

928 F.Supp.2d 10  
United States District Court,  
District of Columbia.

Venancio Aguasanta **ARIAS**, et al., Plaintiffs,  
v.  
**DYNCORP**, et al., Defendants.

Civil Action Nos. 01–1908(RWR), 07–1042(RWR). |  
Feb. 19, 2013.

**Synopsis**

**Background:** Ecuadorian citizens brought tort action against manufacturer of herbicide that drifted over from Columbia in aerial disbursement campaign to eliminate coca plantations. Manufacturer moved for summary judgment.

**Holdings:** The District Court, [Richard W. Roberts, J.](#), held that:

[1] doctor was not qualified to testify as to proper composition or disbursement rate of herbicide;

[2] doctor was qualified to testify as to causation of Ecuadorian citizens' injuries; but

[3] doctor's testimony as to causation was unreliable.

Motion granted.

West Headnotes (21)

[1] **Evidence**  
🔑 Necessity of qualification

Under rule governing admissibility of expert testimony, the trial judge must determine as an initial matter whether the proffered witness is qualified to give the expert opinion he seeks to express; to do so, the court must assess whether the proffered expert has sufficient specialized knowledge to assist the jurors in deciding the particular issues in this case. [Fed.Rules](#)

[Evid.Rule 702, 28 U.S.C.A.](#)

[2] **Evidence**  
🔑 Knowledge, experience, and skill in general

Under the rule governing admissibility of expert testimony, a proffered witness who does not hold a specific academic degree may be qualified as an expert if he has some degree of specialized knowledge regarding the subject or a similar topic. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[3] **Evidence**  
🔑 Matters involving scientific or other special knowledge in general  
**Evidence**  
🔑 Necessity and sufficiency

The rule governing admissibility of expert testimony places an obligation on the court to ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[4] **Evidence**  
🔑 Necessity and sufficiency  
**Evidence**  
🔑 Speculation, guess, or conjecture

Under the *Daubert* test for determining admissibility of expert testimony, scientific testimony is reliable when it pertains to scientific knowledge; determining whether the testimony pertains to scientific knowledge forces the court to focus on principles and methodology, not on the conclusions that they generate, and thus demands a grounding in the methods and procedures of science, rather than

subjective belief or unsupported speculation. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[5] **Evidence**  
🔑Necessity and sufficiency

The *Daubert* test for determining admissibility of expert testimony requires that proposed testimony must be supported by appropriate validation—i.e., good grounds, based on what is known; in determining whether the grounds supporting the expert testimony are scientifically valid, courts may consider whether the theory or technique had been tested, whether it had been subjected to peer review and publication, the method's known or potential error rate, and the method's general acceptance in the scientific community. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[6] **Evidence**  
🔑Matters involving scientific or other special knowledge in general

In general, the rule governing admissibility of expert testimony has been interpreted to favor admissibility. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[7] **Evidence**  
🔑Cause and effect

Under the rule governing admissibility of expert testimony, doctor with graduate degrees in pharmacology and public health was not qualified to testify as to the proper concentration of glyphosate and surfactant, or the proper disbursement rate, of an herbicide used in an aerial campaign to fumigate coca plantations in Columbia that allegedly drifted onto farms in

Ecuador; doctor's education was not related to herbicides, weed biology, glyphosate, or a related field, and nothing demonstrated that doctor's clinical experiences were relevant to the study of the effects of the herbicide. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[8] **Evidence**  
🔑Due care and proper conduct in general

Under the rule governing admissibility of expert testimony, doctor's conclusions based on label of commercially available herbicide that herbicide disbursed in aerial campaign to eradicate coca plantations in Columbia, that allegedly drifted into Ecuador, contained excessive levels of glyphosate and surfactant, and was disbursed at too high a rate, were not based on specialized knowledge; jury was competent to decide whether levels of glyphosate and surfactant, as well as the disbursement rate, were too high. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[9] **Evidence**  
🔑Medical testimony

Under the rule governing admissibility of expert testimony, doctor's testimony based on label of commercially available herbicide that concentration of glyphosate and surfactant in herbicide was too high, and that its disbursement rate in aerial campaign was too high, was unreliable subjective belief; doctor admitted that the label was complex, that he may have missed a portion of the label indicating that higher disbursement rates were appropriate on plants such as coca, and could not state with confidence that health reasons were the motivation by the label's instruction not to add additional surfactant. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[10] **Evidence**  
🔑 Cause and effect

Under the rule governing admissibility of expert testimony, doctor with graduate degrees in pharmacology and public health who had extensive experience in environmental and occupational risk assessment and toxic exposure evaluations was qualified to testify as to causation of ailments of Ecuadorian citizens in their action against manufacturer of herbicide used in aerial disbursement campaign to eradicate coca plantations in Columbia for exposure to the herbicide after it allegedly drifted into Ecuador. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[11] **Negligence**  
🔑 Dangerous instrumentalities and substances

In a toxic tort case, general causation requires that the plaintiff show that the toxicant in question is capable of causing the injury complained of.

[12] **Negligence**  
🔑 Dangerous instrumentalities and substances

Specific causation in a toxic tort case requires that the plaintiff prove that the toxicant in fact did cause the injury in his case.

[13] **Negligence**  
🔑 Dangerous instrumentalities and substances  
**Negligence**  
🔑 Direct or circumstantial evidence

In compelling circumstances, a temporal relationship between exposure to a toxin and a plaintiff's injury alone is sufficient to establish general causation in a toxic tort case.

[14] **Negligence**  
🔑 Dangerous instrumentalities and substances  
**Negligence**  
🔑 In general; degrees of proof

In the absence of an established scientific connection between exposure and illness, or compelling circumstances, the temporal connection between exposure to chemicals and an onset of symptoms, standing alone, is entitled to little weight in determining causation in a toxic tort case. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[15] **Evidence**  
🔑 Medical testimony

Under the rule governing admissibility of expert testimony, an expert in a toxic tort case may rely on a temporal relationship between the exposure to a toxin and onset of symptoms to form a specific causation opinion. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[16] **Evidence**  
🔑 Medical testimony

One method used by expert witnesses to establish general and specific causation in a toxic tort case is to present scientifically-accepted information about the dose-response curve for the toxin which confirms that the toxin can cause the health effects experienced by the plaintiff at the dosage

the plaintiff was exposed to; if an expert uses this methodology, scientific knowledge of the harmful level of exposure to a chemical, plus knowledge that the plaintiff was exposed to such quantities, are minimal facts necessary to sustain the plaintiff's burden in a toxic tort case. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

28 U.S.C.A.

[17]

