corona radiata[1] a "focal T2 white matter hyperintensity" (*id.*), a brain abnormality that "appear[s] as [a] bright signal" on an MRI scan (Lawler Decl. ¶ 1, ECF No. 452-1). He also reported a "corresponding decreased [fractional anisotropy] value" to this T2 hyperintensity. (Lawler Reports at 4.)[2] Dr. Lawler concludes that these findings "likely represent[] a focus of axonal injury/axonal loss after trauma." (*Id.*)[3]

Dr. Lawler's second report added to the set of comparison images three additional MRIs and two computed tomography ("CT") scans taken between April 2009 and January 2021. (*Id.* at 2.) Dr. Lawler observes that the T2 hyperintensity is evident on a March 24, 2012 MRI of Ms. Tardif's brain, taken shortly after the incident with then-Sergeant Giovanni Mattera, but not on an April 23, 2009 MRI. (*Id.*)[4]

Prior to turning to the Rule 702 analysis, a threshold inquiry is whether the expert testimony at issue is relevant pursuant to Rule 401. *See Amorgianos*, 303 F.3d at 265. Dr. Lawler proposes to testify regarding three opinions: (1) that a T2 hyperintensity and decreased fractional anisotropy ("FA") values are evident from review of the July 2021 MRI with DTI; (2) that a T2 hyperintensity is evident from review of the March 24, 2012 MRI but not from review of the April 23, 2009 MRI; and (3) that the observed T2 hyperintensity and decreased FA

[1] "Corona radiata" refers to "a fan-shaped mass of white matter fibers passing to and from the cerebral cortex." *Corona Radiata*, Merriam-Webster, https://www merriam-webster.com/dictionary/corona%20radiata (last visited June 17, 2022).

[2] Fractional anisotropy ("FA") "describes the directional coherence of water diffusion" in white matter tissue; "[a]bnormally low" FA values are considered "to represent alterations of white matter microstructure" consistent with damage to that part of the brain. M.B. Hulkower et al., *A Decade of DTI in Traumatic Brain Injury: 10 Years and 100 Articles Later*, 34 Am. J. Neuroradiology 2064, 2069 (2013).

[3] Axons are found in the brain's white matter. They "extend[] from the nerve cells that constitute the grey matter of the brain" and "are organized into thick, tubular tracts" that connect different regions of the brain. (Krishna Decl. at 2, ECF No. 457-1.)

[4] Hereafter, the Court and the parties will refer to Mattera with the title "Sergeant," which he held at the time of the incident.

values "likely represent[] a focus of axonal injury/axonal loss" after head trauma. (Lawler Reports at 2–4.)

Testimony to these three points is relevant—if credited, it would make more or less probable facts that are of consequence in determining this action. *See* Fed. R. Evid. 401. Dr. Lawler's observations of a T2 hyperintensity and decreased FA values, as well as his conclusion that these findings are likely signs of axonal loss—when explained by an expert—are relevant to the existence and severity of the alleged injury to Ms. Tardif's brain. If the jury finds that the incident with Sergeant Mattera caused Ms. Tardif to suffer a brain injury, the nature of the injury would bear on the objective reasonableness of Mattera's use of physical force and would be central to a damages calculation. *See Centeno v. City of New York*, No. 16-CV-2393, 2019 WL 1382093, at *4, *9 (S.D.N.Y. Mar. 27, 2019) (Broderick, J.) (citing *Kingsley v. Hendrickson*, 576 U.S. 389, 397 (2015)). Dr. Lawler's determination that a T2 hyperintensity was evident on the post-incident MRI in 2012 but not in 2009 could also provide some support for the jury to infer a causal link between the incident with Sergeant Mattera and damage to Ms. Tardif's brain.

A. Reliability

Defendant argues that Dr. Lawler did not use reliable methodologies when developing his report and proposed testimony. Defendant contends that Dr. Lawler (1) "does [not] explain how he arrived at his conclusions from the underlying data" and (2) does not "address[] any other potential cause of [Ms. Tardif's] injury." (Def. Mem. Supp. Mots. in Lim. ("Def. Mem.") at 7, 8, ECF No. 390.)[5] Neither of those arguments remains applicable following Dr. Lawler's supplemental submission.

[5] Defendant also writes that Dr. Lawler did not provide the "results" of the testing he reviewed or the underlying "data" relating to the July 2021 MRI with DTI. (Def. Mem. at 3, 7.) The meaning of these statements is unclear. But if Defendant means to imply that Plaintiff did not comply with discovery requests for the specified information, the time to move to compel discovery has long passed.

First, Dr. Lawler has explained the methodologies by which he arrived at his conclusions. Dr. Lawler represents that both MRI and MRI with DTI are "highly reliable" and "sensitive" in identifying T2 white matter hyperintensities. (Lawler Decl. ¶¶ 1–2.) Defendant does not contest this point—in fact, it submitted an affidavit from a doctor who himself purports to have reviewed MRI images of Ms. Tardif's brain to identify T2 hyperintensities, a methodology employed by Dr. Lawler. (Tsiouris Aff. ¶ 3, ECF No. 477-1.) Defendant argues that this affidavit, prepared by Dr. Apostolos John Tsiouris, M.D., shows that the proposition that a T2 hyperintensity could be identified in the 2012 MRI but not the 2009 MRI is a "fallacy." (Rebuttal at 5, ECF No. 477.) But this contention is misdirected. The Court's role is not to determine whether or not an expert's ultimate conclusions are correct; it is to assess the principles and methodologies underlying those conclusions. *Amorgianos*, 303 F.3d at 266 (citing *Daubert*, 509 U.S. at 595).

