

**THE DOCTOR CAN'T SEE YOU YET: OVERCOMING THE
“INJURY” BARRIER TO MEDICAL MONITORING
RECOVERY FOR PFAS EXPOSURE**

Megan Noonan*

INTRODUCTION	287
I. BACKGROUND	291
A. PFAS: Development and Exposure.....	291
B. PFAS Regulation and Litigation	294
C. PFAS Contamination in Bennington, Vermont, and Hoosick Falls, New York	297
II. INJURY AND MEDICAL MONITORING	300
A. The Economic-Injury Theory	302
1. <i>Friends for All Children, Inc. v. Lockheed Aircraft Corp.</i>	302
2. Criticism and Concerns.....	304
B. The Subcellular Injury Theory	305
C. The Current State of “Injury” Requirements	306
III. “INJURY” AND PFAS EXPOSURE.....	309
A. The Hoosick Falls Cases	309
B. <i>Sullivan v. Saint-Gobain</i>	310
C. The Effect of Different Injury Theories	311
IV. ADDRESSING THE SUPREME COURT’S KEY CONCERNS IN <i>METRO NORTH</i>	313
A. Discerning Necessary Testing and Preventing Windfall Awards.....	316
B. Holding Back a “Flood” of Litigation.....	317
CONCLUSION.....	321

INTRODUCTION

Medical monitoring has been a topic of debate in the legal community for decades. Courts have disagreed on the elements needed to state a claim, the nature of the relief, and whether courts should even recognize a claim in the absence of present physical injury. After the D.C. Circuit Court of Appeals first recognized medical monitoring in 1984,¹ several other states

* J.D. 2020, Vermont Law School. I would like to thank Professor Ken Rumelt for his research, insight, and support on this Article.

1. *Friends for All Child., Inc. v. Lockheed Aircraft Corp.*, 746 F.2d 816, 831 (D.C. Cir. 1984)

adopted medical monitoring in varying forms in the context of toxic torts.² By 1997, the Supreme Court of the United States weighed in and expressed its concerns.³ Although the Court was addressing medical monitoring in a limited context, some commentators have credited the Court's concerns with slowing the recognition of medical monitoring under state tort law.⁴

Amid this legal backdrop, communities across the United States have been discovering in recent years that per- and polyfluorinated substances (PFAS) have contaminated their water.⁵ Research suggests that PFAS exposure is associated with various diseases, including multiple types of cancer.⁶ Because of their widespread use in manufacturing, consumer products, and firefighting foams, these chemicals are particularly prevalent in communities surrounding manufacturing and industrial plants, airports, and military bases.⁷

The PFAS contamination crisis surfaced in Hoosick Falls, New York, and neighboring North Bennington, Vermont, in 2016.⁸ The pollution stemmed from local factories that historically used PFAS in their operations, where workers faced front-line exposure.⁹ Residents also drank, swam,

2. See *infra* notes 133–41 and accompanying text (discussing states that adopted medical monitoring in varying forms after the 1984 decision).

3. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 441–43 (1997).

4. See Victor E. Schwartz & Cary Silverman, *The Rise of “Empty Suit” Litigation™: Where Should Tort Law Draw the Line?*, 80 BROOK. L. REV. 599, 618 (2015) (concluding that “[s]tates quickly reversed course” after *Metro-North* “and reached a consensus view disfavoring such claims.”); Adam P. Joffe, *The Medical Monitoring Remedy: Ongoing Controversy and a Proposed Solution*, 84 CHI. KENT L. REV. 663, 670 (2009) (calling *Metro-North* a “[c]hange of [m]omentum [a]gainst [m]edical [m]onitoring.”); Mark A. Behrens & Christopher E. Appel, *Medical Monitoring in Missouri After Meyer ex rel. Coplin v. Fluor Corp.: Sound Policy Should Be Restored to a Vague and Unsound Directive*, 27 ST. LOUIS U. PUB. L. REV. 135, 141 (2007) (“The *Buckley* opinion has been highly influential. In accordance with *Buckley* . . . most state courts of last resort recently presented with the issue have rejected medical monitoring.”); Laura Hall, Alastair Iles, & Rachel Morello-Frosch, *Litigating Toxic Risks Ahead of Regulation: Biomonitoring Science in the Courtroom*, 31 STAN. ENV'T. L.J. 3, 30 (2012) (“[E]ven though *Metro-North* does not disallow medical monitoring claims . . . [the] opinion has discouraged the majority of state and federal courts from allowing medical monitoring claims.”).

5. See *Mapping the PFAS Contamination Crisis*, ENV'T WORKING GRP. (July 20, 2020), https://www.ewg.org/interactive-maps/pfas_contamination/ (reporting PFAS contamination at 2,230 sites in 49 states).

6. *Basic Information on PFAS*, U.S. EPA, <https://www.epa.gov/pfas/basic-information-pfas> (last visited Dec. 6, 2020).

7. Jeff B. Kray & Sarah J. Wightman, *Contaminants of Emerging Concern: A New Frontier for Hazardous Waste and Drinking Water Regulation*, 32 NAT. RES. & ENV'T 36, 36–37 (2018).

8. Howard Weiss-Tisman, *North Bennington's PFOA Water Testing Began Thanks to a Concerned Resident*, VT. PUB. RADIO (Mar. 28, 2016) [hereinafter Weiss-Tisman, *Concerned Resident*], <https://www.vpr.org/post/north-benningtons-pfoa-water-testing-began-thanks-concerned-resident#stream/0>.

9. Jim Therrien, *Teflon Town: Part 1: ChemFab's Toxic Legacy*, VT DIGGER [hereinafter *Teflon Town: Part 1*], <https://vtdigger.org/investigations/teflon-town-part-1/> (last visited Dec. 6, 2020);

bathed, and gardened with PFAS-contaminated water for decades before their communities uncovered the pollution.¹⁰ Many of these people had PFAS blood concentrations in an order of magnitude higher than the average American.¹¹ Because scientists associate elevated blood levels of PFAS with various diseases, state officials recommended that residents undergo periodic medical testing to screen for the onset of such diseases.¹² In turn, some residents now seek to recover the cost of those examinations from the company that contaminated their drinking water.

The federal government has not meaningfully regulated these chemicals, so some people exposed to PFAS seek to recover through private litigation.¹³ Traditional tort recovery poses challenges for exposed plaintiffs because PFAS, like many toxic chemicals, can cause latent diseases that only manifest years later, making it difficult to show present injury.¹⁴ Medical monitoring claims are thus one option for plaintiffs to consider.¹⁵ If successful, these claims require responsible parties to pay for ongoing medical testing to detect

Brendan J. Lyons, *Hoosick Falls Defends Saint-Gobain, Honeywell Settlement*, TIMES UNION (last updated Jan. 25, 2017) [hereinafter Lyons, *Honeywell Settlement*], <https://www.timesunion.com/local/article/Hoosick-Falls-defends-Saint-Gobain-Honeywell-10884330.php#photo-12167432>.

10. Mike Polhamus, *Teflon Town: Part 3: Neighbors in the Contamination Zone Sickened by PFOA*, VT DIGGER [hereinafter *Teflon Town: Part 3*], <https://vtdigger.org/investigations/teflon-town-part-3/> (last visited Dec. 6, 2020); see also Brendan J. Lyons, *Concerned Citizens Pack Hoosick Falls Water Hearing*, TIMES UNION (Jan. 15, 2016), <https://www.timesunion.com/local/article/Concerned-citizens-pack-Hoosick-Falls-water-6760001.php> (reporting EPA did not know how long drinking water had been contaminated because no medical studies were conducted).

11. Howard Weiss-Tisman, *While Bennington Residents Learn How to Live With PFOA, Doctors Play Catch Up*, VT. PUB. RADIO (Aug. 1, 2016) [hereinafter Weiss-Tisman, *Learn How to Live With PFOA*], <https://www.vpr.org/post/while-bennington-residents-learn-how-live-pfoa-doctors-play-catch#stream/0>.

12. *Id.*; see Howard Weiss-Tisman, *State: Bennington Residents Who Consumed Water With PFOA Have It In Their Blood*, VT. PUB. RADIO (Jan. 27, 2017) [hereinafter Weiss-Tisman, *PFOA in Their Blood*], <http://digital.vpr.net/post/state-bennington-residents-who-consumed-water-pfoa-have-it-their-blood#stream/0> (noting that high levels of PFOA in blood is linked to various types of cancer); Brendan J. Lyons, *High PFOA Levels Seen in Blood of Hoosick-Area Residents*, TIMES UNION (last updated June 4, 2016) [hereinafter Lyons, *PFOA Levels*], <https://www.timesunion.com/local/article/Tests-show-high-levels-of-PFOA-in-blood-of-7962678.php> (reporting that 2,000 residents around Hoosick Falls had higher levels of PFOA in their blood compared to the national average).

13. See Hall, Iles, & Morello-Frosch, *supra* note 4, at 5–6 (“In this context, toxic tort litigation has emerged as a means of controlling chemical risks.”); see also Ilene Munk & Kacy Manahan, *Private-Party Actions are Establishing PFOS and PFOA Liability*, 32 NAT. RES. & ENV’T 29, 30 (2017) (“Private-party actions [regarding PFAS contamination] are developing more rapidly than regulatory action.”).

14. Philip Desai, *Donovan v. Philip Morris USA, Inc.: The Best Approach to Satisfying the Injury Requirement in Medical Monitoring Claims*, 38 B.C. ENV’T AFF. L. REV. 95, 98 (2011).

15. See Hall, Iles, & Morello-Frosch, *supra* note 4 (noting that plaintiffs may opt to pursue medical monitoring over claims for nuisance, trespass, or negligence “because the medical monitoring tort offer[s] the best chance of recovery for prospective harms resulting from chemical exposure.”).

the potential onset of disease from toxic chemical exposure.¹⁶ Although not every state recognizes medical monitoring as a claim, the claim exists in at least 16 states, the District of Columbia (D.C.), and Guam.¹⁷

Plaintiffs bringing these claims are encountering an evolving conception of “injury” as courts apply traditional tort principles to modern-era tort claims. Following the D.C. Circuit in *Friends for All Children*, many courts who addressed this issue determined that plaintiffs suffered injury based on the economic harm caused by the additional medical examinations needed to address the chemical exposure, and thus did not need to show present physical injury, such as symptoms of a disease.¹⁸ In 2011, however, the Massachusetts Supreme Judicial Court chartered a new approach by defining injury as subcellular changes resulting from chemical exposure.¹⁹ This change has proved consequential for PFAS victims in New York and Vermont, albeit under different legal approaches. In cases stemming from this contamination, courts have agreed that plaintiffs’ evidence of increased blood accumulation of PFAS suffices to bring their claims to trial.²⁰

This Article argues that the trend towards recognizing blood accumulation as evidence of significant exposure or subcellular injury treats PFAS-exposed plaintiffs fairly while addressing concerns that medical monitoring will lead to a “flood” of litigation.²¹ Part I provides a background on PFAS, the current regulatory framework, and the groundwater contamination discovered in Bennington, Vermont and Hoosick Falls, New York. Part II examines different approaches to “injury” for medical monitoring and surveys how courts throughout the United States address the

16. Allen L. Schwartz, Annotation, *Recovery of Damages for Expense of Medical Monitoring to Detect or Prevent Future Disease or Condition*, 17 A.L.R. 5th 327 § 3 (1994).

17. See *infra* Part II.C (surveying the current state of medical monitoring claims); see also KENNETH RUMELT, MODERNIZING LEGAL REMEDIES FOR A TOXIC WORLD 8 n.41–42 (2018), <https://www.vermontlaw.edu/sites/default/files/2018-03/2018-01-11%20Modernizing%20Legal%20Remedies.pdf> (detailing which states have judicially-recognized recovery for medical monitoring damages).

18. E.g., *Petito v. A.H. Robins Co., Inc.*, 750 So. 2d 103, 105–07 (Fla. Dist. Ct. App. 1999); *Redland Soccer Club, Inc. v. Dep’t of the Army & Dep’t of Def. of the U.S.*, 696 A.2d 137, 143–44 (Pa. 1997) (citing *In re Paoli R. Yard PCB Litigation*, 916 F.2d 829, 850–51 (3d Cir. 1990)); *Hansen v. Mtn. Fuel Supply Co.*, 858 P.2d 970, 977 (Utah 1993).

19. *Donovan v. Philip Morris USA, Inc.*, 914 N.E.2d 891, 902 (Mass. 2009).

20. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 470 (D. Vt. 2019) (denying cross-motions for summary judgment); *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233 (N.D.N.Y. 2017), *aff’d in part* 959 F.3d 70 (2d Cir. 2020) (affirming the district court’s denial of defendant’s motion to dismiss plaintiffs’ personal injury claims); *Benoit v. Saint-Gobain Performance Plastics Corp.*, 1:16-CV-930, 2017 WL 3316132 (N.D.N.Y. Aug. 2, 2017), *aff’d in part* 959 F.3d 491 (2d Cir. 2020).

21. See *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 433 (1997) (quoting *Consol. Rail Corp. v. Gottshall*, 512 U.S. 532, 557 (1994)).

issue. Part III analyzes the application of subcellular injury in the New York and Vermont PFAS litigation. Finally, Part IV concludes by arguing that these cases address the concerns raised by the Supreme Court and other courts who rejected medical monitoring, ultimately providing a useful framework for courts to adjudicate monitoring claims amidst nationwide PFAS contamination.

I. BACKGROUND

A. PFAS: Development and Exposure

PFAS is a generic term for a family of synthetic substances, including perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and other chemicals.²² While scientists initially developed these chemicals during a lab accident in 1938, companies quickly discovered that these substances effectively repelled water, oil, and stains.²³ The structure of the molecules making up these substances—incidentally strong chains of carbon and fluorine atoms—makes them slippery, resilient, and resistant to breaking down or dissolving.²⁴ By 1946, the E. I. du Pont de Nemours company (DuPont) introduced a nonstick substance, Teflon, made from PFAS.²⁵ In 1954, 3M Company introduced Scotchgard, also made from PFAS.²⁶ Today, PFAS are widespread in industrial and consumer use and can be found in various commercial and household items. These items include food packaging, stain-repellant fabrics, cleaning products, and nonstick products, among others.²⁷

22. *Basic Information on PFAS*, *supra* note 6.

23. Abraham Lustgarten, *How the EPA and the Pentagon Downplayed a Growing Toxic Threat*, PROPUBLICA (Jul. 9, 2018), <https://www.propublica.org/article/how-the-epa-and-the-pentagon-downplayed-toxic-pfas-chemicals>; *see also History of Teflon*, CHEMOURS, <https://www.teflon.com/en/news-events/history#:~:text=Scientists%20described%20the%20invention%20of,limitless%20applications%20that%20benefit%20mankind>. (last visited Dec. 23, 2020) (“[T]he invention of PTFE [has been described] as ‘an example of serendipity, a flash of genius, a lucky accident—even a mixture of all three.’”).

24. Lustgarten, *supra* note 23.

25. *History of Teflon*, *supra* note 23.

26. Lustgarten, *supra* note 23.

27. *Basic Information on PFAS*, *supra* note 6; *see also* Sharon Lerner, *The Teflon Toxin: DuPont and the Chemistry of Deception*, THE INTERCEPT (Aug. 11, 2015) [hereinafter Lerner, *DuPont and the Chemistry of Deception*], <https://theintercept.com/2015/08/11/dupont-chemistry-deception/> (“[PFAS were] eventually used in hundreds of products, including Gore-Tex and other waterproof clothing; coatings for eye glasses and tennis rackets; stain-proof coatings for carpets and furniture; fire-fighting foam; fast food wrappers; microwave popcorn bags; bicycle lubricants; satellite components; ski wax; communication cables; and pizza boxes.”).

As PFAS proliferated in the market, they also accumulated in the environment and human bodies.²⁸ The same persistent qualities that make PFAS appealing for industrial and commercial uses prevent these chemicals from breaking down over time.²⁹ According to the Environmental Protection Agency (EPA), PFAS can be found in our drinking water, soil, food, and workplaces.³⁰ Thus, humans may be exposed to PFAS through various pathways, including pregnant or nursing mothers who have been exposed to such chemicals.³¹ Once in the human body, PFAS remain resistant to breaking down and “accumulate in the blood and liver, making consistent [exposure] to even low concentrations potentially harmful.”³² Exposure to PFAS is widespread and states continue to discover more contaminated sites.³³ Approximately 95% of the U.S. population has measurable concentrations of PFAS in their blood, according to the National Health and Nutrition Examination Survey, the U.S. Centers for Disease Control and Prevention (CDC), and the National Groundwater Association.³⁴

Studies now demonstrate that PFAS exposure poses human health risks. Exposure has been linked to health issues such as cancers, hormone disruption, and increased cholesterol.³⁵ Recent studies have also linked PFAS to immune suppression and the reduced efficacy of vaccines, particularly in children.³⁶ Many scientists argue that the evidence begs action to reduce PFAS use and develop alternatives.³⁷ Still, the evidence is not conclusive and

28. *Understanding PFAS in the Environment*, U.S. EPA, <https://www.epa.gov/sciencematters/understanding-pfas-environment> (last visited Dec. 6, 2020).

29. *Basic Information on PFAS*, *supra* note 6.

30. *Id.*

31. *Per- and Polyfluoroalkyl Substances (PFAS) and Your Health*, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, <https://www.atsdr.cdc.gov/pfas/pfas-exposure.html> (last updated June 24, 2020).

32. Kray & Wightman, *supra* note 7, at 36. PFAS may accumulate in the environment as well. *Id.*

33. ENV'T WORKING GRP., *supra* note 5.

34. *PFAS: Top 10 Facts*, NAT'L GROUNDWATER ASS'N, https://www.ngwa.org/docs/default-source/default-document-library/pfas/pfastop-10.pdf?sfvrsn=8c8ef98b_2 (last visited Dec. 6, 2020).

35. “Studies indicate that PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects in laboratory animals. Both chemicals have caused tumors in animal studies. The most consistent findings from human epidemiology studies are increased cholesterol levels among exposed populations, with more limited findings related to: infant birth weights, effects on the immune system, cancer (for PFOA), and thyroid hormone disruption (for PFOS).” *Basic Information on PFAS*, *supra* note 6.

36. Tasha Stolber, *PFAS Chemicals Harm the Immune System, Decrease Response to Vaccines, New EWG Review Finds*, ENV'T WORKING GRP. (June 21, 2019), <https://www.ewg.org/news-and-analysis/2019/06/pfas-chemicals-harm-immune-system-decrease-response-vaccines-new-ewg>.

37. Arlene Blum et al., *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)*, 123 ENV'T HEALTH PERSPS. A107, A107–108 (May 2015), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.1509934>.

more research is needed.³⁸ Some studies have suggested that medical monitoring could provide more meaningful insight into specific risks.³⁹

Manufacturers DuPont and 3M, however, conducted studies back in the 1960s and 1970s that ultimately demonstrated that these chemicals caused adverse health effects in animals and could potentially harm humans as well.⁴⁰ At the time, the companies monitored their workers and tried to reduce exposure, but they continued to manufacture the chemicals.⁴¹ By the end of the century, however, the companies could no longer deny the persistence of PFAS in the environment and human bodies.⁴² Still claiming that the chemicals posed no adverse health risks, 3M yanked Scotchgard from the market in 2000.⁴³ EPA initiated a priority review of PFAS in 2002 and, in 2006, invited eight manufacturers of the chemicals to voluntarily phase out production of PFOA with a goal of eliminating use of the chemicals by 2015.⁴⁴ All eight companies met EPA's goals.⁴⁵ However, companies met these goals by replacing PFOA with "shorter-chain" PFAS chemicals and only phased out PFOA once they had developed alternatives.⁴⁶ Although these replacements are slightly less persistent in the environment or human

38. See *What Are The Health Effects of PFAS?*, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, <https://www.atsdr.cdc.gov/pfas/health-effects/> (last visited Dec. 6, 2020) (emphasizing that health outcomes related to PFAS exposure are uncertain).

39. Bindu Panikkar et al., *Making the Invisible Visible: Results of a Community-Led Health Survey Following PFAS Contamination of Drinking Water in Merrimack, NH*, 18 ENV'T HEALTH, 1, 13 (2019).

40. See Lerner, *Dupont and the Chemistry of Deception*, *supra* note 27 (explaining that DuPont conducted PFOA studies on monkeys and rats and found that exposure resulted in death, kidney disease, and liver issues at various dosages); Sharon Lerner, *3M Knew About the Dangers of PFOA and PFOS Decades Ago, Internal Documents Show*, THE INTERCEPT (July 31, 2018) [hereinafter Lerner, *3M Knew About the Dangers of PFOA and PFOS*], <https://theintercept.com/2018/07/31/3m-pfas-minnesota-pfoa-pfos/> (explaining that 3M conducted studies finding "a positive association between the amount of PFOA in workers' blood and their levels of cholesterol and triglycerides").

41. Lerner, *Dupont and the Chemistry of Deception*, *supra* note 27; Lerner, *3M Knew About the Dangers of PFOA and PFOS*, *supra* note 40.

42. See *Dupont and the Chemistry of Deception*, *supra* note 27 (describing that DuPont continually denied that PFAS harmed human health or the environment, including draft statements to be released if news of chemical contamination reached the public).

43. David Barboza, *3M Says It Will Stop Making Scotchgard*, N.Y. TIMES (May 17, 2000), <https://www.nytimes.com/2000/05/17/us/3m-says-it-will-stop-making-scotchgard.html>.

44. Participating companies include: Arkema, Asahi, BASF Corporation, Clariant, Daikin, 3M/Dyneon, DuPont, and Solvay Solexis. *Fact Sheet: 2010/2015 PFOA Stewardship Program*, U.S. EPA, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program> (last visited Dec. 6, 2020); Lustgarten, *supra* note 23.

45. *Fact Sheet: 2010/2015 PFOA Stewardship Program*, *supra* note 44.

46. Sharon Lerner, *EPA Allowed Companies to Make 40 New PFAS Chemicals Despite Serious Risks*, THE INTERCEPT (Sept. 19, 2019), <https://theintercept.com/2019/09/19/epa-new-pfas-chemicals/>.

bodies, research indicates that they may pose similar health risks.⁴⁷ Further, PFOA production continues outside of the United States.⁴⁸

B. PFAS Regulation and Litigation

Until recently, the federal government left PFAS largely unregulated. In 2019, EPA released a PFAS Action Plan that detailed how the agency plans to address the contamination crisis.⁴⁹ Since then, EPA has taken several preliminary actions to begin regulating PFAS under current federal environmental statutes. In February 2020, EPA proposed regulating PFOA and PFOS under the Safe Drinking Water Act, which would set a national drinking-water standard for those two chemicals.⁵⁰ Next, EPA issued a Significant New Use Rule under the Toxic Substances Control Act in June 2020, permitting EPA to conduct pre-sale review of products containing certain PFAS chemicals.⁵¹ EPA also added 172 PFAS chemicals to the Toxics Release Inventory in January 2020 under Congress's direction in § 7321 of the National Defense Authorization Act.⁵² Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA has also issued interim recommendations for remediating groundwater contaminated with PFOA and PFOS.⁵³

While the federal government has initiated action on PFAS and the regulatory landscape is changing quickly, these chemicals are only beginning to be regulated under federal environmental statutes. Further, there are

47. *Id.*; see Dan Freedman, *PFOA is Out, But Replacement Prompted Concerns*, TIMES UNION (Apr. 16, 2019), <https://www.timesunion.com/news/article/New-age-chemicals-implicated-in-same-13769294.php> (reporting studies showing that PFOA damages kidneys, livers, the immune system, genital development, and causes cancer).

48. See, e.g., Sharon Lerner, *The Teflon Toxin Goes to China*, THE INTERCEPT (Sept. 15, 2016), <https://theintercept.com/2016/09/15/the-teflon-toxin-goes-to-china/> (reporting that production has largely shifted to China).

49. U.S. EPA, EPA'S PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) ACTION PLAN 1–2 (2019), https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf.

50. U.S. EPA, EPA PFAS ACTION PLAN: PROGRAM UPDATE 7 (2020), https://www.epa.gov/sites/production/files/2020-01/documents/pfas_action_plan_feb2020.pdf.

51. Significant New Use Rules on Certain Chemical Substances, 85 Fed. Reg. 46,551 (Aug. 3, 2020) (to be codified at 40 C.F.R. pts. 9, 721).

52. Implementing Statutory Addition of Certain Per- and Polyfluoroalkyl Substances; Toxic Chemical Release Reporting, 85 Fed. Reg. 37,354 (June 22, 2020) (to be codified at 40 C.F.R. pt. 372).

