

LEAD-BASED PAINT – EXPERT OPINION TESTIMONY – SOURCE CAUSATION – IQ LOSS – SUMMARY JUDGMENT – Supreme Court of Maryland* held that trial court abused its discretion by excluding testimony of plaintiff’s causation expert witness in lead-based paint case. In ruling on motion to preclude and making determinations as to whether expert’s opinion had sufficient factual basis, trial court resolved genuine disputes of material fact, and, in doing so, abused its discretion. Expert’s opinion that plaintiff’s exposure to lead-based paint at property was significant contributing factor to plaintiff’s alleged injuries (other than IQ loss) was supported by sufficient factual basis and admissible, as expert had adequate supply of data from which to form opinion, and methodology expert used reliably supported opinion reached.

Supreme Court remanded case, however, for further proceedings consistent with Court’s holding in Rochkind v. Stevenson, 471 Md. 1, 236 A.3d 630 (2020), for determination as to whether methodology used by expert was sufficiently reliable to permit expert to render specific opinion that plaintiff’s exposure to lead resulted in loss of IQ points, should plaintiff seek to present such evidence at trial.

Having concluded that trial court abused its discretion in granting motion to preclude, Supreme Court also held that trial court erred in granting summary judgment. Trial court’s ruling—that plaintiff was unable to prove negligence without expert’s testimony as to causation—was not warranted. Plaintiff presented sufficient evidence that property was reasonable probable source of exposure to lead and that exposure was significant contributing factor to alleged injuries to establish *prima facie* case of negligence, irrespective of admissibility of expert’s opinion as to IQ loss.

*At the time of the grant of the petition for a writ of *certiorari* in this case, the Supreme Court of Maryland was named the Court of Appeals of Maryland. At the November 8, 2022 general election, the voters of Maryland ratified a constitutional amendment changing the name of the Court of Appeals of Maryland to the Supreme Court of Maryland. The name change took effect on December 14, 2022.

Circuit Court for Baltimore City
Case No. 24-C-18-000268

Argued: March 2, 2023

IN THE SUPREME COURT

OF MARYLAND*

No. 26

September Term, 2022

JAMAIYA OGLESBY

v.

BALTIMORE SCHOOL ASSOCIATES, ET
AL.

Fader, C.J.
Watts
Hotten
Booth
Biran
Gould
Eaves,

JJ.

Opinion by Watts, J.

Filed: July 26, 2023

Pursuant to the Maryland Uniform Electronic Legal Materials
Act (§§ 10-1601 et seq. of the State Government Article) this
document is authentic.



Gregory Hilton, Clerk

*At the November 8, 2022 general election, the voters of Maryland ratified a constitutional amendment changing the name of the Court of Appeals of Maryland to the Supreme Court of Maryland. The name change took effect on December 14, 2022.

This case arises out of a plaintiff's attempt to use expert testimony in a lead-based paint case to establish a property as a source of exposure to lead and a significant factor contributing to her alleged injuries including a loss of intelligence quotient ("IQ") points. Jamaiya Oglesby, Petitioner, initiated a lawsuit in the Circuit Court for Baltimore City against Baltimore Schools Associates,¹ Crowninshield Management Corporation, Jolly Company, Inc., and the Estate of Mendel Friedman (together, "Respondents") for negligence, negligent misrepresentation, and a violation of the Maryland Consumer Protection Act. Ms. Oglesby alleged that Respondents, who owned and managed an apartment building (the "property") in which she lived as a child, were liable for injuries she sustained as a result of exposure to lead-based paint at the property. Ms. Oglesby designated Sandra Hawkins-Heitt, Psy.D., as an expert in the areas of clinical psychology and neuropsychology. Dr. Hawkins-Heitt evaluated Ms. Oglesby and concluded that she suffered from cognitive impairments or deficiencies in multiple areas and had an IQ of 80. Ms. Oglesby designated as a vocational expert Mark Lieberman, M.A., a Certified Rehabilitation Counselor. Mr. Lieberman evaluated Ms. Oglesby and found that she had numerous limitations and qualified as a "Cognitively Disabled" person.

Ms. Oglesby designated Steven Elliot Caplan, M.D., as an expert in the area of pediatric medicine to testify with respect to causation. Dr. Caplan reviewed 24 sets of records pertaining to Ms. Oglesby, including the reports of Dr. Hawkins-Heitt and Mr.

¹Although the case captions in both appellate courts identify the party as "Baltimore School Associates," the parties in their briefs use the name "Baltimore Schools Associates."

Lieberman, and authored a report setting forth his opinions. Dr. Caplan concluded that Ms. Oglesby's likely exposure to lead at the property was a significant contributing factor to bringing about the cognitive deficiencies and impairments found by Dr. Hawkins-Heitt and Mr. Lieberman as described in his report, and to a loss of approximately 3 to 4 IQ points. In reaching his opinion as to Ms. Oglesby's IQ loss, Dr. Caplan relied on two studies—the Canfield study² and the Lanphear study³—which conclude, among other things, that, in children, there is an inverse relationship between blood-lead level (“ BLL”) and IQ.

Respondents moved to preclude Dr. Caplan's opinions and testimony, and for summary judgment. Respondents contended that Dr. Caplan lacked a sufficient factual basis for the opinion that Ms. Oglesby was exposed to lead at the property and that the alleged exposure caused her injuries. In addition, Respondents argued that the methodology Dr. Caplan used to calculate Ms. Oglesby's IQ loss was not reliable or generally accepted. After a hearing, conducted remotely, at which the circuit court simultaneously considered motions to preclude expert opinions and testimony and motions for summary judgment in Ms. Oglesby's case and a second unrelated case, and a motion

²See Richard L. Canfield, Charles R. Henderson, Jr., Deborah A. Cory-Slechta, Christopher Cox, Todd A. Jusko, and Bruce P. Lanphear, Intellectual Impairment in Children with Blood Lead Concentrations below 10 µg per Deciliter, 348 *New Eng. J. of Med.* 1517 (Apr. 17, 2003), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4046839/> [<https://perma.cc/JV55-68C3>].

³See Bruce P. Lanphear, Richard Hornung, Jane Khoury, Kimberly Yolton, Peter Baghurst, David C. Bellinger, Richard L. Canfield, Kim N. Dietrich, Robert Bornschein, Tom Greene, Stephen J. Rothenberg, Herbert L. Needleman, Lourdes Schnaas, Gail Wasserman, Joseph Graziano, and Russell Roberts, Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis, 113 *Env't Health Persps.* 894 (July 2005), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257652/> [<https://perma.cc/8LT6-NZZQ>].

for summary judgment in a third separate case, the court granted both of Respondents' motions in Ms. Oglesby's case. The circuit court found that Dr. Caplan lacked a sufficient factual basis for his opinions due to what the court described as "factual issues in both of the cases, which [] normally could be presented to a jury" and that, without Dr. Caplan's testimony as to causation, Ms. Oglesby was unable to establish a *prima facie* case of negligence. Ms. Oglesby appealed,⁴ and the Appellate Court of Maryland⁵ affirmed the judgment of the circuit court. Ms. Oglesby filed a petition for a writ of *certiorari*, which we granted.

After a careful review of the record, we hold that in ruling on the motion to preclude and making determinations as to whether Dr. Caplan's opinions had a sufficient factual basis, the circuit court resolved genuine disputes of material fact. We conclude that Dr. Caplan's opinion regarding Ms. Oglesby's exposure to lead at the property being a significant contributing factor to her injuries, other than IQ loss, was supported by a sufficient factual basis and admissible, as Dr. Caplan had more than an adequate supply of data from which to form the opinion and the methodology he employed was reliable. As such, the circuit court abused its discretion in granting the motion to preclude and in

⁴The circuit court granted the motion to preclude and the motion for summary judgment as to Ms. Oglesby's claims for negligence and negligent misrepresentation. Ms. Oglesby consented to entry of summary judgment as to the claim for a violation of the Maryland Consumer Protection Act, so that judgment would be final. On brief in this Court, Ms. Oglesby advises that she appealed the circuit court's exclusion of Dr. Caplan's testimony and grant of summary judgment only as to the negligence claim.

⁵At the November 8, 2022 general election, the voters of Maryland ratified a constitutional amendment changing the name of the Court of Special Appeals of Maryland to the Appellate Court of Maryland. The name change took effect on December 14, 2022.

determining that Dr. Caplan's testimony that Ms. Oglesby's exposure to lead at the property was a significant contributing factor to her injuries was inadmissible.

We remand the case, however, for further proceedings consistent with this Court's holding in Rochkind v. Stevenson, 471 Md. 1, 236 A.3d 630 (2020), for a determination as to whether the methodology Dr. Caplan employed under the Canfield and Lanphear studies reliably supports the conclusion that Ms. Oglesby's exposure to lead resulted in a loss of approximately 3 to 4 IQ points, should Ms. Oglesby seek to introduce such testimony at trial.

Having concluded that the circuit court abused its discretion in granting the motion to preclude, we hold that the circuit court erred in granting summary judgment. The circuit court's ruling—that Ms. Oglesby was unable to prove negligence without Dr. Caplan's testimony as to causation—was not warranted. Ms. Oglesby presented sufficient evidence that the property was a reasonably probable source of her exposure to lead and that the exposure was a significant contributing factor to her injuries, other than IQ loss, to establish a *prima facie* case of negligence. Accordingly, we reverse the judgment of the Appellate Court and remand the case to that Court with instruction to remand the case to the circuit court for trial or further proceedings under Rochkind, 471 Md. 1, 236 A.3d 630, with respect to Dr. Caplan's opinion as to IQ loss, should Ms. Oglesby seek to introduce such evidence at trial.

BACKGROUND

Residential History

At the outset, we point out that all of the material facts concerning Ms. Oglesby's

alleged exposure to lead-based paint—such as whether there was lead present at the property at the time Ms. Oglesby lived there; whether Ms. Oglesby came into contact with lead at the property through peeling or chipping paint; and whether she suffered injury due to any such exposure—were disputed in the circuit court.⁶

Ms. Oglesby alleges that she suffered lead-based paint poisoning while residing at 2000 East North Avenue in Baltimore City, Apartment 202, for approximately three years when she was a child.⁷ Ms. Oglesby was born on April 12, 1998. For the first eight months of her life, Ms. Oglesby lived with her mother, Casey Powell, at her grandmother's (Ms. Powell's mother's) house on East Jefferson Street. At deposition, Ms. Powell testified that the house on East Jefferson Street was in good condition and that she did not recall any issue with peeling or flaking paint.⁸

⁶The information concerning Ms. Oglesby's residential history set forth in the Background section of the opinion is derived from Ms. Oglesby's complaint, deposition testimony of witnesses, Respondents' motion to preclude expert testimony and motion for and memorandum in support of summary judgment, Ms. Oglesby's response and memorandum in opposition to the motions, and exhibits attached to the motions and memoranda.

⁷In the complaint, Ms. Oglesby alleged that she was exposed to lead in the common areas of the property as well as in the apartment, and referred to the apartment as "the leased premises."

⁸According to Respondents, shortly after Ms. Oglesby's birth, Ms. Powell moved out of the East Jefferson Street address on her own and lived at a different address—706 Milton Avenue. Respondents also allege that in December 1998, when she applied to live at 2000 East North Avenue, Ms. Powell listed 338 Mason Court as her prior residence in an application to transfer her Baltimore Gas & Electric service to the property.

Respondents contend that Dr. Caplan failed to rule out the East Jefferson Street, Milton Avenue, and Mason Court locations as contributing to Ms. Oglesby's first BLL and that multiple sources of exposure to lead may have contributed to her alleged injuries. As we explain below, these contentions, which, in part, constitute factual disputes concerning sources of Ms. Oglesby's exposure to lead, do not render Dr. Caplan's opinion as to the source and cause of Ms. Oglesby's injuries inadmissible.

On December 18, 1998, when Ms. Oglesby was eight months old, she and Ms. Powell moved into 2000 East North Avenue, Apartment 202.⁹ Respondents owned and managed the apartment building. At deposition, Ms. Powell testified that the apartment was in poor condition when she moved in, and she did not do a walk-through with the landlord before signing the lease and receiving a key.¹⁰ According to Ms. Powell, when she moved in, she noticed peeling or chipping paint “everywhere” in the building, “[t]hroughout the hallways[, t]he stairwells[, s]ome outdoors[,]” and “[s]ome of [the] apartments ha[d] peeling paint on it.” Ms. Powell testified that the front door of the building and the vestibule inside the back door of the building also contained peeling paint.¹¹ Ms. Powell testified that she did not see her children touch or put any peeling paint

⁹Ms. Oglesby also had two brothers who lived in the apartment. Ms. Oglesby’s brother Keshar was born in May 1999, and her brother Quran was born in December 2000. Ms. Oglesby’s brothers lived in the apartment until the family moved in January or February 2002.

¹⁰According to a Crowninshield Management Corporation “Move-In Move-Out Inspection” form, which is Exhibit 5 to the memorandum in support of Respondents’ motion for summary judgment, a move-in inspection of the apartment occurred on December 18, 1998. No deficiencies were noted on the form, and the form was signed by a representative of Crowninshield Management Corporation and purportedly by Ms. Powell.

¹¹Ms. Oglesby attached as exhibits to the memorandum in support of her response to the motion for summary judgment and motion to preclude excerpts of depositions taken in other lead-based paint cases involving Baltimore Schools Associates and 2000 East North Avenue.

At a deposition taken in Ikem Ravenell v. Balt. Schs. Assocs., et al., No. 24-C-16-007111 (Cir. Ct. Balt. City), Tasha Transou, who lived in Apartment 103 in the building, testified that the building had paint chipping on all of the doors, “chipping paint all falling in the hallway[,]” chipping, flaking paint on the metal railing along the steps leading up to the building, and that “the paint was chipping and peeling all the way through the hallway when you walked through to get to [her] apartment[.]” Ms. Transou testified that she was

in their mouths, but indicated that Ms. Oglesby may have picked up peeling paint in a hallway, where she played.

According to Ms. Powell, although the apartment was in poor condition when she moved in, she did not recall any issue initially with peeling or chipping paint inside the apartment. Within six or seven months, though, Ms. Powell noticed peeling paint on the walls and windowsills and in the bathroom of the apartment, and that the paint in a closet was peeling from moisture. Ms. Powell testified that, approximately a year after she moved into the apartment, management repainted the building's common areas and the doors of the apartments, but the "paint that they put over the peeling paint started peeling off again." Ms. Powell testified that, at the time of the repainting, she asked management to repaint her window, the closet, and other locations inside the apartment, but management repainted only one window inside the apartment.

A Crowninshield Management Corporation annual unit inspection report, in an exhibit attached to Ms. Oglesby's opposition to the motions for summary judgment and to preclude, indicates that, on October 7, 2001, a representative of the company conducted an annual inspection of the apartment and noted that components in every room were unacceptable and needed rehabilitation, including doors, walls, floors, windows, and the

the last person who lived in Apartment 103 before the building was shut down due to the poor living conditions.