**Evidence**

🔑 Medical testimony

**Evidence**

🔑 Experiments and results thereof

Doctor's use of studies of high level exposure to herbicide in patients who had used it to attempt suicide was unreliable to show causation of acute injuries of Ecuadorian citizens who were allegedly exposed to herbicide after it drifted over from Columbia as a result of its use in an aerial fumigation campaign to eradicate coca plantations; doctor failed to establish threshold level that would lead to acute injuries, failed to demonstrate how he extrapolated the results from the high-level ingestion exposure downward to the exposure levels allegedly experienced by the Ecuadorian citizens, and made only generic references to other reports supporting causation. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[19]

**Evidence**

🔑 Medical testimony

**Evidence**

🔑 Experiments and results thereof

Doctor's use of some peer-reviewed studies to support his conclusion that manufacturer's herbicides had carcinogenic effects was unreliable to show general causation of chronic injuries of Ecuadorian citizens who were allegedly exposed to herbicide after it drifted over from Columbia as a result of its use in an aerial fumigation campaign to eradicate coca plantations; doctor failed to explain why he chose to credit a study that found an association between exposure and injury over one that did not, and failed to opine as to citizens' exposure level, even though the study that found an association also found a dose-response threshold. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[18]

**Evidence**

🔑 Medical testimony

**Evidence**

🔑 Experiments and results thereof

An expert's drawing inferences and extrapolating from studies of high-level exposure to a toxin is not a per se unreliable methodology of establish causation of acute injuries in a toxic tort case; however, it does require that the expert explain his methodology, such as how he extrapolated the risk downward from results obtained in studies involving high-level exposures. [Fed.Rules Evid.Rule 702,](#)

[20]

**Evidence**

🔑 Medical testimony

Doctor's failure to explain his methodology for specific causation rendered unreliable his testimony that exposure to aeri ally disbursed herbicide caused chronic injuries to Ecuadorian citizens. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

[21]

**Evidence**

🔑 Preliminary evidence as to competency

Under the rule governing admissibility of expert testimony, conclusory statements that an expert is qualified because of his education or experience is insufficient for a court to find that

the witness is indeed qualified to offer his expert opinion. [Fed.Rules Evid.Rule 702, 28 U.S.C.A.](#)

and his general and specific causation opinions regarding the plaintiffs' chronic injuries are inadmissible, the defendants are entitled to judgment as a matter of law.

#### Attorneys and Law Firms

\*13 [Natacha H. Thys](#), [Terry P. Collingsworth](#), Conrad & Scherer, LLP, Washington, DC, [William R. Scherer, III](#), Conrad & Scherer, LLP, Fort Lauderdale, FL, [Eric J. Hager](#), Conrad & Scherer, LLP, Irlanda, [Peter J. Cambs](#), Parker Waichman Alonso, LLP, Bonita Springs, FL, for Plaintiff.

[Eric Gordon Lasker](#), [Joe Gregory Hollingsworth](#), [Katharine R. Latimer](#), [Rosemary Stewart](#), Hollingsworth LLP, Washington, DC, for Defendant.

#### Opinion

#### MEMORANDUM OPINION

[RICHARD W. ROBERTS](#), District Judge.

Plaintiffs, approximately 2,000 Ecuadorian citizens and domiciliaries, bring common law negligence and other tort claims against the DynCorp defendants, alleging acute and chronic personal injuries caused by the defendants spraying herbicides over the plaintiffs' lands in Ecuador.<sup>1</sup> The defendants have filed a motion under [Federal Rule of Evidence 702](#) to exclude the testimony of the plaintiffs' proffered expert witness, Dr. Michael A. Wolfson. Because the plaintiffs failed to establish the reliability of Dr. Wolfson's expert opinions regarding the proper mixture and application rate of the Plan Colombia herbicide and plaintiffs' future need for medical monitoring, or his qualifications to render those opinions, or the reliability of his \*14 opinions regarding general causation of the plaintiffs' acute and chronic injuries and specific causation of the plaintiffs' chronic injuries, but the plaintiffs met their burden regarding Dr. Wolfson's opinion of the specific causation of the plaintiffs' acute injuries, the defendants' motion to exclude Dr. Wolfson's testimony will be granted in part and denied in part. The defendants also move for summary judgment arguing that without Dr. Wolfson's expert testimony, the plaintiffs cannot show that exposure to the Plan Colombia herbicide caused their injuries. Because Dr. Wolfson's general causation opinion regarding the plaintiffs' acute injuries

#### BACKGROUND

The Department of State ("DOS") hired the defendants to help eradicate Colombian cocaine and heroin poppy plantations. *Arias v. DynCorp*, 856 F.Supp.2d 46, 49 (D.D.C.2012). To carry out the mission, which was known as "Plan Colombia," the defendants' planes sprayed aerial fumigants over Colombian drug farms. The fumigant was a glyphosate-based herbicide. Am. Compl. ¶ 35. "Commercial versions of the herbicide have been sold under the trade name Roundup®." *Id.* However, the planes' fumigants allegedly also drifted onto the plaintiffs' lands in Ecuador, harming "humans, animals, and plants other than cocaine and opium poppies[.]" *Arias*, 856 F.Supp.2d at 49 (internal citation and quotation marks omitted). These fumigations are alleged to have severely damaged the plaintiffs and their property and, as a result, forced those residing in the affected areas to flee. *Id.* The test plaintiffs reported several acute injuries including "itchiness to the skin, nose, and eyes; skin irritation; burning sensation to the skin and eyes; rash; vomiting; respiratory problems; headaches; dizziness; stomach aches; diarrhea; and burning throat." Pls.' Opp'n to DynCorp's Mot. to Exclude the Opinions of Pls.' Expert Dr. Michael Wolfson & Associated Mot. for Summ. J. ("Pls.' Opp'n"), Ex. 1 (Michael A. Wolfson Expert Rpt. ("Wolfson Rpt.") at 3). The plaintiffs now bring common law tort claims and claims under the Alien Tort Claims Act against the defendants, all arising from injuries the fumigants allegedly caused.

The plaintiffs proffer as an expert Dr. Michael A. Wolfson to offer opinion testimony in several areas. First, he would state that the DynCorp defendants applied the Plan Colombia herbicide in a manner contrary to the directions on the Roundup label. Second, Dr. Wolfson would offer testimony linking general and specific causation of the plaintiffs' acute personal injuries to their alleged exposure to the Plan Colombia herbicide. *See* Pls.' Opp'n at 2. Third, Dr. Wolfson would opine that as a result of the plaintiffs' exposure to the Plan Colombia herbicide, the plaintiffs have an increased risk of developing several cancers, including non-Hodgkin's lymphoma, hairy cell leukemia, and multiple myeloma. Wolfson Rpt. at 3. Given the plaintiffs' risk of future adverse health effects, Dr. Wolfson would also testify that the plaintiffs should be provided with medical monitoring for early detection of cancer. *Id.* at 4.