53. Memorandum from Peter C. Wright, Assistant Administrator, U.S. EPA, to Regional Administrators, U.S. EPA, OLEM Directive No. 9283.1-47, Interim Recommendations to Address Groundwater Contaminated with Perfluorooctanoic Acid and Perfluorooctanesulfonate (Dec. 19, 2019), https://www.epa.gov/sites/production/files/2019-12/documents/epas_interim_recomendations_for_addressing_groundwater_contaminated_with_pfoa_and_pfos_dec_2019.pdf.

several indications that EPA's actions are not sufficiently addressing the full scope of PFAS contamination. EPA established lifetime health advisories—which are non-regulatory and non-enforceable—for PFOA and PFOS at 70 parts per trillion (ppt).⁵⁴ One study by the CDC, however, indicated that toxic effects manifest at much lower levels.⁵⁵ Some states, including New York and Vermont, have set much lower limits on safe exposure levels.⁵⁶ Most importantly, EPA's regulatory actions focus only on PFOA and PFOS. Those two chemicals, while pernicious, have been voluntarily phased out by many companies and replaced by shorter-chain PFAS chemicals that present similar health risks.⁵⁷ Scholars have urged EPA to regulate PFAS as a class, rather than as individual chemicals, to address the risk most effectively.⁵⁸

Federal environmental laws thus provide limited options for PFAS-exposed people seeking relief. In the context of medical monitoring, citizens cannot bring suit under CERCLA because, at this time, no PFAS chemicals are listed as “hazardous substances” and are merely considered a “pollutant” or “contaminant”.⁵⁹ This distinction also makes it more difficult to trigger an investigation and remediation of contamination.⁶⁰ EPA reports that it “is *beginning* the necessary steps to *propose* designating PFOA and PFOS as ‘hazardous substances.’”⁶¹ The U.S. House of Representatives has sought to speed the process, passing a bill requiring the EPA Administrator to list PFOA and PFOS and to consider listing other PFAS chemicals.⁶² The U.S.

54. Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate, 81 Fed. Reg. 33,250, 33,250–51 (May 25, 2016).

55. William S. Dean et al., *A Framework for Regulation of New and Existing PFAS by EPA*, J. SCI. POL'Y & GOVERNANCE, Apr. 2020, at 1, 2, https://www.sciencepolicyjournal.org/uploads/5/4/3/4/5434385/dean_adejumo_caiati_etal_jspg_v16.pdf

56. See N.Y. COMP. CODES R. & REGS. tit. 10, § 5-1.52 (2020) (adopting a maximum contaminant level of 10 ppt for PFOA and PFOS); 16-3-502 VT. CODE R. Appendix 1 (2019) (adopting a drinking water standard of 20 ppt).

57. Barboza, *supra* note 43 (noting an example of a company that phased out products due to health risks).

58. See Dean et al., *supra* note 55 (“The single most impactful action to streamline the implementation of PFAS regulation would be creating a formal class definition for the family of compounds.”).

59. Ralph A. DeMeo & Jorge Caspary, *Pfapocalypse Now: The PFAS Firestorm and Implications for Florida*, 94 FLA. BAR J. 46, 47 (2020); Melanie Benesh, *It's Time to Designate PFAS a “Hazardous Substance”*, ENV'T. WORKING GRP. (July 3, 2019), <https://www.ewg.org/news-and-analysis/2019/07/it-s-time-designate-pfas-hazardous-substance>.

60. Benesh, *supra* note 59.

61. *PFAS Laws and Regulations*, U.S. EPA, <https://www.epa.gov/pfas/pfas-laws-and-regulations> (last visited Dec. 6, 2020) (emphasis added).

62. H.R. 535, 116th Cong. (2019).

Senate has taken no action on the bill, however.⁶³ Accordingly, some courts have dismissed claims for medical monitoring made under CERCLA and analogous state statutes because PFAS chemicals are not yet listed.⁶⁴

Private lawsuits thus present a more efficient and effective path to recovery than federal statutes, at least for medical monitoring.⁶⁵ In a groundbreaking case in 2002, DuPont settled a class-action lawsuit regarding PFOA water contamination from its West Virginia Washington Works facility.⁶⁶ In the settlement, DuPont agreed to pay \$107 million to fund a scientific panel to study the effects of PFOA exposure.⁶⁷ Under this unique agreement, over 70,000 class members from West Virginia and Ohio provided their personal health data to the C-8 Health Project.⁶⁸ If the panel discovered any probable link between PFOA exposure and disease, the settlement required DuPont to pay up to \$235 million to administer a medical monitoring program.⁶⁹ The panel ultimately found probable links between PFOA exposure and high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, and pregnancy-induced hypertension.⁷⁰ Class members from the original suit subsequently filed over 3,500 claims in multidistrict litigation against DuPont over health issues from PFOA exposure.⁷¹ In 2017, DuPont settled the litigation for \$671 million without admitting fault.⁷²

By establishing probable links between exposure and illnesses, the C-8 Health Project paved the way for other PFAS-exposed victims to recover from PFAS manufacturers and industrial users. Current estimates in July 2020 show PFAS contamination at over 2,000 locations in 49 states,⁷³

63. *All Information for H.R. 535—PFAS Action of 2019*, U.S. CONGRESS, <https://www.congress.gov/bill/116th-congress/house-bill/535/all-info> (last visited Dec. 6, 2020).

64. *See, e.g., Giovanni v. Dep't of Navy*, 433 F. Supp. 3d 736, 746 (E.D. Pa. 2020) (dismissing claim under Pennsylvania's Hazardous Sites Cleanup Act).

65. *See Adam J. Levitt et al., Murky Waters*, 56 TRIAL 36, 38 (2020) (commenting that, in lieu of federal PFAS standards, “[s]tate common law claims often provide more flexibility.”).

66. *Leach v. E.I. DuPont de Nemours & Co.*, No. 01-C-608, 2002 WL 1270121 at *1 (W. Va. Cir. Ct. Apr. 10, 2002).

67. Hall, Iles, & Morello-Frosch, *supra* note 4, at 20.

68. *Id.* at 20–21.

69. *Id.* at 21.

70. *C8 Probable Link Reports*, C8 SCI. PANEL, http://www.c8sciencepanel.org/prob_link.html (last updated Jan. 4, 2017).

71. Munk & Manahan, *supra* note 13, at 30.

72. *Id.*

73. *Mapping the PFAS Contamination Crisis*, *supra* note 5.

including discharges at hundreds of military sites.⁷⁴ This suggests that millions of Americans drink PFAS-contaminated public water, and more public and private contamination continues to be uncovered.⁷⁵

C. PFAS Contamination in Bennington, Vermont, and Hoosick Falls, New York

Since 1956, a manufacturing facility near the Hoosick River in Hoosick Falls, New York, housed companies that used PFAS.⁷⁶ One company, Allied Signal (now owned by Honeywell), operated the plant from 1986–1996.⁷⁷ Saint-Gobain Performance Plastics (Saint-Gobain) purchased the facility in 1996 and remains the current owner and operator.⁷⁸ Both companies used PFAS in the manufacturing process, and washed wastewater containing the chemical down the drain, where it migrated from the soil into the groundwater.⁷⁹ The plant stood less than 400 yards away from an underground well, constructed in 2007, that runs directly to the town's water treatment plant.⁸⁰ In 2014, a local resident decided to investigate a perception that the area suffered from “unusually high” cancer rates.⁸¹ The resident's father, who worked at the facility for decades, was diagnosed with an aggressive form of kidney cancer.⁸² The resident tested his water, found heightened levels of PFOA, and reported his findings to the town.⁸³ After much prodding, the town and Saint-Gobain eventually conducted their own tests, discovering that the water below their facility had levels of PFOA at

74. *678 Military Sites with Known and Suspected Discharges of PFAS*, ENV'T WORKING GRP., <https://www.ewg.org/interactive-maps/2019-pfas-crash-training-military-sites-March2020/map/> (last visited Dec. 6, 2020).

75. *Mapping the PFAS Contamination Crisis*, *supra* note 5.

76. Lyons, *Honeywell Settlement*, *supra* note 9.

77. *Id.*

78. Marie J. French, *Saint-Gobain, Honeywell International Responsible for Hoosick Falls Water Contamination*, *State Says*, ALBANY BUS. REV. (Feb. 11, 2016), <https://www.bizjournals.com/albany/news/2016/02/11/new-york-state-says-saint-gobain-honeywell.html>.

79. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 238 (N.D.N.Y. 2017).

80. *Id.*; Roopal Luhana, *Hoosick Falls Residents Frustrated with State Response to PFOA Contamination*, N.Y. INJ. L. NEWS (Nov. 15, 2016) [hereinafter *Hoosick Falls Residents Frustrated*], <https://newyork.legalexaminer.com/health/toxic-substances/hoosick-falls-residents-frustrated-with-state-response-to-pfoa-contamination/>.

81. Luhana, *Hoosick Falls Residents Frustrated*, *supra* note 80.

82. *Id.*

83. *Id.*

18,000 ppt.⁸⁴ It was also uncovered that in 2005, a different facility in the same county had reported PFOA pollution to the New York Department of Environmental Conservation (DEC), but the DEC undertook no investigation or additional action at that time.⁸⁵

After Saint-Gobain confirmed PFOA water contamination, news reached Bennington, Vermont, where Chemical Fabrics (ChemFab) had operated a similar manufacturing facility since 1968.⁸⁶ The company had claimed that their operation was pollution-free, but by burning the chemicals, the company emitted PFOA through smokestacks, where they settled on the ground and percolated into the groundwater.⁸⁷ Neighbors often complained about the smoke and the fumes.⁸⁸ They even complained to the State, which was aware that PFOA emissions posed a potential health threat in the late 1990s but did not begin to test for the presence of the chemical until 2016.⁸⁹ ChemFab provided well-paying jobs in an area with few large employers, and reporting suggests that the potential economic impacts of rigorous environmental enforcement concerned the State.⁹⁰ Despite the State's attempt to retain jobs, Saint-Gobain purchased ChemFab in 2000.⁹¹ The company moved operations to New Hampshire two years later and shut down the Vermont plant.⁹² After hearing about Hoosick Falls, Bennington residents called for testing and, like in New York, ultimately uncovered significant water contamination.⁹³

In both states, regulators adopted drinking-water regulations for PFOA and PFOS, and listed the two chemicals as hazardous substances.⁹⁴ Under

84. *Id.*; Brendan J. Lyons, *Emails Show Early Confusion over Hoosick Falls Water Pollution*, TIMES UNION (Feb. 8, 2016), <https://www.timesunion.com/local/article/EPA-and-state-warned-of-Hoosick-Falls-water-6812774.php>.

85. Brendan J. Lyons, *State Was Notified of PFOA Pollution in Rensselaer County in 2005*, TIMES UNION (last updated Feb. 29, 2016), <https://www.timesunion.com/tuplus-local/article/State-was-notified-of-PFOA-pollution-in-6855901.php>.

86. Weiss-Tisman, *Concerned Resident*, *supra* note 8; *Teflon Town: Part 1*, *supra* note 9.

87. *Teflon Town: Part 3*, *supra* note 10.

88. *Teflon Town: Part 1*, *supra* note 9.

89. *Id.*; Mike Polhamus, *Teflon Town: Part 2: Records Show State Officials Put Jobs Ahead of Environmental Regulations*, VT DIGGER [hereinafter *Teflon Town: Part 2*], <https://vtdigger.org/investigations/teflon-town-part-2/> (last visited Dec. 6, 2020).

90. *Teflon Town: Part 2*, *supra* note 89.

91. Jim Therrien, *Cleanup at Former Chemfab Site to Begin*, BENNINGTON BANNER, https://www.benningtonbanner.com/uncategorized/cleanup-at-former-chemfab-site-to-begin/article_036dbca7-05cb-5cf0-897f-b4edb9ae9b3d.html (last visited Dec. 6, 2020).

92. *Teflon Town: Part 2*, *supra* note 89.