At a deposition taken in connection with another case brought against Respondents, Jua'Drek Addison v. Balt. Schs. Assocs., LLP, et al., No. 24-C-17-004504 (Cir. Ct. Balt. City), Juanita Addison testified that she would bring her son with her every day to visit her sister, who lived in the building, and that the building contained peeling paint.

bathroom ceiling.¹² Ms. Powell testified that in or around January or February 2002, when Ms. Oglesby was three years and nine or ten months old, after having stayed briefly with her brother in December 2001, the family moved out of the apartment.¹³ Ms. Powell testified that the apartment building was being closed down and they were told to relocate.¹⁴ It is undisputed that the building was not well maintained and that in early 2002, Respondents closed the building rather than make necessary repairs.¹⁵

¹²Annual unit inspection reports dated October 19, 1999, and October 27, 2000, which were Exhibits 8 and 9, respectively, to the memorandum in support of Respondents' motion for summary judgment, indicated that the components in the apartment were in acceptable condition on those dates.

¹³Ms. Powell testified that, in December 2001, after a robbery occurred at the apartment, she and her children, including Ms. Oglesby, stayed with her brother, who lived in the 2800 block of Lafayette, for "a couple weeks[.]" Ms. Powell testified that she did not know of any issues with peeling paint at her brother's house while she stayed with him.

¹⁴Ms. Powell also testified that while she and Ms. Oglesby resided at the property, she and her siblings did "weekend swaps[.]" in which the adults took turns caring for each other's children. During the weekend swaps, Ms. Oglesby would spend time at her uncle's (Ms. Powell's brother's) house once or twice a month in the 2800 block of Lafayette, and she would also spend time each month at another uncle's house and her aunt's house. Respondents contend that the Lafayette residence was a source of exposure to lead for Ms. Oglesby, as her uncle brought a lead-based paint action, alleging that his two sons were exposed to lead at the residence. As explained below, this contention, which, in part, constitutes a factual dispute, does not render Dr. Caplan's opinion as to the source and cause of Ms. Oglesby's injuries inadmissible.

¹⁵An article from the November 24, 2001 edition of *The Baltimore Sun*, *Vision for dwellings becomes another city housing nightmare* by Eric Siegel, was attached as an exhibit to Ms. Oglesby's memorandum in support of her opposition to the motion for summary judgment and motion to preclude. According to the article, in a letter to City housing officials in June 2001, the president of Crowninshield Management Corporation stated that the six Schoolhouse Apartment buildings were "extremely difficult to maintain" and that Crowninshield was unable to manage the building at 2000 East North Avenue to "anyone's minimum standards." The article stated that, on November 7, 2001, the United States Department of Housing and Urban Development ("HUD") notified the City's Housing Authority that it had violated its obligation to keep the buildings in safe and sanitary condition, that all six buildings were in unacceptable condition, and that the

Ms. Powell testified that, beginning in January or February 2002, she and Ms. Oglesby resided at 1713 Lemmon Street. Ms. Powell described the Lemmon Street address as a three-story row house that was “newly renovated[,]” where “[e]verything was fresh[,]” with “[n]othing peeling[.]” Ms. Powell testified that, sometime in the winter of 2003-2004, the family moved from Lemmon Street to a house on Mosher Street. According to Ms. Powell, the Mosher Street house had peeling paint in the basement, where she did not allow her children to go, in a pantry in the kitchen, and “a little bit” in a back bedroom where there had been a roof leak and water damage. Ms. Powell also recalled peeling paint and dust on the wooden floors of the Mosher Street house. In 2005, the family moved from the Mosher Street house, in part because the landlord would not make repairs to the property. Ms. Powell testified that, afterward, she and Ms. Oglesby lived at a property on Elmora Street followed by a property on North Ellwood.¹⁶

Ms. Oglesby’s BLLs

Ms. Oglesby’s BLLs were tested on three occasions between 1999 and 2004. A sample of Ms. Oglesby’s blood collected on April 19, 1999, while Ms. Oglesby resided in the apartment, showed that Ms. Oglesby had a BLL of 2 micrograms per deciliter

building at 2000 East North Avenue, where at least two-thirds of 37 units were vacant, was in the worst shape. According to the article, HUD ordered the Housing Authority to create a plan to restore the properties within 30 days and, 5 days later, Crowninshield issued eviction notices and informed City officials that it was closing all six buildings.

¹⁶On brief, Respondents contend that Ms. Powell “believed” that Ms. Oglesby had an elevated BLL while living on North Ellwood and that Ms. Oglesby “believes” her physician determined that she had an elevated BLL in high school. Respondents assert that, in forming his opinion, Dr. Caplan did not take into account the two subsequent BLLs. Respondents do not identify, however, any BLL test results other than the three described below, which Dr. Caplan relied on.

(“ $\mu\text{g}/\text{dL}$ ”).¹⁷ A sample of Ms. Oglesby’s blood collected on March 27, 2002, shortly after she moved out of the apartment, showed that Ms. Oglesby had a BLL of $5.5 \mu\text{g}/\text{dL}$. Finally, a sample of Ms. Oglesby’s blood collected on August 20, 2004 showed that Ms. Oglesby had a BLL of $4 \mu\text{g}/\text{dL}$.

The Property: 2000 East North Avenue

The building was constructed in 1890 and first served as a schoolhouse in Baltimore City. As of March 1979, lease and development agreements between the City of Baltimore and Baltimore Schools Associates provided for Baltimore Schools Associates to convert six vacant school buildings, including the one at 2000 East North Avenue, into apartment buildings and to maintain the properties as rental apartments for low-income tenants through 2030. The six buildings became known as the Schoolhouse Apartments.¹⁸

According to Ms. Oglesby’s response to Respondents’ motions, because the

¹⁷BLLs “are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$) of blood” and, “[a]s of 2012, the Centers for Disease Control and Prevention consider[ed BLLs] greater than $5 \mu\text{g}/\text{dL}$ to be elevated.” *Levitas v. Christian*, 454 Md. 233, 238 n.3, 164 A.3d 228, 231 n.3 (2017) (citations omitted). As of 2021, the Centers for Disease Control and Prevention “use[d] a blood lead reference value (BLRV) of 3.5 micrograms per deciliter ($\mu\text{g}/\text{dL}$) to identify children with [BLLs] that are higher than most children’s levels.” Centers for Disease Control and Prevention, *Blood Lead Reference Value* (last reviewed Dec. 2, 2022), <https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm> [<https://perma.cc/3DXX-YTYR>]. See also Centers for Disease Control and Prevention, *CDC updates blood lead reference value to $3.5 \mu\text{g}/\text{dL}$* (last reviewed Dec. 16, 2022) <https://www.cdc.gov/nceh/lead/news/cdc-updates-blood-lead-reference-value.html> [<https://perma.cc/X5B5-94RV>] (“On October 28, 2021, CDC updated the blood lead reference value (BLRV) from $5.0 \mu\text{g}/\text{dL}$ to $3.5 \mu\text{g}/\text{dL}$ ”).

¹⁸The project was subsidized through a \$4.1 million loan from the City, and rents were to be paid by the United States Department of Housing and Urban Development through the City’s Housing Authority under the Section 8 program.

building at 2000 East North Avenue was built before 1950 and not certified as lead-free, Respondents registered the building with the Maryland Department of the Environment's Lead Poisoning Prevention Program in February 1995, which demonstrated that the building was not, in fact, lead-free. Ms. Oglesby pointed out that the building received lead-based paint risk reduction certificates, rather than lead-free certificates, from the Maryland Department of the Environment on December 4, 1996, June 16, 1998, and January 28, 1999.

Records indicate the building at 2000 East North Avenue has been inspected or tested for lead by three different entities on three separate occasions, once before Ms. Oglesby's residency and twice afterward. In 1989, the Baltimore City Health Department issued an "Emergency Violation Notice and Order to Remove Lead Nuisance" for Apartment G-2 in the building after it had been determined by the Department that a child who frequented the apartment had "an abnormal" BLL and an inspection of the unit showed that "it contain[ed] lead[-]based paint." The Department ordered the removal of lead-based paint from the building's front exterior doors, front vestibule door and frame, rear exterior doorframes, and west exit doors and drainpipes.

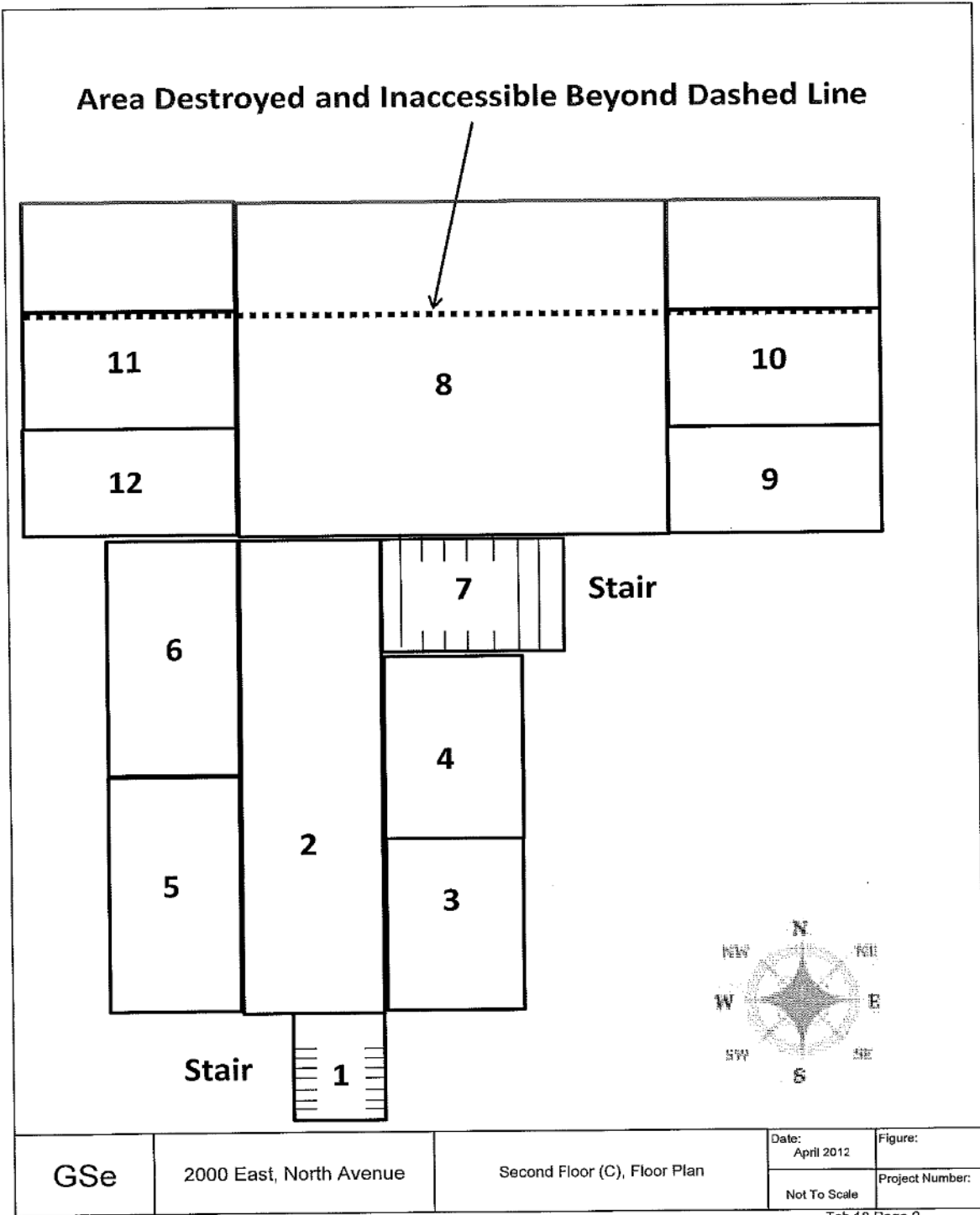
On April 13, 2011, Arc Environmental, Inc., a company providing inspection and consulting services, conducted a lead-based paint inspection of Apartment 203 and other areas of the building. On April 20, 2011, Arc Environmental issued a "Lead-based Paint Survey Report," concluding that lead-based paint above the Maryland standard was detected on window jambs in the living room and two bedrooms in Apartment 203. Apartment 203 was the only apartment tested by Arc Environmental. Lead-based paint

above the Maryland standard was also detected, however, on the first- to second-floor rear stairs baluster and newel post, the first-floor rear hallway wall, the second-floor hallway window jamb, and the first-to-second floor front stairs window casing.

On April 17 and 18, 2012, Green Street Environmental, a Maryland-licensed lead inspection contractor, conducted a lead-specific X-ray fluorescence analysis of painted building components at 2000 East North Avenue. On April 20, 2012, Green Street Environmental issued a report, indicating that 84 areas throughout the building contained lead-based paint. In floor plans attached to the report, apartments and other areas such as stairways and hallways are identified in numerical order, starting with “1,” on each floor of the building, and are called “rooms” in the report. In other words, in the report, former apartments are not identified by the numbers that they had when occupied by residents.¹⁹

On the second floor, there are 12 rooms identified by numbers 1 through 12. Two of the rooms are stairways: room 1 and 7. Room 2 is a hallway. Room 8 is a large area bearing a notation that part of it is destroyed and inaccessible. The remaining rooms on the second floor are rooms 3, 4, 5, 6, 9, 10, 11, and 12. Green Street Environmental provided the following floor plan for the second floor of the building:

¹⁹In a Rental Property Registration form for the Maryland Department of the Environment’s Lead Poisoning Prevention Program completed in February 1995, the apartment units in 2000 East North Avenue were identified, at that time, by the following numbers: G1 through G5, 101 through 114, 201 through 214, and 301 through 304. According to the information on the form, there were apartments on the ground floor, first floor, second floor, and third floor of the building.



According to the report, rooms that had been apartments on both the first and second floors of the building contained lead-based paint on windowsills, window casings, and window troughs in living rooms and bedrooms, on living room, bedroom, and bathroom

walls and wainscots, and on kitchen and apartment storage room walls. With respect to the second floor, the report states that locations in rooms 3, 4, 5, 6, 7, 9, and 11 tested positive for lead-based paint. The only rooms on the second floor that did not test positive for lead-based paint were rooms 1 (a stairway), 2 (a hallway), 8 (a large area marked partly destroyed and inaccessible), and rooms 10 and 12 (potentially former apartments). In the report, Green Street Environmental stated that areas of the building that were not accessible for inspection “likely contain[ed] components that would test positive for Lead[-]Based Paint.”

Dr. Caplan’s Report and Deposition

In a report dated December 26, 2019, Dr. Caplan concluded that Ms. Oglesby’s “likely exposure to lead at 2000 E. North Ave is a significant contributing factor to her lead intoxication” and to her impairments or “difficulties” described in the report. Dr. Caplan concluded that Ms. Oglesby “was exposed to environmental lead and had academic and behavioral problems in school, attentional issues, and symptoms of depression.” Dr. Caplan explained that Dr. Hawkins-Heitt performed a neuropsychological evaluation of Ms. Oglesby on January 28, 2019 and determined that her areas of impairment included “visual and working memory, visual attention speed, visual motor integration and copying skills, encoding and recognition of verbal information, recall of complex visual information, and categorical verbal fluency,” and that she had a full scale IQ score of 80, which is “at the lowest end of the low average range.” Dr. Caplan reported that, “according to the United States Environmental Protection Agency, the American Academy of Pediatrics, the Maryland Department of the Environment, and the World Health

Organization[,]” “[l]ead is a causal or likely causal factor” for academic and behavioral problems, attentional issues, and symptoms of depression.

