State of New York
Court of Appeals

OPINION

No. 24
Francis Nemeth, &c.,
Respondent,
v.
Brenntag North America, &c., et al.,
Defendants,
Whittaker, Clark & Daniels, Inc.,
Appellant.

Bryce L. Friedman, for appellant.
Seth A. Dymond, for respondent.
Chamber of Commerce of the United States of America et al., Colgate-Palmolive Company et al., Richard L. Kradin et al., amici curiae.

GARCIA, J.:

Plaintiff's spouse used a commercial talcum powder daily for a period of more than ten years during the 1960s and early 1970s. Decades later, she developed mesothelioma

and died as a result. Plaintiff brought this action, alleging that use of the cosmetic powder was a proximate cause of decedent's illness. A jury agreed and awarded damages. Because plaintiff's proof of causation was insufficient as a matter of law, we now reverse and dismiss the complaint against defendant.

I.

Florence Nemeth was diagnosed with peritoneal mesothelioma[1] in 2012 and passed away from the disease in 2016. Plaintiff—decedent's husband—sued an array of defendants involved in the manufacturing and distribution of certain products alleged to contain asbestos to which decedent was exposed over the course of her lifetime, on the theory that each product proximately caused her illness. Plaintiff alleged that decedent used lawn care products containing asbestos; worked with construction materials containing asbestos during home renovations; and inhaled asbestos fibers when she laundered the clothing her son wore as an elevator repairman. Plaintiff also alleged that defendant-appellant Whittaker supplied defendant Shulton with talc contaminated with asbestos that was then used in a commercial talcum powder, Desert Flower, which decedent applied daily from 1960 until 1971. Plaintiff settled with all other defendants, and the case went to trial against Whittaker only.

[1] Plaintiff's expert explained that mesothelioma is a tumor of the mesothelia cells, and can occur in "areas where there is mesothelia tissue[, . . . m]ost commonly it's the pleura [the lining of the lungs] [. . . but it] can also occur in the abdomen, when it's called peritoneal mesothelioma."

At trial, the jury viewed a videotaped deposition of decedent, in which she explained that she used Desert Flower daily during the relevant time frame, applying the product while inside small unventilated bathrooms and later cleaning up the residual powder. This routine lasted approximately seven minutes each day. Plaintiff then called a geologist, Sean Fitzgerald, who testified about a test—referred to as a "glove box test"—in which he agitated a vintage sample of Desert Flower within a small, sealed plexiglass chamber to simulate decedent's use of the talc and to capture the released asbestos fibers, in an effort to "target[] the actual exposure." He testified that he strategically placed filters inside the chamber to simulate "breathing zones." He concluded that the asbestos fibers in the sample of Desert Flower were "significantly releasable" and that 2.7 million fibers were released into the air of the chamber during his test and so, multiplying that number by the amount of time, duration, and frequency of decedent's exposure, he concluded that she must have been exposed to "thousands to millions of fibers, billions and trillions when you add it up through repeated use." Fitzgerald compared this to the ambient level, or what "an average person living in an urban area breathes in," of 60,000 fibers per day.

Dr. Jacqueline Moline, a doctor of internal medicine, also testified for plaintiff. She told the jury that mesothelioma is a "sentinel health event" or "signal tumor," meaning that "if someone develops that cancer, . . . then it signals that they've had exposure to that particular substance." She testified that in reaching her conclusions she relied on clinical experience treating patients with mesothelioma, peer reviewed literature discussing epidemiological and case studies, and government standards and regulations governing acceptable levels of asbestos. Dr. Moline concluded that, although "not every inhalation

of asbestos fibers results in peritoneal mesothelioma," because "some exposures to asbestos . . . are trivial and don't increase a person's risk," Desert Flower was "a substantial contributing factor" to decedent's peritoneal mesothelioma. Relying on Fitzgerald's testimony regarding releasable asbestos fibers, she testified that decedent's exposure was "at levels at which multiple studies have shown elevated rates of mesothelioma."

The jury returned a verdict in plaintiff's favor, awarding $15 million to the estate and $1.5 million to plaintiff for loss of consortium, and apportioned fault equally between Whittaker and Shulton.[2] Whittaker moved for judgment notwithstanding the verdict, arguing that it was not supported by legally sufficient evidence as to causation. The trial court denied the motion.

A divided Appellate Division modified the judgment in connection with the damages awarded, concluding that certain offsets relating to settling defendants had been improperly calculated, but otherwise affirmed, holding that there was sufficient evidence, "consistent with the Court of Appeals' [precedent] . . . to support the jury's verdict and conclusion that [decedent] was exposed to a sufficient quantity of asbestos to cause the disease" (183 AD3d 211, 215 [1st Dept 2020]). The court determined that "Fitzgerald's testimony about the amount of asbestos released in a glove box analysis of [Desert Flower], along with the timing, duration and frequency of [decedent's] use of that product, with his conclusion that the amount of asbestos greatly exceeded by 'several [orders] of magnitude'

[2] In response to a ruling by the trial court, the parties later stipulated to a reduced award, and judgment against Whittaker was ultimately entered in the amount of approximately $2 million to decedent's estate and $200,000 for loss of consortium.

the amount of asbestos fibers in ambient air, presents a sound basis for the jury's conclusion" (*id.* at 230).

One Justice dissented, asserting that plaintiff had both "failed to present expert evidence specifying the level of exposure to respirable asbestos that would have been sufficient to cause peritoneal mesothelioma" and that "plaintiff's evidence falls short of establishing that Mrs. Nemeth 'was exposed to sufficient levels of the toxin to cause the illness' " (*id.* at 236-237 [Friedman, J., dissenting], quoting *Parker v Mobil Oil Corp.*, 7 NY3d 434, 448 [2006]). The dissent concluded that the glove box study was insufficient to establish decedent's exposure level because it did not estimate the quantity of asbestos fibers to which the decedent would have been exposed, and that Dr. Moline's testimony failed to provide more than "vague, conclusory and subjective terms . . . characteriz[ing] both the level of asbestos exposure sufficient to cause peritoneal mesothelioma . . . and the level of asbestos exposure to which [decedent] allegedly was subjected" (*id.* at 241-242). The Appellate Division granted leave to appeal to this Court.

II.

A court may set aside a jury verdict on the ground that it is not supported by legally sufficient evidence where "there is simply no valid line of reasoning and permissible inferences which could possibly lead rational [jurors] to the conclusion reached by the jury on the basis of the evidence presented at trial" (*Cohen v Hallmark Cards*, 45 NY2d 493, 499 [1978]; CPLR 4404 [a]). For the reasons that follow, we conclude that plaintiff failed to introduce sufficient evidence to support the jury's verdict.