93. *Id.*

94. N.Y. COMP. CODES R. & REGS. tit. 10, § 5-1.52 (2020) (adopting a maximum contaminant level of 10 ppt for PFOA and PFOS); N.Y. COMP. CODES R. & REGS. tit. 6, § 597.3 (2017) (listing PFOA and PFOS as hazardous substances); 16-3-502 VT. CODE. R. Appendix 1 (2019) (adopting a drinking

this authority, both states have entered into consent orders requiring Saint-Gobain (and Honeywell, in New York) to remediate the contaminated sites.⁹⁵ Further, both states offered blood testing for affected residents.⁹⁶ In Vermont, results showed “a strong correlation between PFOA concentrations in water and PFOA levels in the blood . . . [that] increase[d] with cumulative exposure over the years.”⁹⁷ Test results indicated that most Bennington residents drinking contaminated water had increased blood concentrations of PFOA compared to average Americans.⁹⁸ Likewise, results in New York showed that the average resident’s blood level was “11 times higher than the national average.”⁹⁹

Blood levels decrease, however, once people stop drinking contaminated water.¹⁰⁰ New York’s second round of testing showed hopeful results, finding that the group’s PFOA blood level decreased by 40%.¹⁰¹ Despite these decreases, Hoosick Falls residents’ PFOA blood levels remain higher than the general U.S. population.¹⁰² The Vermont Department of Health conducted a second round of testing in 2018 but has not yet released results.¹⁰³

Although research indicates that elevated blood levels are likely tied to a range of serious diseases,¹⁰⁴ blood-level results do not necessarily indicate

water standard of 20 ppt); 16–3–202 Vt. Code R. § 7–211 (2016) (listing PFOA and PFOS as hazardous substances).

95. Order on Consent and Administrative Settlement between N.Y. Dep’t of Env’t Conservation and Saint-Gobain Performance Plastics Corp., Honeywell International Inc., Index No. CO 4-20160212-18 (June 3, 2016), http://www.dec.ny.gov/docs/regions_pdf/stgobainco632016.pdf; Consent Order and Final Judgment Order at 8–11, Vermont, Agency of Nat. Res. v. Saint-Gobain Performance Plastics Corp., Docket No. 92-4-19 (2019).

96. Lyons, *PFOA Levels*, *supra* note 12; VT. DEP’T OF HEALTH, EXPOSURE TO PERFLUOROCTANOIC ACID (PFOA) IN BENNINGTON AND NORTH BENNINGTON, VERMONT: RESULTS OF BLOOD TESTING AND EXPOSURE ASSESSMENT 4–5 (2017), https://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_PR_PFOA_Report.pdf.

97. Weiss-Tisman, *PFOA in Their Blood*, *supra* note 12; *see* VT. DEP’T OF HEALTH, *supra* note 96 (reporting full results).

98. *See* Weiss-Tisman, *PFOA in Their Blood*, *supra* note 12 (“[T]he average American has about 2.1 micrograms per liter in their blood. . . . [T]he average Bennington resident who was tested has levels slightly above 10 micrograms per liter. . . . [with some] exceed[ing] 60 micrograms per liter.”).

99. Lyons, *PFOA Levels*, *supra* note 12.

100. *Id.* Once exposure ceases, PFOA levels decrease by about half every three years. *Id.*

101. HOOSICK AND PETERSBURGH AREA PFOA BIOMONITORING: GROUP-LEVEL RESULTS FOR ROUND, N.Y. DEP’T OF HEALTH 2 (2019), https://www.health.ny.gov/environmental/investigations/hoosick/docs/hoosick_round_two_info_sheet.pdf.

102. *Id.*

103. *PFOA Blood Testing 2018*, VT. DEP’T OF HEALTH, <https://www.healthvermont.gov/response/environmental/pfoa-blood-testing-2018> (last visited Dec. 6, 2020).

104. *See supra* notes 35–36 and accompanying text (explaining the human health risks of PFAS exposure).

negative health outcomes. Instead, state officials recommend that people with increased blood levels of PFOA monitor their “health [for] outcomes that are most strongly correlated with PFOA.”¹⁰⁵ Naturally, exposed residents are concerned about the long-term health impacts, as well as the cost of such monitoring. For example, Bennington resident Jim Sullivan, who has elevated PFOA blood levels, wants to know, “[W]ho is going to ultimately pay for long-term medical monitoring for ourselves, and for everybody that’s affected? . . . Because, this stuff, as you know, doesn’t leave the system any time soon. And we have to stay on top of it, maybe the rest of our lives. So, it’s a significant issue.”¹⁰⁶

II. INJURY AND MEDICAL MONITORING

Plaintiffs exposed to toxic chemicals may seek to recover under common law tort actions, called *toxic torts*.¹⁰⁷ Plaintiffs typically assert toxic tort actions under negligence theory, although some plaintiffs assert claims under nuisance, trespass, strict liability, or under a specific state statute.¹⁰⁸ A traditional negligence cause of action contains four elements: duty, breach of duty, proximate cause, and damages.¹⁰⁹ Traditionally, tort law requires a plaintiff to show personal injury or property damage, though there are some exceptions.¹¹⁰ The nature of toxic chemical exposure, however, creates challenges for plaintiffs to prove physical injury.¹¹¹ People exposed to toxic chemicals may experience acute symptoms like headaches, dizziness, and nausea.¹¹² Additionally, the exposure may also increase the plaintiff’s risk of developing cancer or other conditions many years after initial exposure.¹¹³ Because these latent injuries do not immediately manifest, many plaintiffs

105. Weiss-Tisman, *Learn How to Live With PFOA*, *supra* note 11; *see also* Lyons, *PFOA Levels*, *supra* note 12 (emphasizing that blood-level results only show exposure and recommending that residents consult with their doctors).

106. Weiss-Tisman, *Learn How to Live With PFOA*, *supra* note 11.

107. Bill Charles Wells, *The Grin Without the Cat: Claims for Damages from Toxic Exposure Without Present Injury*, 18 WM. & MARY J. ENV’T L. 285, 287 (1994).

108. *Id.*

109. RESTATEMENT (SECOND) OF TORTS § 281 (AM. LAW INST. 1965).

110. Vincent R. Johnson, *The Boundary-Line Function of the Economic Loss Rule*, 66 WASH. & LEE L. REV. 524, 525, 528–32 (2009).

111. *See* Wells, *supra* note 107, at 288 (“Toxic tort claims . . . have several distinguishing characteristics that set them apart from other tort litigation.”).

112. Akim F. Czmus, *Medical Monitoring of Toxic Torts*, 13 TEMP. ENV’T L. & TECH. J. 35, 35 (1994).

113. *Id.* at 36.

cannot demonstrate present physical injury sufficient to state a claim for negligence.¹¹⁴

For chemicals of emerging concern, like PFAS, the present injury requirement poses a significant barrier for tort recovery because scientific research linking exposure to disease is still developing—and even then, it may be years before plaintiffs show symptoms.¹¹⁵ Medical monitoring claims seek to address this issue by allowing plaintiffs “to recover the quantifiable costs of periodic future medical examinations to detect the onset of physical harm.”¹¹⁶ The lack of a present physical injury distinguishes the medical monitoring claim from traditional tort claims.¹¹⁷

By their nature, medical monitoring claims should not require present physical injury “because the whole aim of medical monitoring is to *detect the onset* of physical harm.”¹¹⁸ As one court summarized:

[T]his view of the law promotes an absurdity: requiring plaintiffs to manifest physical symptoms before receiving medical monitoring would defeat the purpose of that remedy. The entire point of medical monitoring is to provide testing that would detect a patient’s disease *before* she manifests an obvious symptomatic illness, thus allowing earlier treatment that carries a better chance of success. . . . “Medical monitoring” provides small comfort to someone already suffering outwardly apparent symptoms if the only benefit is to track the continued advance of the disease. Further, the cost of testing necessary to provide treatment would

114. See, e.g., *Wood v. Wyeth-Ayerst Labs.*, 82 S.W.3d 849, 859 (Ky. 2002) (declining to recognize medical monitoring claim without present injury); *Henry v. Dow Chemical Co.*, 701 N.W.2d 684, 701 (Mich. 2005) (explaining that plaintiffs must demonstrate present physical injury to either person or property in addition to economic losses that result from that injury to recover under a negligence theory).

115. See *Per- and Polyfluoroalkyl Substances (PFAS) and Your Health*, *supra* note 31 (“[S]cientists are still learning about the health effects of exposures to mixtures of different PFAS. . . . Additional research may change our understanding of the relationship between exposure to PFAS and human health effects.”); Desai, *supra* note 14, at 98 (“Toxic tort victims often face obstacles in proving injury because victims of exposure frequently do not manifest any symptoms of physical injury until months or years after the exposure.”).

116. Allan L. Schwartz, *Recovery of Damages for Expense of Medical Monitoring to Detect or Prevent Future Disease or Condition*, 17 A.L.R.5th 327 § 2[a] (1994).

117. See, e.g., RESTATEMENT (SECOND) OF TORTS § 281 (AM. L. INST. 1965) (defining negligence based on past risks and harms, not future risks and harms).

118. Desai, *supra* note 14, at 116 (emphasis added).

already be recoverable as a component of damages arising from the illness itself.¹¹⁹

On the other hand, injury is an essential element of tort recovery in American jurisprudence, and legitimate policy concerns support the present-injury rule.¹²⁰ For decades, courts have grappled with how this tort fits within their jurisprudence and vary in their approaches to this theory, including their definition of injury.¹²¹ This part discusses two main approaches: the economic injury theory and the subcellular injury theory.

A. The Economic-Injury Theory

1. Friends for All Children, Inc. v. Lockheed Aircraft Corp.

The D.C. Circuit was the first court to impose medical monitoring liability without a present physical injury.¹²² In *Friends for All Children*, a plane crashed while carrying infant Vietnamese orphans to the United States for adoption.¹²³ As the legal guardian of the survivors, Friends for All Children Inc. sued Lockheed for negligent manufacturing and sought diagnostic testing to determine if the infants suffered from neurological disorders.¹²⁴ Lockheed argued that the plaintiffs could not recover without showing that the infants suffered physical injury, but on appeal, the D.C. Circuit affirmed the district court's order requiring Lockheed to establish a fund for diagnostic expenses.¹²⁵

The court resolved the present injury issue by concluding that the plaintiffs suffered an economic harm when the defendant's negligence required them to incur periodic monitoring costs.¹²⁶ The court laid out an oft-cited hypothetical to demonstrate why tort law encompasses medical monitoring damages for injuries without physical harm:

Jones is knocked down by a motorbike which Smith is riding through a red light. Jones lands on his head with some force. Understandably shaken, Jones enters a hospital where doctors

119. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 252 (N.D.N.Y. 2017) (internal citations omitted).

120. Desai, *supra* note 14, at 104–05.

121. See *infra* Part II.C (surveying the current state of medical monitoring claims).

122. *Friends for All Child., Inc. v. Lockheed Aircraft Corp.*, 746 F.2d 816, 831 (D.C. Cir. 1984).

123. *Id.* at 819.

124. *Id.* at 819–20.

125. *Id.* at 838.

126. *Id.* at 826.

recommend that he undergo a battery of tests to determine whether he has suffered any internal head injuries. The tests prove negative, but Jones sues Smith solely for what turns out to be the substantial cost of the diagnostic examinations.¹²⁷

Through this example, the court explained that permitting recovery in such circumstances aligned with underlying principles of tort law.¹²⁸ The plane crash proximately caused the need for diagnostic testing: but for the crash, no monitoring would be necessary.¹²⁹ Further, competent medical testimony can establish necessity for medical monitoring, addressing the concern that increased risk of injury is too speculative to support recovery.¹³⁰ Compared to increased risk or emotional distress claims, monitoring costs are readily quantifiable.¹³¹ More broadly, the court found that a medical monitoring cause of action fits the traditional tort goal of deterring misconduct and “accords with commonly shared intuitions of normative justice.”¹³² This decision laid the foundation for medical monitoring.

A few years later, courts began to recognize medical monitoring in the context of toxic torts.¹³³ In *Ayers v. Township of Jackson*, residents sought medical monitoring after discovering that toxic pollutants, including known carcinogens, leached from the town landfill and contaminated their well water.¹³⁴ The New Jersey Supreme Court affirmed the plaintiffs’ monitoring award.¹³⁵ Following the logic in *Friends for All Children*, the Court explained that the plaintiffs’ injury is their need to pay for periodic medical monitoring, proximately caused by the defendants’ tortious conduct that exposed plaintiffs to toxic chemicals.¹³⁶

Further, the Court described how the medical monitoring remedy advances the goals of tort law. First, medical monitoring furthers “the public interest in early detection and treatment of disease.”¹³⁷ If monitoring catches

127. *Id.* at 825.