Dr. Caplan explained that Mr. Lieberman performed an employability assessment of Ms. Oglesby on September 13, 2019, and determined she performed low or below average in areas related to word knowledge, language arts, and verbal reasoning, and that she would be “classified as a Cognitively Disabled female by the American Community Survey of the U.S. Census Bureau.” In addition to his opinion concerning her other impairments, Dr. Caplan concluded that, “[e]xtrapolating from the data of Canfield and Lanphear, an IQ deficit of about 3 to 4 IQ points can be attributed to [Ms. Oglesby’s] lead exposure.”

In the report, prior to setting forth his opinion about Ms. Oglesby’s exposure to lead at the property being a significant contributing factor to her alleged injuries, Dr. Caplan discussed information concerning Ms. Oglesby’s residential history and the condition of 2000 East North Avenue. Dr. Caplan reported that Ms. Oglesby lived at 2000 East North Avenue from December 1998 until late 2001 or early 2002. Dr. Caplan noted that the building at 2000 East North Avenue was built before 1950 and had “multiple inspections indicating the presence of lead based paint.” Dr. Caplan reported that on October 5, 1989, the Baltimore City Health Department issued an emergency lead paint violation notice; on April 13, 2011, an inspection performed by Arc Environmental found multiple areas containing lead; and on April 17 and 18, 2012, and again from June 30 to July 3, 2014, Green Street Environmental analyzed the building and found multiple areas containing lead-based paint.

Based on his review of the records provided to him, Dr. Caplan concluded that lead paint “was accessible” to Ms. Oglesby “during her tenancy” at the building. Dr. Caplan explained that Ms. Powell “described the apartment as being in poor condition with peeling and chipping paint throughout the hallways and stairwells as well as from the doors” and that paint in the apartment “began to peel about six months after she moved in.” Dr. Caplan noted that some repainting was performed in the building and on one window in Ms. Oglesby’s apartment; however, chipping and peeling of the paint occurred after the repainting. Dr. Caplan observed that the October 7, 2001 annual inspection for the apartment “indicated multiple rooms needing rehabilitation.” Dr. Caplan also noted that “multiple other children who lived at 2000 E. North Ave from the late 1980’s to the early 2000’s suffered from lead intoxication.”

As to other properties, Dr. Caplan stated that, in late 2001 or 2002, Ms. Oglesby moved to the Lafayette location for a few weeks before moving to Lemmon Street, and that both of those properties were reported to have “had no peeling paint.” Dr. Caplan indicated that Ms. Oglesby had “no significant visitations to other properties” during the time that she resided at 2000 East North Avenue.

At a deposition taken on February 25, 2020, Dr. Caplan verified that, prior to completing his report, he reviewed 24 items pertaining to the case, including the depositions of Ms. Powell and Ms. Oglesby,²⁰ and that he reviewed an additional 5 items

²⁰The items that Dr. Caplan reviewed before completing his report included the following documents pertaining to Ms. Oglesby: Maryland Department of the Environment records; Maryland Department of Health and Mental Hygiene (now the Maryland

before deposition.²¹ Dr. Caplan testified that his opinion was that Ms. Oglesby was exposed to lead at 2000 East North Avenue, that she had suffered “sequelae from all the exposure to lead that she’s had[,]” and that she had incurred an IQ deficit of approximately 3 to 4 points, *i.e.*, that Ms. Oglesby’s IQ score would have been 83 or 84.²²

Department of Health) records; University of Maryland Medical Center records; Total Health Care medical records totaling 30 pages; Dr. Hawkins-Heitt’s report; a report from Mr. Lieberman concerning Ms. Oglesby’s vocational capabilities, limitations, and future earning potential; and a report from Michael A. Conte, Ph.D., an expert in the areas of economics and forensic economics designated by Ms. Oglesby. In addition, Dr. Caplan reviewed, among other things: Ms. Powell’s tenant file totaling 114 pages; the “Property Card” for 2000 East North Avenue; Green Street Environmental’s report; Arc Environmental’s report; Maryland Department of the Environment records concerning 2000 East North Avenue totaling 21 pages; records of the Maryland Department of the Environment’s Lead Poisoning Prevention Program for 2000 East North Avenue totaling 43 pages; Maryland Department of the Environment inspection certificates for Unit 208 of 2000 East North Avenue totaling 25 pages; and Maryland Department of the Environment records concerning Ikem Ravenell and 2000 East North Avenue totaling 28 pages.

²¹The 5 additional items reviewed by Dr. Caplan prior to deposition were: a psychological evaluation report from Neil Hoffman, Ph.D.; Dr. Hoffman’s deposition and exhibits; Mr. Lieberman’s deposition and exhibits; Dr. Conte’s deposition; and his own report on Ms. Oglesby.

²²The deposition transcript shows that the following exchange occurred between Respondents’ counsel and Dr. Caplan as to Ms. Oglesby’s IQ loss:

[RESPONDENTS’ COUNSEL:] Going on to the next paragraph you referenced the testing of [Ms. Oglesby] with an IQ score of 80 and you agree that an IQ score of 80 is in the low average range?

[DR. CAPLAN:] It’s the lowest number in the low average range, yes.

[RESPONDENTS’ COUNSEL:] Am I correct that the range for low average is 80 to 89?

[DR. CAPLAN:] Correct.

[RESPONDENTS’ COUNSEL:] So it is your opinion that after the alleged lead exposure her IQ would have been 83 or 84?

Dr. Caplan testified that he reviewed “data from Lanphear in his pooled analysis as well as Canfield from a 2003 article” and that he “extrapolated from the data that they put forth” and determined a result. Although Dr. Caplan did not specifically testify to this, his calculations demonstrate that he determined that the Lanphear and Canfield studies indicate that every 1 µg/dL in a BLL leads to a loss of 0.62 or 0.74 IQ points, respectively. Dr. Caplan testified that he calculated, based on the average of Ms. Oglesby’s BLLs, 3.8 µg/dL,²³ that Ms. Oglesby would have lost approximately 2.4 (3.8 times 0.62) IQ points according to the Lanphear study or 2.8 (3.8 times 0.74) IQ points according to the Canfield study.

Dr. Caplan calculated that, based on Ms. Oglesby’s highest or peak BLL, 5.5 µg/dL, she would have lost approximately 3.4 (5.5 times 0.62) or 4.1 (5.5 times 0.74) IQ points according to the Lanphear and Canfield studies, respectively. In sum, Dr. Caplan used Ms. Oglesby’s average and peak BLLs, and concluded that, under the Lanphear study, multiplied by a factor of 0.62, her loss of IQ points was 2.4 to 3.4 points, and that, under the Canfield study, multiplied by a factor of 0.74, her loss of IQ points was 2.8 to 4.1 points. Dr. Caplan rounded the numbers to 2 to 3 points and 3 to 4 points, respectively.

Dr. Caplan testified that Ms. Oglesby’s BLL of 5.5 µg/dL was pertinent to the East

[DR. CAPLAN:] Approximately.

It is clear that, in this exchange, Dr. Caplan confirmed his opinion concerning an IQ loss of 3 to 4 points.

²³The average of the results of Ms. Oglesby’s three BLL tests (*i.e.*, 2, 5.5, and 4 µg/dL) was approximately 3.8 µg/dL.

North Avenue address, as her blood was tested two to three months after she moved out of the building. Dr. Caplan explained that Ms. Oglesby moved “to a place that did not have peeling and chipping paint” and that it was “very likely” that the East North Avenue address was responsible for her BLL of 5.5 µg/dL. Dr. Caplan testified that Ms. Oglesby’s BLL “might have been even higher two months earlier and then started to fall during those two to three months that she left.” When asked about Ms. Oglesby’s IQ loss, Dr. Caplan testified that, even with a three-point IQ loss, going from an IQ of 83 to 80, Ms. Oglesby’s “neuro executive functioning has been affected” and she would be “functioning at a little bit lower level[.]”

The Circuit Court’s Ruling

On April 29, 2020, the circuit court conducted a hearing on Respondents’ motions. In a single hearing, the circuit court heard argument on motions to preclude expert opinions and testimony and motions for summary judgment in Ms. Oglesby’s case and a second unrelated case, and a motion for summary judgment in a third unrelated case. In all three cases, plaintiffs who were represented by Ms. Oglesby’s counsel had sued Respondents, claiming injuries due to lead-based paint exposure at different locations, 2000 East North Avenue, 249 Aisquith Street, and 511 South Bond Street. See Tybria Cheley v. Balt. Schs. Assocs., et al., No. 24-C-18-000313 (Cir. Ct. Balt. City); Dwanshayne Johnson v. Balt. Schs. Assocs., et al., No. 24-C-18-001928 (Cir. Ct. Balt. City). At the hearing, the circuit court granted the motions to preclude Dr. Caplan’s opinions and testimony in Ms. Oglesby’s case and in Johnson.

In granting the motions, the circuit court ruled on Ms. Oglesby’s case and the

Johnson case together. The circuit court began by stating: “As it relates to the two Motions to Preclude the Opinions and Testimony of Dr. Caplan, the Court has had an opportunity to review the pleadings.” The circuit court observed that Levitas v. Christian, 454 Md. 233, 164 A.3d 228 (2017) shows that “a qualified expert can rely on other research and can rely on another doctor’s report[.]” The circuit court stated that Levitas was different, though, ruling:

However, the difference here, in Levitas there was -- the issue in Levitas was the expert’s use of -- well, a couple things. One is using -- relying on a report of another doctor, and also relying on a particular type of research, which I think was Lanphear in that case, and there had been some question, I think about it.

But the bottom line was the Court found a qualified expert can rely on other research and can rely on another doctor’s report, and things like that. That’s different from what we have in this case.

What we have in this case is there -- it’s the opposite of relying on the research that was cited by the expert in this particular case. So at the outset let me say Rule 5-702 allows expert testimony to be admitted. There are three factors that have to be satisfied, the third and most relevant here is whether there is a sufficient factual basis to support the expert testimony.

For the most part, the case law will say that once you have a qualified expert their -- the factual basis generally will go before a jury because it is up to a jury to weigh the credibility of the expert. And that is generally based on what is it -- whatever it is that they use to reach their conclusions in their opinions. It’s proper for cross-examination and they jury can decide, “Well, you know, he looked today, [sic] but he didn’t look at B, this doesn’t, you know.” The jury gets the opportunity then to evaluate that credibility.

The problem that we have in this case is that there are a couple of things, particularly as it relates to a factual basis. Again, some of what is being argued by Defendants could be for the jury. But then there are other things, particularly like in the Johnson case, I mean, it’s undisputed that he -- some of what he relied on was just incorrect. The facts -- they -- it was just incorrect information that he relied on.

And also, in both of the cases he does not use all of the available blood level -- blood lead level information in formulating his IQ loss opinions. And then notwithstanding that, he uses methodology that has not been shown to be accepted. As a matter of fact, it’s directly and expressly contradictory to that which he actually identifies as generally accepted research in the field.

And the problem that this Court has, he offers no explanation as to why he did it. He offered no support for using that -- those calculations in that way.

And also again, there's nothing to support that -- the way that he chose to interpret, I guess if you will, for the methodology that he chose in this case is acceptable, and also not contrary to that, which again, he cited.

So that combined with the fact that there are some issues as it relates to the facts that he uses before he employs this methodology I think makes this a situation for which the Court can find that his opinion and his testimony is unreliable and shouldn't be presented to a jury.

And so for those reasons in each of the two cases, Ms. Oglesby and Mr. Johnson, the Court will grant the Motion to Preclude the Opinion Testimony of the Witness, Dr. Steven Caplan.

Ms. Oglesby's counsel immediately asked the circuit court for clarification of its ruling, pointing out that there were two separate cases. Counsel asked: "I just want to make sure that the record is clear when you stated that Dr. Caplan, you said that it's undisputed that some of what he relies on is incorrect, and you said that specific to Johnson. That is not specific in the Oglesby case; is that correct?" The circuit court responded:

So specific to Johnson when I said as it relates to incorrect information, based on what was presented by the defendant. Although, the Court also finds that -- I think the defense, just to be clear, has presented -- what's the word I'm trying to use? That there are issues, if you will, with the facts and the information that was gathered, and how it was gathered, and who he spoke to, and who he didn't speak to.

I think he's present -- the defense has presented issues, and they are more typical and would more likely, as it relates to both case [sic]. And those would more likely be placed in front of a jury, which is very different from the completely incorrect information.

But just to be clear, the basis of the Court's ruling is not only when you combine those issues with the issue of the use of the methodology, the Court believes that together that makes his testimony and opinion inherently unreliable. And so it is a combination of factual issues and the expert's methodology for both cases. But the incorrect information was presented to the Court, for what I believe is undisputed incorrect information, in the Johnson case. That's the best I can give you on that.

Later, during argument on the motion for summary judgment, Ms. Oglesby's

counsel sought clarification as to whether Dr. Caplan would be permitted to render an opinion that “2000 East North Avenue was a substantial contributing factor in brin[g]ing about” Ms. Oglesby’s BLLs. The circuit court responded unequivocally that Dr. Caplan was “precluded from giving any opinion testimony, and that is more so because of the factual issues in both of the cases, which again, normally could be presented to a jury.”

Specifically, the circuit court stated:

So in this particular instance, the Court is ordering that the doctor be precluded from giving any opinion testimony, and that is more so because of the factual issues in both of the cases, which again, normally could be presented to a jury. And in this particular case, if we were to parse it out, we could, but I don’t believe that is appropriate. Or if there is a way to sort of parse out the two. And so this Court’s ruling is that the doctor give no opinion testimony based on the information gathered in these two cases.

Ms. Oglesby’s counsel again sought clarification and the following occurred:

THE COURT: Okay. Well, I don’t know how to be any more clear. In each of the two cases, exclusive of the other, the Court made findings that were a combination of problems with the facts, as well as problems with the methodology. And the Court, in either case, in both cases, and separately in each case, is finding that the issues with the facts are not going to be parsed out separately for him to give opinion testimony on other things.

The Court has ruled that he’s not to give opinion testimony in either of the cases at all. That’s the best I can give you for the record. So with him not giving --

[MS. OGLESBY’S COUNSEL]: Okay. Can -- can you please --

THE COURT: -- opinion testimony --

[MS. OGLESBY’S COUNSEL]: -- for the --

THE COURT: -- I would ask that you proceed to your defense of the summary judgment please.

[MS. OGLESBY’S COUNSEL]: Okay. There has been no -- for [Ms.] Oglesby there’s been no issue regarding any incorrect facts assumed by Dr.

Caplan. I think that was an issue only addressed by [Respondents' counsel] in the [] Johnson matter, as far as the visitation period.