Dr. Wolfson received his Masters of Science in Pharmacology from Northeastern University and holds a medical degree from State University of New York Upstate Medical Center and a Masters of Public Health from Harvard School of Public Health. Wolfson Rpt., Ex. A. at 1. Dr. Wolfson is “Fellowship-trained and Board Certified in Occupational Medicine (1995) with clinical training in occupational and environmental medicine,” and has “engaged \*15 in the practice of Occupational and Environmental Medicine for over twenty-two years [.]” Wolfson Rpt. at 1. His clinical practice has included “environmental and occupational risk assessment and toxic exposure evaluations, diagnoses, treatment, and referrals.” *Id.* at 2. Currently, Dr. Wolfson is the Medical Director of Syracuse Occupational and Environmental Medicine Consultants. *Id.* Although not a toxicologist or epidemiologist, DynCorp Defs.’ Mot. to Exclude the Test. of Pls.’ Sole Expert Witness, Dr. Michael Wolfson & Associated Mot. for Summ. J. (“Defs.’ Mot.”), Defs.’ App. (“Defs.’ App.”) (Michael A. Wolfson Dep. (“Wolfson Dep.”) at 9:5–6, 9:15–16), Dr. Wolfson has “rendered thousands of diagnoses and opinions on the causation of disease involving complex issues of toxic exposures[.]” Wolfson Rpt. at 2.

The DynCorp defendants move to exclude Dr. Wolfson’s expert testimony. The defendants argue that Dr. Wolfson is not qualified to offer his three opinions and that his opinions are unreliable. Defs.’ Mot. at 1–3. The defendants further move for summary judgment arguing that in a toxic tort case, expert testimony is necessary to prove causation. They argue that if Dr. Wolfson’s testimony is excluded, the defendants are entitled to judgment as a matter of law.

## DISCUSSION

### I. MOTION TO EXCLUDE DR. WOLFSON’S EXPERT TESTIMONY

Federal Rule of Evidence 702 provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

Fed.R.Evid. 702.

[1] [2] Under Rule 702, district courts are gatekeepers of expert evidence. See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). The trial judge must determine as an initial matter whether the proffered witness is qualified to give the expert opinion he seeks to express. See *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 156, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999); *Daubert*, 509 U.S. at 589, 113 S.Ct. 2786. To do so, the court must assess whether the proffered expert has “sufficient specialized knowledge to assist the jurors in deciding the particular issues in this case.” *Kumho*, 526 U.S. at 156, 119 S.Ct. 1167 (internal quotation marks omitted). Although “a person who holds a graduate degree typically qualifies as an expert in his or her field,” formal education in the subject or field is not a prerequisite to testify as an expert. *Khairkhwa v. Obama*, 793 F.Supp.2d 1, 11 (D.D.C.2011); see also Fed.R.Evid. 702 (stating that an expert may be qualified by “knowledge, skill, experience, training, or education” (emphasis added)). A proffered witness who does not hold a specific academic degree may be qualified as an expert if he has some degree of specialized knowledge regarding the subject or a similar topic. See *Dyson v. Winfield*, 113 F.Supp.2d 44, 50 (D.D.C.2000) (“[T]he key to qualifying him as an expert is his knowledge, not his academic degree.”); see also *Exum v. Gen. Elec. Co.*, 819 F.2d 1158, 1163–64 (D.C.Cir.1987). A witness may also be qualified as an expert based on his experience. “If the witness is \*16 relying solely or primarily on experience, then the witness must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts.” Fed.R.Evid. 702 advisory committee’s note; cf. *DL v. District of Columbia*, 730 F.Supp.2d 78, 81 (D.D.C.2010) (holding that a proffered witness was not qualified as an expert based on his experience where the proponent “cited sparse evidence of his experience” and the expert “[conclusorily] stated that he ha[d] 35 years [of] experience, without further explanation of what that experience entail [ed]”).

[3] Rule 702 also places an obligation on the court to “ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Daubert*, 509 U.S. at 589, 113 S.Ct. 2786. Evidence is relevant if it will “assist the trier of fact to understand the evidence or

determine a fact in issue.’ ” *Id.* at 591, 113 S.Ct. 2786 (quoting Fed.R.Evid. 702).<sup>2</sup>

[4] [5] Scientific testimony is reliable when it pertains to scientific knowledge. *Id.* at 589–90, 113 S.Ct. 2786. Determining whether the testimony pertains to scientific knowledge

forces the court to focus on “principles and methodology, not on the conclusions that they generate,” [*Daubert*, 509 U.S.] at 595, 113 S.Ct. 2786, and thus demands a grounding in the methods and procedures of science, rather than subjective belief or unsupported speculation. *Id.* at 590, 113 S.Ct. 2786; *Ambrosini v. Labarraque*, 101 F.3d 129, 133 (D.C.Cir.1996).

*Meister v. Med. Eng’g Corp.*, 267 F.3d 1123, 1127 (D.C.Cir.2001). Accordingly, scientific knowledge requires that the “inference or assertion must be derived by the scientific method.” *Daubert*, 509 U.S. at 590, 113 S.Ct. 2786. That is, the “[p]roposed testimony must be supported by appropriate validation—i.e., ‘good grounds,’ based on what is known.” *Id.* In determining whether the grounds supporting the expert testimony are scientifically valid, courts may consider “whether the theory or technique had been tested, whether it had been subjected to peer review and publication, the method’s known or potential error rate, and the method’s general acceptance in the scientific community.” *Meister*, 267 F.3d at 1127 (citing *Daubert*, 509 U.S. at 593–94, 113 S.Ct. 2786).

\*17 [6] “In general, Rule 702 has been interpreted to favor admissibility.” *Khairkhwa*, 793 F.Supp.2d at 10 (citing *Daubert*, 509 U.S. at 587, 113 S.Ct. 2786; Fed.R.Evid. 702 Advisory Committee’s note (“A review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule.”)). Nonetheless, the proponents of the evidence—here, the plaintiffs—bear the burden to prove that the expert testimony is reliable by a preponderance of the evidence. *Meister*, 267 F.3d at 1127 n. 9.

#### **A. Expert testimony on proper mixture and aerial application rate of Plan Colombia herbicide**

[7] The plaintiffs assert that Dr. Wolfson is qualified to offer an expert opinion that the Plan Colombia herbicide contained “excessive concentrations of glyphosate and surfactant[.]” Wolfson Rpt. at 3; Pls.’ Opp’n, Ex. 2 (Michael A. Wolfson Rebuttal Rpt. (“Wolfson Rebuttal Rpt.”) at 7), because he is a physician and a specialist in occupational and environmental medicine, Pls.’ Opp’n at 5. Although Dr. Wolfson has impressive credentials, the plaintiffs have not demonstrated how his academic and

professional experiences make him qualified to testify as to the proper concentration of glyphosate and surfactant in the Plan Colombia herbicide and application rate of the herbicide. Dr. Wolfson’s expert report states that he has graduate degrees in pharmacology and public health and a medical degree. Wolfson Rpt., Ex. A at 1. The plaintiffs in their opposition simply recite Dr. Wolfson’s degrees. Pls.’ Opp’n at 5. But nothing the plaintiffs provide reflects that Dr. Wolfson’s education was related to herbicides, weed biology or eradication, glyphosate, or a related field.