128. *Id.* at 824–25 (“In light of general principles of tort law, the *Restatement (Second) of Torts*, and the law of other jurisdictions, we believe that the District of Columbia Court of Appeals would recognize [medical monitoring].”).

129. *Id.* at 825.

130. *Id.* at 825–26.

131. *See id.* at 826 (“[T]he plaintiffs’ need for diagnostic examinations can be shown through competent medical testimony.”).

132. *Id.* at 825.

133. *See Wells, supra* note 107, at 297 (“*Ayers v. Township of Jackson* was the first case in which a court awarded medical monitoring damages in the toxic tort context.”).

134. *Ayers v. Jackson Twp.*, 525 A.2d 287, 291 (N.J. 1987).

135. *Id.* at 312.

136. *Id.* at 304.

137. *Id.* at 311.

a disease in the early stages of development, appropriate care could mitigate more serious consequences and reduce overall costs to the parties.¹³⁸ Next, medical monitoring serves to deter polluters because it allows plaintiffs to seek redress when evidence readily establishes that the defendants' conduct caused the plaintiffs' exposure.¹³⁹ Conversely, forcing plaintiffs to wait until physical symptoms manifest may allow the responsible party to escape liability by arguing that during the long latency period, other intervening forces could have caused the injury.¹⁴⁰

Courts permitting medical monitoring recovery after *Friends for All Children* tend to adopt the economic injury approach. Courts in California, Utah, Pennsylvania, Florida, West Virginia, Missouri, Maryland, and Nevada also followed *Friends for All Children* by adopting the economic theory of injury under the *Restatement (Second) of Torts*.¹⁴¹

2. Criticism and Concerns

Other courts have rejected medical monitoring recovery without present physical injury, and some have criticized the economic injury theory as relying on circular logic. The Michigan Supreme Court said that this approach “blur[s] the distinction between ‘injury’ and ‘damages’” and explained that the costs of monitoring still only reflect losses from a potential future injury.¹⁴² Similarly, the Kentucky Supreme Court determined that economic losses do not satisfy the present physical injury requirement and remarked that “[i]t is not the remedy that supports the cause of action, but rather the cause of action that supports a remedy.”¹⁴³

Further, the economic injury theory presents problems because the *Restatement (Third) of Torts* retreated from the definition of injury in the *Restatement (Second)*.¹⁴⁴ The *Restatement (Second)* defines injury as “the

138. *Id.* at 312.

139. *Id.* at 311–12.

140. *Id.* at 312.

141. *Potter v. Firestone Tire & Rubber Co.*, 863 P.2d 795, 823 (Cal. 1993); *Hansen v. Mountain Fuel Supply Co.*, 858 P.2d 970, 977, 979 (Utah 1993); *Redland Soccer Club, Inc. v. Dep't of the Army & Dep't of Def. of the U.S.*, 696 A.2d 137, 143–44 (Pa. 1997) (citing *In re Paoli*, 916 F.2d 829, 850–51 (3d Cir. 1990)); *Petito v. A.H. Robins Co., Inc.*, 750 So. 2d 103, 105 (Fla. Dist. Ct. App. 1999); *Bower v. Westinghouse Elec. Corp.*, 522 S.E.2d 424, 430 (W.V. 1999); *Meyer v. Fluor Corp.*, 220 S.W.3d 712, 717–18 (Mo. 2007); *Exxon Mobil Corp. v. Albright*, 71 A.3d 30, 75–76 (Md. 2013); *Sadler v. PacifiCare of Nev.*, 340 P.3d 1264, 1270–71 (Nev. 2014).

142. *Henry v. Dow Chem. Co.*, 701 N.W.2d 684, 691 (Mich. 2005).

143. *Wood v. Wyeth-Ayerst Labs.*, 82 S.W.3d 849, 855 (Ky. 2002).

144. RESTATEMENT (THIRD) OF TORTS: PHYSICAL & EMOTIONAL HARM § 4 (AM. LAW INST. 2010).

invasion of any legally protected interest of another” and includes injury with the definitions of “harm” and “physical harm” in § 7.¹⁴⁵ The *Restatement (Third)* does not include a definition of injury.¹⁴⁶ Instead, the Restatement defines “physical harm” as bodily harm or property damage.¹⁴⁷ Comment C specifically addresses medical monitoring claims absent physical harm and concludes that such claims “are beyond the scope of the physical-harm Chapters in this Restatement.”¹⁴⁸ However, Comment C also explains that there is no threshold level of physical impairment for liability for physical harm and “any detrimental change in the physical condition of a person’s body or property counts as a harmful impairment.”¹⁴⁹ The District of Vermont considered the shift in the Restatement and determined that the new definition does not preclude recovery for medical monitoring.¹⁵⁰ Still, the court acknowledged that “the revised definition chooses not to provide a definitive answer to the question of whether medical monitoring is appropriate for asymptomatic exposure” and that the *Restatement (Third)* no longer provides guidance on this issue.¹⁵¹ So, at best, the *Restatement (Third)* does not address the issue, and at worst, it undermines the reasoning in *Friends for All Children*. Either way, it appears that medical monitoring plaintiffs could need stronger support for their “injury” pleading.

B. *The Subcellular Injury Theory*

In *Donovan v. Philip Morris*, the Massachusetts Supreme Judicial Court chartered a new path and introduced the subcellular theory of injury.¹⁵² In this case, plaintiffs were smokers who sued Philip Morris for negligently designing cigarettes and sought medical monitoring to detect the early onset of lung cancer.¹⁵³ In considering their claim, the Court acknowledged that modern injuries, particularly toxic torts, do not fit neatly under a body of law

145. RESTATEMENT (SECOND) OF TORTS, § 7 (AM. LAW INST. 1965).

146. RESTATEMENT (THIRD) OF TORTS: PHYSICAL & EMOTIONAL HARM § 4 (AM. LAW INST. 2010).

147. *Id.*

148. *Id.*

149. *Id.*

150. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 455 (D. Vt. 2019).

151. *Id.* at 455–56.

152. *See Desai, supra* note 14 at 116–17 (“[T]he *Donovan* Court did not follow other courts that set forth a similar standard for medical monitoring in concluding that no present physical injury was required.”). A Minnesota court did consider whether subcellular changes constitute a present injury but concluded that a fact finder should make that determination. *See Bryson v. Pillsbury Co.*, 573 N.W.2d 718, 721 (Minn. Ct. App. 1998) (determining that summary judgment was improper and that a fact finder should determine whether asymptomatic chromosome damage satisfies the present injury requirement).

153. *Donovan v. Philip Morris USA, Inc.*, 914 N.E.2d 891, 895 (Mass. 2009).

that developed when the nature of tortious injuries was fundamentally different.¹⁵⁴ The Court determined that it “must adapt to the growing recognition” that exposure to toxic substances may cause latent injuries, “which should be compensable even if the full effects are not immediately apparent.”¹⁵⁵ While plaintiffs exposed to toxic substances may not show symptoms of an illness, they may experience subcellular or other physiological changes that warn trained medical professionals that the patient has an increased risk of developing a serious illness requiring medical monitoring.¹⁵⁶ Thus, plaintiffs must prove that their exposure to a hazardous substance “produced, at least, subcellular changes that substantially increased the risk of serious disease, illness, or injury.”¹⁵⁷ *Donovan* does not reject medical monitoring without present physical injury—in fact, Massachusetts is one of five states recognizing medical monitoring as a cause of action¹⁵⁸—but instead takes a different approach in defining what constitutes sufficient exposure than other states adopting the claim.

Ultimately, the Court outlined a seven-part claim for medical monitoring under Massachusetts law.¹⁵⁹ The Court reasoned that the requirement to show a substantially increased risk of harm, corresponding with subcellular change, will preclude false claims.¹⁶⁰ Further, the other elements of the claim accord with requirements in other jurisdictions that require plaintiffs to also show that effective testing for early detection exists, that early detection decreases morbidity or mortality, and to present expert testimony establishing that monitoring is reasonably necessary.¹⁶¹

C. *The Current State of “Injury” Requirements*

16 states, the District of Columbia, and Guam recognize claims for medical monitoring without a present physical injury. Broken down: five states recognize medical monitoring as an independent cause of action,¹⁶²

154. *Id.* at 901.

155. *Id.* (citations omitted).

156. *Id.*

157. *Id.* at 902.

158. *See infra* note 162 and accompanying text (identifying these states).

159. *Donovan*, 914 N.E.2d at 902.

160. *Id.* at 901.

161. *Id.* at 902.

162. *Petito v. A.H. Robins Co., Inc.*, 750 So. 2d 103, 105 (Fla. Dist. Ct. App. 1999); *Redland Soccer Club, Inc. v. Dep’t of the Army & Dep’t of Defense of the U.S.*, 696 A.2d 137, 145–46 (Pa. 1997); *Hansen v. Mountain Fuel Supply Co.*, 858 P.2d 970, 979 (Utah 1993); *Bower v. Westinghouse Elec. Corp.*, 522 S.E.2d 424, 432–33 (W.Va. 1999) (discussing how plaintiffs can prove damages for medical monitoring under West Virginia law); *Donovan*, 914 N.E.2d at 895.

while seven states recognize medical monitoring as a remedy.¹⁶³ In four states, the District of Columbia, and Guam, federal courts have determined that the highest court in each jurisdiction would adopt medical monitoring—either as an independent cause of action or as a remedy—if presented with the issue.¹⁶⁴

On the other hand, 22 states and the Virgin Islands do not recognize claims for medical monitoring absent present physical injury. Broken down: ten of these states reject medical monitoring claims without a present physical injury.¹⁶⁵ Federal courts in six states found no support under state law and declined to permit medical monitoring claims.¹⁶⁶ Three states and

163. *Burns v. Jaquays Min. Corp.*, 752 P.2d 28, 33–34 (Ariz. Ct. App. 1987); *Potter v. Firestone Tire & Rubber Co.*, 863 P.2d 795, 824–25 (Cal. 1993); *Exxon Mobil Corp. v. Albright*, 71 A.3d 30, 81–82 (Md. 2013); *Meyer v. Fluor Corp.*, 220 S.W.3d 712, 718 (Mo. 2007); *Sadler v. PacifiCare of Nev.*, 340 P.3d 1264, 1270 (Nev. 2014); *Ayers v. Jackson Twp.*, 525 A.2d 287, 312 (N.J. 1987); *Wilson v. Brush Wellman, Inc.*, 817 N.E.2d 59, 61 (Ohio 2004).

164. *Cook v. Rockwell Intern. Corp.*, 755 F. Supp. 1468, 1471 (D. Colo. 1991) (affirmed in *Bell v. 3M Co.*, 344 F. Supp. 3d 1207, 1224 (2018)); *Friends for All Child., Inc. v. Lockheed Aircraft Corp.*, 746 F.2d 816, 826 (D.C. Cir. 1984); *Abuan v. Gen. Elec. Co.*, 3 F.3d 329, 334 (9th Cir. 1993); *Carey v. Kerr-McGee Chem. Corp.*, 999 F. Supp. 1109, 1119–20 (N.D. Ill. 1998); *Allgood v. Gen. Motors Corp.*, No. 102-cv-1077DFHTAB, 2005 WL 2218371 at *2 (S.D. Ind. Sept. 12, 2005); *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 466 (D. Vt. 2019).

165. *See Hinton v. Monsanto Co.*, 813 So. 2d 827, 831–32 (Ala. 2001) (holding that Alabama law does not recognize a claim for medical monitoring without present injury); *Wood v. Wyeth-Ayerst Labs.*, 82 S.W.3d 849, 856, 859 (Ky. 2002) (declining to depart from “well-settled principles of tort law” and rejecting a medical monitoring remedy without present injury); *Henry v. Dow Chem. Co.*, 701 N.W.2d 684, 701 (Mich. 2005) (determining that Michigan law requires present injury to recover medical monitoring damages under a negligence claim, and declining to adopt an independent medical monitoring cause of action without present injury); *Paz v. Brush Eng’r Materials, Inc.*, 949 So. 2d 1, 9 (Miss. 2007) (responding to a certified question from the Fifth Circuit and determining that Mississippi does not recognize a medical monitoring cause of action without present physical injury); *Caronia v. Philip Morris USA, Inc.*, 22 N.Y.S.3d 439, 452 (N.Y. 2013) (responding to a certified question from the Second Circuit and concluding that New York law does not recognize a medical monitoring cause of action but permits medical monitoring as a remedy for an existing tort supported by a present injury); *Lowe v. Philip Morris USA, Inc.*, 183 P.3d 181, 186 (Or. 2008) (finding that Oregon law requires present injury to person or property and that economic harm is not sufficient to recover medical monitoring expenses); *Curl v. Am. Multimedia, Inc.*, 654 S.E.2d 76, 81 (N.C. Ct. App. 2007) (declining to recognize a medical monitoring cause of action without present injury); *Duncan v. Nw. Airlines, Inc.*, 203 F.R.D. 601, 608–09 (W.D. Wash. 2001) (finding no support in Washington law for a medical monitoring cause of action without present physical injury, but finding that plaintiff pleaded sufficient injury from exposure to second-hand smoke and permitting plaintiff to seek medical monitoring as a remedy for her negligence claim); *Alsteen v. Wauleco, Inc.*, 802 N.W.2d 212, 218, 223 (Wis. Ct. App. 2011) (holding that “mere exposure to a dangerous substance does not constitute an actual injury” and declining to create a medical monitoring claim without present injury).