Defendant does not challenge the use of MRI with DTI to determine FA values—which are one of two components of the images produced with DTI. (Lawler Decl. ¶ 2.) Defendant's only critique of Dr. Lawler's methodology on this point is that he and Dr. Krishna do not articulate "what is the 'normal' from which [P]laintiff's FA values are deemed to have deviated." (Rebuttal at 4.) Dr. Lawler's report does not specify whether the "decreased" FA values he identifies in parts of Ms. Tardif's brain exhibit are low relative to other areas of Tardif's brain, typical FA values from corresponding areas of healthy brains, or some other baseline value. These questions go to the weight of the evidence, and can be pursued through vigorous cross-examination.

Defendant also does not challenge the reliability of using MRI or MRI with DTI to identify a likely "focus of axonal injury/axonal loss." (*See* Rebuttal at 5.) While more information would have been welcome, the article Dr. Lawler appended to his declaration

provides support for the use of conventional MRI technology and MRI with DTI to identify "traumatic axonal injury." *See* M.B. Hulkower et al., *A Decade of DTI in Traumatic Brain Injury: 10 Years and 100 Articles Later*, 34 Am. J. Neuroradiology 2064, 2064 (2013) ("[G]ross abnormalities [of white matter] can be identified in some cases of [traumatic axonal injury] by using CT and conventional MR imaging[.]"); *id.* at 2064, 2072 ("DTI is uniquely able to probe [the] microscopic structure [of white matter] and is, therefore, particularly well-suited for the assessment of [traumatic axonal injury]. . . . In summary, DTI provides a robust measure of clinically important [traumatic axonal injury.]").

Dr. Lawler errs, though, to the extent he implies that, by identifying a likely focus of axonal injury or axonal loss, he has identified "a type of traumatic brain injury." (Lawler Decl. ¶ 1.) The Court does not understand Dr. Lawler to purport to make a *diagnosis* of TBI. A diagnosis of TBI requires consideration of several sources of information; a review of imaging, standing alone, is insufficient. *See* 1 Bruce H. Stern & Jeffrey A. Brown, *Litigating Brain Injuries* § 6:12.40 (perm. ed., rev. vol. 2021) ("No reputable expert should ever rely on diffusion tensor imaging or any diagnostic test solely to make a diagnosis. A diagnosis of traumatic brain injury is a clinical diagnosis based on history, review of medical records, clinical examination and diagnostic testing. Together, utilizing all of these sources, a clinician can then make an appropriate diagnosis of traumatic brain injury."). Indeed, Dr. Lawler himself recommends "clinical correlation . . . with additional testing for TBI." (Lawler Reports at 2.) To avoid juror confusion regarding Ms. Tardif's diagnosis, Dr. Lawler may not testify to the likelihood that Tardif suffered a traumatic brain injury.

Second, Dr. Lawler's supplemental submission makes clear that Defendant's arguments regarding causation are not applicable to Lawler's testimony. Defendant faults Dr. Lawler for

failing to rule out potential causes of Ms. Tardif's brain injury other than the incident on March 21, 2012 (Def. Mem. at 8–9)—but Lawler never purports to conclude that the cause of her injury was the incident with Sergeant Mattera or any other specific event. Dr. Lawler also clarified in his declaration that he did not conclude that Ms. Tardif was likely to have experienced head trauma. (Lawler Decl. ¶ 4.)

B. Helpfulness

Finally, Defendant argues that Dr. Lawler's testimony would not be helpful to lay jurors because he does not establish the cause of Ms. Tardif's brain injury. The Court holds that, to the contrary, Dr. Lawler's testimony would add value for jurors. The jury will likely be shown images from the MRIs of Ms. Tardif's brain. Analysis of brain imaging to identify T2 hyperintensities, decreased FA values, and axonal injury is a specialized skill, the type of "matter[] requiring assistance to the kind of people expected to sit on the jury." *In re Zyprexa*, 489 F. Supp. 2d at 283. Dr. Lawler's testimony will help the jury to understand the evidence and to use it to decide the factual questions in this case.

Plaintiff has met her burden to show that Dr. Lawler's testimony would be relevant, based on reliable methodologies, and helpful to the jury. Dr. Lawler may testify to his opinions regarding the identification of T2 hyperintensities, decreased FA values, and axonal injury or axonal loss. To prevent juror confusion, he may not testify to the likelihood that his findings indicate traumatic brain injury. He also may not testify to the cause of Ms. Tardif's alleged brain injury. However, Dr. Lawler may testify based on his general knowledge regarding the types of medical conditions and incidents that lead to T2 hyperintensities, decreased FA values, or axonal injury or axonal loss.

