STATE OF NEW HAMPSHIRE
SUPREME COURT

Docket No. 2019-0092

Sandra Moscicki v. Charles Leno and Heidi Leno

RULE 7 APPEAL FROM ORDER OF THE
GRAFTON COUNTY SUPERIOR COURT
(Justice Lawrence A. MacLeod, Jr.)

REPLY BRIEF OF APPELLANT SANDRA MOSCICKI

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Gary M. Burt will present oral argument on behalf of Sandra Moscicki

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I. Appellees' Brief Inconsistently Applies The Overwhelming Body Of Authoritative, Peer Reviewed, Research Literature Regarding The Effect Of EBLLs On Development, Claiming That Low Level Elevated Blood Leads Are A Neurobehavioral Risk Factor, But Ignoring That Same Body Of Literature Establishing That The Magnitude Of Harm Is Small.

The Appellees' respond negatively to the question presented, "whether in a toxic tort case the dose-response relationship for the toxin at issue as recognized in the scientific literature is an inherent or implicit and necessary component of the methodology that an expert witness must consider . . .as a condition or prerequisite for admissibility at trial under RSA 516:29-a…" Instead, Appellees' claim the expert may not only ignore the basic tenet of scientific analysis, but opine in a manner wholly contrary to the known dose-response relationship. This Court should reject that contention.

The Appellees cite the Centers for Disease Control and Prevention ("CDC") statement "research shows that no safe blood lead level has been identified." Appendix to Brief of Appellant Sandra Moscicki ("App.") at 448. Appellees conclude that consequently an expert may testify that the magnitude of the harm caused by low elevated blood lead levels ("EBLLs") is far beyond what the research literature would support. Appellees essentially claim that their experts can selectively choose from part of the vast body of the governing, authoritative research literature regarding the effect of EBLLs, but then ignore that same body of literature regarding the magnitude of the expected effect. Dr. Peter Isquith ("Dr. Isquith") testified, "Matthew's deficits are pretty extreme and much more so than we would expect based on the numerous studies about lead." App. at 139, (Hearing Transcript p. 61:22-24). Yet he and Dr. Robert Karp ("Dr. Karp") choose to disregard that literature in contravention of this Court's admonition that the expert's opinion must be based on "appropriate validation—*i.e.,* good grounds, what is known." *Baxter v. Temple*, 157 N.H. 280, 285 (2008) (quoting *State v. Dahood,* 148 N.H. 723, 727 (2002).

Matthew's level of impairment, global developmental delays, or severe intellectual impairment, was previously classified as mental retardation. *See* App. at 75. That level of significant impairment has never been posited to be caused by EBLLs of 17 µg/dl, nor has any of the scientific literature suggested that lead levels of that size could be a substantial factor in causing severe intellectual impairment. There is not a single study or case report that suggests, as do Appellees' experts, that EBLLs of 17 µg/dl, would cause or be a substantial factor in causing a child who would otherwise be expected to be "average" to fall to the "very low" or significantly impaired range on intellectual and neuropsychological testing. Indeed, only EBLLs much higher than those Matthew experienced are expected to cause or be a substantial factor in causing that level of deficit or impaired performance.

The Agency for Toxic Substances and Disease Registry ("ATSDR") explained in *Toxicological Profile for Lead* "[h]igh-level exposure to lead produces encephalopathy in children." Appendix to Reply Brief of Appellant Sandra Moscicki ("Reply App.") at 8. The ATSDR noted that encephalopathy was "associated with [EBLLs] of approximately 90-800 µg/dl (mean, 330 µg/dl)." Reply App. at 8. "Numerous studies clearly show that childhood lead poisoning with encephalopathy results in a greatly increased incidence of permanent neurological and cognitive impairments." Reply App. at 9.

Children who experience encephalopathy because of their EBLLs often subsequently suffer from severe neurological problems. *See* Reply App. at 16. According to one study, thirty-eight percent of children who experienced encephalopathy because of their EBLLs suffered mentally retardation. Reply App. at 16.

The National Research Council's Committee on Toxicology reached a similar conclusion: "[p]ermanent effects of lead poisoning include blindness, mental retardation, behavior disorders and death. Clinically obvious effects of this magnitude are associated with the later stage of lead poisoning in which encephalopathy occurs." Reply App. at 27. The Committee noted that "**[l]ead encephalopathy in children generally does not occur until blood lead levels exceed 120 [µg/dl].**" Reply App. at 27 (emphasis added).

Appellees ignore the undisputed literature regarding cause and effect of EBLLs and neurobehavioral outcome. That literature clearly points to a large magnitude of effect at much higher levels than Matthew experienced, and a much smaller magnitude of effect at the levels he experienced. Selective and inconsistent application of the science is simply unreliable application of data to facts, contrary to the dictate that an expert must reliably apply the methods to the facts of the case. *See Bourne ex rel. Bourne v. E.I. Dupont de Nemours and Co., Inc.*, 189 F. Supp. 2d 482, 499-501 (S.D. W.Va. 2002).