As to whether Dr. Wolfson’s experience makes him qualified, the plaintiffs have not demonstrated that Dr. Wolfson’s experience is a “sufficient basis” for his expert opinion.<sup>3</sup> In his expert report, Dr. Wolfson states that he is qualified to offer expert opinion testimony in this case because of his “extensive training and expertise in occupational and environmental medicine,” which includes residency training and clinical practice. Wolfson Rpt. at 2. However, the plaintiffs do not show why Dr. Wolfson’s residency training and clinical practice is a sufficient basis for his opinion, or whether Dr. Wolfson’s “preparation is of a kind that others in the field would recognize as acceptable[.]” *Kumho*, 526 U.S. at 151, 119 S.Ct. 1167, or how Dr. Wolfson’s experience supports his conclusion that the Plan Colombia herbicide contained excessive concentrations of glyphosate and surfactant. Thus, the plaintiffs have failed to carry their burden to establish that Dr. Wolfson is qualified to offer expert testimony on whether the Plan Colombia herbicide contained an excessive concentration of glyphosate and surfactant or was applied at an excessive rate.

[8] Moreover, the way that Dr. Wolfson concluded that the Plan Colombia herbicide contained excessive concentrations of glyphosate and surfactant and was applied at an excessive rate makes his expert opinion testimony improper and inadmissible. Dr. Wolfson’s opinion that the Plan Colombia herbicide contained excessive concentrations of glyphosate and surfactant is based on a comparison of the Plan Colombia herbicide composition and application rate with the manufacturer’s recommended concentrations and application directions \*18 on the Roundup Ultra label. The composition and application rate of the Plan Colombia herbicide is undisputed.<sup>4</sup> Thus, Dr. Wolfson used the simple methodology of comparing excerpts from the manufacturer’s label against the quantities and application rates of the Plan Colombia herbicide. However, offering this expert testimony is not proper because “ ‘the jury is just as competent to consider and weigh [this] evidence as is an expert witness and just as well qualified to draw the necessary conclusions therefrom[.]’ ” *Evans v. Wash.*

*Metro. Area Transit Auth.*, 674 F.Supp.2d 175, 179–80 (D.D.C.2009) (quoting *Henkel v. Varner*, 138 F.2d 934, 935 (D.C.Cir.1943)). Since his conclusion is not based upon specialized knowledge that would “help the trier of fact to understand the evidence or determine a fact in issue,” *Fed.R.Evid.* 702, Dr. Wolfson’s opinion would not be admissible.

<sup>[9]</sup> There are also at least two factors undermining the reliability of Dr. Wolfson’s proposed testimony. First, Dr. Wolfson admits that the Roundup Ultra label provided the sole basis for his opinion that the concentration of glyphosate and surfactant in the Plan Colombia herbicide and its application rate was excessive. Wolfson Dep. at 71:22–72:20, 78:23–79:8. However, Dr. Wolfson did not use all of the relevant information on the label in reaching his conclusion. Instead, he based his opinion on incomplete excerpts from the label. For example, Dr. Wolfson would testify that the application rate of the glyphosate based herbicide used in the Plan Colombia spraying was excessive based on the Roundup Ultra label which, according to Dr. Wolfson, states that Roundup Ultra use should not exceed 1 quart per acre although, in exceptional circumstances, 1.5 quarts may be used. Wolfson Rebuttal Rpt. at 7–8. Because the Plan Colombia spraying applied 4.45 quarts of Roundup Ultra per acre, Dr. Wolfson concludes that 3 to 4.5 times the recommended amount of glyphosate was applied through the Plan Colombia aerial spraying. *Id.* at 8. However, Dr. Wolfson bases his conclusion on an excerpt of the label and, without explanation, ignores the surrounding sections of the label. The full label states, in relevant part: “Unless otherwise specified, do not exceed 1 quart of [Roundup Ultra] per acre.... Refer to the individual use area sections of this label for recommended volumes, application rates and further instructions.” Pls.’ Opp’n to DynCorp’s Mot. for Summ. J. Based on Lack of Necessary Expert Test., Ex. 4 (Michael Wolfson Expert Rebuttal Rpt., Ex. A at 2). In his deposition, Dr. Wolfson implied that he referred to the individual use area sections of the label and “found what [he] believe[d] to be the maximum concentration recommended anywhere on the label[.]” Wolfson Dep. at 58:11–17. But he admitted that the label “is so complex and detailed” that he may have missed the appropriate section listing the maximum concentration of Roundup Ultra that may be used in the Plan Colombia context. *Id.* The defendants presented evidence that Dr. Wolfson indeed did miss the appropriate section. They offer expert testimony by Dr. Joseph M. DiTomaso that the appropriate individual \*19 use area section on the label for woody plants, such as coca, provides that Roundup Ultra should be applied at a rate of 2 to 5 quarts per acre. Defs.’ App. (Joseph M. DiTomaso Expert Rpt. (“DiTomaso Rpt.”)) at 203. Confronted with Dr.

DiTomaso’s expert opinion, Dr. Wolfson stated that he had “no basis ... on which ... to provide an opinion at all based on [the Roundup Ultra] label” about whether the correct application rate for Roundup when used for woody brush and trees is 2 to 5 quarts per acre. Wolfson Dep. at 65:3–8.

Second, Dr. Wolfson again relies on the Roundup Ultra label for his opinion that the Plan Colombia herbicide contains excessive amounts of surfactant. The Roundup Ultra label states that surfactant should not be added to a spray solution when Roundup Ultra herbicide is the only pesticide used. Wolfson Rpt. at 3. Dr. Wolfson reasoned that because “[t]he coca spray mixture apparently contains Roundup Ultra as the only pesticide/herbicide in the solution[.]” “the coca spray mixture used by Plan Colombia, fails to follow [the] manufacturer’s label directions for the use of [Roundup Ultra]” since it added the surfactant Cosmo-Flux 411F. *Id.* But Dr. Wolfson admitted that he had not explored the significance of the instruction and did not know whether the statement regarding adding surfactant was required by the Environmental Protection Agency for safe use or was optional. Wolfson Dep. at 50:7–10. Moreover, Dr. Wolfson could not say whether Dr. DiTomaso was correct that the instruction was included on the label for business reasons rather than reasons of safety. *Id.* at 50:11–18; *see also* DiTomaso Rpt. at 202 (stating that “manufacturers often include statements [such as those regarding adding surfactant to Roundup Ultra] in the product labeling ... to remind the user that Roundup formulations already include a surfactant and to suggest (subtly or not) that it is unnecessary to purchase additional surfactants and additives (from other chemical manufacturers) to effectively control weeds and other undesired plants”). Dr. Wolfson also conceded that he did not know whether, despite the label, surfactants are routinely added to Roundup Ultra. Wolfson Dep. at 49:20–23. Thus, Dr. Wolfson’s testimony is based not on scientific knowledge but on subjective belief and unsupported speculation that the directions he cited from the manufacturer’s label are requirements for safe use of Roundup Ultra and should have been followed by the defendants in the Plan Colombia operation. The plaintiffs, then, have not demonstrated that Dr. Wolfson’s testimony regarding the excessive concentration of surfactant in the Plan Colombia herbicide would be reliable.