We agree with the dissent below that plaintiff's proof failed as a matter of law to meet our test for proving causation in toxic tort cases, and we take the opportunity to reaffirm our requirements in such cases. As we noted sixteen years ago, "[i]t is well-established that an opinion on causation should set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and that plaintiff was exposed to sufficient levels of the toxin to cause the illness (specific causation)" (*Parker v Mobil Oil Corp.*, 7 NY3d 434, 448 [2006]). In *Parker*, the toxin at issue was benzene in gasoline, the illness was acute myelogenous leukemia, and the expert testimony described plaintiff's exposure as only "frequent[]," "excessive," and "far more" than exposure in epidemiological studies (*id.* at 449-450). We acknowledged that, because there are times that "a plaintiff's exposure to a toxin will be difficult or impossible to quantify by pinpointing an exact numerical value," "it is not always necessary for a plaintiff to quantify exposure levels precisely or use the dose-response relationship, provided that whatever methods an expert uses to establish causation are generally accepted in the scientific community" (*id.* at 447-448). We noted that there may be several ways that an expert might demonstrate causation, for example by using mathematical modeling, but that any method used must be "generally accepted as reliable in the scientific community" (*id.* at 449).

We later emphasized that *Parker*, despite including language to the effect that precise quantification of exposure is not always required, "by no means . . . dispensed with a plaintiff's burden to establish sufficient exposure to a substance to cause the claimed adverse health effect" (*Cornell v 360 W. 51st St. Realty, LLC*, 22 NY3d 762, 784 [2014]).

Plaintiffs must, using expert testimony based on "generally accepted methodologies," still establish sufficient exposure to the toxin even though "it is sometimes difficult, if not impossible," to do so (*Sean R. v BMW of N. Am., LLC*, 26 NY3d 801, 812 [2016]). Throughout this line of toxic tort cases, we have repeatedly rejected as insufficient to prove causation expert testimony that exposure to a toxin is "excessive" or "far more" than others, and such testimony that merely links a toxin to a disease or "work[s] backwards from reported symptoms to divine an otherwise unknown concentration" of a toxin to prove causation (*Parker*, 7 NY3d at 449 [experts failed to demonstrate causation with "subjective and conclusory assertion" that plaintiff had more exposure than the workers in an epidemiological study]; *Sean R.*, 26 NY3d at 810 [rejecting experts' testimony that plaintiff was exposed to 1,000 ppm of gasoline vapor, a number reached by analyzing plaintiff's symptoms]). Expert testimony, we have made clear, is to be excluded when " 'there is simply too great an analytical gap between the data and the opinion proffered' " (*Cornell*, 22 NY3d at 783-785, quoting *Gen. Elec. Co. v Joiner,* 522 US 136, 146 [1997]).

More recently, we affirmed the Appellate Division's holding that defendant was entitled to judgment notwithstanding the verdict in a case that applied these principles in the asbestos context (*see Matter of New York City Asbestos Litig. [Juni]*, 32 NY3d 1116, 1118 [2018], *affg* 148 AD3d 233, 236 [1st Dept 2017] ["the fact that asbestos . . . has been linked to mesothelioma() is not enough for a determination of liability against a particular defendant; a causation expert must still establish that the plaintiff was exposed to sufficient levels of the toxin from the defendant's products to have caused his disease"]). As was the

case in *Juni*, plaintiff here failed to prove that exposure to asbestos in defendant's product was a proximate cause of decedent's illness.[3]

Dr. Moline provided the expert opinion that decedent's "exposure to the contaminated talcum powder was a substantial contributing factor" in causing decedent's peritoneal mesothelioma. The basis for that opinion, however, did not meet our requirements for establishing exposure to a toxin in an amount sufficient to cause decedent's peritoneal mesothelioma.

With respect to the level of exposure that could serve as a proximate cause of decedent's peritoneal mesothelioma, Dr. Moline asserted that "brief or low level exposures of asbestos" could cause the disease, but that "there are some exposures to asbestos that are trivial and don't increase a person's risk of developing mesothelioma" and that exposure to twice the amount of asbestos in ambient air would not cause mesothelioma. She also testified that mesothelioma may develop idiopathically—that is, without a known cause.[4] This testimony was plainly insufficient (*see Parker*, 7 NY3d at 449-450 [expert's conclusion that plaintiff's exposure was "frequent" or "excessive" could not be

[3] Any reliance on the Appellate Division's holding in *Lustenring v AC&S Inc.* (13 AD3d 69 [1st Dept 2004]) to support a theory that "working in dust laden with asbestos generated from products containing asbestos," along with "expert testimony that dust raised from manipulating asbestos products 'necessarily' contains enough asbestos to cause mesothelioma," is incorrect (*Juni*, 148 AD3d at 252 [Feinman, J., dissenting]; *see* 183 AD3d at 225-226, 229-230). Such an approach is incompatible with *Parker* and its progeny.

[4] That Dr. Moline doubts whether "patients [were asked] the right questions about their exposure" has little bearing on evidence that mesothelioma may develop without a known cause (dissenting op at 8 n 5).

characterized as a "scientific expression" of exposure level]; *Matter of New York City Asbestos Litig. [DiScala]*, 173 AD3d 573 [1st Dept 2019]).

The majority below nevertheless asserted that "Dr. Moline's testimony did not simply 'associate' or 'link' asbestos to mesothelioma, she described it as a sentinel health event of asbestos exposure, and that virtually all cases of mesothelioma are related to asbestos exposure" (*id.* at 228). Yet this is no different than conclusory assertions of causation that we have held were insufficient to meet the *Parker* requirements (*Sean R.*, 26 NY3d at 810; *Cornell*, 22 NY3d 784; *Parker*, 7 NY3d at 450). That standard must be met whether the toxin is mold, benzene, or asbestos (*see Juni*, 143 AD3d at 238).

Nor did the studies or scientific literature cited or relied upon by Dr. Moline provide the necessary support for her conclusion as to proximate causation. Those studies include the "Welch article," which identifies only an association between "low level" exposure to asbestos and peritoneal mesothelioma, and does not quantify "low level"; the "Helsinki criteria," which found an association between "significant" asbestos exposure and pleural mesothelioma without identifying what level of exposure constitutes "significant," and continued on to find that peritoneal mesothelioma is associated with "higher" levels of exposure; and a single case study describing an incidence of peritoneal mesothelioma without determining either the amount of exposure or a causal connection between the individual's use of talc and his illness. Indeed, as the dissent below noted, "[c]ritically, not one of the articles Dr. Moline discussed on the witness stand . . . sets forth an estimate of the minimum level of exposure to respirable asbestos . . . that would suffice to cause peritoneal mesothelioma" (183 AD3d at 238-239, 239 n 6 [Friedman, J., dissenting]).

Simply put, Dr. Moline failed to provide any foundational basis for her opinion that exposure to asbestos at a level analogous to decedent's was shown to be a substantial factor in causing mesothelioma of any kind. Her causation testimony attempted to rely on a "[c]omparison to the exposure levels of subjects of other studies" but failed to provide "a specific comparison sufficient to show how the plaintiff's exposure level related to those of the other subjects" (*Parker*, 7 NY3d at 449). In addition, as we cautioned in *Parker,* "standards promulgated by regulatory agencies as protective measures are inadequate to demonstrate legal causation" (*Parker*, 7 NY3d at 450), and therefore Dr. Moline's testimony regarding the "permissible exposure limit" to asbestos promulgated by the Occupational Safety and Health Administration (OSHA) could not be relied upon to fill this gap in proof as to the level of exposure sufficient to cause peritoneal mesothelioma.