166. *See M.G. ex rel. K.G. v. A.I. DuPont Hosp. for Child.*, 393 F.App’x 884, 892 (3rd Cir. 2010) (finding that plaintiffs could not satisfy the elements from *Paoli* and thus could not state a claim for medical monitoring under Delaware law); *Parker v. Brush Wellman, Inc.*, 377 F. Supp. 2d 1290, 1302 (N.D. Ga. 2005) (determining that Georgia law does not support a medical monitoring remedy for asymptomatic plaintiffs); *Pickrell v. Sorin Grp. UA, Inc.*, 293 F. Supp. 3d 865, 868 (S.D. Iowa 2018)

the Virgin Islands rejected medical monitoring claims on the facts of the cases.¹⁶⁷ Two states denied class certification without discussing the merits of the underlying medical monitoring claims.¹⁶⁸ Louisiana legislatively prohibits medical monitoring recovery without present injury.¹⁶⁹

Finally, five states and Puerto Rico have issued unclear decisions that either acknowledged the claim without directly answering the “injury” question or permitted recovery without articulating standards.¹⁷⁰ Only seven states (Alaska, Hawaii, Idaho, Maine, New Mexico, South Dakota, and Wyoming) have not addressed medical monitoring.

(predicting that the Iowa Supreme Court would decline to recognize a medical monitoring cause of action absent present injury); *Trimble v. Asarco, Inc.*, 232 F.3d 946, 963 (8th Cir. 2000) (overruled on other grounds) (affirming the district court’s holding that Nebraska law does not recognize medical monitoring claims without present physical injury); *McCormick v. Halliburton Co.*, 895 F. Supp. 2d 1152, 1159 (W.D. Okla. 2012) (finding no support in Oklahoma law for a medical monitoring remedy and determining that the Oklahoma Supreme Court would not recognize such a remedy); *Ball v. Joy Tech., Inc.*, 958 F.2d 36, 39 (4th Cir. 1991) (finding that neither West Virginia nor Virginia law recognizes exposure to toxic chemicals as a present physical injury).

167. See *Bowerman v. United Illuminating*, No. X04-cv-940115436S, 1998 Conn. Super. LEXIS 3575 at *3-5 (Conn. Sup. Ct. Dec. 15, 1998) (declining to decide whether lung tissue scarring and the presence of asbestos fiber in the lungs constitutes injury because plaintiffs failed to present evidence establishing that either condition existed); *Burton v. R.J. Reynolds Tobacco Co.*, 884 F. Supp. 1515, 1523 (D. Kan. 1995) (determining that medical monitoring damages sought fell under other tort claims and did not constitute a separate tort, and dismissing the independent medical monitoring claim); *Miranda v. Dacruz*, No. PC 04-2210, 2009 LEXIS 129 at *31 (R.I. Super. Oct. 26, 2009) (following *Donovan* and rejecting plaintiff’s claim for medical monitoring because plaintiff did not demonstrate “any physiological changes indicative of future harm”); *Purjet v. Hess Oil V.I. Corp.*, Civ. No. 1985/284, 1986 WL 1200 at *4 (V.I. Jan. 8, 1996) (concluding asbestos exposure was not an injury sufficient to state a tort cause of action).

168. *Mehl v. Can. Pac. Ry.*, 227 F.R.D. 505, 520 (D.N.D. 2005) (classifying medical monitoring recovery as future damages and not injunctive relief, thus denying class certification); *Rosmer v. Pfizer, Inc.*, No. Civ.A. 9:99-2280-18RB, 2001 WL 34010613 at *5 (D.S.C. Mar. 30, 2001) (denying class certification because South Carolina law does not recognize a cause of action for medical monitoring).

169. LA. CIV. CODE ANN. art. 2315 (2020) (“Damages do not include costs for future medical treatment . . . unless such treatment . . . [is] directly related to a manifest physical or mental injury or disease.”).

170. *Baker v. Wyeth-Ayerst Lab. Div.*, 992 S.W.2d 797, 802 (Ark. 1999) (affirming denial of class-certification petition without addressing underlying claim for medical monitoring damages); *Bryson v. Pillsbury Co.*, 573 N.W.2d 718, 721 (Minn. Ct. App. 1998) (determining that summary judgment was improper and that fact finder should determine whether asymptomatic chromosome damage satisfies the present injury requirement); *Lamping v. Am. Home Prod.*, No. DV-97-85786, 2000 LEXIS 2580 at *14 (Mont. Dist. Feb. 21, 2000) (recognizing a medical monitoring cause of action “under the specific facts of this case” and holding that Complaint withstands a Judgment on the Pleadings); *Barreras Ruiz v. Am. Tobacco Co.*, 180 F.R.D. 194, 197, 199 (D.P.R. 1998) (denying plaintiffs’ class certification motion without considering whether Puerto Rico law permits medical monitoring claims); *Brown v. Saint-Gobain Performance Plastics Corp.*, 2017 WL 6043956 at *7 (D.N.H. Sept. 6, 2017) (indicating that the court was considering certifying the question to the New Hampshire Supreme Court and denying defendant’s motion to dismiss in the meantime); *Sutton v. St. Jude Med. S.C., Inc.*, 419 F.3d 568, 575 (6th Cir. 2006) (determining that increased risk of harm supports Art. III standing).

III. “INJURY” AND PFAS EXPOSURE

In PFAS cases stemming from the Hoosick Falls/Bennington contamination, plaintiffs’ PFAS blood levels were a central focus. In these cases, the district courts declined to dismiss plaintiffs’ medical monitoring claims on the basis that they lacked injury. This Part analyzes how the economic injury and subcellular injury theories apply in these cases.

A. *The Hoosick Falls Cases*

The Northern District of New York and Second Circuit Court of Appeals recently considered the present physical injury requirement under New York law in the context of PFAS exposure in *Baker v. Saint-Gobain* and *Benoit v. Saint-Gobain* (Hoosick Falls cases).¹⁷¹ *Caronia v. Philip Morris* governs medical monitoring claims in New York. *Caronia* held that New York law does not recognize an independent cause of action for medical monitoring without present injury.¹⁷² The Supreme Court’s reasoning in *Metro North Commuter R.R. Co. v. Buckley*¹⁷³ persuaded the New York Court of Appeals that an independent cause of action presented numerous policy concerns and strayed too far from accepted tort jurisprudence.¹⁷⁴ However, the Court of Appeals expressly acknowledged that plaintiffs may recover medical monitoring costs “as consequential damages, so long as the remedy is premised on the plaintiff establishing entitlement to damages on an already-existing tort cause of action.”¹⁷⁵

In the Hoosick Falls cases, plaintiffs alleged that the water contamination constituted both property damage in the form of reduced property values and personal injury in the form of heightened blood concentrations of PFOA.¹⁷⁶ “Plaintiffs [did] not allege any current manifestation of disease or symptoms related to PFOA exposure.”¹⁷⁷ Still, the district court found that the plaintiffs demonstrated the requisite injury to defeat a motion to dismiss through both their heightened blood levels of

171. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 237 (N.D.N.Y. 2017), *aff’d in part* 959 F.3d 70 (2d Cir. 2020); *Benoit v. Saint-Gobain Performance Plastics Corp.*, 1:16-CV-930, 2017 WL 3316132 at *9 (N.D.N.Y. Aug. 2, 2017), *aff’d in part* 959 F.3d 491 (2d Cir. 2020).

172. *Caronia v. Philip Morris USA, Inc.*, 22 N.Y.S.3d 439, 452 (N.Y. 2013).

173. *See infra* Part IV (discussing *Buckley*).

174. *Caronia*, 22 N.Y.S.3d at 452.

175. *Id.*

176. *Baker*, 232 F. Supp. 3d at 240–41.

177. *Id.* at 242 (citations omitted).

PFOA and property damage, and the Second Circuit affirmed.¹⁷⁸ While *Caronia* did not define a present physical injury in toxic exposure cases, the Second Circuit looked to tort cases cited in *Caronia* to conclude that “allegations of the physical manifestation of or clinically demonstrable presence of toxins in the plaintiff’s body are sufficient to ground a claim for personal injury and that for such a claim, if proven, the plaintiff may be awarded, as consequential damages for such injury, the costs of medical monitoring.”¹⁷⁹

While clarifying the “injury” requirement, the cases do not address exactly what elements, beyond the underlying tort, plaintiffs must prove at trial to recover consequential medical monitoring damages under New York law.¹⁸⁰

B. *Sullivan v. Saint-Gobain*

The District of Vermont also considered the injury question in a similar case involving PFAS-exposed plaintiffs from Bennington in *Sullivan v. Saint-Gobain Performance Plastics Corp.*¹⁸¹ On cross-motions for summary judgment, defendants alleged that Vermont tort law requires present physical injury and that plaintiffs’ exposure was insufficient to meet this element.¹⁸²

The district court predicted that the Vermont Supreme Court would recognize medical monitoring recovery under existing tort law.¹⁸³ The court first addressed the physical injury rule. It found that the two primary purposes of the rule—protecting contracting parties from tort liability for economic loss, and limiting cases of speculative and excessive emotional distress—did not apply because the parties had no contractual relationship with Saint-Gobain, and there was a definite number of exposed parties.¹⁸⁴ Guided by the

178. *Id.* at 253; *Baker*, 959 F.3d at 71; *Benoit v. Saint-Gobain Performance Plastics Corp.*, 959 F.3d 491, 494–95 (2d. Cir. 2020). The Second Circuit found that the district court’s decision on property damage was not immediately reviewable and thus dismissed that aspect of the appeal. *Benoit*, 959 F.3d at 491. The use of property damage to support recovery is another facet of medical monitoring that bears examination, but it is beyond the scope of this article. See *Baker*, 232 F. Supp. 3d at 253–55 (inviting the New York Court of Appeals to clarify how *Caronia* should apply to property damage).

179. *Benoit*, 959 F.3d at 501.

180. *Baker*, 232 F. Supp. 3d at 255 (“[I]t is worth noting that this decision does not determine what [p]laintiffs must prove at trial to receive consequential medical monitoring damages. The Court of Appeals’ decision in *Caronia* did not address this question.”).

181. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 452 (D. Vt. 2019).

182. *Id.*

183. *Id.* Under federalism principles, the district court did not analyze whether the Vermont Supreme Court would recognize a new cause of action when the question could be determined as a remedy under existing tort law. *Id.*

184. *Id.* at 452–53.

Vermont Supreme Court's steady reliance on the *Restatement (Second) of Torts*, the court next predicted that the Vermont Supreme Court would likely adopt the definition of injury adopted in § 15.¹⁸⁵ The court looked to the tradition of equitable remedies in Vermont, and also thoroughly canvassed medical monitoring decisions in other states on both sides of the issues.¹⁸⁶ The line of cases following *Friends for All Children*, including *Ayers*, *Paoli*, and *Sadler*, that did not require present physical injury all persuaded the court.¹⁸⁷ Ultimately, the court adopted a six-part test but cautioned that defining the exact contours of elements was "premature" before trial.¹⁸⁸

C. The Effect of Different Injury Theories

Plaintiffs in *Sullivan* and the Hoosick Falls cases share similar facts but face divergent law. The Hoosick Falls cases align with *Donovan* by applying a subcellular theory of injury. The Hoosick Falls cases do not explicitly adopt *Donovan*, but they reach a similar conclusion based on earlier New York cases.¹⁸⁹ The key difference between the Hoosick Falls cases and *Donovan* is that *Donovan* created an independent cause of action for medical monitoring, whereas the Hoosick Falls cases, under *Caronia*, permit medical monitoring only as a remedy for an underlying tort.¹⁹⁰ In fact, *Caronia* expressly rejected *Donovan* insofar as it created an independent cause of action for medical monitoring, pointing to the concerns expressed in *Buckley* and *Henry*.¹⁹¹ Thus, while *Donovan* outlines a multi-element test that links exposure to risk of disease and appropriateness of testing, the Hoosick Falls cases look only at exposure.