## **B. Expert testimony on causation**

### **1. Expert qualifications**

The defendants assert that “ [s]imply having a medical degree or training is insufficient expertise to establish causation.” Defs.’ Mot. at 9 (quoting *Cunningham v. Masterwear, Inc.*, No. 1:04-cv-1616-JDT-WTL, 2007 WL 1164832, at \*10 (S.D.Ind. Apr. 19, 2007)). They continue that Dr. Wolfson is not qualified as an expert to testify as to specific or general causation because “he is not an expert in epidemiology or toxicology, the two fields of expertise relevant to the question whether the Plan Colombia herbicide could cause the test plaintiffs’ alleged acute injuries or alleged increased risk of cancer.” *Id.* at 9. The plaintiffs counter that being a toxicologist or epidemiologist is not required to be qualified to offer expert testimony on causation and Dr. Wolfson’s experience qualifies him as an expert. Pls.’ Opp’n at 6.

Although the D.C. Circuit has not spoken on the qualifications necessary to offer \*20 expert testimony in a toxic tort case, cases in other districts provide guidance. In *Cunningham v. Masterwear, Inc.*, the defendant moved to strike expert witnesses’ testimony and reports regarding causation in a toxic tort case. The plaintiffs claimed that perchloroethylene (“PCE”) exposure over the course of more than fifteen years caused them to develop “chronic respiratory ailments and headaches.” 2007 WL 1164832, at \*1. The plaintiffs’ experts sought to testify that the PCE had caused the plaintiffs’ injuries. *See id.* at \*9. The court explained that one of the putative experts had experience only diagnosing and treating the underlying ailments. *Id.* at \*10. As such, the court concluded that the witnesses were not qualified to “assess [the] genesis” of the plaintiffs’ ailments. *Id.* (internal quotation marks omitted). The court did, however, leave open the possibility that a different physician with more experience may be able to testify as to causation. *Id.* at \*11 (“[I]n this entry the court is not assuming that no physician can ever testify as to general causation; rather, it is assuming only that not every doctor by virtue of having a medical degree may testify as to general causation in every case.”).

In *Morin v. United States*, 534 F.Supp.2d 1179 (D.Nev.2005), the plaintiff alleged that regular exposure to jet fuel from a military air station caused her to develop a malignant brain tumor. *Id.* at 1181. The plaintiff’s only proffered expert to testify as to causation was a practicing physician who regularly diagnosed and treated patients with cancer. *Id.* at 1185. As in *Cunningham*, the court in *Morin* distinguished between the expert’s experience diagnosing and treating the underlying ailment and his experience determining the cause of the ailment, and held that the licensed oncologist was not qualified to testify as to the causal link between jet fuel and brain tumors because he had “no expertise in toxicology,

epidemiology, risk-assessment, or environmental medicine.” *Id.* The guidance that emerges from these cases is that an expert is qualified to testify as to causation in a toxic tort case when he has expertise to “assess [a disease’s] genesis to a reasonable degree of scientific certainty.” *Sutera v. Perrier Grp. of Am. Inc.*, 986 F.Supp. 655, 667 (D.Mass.1997).

This guidance mirrors approaches used in this district. For example, the court in *Dyson* considered whether a witness who was not a physician could offer expert testimony that a drug given to a pregnant patient had caused birth defects. 113 F.Supp.2d at 50. As happened in *Cunningham* and *Morin*, the court looked past the witness’s professional title and formal education and considered whether the proffered expert had experience identifying the effect of chemical exposure during pregnancy. *Id.*

<sup>[10]</sup> In his expert report, Dr. Wolfson describes his lengthy career in occupational and environmental medicine. Dr. Wolfson also states that he has “rendered thousands of diagnoses and opinions on the causation of disease involving complex issues of toxic exposures” and, through his clinical practice, conducted “environmental and occupational risk assessment and toxic exposure evaluations[.]” Wolfson Rpt. at 1–2. Dr. Wolfson’s resume supports his statements. Thus, although Dr. Wolfson does not have any formal education in epidemiology or toxicology, his expert report supports a finding that he has vast experience in environmental medicine, conducting risk assessments, and assessing the genesis of diseases caused by toxins. As such, the plaintiffs have made an ample showing of Dr. Wolfson’s qualifications as an expert to offer causation testimony.

## 2. Reliability

<sup>[11]</sup> <sup>[12]</sup> In a toxic tort case, general causation requires that the plaintiff “show \*21 that the toxicant in question is capable of causing the injury complained of[.]” *Young v. Burton*, 567 F.Supp.2d 121, 138 (D.D.C.2008) (internal quotation marks omitted). Specific causation requires that the plaintiff “prove that the toxicant in fact did cause that injury in the present case[.]” *Id.* Dr. Wolfson proposes to testify that the Plan Colombia herbicide can and did cause the plaintiffs’ acute injuries. He would also testify that exposure to glyphosate and glyphosate-based herbicides as a result of aerial spraying can cause certain chronic injuries, and very likely placed the plaintiffs at significant risk for the development of cancers in the future. Wolfson Rpt. at 3.

[13] [14] In toxic tort cases, there are two common methods experts apply to draw causation conclusions. First, an expert may rely on “a temporal relationship between exposure to the toxin and subsequent adverse health effects” to establish both general and specific causation. See *Young*, 567 F.Supp.2d at 128. In compelling circumstances, a temporal relationship between exposure to a toxin and a plaintiff’s injury alone is sufficient to establish general causation. See *Cavallo v. Star Enterprise*, 892 F.Supp. 756, 773–74 (E.D.Va.1995), *aff’d in relevant part, rev’d in part*, 100 F.3d 1150 (4th Cir.1996). For example, a temporal relationship may be “so compelling as to dispense with the need for reliance on standard methods of toxicology” where a person is exposed to a large amount of chemical X and “immediately thereafter developed symptom Y[.]” *Id.* Also, if a chemical is introduced into an environment and all of the people “exposed immediately develop the same adverse reaction, then the episode itself may be sufficiently indicative of causation.” *Id.* However, “[i]n the absence of an established scientific connection between exposure and illness, or compelling circumstances ..., the temporal connection between exposure to chemicals and an onset of symptoms, standing alone, is entitled to little weight in determining causation.” *Moore v. Ashland Chem. Inc.*, 151 F.3d 269, 278 (5th Cir.1998); see also *Young*, 567 F.Supp.2d at 128. This is because “[d]rawing such a conclusion from temporal relationships leads to the blunder of the post *hoc ergo propter hoc* fallacy.”<sup>5</sup> *McClain v. Metabolife Int’l, Inc.*, 401 F.3d 1233, 1243 (11th Cir.2005) (citing *Ohio v. U.S. Dep’t of the Interior*, 880 F.2d 432, 473 (D.C.Cir.1989)).