Under these circumstances, plaintiff's proof failed to demonstrate decedent's level of exposure to asbestos in a manner that established causation. In attempting to do so, plaintiff primarily relied on the testimony of the geologist, Fitzgerald. The dissent, plaintiff, and the majority below all characterize Fitzgerald's glove box test as a quantification, or at least a scientific expression, of decedent's exposure, recasting it as some sort of "breathability" study (dissenting op at 21). It was not. Fitzgerald shook a vintage sample of Desert Flower to determine the number of fibers released into a box, or as he put it, to "contain anything that's released" and "determine . . . if that asbestos was releasable." Fitzgerald could not offer an estimate of the amount that would be inhaled based on the test he conducted. Nor did his identification of the number of released fibers and description of those fibers as of "an inhalable size" establish causation by

demonstrating that decedent's exposure was comparable to similar exposures proven to be causally related to the development of mesothelioma. While a precise numerical value is not required, Fitzgerald's test simply failed to provide any scientific expression linking decedent's actual exposure to asbestos to a level known to cause mesothelioma.

Dr. Moline purported to base her expert opinion on the results of Fitzgerald's test, testifying that the volume of fibers released into the glove box during Fitzgerald's simulation corresponds to those "at which multiple studies have shown elevated rates of mesothelioma." But Dr. Moline admitted that industrial hygienists could have estimated decedent's inhalation levels (*id.* at 244 n 12 [Friedman, J dissenting] [noting that "it is possible to conduct a test in an actual bathroom of the level of exposure to respirable asbestos resulting from the use of a cosmetic powder" and "Mr. Fitzgerald, however, did not conduct any such test with Desert Flower in a bathroom the size of Mrs. Nemeth's"]). Plaintiff could have introduced such evidence, and could also have introduced evidence regarding the inhalation levels known to cause peritoneal mesothelioma, but did not do so. Because of these flaws in Fitzgerald's test, Dr. Moline's corresponding reliance on that test to conclude that decedent's exposure caused her mesothelioma was likewise insufficient. [5]

Although we have recognized that in any given case it may be "difficult, if not impossible, to quantify a plaintiff's past exposure" to a toxin (*Sean R.*, 26 NY3d at 812), our standard itself is not "impossible" for plaintiffs to meet (dissenting op at 25). We must,

[5] Of course, the issue is not that Dr. Moline relied on tests other than those she performed herself (dissenting op at 22-23), but rather that the test on which she relied was itself insufficient to support Dr. Moline's conclusion.

as always, strike a balance between the need to exclude "unreliable or speculative information" as to causation with our obligation to ensure that we have not set "an insurmountable standard that would effectively deprive toxic tort plaintiffs of their day in court" (*Parker*, 7 NY3d at 447). The requirement that plaintiff establish, using expert testimony based on generally accepted methodologies, sufficient exposure to a toxin to cause the claimed illness strikes the appropriate balance (*see Cornell*, 22 NY3d at 784). The fault here is not in our standard, but in plaintiff's proof.[6]

Accordingly, the order should be reversed, with costs, and the complaint as against Whittaker, Clark & Daniels, Inc. dismissed.

[6] Because we reverse on this basis, we do not address defendant's argument regarding plaintiff's summation.

RIVERA, J. (dissenting):

Florence (Flo) Nemeth died of peritoneal mesothelioma before the trial in this toxic tort action, which had been brought against several companies for their role in the manufacture, supply, distribution, and sale of products that allegedly caused her terminal

cancer. Defendant Whittaker, Clark & Daniels—the only defendant that went to trial—appeals from a judgment for damages based on a jury determination that defendant supplied the asbestos-containing talc in the cosmetic powder used by Flo which, in turn, was a causative factor in her peritoneal mesothelioma. The trial evidence established the existence of asbestos in Flo's brand of cosmetic powder, her daily use of the powder in small, unventilated bathrooms over 11 years, and that she was diagnosed decades after her exposure to the asbestos, as is common for mesothelioma patients. Plaintiff relied on epidemiological studies, case reports, and expert testimony to show that: (1) asbestos causes cancer, including the type that took Flo's life; (2) low-level exposure to asbestos causes cancer; (3) mathematical modeling performed for this litigation measured the amount of asbestos in the cosmetic powder released into Flo's breathable zone, determining that it was at least twice the amount found in ambient air and that it exceeded the amount permitted in schools under federal law; and (4) the asbestos in the cosmetic powder used by Flo caused her cancer. That evidence persuaded the jury on causation. The trial court and the Appellate Division agreed that the evidence was sufficient. We should do the same because plaintiff met the standard set forth in *Parker v Mobil Oil Corp.* (7 NY3d 434 [2006]) and its progeny. The majority's reversal is improperly based on the weight, not sufficiency, of this evidence.

I.

A.

Flo and her husband Frank Nemeth filed this toxic tort action against several defendants.[1] Flo passed away during the litigation and Frank continued, in his individual capacity and as executor of Flo's estate.[2] Although Flo did not live to testify in person, her deposition testimony was entered into evidence at trial. In detail, she described how, as a teenager, she began her daily routine of applying Desert Flower cosmetic power all over her body after showering. She first saw her mother use it, and she followed suit, the two of them going through a large box of this same brand of powder every two weeks. Flo explained that she used the powder puff that came in the box to apply the powder to her body, including around her neck. Her parents' apartment bathroom was "tiny," 5 by 6 feet, with no ventilation, windows, or fans. For approximately six years, Sunday through Monday, while living in this apartment, she applied the powder in the same way; each time, the bathroom became dusty, and she inhaled the dust. As she applied the powder, the dust fell on the sink, toilet, and floor, and Flo used a damp towel for about 5 minutes to clean up the dust.

[1] I use "Flo," rather than Florence, because that is how Frank and his attorneys referred to her throughout the trial and in the briefing to this Court.

[2] The Third Amended Complaint amended the caption and added a claim for wrongful death.

When she was 14, Flo met Frank. After years of dating, they married and moved into an apartment. Flo continued to apply the Desert Flower cosmetic powder daily. As in her parents' home, she applied the powder in the bathroom, which had the same dimensions and was just as tiny as her parents'. Flo stopped using the powder when she was 25 years old, approximately 11 years after first using Desert Flower.

The couple eventually moved to a house, had children and grandchildren, and Flo testified to an active life with her family—going to baseball games, visiting amusement parks, gardening, and playing with her grandchildren—until at 68 years of age, she was diagnosed with peritoneal mesothelioma, a rare and terminal cancer of the abdomen. The doctor told Flo she had six years left to live. Those years were marked by several surgeries, rounds of chemotherapy treatment, and a drug medication regimen.

Flo described the physical pain and psychological effects of the cancer:

> "I get up in the morning, I try to do little things just to move but when I do that, I start huffing and puffing and then I wheeze. So, now I have to sit down to catch my breath, then I can get up again, do something, a little bit just to move a little bit but all day long I have to stop and sit to catch my breath."
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> "Every day I think [about] . . . not being around to see my grandchildren get married or my grandchildren to have children, it's all part of life."