However, just for the record, it is undisputed that [Ms.] Oglesby was at Apartment 202 of 2000 East North Avenue from December 1998 through December 2001. It is undisputed that lead was found inside 2000 East North Avenue subsequent to the ownership and management by Defendants of these properties. It's undisputed that there's a Baltimore City Health Department violation notice that found lead-based paint in 1989. That there was -- ARC Environmental found lead in the unit of 203. The lead was found throughout 2012 Green Street Environmental.

At the conclusion of the hearing, the circuit court granted the motion for summary judgment as to the negligence claim in Ms. Oglesby's case, concluding that Ms. Oglesby could not prove negligence without expert testimony on causation. On the same day, the circuit court issued orders, stating in both orders that the motions were granted "for the reasons stated on the record[.]"

Ms. Oglesby filed a motion to alter or amend, or in the alternative for reconsideration of, the circuit court's orders, which the circuit court denied. Ms. Oglesby filed a notice of appeal.

Opinion of the Appellate Court of Maryland

On August 9, 2022, the Appellate Court of Maryland affirmed the circuit court's judgment, holding that the circuit court did not abuse its discretion in excluding Dr. Caplan's testimony or err in granting summary judgment. See *Jamaiya Oglesby v. Balt. Sch. Assocs., et al.*, No. 0130, Sept. Term, 2021, 2022 WL 3211044, at *8 (App. Ct. Md. Aug. 9, 2022). The Appellate Court explained that the case involved three areas of disputed facts: (1) whether there was any lead-based paint at 2000 East North Avenue at the relevant time, (2) whether Ms. Oglesby was exposed to any lead that may have been present at the

building through contact with deteriorated paint, and (3) whether Ms. Oglesby incurred any injury from exposure to lead while living at the building. See id. at *4-5. According to the Appellate Court, the circuit court found the disputed data to be inadequate to form the basis of Dr. Caplan’s opinions and, as a result, excluded his expert testimony. See id. at *5. The Appellate Court stated:

Given the disputed nature of the evidence regarding the presence of lead in Apartment 202, the disputed nature of the evidence regarding Oglesby’s exposure to peeling paint, and the disputed nature of the evidence regarding any injury suffered as a result—combined with our deferential standard of review based on *Levitas*, *Rochkind II*, and *Matthews* . . . —however, we cannot say that the circuit court abused its broad discretion in finding that Dr. Caplan lacked an adequate supply of data.

Oglesby, 2022 WL 3211044, at *5 (cleaned up). In reaching its conclusion, the Appellate Court stated: “[O]ur view is that these disputes made for a close question.” Id. at *5.

With respect to Dr. Caplan’s opinion concerning Ms. Oglesby’s IQ loss, the Appellate Court explained that the Canfield and Lanphear studies

have been frequently relied upon in previous lead paint cases, and Maryland courts have repeatedly held that a properly qualified expert witness can rely on the Lanphear Study methodology, as well as other accepted scientific research, as a factual basis for an opinion that a plaintiff’s elevated [BLLs] caused the loss of a specific number of IQ points.

Id. at *6 (cleaned up). The Appellate Court stated that the circuit court’s “quarrel” with Dr. Caplan’s methodology was not that he relied on the studies, but that he had used them in a way that was not generally accepted and he had “offered no explanation for his methodology.” Id. (cleaned up). The Appellate Court concluded that, given the deferential abuse of discretion standard of review, the circuit court was within the bounds of its discretion in finding Dr. Caplan’s methodology for calculation of Ms. Oglesby’s IQ loss

unreliable. See id. at *7. The Appellate Court concluded that the circuit court did not err in granting summary judgment because, without Dr. Caplan's testimony, Ms. Oglesby could not make a *prima facie* case of negligence, as she could not connect her exposure to lead at 2000 East North Avenue to her alleged impairments. See id. at *8.

Petition for a Writ of *Certiorari*

On September 6, 2022, Ms. Oglesby petitioned for a writ of *certiorari*, raising the following four issues:

1. Did the trial court abuse its discretion when it took factual issues away from the jury and resolved genuine disputes of material fact by ruling that Petitioner's medical expert lacked an adequate supply of data to opine as to the source and source causation of Petitioner's lead exposure, when there was substantial evidence for a jury to evaluate, including direct evidence of lead at the subject property, evidence of numerous areas of deteriorated paint, evidence that Petitioner lived in the subject property for three years and was exposed to and ingested lead resulting in her elevated [BLLs] and injury?
2. Did the trial court abuse its discretion when it took factual issues away from the jury and resolved genuine disputes of material fact by ruling that Petitioner's medical expert's opinion regarding Petitioner's IQ loss was inadmissible, when Petitioner's medical expert relied on studies that Maryland courts have repeatedly sanctioned?
3. Did the trial court err when it granted summary judgment after resolving genuine disputes of material fact related to the expert witness' source, source causation and IQ loss opinions and excluded Petitioner's expert witness from testifying entirely when the jury could make the source determination and the expert had rendered numerous other opinions wherein jury could have found that Petitioner was injured from her exposure to and ingestion of lead?
4. Did the [Appellate] Court [] err in holding that the trial court did not abuse its discretion when it acted as the jury, inappropriately resolved genuine disputes of material facts and excluded the testimony of Petitioner's expert witness in its entirety and that the trial court did not err in subsequently granting summary judgment?

On November 18, 2022, we granted the petition. See Oglesby v. Balt. Sch. Assocs., 482 Md. 142, 285 A.3d 848 (2022).

DISCUSSION

Standard of Review

This case involves a challenge to the admissibility of expert opinion under Maryland Rule 5-702(3) and Frye-Reed that originated before the issuance of Rochkind, 471 Md. 1, 236 A.3d 630. In Rochkind, id. at 5, 236 A.3d at 633, this Court discontinued use of the “general acceptance” standard for admissibility of expert testimony set forth in Frye v. United States, 293 F. 1013 (D.C. Cir. 1923) and Reed v. State, 283 Md. 374, 391 A.2d 364 (1978) and adopted the standard set forth in Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993) and its progeny.

Before Rochkind, appellate courts reviewed a trial court’s decision as to the admissibility of expert testimony under two different standards of review, with a trial court’s determinations under Frye-Reed reviewed *de novo* and a trial court’s determinations under Maryland Rule 5-702 reviewed for abuse of discretion. See Rochkind, 471 Md. at 37, 236 A.3d at 651. After Rochkind, id. at 37, 236 A.3d at 651, this Court reviews a trial court’s decision to admit or exclude expert opinion for an abuse of discretion. This Court has described an abuse of discretion as occurring “where no reasonable person would take the view adopted by the trial court[,]” Md. Bd. of Physicians v. Geier, 451 Md. 526, 544, 154 A.3d 1211, 1221 (2017) (cleaned up), or when “the decision under consideration [is] well removed from any center mark imagined by the

reviewing court and beyond the fringe of what that court deems minimally acceptable[.]” Wilson v. John Crane, Inc., 385 Md. 185, 199, 876 A.2d 1077, 1084 (2005) (cleaned up).

“An appellate court reviews without deference a trial court’s grant of a motion for summary judgment, reviews the record in the light most favorable to the nonmoving party, and construes any reasonable inferences that may be drawn from the facts against the moving party.” State v. Rovin, 472 Md. 317, 341, 246 A.3d 1190, 1204 (2021) (cleaned up). Summary judgment is appropriate where “there is no genuine dispute as to any material fact and [] the [moving] party is entitled to judgment as a matter of law.” Md. R. 2-501(a).

Admission of Expert Testimony Generally

Maryland Rule 5-702 provides that “[e]xpert testimony may be admitted, in the form of an opinion or otherwise, if the court determines that the testimony will assist the trier of fact to understand the evidence or to determine a fact in issue.” In making that determination, the trial court must determine: “(1) whether the witness is qualified as an expert by knowledge, skill, experience, training, or education, (2) the appropriateness of the expert testimony on the particular subject, and (3) whether a sufficient factual basis exists to support the expert testimony.” Md. R. 5-702 (paragraph breaks omitted).

The third factor, the existence of a sufficient factual basis, has been interpreted as encompassing two sub-factors—whether the expert had an adequate supply of data and whether the expert used a methodology that was reliable. See Sugarman v. Liles, 460 Md. 396, 415, 190 A.3d 344, 354 (2018); Rochkind, 471 Md. at 22, 236 A.3d at 642. Absent either sub-factor, an expert’s opinion is inadmissible. See Rochkind, 471 Md. at 22, 236

A.3d at 642. We have held that, to satisfy the requirement of a reliable methodology, “an expert opinion must provide a sound reasoning process for inducing its conclusion from the factual data and must have an adequate theory or rational explanation of how the factual data led to the expert’s conclusion.” Sugarman, 460 Md. at 415, 190 A.3d at 355 (citation omitted).

In addition, in determining whether an expert has a sufficient factual basis to offer an opinion, a court may consider whether there is too great an analytical gap between the data relied upon and the opinion proffered. See Rochkind v. Stevenson, 454 Md. 277, 289, 164 A.3d 254, 261 (2017). The data or information upon which an expert relies must provide factual support for the opinions reached. See Sugarman, 460 Md. at 427, 190 A.3d at 362 (“To bridge the analytical gap, an expert’s testimony must have a sufficient factual foundation. It is permissible for an expert to reasonably extrapolate from existing data provided that a sufficient factual basis for that opinion exists.” (Citations omitted)). But testimony may not be the *ipse dixit* conclusion of the expert. See id. at 415, 190 A.3d at 355 (“Conclusory or *ipse dixit* assertions are not helpful—an expert must be able to articulate a reliable methodology for how [the expert] reached [the] conclusion.” (Cleaned up)). Also, pursuant to Maryland Rule 5-703(a), “[a]n expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed.”

I. The Factual Basis for Dr. Caplan’s Opinion

Ms. Oglesby contends that, in excluding Dr. Caplan’s testimony, the circuit court abused its discretion by concluding that Dr. Caplan relied on incorrect information or that there were problems with the facts Dr. Caplan relied on, and in doing so resolved genuine

issues of disputed fact in favor of Respondents. Ms. Oglesby argues that the information that Dr. Caplan relied on was not incorrect, but rather was disputed and consisted of facts that, if believed by the jury, provided a sufficient factual basis for Dr. Caplan's testimony.

Respondents contend that the circuit court properly excluded Dr. Caplan's testimony because, in their view, Dr. Caplan's opinions were based on "limited" information provided by Ms. Oglesby's counsel and, therefore, lacked a sufficient factual foundation. Respondents argue that Dr. Caplan failed to consider other potential sources of exposure to lead-based paint for Ms. Oglesby and merely assumed that Ms. Oglesby was exposed to lead at the property. Respondents maintain that the circuit court did not reject the accuracy of information that Dr. Caplan relied on, but rather concluded that Dr. Caplan did not have an adequate supply of data for his opinions.

For two reasons, we agree with Ms. Oglesby that the circuit court abused its discretion in excluding Dr. Caplan's testimony: (1) the record demonstrates that the circuit court impermissibly resolved issues of disputed fact in excluding Dr. Caplan's opinion; and (2) Dr. Caplan's opinion with respect to causation (other than as to Ms. Oglesby's IQ loss) was supported by a sufficient factual basis.

A. The Circuit Court Resolved Disputed Issues of Fact

The circuit court abused its discretion in excluding Dr. Caplan's testimony based on its assessment that there were factual issues in the case, which "normally could be presented to a jury[.]" but which in its view rendered the testimony inadmissible. In Frankel v. Deane, 480 Md. 682, 703-04, 281 A.3d 692, 705 (2022), we recently held that the trial court erred in precluding an expert's testimony and concluded that the trial court

“improperly took sides in a credibility contest between” the defendants on one hand and the plaintiff on the other hand and “impermissibly gave” the defendants “the benefit of favorable inferences drawn from evidence susceptible to more than one interpretation.” In discussing whether a sufficient factual basis existed to support expert testimony under Maryland Rule 5-702(3), we explained that the factual basis for an expert’s opinion may “come from facts obtained from the expert’s first-hand knowledge, facts obtained from the testimony of others, and facts related to an expert through the use of hypothetical questions.” *Id.* at 700, 281 A.3d at 703 (cleaned up). We stated that “experts are permitted to express an opinion based upon facts assumed but not in evidence when the question is asked, if such facts are later proved in the case.” *Id.* at 700-01, 281 A.3d at 703 (cleaned up). Notably, “[t]his applies to disputed facts as well.” *Id.* at 701, 281 A.3d at 703. In so concluding, we explained that, in Kruszewski v. Holz, 265 Md. 434, 445, 290 A.2d 534, 540 (1972), we stated:

[T]he proper way to submit a hypothetical question is to ask the witness to presume the truth of certain facts as if they were not the subject of dispute. These may still be contested in actuality but the inquiry is proper as long as there is evidentiary support for the facts which the expert is told to assume the veracity of and evaluate in rendering his opinion. Of course, any assumption made must be grounded on a fair summation of the material facts in evidence and those material facts must be sufficient in scope for the witness to formulate a rational opinion. In such a situation the jury is aware of the premise upon which the opinion is based and can determine whether that assumption was valid. If it is not, the opinion of the expert is disregarded.

Frankel, 480 Md. at 701, 281 A.3d at 703-04.²⁴

²⁴Ms. Oglesby contends that Parkway Neuroscience & Spine Inst., LLC v. Katz,

In this case, the record demonstrates that, in ruling that Dr. Caplan did not have an adequate factual basis for his opinion, the circuit court resolved disputed issues of fact. The circuit court expressly ruled that Dr. Caplan was “precluded from giving any opinion testimony, and that is more so because of the factual issues” that could normally go to a jury. In addition, the circuit court determined that information Dr. Caplan relied on was “incorrect[.]” We are aware that Respondents contend that the circuit court excluded Dr. Caplan’s opinions “not because it found [Respondents’] evidence more credible than [Ms.] Oglesby’s evidence,” but because it determined that the evidence upon which Dr. Caplan relied was “limited” or insufficient under Maryland Rule 5-702(3). We are not persuaded, however, by Respondents’ explanation of what the circuit court meant in ruling that Dr. Caplan relied on “incorrect information” and in finding that there were facts that could normally be submitted to the jury but that would not be in this case.

The circuit court’s ruling can be viewed in three parts: its initial ruling and its responses to Ms. Oglesby’s counsel’s two requests for clarification. In initially ruling that Dr. Caplan relied on incorrect information and that there were issues with the facts, the circuit court did not explain what it meant, identify what the incorrect information was or factual issues were, or state whether the finding about incorrect information applied to both

Abosch, Windesheim, Gershman & Freedman, P.A., 255 Md. App. 596, 283 A.3d 753 (2022), cert. granted, 482 Md. 534, 288 A.3d 1231 (2023) presents a similar issue involving a trial court having resolved issues of disputed fact in excluding expert testimony. This Court granted *certiorari*, and heard oral argument in Katz, Abosch, Windesheim, Gershman & Freedman, P.A., and Mark E. Rapson v. Parkway Neuroscience and Spine Inst., LLC, No. 30, Sept. Term, 2022, on May 4, 2023. Because Katz is pending, we will not comment on the case.

