
TORT LAW — EXPERT TESTIMONY IN ASBESTOS LITIGATION —
DISTRICT OF SOUTH CAROLINA HOLDS THE EVERY EXPOSURE
THEORY INSUFFICIENT TO DEMONSTRATE SPECIFIC CAUSATION
EVEN IF LEGAL CONCLUSIONS ARE SCIENTIFICALLY SOUND. —
Haskins v. 3M Co., Nos. 2:15-cv-02086, 3:15-cv-02123, 2017 WL
3118017 (D.S.C. July 21, 2017).

Every year, over 2000 Americans are killed by mesothelioma¹ — “a signature disease of asbestos.”² Although exposure to asbestos may cause most malignant mesothelioma deaths,³ plaintiffs in asbestos litigation routinely fail to demonstrate specific causation.⁴ That is, they fail to show that it is more probable than not that the plaintiff would not have suffered from the disease *but for* his or her exposure to the defendant’s asbestos. Under traditional tort theory, plaintiffs who suffer from cumulative dose diseases like mesothelioma must show that the defendant’s marginal dose increased the cumulative exposure to a *threshold level* beyond the body’s defenses.⁵ Plaintiffs’ proof of causation is complicated by the long latency period of mesothelioma, the difficulty in determining the particular source of the asbestos that caused the disease, and the different levels of exposure per product.⁶ Courts and plaintiffs in asbestos litigation have repeatedly departed or attempted to depart from traditional tort standards to overcome these evidentiary hurdles.⁷ One of these modifications is the substantial factor test.⁸ Instead of requiring the plaintiff to show that absent the defendant’s exposure the plaintiff would not have developed mesothelioma, some courts instead require that the plaintiff show that such exposure

¹ Jacek M. Mazurek et al., *Malignant Mesothelioma Mortality — United States, 1999–2015*, 66 MORBIDITY & MORTALITY WKLY. REP. 214, 214 (2017), <https://www.cdc.gov/mmwr/volumes/66/wr/pdfs/mm6608a3.pdf> [<https://perma.cc/4T4N-K8KL>].

² Troyen A. Brennan, *Environmental Torts*, 46 VAND. L. REV. 1, 15 (1993).

³ Mazurek et al., *supra* note 1, at 217.

⁴ See 3 DAVID L. FAIGMAN ET AL., MODERN SCIENTIFIC EVIDENCE § 21:2, at 8 (2007). Causation in asbestos litigation is composed of (1) general causation, which asks if exposure to asbestos can cause mesothelioma at the population level, and (2) specific causation, which asks if the plaintiff’s exposure to the defendant’s asbestos-containing product caused the plaintiff’s injury. *Id.* § 26:2, at 464. General causation is generally not an issue in asbestos litigation. *Id.* § 26:3, at 464 (“[I]t is accepted by both parties that exposure to asbestos causes [mesothelioma].”).

⁵ See William L. Anderson et al., *The “Any Exposure” Theory Round II — Court Review of Minimal Exposure Expert Testimony in Asbestos and Toxic Tort Litigation Since 2008*, 22 KAN. J.L. & PUB. POL’Y 1, 5–10 (2012).

⁶ *Borg-Warner Corp. v. Flores*, 232 S.W.3d 765, 772–73 (Tex. 2007).

⁷ See Mark A. Behrens & William L. Anderson, *The “Any Exposure” Theory: An Unsound Basis for Asbestos Causation and Expert Testimony*, 37 SW. U. L. REV. 479, 480 (2008); Joseph Sanders, *The “Every Exposure” Cases and the Beginning of the Asbestos Endgame*, 88 TUL. L. REV. 1153, 1163–66 (2014); see also 3 FAIGMAN, *supra* note 4, §§ 26:5–6, at 471–82.