As her responses further reveal, the emotional toll was overwhelming:

> "Q. How does that make you feel emotionally knowing that they have to take care of you and you can't take care of them?
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> "A. Very bad, very, very depressing. There are times I cry but they don't know it. I don't like to let them see that I get upset,

> so either I go in the bathroom if they're there and let it out and come back out.
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> "Q. Why don't you like to see them—let them see you get upset?
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> "A. Because I know they're going to be upset and I don't want them to do that. Then I'll come out of the bathroom and I joke around and I make them—I try to push myself to make them think I'm not going through all this pain and suffering."

B.

Plaintiff's causation evidence rested on testimony of two experts. Their credentials are not at issue on this appeal. Sean Fitzgerald, a licensed geologist and microscopist specializing in asbestos,[3] tested a sample of Desert Flower from the period when Flo used the product. He explained that the experimental design was based upon an earlier, peer-reviewed study that he had co-authored and which he described to the jury.[4] In accordance with this design, Mr. Fitzgerald constructed a "glove box," a clear box constructed of Plexiglass with two gloves built in, allowing him to manipulate the talcum powder in a sealed environment. Mr. Fitzgerald and defendant's expert both noted that the use of a glove box for this testing purpose had been approved by the federal Environmental Protection Agency. Inside the box were pumps, one positioned under Mr. Fitzgerald's nose

[3] At the time of the trial, Fitzgerald had been working as a professional geologist for approximately 30 years. He had worked in several laboratories—including the McCrone Institute, a well-known microscopy laboratory—and had training in industrial hygiene and public health. Fitzgerald also served on asbestos-related committees operated by ASTM International, a private standards-setting organization whose standards are used worldwide. He also served as a peer reviewer for a third-party update to the Environmental Protection Agency's Purple Book, which contains up-to-date research on asbestos.

[4] *See* Ronald E. Gordon et al., *Asbestos in Commercial Cosmetic Talcum Powder as a Cause of Mesothelioma in Women*, 20 Intl J Occupational & Envtl Health 318 (2014).

to simulate asbestos release in the breathing zone relative to the hands in the gloves. He aerosolized the talcum powder by pouring it onto his gloved hand. Then, he allowed the pumps to run for 15 minutes while his hands were in the glove box. The pump closest to Mr. Fitzgerald's nose ran at a volume of two liters per minute, half of the average respiratory rate. Mr. Fitzgerald placed the other filters farther back in the glove box and ran the pumps attached to those filters at a higher volume to simulate powder spreading towards the back of a room. Mr. Fitzgerald also placed a clean wipe in the back of the glove box as a "dust fall" monitor to measure the amount of powder collected there and determine what would happen should the powder be re-aerosolized.

Mr. Fitzgerald determined that the asbestos contained in Desert Flower "was significantly releasable," at a level "thousands of times" higher than would be acceptable in a school under the federal Asbestos Hazard Emergency Response Act (15 USC § 2641 *et seq.* [AHERA]), using AHERA's definitions and protocols for measurement. He further estimated that "millions of fibers [were] initially released into the chambers" and opined that the fibers would have been of an inhalable size.

In response to a series of counsel's hypotheticals, Mr. Fitzgerald opined—based on his experience and education, and the test results and Flo's description of her daily use of the cosmetic powder in the confines of her tiny bathroom—that had Flo used Desert Flower every day, she would have been exposed to inhalable asbestos in measures above those acceptable under the AHERA standards. The final hypothetical and response is particularly significant:

> "Q. With those facts that I asked you to assume in mind [i.e., facts pertaining to Flo's long-term use of Desert Flower and the geologic source of the talc], do you have an opinion that—And I would like you to further assume within those facts that Flo Nemeth testified that she breathed this dust every time she used the product. With those facts in mind, do you have an opinion within a reasonable degree of geological and scientific certainty about whether the talc from those mines that was used in Desert Flower was consistently contaminated with releasable asbestos?
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> ". . .
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> "A. I do. And my opinion to a reasonable degree of scientific and geological certainty is that that product contained releasable asbestos fibers including tremolite, anthophyllite and occasionally chrysotile asbestos based on my research of the geology and the mineralogy of the actual source talcs that you've asked me to assume were constituents supplied to Shulton through Whittaker, Clark, Daniels."

During cross-examination, Mr. Fitzgerald conceded that it is difficult to count asbestos in talc, that microscopy involves a degree of subjective interpretation, and that his testing was an approximation in that he did not conduct testing in a bathroom-sized space. Defendant's geologist witness criticized Mr. Fitzgerald for not using a bathroom-sized simulation but admitted that the glove-box is a less expensive method for counting asbestos than a space the size of a bathroom.

Plaintiff's expert, Dr. Jacqueline Moline,[5] testified that asbestos causes peritoneal mesothelioma and that, based on Flo's testimony and Mr. Fitzgerald's results, defendant's

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[5] Dr. Moline earned her M.D. at the University of Chicago-Pritzker School of Medicine and a Master of Science in Community Medicine (equivalent to a Master of Public Health) from the Mount Sinai School of Medicine in New York. Dr. Moline completed her internal medicine residency at Yale and then completed a fellowship in occupational medicine with a team of asbestos experts at Mount Sinai Medical Center, where she then worked for

asbestos-containing talc was a significant factor in Flo's terminal cancer. Specifically, Dr. Moline explained that asbestos is "associated with four cancers," including mesothelioma, and that peritoneal mesothelioma is rare, with approximately 350 cases per year. She further testified that "[v]irtually all cases of mesothelioma are related to asbestos exposure," and that mesothelioma is considered a "Sentinel Health Event," and that a peritoneal mesothelioma mass is a "signal tumor," meaning that development of that illness and the tumor implies asbestos exposure.[6] As to adverse health impact exposure levels, Dr. Moline testified that "brief or low level exposures of asbestos can cause mesothelioma." She described a study that "found that even slight exposure to asbestos was associated with

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around 19 years. She also served as the Director of the National Institute for Occupational Safety and Health (NIOSH) New York/New Jersey Education and Research Center, a consortium of educational institutions that provides interdisciplinary training in occupational health and safety. At the time of trial, Dr. Moline served as the Chair of the Department of Occupational Medicine, Epidemiology and Prevention at Northwell Health.