II. Dr. Ranga C. Krishna

Plaintiff also intends to offer Dr. Ranga C. Krishna, M.D. as an expert witness. Dr. Krishna has spent twenty-six years in the private practice of neurology and neurophysiology after attending medical school at K.M.C. Medical College in India and completing his residency in neurology at Mount Sinai Medical Center in New York. (Rezvani Decl., Ex. B ("Krishna Report") at 11, ECF No. 412-2.) He is certified in neurology by the American Board of Psychiatry and Neurology (*id.* at 12) and has co-written a case report regarding the use of DTI for diagnosis of mild traumatic brain injury for a medical journal, Ranga Krishna et al., *Diagnostic Confirmation of Mild Traumatic Brain Injury by Diffusion Tensor Imaging: A Case Report*, 6 J. Med. Case Reps. 66 (2012).

Dr. Krishna's expert report contains several opinions to which he may be asked to testify at trial. First, Dr. Krishna makes a diagnosis that "[Ms. Tardif's] clinical findings are consistent with traumatic brain injury." (Krishna Report at 5.) Second, he states that Ms. Tardif's past and current symptoms and injuries are "causally related to the incident on March 21st, 2012" with Sergeant Mattera. (*Id.* at 7.) Third, Dr. Krishna gave the prognosis that Ms. Tardif's injuries are "serious and permanent in nature," will result in "permanent partial residual disabilities, pain, and limitations with significant restriction of motion," and "will significantly restrict patient's working and social activities." (*Id.* at 6.) Finally, Dr. Krishna recommends nine types of future care for Ms. Tardif, from yearly MRIs with DTI to psychologist consultations six times per year; he also writes that she "will require a home health aide in the future." (*Id.*)[6] Dr. Krishna states that he based his conclusions on (i) Ms. Tardif's account of her history, including her current

[6] Dr. Krishna's report also includes statements identifying T2 white matter hyperintensity and corresponding decreased FA values. A later submission made clear that those statements were based on determinations made by Dr. Lawler and were not made independently by Dr. Krishna. (*See* Krishna Decl. at 6, ECF No. 457-1.)

reported symptoms of "headaches, dizziness, nausea, decline in cognitive functioning, [and finding] bright lights and loud noises [to be] bothersome" (Krishna Decl. at 2, ECF No. 457-1); (ii) the neurological examination Krishna conducted of Tardif in 2021, which resulted in "abnormal findings on her mental status examination" including difficulty counting backward by sevens, difficulty recalling memorized words after five minutes, and difficulty concentrating (*id.* at 1); (iii) diagnostic imaging of Tardif's brain, including MRIs and the MRI with DTI, which "showed abnormalities" such as a T2 white matter hyperintensity on the post-incident MRIs and decreased FA values on the 2021 MRI with DTI (*id.* at 1, 3)[7]; and (iv) review of Tardif's available medical records (*id.* at 1).

Turning to the threshold question, relevance, all of Dr. Krishna's opinions are relevant pursuant to Rule 401. Ms. Tardif's alleged traumatic brain injury, the severity of her suffering from that injury, and the future costs of treatment are central to her theory of damages in this trial. The causation question—i.e., whether any or all of Ms. Tardif's alleged injuries can be attributed to the incident with Sergeant Mattera—will be perhaps the most pivotal finding made by the jury. If credited, Dr. Krishna's opinions would tend to make more probable numerous facts that are critical to the jury's resolution of these questions.

A. Reliability

i. Diagnosis of Traumatic Brain Injury

Defendant asserts that three of Dr. Krishna's opinions are not based on reliable methodologies. First, Defendant attacks the underpinnings of Dr. Krishna's diagnosis of TBI. Defendant principally argues that the Court should preclude testimony about the diagnosis

[7] Dr. Krishna explicitly refutes Defendant's claims that he did not personally review the underlying images listed in his report. (*Compare* Krishna Decl. ¶ 5, *with* Reply at 5.)

because the use of DTI in diagnosing TBI is not a generally accepted methodology.[8] Federal courts have faced similar challenges to the reliability of DTI for more than a decade. *See Ruppel v. Kucanin*, No. 3:08 CV 591, 2011 WL 2470621, at *4–14 (N.D. Ind. June 20, 2011). Judges in at least twelve judicial districts—including one in this circuit, *see Kang v. Romeo*, No. 18CV4033ARRSMG, 2020 WL 4738947, at *17 n.33 (E.D.N.Y. Aug. 14, 2020)—have consistently held the use of DTI to diagnose brain injury to be reliable, helpful, and admissible.[9] Defendant does not identify a single federal court decision to the contrary, nor does Defendant even acknowledge the vast weight of authority in favor of DTI.[10]

Moreover, Defendant appears not to recognize the appropriate legal standard for this question. Defendant discusses in its Rebuttal solely whether DTI is a "generally accepted" methodology (*see* Rebuttal at 1–4), mirroring the language of the restrictive *Frye* standard that

[8] Inexplicably, Defendant professed bewilderment in its briefing about Drs. Lawler and Krishna having conducted "something referred to as 'DTI'" and claimed that the term "is not explained anywhere" in the expert reports. (Def. Mem. at 3.) The phrase "diffusion tensor imaging" was written out in full next to the abbreviation "DTI" in Dr. Lawler's July 18, 2021 report, which is appended to Dr. Krishna's original report. (Krishna Report at 9.) Nonetheless, the Court has an affirmative obligation to ensure the reliability of any expert testimony, *Daubert*, 509 U.S. at 589, and it ordered the parties to make further submissions regarding the reliability of the experts' methodologies (ECF No. 431). For these reasons, the Court will consider Defendant's arguments regarding DTI notwithstanding Defendant's failure to raise those arguments in its initial memorandum of law.

