IN THE SUPREME COURT OF IOWA

No. 21–0723

Submitted December 14, 2022—Filed June 23, 2023

JACQUELINE SUE UHLER,

Appellant,

vs.

THE GRAHAM GROUP, INC.,

Appellee.

On review from the Iowa Court of Appeals.

Appeal from the Iowa District Court for Polk County, Samantha Gronewald, Judge.

A plaintiff alleging a permanent lung injury from exposure to chemical vapors in a building seeks further review of the court of appeals decision affirming the district court's grant of summary judgment in favor of the building's owner. **DECISION OF COURT OF APPEALS AND DISTRICT COURT JUDGMENT AFFIRMED.**

McDermott, J., delivered the opinion of the court, in which Christensen, C.J., and Waterman and Mansfield, JJ., joined. McDonald, J., filed a dissenting opinion, in which Oxley, J. joined. May, J., took no part in the consideration or decision of this case.

Jason D. Walke (argued) of Walke Law, LLC, West Des Moines, and Troy A. Skinner of Skinner & Paschke, PLLC, West Des Moines, for appellant.

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McDERMOTT, Justice.

Jacqueline Uhler alleges that she suffered a permanent lung injury from toxic vapors that spread throughout the multistory building where she worked after a maintenance worker poured a chemical drain cleaner down a sink. The district court dismissed her claim, determining that she failed to offer evidence to establish the element of causation. In this appeal, we must decide whether Uhler presented evidence to create a dispute of material fact about whether her exposure to the chemical's vapors caused her permanent lung injury.

I. Facts and Procedural Background.

A maintenance worker at a medical office building, responding to a call about a clogged restroom sink on a lower level, used a chemical drain cleaner called Draynamite to clear the clog. Although he didn't measure out the chemical as he was using it—instead pouring directly from the bottle into the sink—he estimates that he used "about a cup." The building's maintenance crew had used Draynamite to clear clogged sinks in the building in the past with no problems. When he returned to the restroom about ten minutes later, the clog had cleared.

The maintenance manager's phone soon rang with complaints from two different people in offices on the building's third and fourth levels about a rotten-egg smell. The maintenance worker and his manager quickly began opening stairwell doors throughout the building, setting up fans, and redirecting airflow using the building's computerized ventilation system. It reportedly took ten to thirty minutes to air out the building (although some occupants reported that they could still detect an odor the next day).

A number of the building's workers felt sick and went home for the rest of the afternoon, and a pediatric clinic on the building's third level closed early. The next day, eleven workers filed incident reports about the odor. The complaints ranged from nausea, headaches, and dizziness to chest tightness, burning sensation, severe cough, and shortness of breath.

Uhler was among those who experienced adverse symptoms that afternoon. As soon as she experienced those symptoms, she asked permission to leave and went home. She worked in a cubicle in a records area on the building's fourth level—four floors above the restroom sink treated with Draynamite. Like the others, she described a chemical, rotten-egg smell. In her incident report the next day, she reported a headache, nausea, and difficulty breathing. A coworker seated about five cubicles away said that the odor was stronger around Uhler's cubicle.

Two days after the incident, Uhler sought medical treatment for breathing trouble. Uhler was 78 years old at the time of the incident and had been previously diagnosed with asthma. A pulmonologist to whom Uhler had been sent, Dr. Gregory Hicklin, diagnosed Uhler with a permanent lung injury and prescribed medication, including medicated inhalers. Uhler reports that her asthma and general pulmonary function worsened after the incident. Although her condition has stabilized to some extent, Uhler has continued to report shortness of breath and difficulty doing many activities she once enjoyed.

Uhler sued the building's owner and manager, Graham Group, Inc., for negligence. Characterizing her cause of action as a premises liability claim, Uhler

alleges that Graham Group failed to maintain the premises and ventilate the building adequately, warn tenants of the danger in a timely and safe fashion, and minimize and contain the chemical exposure. She asserts that her inhalation of the fumes in the building aggravated her preexisting asthmatic condition and caused permanently reduced pulmonary function.

After discovery in the case, Graham Group moved for summary judgment, arguing that Uhler had failed to present sufficient evidence that the chemical fumes caused the permanent lung injury that she alleges. The district court granted the motion and dismissed Uhler's claim. Uhler appealed. We transferred the case to the court of appeals, which affirmed the district court judgment over a dissent. Uhler sought further review, which we granted.