⁸ 3 FAIGMAN, *supra* note 4, § 26:5, at 472.

was a significant factor in the development of the disease.⁹ Plaintiffs have similarly evaded the traditional requirements with the every exposure theory, which argues that, because there is no safe level of exposure to asbestos, every exposure substantially contributes to the development of mesothelioma.¹⁰

Recently, in *Haskins v. 3M Co.*,¹¹ the District Court for the District of South Carolina excluded expert testimony in an asbestos suit because, even if the expert's conclusions that the plaintiffs had been sufficiently exposed to asbestos to cause the disease were scientifically valid, the evidence was insufficient to demonstrate specific causation.¹² The court applied the substantial factor test in name only and effectively employed a traditional but-for causation test instead. Although Judge Norton made suggestions for what would be considered sufficient evidence, he ultimately demanded evidence that may not be scientifically feasible to obtain. While Judge Norton did recognize the tension between science and the law, he should have also resolved this tension by grounding his interpretation of the legal standard in the science that the law purports to reflect.¹³

John E. Haskins and James W. Chesher both served in the U.S. Navy for many years — Haskins as a fireman between 1953 and 1956, and Chesher as a machinist mate and commissioned officer between 1968 and 1989.¹⁴ Both were diagnosed with mesothelioma.¹⁵ In April of 2015, each independently filed suit in the Court of Common Pleas in Charleston County against “suppliers of the asbestos-containing products” used on their Naval ships, including Crane Co. and Air and Liquid Systems.¹⁶ Both alleged that their cumulative exposure to the asbestos that emanated from the defendants' products was responsible for their mesothelioma.¹⁷ Both actions were then removed to the District Court for the District of South Carolina.¹⁸

Both Haskins and Chesher presented the opinions of Dr. Carlos Bedrossian.¹⁹ Bedrossian's opinions established that malignant mesothelioma is a result of repeated exposure to asbestos, that every exposure

⁹ *Id.*

¹⁰ See Behrens & Anderson, *supra* note 7, at 480. The every exposure theory is also known as the any exposure theory. See *id.* (“[T]he any exposure theory contends that . . . each and every exposure to asbestos . . . substantially contributes to the ultimate disease . . .”).

¹¹ Nos. 2:15-cv-02086, 3:15-cv-02123, 2017 WL 3118017 (D.S.C. July 21, 2017).

¹² *Id.* at *8.

¹³ Cf. *Rosen v. Ciba-Geigy Corp.*, 78 F.3d 316, 319 (7th Cir. 1996) (“Law lags science; it does not lead it.”).

¹⁴ *Haskins*, 2017 WL 3118017, at *1.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.* at *2.

¹⁸ *Id.* at *1.

¹⁹ *Id.* at *2.

increases the risk of developing mesothelioma, and that the total cumulative dose of asbestos is the “best indicator of risk.”²⁰ Bedrossian came to similar conclusions on specific causation in both cases: in Haskins’s he concluded that the total exposure “from any and all products” significantly contributed to the plaintiff’s disease and death,²¹ and in Chesher’s he concluded that every asbestos-containing product was a contributing factor to the development of the disease because it increased the plaintiff’s cumulative dose of asbestos.²² Defendants in both cases filed motions to exclude Bedrossian’s opinions.²³

The defendants raised two arguments. First, they argued that Bedrossian failed to address the plaintiffs’ exposure to any specific products of the defendants and should therefore be precluded from opining on how such exposure caused the plaintiffs’ mesothelioma under Rule 26(a)(2) of the Federal Rules of Civil Procedure, which requires parties to disclose “a complete statement of all opinions the witness will express . . . and reasons for them.”²⁴ Under Rule 37(c)(1), failure to disclose such information bars the party from using that information at trial “unless the failure was substantially justified or is harmless.”²⁵ Judge Norton determined that the plaintiffs’ failure to disclose was harmless because Bedrossian’s theory of causation did not require him to discuss the defendants’ specific products and because the defendants knew how the “plaintiffs intend[ed] to present [the opinions] at trial.”²⁶

Second, defendants asserted that Bedrossian’s reliance on the every exposure theory was “unfairly prejudicial, confusing, and misleading under [Federal Rule of Evidence] 403, and unhelpful and unreliable under [Federal Rule of Evidence] 702.”²⁷ In evaluating the nature of Bedrossian’s opinions, the court concluded that the scientific principles of the opinion were “all fairly uncontroversial.”²⁸ The court instead took issue with Bedrossian’s “application of these principles” in concluding

²⁰ *Id.* (quoting Report or Affidavit of Carlos WM. Bedrossian, M.D. at 5, *Haskins*, 2017 WL 3118017 (Mar. 18, 2016) (No. 2:15-cv-02086), 2016 WL 9281063 [hereinafter *Haskins Report*]; Report or Affidavit of Carlos Bedrossian, M.D., Ph.D. at 6, *Chesher v. 3M Co.*, 2017 WL 3118017 (Feb. 12, 2016) (No. 3:15-cv-02123), 2016 WL 6665510 [hereinafter *Chesher Report*]).