Ms. Oglesby’s case and Johnson’s, just Johnson’s, or just Ms. Oglesby’s case, or to only Dr. Caplan’s opinion concerning IQ loss or to all of his opinions. The most specific reference to what the circuit court deemed the factual issues to be was the court’s statement that, in both of the cases, Dr. Caplan had not used all available BLLs. Yet, in this case, Dr. Caplan’s report and deposition testimony show that he considered each of the three BLLs available in the record. The circuit court’s observation lends itself to the conclusion that, as to Ms. Oglesby’s case, the circuit court resolved what appeared to be a dispute of fact between the parties—whether Ms. Oglesby had other or higher BLL results later in her life that were not included in the record. Due to the nature of the circuit court’s initial ruling, Ms. Oglesby’s counsel immediately sought clarification and pointed out that there were two separate cases.

When Ms. Oglesby’s counsel sought clarification as to whether the circuit court’s statement about incorrect information applied to the Johnson case and not Ms. Oglesby’s case, the circuit court compounded the confusion by responding, among other things, that the defense had presented issues “as it relates to both case[s]” and “those would more likely be placed in front of a jury, which is very different from the completely incorrect information.” The circuit court stated that, for both cases, “it is a combination of factual issues and the expert’s methodology[,]” “[b]ut the incorrect information was presented to the Court, for what I believe is undisputed incorrect information, in the Johnson case.”

Conceivably, the circuit court’s response might somehow lend itself to the interpretation, as Respondents allege, that the circuit court intended to rule that Dr. Caplan relied on incorrect information only in the Johnson case and not in Ms. Oglesby’s case.

But, another interpretation of the circuit court's ruling is that the court intended to rule that Dr. Caplan relied on incorrect information in both cases and on "undisputed" incorrect information in Johnson's case. This was not, however, the last explanation given by the circuit court in response to a request for clarification.

Later, during argument on the motion for summary judgment, when Ms. Oglesby's counsel sought clarification as to whether Dr. Caplan would be permitted to render an opinion that 2000 East North Avenue was a substantial contributing factor to Ms. Oglesby's BLLs, the circuit court responded that Dr. Caplan would be precluded from giving any opinion testimony whatsoever "because of the factual issues in both of the cases, which again, normally could be presented to a jury." With this response, the court left no room to doubt that its ruling that there were issues with the facts that would normally go to the jury applied to both Ms. Oglesby's case and Johnson's. The circuit court stated that in Johnson and this case, "exclusive of the other," the court had "made findings that were a combination of problems with the facts, as well as problems with the methodology." The circuit court once more refused to identify or describe the factual problems that in its view precluded Dr. Caplan's testimony. Instead, the circuit court stated that, "in either case, in both cases, and separately in each case," it was "finding that the issues with the facts are not going to be parsed out separately for him to give opinion testimony on other things."

In the end, what can be gleaned from the circuit court's ruling is that it determined that there were factual issues that could normally go to the jury, but would not in this case. Because the circuit court declined to explain or "parse" what the issues with the facts were, the court did not expressly identify the factual problems or how it resolved them. Implicit

in the circuit court's decision to exclude Dr. Caplan's testimony in its entirety, based on issues with the facts, instead of only his testimony concerning Ms. Oglesby's IQ loss, is that the court resolved in Respondents' favor factual disputes such as whether there was lead present at the property at the time that Ms. Oglesby lived there, whether Ms. Oglesby came into contact with lead at the property through peeling or chipping paint, and whether Ms. Oglesby was potentially exposed to lead at other locations and the condition of those properties.

As our holding in Frankel, 480 Md. at 700-01, 281 A.3d at 703-04, demonstrates, where there is evidentiary support for the facts, an expert is permitted to express an opinion based on disputed facts, and questions may be asked of an expert in the form of a hypothetical in which an expert may presume the truth of certain facts as if they were not disputed. See also Fed. R. Evid. 702, advisory committee's notes to 2000 amendment ("When facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on 'sufficient facts or data' is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other."). In short, a trial court is not permitted to resolve disputes of material fact in determining whether a sufficient factual basis exists to support an expert's opinion. Doing so is a clear abuse of discretion.

B. Sufficient Factual Basis

Although the facts were greatly disputed, Ms. Oglesby produced more than sufficient evidence that lead was present in the building at 2000 East North Avenue, that

she was exposed to lead-based paint at the property, and that the property was a source of her elevated BLLs and alleged injuries (other than her IQ loss) to provide a sufficient factual basis for Dr. Caplan's opinions. Before addressing the factual basis for Dr. Caplan's testimony, it is helpful to discuss principles of causation in lead-based paint cases. Causation in lead-based paint cases may be proven by showing that the defendant's negligence was a "substantial factor" in causing the plaintiff's injury. Ross v. Hous. Auth. of Balt. City, 430 Md. 648, 667, 63 A.3d 1, 12 (2013) (cleaned up). We have held that a customary theory of specific causation²⁵ in a lead-based paint case can be conceived of as a series of links: "(1) the link between the defendant's property and the plaintiff's exposure to lead; (2) the link between specific exposure to lead and the elevated [BLLs]; and (3) the link between those [BLLs] and the injuries allegedly suffered by the plaintiff." Ross, 430 Md. at 668, 63 A.3d at 12. The first, second, and third links have sometimes been referred to as source, source causation, and medical causation, respectively. See, e.g., Rogers v. Home Equity USA, Inc., 453 Md. 251, 265, 160 A.3d 1207, 1215 (2017). With respect to the first link, the source of a plaintiff's exposure to lead, it may be established either with or without expert testimony. See Ross, 430 Md. at 669, 63 A.3d at 13 ("[T]he link between a defendant's property and a plaintiff's childhood exposure to lead paint and dust may be established through circumstantial evidence, even if expert testimony is not available."). Indeed, even the second or third link may potentially be established without expert

²⁵"General causation addresses whether a particular substance can cause the kind of injury suffered by the plaintiff[.]" and "[s]pecific causation addresses whether the substance actually caused the plaintiff's injury." Sugarman, 460 Md. at 415-16, 190 A.3d at 355 (citations omitted).

testimony. See, e.g., id. at 668, 63 A.3d at 13 (“Expert opinion testimony could be helpful in establishing any of the links and might sometimes be essential in proving the second and third links.” (Footnote omitted)).

To avoid summary judgment in a lead-based paint case, “a plaintiff must demonstrate only a reasonable probability as to each of these links”—a plaintiff is not required to irrefutably establish them. Rogers, 453 Md. at 265, 160 A.3d at 1215 (citation omitted). Case law has recognized two ways in which a plaintiff in a lead-based paint case can establish the subject property as a reasonably probable source of the plaintiff’s lead exposure and resulting elevated BLLs. In Dow v. L & R Props., Inc., 144 Md. App. 67, 76-77, 796 A.2d 139, 144-45 (2002), the Appellate Court of Maryland held that a plaintiff can defeat a motion for summary judgment by presenting evidence that the subject property is the only possible source of the plaintiff’s lead exposure. With the second method, if there are allegedly multiple possible sources of lead exposure, a plaintiff can produce “enough evidence to establish that it is reasonably probable that the subject property contributed to [the plaintiff’s] lead poisoning.” Rogers, 453 Md. at 266, 160 A.3d at 1216. In such cases, a plaintiff can “rule in” the subject property as a reasonably probable source through either direct or circumstantial evidence. Id. at 266, 160 A.3d at 1216 (citation omitted).

Source and Source Causation

In this case, Ms. Oglesby sought to introduce Dr. Caplan’s expert testimony with respect to all three of the causation links. Even though, as Ms. Oglesby argues on brief, there was other evidence with respect to the property being a source of her exposure to

lead, Ms. Oglesby sought to use Dr. Caplan's testimony to assist in establishing the first causal link, the link between the property and her exposure to lead, *i.e.*, Ms. Oglesby sought to use Dr. Caplan's testimony to assist in "ruling in" 2000 East North Avenue. In his report, Dr. Caplan concluded that Ms. Oglesby's "likely exposure to lead at 2000 E. North Ave is a significant contributing factor to her lead intoxication and, therefore, to her" impairments. And, at deposition, Dr. Caplan testified that Ms. Oglesby's second BLL of 5.5 µg/dL was related to her residency at the building. In reaching these conclusions, Dr. Caplan did not offer the opinion that 2000 East North Avenue was the sole source of Ms. Oglesby's exposure to lead paint; rather, the substance of his report and testimony demonstrates that Dr. Caplan's opinion was, as stated, that Ms. Oglesby's likely exposure to lead at the building was a significant contributing factor to her injuries. In other words, Ms. Oglesby endeavored to use Dr. Caplan's expert testimony and other evidence to establish a reasonable probability that exposure to lead-based paint at 2000 East North Avenue contributed to her alleged injuries—to rule in the property as a source of her exposure.

In reaching the conclusion that Ms. Oglesby's likely exposure to lead at 2000 East North Avenue was a significant contributing factor to her injuries, Dr. Caplan's report and deposition testimony show that he relied on data, including: (1) independent test results showing the presence of lead in the building both before and after Ms. Oglesby's residency; (2) reports of Crowninshield and others indicating that the building was in poor or bad condition during the time of Ms. Oglesby's residency; (3) the testimony of Ms. Powell and others regarding chipping and peeling paint in the apartment and the building; (4) Ms. Oglesby's BLLs; and (5) Dr. Hawkins-Heitt's and Mr. Lieberman's reports. Dr. Caplan

explained in his report:

[Ms. Oglesby] lived at 2000 E. North Ave from December 1998 through late 2001 or early 2002. This is a building built before 1950 with multiple inspections indicating the presence of lead based paint. The Baltimore City Health Department issued an Emergency Lead Paint Violation Notice on October 5, 1989. Arc Environmental performed an inspection on April 13, 2011 and found multiple areas containing lead. Arc Environmental also performed inspections of multiple properties on the 2000 block of E. North Ave and found lead based paint in multiple areas of the seven properties. Green Street Environmental analyzed 2000 E. North Ave from April 17-18, 2012 and again from June 30, 2014 to July 3, 2014. Multiple areas containing lead based paint were identified during both inspections. Furthermore, multiple other children who lived at 2000 E. North Ave from the late 1980's to the early 2000's suffered from lead intoxication. For [Ms. Oglesby] the lead paint was accessible during her tenancy. Her mother described the apartment as being in poor condition with peeling and chipping paint throughout the hallways and stairwells as well as from the doors. In her apartment the paint began to peel about six months after she moved in. Some repainting was performed in the hallways, stairways, and on one window inside her apartment. However, the chipping and peeling restarted after the repainting. Indeed the annual inspection dated 10/7/01 indicated multiple rooms needing rehabilitation. [Ms. Oglesby] moved in late 2001 or 2002 to 2800 Lafayette for a few weeks before moving again to 1713 Lemmon Street, both of which had no peeling paint. There were no significant visitations to other properties for [Ms. Oglesby] during this time.

In his report, Dr. Caplan set forth the dates and results of Ms. Oglesby's BLL tests and explained that her BLLs were:

4/19/99	2 mcg/dl	venous
3/27/02	5.5 mcg/dl	venous
8/20/04	4 mcg/dl	venous

In forming his opinion about Ms. Oglesby's exposure to lead at the property, Dr. Caplan relied on sources of information, not connected to Ms. Oglesby or Ms. Powell, showing the presence of lead in the building both before and after Ms. Oglesby's residency. Specifically, Dr. Caplan reported that in October 1989 (nearly a decade before Ms. Oglesby

lived in the building), the Baltimore City Health Department issued an emergency violation notice for the building. According to Baltimore City Health Department records which were among the items reviewed by Dr. Caplan, the Health Department issued the violation notice for Apartment G-2 after determining that a child who visited the apartment had an abnormal BLL and an inspection of the apartment showed that it contained lead-based paint.

Similarly, Dr. Caplan reported that in April 2011 (nine years after Ms. Oglesby moved from the building), Arc Environmental conducted inspections of multiple properties in the 2000 block of East North Avenue and found lead-based paint in seven of the properties. According to the Arc Environmental report, which was one of the items reviewed by Dr. Caplan, in April 2011, a lead-based paint inspection of Apartment 203 and other areas of the building resulted in findings that lead-based paint above the Maryland standard was detected on window jambs in the living room and in two bedrooms in Apartment 203 and in certain common areas of the building, including on the first-to-second floor rear stairs baluster and newel post and on the second-floor hallway window jamb.

Dr. Caplan noted in his report that, in 2012 and 2014, Green Street Environmental analyzed the property and identified multiple areas containing lead-based paint. According to Green Street Environmental's April 2012 report, the company tested components of the building for the presence of lead-based paint and found that 84 areas throughout the building contained lead-based paint. Green Street Environmental's report showed that lead was found on every floor of the building in numerous locations, including in rooms that

would previously have been apartments. Green Street Environmental’s report and second-floor floorplan demonstrated that, of the rooms on the second floor that did not test positive for lead-based paint—namely, rooms 1 (a stairway), 2 (a hallway), 8 (a large area marked partly destroyed and inaccessible), and rooms 10 and 12 (potentially apartments in the past)—there were only three rooms, 8, 10, and 12, that could potentially have once been apartments; rooms 1 and 2 were a stairway and a hallway.

Together, these three independent sources of information demonstrated that lead-based paint was present in the building before and after Ms. Oglesby lived there and supported Dr. Caplan’s conclusion that Ms. Oglesby was likely exposed to lead-based paint at the property during her tenancy in the building. The testing revealing the presence of lead in the building before and after Ms. Oglesby’s residency is particularly persuasive concerning the adequacy of the factual basis for Dr. Caplan’s opinion as to source causation. There is a lack of any evidence that the building underwent a lead-based paint abatement or gut rehabilitation after 1989, at some point before Ms. Oglesby’s residence in 1998. As the Appellate Court explained in Taylor v. Fishkind, 207 Md. App. 121, 144, 148, 51 A.3d 743, 757, 759 (2012), cert. denied, 431 Md. 221, 64 A.3d 497 (2013), when reviewing a trial court’s grant of summary judgment, “[i]f the property contained lead-based paint when it was originally constructed, then lack of evidence of a gut rehabilitation prior to [the plaintiff] living there would support the conclusion that the property still contained lead-based paint when [the plaintiff] lived there.” See also Rogers, 453 Md. at 272-73, 160 A.3d at 1219-20 (same). In addition, our case law confirms that the federal government no longer permitted lead-based paint to be used after 1978, negating the

possibility that the property may have been entirely abated of lead-based paint at some point after the 1989 Health Department inspection results and repainted with lead-based paint after Ms. Oglesby's departure in January or February 2002, thereby accounting for the 2011 and 2012 test results showing the presence of lead in the building. See Levitas, 454 Md. at 248, 164 A.3d at 237.