[9] *See Gregg v. Covert*, No. 4:21-CV-00871, 2021 WL 5140799, at *3 (E.D. Tex. Nov. 4, 2021); *Moreno v. Specialized Bicycle Components, Inc.*, No. 19-CV-01750-MEH, 2021 WL 5312387, at *3 (D. Colo. Oct. 18, 2021); *Amidon v. Goodyear Tire & Rubber Co.*, No. 1:18-CV-02138, 2021 WL 7907073, at *4 (M.D. Pa. Sept. 3, 2021); *Freteluco v. Smith's Food & Drug Centers, Inc.*, No. 219CV00759JCMEJY, 2021 WL 183321, at *8 (D. Nev. Jan. 19, 2021); *Lance Meadors v. D'Agostino*, No. CV 18-01007-BAJ-EWD, 2020 WL 6342637, at *4 (M.D. La. Oct. 29, 2020); *Kang v. Romeo*, No. 18CV4033ARRSMG, 2020 WL 4738947, at *17 n.33 (E.D.N.Y. Aug. 14, 2020); *Ward v. Carnival Corp.*, No. 17-24628-CV, 2019 WL 1228063, at *8 (S.D. Fla. Mar. 14, 2019); *Barnett v. Nat'l Cont'l Ins. Co.*, No. 3:17-CV-153-JWD-EWD, 2019 WL 126732, at *6 (M.D. La. Jan. 8, 2019); *Marsh v. Celebrity Cruises, Inc.*, No. 1:17-CV-21097-UU, 2017 WL 6987718, at *3 (S.D. Fla. Dec. 15, 2017); *Roach v. Hughes*, No. 4:13-CV-00136-JHM, 2016 WL 9460306, at *3 (W.D. Ky. Mar. 9, 2016); *White v. Deere & Co.*, No. 13-cv-02173-PAB-NYW, 2016 WL 462960, at *4 (D. Colo. Feb. 8, 2016); *Andrew v. Patterson Motor Freight, Inc.*, No. 6:13CV814, 2014 WL 5449732, at *8 (W.D. La. Oct. 23, 2014); *Ruppel v. Kucanin*, No. 3:08 CV 591, 2011 WL 2470621, at *4–14 (N.D. Ind. June 20, 2011); *Booth v. KIT, Inc.*, No. CIV. 06-1219 JP/KBM, 2009 WL 4544743, at *2 (D.N.M. Mar. 23, 2009).

[10] Multiple courts have stated that a litigant's failure to acknowledge the consensus of authority in favor of DTI may implicate that litigant's duty of candor to the court. *See Lance Meadors*, 2020 WL 6342637, at *4; *Ward*, 2019 WL 1228063, at *8.

governs the admissibility of expert testimony in New York state courts, *see Sean R. ex rel. Debra R. v. BMW of N. Am., LLC*, 48 N.E.3d 937, 941 (N.Y. 2016). Indeed, the single case to which Defendant directs the Court is a New York state court case in which the judge issued several decisions applying the *Frye* standard. (*See* Rebuttal at 3–4.) This approach is puzzling, at best. The U.S. Supreme Court in *Daubert* explicitly renounced *Frye*'s "rigid 'general acceptance' requirement" and held that this "austere standard, absent from, and incompatible with, the Federal Rules of Evidence, should not be applied in federal trials." *Daubert*, 509 U.S. at 589.

Under the appropriate *Daubert* standard, Plaintiff has met her burden to establish the reliability of the methodology Dr. Krishna used to arrive at his diagnosis. The Court looks to the non-exclusive and non-mandatory factors suggested in *Daubert*. *See Williams*, 506 F.3d at 160. The first two *Daubert* factors are addressed by the article Drs. Lawler and Krishna shared, a review of 100 published articles on the use of DTI in relation to TBI. This piece shows that the methodology has been tested and subject to substantial amounts of peer review and publication. *See* Hulkower et al., *supra*, at 2071. Plaintiff's submissions, which are no model of thoroughness, do not address the third *Daubert* factor: whether the use of DTI to diagnose TBI in an individual patient has a known error rate and standards to control the technique's operation. *See Williams*, 506 F.3d at 160. However, other courts have established a "consensus view that DTI . . . has a low error rate." *Lance Meadors v. D'Agostino*, No. CV 18-01007-BAJ-EWD, 2020 WL 6342637, at *5 (M.D. La. Oct. 29, 2020). With respect to *Daubert*'s fourth, general acceptance factor, Plaintiff's experts also note that DTI has been approved by the U.S. Food & Drug Administration, "is a widely available MRI method, and has been in clinical use for many years." (Lawler Decl. ¶ 2.) This Court joins the "clear consensus" of its sister courts that have held expert testimony based on DTI to be admissible. *Lance Meadors*, 2020 WL 6342637, at *4.