[6] According to the majority, Dr. Moline "testified that mesothelioma may develop idiopathically—that is, without a known cause" (majority op at 8). To the contrary, Dr. Moline made clear that she disagreed with the defendant's expert's opinion that most cases of mesothelioma are "spontaneous" and occur as a result of age and genetics, rather than asbestos exposure. Dr. Moline opined, based on her knowledge of epidemiological methodologies, that "most allegedly" "idiopathic" cases of mesothelioma involved prior exposures to asbestos that researchers had not identified due to poor study design. She also explained that many of her colleagues who treat mesothelioma would only know to ask about particular exposure scenarios based on what had been reported in the literature. For example, she explained that until recently many doctors had not known of the link between cosmetic talc and asbestos, and failed to ask patients—particularly women—about their use of beauty products containing talc. Thus, according to Dr. Moline, in those cases doctors would have wrongly reported their patients' mesotheliomas as "idiopathic," when in reality, they had failed to perceive the cause. The majority's assertion that asking the right questions "has little bearing on evidence that mesothelioma may develop without a known cause" (*id.* at 8 n 4) misses the mark. The right questions, in Dr. Moline's opinion, could uncover known unknowns, and that opinion had bearing on the core debate between the parties' experts.

an increased risk over six fold of developing mesothelioma in th[e study] group" (the Welch study).[7] Further, the 0.1 fiber per cubic centimeter of air Permissible Exposure Limit (PEL) for asbestos set by the federal Occupational Safety and Health Administration (OSHA) "shows that very low levels of asbestos exposure can cause disease." According to Dr. Moline, the medical literature describes increased mesothelioma rates even at low levels of asbestos exposure. She also referred to epidemiological studies and public health literature linking talc with asbestos and describing asbestos as a cause of mesothelioma,[8] as well as various mortality studies.[9]

Dr. Moline discussed the Helsinki Criteria,[10] which explain that "low levels of exposure are attributed to mesothelioma." The criteria were originally developed in 1997

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[7] *See* Laura S. Welch et al., *Asbestos and Peritoneal Mesothelioma Among College-Educated Men*, 11 Intl J Occupational & Envtl Health 254 (2005).

[8] *See* Victor L. Roggli et al., *Tremolite and Mesothelioma*, 46 Annals Occupational Hygiene 447 (2002); Sharon H. Srebro & Victor L. Roggli, *Asbestos-Related Disease Associated With Exposure to Asbestiform Tremolite*, 26 Am J Indus Med 809 (1994); L. Paoletti et al., *Evaluation by Electron Microscopy Techniques of Asbestos Contamination in Industrial, Cosmetic, and Pharmaceutical Talcs*, 4 Regul Toxicology & Pharmacology 222 (1984); L. Longo & R.C. Young, *Cosmetic Talc and Ovarian Cancer*, 314 Lancet 349 (1979); A.N. Rohl et al., *Consumer Talcums and Powders: Mineral and Chemical Characterization*, 2 J Toxicology & Envtl Health 255 (1976).

[9] *See* Alberto Andrion et al., *Malignant Peritoneal Mesothelioma in a 17-Year-Old Boy With Evidence of Previous Exposure to Chrysotile and Tremolite Asbestos*, 25 Hum Pathology 617 (1994); J. Gamble et al., *An Epidemiological-Industrial Hygiene Study of Talc Workers*, 26 Annals Occupational Hygiene 841 (1982).

[10] *See* Consensus Report, *Asbestos, Asbestosis, and Cancer, the Helsinki Criteria for Diagnosis and Attribution 2014: Recommendations*, 41 Scandinavian J Work Envt & Health 5 (Henrik Wolff et al. reporters 2015) (hereinafter "Helsinki II"); Consensus Report,

by a group of researchers as a consensus report for asbestos diagnostic criteria (*see* Helsinki I). They were updated in 2014 and recommend that causation be established through measurements of asbestos levels "if available," but also recognize that since "most people work or live in a place where they don't go around having air measurements of what their exposure is on a day-to-day basis," a "history of exposure is sufficient for attribution."

Counsel asked Dr. Moline to consider Mr. Fitzgerald's testimony, and she responded that, based on his testimony and her knowledge, the amount of released asbestos from talc described in the literature is at levels shown to have elevated mesothelioma rates:

> "Q. With that understanding in mind, Mr. Fitzgerald also testified yesterday that the reports of releasable asbestos fibers from cosmetic talc he studied was orders of magnitude above the ambient levels he mentioned. What significance is that from an occupational health perspective?
>
> "A. Well, that is from what Mr. Fitzgerald you're telling me said and what's in the literature compared to my knowledge of the medical literature and the government regulations on what has been measured is, if it is true in that the amount of fibers from cosmetic talc that are released is orders of magnitude higher than ambient exposure and are at levels capable—they're at levels at which multiple studies have shown elevated rates of mesothelioma."

Dr. Moline also opined that, "[i]f the product is contaminated with asbestos and it gives off dust, then whatever percentage of asbestos is in that dust will be and it's breathed

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Asbestos, Asbestosis, and Cancer: The Helsinki Criteria for Diagnosis and Attribution, 23 Scandinavian J Work Envt & Health 311 (Antti Tossavainen reporter 1997) (hereinafter "Helsinki I").

in, then it has the potential for causing human health consequences." The following colloquy directly addressed asbestos fibers in talc:

> "Q. What significance, if any, does the fact that we're talking about an asbestos contaminated talc hold from an environmental health perspective with regard to the possibility of airborne fibers?
>
> "A. There is no encapsulation, so there is nothing weighing it down. It's just fibers that become airborne. People can breathe it in. And it can get deep into the lung and exert human health effects."

Dr. Moline further opined regarding Flo's exposure to asbestos during her cleaning of the dust:

> "Q. Now, there is evidence in this case that Flo Nemeth spent five minutes [at] a time cleaning up cosmetic talcum powder after she applied it in a five by seven closed bathroom without ventilation or closed windows. Is there any significance to that amount of time when we're talking about the idea of re-entrainment?
>
> "A. Well, sure. While she is cleaning it up she has direct exposure from the act of what she's doing cleaning it. Plus, there is asbestos from the day before when she might have been cleaning it from a prior utilization of that, but the act of cleaning it is another exposure that goes to her total exposure."

Counsel inquired as to Dr. Moline's opinion on the following hypotheticals based on Flo's use of the powder:

> "Q. Dr. Moline, there is evidence in this case that Flo Nemeth used Desert Flower Dusting Powder from the time she turned 13 in roughly 1960 through the year 1971. There is also evidence in this case that she used this powder every day after bathing in an enclosed five by seven foot bathroom without ventilation or windows, and she applied the powder all over her body and that applying the powder took approximately two minutes every time she applied it.

"There is also evidence in this case that during each application, Flo Nemeth breathed in the airborne pattern. There is also evidence in this case that Flo would stay in the bathroom after she applied it and would return to the bathroom to clean any powder that had fallen to the floor. There is evidence that it took Flo five minutes in this bathroom to clean it after every application of the powder.

"There is also evidence in this case that Whittaker, Clark & Daniels was the main supplier of talcum powder for Desert Flower from approximately 1967 through 1971. There is also evidence in this case that during this time, Whittaker, Clark & Daniels sources of talc were consistently contaminated with tremolite, anthophyllite and chrysotile asbestos.

"There is also evidence in this case that the use of this talc released airborne asbestos fibers, thousands of times above the AHERA level for safety for children in schools, and that those fibers were quantified to millions of fibers released per application, which when quantified over her total use measure in the trillions of asbestos fibers released into the air.

"There is also evidence in this case that these findings [of] releasable asbestos fibers are consistent with published—with published findings and peer reviewed published study, which examined finish [sic] talcum powder products, sharing two of the three mine sources implicated in this case.

"Based on these facts in evidence, Dr. Moline, I would like you to assume that over the course of the relevant time period, Flo Nemeth applied talc in the manner I described over the course of 1,825 days for two minutes per day totaling 3,650 minutes, inhaling this talc and releasable asbestos fibers for approximately 61 hours of inhalation. I would also like you to assume in addition that she remained in the bathroom for a minimum of five minutes after every application to clean up powder that had fallen to the floor.