²¹ *Id.* (quoting *Haskins Report*, *supra* note 20, at 6).

²² *Id.* (citing *Chesher Report*, *supra* note 20, at 8).

²³ *Id.*

²⁴ *Id.* at *5 (quoting FED. R. CIV. P. 26(a)(2)).

²⁵ FED. R. CIV. P. 37(c)(1).

²⁶ *Haskins*, 2017 WL 3118017, at *4.

²⁷ *Id.* at *5.

²⁸ *Id.* The court highlighted the following statements from each of Bedrossian’s opinions. First, “mesothelioma is closely tied to asbestos exposure.” *Id.* Second, a person’s likelihood of developing mesothelioma increases with every exposure over her lifetime. *Id.* Third, the “total cumulative dose” of asbestos is the cause of each of the plaintiffs’ injuries and the “best indicator” of their risk of later developing the disease. *Id.* (quoting *Haskins Report*, *supra* note 20, at 5). Fourth, there is an inverse relationship between the intensity of exposure and the latency period of the disease. *Id.* And fifth, even small exposures to asbestos can cause mesothelioma. *Id.*

that, because the plaintiffs' exposure to the defendants' asbestos contributed to their cumulative dose, these exposures were therefore *significant* contributions to the harm.²⁹ The court noted that Bedrossian both did not define what constitutes a significant level of exposure and explicitly stated that the plaintiffs' exact levels of exposure were irrelevant to his ultimate conclusions on causation.³⁰ In Bedrossian's view, occupational exposures, which are exposures "close to the source of the asbestos, frequent and repeated,"³¹ are causative, while everyday exposures ("background exposures") are not.³² The court read Bedrossian's opinion to mean that every occupational exposure was therefore a substantial cause of the disease.³³

The court did not consider Bedrossian's findings sufficiently probative to aid a jury's analysis within the framework of the substantial factor test.³⁴ The test requires defendant-by-defendant analysis and proof of more than a "minimal exposure."³⁵ Because Bedrossian's opinions lacked defendant-specific analysis and relied on the argument that every exposure to asbestos is a substantial cause, they "evaluate[d] causation in a manner that [was] inconsistent with the appropriate legal standard," and had to be excluded under Rule 403.³⁶ The court further noted that Bedrossian's view that all exposures are unsafe is inconsistent with his distinction between occupational and background exposures.³⁷

In refusing to accept such a view, the court instead adopted the *Bostic v. Georgia-Pacific Corp.*³⁸ standard: the plaintiff must consider "other defendants' contributions to the total exposure" to establish whether a plaintiff's exposure to a particular defendant's asbestos was a substantial factor.³⁹ Under this standard, a defendant's contribution to the total exposure is a substantial cause of the disease only if it had a "*substantial* impact on the total cumulative exposure."⁴⁰ The court also considered that there might be "some level of exposure at which substantial causation may be presumed," regardless of other defendants'

²⁹ *Id.* at *6.

³⁰ *Id.*

³¹ *Id.* at *8 n.11 (quoting Transcript of Hearing at 135, *Chesher v. 3M Co.*, 2017 WL 3118017 (Apr. 6, 2017) (No. 3:15-cv-02123), ECF No. 311).

³² *Id.* at *6.

³³ *See id.* at *7.

³⁴ *Id.* at *6. The court's causation standard required the plaintiff to show "that (1) he was exposed to the defendant's product, and (2) the product was a *substantial factor* in causing the injury he suffered." *Id.* (quoting *Lindstrom v. A-C Prod. Liab. Tr.*, 424 F.3d 488, 492 (6th Cir. 2005)).

³⁵ *Id.* (quoting *Lindstrom*, 424 F.3d at 492).

³⁶ *Id.*

³⁷ *Id.*

³⁸ 439 S.W.3d 332 (Tex. 2014).

³⁹ *Haskins*, 2017 WL 3118017, at *8; *Bostic*, 439 S.W.3d at 350-51.