Defendant's factual counterarguments are misplaced. Its Rebuttal submission includes statements of professional organizations that it characterizes as "unequivocally disclaim[ing] the use of DTI for assessing individual patients." (Rebuttal at 2.) But in fact, those statements go no further than stating that there is not sufficient evidence to recommend the "*routine* clinical use" of DTI and other types of different advanced neuroimaging techniques. (Rebuttal at 2–3 (emphasis added).) Defendant offers nothing to critique the reliability of DTI in the circumstances of this case. Nor does Defendant explain why any supposed flaws in DTI should be interpreted to invalidate the entirety of the methodology used to diagnose Ms. Tardif, including a review of her history and current symptoms, the results of a neurological examination, neuroimaging, and medical records.

Defendant fares no better in faulting Dr. Krishna for failing to identify the criteria against which he measured Ms. Tardif's symptoms and medical records to make a diagnosis. Dr. Krishna writes that he made his diagnosis of TBI by applying his "knowledge, training and experience as a board certified neurologist" to Ms. Tardif's history, neurological exam, diagnostic testing, and medical records. (Krishna Decl. at 1.) He represents that this methodology is "long-established" and "accepted in the medical field in diagnosing and treating patients." (*Id.* at 2.) Courts regularly admit expert testimony from doctors who apply their training and professional experience to a review of similar sources of information. *See Monterey v. City of New York*, No. 17-CV-4477, 2019 WL 5884466, at *5 (S.D.N.Y. Nov. 12, 2019) (Caproni, J.). Defendant states that Dr. Krishna does not identify the specific "accepted diagnostic criteria" he applied (Rebuttal at 6), but this concern rings hollow. Defendant did not submit an affidavit or provide any other authority suggesting that diagnosis of physical brain injuries is typically guided by the same type of formal diagnostic criteria used to diagnose

psychological conditions. *Cf. Tardif I*, 344 F. Supp. 3d at 600 (assessing expert's diagnosis of post-traumatic stress disorder using the diagnostic criteria found in the Diagnostic and Statistical Manual of Mental Disorders). Defendant also chose not to offer an expert in rebuttal.

ii. Causation Opinion

Second, Defendant contends that Dr. Krishna did not use a reliable methodology to draw a causal link between the incident of March 21, 2012 and Ms. Tardif's symptoms and injuries, because he failed to undertake a differential diagnosis. "A differential diagnosis is 'a patient-specific process of elimination that medical practitioners use to identify the most likely cause of a set of signs and symptoms from a list of possible causes.'" *Ruggiero v. Warner-Lambert Co.*, 424 F.3d 249, 254 (2d Cir. 2005) (quoting *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1413 (D. Or. 1996)). For a causation opinion based on a differential diagnosis to be admitted, an "expert must make some reasonable attempt to eliminate some of the most obvious [alternative] causes," but need not "categorically exclude each and every possible alternative cause." *U.S. Info. Sys., Inc. v. Int'l Bhd. of Elec. Workers*, 313 F. Supp. 2d 213, 238 (S.D.N.Y. 2004) (Francis, M.J.). Defendant argues that Dr. Krishna's original report did not explicitly rule out several potential alternative causes of TBI: other incidents between Ms. Tardif and police on March 17, March 21, and April 16, 2012; a 2019 seizure that caused Tardif to fall and reportedly hit her head; a mild concussion Tardif suffered in 2020 from being hit with a surfboard; and her history of epilepsy and past drug use. (Def. Mem. at 8–9.)

Plaintiff counters that Dr. Krishna conducted an "implicit differential diagnosis" and ruled out alternative causes as set forth in his Addendum Report. (Pl. Opp'n to Def. Mots. in Lim. ("Pl. Opp'n") at 8, ECF No. 411.)[11] He justifiably ruled out some alternative causes. Dr.

[11] Defendant moves to strike Dr. Krishna's "Addendum Report," which was submitted alongside Plaintiff's opposition brief. (ECF No. 412-3.) Dr. Krishna does not state new opinions in this document or even new bases for

Krishna stated that the type of axonal injury he observed results from "speed increase or deceleration of the head (skull) which causes disfigurements (stretch and strain) of the cerebrum substance," i.e., a blow to the head. (Krishna Decl. at 2.) It was reasonable for Dr. Krishna to rule out incidents with police officers that did not result in reported head trauma—these incidents certainly cannot be considered obvious alternative causes of brain injury. Similarly, Defendant provides no reason to believe that Ms. Tardif's history of epilepsy and her unspecified past drug use are plausible causes of TBI, much less obvious alternative causes. Defendant does not identify any instance of head trauma prior to 2012 due to epilepsy or drug use. Moreover, Dr. Krishna's diagnosis was based in part on a review of medical records that discussed Ms. Tardif's epilepsy at great length. This fact supports Plaintiff's contention that Dr. Krishna implicitly ruled out epilepsy as an alternative cause.