Judge MacLeod erroneously concluded that because EBLLs are known to cause some harm, it is left to the experts to opine on the magnitude of harm where the expert "may be attempting to establish a greater impact than has been traditionally documented in the literature." App. at 13. That determination disregards that "scientific testimony must be supported by appropriate validation--*i.e.*, good grounds, based on what is known." *Baxter* at 285. Judge MacLeod was similarly wrong to conclude that because "there is a well-established connection between lead exposure and lowered IQ score," an expert's opinion that the magnitude of harm was much more severe than science supports is best addressed through cross-examination. *See* App. at 13, 15. This Court has previously declared that cross examination is not a proxy for the requirement that proposed expert testimony be based upon a reliably applied methodology. *See State v. Cressey*, 137 N.H. 402, 405, 410 (1993); *In re Gina D.*, 138 N.H. 697, 703 (1994).

The experts in the *Lipitor* and other cases cited in Moscicki's Brief were similarly attempting to establish that a toxin's impact was much greater than had been documented in the literature, but the courts excluded the experts' testimony. *See, e.g.*, *In re: Lipitor (Atorvastatin Calcium) Marketing, Sales Practices and Prods. Liab. Litig.*, 2016 WL 1251828, at *5, *11 (D.S.C. Mar. 30, 2016) ("*Lipitor I*"); *In re Ingram Barge Co.*, 187 F.R.D. 262, 266 (M.D. La. 1999). N.H. Rev. Stat. Ann. § 516:29-a requires more than an expert baldly assert that his opinion is supported by the relevant science. An expert's opinion must be based upon sufficient facts or data, and represent a reliable application of the relevant principles and methods to the facts of the case. *See id.* The Lenos' experts'

opinions, selectively applying the research literature regarding the effects of by low EBLLs, cannot meet this standard.

II. As Appellees' Experts Ignored The Overwhelming Body Of Authoritative, Peer Reviewed, Research Literature Regarding The Magnitude Of Effect Of Low EBLLs On Development, Their Proposed Testimony Is Not Admissible As It Is Not Based On Good Grounds.

The Lenos' experts' proposed, "scientific testimony must be supported by appropriate validation--*i.e.*, good grounds, based on what is known." *Baxter* at 285. Matthew's EBLLs never approached the level necessary to cause or be a substantial factor in causing his global developmental delays. *See* Reply App. at 27. Noticeably, the Appellees do not cite a single case report or study to support their experts' opinion that a child expected to perform in the average range, *see* App. at 111, (Deposition p. 94:17 – 95:3), would drop to the first percentile on multiple neuropsychological tests due to EBLLs of 17 µg/dl. Dr. Isquith admitted he was unaware of any such studies and would be surprised if "any of the literature" suggested that Matthew's EBLLs could cause a drop of "two or three times the standard deviation on test scoring." *See* App. at 111, (Deposition p. 96:12-22); App. at 106, (Deposition p. 76:4-7).

Despite his admission, Dr. Isquith nevertheless opines that Matthew's EBLLs were a substantial contributing factor to his deficits. App. at 139-140, 141, (Hearing Transcript p. 61:25 – 62:3; 67:6-16). Simply calling Matthew's EBLLs a "substantial contributing factor" to his global developmental delays does not transform Dr. Isquith's opinion into reliable science. The "substantial factor" test requires not only that a substance be "a substantial factor in bring about the harm," but also that **the harm would not have occurred without the exposure**. N.H. Civ. Jury Instructions 6.1. Dr. Isquith admitted that he does not know what Matthew's IQ would have been had he not experienced EBLLs, *see* App. at 108, (Deposition p. 85:1-4), and could not estimate how much Matthew's EBLLs affected his IQ. App. at 108, (Deposition p. 85:12-16). Further, Dr. Isquith acknowledged that there are "many" risk factors for intellectual impairment

other than EBLLs, *see* App. at 102-103 (Deposition p. 61:18 – 63:9), and Dr. Isquith did not exclude those risks factors as being the cause of Matthew's deficits. *See* App. at 111 (Deposition p. 95:23 – 96:5). Dr. Isquith's admissions confirm that his opinion are not based on good grounds.

Dr. Isquith testified that given Matthew's mother, father, and siblings' full scale IQ scores, he would have expected Matthew's full scale IQ score to be average. *See* App. at 111, (Deposition p. 94:17 – 95:3). In both of his reports, Dr. Isquith specifically noted that the average range for IQ scores is 90 to 109:

Percentile	Standard Score	Scaled Score	T Score	Range
>98	>130	17-19	>70	Very High
95-98	120-129	15-16	65-70	Well Above Average
75-94	110-119	13-14	58-64	Above Average
25-74	90-109	8-12	43-57	Average
11-24	80-89	6-7	37-42	Below Average
4-10	70-79	4-5	30-36	Well Below Average
0-3	<70	<4	<30	Very Low

See App. at 67, 79-80. Dr. Isquith also reported that the standard deviation for the tests he administered was 15, confirming that Matthew's full scale IQ score of 40 was four standard deviations below the median average score of 100. *See* App. at 67, 79.