In addition to independent tests showing the presence of lead in the building, Dr. Caplan was aware, from sources other than Ms. Powell, that she and Ms. Oglesby were required to move out of the building because it was in poor condition. Dr. Caplan had reviewed the October 7, 2001 annual inspection report from Crowninshield for Apartment 202 and, in his report, specifically noted that the annual inspection report indicated that multiple rooms in the apartment needed rehabilitation. At deposition, Dr. Caplan testified that the October 2001 inspection report "said that rehab was needed in multiple rooms: living room, dining room, bedrooms, bathroom[], kitchen and they were closing . . . that apartment building. . . . [T]he whole apartment building was closed at the beginning of 2002 because of its poor condition." The October 7, 2001 inspection report provided independent support for Dr. Caplan's conclusion that lead was accessible and Ms. Oglesby was likely exposed to lead at the building.

Prior to issuing his report, Dr. Caplan also reviewed Ms. Powell's deposition testimony regarding chipping and peeling paint in the apartment and the rest of the building. At deposition, Ms. Powell described the building as having peeling and chipping paint everywhere in the building, throughout the hallways and stairwells and on the doors. Ms. Powell testified that, although approximately a year after she moved into the apartment

management repainted the building's common areas and the apartment doors, the paint began peeling again. As to the apartment, Ms. Powell testified that the apartment was in poor condition when she first moved in, and that within six or seven months, she noticed peeling paint throughout the apartment, on the walls and windowsills, in the bathroom, and in a closet. Despite her request that management paint locations inside the apartment, only one window inside the apartment was repainted. This testimony, although it may have been disputed, contributed to the factual basis for Dr. Caplan's opinion that lead was accessible to Ms. Oglesby during her residency at the building and that the building was a source of her lead exposure.

Dr. Caplan also reviewed records documenting Ms. Oglesby's BLL tests. At deposition, Dr. Caplan explained that the dates of Ms. Oglesby's documented BLL tests, the circumstance that Ms. Oglesby's BLL of 5.5 $\mu\text{g}/\text{dL}$ was documented only two to three months after she moved away from 2000 East North Avenue, that she did not have significant visitations to other properties, and that she moved to a place not reported to have peeling and chipping paint led to his conclusion that it was very likely that 2000 East North Avenue was responsible for Ms. Oglesby's BLL of 5.5 $\mu\text{g}/\text{dL}$.

At bottom, although there may have been a dispute of fact concerning whether Ms. Oglesby was exposed to lead at the property or at other locations, there was more than an adequate supply of data and information about the building to support Dr. Caplan's opinion that Ms. Oglesby was exposed to lead-based paint at 2000 East North Avenue. That Dr. Caplan did not rule out a property that Ms. Oglesby visited while living at 2000 East North Avenue or properties in which Ms. Oglesby lived before or after moving from the building

as sources of her exposure to lead would not render inadmissible his opinion regarding Ms. Oglesby's exposure to lead 2000 East North Avenue being a significant contributing factor to her injuries. Cf. Levitas, 454 Md. at 250, 164 A.3d at 238 (“The substantial factor test does not require experts to exclude other properties as possible contributing sources. . . . It would be illogical for us to require an expert to narrow the plaintiff's lead exposure down to a single source when the substantial factor test, by its very definition, permits more than one cause of injury.” (Citation omitted)); id. at 250, 164 A.3d at 238 (It is “not the rule” “that an expert must exclude other properties before he can testify that the plaintiff was exposed to lead at the subject property.”). With respect to source causation, “[w]e have only required that an expert be able to adequately explain how he determined that a property was a source of the plaintiff's lead exposure so that the trier of fact can evaluate his reasoning.” Id. at 251, 164 A.3d at 238-39 (citation omitted).

In fact, we agree with Ms. Oglesby that this case is similar to Levitas, id. at 250-51, 164 A.3d at 238-39, in which we held that a trial court abused its discretion in excluding an expert's opinion that the defendant's property was likely a source of the plaintiff's exposure to lead-based paint. In Levitas, id. at 248-49, 164 A.3d at 237, the expert took into account the circumstances that the plaintiff's BLLs “were first found to be elevated while he was living at [the building], when he had not yet lived anywhere else[,]” and that he “regularly stayed at [the building] during the day while his mother was at work, both when he lived there and when he lived at” a subsequent residence. (Emphasis omitted). The expert also considered that: an Arc Environmental report found that 31 interior and 5 exterior locations tested positive for lead; lead-based paint was federally banned in 1978,

making it unlikely that the building had been painted with lead-based paint since the plaintiff lived in the building in the 1990s; Maryland Department of Housing and Community Development records described the poor condition of the property; a Maryland Department of the Environment certification indicated that the building was not lead free; and the plaintiff's family members testified that the building was in a deteriorated condition while the plaintiff lived there and the plaintiff touched peeling paint at the property. See id. at 248-49, 164 A.3d at 237. In Levitas, id. at 250-51, 164 A.3d at 238-39, we concluded that the trial court abused its discretion in excluding the expert's testimony on causation because, in the trial court's view, the expert had little information as to other sources of lead exposure. We explained that, in so ruling, the trial court mistakenly "relied on a purported rule of law that an expert must exclude other properties before he can testify that the plaintiff was exposed to lead at the subject property." Id. at 250, 164 A.3d at 238.²⁶

Ms. Oglesby also sought to use Dr. Caplan's testimony to assist with establishing

²⁶By contrast, in another case, Ross, 430 Md. at 663, 63 A.3d at 10, we held that a trial court did not abuse its discretion in determining that an expert lacked an adequate factual basis to opine that the defendant's building was "the source" of the plaintiff's exposure to lead-based paint. We concluded that the expert "did not explain adequately how she reached the conclusion that the [subject property] was 'the source' of the lead exposure that resulted in" the plaintiff's elevated BLLs. Id. at 664, 63 A.3d at 10. We explained that, "[g]iven the uncontroverted evidence that there were various other sources of lead exposure in [the plaintiff]'s environment, including her prior residence, and that she came to the [subject property] with already elevated [BLLs], there were likely multiple causes of her elevated [BLLs]." Id. at 664, 63 A.3d at 10. We determined that "[t]he real question for the fact-finder [wa]s how much exposure to lead at the [subject property] contributed to [the plaintiff's BLLs] over the pertinent time period[.]" Id. at 664, 63 A.3d at 10 (emphasis omitted). We concluded that the trial court did not abuse its discretion in determining that the expert's opinion would not assist the fact-finder in answering that question. See id. at 664-65, 63 A.3d at 10.

the second link, *i.e.*, the link between her exposure to lead at the property and her BLLs. The information that Dr. Caplan relied on concerning the presence of lead-based paint in the building before and after Ms. Oglesby's residency, and the deteriorated condition of the building and the apartment at the time that Ms. Oglesby lived there, giving Ms. Oglesby access to lead-based paint during the time she lived in the building, was sufficient to support the opinion that Ms. Oglesby was likely exposed to lead at 2000 East North Avenue. That information, coupled with Ms. Oglesby's documented BLLs—specifically, that she had a BLL of 2 µg/dL in April 1999, only a few months after she moved into the building, and that she had a BLL of 5.5 µg/dL in March 2002, just two to three months after she moved out of the building—as well as information that Ms. Oglesby did not have significant visitations to other properties during this time and that the property Ms. Oglesby moved into did not have chipping and peeling paint, although disputed by the parties, provided a sufficient factual basis for Dr. Caplan to render an opinion concerning the second causal link, the link between specific exposure to lead at the property and Ms. Oglesby's BLLs.

Clearly, issues concerning the frequency of Ms. Oglesby's visits to the Lafayette property on weekends and whether the Lafayette property and other properties that Ms. Oglesby lived in before or after residing at 2000 East North Avenue contained lead-based paint involve issues of disputed facts. The credibility of Ms. Powell's testimony regarding the frequency and duration of Ms. Oglesby's weekend visits and the condition of other properties is a matter for the trier of fact to determine, not the circuit court in ruling on the motion to preclude. See Frankel, 480 Md. at 700-01, 281 A.3d at 703. In other words,

subject to the premise that the jury would be made aware of the existence of any genuinely disputed facts, the information that Dr. Caplan relied on from Ms. Powell's testimony provided a sufficient factual basis for his opinion linking Ms. Oglesby's specific exposure to lead at the property to her documented BLL of 5.5 µg/dL in March 2002. See id. at 700-01, 281 A.3d at 703.

Medical Causation

Setting aside the issue of IQ loss, Dr. Caplan also had a sufficient factual basis to offer an opinion as to the third causal link—the link between Ms. Oglesby's BLLs and her other alleged injuries—when concluding that Ms. Oglesby's likely exposure to lead at 2000 East North Avenue was a significant contributing factor to her cognitive impairments. Dr. Caplan pointed out in his report that, according to the United States Environmental Protection Agency, the American Academy of Pediatrics, the Maryland Department of the Environment, and the World Health Organization, lead is a causal or likely causal factor for the type of impairments Ms. Oglesby suffered. In this case, there is no challenge to the principle that the types of impairments and limitations documented by Dr. Hawkins-Heitt and Mr. Lieberman, which are described in Dr. Caplan's report, can be caused by exposure to lead.

In the motion to preclude, Respondents took issue with the factual basis for Dr. Caplan's opinions as to causation of Ms. Oglesby's alleged injuries, alleging that Dr. Caplan lacked a sufficient factual basis for his testimony because he relied on a "selective review of the evidence to support his opinion that the Property was the source of [Ms. Oglesby]'s childhood lead exposure, and that childhood lead exposure caused her injuries."

Similarly, before this Court, Respondents advance the claim that “Dr. Caplan lacked a sufficient factual basis to opine that [Ms.] Oglesby suffered injuries as a result of lead exposure at the Property[,]” due to the “limited evidence that Dr. Caplan received from [Ms. Oglesby’s] counsel[.]” (Bolding omitted). In other words, as an extension of the argument that Dr. Caplan lacked an adequate supply of data for his opinion as to source causation, Respondents allege that Dr. Caplan also lacked an adequate supply of data for the opinion that Ms. Oglesby’s exposure to lead at 2000 East North Avenue was a significant contributing factor to her alleged injuries. We have already assessed this contention and dispensed with it; the record reflects that Dr. Caplan had more than an adequate supply of data for the opinion that Ms. Oglesby was exposed to lead-based paint at the property.

That an expert have both an adequate supply of data and use reliable methodology are well-recognized aspects of having a sufficient factual basis for an opinion under Maryland Rule 5-702(3). See Sugarman, 460 Md. at 415, 190 A.3d at 354. In the “Introduction” section of the motion to preclude, Respondents asserted that “Dr. Caplan’s medical opinions, and any opinion testimony based on them, should be precluded under Maryland Rule 5-702” and the Frye-Reed standard “because they lack a sufficient factual basis and are not the product of a reliable methodology.”²⁷ On brief in this Court,

²⁷In a section of the motion titled “Legal Standard,” along with other authority, Respondents cited general case law indicating that both an adequate supply of data and reliable methodology are necessary for the admission of expert opinion and that opinions based on conjecture and speculation are not admissible. And, Respondents quoted the well-established principle that “an expert opinion must provide a sound reasoning process

Respondents state that the circuit court properly exercised its discretion to find that “Dr. Caplan did not use a reliable methodology to form his opinions regarding Oglesby’s alleged injuries,” and state that the circuit court excluded Dr. Caplan’s opinions as “inherently unreliable.”

To be sure, the record reflects that, at one point during the motions hearing while ruling, the circuit court stated that “there are issues, if you will, with the facts and the information that was gathered, and how it was gathered, and who he spoke to, and who he didn’t speak to[,]” and that “the basis of the Court’s ruling is not only when you combine those issues with the issue of the use of the methodology, the Court believes that together that makes his testimony and opinion inherently unreliable.” This was part of the circuit court’s response to Ms. Oglesby’s counsel’s request for clarification as to whether its ruling that Dr. Caplan had used “incorrect” information applied to Ms. Oglesby’s case or Johnson’s. With these remarks, the circuit court referred mainly to what it described as issues with the facts, which the court believed in combination with “the issue of the use of the methodology” rendered Dr. Caplan’s testimony unreliable. The circuit court made no finding whatsoever with respect to “the issue of the use of the methodology”²⁸ and provided no substantive basis for ruling that Dr. Caplan’s testimony was inherently unreliable. This

for its conclusion from the factual data” and the explanation for the opinion must not be “conclusory.” (Citation omitted).

²⁸Earlier, in its initial ruling, the circuit court’s only specific remarks concerning methodology referred to Dr. Caplan not using all available BLLs in formulating his IQ loss opinion and that he offered no support for the “calculations” he used.

was far from a finding by the circuit court that Dr. Caplan's opinion on medical causation as to Ms. Oglesby's other alleged injuries was the product of unreliable methodology.

On brief in this Court, Respondents assert that Dr. Caplan's opinion that Ms. Oglesby suffered "neurocognitive injuries" was inadmissible because he did not examine or administer tests to Ms. Oglesby, meet with her, or speak with her family, medical providers, or teachers. To the extent Respondents contend that Dr. Caplan's opinions and testimony regarding Ms. Oglesby's injuries are inadmissible because he relied on Dr. Hawkins-Heitt's report and did not personally examine Ms. Oglesby, this goes to the weight to be given to Dr. Caplan's opinion, rather than its admissibility. In Levitas, *id.* at 251, 164 A.3d at 239, we rejected the defendant's contention that an expert's opinion lacked a sufficient factual basis because the expert did not conduct his own examination of the plaintiff and instead relied on another expert's report, scientific research, school records, discovery materials, and deposition testimony. Our case law demonstrates that an expert's factual basis may arise from a number of sources, including reports prepared by other doctors. See id. at 254, 164 A.3d at 240.

When a challenge to the admissibility of expert testimony is raised, "[t]he burden rests with the proponent of the expert testimony to demonstrate that the[] requirements [of Maryland Rule 5-702] have been met." Rochkind, 454 Md. at 286, 164 A.3d at 259 (citation omitted). In this case, we are satisfied that, with respect to the data and methodology used by Dr. Caplan for his opinion as to Ms. Oglesby's alleged injuries (other than IQ loss), Ms. Oglesby has done so. The process that Dr. Caplan used in reaching his opinion is similar to that of medical experts who have been permitted in other cases to

render an opinion that a plaintiff's exposure to lead was a significant contributing factor to impairments like those attributed to Ms. Oglesby. See, e.g., Levitas, 454 Md. at 251-55, 164 A.3d at 239-41. Dr. Caplan evaluated information such as Ms. Oglesby's time of residency at the property, independent reports concerning the presence of lead and the condition of property, Ms. Oglesby's documented BLLs, and medical and vocational evaluations describing Ms. Oglesby's impairments, and, based on his knowledge and experience, provided a reasonable explanation of how the factual data led to his conclusions. See id. at 251-55, 164 A.3d at 239-41. Under the particular circumstances of this case, given the large quantity of data that he had available and reviewed and the nature of the challenge to the admissibility of his testimony, a remand for further proceedings as to Dr. Caplan's opinion that Ms. Oglesby's exposure to lead at the property was a substantial contributing factor to her injuries (other than IQ loss) is not warranted.