"Based on these facts and evidence and my hypothetical, do you have an opinion within a reasonable degree of medical certainty as to whether this exposure to Whittaker, Clark & Daniels contaminated talc was a substantial contributing factor in causing Flo Nemeth peritoneal mesothelioma?"

"A. Yes.

> "Q. What is your opinion, Doctor?
>
> "A. That her exposure to the contaminated talcum powder was a substantial contributing factor."
>
> "Q. And what are you relying on scientific expression and otherwise as the basis for your opinion?
>
> "A. Relying on the information that there was talc present in—there was asbestos present in the talc, that there is studies that show that the use of talc in this manner elaborates respirable asbestos levels, at levels well above those that have been associated in multiple studies with the development of disease.
>
> "She has the appropriate latency from when she was using this product to when she developed the disease. She develops a disease that's associated with asbestos exposure, so it's a combination. She had the exposure, she has the appropriate amount of time from when she had the exposure and she has the significance disease related to this exposure.
>
> "Q. I would like you to assume the facts I mentioned, but this time I would like you to assume that the contaminated talc Whittaker, Clark & Daniels supplied for Desert Flower only occurred between the years 1969 through 1971. As such, I would like you to assume that Flo Nemeth's exposure to Whittaker, Clark & Daniels' talc was over the course of 1,095 days which for two minutes per day amounts to 2,190 minutes of inhalation of Whittaker, Clark & Daniels' asbestos-contaminated talcum powder or approximately 36 and a half hours.
>
> "I would also like you to assume that she remained in the bathroom for a minimum of five minutes after every application to clean up powder that had fallen to the floor. Under these facts, does your opinion change?"
>
> ". . .
>
> "A. . . . No. My opinion would not change. It would still be a substantial factor."

On cross-examination, Dr. Moline confirmed that her opinion that cosmetic talc can cause peritoneal mesothelioma was based on over 60 years of literature and collected information. She reiterated that her opinion was based upon a comparison of Flo's use of

talcum powder, Mr. Fitzgerald's results, "what has been published in the literature," and a determination that decedent "used it in analogous fashion to studies that have shown measurements of asbestos."

The defense position was that there was no scientific support for plaintiff's argument that asbestos in talc powder causes mesothelioma or that Flo's use of Desert Flower caused her peritoneal mesothelioma. The defense presented testimony from its expert, Suresh Moolgavkar, M.B.B.S., Ph.D.[11] He opined that peritoneal mesothelioma can occur spontaneously, "as a consequence of the natural accumulation of mutations that is going on in our bodies all the time." He further asserted that in determining external causes of cancer, "it is the dose that makes the poison," meaning that exposure to a carcinogen at low doses does not present a risk of cancer. He opined that the primary internal risk factors are age and genetics, and that age is a strong risk factor because as a person ages, more cells mutate, increasing the risk of cancerous cells forming. Dr. Moolgavkar cited a study finding "that a major fraction of cancers in the United States are not attributable to exposure

[11] An M.B.B.S. (Medicinae Baccalaureus, Baccalaureus Chirurgiae), is a bachelor of medicine and surgery, an international medical school undergraduate degree. Dr. Moolgavkar did a fellowship at The Johns Hopkins University School of Medicine and received his Ph.D. in mathematics from The John Hopkins University. He is not a licensed physician and did not have a clinical practice. He previously worked as a researcher at the Fox Chase Cancer Center and the Fred Hutchinson Cancer Research Center and was a faculty member of epidemiology at the University of Washington. At the time of trial, Dr. Moolgavkar was retired from teaching and served as a consultant, senior fellow, and corporate principle for Exponent, a consulting firm he worked for prior to his retirement.

to environmental agents," but rather occur from cell mutations.[12] He further noted some epidemiological studies had found that "a significant fraction of mesotheliomas cannot be attributed to asbestos exposure." Dr. Moolgavkar also discussed a paper that he had co-authored that had found no association between asbestos consumption and rates of peritoneal mesothelioma in women.[13] He also claimed that there were no studies in the literature showing that consumer talc was associated with a risk of peritoneal mesothelioma.

On cross-examination, Dr. Moolgavkar conceded he was not licensed to practice medicine, had never treated or diagnosed anyone with mesothelioma, nor had he met Flo or knew that she had died prior to trial. He also admitted that there were limitations to the epidemiological studies he relied on and that a well-known judge's reference manual[14] recognizes asbestos as causing mesothelioma.

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[12] *See* Cristian Tomasetti & Bert Vogelstein, *Variation in Cancer Risk Among Tissues Can Be Explained by the Number of Stem Cell Divisions*, 347 Sci 78 (2015).

[13] *See* Suresh H. Moolgavkar et al., *Pleural and Peritoneal Mesotheliomas in SEER: Age Effects and Temporal Trends, 1973–2005*, 20 Cancer Causes & Control 935 (2009).

[14] *See* Bernard D. Goldstein & Mary Sue Henifin, Reference Guide on Toxicology, in Federal Judicial Center, Reference Manual on Scientific Evidence at 635 (3d ed 2011) ("A particular challenge is that only rarely is the adverse impact highly specific to the toxic agent; for example, the relatively rare lung cancer known as mesothelioma is almost always caused by asbestos").

C.

During summation, plaintiff's counsel told the jury that Dr. Moline had testified that "there was a second avenue of exposure that could occur," vaginally. The testimony was in the context of an article that Dr. Moline was discussing. Defendant moved for a mistrial on the ground that there was no opinion on vaginal exposure presented in the testimony and that there was no cure for counsel's erroneous statement. The court allowed plaintiff's counsel to clarify the statement the following morning during further summation to the jury. Defendant again objected following this additional summation.

The jury returned a verdict for plaintiff in the amount of $15 million for Flo's past pain and suffering, plus $1.5 million for Frank's loss of consortium, holding defendant 50% at fault and codefendant Shulton 50% at fault. The judgment against defendant was eventually reduced to $2,933,750. The court denied defendant's CPLR 4404 (a) motion for a directed verdict based on the alleged insufficiency of plaintiff's causation evidence.

The Appellate Division affirmed as modified, concluding that plaintiff presented sufficient evidence of general and specific causation in accordance with caselaw from this Court and rejecting defendant's challenge based on the summation (*see* 183 AD3d 211, 227 [1st Dept 2020], citing *Cornell v 360 W. 51st St. Realty, LLC*, 22 NY3d 762, 782 [2014]; *id.* at 229, citing *Parker*, 7 NY3d 434).[15] One justice dissented, arguing that neither

[15] Plaintiff successfully cross-appealed on the amount of damages and defendant did not appeal from that part of the Appellate Division order. The modification was made on plaintiff's cross appeal and consisted of an increase in the principal amount of the award to $3.3 million.

general nor specific causation had been established and that the original summation error was not cured (*see id.* at 237-238, 240-243, 249 [Friedman, J.P., dissenting]). The Appellate Division granted defendant leave to appeal (*see* 2020 NY Slip Op 69871[U] [1st Dept 2020]).[16]

I agree for the reasons stated by the Appellate Division majority that defendant's challenge to the summation and the denial of a mistrial is without merit and I have no reason to opine further as to this aspect of defendant's appeal. As to defendant's challenge to the sufficiency of plaintiff's causation evidence, for the reasons I discuss (*see* § III, *infra*), I conclude that plaintiff's proof was sufficient under our precedent and a valid line of reasoning supports the jury's verdict.