Matthew's IQ score is also well below the threshold (a score of 70) for a diagnosis of severe intellectual impairment. *See* App. at 205 (Hearing Transcript p. 81:6-19). To drop from the average range (90 to 109) to below 70 is a loss of at least 20 IQ points (1 and 1/3 standard deviations), far beyond what the studies on the effect of low EBLLs support. Dr. Isquith had previously admitted those studies "consistently point to an average loss of 1 to 3 points on IQ tests for each 10 μg/dl of blood lead level elevation." App. at 122. Dr. Isquith reaffirmed the small effect during his deposition. *See* App. at 105, (Deposition p. 72:18 – 73:13).

Absent support of applicable scientific studies and in direct contradiction of his prior conclusions, Dr. Isquith's opinion is a classic *ipse dixit*. *See Smith v. Jenkins*, 732

F.3d 51, 67 (1st Cir. 2013). Even if Matthew lost 10 IQ points because of his EBLLs, which Dr. Isquith admitted would be the most supported by the literature, Matthew's IQ would still have been only 50, twenty points below the threshold for severe intellectual impairment. *See* App. at 154-155 (Hearing Transcript p. 121:13 – 122:4). Dr. Isquith's opinion does not meet the statutory requirements of reliability simply because he claims it does. *See General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997). Undoubtedly, all experts in toxic tort cases opine that the toxin was a substantial factor, but courts have nonetheless excluded that testimony when not supported by the relevant science.

III. Appellees Claim That If No Threshold Exists Below Which Lead Cannot Cause Harm, An Expert Is Permitted To Opine As To The Magnitude Of Harm Without Regard For The Authoritative, Peer Reviewed, Research Literature On The Dose-Response Relationship Between EBLLs And Expected Outcome.

Even if no threshold exists below which lead cannot cause harm, that does not mean that exposure to low levels of lead can cause severe harm. That statement ignores the basic scientific principle of dose response addressed in the research literature on lead. As Dr. Isquith recognized "[t]here are several, prospective, large cohort studies of children that find very similar, nearly linear dose-effect relationships between post-natal lead exposure and intelligence test scores as well as other neuropsychological functions (e.g. attention, executive functions, visuospatial skill)." App. at 122.

To simplify the science to "any exposure to lead can cause any severity of harm" is error. "[T]he notion that it is theoretically possible that any amount of exposure could cause injury is different from an opinion that the particular level of dosage experienced by a plaintiff was sufficient to cause his or her particular injury." *Krik v. Crane Co.*, 76 F. Supp. 3d 747, 752 (N.D. Ill. 2014). Dr. Isquith admitted, "[l]ead is the most researched neurotoxin." App. at 122. That research cannot be ignored or disregarded simply because no threshold exists below which lead cannot cause harm.

One recent longitudinal study noted "findings suggest that the associations between early childhood lead exposure and subsequent developmental outcomes may

persist. However, **as the magnitude of these effects was small**, they are not discernible at the individual level, posing more of a population health concern." App. at 430 (emphasis added). This statement is consistent with the large body of literature cited in Moscicki's Brief. *See, e.g.*, App. at 326, 340, 358, 367, 377. The World Health Organization summarized the current scientific consensus regarding the effect of EBLLs by explaining that "it is estimated that about a quarter to a half of an IQ point is lost for each 1 µg/dl increase in the blood lead level during the preschool years for children who have blood lead levels in the range of 10-20 µg/dl." App. at 408.

The small effect of low EBLLs on development is not only supported by the numerous studies of lead, but consistent with the CDC's recommended treatment regarding EBLLs:

Blood Lead Level (BLL)					
<5 µg/dL	**5–9 µg/dL**	**10–19 µg/dL**	**20–44 µg/dL**	**45–69 µg/dL**	**≥70 µg/dL**
Routine assessment of nutritional and developmental milestones Anticipatory guidance about common sources of lead exposure Follow-up blood lead testing at recommended intervals based on child's age	Routine assessment of nutritional and developmental milestones Environmental assessment of detailed history to identify potential sources of lead exposure Nutritional counseling related to calcium and iron intake Follow-up blood lead testing at recommended intervals based on child's age	Routine assessment of nutritional and developmental milestones Environmental assessment of detailed history and environmental investigation** including home visit to identify potential sources of lead exposure Nutritional counseling related to calcium and iron intake; consider lab work to assess iron status Follow-up blood lead monitoring at recommended intervals	Complete history and physical exam Neurodevelopmental assessment Environmental investigation of the home and lead hazard reduction Lab work: • Iron status • Hemoglobin or hematocrit Abdominal X-ray (with bowel decontamination if indicated) Follow-up blood lead monitoring at recommended intervals	Complete history and physical exam Complete neurological exam including neuro-developmental assessment Environmental investigation of the home and lead hazard reduction Lab work: • Iron status • Hemoglobin or hematocrit Abdominal X-ray with bowel decontamination if indicated Oral chelation therapy; consider hospitalization, if lead-safe environment cannot be assured	Hospitalize and commence chelation therapy in conjunction with consultation with a medical toxicologist or a pediatric environmental health specialty unit Proceed with additional actions according to interventions for BLLs between 45-69 µg/dL

Reply App. at 29. For Matthew, the CDC's recommended treatment is assessment, counseling, and follow-up blood lead monitoring. *See* Reply App. at 29. Were it

possible for Matthew's global developmental delays to be caused by his low EBLLs, the CDC's recommended treatment would be far more urgent and extensive.