⁴⁰ *Haskins*, 2017 WL 3118017, at *7.

contributions.⁴¹ While the court did not define that level, it did establish that it “cannot be defined as the level of exposure that *may* cause mesothelioma,” because doing so “would render the substantial causation rule meaningless.”⁴² Ultimately, the court noted that even if Bedrossian’s view that every occupational exposure is causative “is sound science, it is inconsistent with the law.”⁴³

Judge Norton’s understanding of the substantial factor test and his idea of how the standard could be met tugs against previous efforts to reconcile the law with science in asbestos litigation. First, although the court wrapped its conclusion in substantial factor language, it applied the but-for standard of specific causality — the same standard whose evidentiary difficulties elicited modifications of the test in the first place. Second, the court assumed that the legal standard for specific causation is a feasible standard — one that should take precedence over scientific fact⁴⁴ — but ultimately provided examples of evidence that could satisfy the standard that were not grounded in the scientific realities of the disease. To align the goals of the law with the possibilities of science, Judge Norton should have grounded his interpretation of the legal standard in the scientific literature of the disease.

Judge Norton’s rejection of Bedrossian’s expert opinions and simultaneous acceptance of their scientific premises is unusual. Multiple surveys have found that the primary distinction between the courts that reject the every exposure theory as evidence of specific causation and those that accept it is whether they question the scientific underpinnings of the expert opinion.⁴⁵ Judge Norton, on the other hand, did not question the studies, the science of the threshold, the literature, or the qualifications of the experts. Instead, the court argued that Bedrossian’s science could not *logically* demonstrate specific causation.⁴⁶ The court explicitly considered a scenario where the plaintiff could prove that a particular defendant’s marginal exposure *could* independently cause mesothelioma and ultimately rejected that evidence as well, because,

⁴¹ *Id.* at *8.

⁴² *Id.* (“Because Bedrossian’s opinions are premised on his conclusion — scientifically sound as it may be — that Haskins and Chesher’s exposures to asbestos from defendants’ products *could* have independently caused their mesothelioma, his opinions cannot be used to support a finding of substantial causation.”).

⁴³ *Id.* at *6.

⁴⁴ *Id.* at *8.

⁴⁵ See Anderson et al., *supra* note 5, at 4; Behrens & Anderson, *supra* note 7, at 480–82; David E. Bernstein, *Getting to Causation in Toxic Tort Cases*, 74 BROOK. L. REV. 51, 58–60 (2008). Some judges who rejected the theory questioned the sufficiency of the epidemiological studies and highlighted the scientific necessity of demonstrating a dose threshold. Others evaluated the scientific literature. Others questioned the experts’ qualifications, the level of scientific development at the time, or the scientific process through which exposure triggers mesothelioma. See *id.* at 67–69.

⁴⁶ See, e.g., *Haskins*, 2017 WL 3118017 at *7 (“Therefore, Bedrossian’s logic quickly devolves . . .”).

even if the evidence were sound, to rely on it would render the substantial factor requirement meaningless.⁴⁷ That is, the court assumed the law ought to take precedence over scientific fact.

In deciding this way, the court expanded the gap between the scientific realities of mesothelioma and the legal standard an asbestos plaintiff must meet. Judge Norton noted the scientific premises of the expert's opinions were "uncontroversial" and scientifically reliable, but he ultimately rejected them.⁴⁸ In the *Haskins* world, scientifically valid evidence that the given exposure *could* independently cause mesothelioma does not demonstrate specific causation *unless* the plaintiff presents either (1) evidence that the defendant's exposure crossed the plaintiff's dose threshold⁴⁹ or (2) quantification of the exposure levels of each of the defendants to establish that the defendant's exposure is *comparatively* significant.⁵⁰

The threshold option is equivalent to but-for causation. With such threshold evidence, the plaintiff would show that, had the defendant not exposed the plaintiff to asbestos, the plaintiff would not have had a sufficient cumulative exposure to develop the disease.⁵¹ Although mesothelioma itself is "proof beyond doubt" that the "total exposure exceeded the threshold,"⁵² traditional but-for causation presents an "insuperable"⁵³ evidentiary requirement in multiple-defendant litigation because it is impossible to tell which source of asbestos caused the disease.⁵⁴ Even scholars who seek to limit asbestos litigation recognize the difficulty of identifying thresholds.⁵⁵ Indeed, it was these evidentiary

⁴⁷ *Id.* at *8.