[15] An expert may also rely on a temporal relationship between the exposure to a toxin and onset of symptoms to form a specific causation opinion. For example, in *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 265 (4th Cir.1999), the court of appeals allowed expert testimony that relied in part on the temporal proximity between exposure to the toxin in the plaintiff’s workplace and the plaintiff’s injury. In *Westberry*, there was no dispute that inhalation of high levels of the toxin at issue could cause sinus conditions similar to those suffered by the plaintiff and there was evidence that the plaintiff had been substantially exposed to the toxin. *Id.* The plaintiff’s proffered expert was the plaintiff’s treating physician, the plaintiff’s injury began shortly after exposure to the toxin, and the expert had “experimented with keeping [the plaintiff] out of work and noticed that his sinus condition improved when he was not working but worsened when he returned.” *Id.* at 265; cf. *Roche \*22 v. Lincoln Prop. Co.*, 278 F.Supp.2d 744, 765 (E.D.Va.2003) (finding that

expert testimony was inadmissible because, unlike in *Westberry*, the doctor treated the plaintiff nine months after alleged exposure to mold, the doctor had not treated the plaintiff prior to exposure, and the doctor did not conduct experiments where the plaintiff’s injury was observed when the plaintiff was in the allegedly toxic environment and when the plaintiff was removed from that environment). In that context, the court held that the expert’s opinions satisfied *Daubert* even though the expert did not rely on “precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff’s exposure[.]” *Westberry*, 178 F.3d at 264–65.

[16] The second common expert method used to establish general and specific causation is to “present scientifically-accepted information about the dose-response curve for the toxin which confirms that the toxin can cause the health effects experienced by the plaintiff at the dosage [the] plaintiff was exposed to.” *Young*, 567 F.Supp.2d at 128. If an expert uses this methodology, “‘scientific knowledge of the harmful level of exposure to a chemical, plus knowledge that the plaintiff was exposed to such quantities, are minimal facts necessary to sustain the plaintiff’s burden in a toxic tort case.’” *Id.* (quoting *Mitchell v. Gencorp Inc.*, 165 F.3d 778, 781 (10th Cir.1999) (citing *Wright v. Willamette Indus., Inc.*, 91 F.3d 1105, 1106 (8th Cir.1996))). This is the “most widely-used method” to demonstrate causation in toxic tort cases. *Id.* As such, “[t]he expert who avoids or neglects this principle of toxic torts without justification casts suspicion on the reliability of his methodology.” *McClain*, 401 F.3d at 1241–42.

Dr. Wolfson admitted that he could not opine as to “the dose and duration of exposure to Plan Colombia herbicide spray that will be required to cause any one of the medical conditions for which the plaintiffs complain[.]” Wolfson Dep. at 210:20–25.<sup>6</sup> Instead, Dr. Wolfson purports to rely on several studies to support his general causation opinions that the Plan Colombia herbicide can cause the plaintiffs’ acute and chronic injuries. See Wolfson Rpt. at 2, 5–6; Wolfson Rebuttal Rpt. at 14–18. Dr. Wolfson bases his specific causation opinion that the Plan Colombia herbicide did cause the plaintiffs’ injuries on the plaintiffs’ medical histories, the plaintiffs’ depositions and questionnaires, a report by Dr. Adolfo Maldonado, and the temporal relationship between the plaintiffs’ injuries and their exposure to the herbicide.

#### a. Acute injuries

[17] [18] The defendants argue that Dr. Wolfson's general causation opinion is unreliable because it is based on "studies of patients who try to commit suicide" by directly ingesting large amounts of the concentrated Roundup product." Defs.' Mot. at 19 (quoting Wolfson Dep. at 124:20–25). The plaintiffs counter that it was reliable for Dr. Wolfson to base his opinion on high-level exposure studies. Pls.' Opp'n at 15–16. Drawing inferences and extrapolating from studies of high-level exposure to a toxin is not a per se unreliable methodology. See, e.g., *City of Greenville v. W.R. Grace & Co.*, 827 F.2d 975, 980 & n. 2 (4th Cir.1987). However, it does require that the expert explain his methodology, such as how he "extrapolate[d] \*23 the risk downward from results obtained in studies involving high-level exposures." See *id.* at 980 n. 2. Here, Dr. Wolfson does not opine that there is no "threshold" level<sup>7</sup> for glyphosate or other toxins in the Plan Colombia herbicide to cause acute injuries. If there is a dose-response relationship between health effects and glyphosate exposure, then Dr. Wolfson must have made some inferences in drawing conclusions regarding the plaintiffs' alleged injuries from exposure to the Plan Colombia herbicide through drift from the high-level exposure studies. However, the plaintiffs fail to offer any evidence explaining or showing "a scientifically valid link between the sources or studies consulted and the conclusion reached." *Cavallo*, 892 F.Supp. at 762. Thus, the plaintiffs did not meet their burden to show that Dr. Wolfson's general causation opinion, based on high-level exposure studies, is supported by a reliable methodology.

In his deposition, Dr. Wolfson testified that the suicide studies were only "part of the basis for [his] opinion" and that he "integrated the information about the signs and symptoms of disease from those studies in a whole body of evidence that's available about the effects" of glyphosate-based herbicides. Wolfson Dep. at 124:11–25. In their opposition, the plaintiffs also stated that Dr. Wolfson did not rely "exclusively" on studies of suicide attempts and data sheets regarding exposure by ingestion to form the basis of his general causation opinion. Pls.' Opp'n at 15–16. Despite their representation that Dr. Wolfson relied on other studies, the only alternative methodology offered by the plaintiffs is that Dr. Wolfson "evaluated relevant peer-reviewed scientific and medical literature including, but not limited to, material regarding toxicological, environmental, and human health effects of herbicides, Glyphosate (G), Roundup and surfactants." *Id.* at 7–8; see also Wolfson Rpt. at 2.