II. Dr. Caplan's Opinion with Respect to IQ Loss

A. The Canfield and Lanphear Studies

Respondents contend that Dr. Caplan's testimony concerning Ms. Oglesby's IQ loss is inadmissible because, in their view, Dr. Caplan's explanation of his use of the Canfield and Lanphear studies does not support a finding that his methodology was reliable. On brief, Respondents state that "the issue is not the fact that Dr. Caplan relied on the Lanphear and Canfield studies; the issue is how Dr. Caplan used those studies to calculate [Ms.] Oglesby's alleged IQ loss." (Cleaned up). Based on their review of the studies, Respondents raise the following complaints: (1) the studies contain language indicating that causal inferences may not be made, and Dr. Caplan used linear calculations; (2) Dr.

Caplan used a peak BLL in a manner that is contradicted by information in the studies; and (3) he miscalculated Ms. Oglesby's average BLL.

To frame our discussion, we begin with some relevant information about the studies. The Canfield study “measured blood lead concentrations in 172 children at 6, 12, 18, 24, 36, 48, and 60 months of age”—*i.e.*, ½ a year old, 1 year old, and 1½, 2, 3, 4, and 5 years old. Richard L. Canfield, Charles R. Henderson, Jr., Deborah A. Cory-Slechta, Christopher Cox, Todd A. Jusko, and Bruce P. Lanphear, Intellectual Impairment in Children with Blood Lead Concentrations below 10 µg per Deciliter, 348 *New Eng. J. of Med.* 1517 (Apr. 17, 2003), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4046839/> [<https://perma.cc/JV55-68C3>]. The study explained that “[t]he relation between IQ and blood lead concentration was estimated with the use of linear and nonlinear mixed models, with adjustments for maternal IQ, quality of the home environment, and other potential confounders[,]” and that results demonstrated that “blood lead concentration was inversely and significantly associated with IQ.” *Id.* The study stated that, “[w]hen estimated in a nonlinear model with the full sample, IQ declined by 7.4 points as lifetime average blood lead concentrations increased from 1 to 10 µg[dL].” *Id.*²⁹ The Canfield study explained that “[p]revious research is consistent with the interpretation that the effects of lead on IQ are proportionally greater at lower lead concentrations.” 348 *New Eng. J. of Med.* at 1522.

As to IQ at blood-lead concentrations below 10 µg/dL, the Canfield study related

²⁹The Canfield study also stated that, using the linear model, “the estimated IQ loss was 4.6 points for each increase in the blood lead concentration of 10 µg per deciliter,” and that “for children whose lead concentrations remained below 10 µg per deciliter, the estimated loss in IQ was considerably greater.” 348 *New Eng. J. of Med.* at 1521.

that “linear models for each lead variable were estimated for the subgroup of children whose peak lead concentration was below 10 µg per deciliter” and that, “[w]ithout exception, the estimates were larger in this subgroup.” Id. at 1521. The Canfield study stated that, using nonlinear mixed models, the “[s]emiparametric analysis indicated a decline in IQ of 7.4 points for a lifetime average blood lead concentration of up to 10 µg per deciliter[.]” Id.

Similarly, the Lanphear study starts by noting that “[t]here is emerging evidence that lead-associated intellectual deficits occur at [BLLs less than] 10 µg/dL” and cites eight studies for this point. Bruce P. Lanphear, Richard Hornung, Jane Khoury, Kimberly Yolton, Peter Baghurst, David C. Bellinger, Richard L. Canfield, Kim N. Dietrich, Robert Bornschein, Tom Greene, Stephen J. Rothenberg, Herbert L. Needleman, Lourdes Schnaas, Gail Wasserman, Joseph Graziano, and Russell Roberts, Low-Level Environmental Lead Exposure and Children’s Intellectual Function: An International Pooled Analysis, 113 *Env’t Health Persps.* 894 (July 2005), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257652/> [<https://perma.cc/8LT6-NZZQ>]. The study explained that it contacted investigators of the studies and obtained “data sets and collaboration” from seven of the eight. Id. The study described itself as a pooled analysis that estimated “the quantitative relationship between children’s performance on IQ tests and selected measures of blood lead concentration among children followed prospectively, from infancy through 5–10 years of age in seven prospective cohort studies.” Id. “To enhance comparability across studies, [the study] used the following blood sampling

intervals (based on children’s age): 6, 12 (or 15), 36, 48, and 60 months”—*i.e.*, ½ a year old, 1 year old (or 1¼ years old), and 3, 4, and 5 years old. Id. at 895.

As to results, the Lanphear study stated that, “[f]or the entire pooled data set,” there was an “observed decline of 6.2 IQ points [] for an increase in [BLLs] from < 1 to 10 µg/dL[.]” Id. at 898. The Lanphear study stated that this “was comparable with the 7.4 IQ decrement for an increase in lifetime mean [BLLs] from < 1 to 10 µg/dL observed in the” Canfield study. Id. The Lanphear study stated that, consistent with other studies, “the lead-associated IQ deficits observed in this pooled analysis were significantly greater at lower blood lead concentrations.” Id. The Lanphear study also determined that, by using the larger sample size of the pooled analysis, it was able “to show that the lead-associated intellectual decrement was significantly greater for children with a maximal blood lead of < 7.5 µg/dL than for those who had a maximal blood lead of ≥ 7.5 µg/dL.” Id.

B. Relevant Case Law

This Court has held that “a properly qualified expert witness can rely on the Lanphear Study methodology, as well as other accepted scientific research, as a factual basis for an opinion that a plaintiff’s elevated BLLs caused the loss of a specific number of IQ points.” Sugarman, 460 Md. at 434, 190 A.3d at 366 (citing Levitas, 454 Md. at 254-55, 164 A.3d at 241; Roy v. Dackman, 445 Md. 23, 51 n.16, 124 A.3d 169, 186 n.16 (2015); Rochkind v. Stevenson, 229 Md. App. 422, 469-70, 145 A.3d 570, 598 (2016), rev’d, 454 Md. 277, 164 A.3d 254 (2017)).

In Roy, 445 Md. at 33, 124 A.3d at 175, we considered whether an expert witness could render an opinion that lead-based paint at a property caused the plaintiff’s medical

injuries, which included “a loss of IQ points, impaired attention, problems with memory, and problems with coordination.” (Cleaned up). The expert relied on the pooled Lanphear study to form an opinion about the plaintiff’s IQ loss due to lead exposure. See id. at 51 & n.16, 124 A.3d at 186 & n.16. The defendants took issue with the expert’s use of the study, contending that there “have been peer-reviewed studies published in highly respected journals not only directly contradicting the studies on which [the expert] relie[d], but also calling into question the application of the studies to any one individual without real-life evidence of actual IQ point loss.” Id. at 51 n.16, 124 A.3d at 186 n.16.

We concluded that the expert’s reliance on the Lanphear study did “not invalidate the entire basis of his opinion, even if the Lanphear study [was] contrary to the results of other studies as alleged by [the defendants]. Such is the grist for cross-examination and dueling experts and for resolution by the relative weight assigned by the fact-finder.” Id. at 51 n.16, 124 A.3d at 186 n.16. We determined that the record demonstrated that the expert possessed “a sufficient background from which to provide an opinion as to the injuries claimed to have been suffered by [the plaintiff] as the result of alleged exposure to lead.” Id. at 52, 124 A.3d at 186. But, whether a jury would find the expert’s testimony persuasive would “depend, in large measure, on the effectiveness of [the defendants’] cross-examination and a comparison/weighing by the jury against [the defendants’] competing witness(es)’ testimony.” Id. at 52, 124 A.3d at 186.

In Rochkind, 229 Md. App. at 465, 145 A.3d at 596, where an expert’s opinion quantified the plaintiff’s IQ loss, the Appellate Court addressed whether the expert’s calculations were reliable under Frye-Reed and whether the expert had an adequate factual

basis under Maryland Rule 5-702(3).³⁰ The Appellate Court concluded that the trial court did not abuse its discretion in finding the expert's methodology reliable where the expert extrapolated from the Lanphear study to estimate a specific IQ loss in the plaintiff. See Rochkind, 229 Md. App. at 469, 145 A.3d at 598. In Rochkind, id. at 466-67, 145 A.3d at 596-97, relying on the Lanphear study, the expert testified that the plaintiff lost between 5 and 6 IQ points as a result of exposure to lead. The expert testified that, based on the Lanphear study, she used the plaintiff's peak BLL of 14 µg/dL and "calculated an IQ loss of 3.9 points based upon a level of between zero and ten, 0-10 µg/dL[,] and an additional loss of 1.9 points for the level between 10 and 20 µg/dL, for a total of 5.8." Id. at 466-67, 145 A.3d at 597. The expert explained that her opinion would not have changed if she had used the plaintiff's average BLL of 11.5 µg/dL. See id. at 466-67, 145 A.3d at 597.

The Appellate Court determined that, because, as the defendant acknowledged, "there is a scientific consensus that lead poisoning causes IQ loss, the only issue [was] whether the trial court abused its discretion by allowing [the expert] to opine that [the plaintiff] sustained a specific IQ loss of between five and six points." Id. at 469, 145 A.3d at 598. The Appellate Court concluded that the trial court did not abuse its discretion in accepting as "sound" the expert's methodology of "extrapolating from epidemiological studies quantifying IQ loss resulting from lead exposure in the general population to

³⁰This Court reversed the Appellate Court's judgment on a different ground, concluding that the trial court abused its discretion in permitting the expert to testify that lead exposure can cause attention-deficit/hyperactivity disorder ("ADHD") generally and that lead caused the plaintiff's ADHD specifically. See Rochkind, 454 Md. at 295-96, 164 A.3d at 265. No issue concerning the expert's opinion as to IQ loss was before this Court. See id. at 284-85, 164 A.3d at 258.

estimate the range of IQ loss in an individual.” Id. at 469, 145 A.3d at 598. The Appellate Court stated that the expert “fully explained the basis for her calculation on the IQ loss” during “vigorous cross-examination[.]” Id. at 470, 145 A.3d at 598. Accordingly, the Appellate Court concluded that the expert’s opinion as to IQ loss was supported by an adequate factual basis. See Rochkind, 229 Md. App. at 470, 145 A.3d at 599.

In Levitas, 454 Md. at 254-55, 164 A.3d at 241, relying on Roy, we concluded that an expert could use the Lanphear study to calculate the plaintiff’s individual IQ loss. In Levitas, 454 Md. at 240, 164 A.3d at 232, at deposition, the plaintiff’s expert witness testified that, as a result of the plaintiff’s exposure to lead, the plaintiff lost 7.4 to 9.4 IQ points. In calculating the plaintiff’s IQ loss, the expert relied on the Lanphear study, and averaged the plaintiff’s BLLs and “determined his loss in IQ points based on the study’s results.” Id. at 240-41, 164 A.3d at 232. The trial court excluded the expert’s opinion, ruling that the expert lacked a sufficient factual basis under Maryland Rule 5-702(3). See id. at 241, 164 A.3d at 233.

Before this Court, the defendant contended that the expert could not calculate the plaintiff’s “IQ loss using the Lanphear study because it is population-based, and therefore cannot be used to calculate an individual’s IQ loss.” Id. at 254, 164 A.3d at 240. Relying on Roy, 445 Md. at 51-52 & n.16, 124 A.3d at 185-86 & n.16, we rejected the defendant’s contention, stating that, despite other reputable studies contradicting the Lanphear study’s results and cautioning against using it to calculate individual IQ loss, relying on the Lanphear study did not invalidate the basis of an expert’s opinion. See Levitas, 454 Md.

at 254-55, 164 A.3d at 241.³¹

In Sugarman, 460 Md. at 432-34, 190 A.3d at 365-66, after reviewing Roy, Rochkind, and Levitas, we stated unequivocally: “*Levitas* and *Roy* demonstrate that a properly qualified expert witness can rely on the Lanphear Study methodology, as well as other accepted scientific research, as a factual basis for an opinion that a plaintiff’s elevated BLLs caused the loss of a specific number of IQ points.” (Citations omitted). We explained that “[I]egitimate scientific disputes go not to the admissibility of testimony, but to the weight of the evidence.” Sugarman, 460 Md. at 434, 190 A.3d at 366. In Sugarman, id. at 403, 190 A.3d at 348, the plaintiff offered Robert Kraft, Ph.D., as an expert in the fields of psychology and neuropsychology, who conducted a neuropsychological examination of the plaintiff consisting of an interview and several tests to assess aspects of intelligence. Dr. Kraft testified that the plaintiff had a full-scale IQ of 94, which placed him in the average range, but noted that test scores “indicated that [the plaintiff] had some form of brain impairment.” Id. at 403, 190 A.3d at 348.

The plaintiff offered Jacalyn Blackwell-White, M.D., as an expert in the fields of pediatrics and childhood lead poisoning. See id. at 405, 190 A.3d at 349. Dr. Blackwell-

³¹In Levitas, 454 Md. at 240 & n.6, 164 A.3d at 232 & n.6, following our first reference to the Lanphear study, we provided the citation for the Canfield study instead—“Richard L. Canfield et al., *Intellectual Impairment in Children with Blood Lead Concentrations Below 10 µg per Deciliter*, 348 New Eng. J. of Med. 1517 (2003).” It is unclear whether we inadvertently cited the Canfield study or whether we meant to refer to the Canfield study instead of the Lanphear study. In any event, in Levitas, 454 Md. at 254-55, 164 A.3d at 241, we summarized our discussion of the Lanphear study in Roy, 445 Md. at 51-52 & n.16, 124 A.3d at 185-86 & n.16, a case in which we provided the citation to the Lanphear study.

White reviewed the plaintiff's medical records, Dr. Kraft's report, and other records, and determined that the plaintiff incurred a brain impairment due to lead toxicity, that the impairment included a loss of cognitive function, and that the plaintiff lost 4 IQ points due to lead toxicity. See id. at 405, 190 A.3d at 349. Among other studies, Dr. Blackwell-White relied on the Lanphear study. See id. at 405-06, 190 A.3d at 349.

As to Dr. Blackwell-White's opinion about the plaintiff's IQ loss, we stated:

Like the experts in *Levitas* and *Roy*, Dr. Blackwell-White relied on [the plaintiff]'s documented BLLs, the results of his neuropsychological evaluation, and the Lanphear Study, to estimate a specific IQ point loss. She did not look only to his elevated BLLs, assume he had a cognitive defect, and then extrapolate a point loss based on the Lanphear methodology. Rather, Dr. Blackwell-White relied on evidence that [the plaintiff]—individually—had already manifested cognitive defects. This gave her enough reason to use her knowledge and expertise to extrapolate a loss of IQ points according to the methodology outlined in the Lanphear Study. [The defendant] presented contradictory experts and extensively cross-examined [the plaintiff]'s experts about their conclusions. That is what we contemplated in *Levitas* and *Roy*.

Sugarman, 460 Md. at 436-37, 190 A.3d at 367-68 (citations omitted). We concluded that “Dr. Blackwell-White's testimony provided sufficient evidence for the jury to draw the inference that, more likely than not, [the plaintiff]'s elevated BLLs caused a measurable loss of IQ points” and that the trial court properly denied the defendant's motions and allowed the question to go to the jury. Id. at 437, 190 A.3d at 368.