⁴⁸ *Id.* at *5.

⁴⁹ *Id.* at *6.

⁵⁰ *See id.* at *8.

⁵¹ *See* 3 FAIGMAN, *supra* note 4, § 26:5, at 470–71. That even exposures that could have independently caused mesothelioma do not rise to the level of substantial causation suggests that Judge Norton cared about the order of exposure: if a plaintiff were exposed to a defendant's product at a level sufficient to cause mesothelioma, but had already been sufficiently exposed to a different defendant's product, the later-exposing defendant would not be held liable because the dose threshold may have already been crossed. *Haskins*, 2017 WL 3118017, at *11 (arguing that even "show[ing] substantial causation by establishing some particular level of exposure in a vacuum" would require more persuasive threshold evidence).

⁵² Sanders, *supra* note 7, at 1176.

⁵³ Bernstein, *supra* note 45, at 55.

⁵⁴ *See* Thacker v. UNR Indus. Inc., 603 N.E.2d 449, 456 (Ill. 1992) ("[A] plaintiff injured by asbestos fibers often does not know exactly when or where he was injured and therefore is unable to describe the details of how such injury occurred."); Bernstein, *supra* note 45, at 55; Sanders, *supra* note 7, at 1158 ("[T]here is no known method by which we might ascertain which asbestos fiber(s) caused the plaintiff's disease, and . . . courts routinely treat the injury as indivisible.").

⁵⁵ *See, e.g.*, Anderson et al., *supra* note 5, at 8. Indeed, although the authors go on to assert that the difficulty of evaluating a dose threshold does not mean the threshold does not exist, they do not cite a source to support the possibility of evaluating a threshold. *Id.*

hurdles of traditional tort theory that persuaded courts to provide solutions (like applying the substantial factor test) in the first place.⁵⁶

The quantification option requires the plaintiff to measure her exposure to asbestos from each defendant. The same hurdles that complicate gathering sufficient evidence for one defendant under traditional specific-causation principles complicate the acquisition of evidence for multiple defendants.⁵⁷ Moreover, requiring a multiple-defendant analysis may be even more stringent than the traditional specific-causation test. Under a multiple-defendant analysis, the court would evaluate each defendant's *ex ante* risk of causing the plaintiff's mesothelioma without regard to the order of exposure or the dose threshold of the disease.⁵⁸ This is the equivalent of requiring a plaintiff in a traditional tort case to calculate the risk of experiencing the same multiple-decades-old injury at the hands of several potential defendants. The *Haskins* interpretation of "substantial factor" merely rehashed the traditional tort standard and added potentially insurmountable hurdles in a field where the courts have consistently determined that those standards are inappropriate.

Indeed, although Judge Norton gave examples to demonstrate that under his interpretation the science and the law can overlap, he left a narrow space for plaintiff success. Judge Norton stated that to demonstrate "substantial causation," an expert opinion should evaluate the defendant's "relative contribution" to the overall exposure.⁵⁹ While the court's evidentiary requirement seems simple, the opinion is devoid of any evidence demonstrating its scientific feasibility or any reference to previous cases where plaintiffs met this standard.⁶⁰ Judge Norton did

⁵⁶ 3 FAIGMAN, *supra* note 4, §26:5, at 471–73.

⁵⁷ Bernstein, *supra* note 45, at 55. The latency period is long and, because the dose threshold is equally uncertain under a multiple-defendant analysis, it may be difficult to ascertain what exposure is worth counting. See 3 FAIGMAN, *supra* note 4, § 26:4, at 468–71; Sanders, *supra* note 7, at 1166. And absent a direct measure of the level of exposure, as opposed to a proxy, plaintiffs' attempts to measure the level of exposure can be excluded on grounds other than their scientific validity. See, e.g., *In re Armstrong World Indus., Inc.*, 285 B.R. 864, 870–71 (Bankr. D. Del. 2002).

⁵⁸ See Sanders, *supra* note 7, at 1164–65. For example, where the first exposure contributed twenty-five percent of the total exposure and the second provided the other seventy-five percent, even if the level of exposure that corresponds to twenty-five percent were sufficient to — and indeed did — cause the disease, the level may not be a comparatively significant contribution.

⁵⁹ *Haskins*, 2017 WL 3118017, at *8.