IV. The Appellees' Argument That The Authoritative, Peer Reviewed, Research Literature Regarding EBLLs And Its Effect On IQ Can Be Ignored By Their Experts Who Opine As To A Magnitude Of Overall Effect, Disregards The Requirement That An Expert's Methodology Must Reliably Be Applied To The Facts.

Although the Lenos claim IQ is not the "gold standard" for determining the effect of EBLLs, they ignore their own expert's admission that the effect on IQ has been the subject of significant study, in part because IQ score is an imperfect mirror for other areas of neurobehavioral performance. As Dr. Isquith acknowledged, IQ has been the most studied measure of the effect of EBLLs on development. *See* App. at 152 (Hearing Transcript p. 112:11-15). IQ measurement also encompasses many of the same areas of function that are measured by other neuropsychological tests. The CDC explained "[t]he aggregate or full-scale IQ is based on the sum of performance on multiple subtests that tap a vast array of cognitive and psychomotor functions." App. at 454.

In a 2010 article, Dr. David K. Marcus and his colleagues concluded, "the relation between lead exposure and conduct problems was strikingly similar in magnitude to the relation between lead exposure and decreased IQ." App. at 422. Dr. Isquith similarly noted that studies of EBLLs have found "very similar, nearly linear dose-effect relationships between post-natal lead exposure and intelligence test scores **as well as other neuropsychological functions (e.g. attention, executive functions, and visuospatial skill**)." App. at 122. A recent longitudinal study also found a small association between childhood lead exposure and certain negative developmental outcomes other than IQ. *See* App. at 435-436.

Whether IQ or another measure is used, the science is clear: EBLLs of 17 μg/dl may have a small effect on an individual's development. Dr. Isquith and Dr. Karp disregarded the overwhelming scientific authority regarding the magnitude of effect of low EBLLs. Appellees never explain how Dr. Isquith and Dr. Karp's opinions are based

on sufficient facts or data, nor they have identified a single study supporting their expert's opinions. The Appellees fail to explain how their experts' principles and methods could be reliably applied to the facts of this case when they have opined differently in other circumstances based on the same body of literature. *See* App. at 122, 414.

Appellees also disregard the substantial body of case law that an expert's opinion in a toxic tort case comport with the basic science of toxicology - most importantly, dose response. *See, e.g.*, *Williams v. Mosaic Fertilizer, LLC,* 889 F.3d 1239, 1246 (11th Cir. 2018); *Baker v. Chevron USA, Inc.*, 680 F. Supp. 2d 865, 887 (S.D. Ohio 2010); *In re Accutane Prods. Liab.*, 511 F. Supp. 2d 1288, 1293 (M.D. Fla. 2007); *Benkwith v. Matrixx Initiatives, Inc.*, 467 F. Supp. 2d 1316, 1328 (M.D. Ala. 2006); *Sherwin-Williams Co. v. Gaines ex rel Pollard*, 75 So. 3d 41, 45-46 (Miss. 2011). Appellees' experts method of analysis defies reliability, as they cite to part of the literature documenting a dose-response relationship, yet ignore that same literature's conclusion that the magnitude of the harm is small. "[A]ttempting to establish a greater impact than has been traditionally documented in the literature" is nothing more than ignoring the relevant science. App. at 13. This is totally inconsistent with the dictate that proposed "scientific testimony must be supported by appropriate validation--*i.e.*, good grounds, based on what is known." *Baxter* at 285.

CONCLUSION

This Court should answer the trial court's question in the affirmative and reverse the October 4, 2017 Order.

CERTIFICATION REGARDING THE DECISION BEING APPEALED

The trial court's October 4, 2017 Order and January 12, 2018 Order are in writing and are appended to this brief.

Respectfully submitted,

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By Her Attorneys,

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Date: July 2, 2019 By: /s/ Gary M. Burt

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CERTIFICATION OF WORD LIMIT

I hereby certify that the total words in this Reply Brief do not exceed 3,000 words.

Date: July 2, 2019 /s/ Gary M. Burt
Gary M. Burt (N.H. Bar No. 5510)

CERTIFICATION

I hereby certify that a copy of this Reply Brief was served today via the Court's electronic filing system on Christopher J. Seufert.

Date: July 2, 2019 /s/ Gary M. Burt
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BRIEF ADDENDUM

STATE OF NEW HAMPSHIRE
SUPERIOR COURT

GRAFTON, SS. Docket Nos. 11-CV-111 & 174

Sandra Moscicki

v.