II. Uhler's Evidence of Causation.

Uhler characterizes her negligence cause of action as a premises liability claim, not a toxic tort. She thus doesn't discuss the two types of causation—general and specific—that we require plaintiffs to show to prove factual causation in toxic tort cases. *See Ranes v. Adams Lab'ys, Inc.*, 778 N.W.2d 677, 687–88 (Iowa 2010). Toxic torts generally "involve plaintiffs who have been exposed to allegedly toxic substances, such as chemicals, asbestos fibers, or a pharmaceutical product, and allege that this exposure has caused their cancer, birth defect, or other injury." David E. Bernstein, *Getting to Causation in Toxic Tort Cases*, 74 Brook. L. Rev. 51, 51 n.1 (2008) [hereinafter Bernstein]. Uhler's cause of action,

as pleaded, alleges that she was exposed to toxic fumes from the use of a chemical drain cleaner and that the exposure caused permanent lung damage. That's a toxic tort claim, so we will apply our bifurcated causation analysis.

General causation is a showing that the substance in question was *capable* of causing the injury alleged. *Ranes*, 778 N.W.2d at 688; Bernstein, 74 Brook. L. Rev. at 52–53. Specific causation is a showing that the exposure to the substance in fact caused *the plaintiff's* injury. *Ranes*, 778 N.W.2d at 688; Bernstein, 74 Brook. L. Rev. at 52–53. We've described general causation as a process of "ruling in" possible causes for the injury, and specific causation as a process of "ruling out" those possible causes through a process of elimination. *Ranes*, 778 N.W.2d at 695.

Uhler argues that the manufacturer's own safety data sheet establishes that inhaling Draynamite vapors is capable of causing serious damage to the lungs and, thus, a jury question on causation prevents summary judgment. The safety data sheet for Draynamite includes this statement:

> Risk of serious damage to the lungs (by inhalation). Causes burns to the respiratory tract, nose, mouth, and throat with discomfort, nasal discharge, sneezing, coughing, rapid heartbeat, and chest pain. Inhalation of mist or vapors may cause chemical pneumonia which can cause damage and may be fatal.

But disclosures required on a chemical safety data sheet are a step removed from establishing causation. A manufacturer's duty to provide basic information about hazards on safety data sheets is imposed by federal regulation. *See* 29 C.F.R. § 1910.1200(b)(1), (g) (2012). "Regulatory standards are set for purposes far different than determining the preponderance of evidence in a toxic tort case."

Bernard D. Goldstein & Mary Sue Henifin, Fed. Judicial Center, *Reference Guide on Toxicology, in Reference Manual on Scientific Evidence* 633, 665 (3d ed. 2011) [hereinafter *Reference Manual on Scientific Evidence*]. A safety data sheet alone isn't sufficient to establish causation in a toxic tort case because the sheets aren't evidence of what a toxic level of exposure might be, whether a particular person was exposed to a toxic dosage, or whether the person's exposure actually caused her injuries. *See Gass v. Marriott Hotel Servs., Inc.*, 501 F. Supp. 2d 1011, 1025 (W.D. Mich. 2007), *rev'd and remanded on other grounds*, 558 F.3d 419 (6th Cir. 2009).

The safety data sheet proves that Draynamite is a toxin capable of causing injury by inhaling its vapors, but it doesn't prove that the vapors actually drifted through the building to reach Uhler in a concentration sufficient to cause the permanent lung injury that she alleges. To show that her exposure to Draynamite vapors caused her injury, Uhler needed to present evidence of the *level* of her exposure to the toxin and that *that level* could cause the injury she alleges. The main issue surrounds "whether there has been exposure to a sufficient dose to be a likely cause of this effect." *Reference Manual on Scientific Evidence* at 638. Concentration levels of toxins are influenced by a number of variables, including dilution. A simple example illustrates the point: A drop of undiluted acid on your skin might cause a horrible burn, while the same drop in a bathtub might reduce the concentration such that you experience no effect. *Id.* at 641 n.25.

Uhler has presented evidence that the fumes traveled through four floors of the building in *some* concentration, and that the fumes were associated with

brief symptoms in at least eleven people in the building. But this evidence of a temporal connection between exposure to fumes and temporary symptoms, without more, doesn't permit the leap that the exposure involved toxins of a quantity capable of causing the permanently reduced pulmonary function. *See Cavallo v. Star Enter.*, 892 F. Supp. 756, 769–75 (E.D. Va. 1995) (granting summary judgment where expert testimony was based primarily on a temporal connection between exposure to jet fuel and the plaintiff's onset of chronic respiratory illness) *aff'd in part and rev'd and remanded in part on other grounds*, 100 F.3d 1150 (4th Cir. 1996).