Rather than identifying the specific scientific reports that Dr. Wolfson relied on to reach his general causation opinion, the plaintiffs make only generic references to

reports that support Dr. Wolfson's general causation opinion. Similarly, Dr. Wolfson's expert report and expert rebuttal report do not specifically identify the reports that support Dr. Wolfson's general causation opinions and do not discuss the conclusions the reports and texts reached. Such a generalized and non-specific description falls short of the plaintiffs' burden to explain with specificity the expert witness's methodology, show that the expert's testimony is based on a reliable methodology, and establish that the expert reliably applied the methodology to the facts of the case. See *Fed.R.Evid.* 702. Moreover, Dr. Wolfson did not base his opinion on any peer-reviewed study that states that exposure to a glyphosate-based herbicide through drift can cause any of the medical conditions complained of by the test plaintiffs in this case. Wolfson Dep. at 141:21 to 142:2. Furthermore, some of the studies Dr. Wolfson cites in his expert \*24 report, appear to be advocacy pieces published in non-peer-reviewed journals. See, e.g., Caroline Cox, *Glyphosate, Part 1: Toxicology*, 15 J. Pesticide Reform 14 (1995); Caroline Cox, *Glyphosate, Part 2: Human Exposure and Ecological Effects*, 15 J. Pesticide Reform 14 (1995). Accordingly, the plaintiffs have not met their burden to show, by a preponderance of the evidence, that Dr. Wolfson's expert general causation opinion regarding the plaintiffs' acute injuries is reliable.<sup>8</sup>

## **b. Chronic injuries**

### **i. General causation**

[19] Dr. Wolfson states in his expert report that "[t]he exposure of the plaintiffs to [the Plan Colombia] herbicide[ ], as a result of aerial spraying, very likely places them at a significant increased risk for the development of cancers in the future." Wolfson Rpt. at 3. Although the plaintiffs' "description" of Dr. Wolfson's methodology suffers from many of the same shortcomings as his general causation opinion for the plaintiffs' acute injuries, Dr. Wolfson does specifically identify a few peer-reviewed studies to support his conclusion that glyphosate-based herbicides have carcinogenic effects. See Wolfson Rebuttal Rpt. at 3 & nn. 3–4; Wolfson Dep. at 400:15–21.

However, a brief review of the cited studies demonstrates that the plaintiffs have not shown that Dr. Wolfson's testimony is reliable. For example, the plaintiffs fail to reveal how, based on the studies alone, Dr. Wolfson reached the conclusion that exposure to the Plan

Colombia herbicide increased the plaintiffs' risks for developing non-Hodgkins lymphoma. Dr. Wolfson cites several studies including studies by Eriksson, et al., Hardell and Eriksson, and De Roos, et al. Eriksson and his colleagues conducted a population-based control study and concluded that "Glyphosate was associated with a statistically significant increased [odds ratio] for lymphoma [.]" Mikael Eriksson et al., *Pesticide exposure as risk factor for non-Hodgkin lymphoma including histopathological subgroup analysis*, 123 Int'l J. Cancer 1657, 1662 (2008). The Hardell \*25 and Eriksson study concluded that their study population who had been exposed to glyphosate was too low to draw any definite conclusions. Lennart Hardell & Mikael Eriksson, *A Case-Control Study of Non-Hodgkin Lymphoma & Exposure to Pesticides*, 85 Cancer 1353, 1358 (1999). The De Roos study found an association between multiple myeloma incidence and glyphosate, but concluded that "the available data provided evidence of no association between glyphosate exposure and NHL incidence." Anneclaire J. De Roos et al., *Cancer Incidence among Glyphosate-Exposed Pesticide Applicators in the Agricultural Health Study*, 113 Env'tl. Health Persp. 49, 53 (2005) (emphasis added). Dr. Wolfson does not explain why he decided to credit Eriksson's results and dismiss De Roos's results regarding non-Hodgkin lymphoma. Also, the Eriksson study found that there is a dose-response effect between glyphosate and lymphoma but Dr. Wolfson does not opine as to the plaintiffs' exposure. Thus, the plaintiffs have not demonstrated that the results of the Eriksson study apply to the facts of this case. Because the plaintiffs have not shown that Dr. Wolfson's general causation opinion for the plaintiffs' chronic injuries is reliable, his testimony would be inadmissible.<sup>9</sup>

#### ii. Specific causation

<sup>[20]</sup> The plaintiffs do not explain Dr. Wolfson's methodology for his specific causation opinion regarding the plaintiffs' chronic injuries and his methodology cannot be gleaned from his expert report or rebuttal report. Because the plaintiffs have not met their burden to show that Dr. Wolfson's testimony on specific causation regarding the plaintiffs' chronic injuries is reliable, this testimony will be excluded.

#### C. Expert testimony on medical monitoring

<sup>[21]</sup> Dr. Wolfson opines that a medical "monitoring regime is necessary and indicated for an exposed ... group [ ] of

individuals such as [the] plaintiffs, within a reasonable degree of medical certainty" because the plaintiffs are at an increased risk for significant adverse health effects in the future. Wolfson Rpt. at 4. The plaintiffs suggest that Dr. Wolfson's education and experiences qualify him as an expert. Pls.' Opp'n at 5-6. However, the plaintiffs offer no further explanation as to how Dr. Wolfson's education qualifies him to offer such testimony or how his experience caused him to reach his conclusion. Conclusory statements that an expert is qualified because of his education or experience is insufficient for a court to find that the witness is indeed qualified to offer his expert opinion. See *DL*, 730 F.Supp.2d at 81. Similarly, neither the plaintiffs nor Dr. Wolfson offer any explanation or evidence regarding the reliability of Dr. Wolfson's methodology. Because the plaintiffs have not met their burden to show that Dr. Wolfson is qualified and that his testimony is reliable, Dr. Wolfson's medical monitoring testimony is inadmissible.

#### II. MOTION FOR SUMMARY JUDGMENT

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(a). The Memorandum Opinion entered on February 7, 2013 determined that the plaintiffs must offer expert testimony to prove general causation for the plaintiffs' acute and chronic injuries, and specific causation for \*26 the plaintiffs' chronic injuries. Mem. Op. entered Feb. 7, 2013 at 10, 17. Since Dr. Wolfson is the plaintiffs' sole expert, and his general causation testimony regarding the plaintiffs' acute and chronic injuries and his specific causation testimony regarding the plaintiffs' chronic injuries is inadmissible, the plaintiffs offer nothing else to establish that the defendants' aerial spraying caused their injuries. Thus, the defendants' motion for summary judgment will be granted.

#### CONCLUSION

The plaintiffs failed to show by a preponderance of the evidence that Dr. Wolfson's expert opinion testimony on the proper mixture and application rate of the Plan Colombia herbicide, general causation regarding the plaintiffs' acute and chronic injuries, specific causation regarding the plaintiffs' chronic injuries, and need for medical monitoring is admissible. However, Dr. Wolfson's specific causation opinion regarding the plaintiffs' acute injuries is not excludable. Thus, the defendants' motion to exclude Dr. Wolfson's expert

testimony will be granted in part and denied in part. Without the plaintiffs' sole expert witness's general causation opinions regarding the plaintiffs' acute and chronic injuries and his specific causation opinion regarding the plaintiffs' chronic injuries, the plaintiffs cannot establish causation as a matter of law, and

summary judgment will be entered for the defendants. A final Order accompanies this Memorandum Opinion.