Charles Leno *et al.*

ORDER

The plaintiff, Sandra Moscicki, originally brought this action as a small claims complaint seeking unpaid rent from the defendants subsequent to their having vacated an apartment she had leased to them. The defendants, acting in their capacity as parents, thereafter filed an independent action alleging that their two minor children were exposed to unsafe levels of lead while residing in the plaintiff's apartment, suffering injuries as a result. The cases were consolidated. In support of their claims, the defendants seek to introduce the expert testimony of Peter Isquith, Ph.D., a clinical neuropsychologist, and Robert Karp, M.D., a pediatrician. The plaintiff has moved to exclude the opinions of Drs. Isquith and Karp on the grounds that their testimony fails to meet the requirements of admissibility under New Hampshire law, specifically RSA 516:29-a. The court held a hearing on October 13 and 14, 2016, and February 22, 2017. Voluminous exhibits were submitted by the parties. Thereafter, the parties submitted post-hearing memoranda. Upon consideration of the testimony, the parties' pleadings and exhibits, and the applicable law, the court finds and rules as follows.

The defendants' children, Matthew Leno and Maureen Leno, are fraternal twins born on July 8, 2008. (*See* Pl.'s Post-Hr'g Ex. C.) Matthew was in breach position in

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utero, but did not display any immediate neurological issues at birth. (*Id.*) Both children exhibited ordinary development in the first year of their lives.

On September 1, 2009, the defendants moved into the plaintiff's apartment building located at 32 Union Street in Littleton. While living in the apartment, when Matthew was approximately eighteen months old, the defendants observed that he appeared to be experiencing developmental setbacks and his vocabulary began to regress. (Defs.' Hr'g Ex. Y at 2.) Ultimately, Matthew stopped talking altogether. (*Id.*) Both children were tested for lead on October 21, 2009. Matthew had elevated blood lead levels ("EBLLs") of 4.6 μg/dl and Maureen had EBLLs of 3.7 μg/dl. (Pl.'s Post-Hr'g Ex. N.) On July 27, 2010, at their second annual physical examinations, the children were again tested for lead. At this point, Matthew had EBLLs of 17 μg/dl and Maureen had EBLLs of 19 μg/dl. (Pl.'s Post-Hr'g Ex. H, I.) As a result of the foregoing, the defendants moved out of the plaintiff's apartment and the pending lawsuits followed.

The defendants hired Dr. Peter Isquith to perform neuropsychological evaluations on both children to determinate what, if any, ill effects the lead exposure had caused. With respect to Matthew, Dr. Isquith began by attempting to evaluate his IQ by administering the Wechsler Intelligence Scale for Children (WISC-IV). (Isquith Dep. at 79:17–21.) Dr. Isquith was ultimately unable to derive a full scale IQ based upon the WISC-IV as Matthew's scores were too low on three subtests. (*Id.* at 79–81.) Therefore, Dr. Isquith elected to employ the Reynolds Intellectual Assessment Scales (RIAS), which Matthew was able to complete. In his report, Dr. Isquith reported a Verbal Index score of 40, a Nonverbal Index score of 59, and a Composite Index score of 40, all of which are in the "very low" range. (Defs.' Hr'g Ex. Y at 7.)

Dr. Isquith then employed a number of other measures, including the Developmental Neuropsychological Assessment, Second Edition (NEPSY-II). Matthew's scores were almost universally poor. (*Id.* at 8–10.) Citing lead exposure as the most prominent risk factor in Matthew's history, Dr. Isquith concluded that "[l]ow level lead exposure such as Matthew's is associated with a loss of intellectual function and increased risk of other developmental deficits affecting attention, self-regulation, visuospatial functions and other domains. It is more likely than not that the lead exposure is a substantial contributing factor to Matthew's deficits." (*Id.* at 12.)

Dr. Isquith employed many of the same measures to evaluate Maureen. Maureen performed significantly better than her brother on all tests, despite having had a high peak EBLL. Nearly across the board, Maureen's scores were at or above expected levels in cognition. (Defs.' Hr'g Ex. Z at 5–8.) However, Dr. Isquith noted some academic deficits that required some additional support in school. (*Id.* at 10.) Dr. Isquith concluded that "[g]iven the known associations between lead exposure and adverse developmental outcomes and the specifics in this case, it is more likely than not that lead is a substantial contributing factor to Maureen's ongoing attention and self-regulatory vulnerability and her academic performances deficits." (*Id.*)

Dr. Robert Karp also issued a report for the defendants after reviewing the children's records, including Dr. Isquith's reports. (Karp Hr'g Ex. 1.) Dr. Karp concluded that, to a reasonable degree of medical certainty, both children were negatively impacted by their exposure to lead. (*Id.*)

Analysis

The plaintiff has moved to exclude the testimony of Drs. Isquith and Karp with respect to Matthew Leno, arguing their conclusions with respect to the impact of lead

exposure on Matthew's neurological development are unsupported by the prevailing medical literature.

I. Legal Standard

New Hampshire Rule of Evidence 702 provides: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." "[E]xpert testimony must rise to a threshold level of reliability to be admissible." *Baker Valley Lumber, Inc. v. Ingersoll-Rand Co.*, 148 N.H. 609, 614 (2002). In determining the reliability of an expert's testimony, the Court in *Baker Valley* adopted the framework set forth in *Daubert v. Merrel Dow Pharmas., Inc.*, 509 U.S. 579 (1993).