II.

On a motion pursuant to CPLR 4404 (a), "[i]t is necessary to first conclude that there is simply no valid line of reasoning and permissible inferences which could possibly lead rational [people] to the conclusion reached by the jury on the basis of the evidence presented at trial" (*Cohen v Hallmark Cards, Inc.*, 45 NY2d 493, 499 [1978]). Put another way, when "[a] valid line of reasoning exists based on the record evidence to support the jury verdict finding defendants liable," the verdict should stand (*Acosta v City of New York*, 15 NY3d 881, 882 [2010], citing *Cohen*, 45 NY2d at 499). On a motion to set aside the

[16] The appeal was initially placed sua sponte on this Court's alternative review track and the parties filed letter submissions in accordance with § 500.11 of the Rules of this Court. Thereafter, the appeal was normal-coursed and oral argument was heard.

verdict, we must view "the facts . . . in a light most favorable to the nonmovant" (*Szczerbiak v Pilat*, 90 NY2d 553, 556 [1997]).

"In any common-law negligence case brought pursuant to New York law, 'a plaintiff must demonstrate (1) a duty owed by the defendant to the plaintiff, (2) a breach thereof, and (3) injury proximately resulting therefrom'" (*Ferreira v City of Binghamton*, — NY3d —, 2022 NY Slip Op 01953, *2 [2022], quoting *Solomon v City of New York*, 66 NY2d 1026, 1027 [1985]). The Court has identified two necessary components of the causation element in toxic tort actions: a plaintiff must establish "general" and "specific" causation (*Parker*, 7 NY3d at 448; *accord Cornell*, 22 NY3d at 784; *Sean R. v BMW of N. Am., LLC*, 26 NY3d 801, 808 [2016]). Thus, in a toxic tort case, the plaintiff's expert's "opinion on causation should set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and that plaintiff was exposed to sufficient levels of the toxin to cause the illness (specific causation)" (*Parker*, 7 NY3d at 448, citing *McClain v Metabolife Intl., Inc.*, 401 F3d 1233, 1241 [11th Cir 2005], and *Wright v Willamette Indus., Inc.*, 91 F3d 1105, 1106 [8th Cir 1996]). To establish general causation, a plaintiff need only show "that the toxin is capable of causing the particular illness" (*id.*). A plaintiff may establish general causation through epidemiological evidence, which must rely upon "the generally accepted methodology for evaluating epidemiologic evidence when determining whether exposure to an agent causes a harmful effect or disease" (*Cornell*, 22 NY3d at 783). Epidemiological evidence cannot establish general causation by showing a mere "risk," "linkage," or "association" between the toxin

and the illness because "there can be an association without causation" (*id.*). Specific causation does not require "precise quantification" (*Parker*, 7 NY3d at 448). "[I]t is not always necessary for a plaintiff to quantify exposure levels precisely or use the dose-response relationship, provided that whatever methods an expert uses to establish causation are generally accepted in the scientific community" (*id.*). Indeed, "[o]ne problem with establishing causation in toxic tort cases is that, often, a plaintiff's exposure to a toxin will be difficult or impossible to quantify by pinpointing an exact numerical value" (*id.* at 447). "At a minimum, there must be evidence from which the factfinder can conclude that the plaintiff was exposed to levels of the agent that are known to cause the kind of harm that the plaintiff claims to have suffered" (*Sean R.*, 26 NY3d at 809 [cleaned up]).

In *Parker*, this Court identified both quantitative and qualitative methods as "ways an expert might demonstrate causation" (7 NY3d at 449). An expert may use quantitative methods, such as determining the "intensity of exposure" or estimating exposure "through the use of mathematical modeling" (*id.*). Alternatively, an expert may use "qualitative means," such as "[c]omparison to the exposure levels of subjects of other studies[,] . . . provided that the expert ma[ke] a specific comparison sufficient to show how the plaintiff's exposure level related to those of the other subjects" (*id.*). The Court explained that those methods, "along with others, could be potentially acceptable ways to demonstrate causation" (*id.*).

III.

Defendant makes no claim as to the duty or breach elements of plaintiff's tort claim and limits its challenge on appeal to the alleged insufficiency of plaintiff's causation evidence. The majority adopts defendant's view that the evidence failed to present a scientific expression of Flo's exposure to asbestos (*see* majority op at 10-11). That view finds no support in the record, is a misapplication of precedent, and confuses legal sufficiency with weight of the evidence.

As to general causation, Mr. Fitzgerald and Dr. Moline testified that there were epidemiological and case studies supporting a finding that asbestos causes mesothelioma and that the talc in Desert Flower contained asbestos. Mr. Fitzgerald further testified to historical and recent geological findings of asbestos in the talc that had been mined, including his own testing of a sample from an old mine that supplied defendant, and eventually mixed into the Desert Flower cosmetic powder used by Flo. Dr. Moline testified to numerous epidemiological and case studies explaining and showing that asbestos causes mesothelioma, including peritoneal mesothelioma, that reflected the many peer-reviewed studies that were part of six decades of material showing asbestos can cause mesothelioma. Based on the literature, she testified that even low levels of asbestos exposure could cause mesothelioma and that peritoneal mesothelioma is a rare form of cancer. She relied on federal standards, the Helsinki international consensus criteria, and the Welch study, which provided specific findings of peritoneal mesothelioma in persons exposed to asbestos.[17]

[17] *E.g.* Welch et al. at 256 ("This study supports the conclusion that asbestos exposures cause peritoneal mesothelioma even at levels lower than exposures sustained by cohorts

Defendant's cross-examination of both experts failed to undermine their testimony. Instead, defendant relied on Dr. Moolgavkar's contrasting opinion. Yet, he acknowledged that the medical literature that he relied upon had limitations. That view, which plaintiff argued was unsupported by science, was that epidemiological studies had shown that "a significant fraction of mesotheliomas cannot be attributed to asbestos exposure" and that "th[e] view that spontaneous mesotheliomas can occur is consistent with our view of cancer, the accumulation of mutations in normally dividing stem cells without any kind of exposure to any environmental agent."