What's more, the temporary symptoms that some in the building experienced aren't what Uhler alleges in this case; her claim seeks damages for a *permanent* injury. Yet she presents no evidence that the exposure to fumes caused anyone else to suffer anything other than discomfort that subsided after leaving the building. This evidence of causation—that the concentration of toxin emanating in her workspace from the release of Draynamite was capable of causing her permanent lung injury—requires expert testimony. Uhler didn't offer it.

Uhler designated three physicians (two of them her treating physicians) as experts: Dr. Gregory Hicklin, Dr. Daniel Dodge, and Dr. Jacqueline Stoken. But Dr. Hicklin, a pulmonologist, is the only expert she designated to offer an opinion about causation. Dr. Hicklin initially treated Uhler after the incident. Regrettably, Dr. Hicklin died in the time between the incident and Uhler's filing of her lawsuit; he never prepared an expert report for this case. Uhler provided some of Dr. Hicklin's treatment records with her summary judgment materials. But as

the district court found, Dr. Hicklin's records are silent about the concentration and toxicity of Draynamite fumes that could have reached Uhler, and whether that concentration was capable of causing the permanent injury she alleges.

Uhler's other experts, both osteopathic medicine physicians, fare no better on this issue. Dr. Stoken specializes in rehabilitation medicine. Her expert affidavit says that she has treated patients with pulmonary injuries from inhaling fumes from toxic chemicals. But she offers no opinion about the dosage of toxin that could have reached Uhler and whether that dosage was capable of causing Uhler's permanent injury. Dr. Dodge specializes in pulmonology, which focuses on ailments of the respiratory system. He took over Uhler's pulmonary treatment for Dr. Hicklin. Like Dr. Stoken, Dr. Dodge offers no opinion about the dosage of toxin that could have circulated four floors up to Uhler's workspace or whether that dosage was capable of causing Uhler's permanent injury.

To prove general causation in this case, Uhler needed a toxicology expert. Toxicology, as a scientific endeavor, "attempts to determine at what doses foreign agents produce their effects." *Reference Manual on Scientific Evidence* at 637. Toxicology's oldest maxim is that "the dose makes the poison." Bernard D. Goldstein, *Toxic Torts: The Devil Is in the Dose*, 16 J.L. & Pol'y 551, 551, 554–55 (2008). Unlike a toxicologist, "most physicians have little training in chemical toxicology and lack an understanding of exposure assessment and dose–response relationships." *Reference Manual on Scientific Evidence* at 676. Uhler offered no expert opinion from a toxicologist. Dr. Stoken's expert affidavit, which

Uhler seems to rely on most for the causation issue, essentially offers that exposure to Draynamite, followed by Uhler's permanent injury diagnosis, establishes causation. But this conclusion assumes that the exposure was *capable* of causing the injury. This step in the analytical process—evidence of general causation—is skipped. Evidence that a plaintiff's symptoms are "consistent with" exposure to a particular chemical doesn't satisfy the plaintiff's burden of proof as to causation. *See Turpin v. Merrell Dow Pharms., Inc.*, 959 F.2d 1349, 1359–61 (6th Cir. 1992) (holding that proof that a drug is " 'capable of causing,' 'could cause' or that its effects are 'consistent with causing' birth defects" was evidence of a possibility rather than a probability and thus insufficient to support a finding of causation); *see also Bland v. Verizon Wireless, (VAW) L.L.C.*, 538 F.3d 893, 897, 899 (8th Cir. 2008) (affirming summary judgment where a treating physician didn't know what amount of exposure to freon caused, or would have an appreciable risk of causing, asthma).

At some point, a dose of sulfuric acid—the toxic agent that Uhler points to in Draynamite as triggering her disease—becomes so low that it can't produce a particular effect. *See Reference Manual on Scientific Evidence* at 635–36, 669. The complexity in understanding the dose–response relationship between Draynamite fumes and a person's lungs places the causation question in this case well beyond a layperson's knowledge. A toxicologist measures exposure, for instance, "by mathematical modeling, in which one uses a variety of physical factors to estimate the transport of the pollutant from the source to the receptor."

Id. at 666. That type of evidence of exposure is absent in this summary judgment record.

Uhler cites *Bloomquist v. Wapello County* for the proposition that juries can use "traditional cause and effect" testimony from physicians to resolve causation questions and that epidemiological evidence is not "an absolute requirement in establishing causation" in a toxic tort case. 500 N.W.2d 1, 3, 5 (Iowa 1993). These propositions, while true, have limited application in this case. As the court of appeals explained, the evidence of the plaintiffs' exposure to the chemical pesticide in *Bloomquist* involved evidence about the repeatedly monthly exposures (from broadcast spraying inside work offices on desks, papers, carpets, and seemingly all points between). *See id.* at 1. The evidence also included data from on-site testing conducted to determine the amount of chemical residue still on the carpets in the offices where the plaintiffs worked. *Id.* at 3. What's more, and as the court of appeals correctly observed, nothing in *Bloomquist* permits a reading that expert epidemiological testimony is *never* required to establish exposure levels in toxic tort cases, only that it isn't "an *absolute* requirement." *Id.* at 5 (emphasis added).