The New Hampshire legislature has since codified this framework at RSA 516:29-a, which provides:

> I. A witness shall not be allowed to offer expert testimony unless the court finds:
> (a) Such testimony is based upon sufficient facts or data;
> (b) Such testimony is the product of reliable principles and methods; and
> (c) The witness has applied the principles and methods reliably to the facts of the case.
> II. (a) In evaluating the basis for proffered expert testimony, the court shall consider, if appropriate to the circumstances, whether the expert's opinions were supported by theories or techniques that:
> (1) Have been or can be tested;
> (2) Have been subjected to peer review and publication;
> (3) Have a known or potential rate of error; and
> (4) Are generally accepted in the appropriate scientific literature.
> (b) In making its findings, the court may consider other factors specific to the proffered testimony.

Under this analysis, "[t]he trial court functions only as a gatekeeper, ensuring a methodology's reliability before permitting the fact-finder to determine the weight and credibility to be afforded an expert's testimony." *Baker Valley*, 148 N.H. at 616.

II. Reliability of the Experts' Opinions Regarding Matthew Leno

In her initial motion in limine, the plaintiff argued Dr. Isquith's opinion was unsupported by the prevailing literature on lead's impact on IQ and executive function. Specifically, the plaintiff argued that the literature indicates that blood lead levels of 17 μg/dl are associated with a loss of approximately five to ten IQ points, whereas Matthew's IQ of 40, as reported by Dr. Isquith, represented a substantially higher decrement of sixty points below the mean IQ of 100. In response, the defendants maintain that Dr. Isquith never claimed that Matthew's IQ was 40, and that the plaintiff is misinterpreting Dr. Isquith's report. Because the issue of Matthew's IQ is central to the plaintiff's critique of Dr. Isquith's opinion, the court will first address Dr. Isquith's testimony regarding the interpretation of the scores in his report.

As Dr. Isquith himself acknowledged, the relationship between lead and IQ is one of the most studied phenomena in the medical literature. (Hr'g Tr. (Day 1) at 112:11–15.) In his report, Dr. Isquith initially attempted to evaluate Matthew's IQ using the WISC-IV but was unable to do so, as Matthew was unable to complete several of the subtests. Therefore, Dr.Isquith utilized the RIAS instead. Though Matthew also struggled on that test, Dr. Isquith was able to generate final scores. Dr. Isquith reported verbal, nonverbal, and composite index scores of 40, 59, and 40 respectively. (Defs.' Hr'g Ex. Y at 7.) At Dr. Isquith's deposition, the following exchange took place:

> Q: Okay. And he [Matthew] was able to complete the RIAS?
> A: . . . He achieved a zero on two subtests, which translates to the lowest possible scores. So he actually couldn't do all of the RIAS.

Q: But it did generate a[n] IQ score, correct?
A: It did.
Q: And what was the IQ score?
A: As low as one possibly can get. A 40.
Q: That's composite index?
A: Yes.

(Isquith Dep. at 81:9–23; 82:1.) Based on the foregoing, the plaintiff understood Dr. Isquith to be claiming that Matthew's IQ was 40, and moved to exclude defendants' experts on that basis.

At the *Daubert* hearing, however, Dr. Isquith testified that because of the nineteen-point discrepancy between Matthew's verbal and nonverbal index scores, he disregarded the low verbal test score. (Hr'g Tr. (Day 1) at 40.) In addition, Dr. Isquith testified that the verbal index score was unreliable because Matthew had a language impairment. (*Id.* at 26–27.) Therefore, Dr. Isquith relied on Matthew's nonverbal score on the RIAS, as well as the composite score of 65 on one of the nonverbal components of the WISC-IV. (*Id.* at 40) He testified that "on the two nonverbal measures, he scored a 65 and a 59 . . . which would reasonably place an estimate of his intellectual ability somewhere between the upper 50s and the lower mid-60s—or upper 60s." (*Id.* at 42.)

The court finds that Dr. Isquith has failed to adequately support his position that the composite index results of the RIAS should be disregarded. First, there is inadequate support in the record for the claim that Matthew suffers from a language impairment. The Handbook of Psychological and Educational Assessment of Children, edited by Dr. Cecil Reynolds, author of the RIAS, defines language impairment as "a disorder of oral language, either expressive and/or receptive, not associated with, or in excess of, an impairment in intellectual capacity." (Pl.'s Post-Hr'g Ex. CC at 609.) At no point in Dr. Isquith's report does he specifically identify Matthew as having a language

impairment or provide a basis for believing his deficits were not related to his overall intellectual disability, whereas the plaintiff's expert Dr. Robert McCaffrey testified that Matthew's verbal deficits *were* part and parcel of his intellectual disability. (Defs.' Hr'g Ex. Y at 11; Hr'g Tr. (Day 3) at 60, 62.). Dr. Isquith did not conduct any specific testing on the issue, but simply noted that Matthew had global deficits and difficulties with language. In addition, the WISC-IV manual explicitly states that "English language learners and children with language impairments or verbal or expressive difficulties should be given the [Wechsler Preschool and Primary Scale of Intelligence–Third Edition] to reduce the confounding effects of language or verbal expression on composite scores." (Pl.'s Post-Hr'g Ex. JJ at 16.) Dr. Isquith did not administer this test.