Footnotes

- 1 The plaintiffs also claim that the fumigant caused property damage, but the plaintiffs' claims regarding injury to their farms, livestock, and fish were dismissed in an earlier order. *See* Mem. Op. entered Feb. 7, 2013 at 11.
- 2 Dr. Wolfson's testimony is relevant to at least the plaintiffs' negligence and medical monitoring claims. A plaintiff bringing a negligence action under District of Columbia law must show: "(1) that the defendant owed a duty to the plaintiff, (2) breach of that duty, and (3) injury to the plaintiff that was proximately caused by the breach." *Hedgepeth v. Whitman Walker Clinic*, 22 A.3d 789, 793 (D.C.2011). To be successful, a plaintiff asserting a cause of action for medical monitoring must prove the essential elements of a claim for medical monitoring.  
The elements of a claim for medical monitoring are (1) plaintiff was significantly exposed to a proven hazardous substance through the negligent acts of the defendant; (2) as a proximate result of that exposure, plaintiff suffers a significantly increased risk of contracting a serious latent disease; (3) that increased risk makes periodic medical examinations reasonably necessary; and (4) monitoring and testing procedures exist which make the early detection and treatment of the disease possible and beneficial.  
*Reed v. Philip Morris Inc.*, No. 96-5070, 1997 WL 538921, at \*16 n. 10 (D.C.Super. Aug. 18, 1997) (internal quotation marks omitted). Dr. Wolfson's testimony that the defendants did not follow the directions on the Roundup label and his causation opinions are relevant to the plaintiffs' negligence claims—the breach of duty and causation elements, respectively. Dr. Wolfson's causation testimony is also relevant to the plaintiffs' medical monitoring claims as is his medical monitoring opinion.
- 3 If the plaintiffs rely upon Dr. Wolfson's experiences to qualify him to testify on the proper mixture of the Plan Colombia herbicide, Dr. Wolfson's deposition raises serious doubts as to the scope of Dr. Wolfson's knowledge gained from his experiences. *See, e.g.*, Wolfson Dep. at 49:20-23 (testifying that he does not "have any knowledge one way or the other whether surfactants are routinely added to Roundup ULTRA").
- 4 The Plan Colombia herbicide was composed of 44% Roundup Ultra ("commercial glyphosate formulation"), 1% Cosmo-Flux 411F (a surfactant), and 55% water. The Roundup Ultra was composed of 41% glyphosate, 15% surfactant (polyoxyethylene alkylamine ("POEA")), and 44% water. *See Chemicals Used for the Aerial Eradication of Illicit Coca in Colombia and Conditions of Application*, U.S. Dep't of State (2002), <http://www.state.gov/j/inl/rls/rpt/aeicc/13234.htm> ("DOS Spray Report"); Letter from Stephen L. Johnson, Assistant Adm'r, EPA, to Colin L. Powell, Secretary, U.S. Dep't of State (Aug. 19, 2002), available at <http://www.state.gov/j/inl/rls/rpt/aeicc/13237.htm>. The Plan Colombia herbicide was applied "to coca at the rate of 2.53 gallons per acre." DOS Spray Report.
- 5 "The *post hoc ergo propter hoc* fallacy assumes causality from temporal sequence. It literally means 'after this, because of this.' *Black's Law Dictionary* 1186 (7th ed. 1999). It is called a fallacy because it makes an assumption based on the false inference that a temporal relationship proves a causal relationship." *McClain v. Metabolife Int'l, Inc.*, 401 F.3d 1233, 1243 (11th Cir.2005).
- 6 In his deposition, Dr. Wolfson stated that he thought that "evidence regarding dose and route of exposure" was unnecessary "to reach an opinion that exposure to Plan Colombia herbicide can cause a medical impairment to a human being[.]" Pls.' Opp'n to DynCorp's Mot. for Summ. J. Based on Lack of Necessary Expert Test., Ex. 1 (Michael A. Wolfson Dep. at 154:18-155:4).
- 7 "For agents that produce effects other than through mutations, it is assumed that there is some level that is incapable of causing harm. If the level of exposure was below this no observable effect, or threshold, level, a relationship between the exposure and disease cannot be established." Fed. Judicial Ctr., *Reference Manual on Scientific Evidence* 669 (3d ed. 2011). For some agents, such as mold, there is no "threshold" level, meaning that "certain susceptible people can suffer injuries from being exposed to mold at very low levels." *Ferguson v. Riverside Sch. Dist. No. 416*, No. CS-00-0097-FVS, 2002 WL 34355958, at \*6 (E.D.Wash. Feb. 6, 2002). If the toxin does not have a "threshold level," "the 'dose-response' concept does not play an important part in his determining causation." *Id.*; *see also Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 265 (6th Cir.2001).
- 8 "In the absence of sufficient proof of general causation, it goes without saying that plaintiffs cannot establish specific causation." *Young*, 567 F.Supp.2d at 139. However, if they could, Dr. Wolfson's specific causation testimony would not be excludable on the ground that it would be based upon information given to him and not personal examinations of the plaintiffs. *See Fed.R.Evid. 703* ("An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed.")

(emphasis added)); *id.*, Advisory Committee’s note (stating that an expert may rely “on information from numerous sources and of considerable variety, including statements by patients and relatives, reports and opinions from nurses, technicians and other doctors”); *Peteet v. Dow Chem. Co.*, 868 F.2d 1428, 1432 (5th Cir.1989) (“A personal examination of the person or object of the expert’s testimony is not required under [Rule] 703.”). The plaintiffs contend that Dr. Wolfson reliably based his specific causation opinion on the plaintiffs’ testimony regarding the acute symptoms they developed immediately or soon after the spraying, the plaintiffs’ questionnaires reporting exposure to the Plan Colombia herbicide and other injuries, and Dr. Maldonado’s report, which reflected that individuals living near the areas that were fumigated suffered acute injuries similar to those reported by the test plaintiffs. Pls.’ Opp’n at 8–12. Given the immediacy of the plaintiffs’ injuries and the consistent reports from others in the region as reported by Dr. Maldonado, Dr. Wolfson concluded that exposure to the Plan Colombia herbicide likely caused the test plaintiffs’ injuries. Pls.’ Opp’n at 11; *see also* Wolfson Rebuttal Rpt. at 4–5. Thus, Dr. Wolfson’s specific causation opinion follows from the temporal relationship between the plaintiffs’ exposure to the Plan Colombia herbicide as reported by the plaintiffs in their depositions and questionnaires and corroborated by Dr. Maldonado’s report and medical histories.

<sup>9</sup> Moreover, in his deposition, Dr. Wolfson conceded that he had not seen any epidemiological studies that found an increased risk of cancer caused by exposure to glyphosate by spray drift. Wolfson Dep. 400:9–14.