We don't require mathematical precision in equating levels of exposure with levels of harm to prove causation. *See Wright v. Willamette Indus., Inc.*, 91 F.3d 1105, 1107 (8th Cir. 1996). We recognize that "[t]oxicologists also have indirect means of approaching exposure through symptoms. For many agents, there is a known threshold for smell and a reasonable range of levels that might cause symptoms." *Reference Manual on Scientific Evidence* at 657 n.66. But what

is that threshold for Draynamite? Dr. Stoken's affidavit states that inhalation of sulfuric acid fumes "even in small amounts" could cause pulmonary injury, yet we're left to guess what that means, both as to the amount and the severity of injury. Is a cup or two of Draynamite capable of producing enough vapor to circulate through a large office building and reach four floors above while retaining enough toxic potency to cause permanent pulmonary damage? None of Uhler's experts answer this question. Without some offer of evidence on this point, a jury is left to speculate, and speculation won't do. "Guesses, even if educated, are insufficient to prove the level of exposure in a toxic tort case." *Mitchell v. Gencorp Inc.*, 165 F.3d 778, 781 (10th Cir. 1999); *see also Wright*, 91 F.3d at 1106 (reversing the jury's verdict in a toxic tort case for failing to offer evidence of "the plaintiff's actual level of exposure to the defendant's toxic substance").

Whether a plaintiff has proved causation is generally a jury question. *Thompson v. Kaczinski*, 774 N.W.2d 829, 836 (Iowa 2009). But when a tort claim requires an expert witness to prove causation, and no expert presents this evidence, the claim is properly dismissed on summary judgment because "[s]peculation is not sufficient to generate a genuine issue of fact." *Hlubek v. Pelecky*, 701 N.W.2d 93, 95–96 (Iowa 2005). Expert testimony is often critical in toxic tort cases to prove causation. *Ranes*, 778 N.W.2d at 688. Indeed, in *Ranes v. Adams Laboratories, Inc.*, we determined that expert medical and toxicological testimony was "unquestionably required to assist the jury" on general and specific causation. *Id.* A plaintiff's "[f]ailure to reliably 'rule in' the defendant's [toxin] as a cause

of the injuries in a particular case is commonly fatal to plaintiffs seeking to survive summary judgment in toxic tort cases." *Id.* at 690.

And so it is in this case. "When the analytical gap between the evidence presented and the inferences to be drawn is too wide, a jury should not be asked to speculate on the issue of causation." *Gass*, 501 F. Supp. 2d at 1026. Because Uhler presented insufficient evidence about whether the dose of toxin to which she was exposed was capable of causing the permanent injury alleged, she has failed to establish a necessary element of her claim. We thus affirm the judgment of the district court granting summary judgment in favor of Graham Group and affirm the decision of the court of appeals.

DECISION OF COURT OF APPEALS AND DISTRICT COURT JUDGMENT AFFIRMED.

Christensen, C.J., and Waterman and Mansfield, JJ., join this opinion. McDonald, J., files a dissenting opinion, in which Oxley, J., joins. May, J., takes no part.

McDONALD, Justice (dissenting).

"It is the duty of the jury to decide issues of fact." *Grismore v. Consol. Prods. Co.*, 5 N.W.2d 646, 656 (Iowa 1942). Causation is an issue of fact and "ordinarily a jury question." *Garr v. City of Ottumwa*, 846 N.W.2d 865, 870 (Iowa 2014). It is only in the "*very exceptional cases* where the facts are so clear and undisputed, and the relation of cause and effect so apparent to every candid mind" that a court should grant summary judgment on causation. *Lindquist v. Des Moines Union Ry.*, 30 N.W.2d 120, 123 (Iowa 1947) (quoting *Fitter v. Iowa Tel. Co.*, 121 N.W. 48, 50 (Iowa 1909)). This is not one of the very exceptional cases where summary judgment on the fact question of causation is appropriate. On the contrary, there is more evidence establishing causation in this summary judgment record than disproving it. I thus respectfully dissent.