Furthermore, the defendants provided no support for Dr. Isquith's claim that Matthew's verbal index scores can be completely disregarded simply due to the fact that they are markedly lower than the nonverbal scores. The defendants cite to a chapter in the Handbook on interpreting the index scores on the WISC-III, which states that "[a]s a general rule of thumb, we think that a 20-point Verbal-Performance discrepancy should raise 'red flags' in the examiner's mind." (Pl.'s Post-Hr'g Ex. HH at 127.) However, Matthew's test score discrepancy, while close, did not rise to this level. Moreover, his composite IQ score was generated on the RIAS, not the WISC, and there is no indication that the results of the two separate tests can be interpreted interchangeably. According to the Professional Manual for the RIAS, a discrepancy of nineteen points between the verbal and nonverbal indexes occurs 17.6% of the time. (Pl.'s Post-Hr'g Ex. II.)

Finally, as noted by Dr. McCaffrey, all of the lead literature is based on full scale IQ measurement, as opposed to IQ scores derived solely from verbal or nonverbal

indexes. (Hr'g Tr. (Day 3) at 61–62.) It is thus unclear what applicability Dr. Isquith's proposed IQ for Matthew based solely on the nonverbal test scores would have to the literature.

In light of the foregoing, the court finds that Dr. Isquith's methodology with respect to identifying Matthew's IQ, as articulated at the *Daubert* hearing, is unsupported and unreliable and therefore does not meet the standard set forth in RSA 516:29-a. Therefore, Dr. Isquith shall be limited to testifying as to the scores generated by the RIAS as documented in his report.

Despite this finding, the court concludes that the opinions of Dr. Isquith and Dr. Karp are otherwise admissible. Many significant facts in this case are uncontested. The plaintiff challenges neither the fact that Matthew is intellectually disabled nor that that he had an EBLL of 17 μg/dl. Additionally, the plaintiff does not challenge the fact that the literature unanimously states that lead at the levels Matthew experienced is detrimental to one's health. Finally, the plaintiff does not question Dr. Isquith's methodology with respect to his evaluation of Matthew, the testing performed, and the scores generated by those tests—as set forth in Dr. Isquith's report—as indicated by his heavy reliance on the composite score generated by the RIAS.

Instead, the plaintiff challenges Dr. Isquith's ultimate conclusion that Matthew's exposure to lead was a substantial contributing factor to his current deficits. The plaintiff argues the literature supports, at most, an expected decrement in IQ of five to ten points. The plaintiff thus asserts that, taking Matthew's reported IQ of 40, there is no support for the conclusion that blood lead levels of 17 μg/dl can result in a drop of 60 points off the mean of 100.

As an initial matter, the plaintiff's characterization of Dr. Isquith's conclusion mischaracterizes the evidence. First, it presumes that Dr. Isquith is claiming that lead is the sole cause of Matthew's deficits. Dr. Isquith in fact explicitly testified to the contrary, and his report merely concludes that lead was a substantial contributing factor, not the sole cause. (Hr'g Tr. (Day 1) at 139; Defs.' Hr'g Ex. Y at 12.) Dr. Isquith also testified that he was unable to put an exact number on how much lead contributed to Matthew's deficits, but can estimate based on the literature that Matthew lost approximately 10 IQ points. (Hr'g Tr. (Day 1) at 120–21.) In addition, the plaintiff's argument regarding a 60-point drop in IQ presupposes that Matthew's IQ would have been 100 had he not been exposed to lead. While Dr. Isquith did testify that one would expect an otherwise healthy boy in Matthew's position to be in the average range,[1] the fact remains that his expected IQ is impossible to know. Therefore, while the precise drop in Matthew's IQ was likely significant, it is not as clear cut as the plaintiff would argue.

Moreover, "[i]mportantly, the *Daubert* test does not stand for the proposition that scientific knowledge must be absolute or irrefutable." *State v. Dahood*, 148 N.H. 723, 727 (2002). "[W]hen the *application* of a scientific methodology is challenged as unreliable under *Daubert* and the methodology itself is otherwise sufficiently reliable, outright exclusion of the evidence in question is warranted only if the methodology was so altered by a deficient application as to skew the methodology itself." *State v. Langill*, 157 N.H. 77, 88 (2008); *see also Daubert*, 509 U.S. at 594–95 ("The focus, of course, must be solely on principles and methodology, not on the conclusions that they

[1] As defined by the RIAS, the average range runs from 90 to 109. (Hr'g Tr. (Day 1) at 135–36.) However, Dr. Isquith testified he would expand the range from 85 to 115, or one standard deviation from the mean in either direction, describing it as "broadly average." (Id. at 143–44.) In addition, plaintiff's own expert Dr. Mandelbaum testified that the average range was 85 to 115. (Hr'g Tr. (Day 2) at 104.)

generate."). "Where errors do not rise to the level of negating the basis for the reliability of the principle itself, the adversary process is available to highlight the errors and permit the fact-finder to assess the weight and credibility of the expert's conclusions." *Langill*, 157 N.H at 88 (quotations and citation omitted). "[A]s long as an expert's scientific testimony rests upon good grounds, . . . it should be tested by the adversary process—competing expert testimony and active cross-examination—rather than excluded from jurors' scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies." *Id.* (quotations and citation omitted).