The Court holds that other alternative causes cannot be justifiably ruled out. Dr. Krishna makes too great an analytical leap in concluding that Ms. Tardif's current symptoms and TBI diagnosis cannot be explained by instances of head trauma in 2019 and 2020. *See Joiner*, 522 U.S. at 146. Dr. Krishna writes that he ruled out these potential causes because they occurred after March 24, 2012, the date of Ms. Tardif's first MRI from which the experts identified a T2 white matter hyperintensity. Yet, as Plaintiff herself explained, Dr. Krishna's diagnosis of TBI was not based solely upon a review of brain imaging. (Pl. Opp'n at 5.) Dr. Krishna considered factors including Ms. Tardif's performance at a neurological examination conducted in 2021,

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the opinions he had previously included. This submission is an example of an expert permissibly providing "evidentiary details . . . in support of opinions already expressed in the expert's report." *Phoenix Light SF Ltd. v. Bank of N.Y. Mellon*, No. 14-CV-10104, 2019 WL 5957221, at *2 (S.D.N.Y. Nov. 13, 2019) (Caproni, J.). Furthermore, the Court later ordered Dr. Krishna to submit additional information on topics including the one addressed in the Addendum Report: the methodology underlying his causation opinion. Defendant's motion to strike is denied.

symptoms she reported first experiencing in November 2020,[12] and decreased FA values on a 2021 MRI with DTI. Dr. Krishna does not purport to make a diagnosis that Ms. Tardif has suffered from a TBI since 2012. For the same reason, he cannot conclude that the events of 2012 caused Ms. Tardif to suffer from a TBI or from any of her current symptoms.

Dr. Krishna may not testify about the specific cause of Ms. Tardif's condition or her current and recent symptoms. As a result, Dr. Krishna may not attribute any particular proportion of Ms. Tardif's need for future medical care to the incident of March 21, 2012. Dr. Krishna may still testify to his general knowledge about the types of events that can cause TBI and symptoms such as those reported by Ms. Tardif. He may similarly respond to hypothetical questions about whether a blow to the head like the one that Plaintiff alleges occurred on March 21, 2012 could be a plausible cause of TBI. He may also testify regarding the causation of the T2 white matter hyperintensity identified in the March 24, 2012 MRI, for which the 2019 and 2020 incidents are not obvious alternative explanations. Defendant's assertion that Drs. Krishna and Lawler simply came to the wrong conclusion when they determined that no T2 hyperintensity could be identified in the 2009 MRI can be addressed through cross-examination at trial. Defendant was at liberty to proffer a competing expert, as it did in 2018.

iii. Prognosis

Third, Defendant argues that Dr. Krishna failed to establish a need for "long-term life care" for Ms. Tardif. (Rebuttal at 6.) In particular, Defendant attacks as unsupported Dr. Krishna's opinion that Ms. Tardif's injuries are "serious and permanent," that they will

[12] The clearest indication that Ms. Tardif never experienced numerous of her symptoms prior to November 2020 is found in a medical record that is maintained under seal. That record contains progress notes from [redacted] that include a statement that, [redacted] (Rezvani Decl., Ex. F-3 at 5, ECF No. 414-2.)

"significantly restrict [her] working and social activities," and that they will at some point require the services of a home health aide. (Krishna Report at 6.) Although these conclusions may rest on shaky ground, Defendant's critiques go to the weight of this testimony, not its admissibility.

Dr. Krishna's determination that Ms. Tardif's injuries will be permanent is not particularly well-supported, but it is not groundless. He writes that he considered Ms. Tardif's "long standing symptomatology," the length of time she has experienced those symptoms despite past medical interventions, and the "clear change in brain histology as evidenced on the MRI with [DTI]." (Krishna Decl. at 5.) Dr. Krishna also attached a scholarly article that provides some support for the proposition that TBI causes progressive deterioration in the white matter of patients' brains. *See* Hulkower et al., *supra*. While Dr. Krishna's basis for his opinion may be thin, his opinion is not "speculative or conjectural or based on assumptions that are so unrealistic and contradictory as to suggest bad faith." *Restivo v. Hessemann*, 846 F.3d 547, 577 (2d Cir. 2017) (quoting *Zerega Ave. Realty Corp. v. Hornbeck Offshore Transp., LLC*, 571 F.3d 206, 214 (2d Cir. 2009)). Defendant does not offer an expert's contrary opinion or factual submissions suggesting that it is implausible to conclude from Ms. Tardif's history, records, and brain imaging that her condition is likely to be permanent. Defendant's submissions largely complain of purported insufficiencies in the record. The "liberal admissibility standards of the federal rules . . . recognize[] that our adversary system provides the necessary tools for challenging reliable, albeit debatable, expert testimony." *Amorgianos*, 303 F.3d at 267. "[T]he rejection of expert testimony is the exception rather than the rule." Fed. R. Evid. 702 advisory committee's note to 2000 amendments. The Court need not take the exceptional path in this case.