In affirming the grant of summary judgment and denying Uhler her right to present her case to a jury, my colleagues misapply *Ranes v. Adams Laboratories, Inc.*, 778 N.W.2d 677 (Iowa 2010). In *Ranes*, we adopted and applied a "bifurcated toxic-tort-causation analysis" to claims arising out of the use of phenylpropanolamine, an ingredient used for three decades in many cough and cold products. *Id.* at 682, 687. Under this bifurcated analysis, we separated causation into two parts: general causation and specific causation. *Id.* at 687–88. "General causation is a showing that the drug or chemical is capable of causing the type of harm from which the plaintiff suffers. Specific causation is evidence that the drug or chemical in fact caused the harm from which the plaintiff suffers." *Id.* at

688 (citation omitted). We explained that general causation and specific causation were merely "device[s] to organize a court's analysis" and not "additional elements of the tort." *Id.* (quoting Restatement (Third) of Torts: Liab. for Physical & Emotional Harm § 28 cmt. *c*, at 405 (Am. L. Inst. 2010) [hereinafter Restatement (Third)]).

The bifurcated causation framework adopted and applied in *Ranes* is appropriate and useful in certain categories of toxic tort cases. "Cases involving toxic substances often pose difficult problems of proof of factual causation." Restatement (Third) § 28 cmt. *c*, at 402. In certain types of toxic tort cases, like *Ranes*, there are a host of unknown issues presented regarding exposure, latency, etiology, environmental factors, preexisting conditions, and alternative potential causes of disease, to name a few. The Restatement (Third) explains:

> By contrast, the causes of some diseases, especially those with significant latency periods, are generally much less well understood. Even known causes for certain diseases may explain only a fraction of the incidence of such diseases, with the remainder due to unknown causes. Causal agents are often identified in group (epidemiologic) studies that reveal an increase in disease incidence among a group exposed to the agent as compared to a group not exposed. Biological mechanisms for disease development—i.e., a series of causally linked physiological changes from exposure to disease development—are frequently complicated and difficult to observe.

Id.

The bifurcated framework is not appropriate or useful in all toxic tort cases, however. In some cases the bifurcated causation analysis is inappropriate and not useful because "the plaintiff can prove the causal role of the defendant's tortious conduct by observation, based upon reasonable inferences drawn from everyday experience and a close temporal and spatial connection between that

conduct and the harm. Often no other potential causes of injury exist." *Id.* In other words, as the Restatement (Third) explains, "the evidence bearing on specific causation may be sufficient to pretermit the need to assess general causation." *Id.* at 407.

To make the abstract more concrete: general causation and specific causation are at issue in every case. In an automobile collision case, there is a general causation question—whether the cars collided with sufficient force to be capable of causing the type of harm the plaintiff suffered—and there is a specific causation question—whether the collision in fact caused the harm the plaintiff suffered. In automobile collision cases, however, courts do not apply the bifurcated general causation and specific causation framework. Courts do not require plaintiffs to obtain a physicist to opine on the force of the automobile collision and opine on whether the force was sufficient to cause the harm at issue. The temporal relationship between the collision and the injury is sufficient to establish a nonspeculative inference of causation, both general and specific.

The same analysis applies in this case. While the majority tries to frame this case as a complicated toxic tort case that requires extraordinary proof of causation from an epidemiologist—like the toxic exposures at issue in the oft-mentioned Bendectin, Agent Orange, and asbestos class-action cases—it is not. This is a single-exposure case where injury occurred almost immediately after exposure. It is more of a traumatic injury case akin to an automobile collision case. This type of case is sometimes called an "isolated exposure" or "sporadic accident" case. *See Kuhn v. Sandoz Pharms. Corp.*, 14 P.3d 1170, 1184–85 (Kan.

2000). In this type of case, the bifurcated causation analysis is unnecessary to organize the court's analysis, and the testimony of a physician is generally sufficient to establish a triable issue of fact on causation:

> [D]ecisions such as those in the Bendectin and Agent Orange cases, which have demanded confirming epidemiological proof in order to make out a prima facie case, can be explained and better understood, in comparison to decisions such as *Ferebee*, which did not require such proof, by examining whether the exposures were, in fact, mass exposures or, in contrast, were limited or isolated ones. **The courts should explicitly recognize that isolated exposure cases are in reality more typical tort cases that can more comfortably be placed into the sporadic accident model of tort law**. . . . In isolated exposure cases, where only a single plaintiff or a few persons have allegedly suffered harm from a toxic exposure, it is fair and reasonable to allow the traditional sporadic accident model to exert greater influence. A medical doctor is permitted to render an opinion as to whether, to a reasonable degree of medical certainty, exposure to Agent X caused the plaintiff's physical disability. This standard of causation will be referred to as the "testifying treating physician" standard, and *Ferebee* is the paradigm case articulating this standard. In rendering an opinion on causation under this standard, the expert is not typically required to demonstrate the existence of supporting epidemiological data (or even much other toxicological proof) in order to justify admission of that opinion and to reach a jury on that issue.