The bottom line is that these cases demonstrate that experts have been permitted to rely on the Lanphear study and extrapolate from its findings and render an opinion that an individual suffered a specified loss of IQ points as a result of exposure to lead.

C. Application of Principles Above to This Case

In this case, as with the experts in Sugarman, Levitas, and Roy, Dr. Caplan relied on information about Ms. Oglesby, such as documented BLLs, the results of the neuropsychological evaluation performed by Dr. Hawkins-Heitt showing that Ms. Oglesby had a full-scale IQ score of 80 and cognitive impairments, and the Lanphear study (as well as the Canfield study), to estimate specific IQ point losses. Cf. Sugarman, 460 Md. at 436, 190 A.3d at 367. Although this Court and the Appellate Court have explicitly acknowledged that an expert may rely on and extrapolate from the Lanphear study to render an opinion as to an individual's IQ loss, our case law has not yet assessed an expert's use of the Canfield study in the same way. We note, though, that the Canfield study is one of the studies in the pooled analysis used in the Lanphear study. See 113 Env't Health Persps. at 894. And, the Lanphear study explained that its conclusion that there was a decline of 6.2 IQ points for an increase in BLLs from less than 1 to 10 µg/dL was comparable to the 7.4 IQ decrement observed in the Canfield study. See id. at 898.

At the outset of our discussion, we observe that Respondents raised in the motion to preclude, and on brief in this Court, arguments that appear to go to the reliability of Dr. Caplan's methodology as well as arguments that are better suited for cross-examination, rather than the exclusion of Dr. Caplan's testimony. As an example of the latter, at least with respect to the Lanphear study, Respondents identify a statement in the study that "[t]he observational design of this study limits our ability to draw causal inferences" and argue that this language renders Dr. Caplan's opinion concerning Ms. Oglesby's IQ loss inadmissible. That notwithstanding, as the case law discussed above demonstrates, experts

have been permitted to rely on the Lanphear study to offer an opinion that exposure to lead caused IQ loss to a plaintiff. See Sugarman, 460 Md. at 436-37, 190 A.3d at 367-68; Roy, 445 Md. at 51 n.16, 124 A.3d at 186 n.16. There is no dispute the Lanphear study shows that exposure to lead-based paint can cause IQ loss. See, e.g., Sugarman, 460 Md. at 430, 190 A.3d at 363. Our case law contradicts the notion that expert testimony as to specific causation in reliance on the Lanphear study is precluded based solely on the language in the study that Respondents point out and suggests that the significance of the language the Respondents point out is a matter for cross-examination. See Sugarman, 460 Md. at 434, 190 A.3d at 366; Roy, 445 Md. at 51 n.16, 124 A.3d at 186 n.16.

In another example of an argument better suited for cross-examination, Respondents assert that Dr. Caplan improperly multiplied using Ms. Oglesby's peak BLL rather than her average lifetime BLL. Dr. Caplan's testimony at deposition confirms that he made calculations based on both Ms. Oglesby's peak BLL and the average of her BLLs. Although the Lanphear study states that "average lifetime estimates of lead exposure were generally stronger predictors of lead-associated intellectual deficits than" peak blood-lead concentration, 113 *Env't Health Persps.* at 898, the Lanphear study did not state that an average BLL is the only predictor or that a peak BLL could not be used. And, in discussing IQ at blood-lead concentrations below 10 $\mu\text{g}/\text{dL}$, the Canfield study stated that "[I]ifetime average, peak, and concurrent blood lead concentrations, but not the average in infancy, were inversely and significantly associated with IQ[.]" 348 *New Eng. J. of Med.* at 1521. Neither study states that the average lifetime BLL is the only acceptable factor or indicator of lead exposure deficits. Moreover, case law demonstrates that expert witnesses, relying

on the Lanphear study, have been permitted to render an opinion as to IQ loss after extrapolating using either the average of a plaintiff's BLLs, see Levitas, 454 Md. at 240-41, 164 A.3d at 232, or a plaintiff's peak BLL, see Rochkind, 229 Md. App. at 466-67, 145 A.3d at 597.

Next, Respondents contend that Dr. Caplan incorrectly calculated Ms. Oglesby's average BLL by not using the computation method set forth in the Canfield study. The Canfield study states:

[L]ifetime average blood lead concentration was estimated at 3 and 5 years of age by computing the area under the blood lead curve (AUC) from 6 through 36 months of age and from 6 through 60 months of age, respectively. Dividing the AUC by the corresponding age span yields an average concentration expressed in micrograms per deciliter.

Respondents contend that Dr. Caplan did not perform the AUC calculation described in the Canfield study for Ms. Oglesby's average BLL and instead that he took just the mean of the three BLL test results as the average, which, according to them, was wrong. Respondents do not make a corresponding allegation that the Lanphear study required the average BLL to be calculated in the same manner set forth in the Canfield study.³² With respect to the Canfield study, this issue would be among the matters for the circuit court's consideration on remand should Ms. Oglesby seek to introduce Dr. Caplan's testimony concerning her IQ loss at trial and Respondents raise the same objection.

Respondents also argue that Dr. Caplan offered no support for using linear

³²The Lanphear study states that lifetime average blood lead concentration "was defined as the mean of blood lead tests taken from 6 months through the concurrent blood lead test."

extrapolation, and observe that the Canfield study states that “the relation between children’s IQ score and their blood lead concentration is nonlinear.” 348 New Eng. J. of Med. at 1521-22. In our view, neither the Lanphear study nor the Canfield study sets forth one correct way in which to apply its findings. To the extent that Respondents argue that language in the Lanphear study does not permit linear extrapolation, as with the language concerning a potential limitation on causal inferences, this language has been in the study since its publication and, under Maryland case law, experts have been permitted not only to testify relying on the content of the Lanphear study, but also to render opinions as to specific IQ point loss after calculations based on information in the study.

That said, although our case law demonstrates it is permissible for an expert to rely on the Lanphear study to offer an opinion that exposure to lead resulted in a specific loss of IQ points, the record in this case shows that neither Dr. Caplan’s report nor his deposition testimony fully explains the basis for his calculations under either study. To be sure, at deposition, Dr. Caplan testified that he made calculations using both Ms. Oglesby’s peak BLL of 5.5 $\mu\text{g}/\text{dL}$ and an average BLL of 3.8 $\mu\text{g}/\text{dL}$. Implicit in the calculations is that Dr. Caplan determined that the Lanphear and Canfield studies indicate that every 1 $\mu\text{g}/\text{dL}$ increase in a BLL leads to a loss of 0.62 or 0.74 IQ points, respectively. Dr. Caplan did not testify, however, that this interpretation of the studies’ findings formed the underpinning of his calculations.

Further, assuming that Dr. Caplan, in fact, determined that the studies show that every 1 $\mu\text{g}/\text{dL}$ increase in a BLL leads to a loss of 0.62 or 0.74 IQ points, it is not readily discernable from the content of the studies that these are reliable determinations, *i.e.*, that

these are determinations reliably supported by information or findings in the studies. With respect to the Lanphear study, the issue is plainly not that Dr. Caplan used the study to make calculations or that he used information in the study and extrapolated to achieve a result. The question is whether his calculations involve use of information in the study in a way that produces reliable results. To be sure, the Lanphear and Canfield studies refer to losses of 6.2 or 7.4 IQ points, respectively, see 113 Env't Health Persps. at 898; 348 New Eng. J. of Med. at 1517, and it is possible Dr. Caplan's approach is a reliable use of the information. But without a full explanation of his methodology, including the reasons for his choices, even though it is possible to discern the basis of the calculations, we cannot determine whether it was an abuse of discretion for the circuit court to preclude this aspect of Dr. Caplan's testimony.

It could well be that, once the parties have adduced additional information from Dr. Caplan concerning his use of the studies and the circuit court has been given an opportunity to assess his methodology, Dr. Caplan's testimony with respect to Ms. Oglesby's IQ loss based on one or both of the studies may be admissible. On remand, should Ms. Oglesby seek to introduce Dr. Caplan's testimony concerning her IQ loss, the circuit court, at a new hearing, will have an opportunity to assess Dr. Caplan's use of the studies and the reliability of his methodology. For these reasons, we remand the case for a hearing under Rochkind, 471 Md. 1, 236 A.3d 630, for the circuit court to determine whether the calculations that Dr. Caplan employed using the Lanphear study are reliable and to assess Dr. Caplan's use of the Canfield study and the reliability of his methodology with respect to it, should Ms. Oglesby seek to introduce evidence concerning her IQ loss at trial.

III. Summary Judgment Was Not Warranted

Having concluded that the circuit court abused its discretion in granting the motion to preclude, we hold that the circuit court erred in granting summary judgment. The circuit court's ruling that Ms. Oglesby was unable to prove negligence without Dr. Caplan's testimony on causation was not warranted. Even without Dr. Caplan's testimony (which should not have been excluded in its entirety), based on other evidence, Ms. Oglesby presented sufficient evidence that the property was a source of her exposure to lead to satisfy the first link of the causal chain. Dr. Caplan's testimony, along with other evidence, satisfied the second and third causal links. In sum, Ms. Oglesby presented sufficient evidence that there was a reasonable probability, *i.e.*, a fair likelihood, that the apartment at 2000 East North Avenue was a source of her exposure to lead-based paint and a significant contributing factor to her alleged injuries, other than IQ loss, to establish a *prima facie* case for negligence. See Rowhouses, Inc. v. Smith, 446 Md. 611, 657, 133 A.3d 1054, 1082 (2016).

Expert testimony is not necessarily required to "rule in a property" as a source of exposure to lead. See id. at 665-66, 133 A.3d at 1087; Ross, 430 Md. at 669, 63 A.3d at 13. In Rowhouses, 446 Md. at 668, 133 A.3d at 1088, we held that the trial court erred in granting summary judgment in the defendant's favor as to the plaintiff's negligence claim because, even without direct evidence that the subject property contained lead-based paint and without expert testimony as to the source of the plaintiff's lead exposure, "there was sufficient circumstantial evidence from which a trier of fact could conclude that the [subject p]roperty contained lead-based paint[.]" We determined that, for purposes of causation in

lead-based paint cases at the summary judgment phase, “a reasonable probability requires a showing that is less than ‘more likely than not,’ but more than a mere ‘possibility.’” Id. at 655, 133 A.3d at 1080-81 (footnote omitted). We concluded that, “in a lead-based paint case, a subject property is a reasonable probable source of a plaintiff’s lead exposure where there is a fair likelihood that the subject property contained lead-based paint and was a source of the lead exposure.” Id. at 659, 133 A.3d at 1083.

We explained that, “when proceeding under a *Dow*^[33] theory of causation, where there is no direct evidence that a property contained lead-based paint, as a necessary part of the circumstantial evidence, the plaintiff must, by process of elimination, rule out other potential sources and demonstrate that the property at issue is the only source of exposure. See Rowhouses, 446 Md. at 659-60, 133 A.3d at 1083. As to ruling out other reasonably probable sources of lead, we stated that, “[a]t the summary judgment stage, although expert witness testimony may be helpful to rule out another property as a reasonable probable source, it is not necessary.” Id. at 661, 133 A.3d at 1084 (citation omitted).³⁴ In contrast,

³³In Dow, 144 Md. App. at 76-77, 796 A.2d at 144-45, the Appellate Court held that the trial court erred in granting a motion for summary judgment where, in opposition to the motion, the plaintiffs set forth circumstantial evidence that, if believed, “could establish that the chipping and peeling paint inside [the subject property] was the only possible source of [the plaintiff]’s lead poisoning” and thus caused the plaintiff’s alleged injuries.

³⁴“[C]ircumstantial evidence that rules out other reasonably probable sources may take the form of a lay witness’s testimony at a deposition or an averment in an affidavit that a property other than the subject property did not contain deteriorated, chipping, or flaking paint and was in good condition.” Rowhouses, 446 Md. at 661, 133 A.3d at 1084. Or, a lay witness’s testimony or affidavit could rule out other reasonably probable sources of lead, including environmental sources such as soil, painted toys, and the like, by stating that the plaintiff did not have contact with such sources. See id. at 661-62, 133 A.3d at 1084.

where a plaintiff produces direct evidence that a property contains lead, the ruling out of other potential sources, by expert testimony or otherwise, is not required. See, e.g., Hamilton v. Kirson, 439 Md. 501, 536-37, 96 A.3d 714, 735-36 (2014) (Where there is no direct evidence that the subject property contained lead, the plaintiff “may prove circumstantially that the subject property contained lead-based paint in a number of ways[,]” including, but not limited to, relying on a Dow theory of causation by excluding other reasonably probable sources of lead.).

In Rogers, 453 Md. at 256, 272-73, 160 A.3d at 1210, 1220, where without ruling out other possible sources of exposure, the plaintiff produced evidence, including a 1976 positive test for lead at the subject property (20 years before his residency), we held that the evidence was sufficient to establish the subject property as a reasonably probable source of lead exposure and that summary judgment was improperly granted. We explained that “[t]he 1976 interior lead testing, paired with the lack of evidence showing full lead abatement, [gave] rise to a reasonable inference that [the subject property’s] interior still contained lead-based paint when [the plaintiff] lived there.” Id. at 271, 160 A.3d at 1218-19. We stated that, in a lead-based paint case, “a plaintiff is not required to show that one source of his lead exposure contributed to his injury to a greater degree than another” and that, “[o]nce a plaintiff has established a property as a reasonably probable source of his lead exposure, a defendant cannot avoid liability by pointing to other properties that also exposed the plaintiff to lead.” Id. at 274, 160 A.3d at 1221 (citation omitted).

As Rowhouses, 446 Md. at 665-66, 133 A.3d at 1087, and Rogers, 453 Md. at 274, 160 A.3d at 1221, demonstrate, with direct evidence of lead in the building, Ms. Oglesby

did not necessarily need expert testimony to rule out other properties as reasonable probable sources where she produced sufficient admissible evidence to rule in 2000 East North Avenue as a reasonable probable source at the summary judgment stage. Because we hold that the circuit court abused its discretion in excluding Dr. Caplan's opinion that Ms. Oglesby's exposure to lead at the property was a significant contributing factor to her injuries other than IQ loss, there is sufficient evidence to establish a reasonable probability as to each of the links in the causation chain and to preclude summary judgment.

IV. Conclusion

For the reasons stated herein, we reverse the judgment of the circuit court and remand the case for trial or further proceedings under Rochkind, 471 Md. 1, 236 A.3d 630, should Ms. Oglesby elect to present expert testimony as to IQ loss. As in Frankel, 480 Md. at 714-15, 281 A.3d at 711, in light of the findings made by the trial judge in ruling on the motions, this case should be assigned to a different trial judge for all further proceedings.

JUDGMENT OF THE APPELLATE COURT OF MARYLAND REVERSED. CASE REMANDED TO THAT COURT WITH INSTRUCTION TO REMAND THE CASE TO THE CIRCUIT COURT FOR BALTIMORE CITY FOR TRIAL OR OTHER FURTHER PROCEEDINGS CONSISTENT WITH THIS OPINION. RESPONDENTS TO PAY COSTS.