Dr. Krishna's opinion on the severity of Ms. Tardif's injuries is also admissible. Notably, Dr. Krishna's recommendations for the care Ms. Tardif should receive *currently* are unchallenged. Treatment for neurological issues is, of course, at the core of the practice of a treating neurologist such as Dr. Krishna. *Cf. id.* (citing "[w]hether the field of expertise claimed by the expert is known to reach reliable results for the type of opinion the expert would give" as a factor bearing on the reliability of an expert's opinion). The medical records reviewed by Dr. Krishna provide modest support for his opinion that Ms. Tardif experiences professional and social limitations—including one instance of headaches caused by looking at digital screens that interfered with her work responsibilities and a series of physical therapy appointments to address mobility issues. (Rezvani Decl., Ex. F-3 at 68, 396–449, ECF No. 414-2.)[13] Ultimately, though, this is the frequent case in which "gaps or inconsistencies in the reasoning leading to [the expert's] opinion go to the weight of the evidence, not to its admissibility." *Restivo*, 846 F.3d at 577 (ellipsis omitted) (alteration in original) (quoting *Campbell ex rel. Campbell v. Metro. Prop. & Cas. Ins. Co.*, 239 F.3d 179, 186 (2d Cir. 2001)).

As stated previously, though, the Court's exclusion of Dr. Krishna's causation opinion means that he may not testify that any proportion of the care he recommends (or the costs of that care) is due to the incident on March 21, 2012.

B. Helpfulness

The opinions Dr. Krishna offers will be helpful, given that they deal with matters outside the competence of a lay juror. His TBI diagnosis is the result of applying specialized experience

[13] These records are maintained under seal.

to a set of data—a core function of an expert witness.[14] Similarly, Dr. Krishna's testimony about the types of occurrences that generally can cause a TBI will not "'undertake[] to tell the jury what result to reach,' and thus 'attempt[] to substitute the expert's judgment for the jury's.'" *Nimely*, 414 F.3d at 397 (quoting *United States v. Duncan*, 42 F.3d 97, 101 (2d Cir. 1994)). Instead, the testimony will simply equip the jury with information it can use to decide which inferences to draw or not to draw from the facts it hears at trial. Defendant does not contest the helpfulness of Dr. Krishna's prognosis and future care recommendations, other than repeating the point that Plaintiffs' experts do not establish that the prognosis and need for care were caused by the incident on March 21, 2012. If the jury finds causation, estimates of the likely costs of treatment will assist in its consideration of a damages award.

III. Ms. Linda Lajterman

Plaintiff's third expert is Linda Lajterman—a "life care planner" who, since 1995, has owned and operated a series of independent consulting firms specializing in life care planning, cost projections, and case management. (Rezvani Decl., Ex. D ("Lajterman Report") at 20, ECF No. 412-4.) Ms. Lajterman is a registered nurse who earned a post-graduate certificate in advanced life care planning from the University of Florida and is certified as a life care planner, disability management specialist, and case manager. (*Id.* at 19.) Her expert report contains seven categories of recommended care for Ms. Tardif. Those categories include routine medical care (specialist visits with neurologists, headache specialists, neuro-ophthalmologists, and neuro-otologists), diagnostic care (an annual MRI), and future aggressive care (occipital nerve block procedures every three weeks). The recommendations largely mirror the care recommended by

[14] Of course, parroting the narrative recounted by a patient would not be helpful. *See Tardif I*, 344 F. Supp. 3d at 602–03. But there is no indication that Plaintiff plans to elicit such testimony. At trial, Defendant may naturally raise any objections that become necessary.

Dr. Krishna. (*See id.* at 3–4; Lajterman Decl. at 3, ECF No. 448-1.) Ms. Lajterman also adds her own recommendations for several types of equipment to mitigate the risk of falling and recommends that Ms. Tardif receive three hours of in-house homemaker assistance per week. She provides a cost estimate for each type of care and multiplies those figures by the recommended annual frequency of care and Ms. Tardif's life expectancy, to arrive at annual and lifetime total costs.

Ms. Lajterman's life care plan is relevant and helpful to the jury notwithstanding that the Court precluded Dr. Krishna's opinion on the specific cause of Ms. Tardif's alleged injuries. If the jury finds liability and causation, Ms. Lajterman's recommended care and cost estimates could inform the jury's damages calculation. Defendant does not challenge Ms. Lajterman's qualifications, and the Court is satisfied that she is qualified to opine on life care planning, including estimating the costs of care.

Defendant contests the reliability of Ms. Lajterman's methodology in two respects.[15] First, it states that Ms. Lajterman's creation of a life care plan without the participation of Ms. Tardif's treating physicians is an impermissible deviation from the standards of life care planning. Defendant provides no authority in support of this proposition. Defendant mischaracterizes the standards of care for life care planning that Ms. Lajterman provided, when it argues that these standards *require* the collaboration of a patient's treating physicians. (*Cf.* Lajterman Decl. at 2–3.) The degree of involvement by Ms. Tardif's treating physicians in Ms. Lajterman's life care planning goes to the weight of the evidence, not its admissibility. *See, e.g.*, *Burris v. Ethicon, Inc.*, No. 3:20 CV 1450, 2021 WL 3190747, at *19–20 (N.D. Ohio July 28,

[15] The Court's ruling that Dr. Krishna's care recommendations are admissible moots another of Defendant's arguments: that Ms. Lajterman's life care plan must be precluded because it is derivative of an inadmissible report.