Gerald W. Boston, *A Mass-Exposure Model of Toxic Causation: The Content of Scientific Proof and the Regulatory Experience*, 18 Colum. J. Env't L. 181, 188–89 (1993) (emphasis added) (footnote omitted).

With that understanding, when the summary judgment record is viewed in the light most favorable to Uhler, the district court erred in granting the defendant's motion for summary judgment because there is a disputed issue of fact regarding causation. First, consider the chemical at issue—Draynamite. The material safety data sheet for Draynamite cautioned that "Acute Inhalation Toxicity – Vapers" posed a "Category 2" risk. It also cautioned: "odor pungent acidic,"

"fatal if inhaled," "obtain special instructions before use," "wear respiratory protection," "use in a well-ventilated area," "IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing," "local ventilation is suggested to control exposure from operations that can generate significant levels of vapour, mist or fumes," "risk of serious damage to lungs (by inhalation)," "causes burns to the respiratory tract," and "inhalation of mist or vapors may cause chemical pneumonia."

Next consider the close temporal and spatial relationship between the defendant's use of Draynamite in the building and the immediate and simultaneous onset of injury to Uhler and others. Sometime after noon, the defendant's maintenance workers received a complaint of a clogged sink on the basement level of the building where Uhler worked. Brad Grismore responded to the complaint. Grismore poured Draynamite down the drain to unclog the sink. Within minutes of Grismore pouring Draynamite down the sink, Toby George, another maintenance employee, received a call from a tenant who reported a strange odor on the second floor. It smelled like rotten eggs. George contacted Grismore, who said he was in the basement tending to the clogged sink. George joined Grismore in the basement and could smell something. George "hurried back up to his office one floor above, got on his computer and adjusted the settings on the building's air circulation system to vent out all circulating air in the system to the outside of the building and to have all fresh outside air come into the system."

Within minutes, people who worked in the building began to suffer various injuries. Eleven people filed incident reports about what happened that day. Four

of the people worked on the third story, where Uhler worked. Seven of the people worked on the second story. Not all of the incident reports are legible, but the summary judgment record shows the following:

- One person "started smelling rotten eggs." She experienced "flu like symptoms." She described her type of injury as "chest burning-indigestion-belching."

- Another person "started smelling odor." She said her "lungs" were the "body part affected by the injury." She said it was "hard to breathe" and she was "coughing." As for the type of injury, she said, "breathing/severe cough last night and cough & chest tightness today."

- Another person started smelling "fumes." She reported injuries as "lungs, sinus, headache." She described her type of injury as shortness of breath, headache, and congestion.

- Another person complained of headache, dizziness, and nausea.

- Another said, "Started smelling sulfur/sewer smell. Continued to get stronger. Started getting headache within 15-20 min. Nausea and dizziness." She described her type of injury as "headache, nausea, dizziness, shortness of breath."

- Another person described a "horrible smell in the clinic and we had to close." She stated she had a "headache" and was "nau[seous], dizzy, today I feel dizzy. I can't remember things."

- Another reported fumes caused headache and stomachache.

- Another stated, "Fumes were circulating through the clinic air system." She stated this caused nausea and chest tightness. She described her body part affected as "stomach, head, lungs" and her type of injury as "headache, nausea, short of breath."

- Another person described "fumes" and the injury as "headaches, nausea, breathing."

Uhler's experience was similar to the ten other people who reported an injury on the day in question. Uhler started having trouble breathing. She asked for,

and was granted, permission to leave as soon as she started experiencing symptoms. She saw Dr. Daphney Myrtil two days later for her symptoms. The doctor's report states Uhler's chief complaint was "inhalation exposure to hydrogen sulfide" from "fumes in the building." The report confirms "inhalation exposure symptoms" and a history of asthma. The report further states that since the incident, "she has been having symptoms of eye irritation, she has had a slight headache, and she does feel like her nose is irritated as well." Dr. Myrtil performed a chest X-ray that showed "hyperinflation" in the lungs. Then, after an "acute worsening of her asthma," Uhler treated with pulmonologist Gregory Hicklin. Dr. Hicklin noted Uhler's lung condition had been stable until her exposure at work.