While *Sullivan* also did not adopt an independent cause of action, it adopted a six-element test for a medical monitoring remedy that aligns with other jurisdictions.¹⁹² The district court never directly characterized

185. *Id.* at 454 n.2. As discussed above, the court noted the wrinkle created by the new definition in the *Restatement (Third)* but concluded that this shift was not dispositive. *Id.* at 455–56.

186. *Id.* at 456–66.

187. *Id.* at 466.

188. *Id.*

189. The courts primarily relied upon *Askey v. Occidental Chem. Corp.*, 477 N.Y.S.2d 242, 247 (N.Y. Sup. Ct. 1984) and *Abusio v. Consol. Edison Co. of N.Y.*, 656 N.Y.S.2d 371 (N.Y. Sup. Ct. 1997). *Baker*, 232 F. Supp. 3d at 252; *Benoit*, 2017 WL 3316132 at *10.

190. Compare *Donovan v. Philip Morris USA, Inc.*, 914 N.E.2d 891, 901–02 (Mass. 2009) (defining a cause of action for medical monitoring), with *Baker*, 232 F. Supp. 3d at 242 (asserting that the availability of damages for medical monitoring depends on the existence of an independent tort), and *Benoit*, 2017 WL 3316132 at *9 (explaining that there is no independent cause of action for medical monitoring in NY).

191. *Caronia v. Philip Morris USA, Inc.*, 22 N.Y.S.3d 439, 451–52 (N.Y. 2013).

192. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 466 (D. Vt. 2019).

plaintiffs' injury as "economic." Instead, the court aligned with *Friends for All Children* and its toxic-tort progeny by relying on broader tort principles, as well as the *Restatement (Second) of Torts*, to support its holding.¹⁹³

Under either approach, plaintiffs have the opportunity to prove their claims. *Sullivan*, however, provides a sufficiently specific set of elements that plaintiffs must prove to recover a monitoring remedy. Instead of present physical injury, the *Sullivan* plaintiffs must generally prove: (1) exposure to PFOA "at a rate significantly greater than the general population"; (2) that PFOA is a hazardous substance; (3) Saint-Gobain's tortious conduct caused the exposure; (4) the exposure caused plaintiffs to "suffer[] an increased risk of contracting a serious disease"; (5) that "increased risk makes it medically necessary for the plaintiffs to undergo periodic medical examination different from that prescribed for the general population in the absence of the exposure"; and (6) that such procedures exist, are reasonably priced, and safe.¹⁹⁴ This analysis places a significant burden on plaintiffs.¹⁹⁵ In rejecting cross-motions for summary judgment, the district court noted that "[i]t is hardly an exaggeration to observe that almost every fact in the case is in dispute."¹⁹⁶

In contrast, *Caronia* does not outline the elements that plaintiffs must prove to recover a monitoring remedy. To prove injury in the Hoosick Falls cases, plaintiffs must show that they have a "physical manifestation of or clinically demonstrable presence of" PFOA in their blood.¹⁹⁷ This is a lesser standard than *Sullivan*, which requires plaintiffs to show that their blood accumulation levels differ from those in the general population, and also to link blood levels with increased risk of disease and appropriate monitoring. Because approximately 95% of Americans have PFOA in their blood, this distinction is significant.¹⁹⁸ *Sullivan* more clearly limits recovery.

Other cases suggest, however, that other elements of New York law will serve to limit recovery. In another PFAS case, a state court determined that plaintiffs had to show clinically demonstrable presence of PFAS in their blood "above background levels" in order to be a part of the class.¹⁹⁹ *Caronia* and the Hoosick Falls cases also rely on a case holding that plaintiffs must show that disease is likely to result from exposure with "reasonable certainty," meaning a greater than 50% chance, which the courts recognize

193. *Id.*

194. *Id.*

195. *See id.* at 468–69 (discussing plaintiffs' burden of proof).

196. *Id.* at 466.

197. *Benoit v. Saint-Gobain Performance Plastics Corp.*, 959 F.3d 491, 501 (2d. Cir 2020)

198. *PFAS: Top 10 Facts*, *supra* note 34.

199. *Burdick v. Tonoga, Inc.*, 2018 WL 3355239 at *11–12 (N.Y. Sup. Ct. July 3, 2018).

as “formidable.”²⁰⁰ This may, in fact, be more difficult for plaintiffs to prove than *Sullivan*’s “increased risk of disease.”²⁰¹ Still, *Baker* points out the potential for confusion in *Caronia*’s current articulation.²⁰² The court suggests that the Court of Appeals could clarify *Caronia* by “rooting its present-injury requirement in the potential effects on the plaintiff’s health . . . and the resulting need for medical testing, as opposed to potentially arbitrary distinctions in . . . accumulation in the blood.”²⁰³

By treating present physical injury as a singular barrier to the concerns raised about medical monitoring, the New York Court of Appeals missed an opportunity to tailor a multi-element monitoring claim (or remedy) to address these concerns. While other aspects of New York tort law will likely limit the remedy, their application remains to be seen. The Hoosick Falls cases show that the court needs to consider fully the appropriate contours of the remedy. *Sullivan*, thus, strikes a better balance by articulating standards that link exposure to disease and monitoring.²⁰⁴ As discussed in the next Part, these multi-element tests may prove more effective at limiting spurious claims—a key concern of the Supreme Court.

IV. ADDRESSING THE SUPREME COURT’S KEY CONCERNS IN *METRO NORTH*

The Supreme Court considered medical monitoring in *Metro North Commuter R.R. Co. v. Buckley*.²⁰⁵ In this case, Buckley sued Metro-North under the Federal Employees’ Liability Act (FELA), a federal statute that permits railroad workers to recover for injuries resulting from the employers’ negligence, after he was exposed to asbestos daily on the job.²⁰⁶

The Supreme Court rejected Buckley’s contention that FELA allows plaintiffs without symptoms of injury to recover medical monitoring costs as damages.²⁰⁷ The Court further held that the Second Circuit “went beyond the bounds of currently ‘evolving common law’” to the extent that it characterized medical monitoring as an independent tort cause of action

200. *Id.* at *11 (citing *Askey v. Occidental Chem. Corp.*, 102 A.2d 130, 136 (1984)).

201. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 467 (D. Vt. 2019).

202. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 241, 250–51 (N.D.N.Y. 2017), *aff’d in part* 959 F.3d 70 (2d Cir. 2020).

203. *Id.* at 254–55.

204. *Sullivan*, 431 F. Supp. 3d at 466.

205. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 427 (1997).

206. *Id.* at 427; 45 U.S.C. § 51 (2020).

207. *Buckley*, 521 U.S. at 439.

permitting recovery of medical costs as a lump sum of damages.²⁰⁸ The Court considered several state medical monitoring cases and noted that most state courts declined lump-sum award of damages and instead imposed limitations on that remedy, suggesting caution towards medical monitoring claims.²⁰⁹

Moving beyond *Buckley*'s claim under FELA, the Court addressed several concerns about adopting an independent cause of action for medical monitoring. First, the Court cited the difficulty of demonstrating the need for additional monitoring beyond what doctors already recommend for general wellbeing.²¹⁰ Experts may disagree, the Court reasoned, "about just which tests are most usefully administered and when," and it may be difficult for judges and juries to discern whether exposure calls for additional monitoring.²¹¹

Next, the Court suggested that a medical monitoring cause of action could lead to a flood of litigation because of widespread exposure to potentially hazardous substances.²¹² Broad exposure coupled with undefined liability for such exposure, it reasoned, would threaten to overburden the courts and inadequately allocate defendants' resources for liability.²¹³ Finally, the Court noted that a traditional cause of action for medical monitoring ignores current alternative sources of payment, such as administrative relief under federal or state regulations, or insurance coverage.²¹⁴ The Court acknowledged that equitable considerations often weigh in favor of allowing medical monitoring recovery.²¹⁵ The Court concluded, however, that "the potential systemic effects of creating a new, full-blown, tort law cause of action" require the Court to refrain from allowing a recovery of lump-sum damages for medical monitoring.²¹⁶

Even though the Court's holding did not affect state tort law, some subsequent state cases relied upon the Court's concerns in rejecting medical

208. *Id.* at 439–40 (quoting *Consol. Rail Corp. v. Gottshall*, 512 U.S. 532, 558 (1994) (Souter, J. concurring)).

209. *See id.* at 441 (noting that courts commonly establish a court-supervised fund to administer medical monitoring awards to plaintiffs); *Ayers v. Twp. of Jackson*, 525 A.2d 287, 314 (N.J. 1987) (recommending a court-supervised fund); *Hansen v. Mtn. Fuel Supply Co.*, 858 P.2d 970, 982 (Utah 1993) (recommending the same). However, the Court did not address whether it would permit recovery of medical monitoring costs under a court-administered fund or a similar mechanism. *Buckley*, 521 U.S. at 444 ("We need not, and do not, express any view here about the extent to which the FELA might, or might not, accommodate medical cost recovery rules more finely tailored than the rule we have considered.").

210. *Buckley*, 521 U.S. at 441.

211. *Id.* (citations omitted).

212. *Id.* at 442.

213. *Id.*

214. *Id.*

215. *Id.* at 443.

216. *Id.* at 443–44.

monitoring in the absence of present injury.²¹⁷ *Caronia* pointed to these concerns, emphasizing the potential for a rush of frivolous suits to deplete defendants' resources, and leave legitimately injured parties without recourse.²¹⁸ *Henry* went further, fretting that "a potentially limitless pool of plaintiffs" might "wreak enormous harm on Michigan's citizens and its economy" and ultimately determining that the decision was best made by the legislature.²¹⁹ Many commentators attribute *Buckley* for stemming the flow of medical monitoring recognition by states,²²⁰ and some echo *Buckley*'s concerns.²²¹

The Supreme Court decided *Buckley* over two decades ago and its analysis is generally understood to target lump-sum payments for monitoring awards under FELA, rather than broadly rebuking medical monitoring under state law.²²² Still, its reasoning continues to influence medical monitoring decisions.²²³ This begs the question: are the policy concerns articulated in *Buckley* still valid? A review of key state medical monitoring cases suggests that state courts permitting medical monitoring without present physical injury have largely addressed the Court's key concerns.²²⁴ While the concern about a flood of litigation lingers, PFAS cases demonstrate how courts are striking an effective balance by limiting the remedy while still providing an avenue for relief in appropriate cases.²²⁵ As the number of PFAS lawsuits grow, such balance is key to ensuring justice for both plaintiffs and defendants.

217. See *supra* Part II.C (listing jurisdictions rejecting medical monitoring claims without present injury).

218. *Caronia v. Philip Morris USA, Inc.*, 22 N.Y.S.3d 439, 451 (N.Y. 2013).

219. *Henry v. Dow Chem. Co.*, 701 N.W.3d 684, 694, 701 (2005).

220. See *supra* note 4 (listing some of these commentators).

221. See Schwartz & Silverman, *supra* note 4, at 626 ("The most defensible approach is to follow the steps of the U.S. Supreme Court, the New York Court of Appeals, and most other state courts in upholding traditional principles of law by rejecting medical monitoring claims by individuals with no present injury."); Victor E. Schwartz, Leah Lorber, & Emily J. Laird, *Medical Monitoring: The Right Way and the Wrong Way*, 70 MO. L. REV. 349, 369 (2005) (arguing that awarding medical monitoring without present physical injury belies scientific and medical recommendations); see also Joffe, *supra* note 4, at 674–681 (collecting critics' common concerns).

222. See *Sullivan v. Saint-Gobain Performance Plastics*, 431 F. Supp. 3d 448, 462 (D. Vt. 2019) (explaining that *Buckley* joins other jurisdictions in rejecting a lump-sum damages award for future medical expenses).

223. See, e.g., *Caronia*, 22 N.Y.S.3d at 451 (quoting *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 444 (1996) (citing *Buckley* and pointing out "potential systemic effects" of recognizing a new medical monitoring cause of action).