Plaintiff also satisfied his burden as to specific causation with a multi-step evidentiary presentation that culminated in Dr. Moline's causation opinion. First, Mr. Fitzgerald testified to a mathematical modeling methodology, previously peer-reviewed and acknowledged by defendant's expert. Mr. Fitzgerald used the glove box to measure the amount of releasable asbestos in the historic cosmetic powder, which was from the same era in which Flo used it. Second, based on those results and his calculations, he opined as to the asbestos in the breathable zone and compared it to the federal AHERA standards. He stated that "millions of fibers [were] initially released into the chambers" and were an inhalable size. Third, Dr. Moline provided a scientific expression of Flo's exposure level

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previously described"); *see* Helsinki II at 10 ("[A]sbestos can contribute to causation of disease in exposed populations at even lower levels"); Gordon et al. at 330 ("Our findings indicate that historic talcum powder exposure is a causative factor in the development of mesotheliomas and possibly lung cancers in women"); Helsinki I at 313 ("The great majority of mesotheliomas are due to asbestos exposure"); *cf.* Srebro & Roggli (finding causal relationship between asbestos and pleural mesothelioma); Roggli et al. (same).

to asbestos based on the literature she had previously discussed, including a comparator study showing development of peritoneal mesothelioma after use of talcum powder (*see* Andrion et al.), Mr. Fitzgerald's test results, and Flo's testimony of her daily and regular exposure. Dr. Moline concluded—"[r]elying on the information that . . . there was asbestos present in the talc, that there [are] studies that show that the use of talc in this manner elaborates respirable asbestos levels, at levels well above those that have been associated in multiple studies with the development of disease," and based upon the "appropriate latency" period from Flo's use and the development of her cancer—that defendant's cosmetic powder was a significant factor in causing Flo's peritoneal mesothelioma.

The majority concludes that the evidence is insufficient based on what the majority considers to be unpersuasive about plaintiff's evidence (*see* majority op at 8-11). To the extent the majority suggests there was a lack of any evidence of general causation, such a suggestion is unsupportable as there was an abundance of evidence that asbestos-containing talc could cause mesothelioma because the asbestos was releasable during use. Dr. Moline also testified that the literature included studies of persons exposed to asbestos who developed peritoneal mesothelioma, a rare cancer. This was enough under our law (*see Cornell*, 22 NY3d at 782-783; *Parker*, 7 NY3d at 448).

The majority's conclusion that plaintiff failed to present sufficient evidence of specific causation is similarly flawed. First, the majority relies heavily for its analysis on

an apparent lack of evidence on "breathability" (*see* majority op at 10-11).[18] The majority acknowledges that Mr. Fitzgerald's glove box test provided data on the releasability of asbestos from the historical sample of Desert Flower talc powder. But the majority then ignores that Mr. Fitzgerald's test was designed to measure the amount of inhalable-sized asbestos that was released into the breathable zone—positioning a pump near his nose, and also pumping in a manner that would simulate drawing air further into a room. This test simulated the release of asbestos from the talc as Flo shook the powder while patting her body with the powder-covered puff, and the test further simulated that release in the range where she would inhale that dust. The majority simply misreads the record and ignores this critical part of the data which formed part of the basis for Dr. Moline's opinion on causative effect.

This misreading leads to the second flaw: an erroneous assumption that Dr. Moline could not rely on Mr. Fitzgerald's results and calculations to provide her opinion that Flo had inhaled the concededly released asbestos in sufficient quantities that were a substantial cause of her mesothelioma. Our precedent does not require that any particular expert

[18] Contrary to the majority's view, the majority below and I have not "recast[ed]" Mr. Fitzgerald's study "as some sort of 'breathability' study" (majority op at 10). I nowhere describe it as such. Rather, I acknowledge—as the trial court did—that Mr. Fitzgerald opined solely as to the releasability of asbestos in the historic sample of Desert Flower cosmetic talc. Under our precedent, Dr. Moline could draw on Mr. Fitzgerald's study to reach her opinion on causation. The majority attempts to elide the issue with its carefully worded assertion that Mr. Fitzgerald's results did not "offer an estimate" or "scientific expression" of Flo's exposure (*id.* at 10-11). But, as I explain, our precedent requires only that plaintiff's evidence provide a scientific expression in accordance with scientifically recognized methods, not that the expert conducting the tests articulate that scientific expression for the trier of fact (*see infra* at 23-24).

ground their scientific expression solely on their own tests (*see e.g. People v Miller*, 91 NY2d 372, 380 [1998] [holding, where autopsy reports and other documents and testimony had been properly introduced into evidence, forensic pathologist could "draw . . . conclusions from the record evidence" without having "examined the corpus delicti or performed the autopsy"]; *see generally Cassano v Hagstrom*, 5 NY2d 643, 646 [1959]; Jerome Prince, Richardson on Evidence § 7-308 [Farrell 11th ed 1995, 2008 Supp]). Put another way, Dr. Moline could base her opinion of causation on Mr. Fitzgerald's results and calculations along with her own knowledge of the medical literature, the extensive data from the glove box test, and Flo's testimony of her daily exposure to Desert Flower's asbestos-containing talc (*see Matteson v New York Cent. R.R. Co.*, 35 NY 487, 493 [1866] ["The opinions of experts are admissible, though the witness founds them, not on their own personal observation, but on the case itself, as proved by other witnesses on the trial" (cleaned up)]). It is a tried-and-true method to ask an expert for an opinion based on assumed facts and the existing data. All of the fundamental considerations of her opinion—her education, clinical experience, the medical literature, Fitzgerald's tests and results, which were conducted in accordance with the mathematical modeling noted approvingly in *Parker* (7 NY3d at 449), and Flo's testimony regarding her exposure—are all acceptable bases for an expert opinion on specific causation under our case law.

"The fault here" was not "in plaintiff's proof" (majority op at 12). As with most tort actions, including toxic torts, this litigation turned on a battle of the experts. Dr. Moline and Mr. Fitzgerald relied on methodologies and studies that are generally accepted in the

scientific community, and Dr. Moline provided her opinion—her scientific expression—that the asbestos to which Flo was exposed through inhalation was sufficient to be a significant cause of Flo's cancer. Plaintiff met his burden of proof under our law, which the lower courts properly articulated, and the jury found his experts persuasive and rejected defendant's experts' views. The fact that the majority would have come to a different conclusion is irrelevant. Concerns about whether the plaintiffs' experts' opinions were based on studies and criteria that defendant's expert disagreed with goes to the weight of the evidence, and not the legal sufficiency of the proof establishing causation. And, this Court has no authority to weigh the evidence (*see* Arthur Karger, Powers of the New York Court of Appeals § 13:2 at 453-454 [3d ed rev 2005]).

IV.

In sum, plaintiff's proof of causation was sufficient and provided a basis for the jury's conclusion that plaintiff established by a preponderance of the evidence that defendant distributed and/or sold talc contaminated with asbestos, Flo was exposed to that talc, defendant negligently failed to provide adequate warning, and defendant's negligence was a substantial factor causing injury to Flo. Accordingly, defendant's motion for a directed verdict was properly denied because "[a] valid line of reasoning exists based on the record evidence to support the jury verdict finding defendant[] liable" (*Acosta*, 15 NY3d at 882, citing *Cohen*, 45 NY2d at 499).

The majority has essentially adopted an impossible standard for plaintiffs—even though this Court has rejected that exact approach, explaining in *Parker* that "it is . . .

inappropriate to set an insurmountable standard that would effectively deprive toxic tort plaintiffs of their day in court" (7 NY3d at 447). I dissent.

Order reversed, with costs, and complaint as against defendant Whittaker, Clark & Daniels, Inc. dismissed. Opinion by Judge Garcia. Chief Judge DiFiore and Judges Singas, Cannataro and Troutman concur. Judge Rivera dissents in an opinion. Judge Wilson took no part.

Decided April 26, 2022