The close temporal and spatial relationship between Grismore's use of the Draynamite, the immediate onset of injury to Uhler, and the corroborating work incident reports from at least ten other people in the building are more than sufficient to "rule in" Draynamite as a cause of injury. *See Cavallo v. Star Enter.*, 892 F. Supp. 756, 774 (E.D. Va. 1995) ("[I]f a known chemical is accidentally introduced into a company's ventilation system, and all of the workers exposed immediately develop the same adverse reaction, then the episode itself may be sufficiently indicative of causation."), *aff'd in part, rev'd in part*, 100 F.3d 1150 (4th Cir. 1996).

Next, consider the fact that there is no other plausible explanation for what happened sufficient to rule out Draynamite as a cause of injury. Grismore testified there was not "one specific plausible explanation for the complaints . . . other

than [his] use of the Draynamite product in the basement of the building that day." George testified that he could not "offer any explanation for the complaints of the people who say they got sick . . . besides the use of chemicals in the basement." Jeff Hatfield, Graham Group's senior vice president of medical properties, also testified. Hatfield was George and Grismore's boss. Hatfield stated he did not "have a single plausible specific explanation for what happened that day that does not involve the use of Draynamite in the basement."

Not only has Graham Group failed to identify any alternative explanation of harm—Graham Group has affirmatively admitted that the cause of harm to the tenants' employees was the Draynamite used in the building. A clinic administrator in the building at issue testified that she was told by Graham Group that "the cause of all this was they had poured something down the drain." Another supervisor in the building was told by Graham Group "that there was a cup of drain cleaner poured into a basement sink drain, and it resulted in fumes." Hatfield testified about the steps Graham Group took to investigate what happened on the day in question. Based on Graham Group's investigation, he testified that the use of Draynamite "was part of what caused problems. We're not sure what it interacted with."

Next, consider the medical opinions provided by Uhler's experts in resistance to the motion for summary judgment. Dr. Jacqueline Stoken stated she was qualified to opine on lung injuries due to her education, training, and experience working in pulmonary care. In preparing her opinion, she relied on her education, training, and experience; she examined Uhler; she reviewed Uhler's

medical records; she reviewed Graham Group's answers to interrogatories; she reviewed the material safety data sheets for Draynamite; and she reviewed the employee incident reports. She opined that Uhler has a preexisting medical condition that made her more susceptible to injury from exposure to Draynamite. She opined that Uhler's injuries that day (and since) were caused by her exposure to fumes generated by the use of Draynamite in the building. She also opined that Uhler suffered a "long term permanent worsening of her asthma" as a result of her exposure to Draynamite on the day in question; the "chemical fume injury" caused "a material aggravation of [Uhler's] underlying asthma and permanent lung damage." Pulmonologist Dr. Daniel Dodge opined that Uhler's exposure to Draynamite in the workplace caused a "significant and permanent worsening of her pre-existing asthma."

The majority's response to all of this is that there is no evidence the amount of Draynamite poured down the drain was generally capable of causing Uhler's harm, so she loses. This is vaporous. "We do not require a mathematically precise table equating levels of exposure with levels of harm" to prove causation. *Wright v. Willamette Indus., Inc.*, 91 F.3d 1105, 1107 (8th Cir. 1996). And we do not demand evidence of the exact dose where, as here, the evidence may very well be impossible to produce. *Spaur v. Owens–Corning Fiberglas Corp.*, 510 N.W.2d 854, 861 (Iowa 1994) (holding "the jury could infer that [the defendant] was a contributing cause of [the plaintiff's] disease" because "it is not necessary and indeed may be impossible to establish exactly how much" exposure plaintiff experienced).

More important, the general causation evidence the majority now demands is not needed because the close temporal and spatial relationship between the defendant's use of Draynamite and the onset of simultaneous injury to at least eleven people within the building is sufficient to establish both general and specific causation. *See Bonner v. ISP Techs., Inc.*, 259 F.3d 924, 931 (8th Cir. 2001) (affirming jury award in toxic tort case where "the immediacy of [plaintiff's] acute symptoms to her exposure" was sufficient to establish causation); *Kuhn*, 14 P.3d at 1184–85 ("A medical doctor will be permitted to render an opinion as to whether the exposure caused the plaintiff's injury" in "sporadic accident" exposure case.); *Bradford v. CITGO Petroleum Corp.*, 237 So. 3d 648, 666 (La. Ct. App. 2018) (affirming jury award where "the trial court was given significant circumstantial evidence that tied [plaintiffs'] exposures to the subject [chemical] spills"); *Christian v. Gray*, 65 P.3d 591, 606 (Okla. 2003) ("The method for determining the level of the toxin present in the environment may vary, and may include, when appropriate, the observations of those non-experts present when the exposure occurs."). *Cf. Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 158 (3d Cir. 1999) (explaining that if plaintiffs had experienced "prompt reaction" to toxin rather than reporting reaction more than one year later, "this would be the type of temporal relationship that might reliably support a" finding of causation).