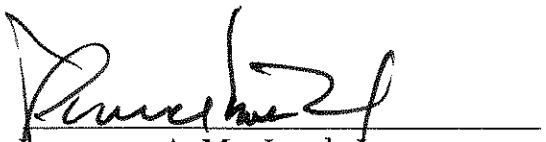
While the precise impact that lead had on Matthew's deficits is up for debate, there appears to be no question that Matthew was exposed to unsafe levels of lead and that such exposure can result in deficits in IQ and executive function. (*See, e.g.*, Pl.'s Post-Hr'g Ex. S–X.) The fact that Dr. Isquith may be attempting to establish a greater impact than has been traditionally documented in the literature does not render all of the well-accepted science underlying that conclusion unreliable. To the extent Dr. Isquith is incorrect in his application of the science to the facts of this case, the flaws in his analysis can be adequately addressed by cross-examination and the presentation of competing expert testimony. Therefore, the court finds the principles and methods underlying Dr. Isquith's conclusion are reliable, and thus his testimony is admissible at trial. Dr. Karp's conclusions, which are based upon the same principles as well as Dr. Isquith's report, is likewise admissible.

Accordingly, for the foregoing reason, defendants' motion in limine to exclude the testimony of Dr. Isquith and Dr. Karp is DENIED.

Finally, the court apologizes to the parties and their lawyers for the delay in issuing this order. The sheer volume of information associated with this task in terms of

pleadings, exhibits, medical records and literature submitted, and testimony, coupled with the other demands on the undersigned justice's time, thwarted efforts to produce this order in a more timely fashion.

SO ORDERED, this 4th day of October 2017.



Lawrence A. MacLeod, Jr.
Presiding Justice

STATE OF NEW HAMPSHIRE
SUPERIOR COURT

GRAFTON, SS.

Sandra Moscicki

v.

Charles Leno and Heidi Leno
Docket Nos. 215-2011-CV-111 & 217-2011-CV-174

ORDER ON PLAINTIFF'S MOTIONS TO RECONSIDER AND CLARIFY

This matter is before the court on the plaintiff's motion to reconsider and motion to clarify. The plaintiff asks the court to reconsider its October 4, 2017 order (Index #58) denying the plaintiff's motion in limine (Index #32) to exclude the testimony of Drs. Isquith and Karp. The plaintiff's motion to reconsider (Index #61), to which the defendant objects (Index #64), contains no issues of fact or law which were not previously considered by the court or which warrant a different result than that determined by the court in its October 4, 2017 order.

In her motion to reconsider, the plaintiff raises a dose-response relationship, relying in part on the *Lipitor* case, in which the court held that the expert could not testify because there was no evidence to support a connection between Lipitor in low doses and Type 2 Diabetes. This case is distinguishable because there *is* a well-established connection between lead exposure and lowered IQ score. The question here is a matter of degree, which is appropriate for cross-examination. As explained in the court's October 4, 2017 order, Dr. Isquith explicitly testified at the hearing and

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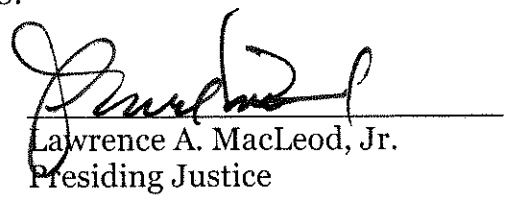
CC: G. Burt; S. Mosicki; C. Seufert

concluded in his report that lead was a substantial contributing factor, not the sole cause of Matthew's deficits.

In regard to the plaintiff's motion to clarify (Index #59), the court found the opinions of both Dr. Isquith and Dr. Karp admissible but limited Dr. Isquith to testifying as to the scores generated by the Reynolds Intellectual Assessment Scales ("RIAS") because Dr. Isquith failed to adequately support his position at the hearing that the composite index results of the RIAS should be disregarded. There was inadequate support in the record for the claim that Matthew suffers from a language impairment and inadequate support that Matthew's verbal index scores can be completely disregarded simply because they are markedly lower than the nonverbal scores. Dr. Isquith is, therefore, bound by the numbers that he reported from the results of the RIAS. Otherwise, Dr. Isquith's testimony at the hearing was consistent with the science, and therefore, he may testify at trial in a manner consistent with the court's October 4, 2017 order.

For the foregoing reasons, the court DENIES the plaintiff's motion to reconsider.

SO ORDERED, this 12th day of January 2018.



Lawrence A. MacLeod, Jr.
Presiding Justice