⁶⁰ Judge Norton cited *Bostic* to establish that courts must consider other defendants' contributions to the overall exposure when evaluating whether a particular defendant's contribution was substantial. *Id.* at *7–8. To support its standard, the *Bostic* court cited an article, Bernstein, *supra* note 45, that interpreted a prior decision to mean that a *de minimis* exposure to asbestos was insufficient evidence of causation. *Bostic v. Georgia-Pacific Corp.*, 439 S.W.3d 332, 341 (Tex. 2014) (citing Bernstein, *supra* note 45, at 59); see Bernstein, *supra* note 45, at 59 & n.32. That earlier decision, *Borg-Warner Corp. v. Flores*, 232 S.W.3d 765 (Tex. 2007), in a circular fashion, established that to show substantial factor causation, a plaintiff needs defendant-specific evidence relating to the dose of asbestos and "evidence that the dose was a substantial factor in causing the asbestos-

appear to perceive that the relative-contribution requirement is too stringent, because he went on to theorize that there is “some level of exposure at which substantial causation may be presumed.”⁶¹ The court ultimately concludes that such a level is somehow both unknown *and* not what Bedrossian proposes it to be.⁶² In failing to ground his interpretation of the legal standard in the scientific realities of mesothelioma, Judge Norton overly narrowed the amount of admissible scientific evidence that can demonstrate specific causation.⁶³

Instead, courts should apply specific causation based on evidence that is grounded in the scientific realities of the disease. The standard for good causation evidence need not be low — it merely needs to be feasible.⁶⁴ Judges are already able, and indeed required, to dive into scientific literature to thoroughly evaluate the expert testimony.⁶⁵ They evaluate the data, methodology, application of methods, and conclusions.⁶⁶ If they are qualified to determine what evidence is scientifically valid, they must also understand where the line between feasible and not-feasible emerges. To ask for kinds of evidence the court has never seen demands “more from experts than they can give.”⁶⁷

Judge Norton’s stringent interpretation of the substantial factor test drastically reduces plaintiffs’ possibilities of success. Requiring evidence on the dose threshold or quantification of exposure pushes against the legal community’s virtual agreement that asbestos diseases do not respect traditional tort rules. The number of mesothelioma claims is still increasing year to year.⁶⁸ Unrealistic legal expectations of science could do great injustice. Encouraging judges to use science to guide their interpretations of the legal standards and tests can “strike[] a balance between the needs of our legal system and the limits of science.”⁶⁹

related disease.” *Id.* at 773. In the chain of references, no court cited a case where the plaintiff satisfied such an interpretation of the substantial factor standard.

⁶¹ *Haskins*, 2017 WL 3118017, at *8.

⁶² *Id.*

⁶³ Cf. Margaret A. Berger, Essay, *Eliminating General Causation: Notes Towards a New Theory of Justice and Toxic Torts*, 97 COLUM. L. REV. 2117, 2118–19 (1997).

⁶⁴ In *Rost v. Ford Motor Co.*, 151 A.3d 1032, 1039 (Pa. 2016), like in *Haskins*, the plaintiff’s expert presented evidence that the defendant’s cumulative exposure of the plaintiff to asbestos was sufficient to cause mesothelioma. *Id.* Unlike in *Haskins*, the *Rost* court did not require a comparison to other defendants’ contributions. *Id.* at 1048–49. If the statements reflect scientifically valid and strong evidence that the exposure of one defendant could independently cause mesothelioma, the *Rost* standard could be both a feasible and rigorous standard that can satisfy the court’s intention of limiting liability.

⁶⁵ See Jack B. Weinstein, *Improving Expert Testimony*, 20 U. RICH. L. REV. 473, 494–95 (1986); see also Douglas R. Richmond, *Regulating Expert Testimony*, 62 MO. L. REV. 485, 502–09 (1997).

⁶⁶ 1 FAIGMAN, *supra* note 4, § 1:1, at 4; see *supra* note 45.

⁶⁷ Weinstein, *supra* note 65, at 473.

⁶⁸ ASBESTOS AND MESOTHELIOMA 362 (Joseph R. Testa ed., 2017).

⁶⁹ *Merrell Dow Pharm., Inc. v. Havner*, 953 S.W.2d 706, 718 (Tex. 1997).