2021) (admitting expert testimony regarding a life care plan based on the expert's review of the plaintiff's medical records and of recommendations by an expert urologist who was not the plaintiff's treating physician).

Second, Defendant asserts that Ms. Lajterman did not produce a "true" life care plan because her report "reads as [a] cost estimate rather than a [life care] plan." (Rebuttal at 7.) The definition of a life care plan includes the "associated costs" of care; similarly, specifying "the charges for those services needed by the evaluee" is one of the five goals of a life care plan. (Lajterman Decl. at 35–36.) Even if Defendant is correct that Ms. Lajterman's report is a cost estimate, it does not explain why life care planning methodology is not a reliable basis for estimating costs. Other courts have faced directly analogous circumstances and admitted cost estimates by life care planners. *See Bayes v. Biomet, Inc.*, No. 4:13-CV-00800-SRC, 2020 WL 5594059, at *9 (E.D. Mo. Sept. 18, 2020) ("Basically, [Dr.] Lux provided recommendations regarding Mary's future medical needs, and [life care planner Aubrey] Corwin provided a calculation of the associated costs, based on her knowledge, experience, and research."). For all of the preceding reasons, the Court denies Defendant's motion to preclude the testimony of Ms. Lajterman.

IV. Prof. Mark P. Zaporowski

Plaintiff's final proffered expert is Professor Mark P. Zaporowski. Prof. Zaporowski holds a Ph.D. in economics from the State University of New York at Albany and has taught economics and finance at Canisius College from 1984 to the present. (Rezvani Decl., Ex. E ("Zaporowski Report") at 7, ECF No. 412-5.) His report consists of a straightforward inflation adjustment of Ms. Lajterman's estimates of the lifetime costs of care for Ms. Tardif. Prof. Zaporowski calculated projected rates of future inflation of costs for several categories of medical care and services, as well as future inflation in the overall economy. He did so by

reviewing past Consumer Price Index ("CPI") data reported by the Bureau of Labor Statistics for the years 2000 to 2020 and adopting the assumption that future growth rates in each category of costs would match past growth rates. (*See* Zaporowski Decl. ¶¶ 1–2, ECF No. 448-2.)

Defendant raises unpersuasive arguments against the admissibility of Prof. Zaporowski's report. Prof. Zaporowski's testimony is relevant to this case. If the jury finds liability, and that the actions of Sergeant Mattera caused Ms. Tardif to suffer an injury that merits future medical treatment, the jury will be required to determine Tardif's future medical costs. Awards for future damages must be adjusted to account for the rate of inflation and the time value of money; collectively, these two factors are termed the "discount rate." *See Ammar v. United States*, 342 F.3d 133, 147 (2d Cir. 2003). Prof. Zaporowski's report points out that the costs of many types of medical care and services grow faster than the economy-wide rate of inflation. (Zaporowski Report at 3.) Testimony to this fact would affect the amount of money a jury could reasonably expect Ms. Tardif to pay for medical expenses over her lifetime.[16] The Second Circuit has stated that it is often sensible for parties to stipulate to a particular discount rate, thereby simplifying the jury's task. *See Oliveri v. Delta S.S. Lines, Inc.*, 849 F.2d 742, 746, 748 (2d Cir. 1988). The Court would welcome any such stipulation. But a court may not impose such an agreement upon the parties. *Id.* at 748.

Defendant also argues that Plaintiff does not sufficiently explain the reliability of Prof. Zaporowski's methodology. Prof. Zaporowski provided the twenty years of past Bureau of Labor Statistics data that he used to calculate his projections of future inflation rates. He declares that "[u]sing past rates of growth in CPI series to project future inflation rates is a

[16] The Court notes that neither party appears prepared to offer competent evidence regarding "the interest rate for virtually risk-free investments" over the relevant time period, i.e., the time value of money. *Oliveri v. Delta S.S. Lines, Inc.*, 849 F.2d 742, 746 (2d Cir. 1988). This shortcoming would leave the finder of fact without a basis to determine one of the two components of the discount rate.

generally accepted methodology by economists." (Zaporowski Decl. ¶ 3.) Moreover, testimony based on the same methodology has been accepted by other courts against a *Daubert* challenge. *See Coleman v. Dydula*, 139 F. Supp. 2d 388, 391, 394 (W.D.N.Y. 2001). Defendant could have submitted facts supporting its contention that past inflation rates are not a reliable predictor of future inflation rates, but it did not do so.

Defendant does not challenge Prof. Zaporowski's qualifications or the helpfulness of his expert testimony to the jury. Because none of Defendant's arguments has merit, its motion to preclude Prof. Zaporowski's expert testimony is denied.

CONCLUSION

For the foregoing reasons, Defendant's motion to preclude Plaintiff's experts from testifying is GRANTED in part and DENIED in part. The second motion *in limine* from Defendant's February 28, 2022 memorandum of law—to bar Plaintiff from presenting a theory of damages premised on traumatic brain injury—is also DENIED for the same reasons.

The Clerk of Court is respectfully directed to terminate the pending motion at ECF No. 388.

SO ORDERED.

Dated: New York, New York
June 17, 2022

/s/ Kimba M. Wood
KIMBA M. WOOD
United States District Judge