The Kansas Court of Appeals issued a decision that correctly applies the law and demonstrates the majority's error. In *Najera v. General Pest Control, LLC*, the plaintiffs sued a pest control company after being exposed to pesticides sprayed in their workplace. 503 P.3d 1054, 1056, 1065 (Kan. Ct. App. 2021).

The district court granted judgment as a matter of law on the question of causation, and the appellate court reversed, holding there was a triable issue of fact based on an expert's "testimony regarding potential effects of exposure, the MSDS [(material safety data sheet)] for the chemicals applied," and a doctor's diagnosis of conditions consistent with the known side effects of the chemicals at issue. *Id.* The court further explained that "the Plaintiffs' symptoms developed close in time to their exposure, which can be circumstantial evidence for establishing causation." *Id.* at 1065. The court then explained at length why there was sufficient evidence of causation and why the defendant was wrong in stating that evidence of the dose was necessary:

> The expert testimony here is not *post hoc, ergo propter hoc* reasoning. Dr. Henry's and Dr. Goldstein's testimony was not merely based on pure speculation, nor the mere premise that because one event occurred before another, the first must have caused the second. The pesticides used are known, the exposure is known, the potential effects of exposure are known, the Plaintiffs' medical conditions and diagnoses are known, and the physical exams and lab work could support the medical diagnoses. . . . Here, there is no speculation that Plaintiffs were in the same location during, right after, and for prolonged periods after liquid chemicals were sprayed onto surfaces and into the air of the Office Building. Their exposure is not speculative; and to require them to list the weight or volume of exposure would preclude the submission of causation to the jury in almost every exposure case.
>
> Defendants' counsel argues that the Plaintiffs must prove the exact amount of exposure. If plaintiffs claiming negligence were required to prove the exact amount of poison, salmonella, radiation, or other toxin to which they were exposed, defendants could avoid all liability simply through failure to keep accurate records. In the case of a plaintiff working with toxins known to cause illness upon inhalation, under Defendants' argument that plaintiff would need to prove the exact amount inhaled just to submit a case to the jury. What about a toddler who drinks from a bottle of poison? Under Defendants' argument, the plaintiff would have to prove the exact amount consumed before submitting the case to the jury. Let us

> assume the toddler did not take a measurement and the plaintiff forgot the amount in the bottle. In all such cases, a defendant could avoid a trial and total liability by alleging the amount of toxin ingested, inhaled, touched, or otherwise introduced was not known and thus causation could not be submitted to the jury. Such a result defies logic. Defendants are free to provide evidence, which might be compelling, contradicting Plaintiffs' exposure allegations. But at some point in the fact-finding, it must be left up to the jury to determine the sufficiency of the evidence.

Id. at 1066–67.

The majority pays little attention to the rationale underlying *Ranes* and thus misapplies it here where the general and specific causation tests are unnecessary and unhelpful. This court should be cautious to avoid adopting principles "taken out of context, to formulate bright-line legal rules or conclude that reasonable minds cannot differ about factual causation." Restatement (Third) § 28 cmt. *c*, at 403. None of the concerns that motivated the creation of the bifurcated framework apply here. Graham Group concedes it had exclusive control of the building. At least eleven people in the building, including Uhler, were injured simultaneously and immediately after the defendant's use of Draynamite. None of the Graham Group's employees responding to the clogged drain or investigating the incident have any plausible explanation of harm other than Draynamite. Graham Group admitted to tenants in the building that the cause of harm was the use of Draynamite in the basement. Graham Group's senior vice president of medical properties has opined that at least part of the cause of harm to tenants in the building was the use of Draynamite. Uhler's experts opined that Uhler's exposure to Draynamite caused her injury and that Uhler was uniquely vulnerable to Draynamite because of her preexisting medical conditions.

All of this is sufficient to rule in Draynamite as a cause of injury, while no evidence rules Draynamite out. Indeed, the defendant admits Draynamite was a cause of injury. "[W]hile epidemiological evidence is helpful, it should not be held to be an absolute requirement in establishing causation." *Bloomquist v. Wapello County*, 500 N.W.2d 1, 5 (Iowa 1993). As one commentator predicted, "*Ranes* illustrates the principle that bad toxic tort claims make hard toxic tort causation rules that may later be applied to dismiss better but uncertain claims." Steve C. Gold, *The "Reshapement" of the False Negative Asymmetry in Toxic Tort Causation*, 37 Wm. Mitchell L. Rev. 1507, 1575 (2011). That is true here. I respectfully dissent.

Oxley, J., joins this dissent.