224. See *supra* notes 210–216 and accompanying text (describing the *Buckley* Court's key concerns with medical monitoring).

225. See *infra* part IV(A)–(B) (describing how courts have struck this balance).

A. *Discerning Necessary Testing and Preventing Windfall Awards*

Buckley's first concern is that factfinders will struggle to determine if exposure warrants additional monitoring beyond that recommended for general wellbeing.²²⁶ Several state courts articulate medical monitoring standards that adequately address this concern by requiring expert proof of this exact element. For example, Pennsylvania, Florida, West Virginia, Vermont, and Utah explicitly require plaintiffs to prove, among other elements, that the monitoring sought: (1) is necessary, based on significant exposure; (2) differs from generally recommended medical examinations and routine screenings; and (3) can be performed through existing procedures that provide early detection of disease.²²⁷ Plaintiffs will need to present expert testimony to prove these elements.²²⁸ Weighing competing expert testimony presents no greater challenge in a medical monitoring case than any other case.

Buckley also raised concern about plaintiffs earning a windfall by receiving a monitoring award that duplicates payment from alternative sources, like insurance.²²⁹ Although lump-sum awards create a potential risk that plaintiffs may recover twice, courts can address this concern through carefully crafted equitable relief, such as court-supervised funds.²³⁰ Courts have used these funds since *Friends for All Children*, though not in every instance.²³¹ Still, they remain favored by the courts.²³² These funds provide an appropriate check on any windfall award because trustees handling court-administered funds could “withhold[] payment or receiv[e] reimbursement”

226. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 441 (1996).

227. *Redland Soccer Club, Inc. v. Dep't of the Army & Dep't of Def. of the U.S.*, 696 A.2d 137,146 (Pa. 1997); *Petito v. A.H. Robins Co., Inc.*, 750 So. 2d 103, 106–07 (Fla. Dist. Ct. App. 1999) (adopting the *Redland* test); *Bower v. Westinghouse Elec. Corp.*, 522 S.E.2d 424, 432–33 (W.Va. 1999) (adopting a variation of the *Redland* test); *Sullivan*, 431 F. Supp. 3d at 466; *Hanson v. Mtn. Fuel Supply Co.*, 858 P.2d 970, 980 (Utah 1993).

228. *Redland*, 696 A.2d at 146.

229. *Buckley*, 521 U.S. at 442–43.

230. *See id.* at 440–41 (listing cases where courts have used this approach).

231. For example, in *Ayers*, the Court upheld the jury's award of lump-sum damages in that instance but directed courts to use their equitable powers to disburse awards in a supervised fund in future cases. *Ayers v. Twp. of Jackson*, 525 A.2d 287, 314 (N.J. 1987). The court wanted to ensure that damages paid through the fund reimburse only medical testing actually administered to the plaintiff. *Id.*

232. *See, e.g., Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 462 (2019) (citations omitted) (“It is now largely accepted that a cash damage award paid directly to plaintiffs for future medical monitoring expenses is an inappropriate remedy.”); Logan Glasenapp, *Judicially Sanctioned Environmental Justice: Making the Case for Medical Monitoring*, 49 N.M. L. REV. 59, 87 (2019) (explaining that most courts have administered a fund).

from the fund if the plaintiff collects payment from a collateral source.²³³ Such funds can also protect against the misuse of monitoring funds by establishing a voucher system that “only compensate[s] for medical examinations and tests actually administered.”²³⁴ Effectively, these monitoring disbursements could ensure that insured plaintiffs are only compensated for costs outside of their coverage, and that uninsured plaintiffs are able to access medical care.

Sullivan exemplifies how courts are continuing to address these concerns in PFAS cases. The remedy adopted, as discussed above, requires plaintiffs to prove that this testing is “medically necessary” and differs from what a doctor would regularly recommend absent exposure.²³⁵ The court also determined that this element requires it to tailor the remedy “to exclude currently available care and testing.”²³⁶ This ensures that any recovery only helps plaintiffs pay for additional monitoring. While plaintiffs still have a significant burden of proof before the court considers shaping a remedy, the language in *Sullivan* indicated that the court was unlikely to award relief, if any, in the form of a lump-sum payment.²³⁷ While the ultimate remedy will be telling, *Sullivan* shows that the district court understands its duty to construct a remedy that treats defendants fairly.

B. Holding Back a “Flood” of Litigation

The final *Buckley* concern is that “tens of millions of individuals [who] have suffered exposure to substances [warranting medical monitoring]” could cause a flood of medical monitoring claims, creating “uncertainty as to the amount of liability” and straining judicial and medical resources.²³⁸ *Henry*, for example, seized on this concern, fretting that a “stampede of litigation” would “divert resources” towards “less meritorious claims”²³⁹ that could “wreak enormous harm on Michigan’s citizens and its economy.”²⁴⁰ Likewise, commentators cautioning against medical monitoring tend to focus

233. Mark A. Tanner, *Torts—Medical Monitoring Trusts: A Win-Win Situation Under FELA?* *Metro-North Commuter R.R. Co. v. Buckley*, 117 S. Ct. 2113 (1997), 33 *LAND & WATER L. REV.* 399, 414–15 (1998). In fact, the defendants in *Ayers* argued for a fund mechanism to “credit[] defendant[s] with payments from collateral sources.” *Ayers v. Jackson Twp.*, 525 A.2d 287, 314 (N.J. 1987).

234. *Ayers*, 525 A.2d at 314.

235. *Sullivan*, 431 F. Supp. 3d at 466.

236. *Id.* at 470.

237. *Id.* at 462.

238. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 442 (1996).

239. *Henry v. Dow Chem. Co.*, 701 N.W.2d 684, 695 (Mich. 2005).

240. *Id.* at 697.

on the potential for illegitimate or superfluous claims to create “the prospect of endless liability” based on unfounded fears and speculation.²⁴¹

The main factor legitimizing this concern is inadequate federal regulation of toxic chemicals.²⁴² While an estimated 85,000 chemicals are used in commerce today, the EPA has reviewed only a small fraction of that number and “has only five times used its [TSCA] authority to ban, limit production of, or restrict the use of existing chemicals.”²⁴³ Because the United States does not follow the precautionary principle, most chemicals are presumed safe and introduced into the market without thorough review.²⁴⁴ This approach puts the onus on consumers to prove harm, instead of requiring manufacturers to prove safety.²⁴⁵ As a result, “people rely on the tort system to fill the gaps.”²⁴⁶

Recognizing the toxic realities of the modern world, however, should not lead courts to reject medical monitoring simply because there may be too many valid claims. As one court remarked, “[w]hile the Court recognizes the concern about a deluge of frivolous litigation, the judiciary should not retreat from a flood of litigation when the claims it carries have merit.”²⁴⁷ Instead, courts must acknowledge this reality in shaping the medical monitoring remedy to best allocate defendants’ limited resources. PFAS cases show that courts are applying these elements in a manner that address these concerns.

Proof of PFAS blood accumulation above background levels, among other elements, adequately screens meritless cases while allowing potentially meritorious cases to put forth their proof. Scientific and medical advancements since *Buckley* continually improve parties’ ability to demonstrate the impacts of exposure on the human body.²⁴⁸ These

241. See Schwartz & Silverman, *supra* note 4, at 626–27 (“Lawsuits may be rooted in fear and unsupported by most scientific studies, but rely on outlier, preliminary, or arguably inapplicable studies. Each scare could trigger a wave of speculative lawsuits.”).

242. See Brief of Amici Curiae Alliance of Nurses for Healthy Environments et al. at 15–21, *Benoit v. Saint-Gobain Performance Plastics Corp.*, 1:16-CV-930, 2017 WL 3316132 at *15–25 (N.D.N.Y. Aug. 2, 2017), *aff’d* in part 959 F.3d 491 (2d. Cir. 2020) (explaining the failure of the Toxic Substances Control Act to protect the public from toxic chemicals, including PFAS).

243. *Id.* at *16–17; see Britt E. Erickson, *How Many Chemicals Are in Use Today?*, 95 CHEM. & ENG’G NEWS 23–24 (2017), <https://cen.acs.org/articles/95/i9/chemicals-use-today.html> (noting that the EPA lists over 85,000 substances under the Toxic Substances Control Act but does not know how many of these chemicals are in the market or how they are being used).

244. Alexandra D. Lahav, *The Knowledge Remedy*, 98 TEX. L. REV. 1361, 1364 (2020).

245. *Id.*

246. *Id.* at 1365.

247. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 255 (N.D.N.Y. 2017) (internal citation omitted).

248. See, e.g., Hall, Iles, & Morello-Frosch, *supra* note 4, at 29 (“Importantly, the [*Buckley*] opinion was issued prior to the rapid growth in biomonitoring studies. Biomonitoring now provides

improvements allow trained physicians to evaluate adverse health effects much earlier than before.²⁴⁹ This benefits both plaintiffs and defendants in medical monitoring cases because “if biological evidence can help identify who is among the injured, it can also help identify who is not.”²⁵⁰

PFAS cases demonstrate that courts are capable of considering whether the scientific evidence presented meets these elements. For example, in *Rowe v. E.I. du Pont de Nemours and Co.*, residents sought class certification in a suit against DuPont for PFOA releases in New Jersey.²⁵¹ The district court applied *Ayers* to plaintiffs’ medical monitoring claims and determined that they failed to show “significant exposure” to PFOA.²⁵² Plaintiffs submitted a risk assessment that attempted to prove significant exposure through heightened levels of PFOA in drinking water, supported by expert testimony that current water concentrations exceeded safe levels.²⁵³ Because the risk assessment assumed exposure based on an average weight and water consumption, the district court found that plaintiffs failed to show cohesiveness among class members.²⁵⁴ The court suggested that the plaintiffs could have instead collected blood serum to demonstrate actual exposure.²⁵⁵ Plaintiffs pointed out that they sought monitoring precisely to determine their PFOA blood levels, but the court rejected this argument.²⁵⁶ This accords with other decisions applying *Ayers* to preclude relief when plaintiffs are exposed indirectly and cannot link their exposure to risk of future injury.²⁵⁷

In *Sullivan* and the Hoosick Falls cases, by contrast, plaintiffs benefitted from state-funded testing to prove their PFOA blood levels.²⁵⁸ Still, plaintiffs also needed to show that their blood levels exceeded background levels in the general population.²⁵⁹ In *Sullivan*, the district court indicated that defendants could file a motion to remove class members whose PFOA blood

potential plaintiffs with convincing proof that they have suffered exposure to a hazardous chemical . . . [and] increased the evidential power of toxicology and epidemiology . . .”); Jamie A. Grodsky, *Genomics and Toxic Torts: Dismantling the Risk-Injury Divide*, 59 STAN. L. REV. 1671, 1704 (2007) (arguing that “as technology enables ever more nuanced and multidimensional insights into the effects of toxic substances on the body,” exposure currently considered to merely increase risk of contracting a disease may become an injury itself).

249. Grodsky, *supra* note 248, at 1710.

250. *Id.* at 1717.

251. *Rowe v. E.I. du Pont de Nemours & Co.*, 2008 WL 5412912 at *12 (D.N.J. Dec. 23, 2008).

252. *Id.*

253. *Id.* at *13.

254. *Id.* at *14.

255. *Id.*

256. *Id.* at *14 n.12.

257. *E.g.*, *Theer v. Philip Carey Co.*, 628 A.2d 724, 732–33 (N.J. 1993).

258. Lyons, *PFOA Levels*, *supra* note 12; VT. DEP’T OF HEALTH, *supra* note 96.

259. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp. 3d 448, 470 (2019).

levels do not exceed the background level.²⁶⁰ It remains to be seen what level the Hoosick Falls cases will require to constitute injury, but it is likely that plaintiffs will also have to show that their exposure exceeds background levels.²⁶¹ Even though New York law is less explicit in its requirements to recover medical monitoring, its causation requirement, if applied, will likely suffice to prevent a “flood” of frivolous claims.²⁶² As *Baker* pointed out, additional clarification of New York law is needed.

Thus, these multi-element tests, exemplified by *Sullivan*, adequately address the Supreme Court’s key concerns in *Buckley*. As a whole, these elements serve as an analog to the present physical injury requirement in ensuring that only legitimate cases are heard. The evidentiary burden on plaintiffs creates a significant hurdle that will effectively exclude frivolous cases. Plaintiffs must show direct evidence of exposure in their bodies, and that exposure must exceed general levels.²⁶³ This evidence must be buttressed by evidence linking exposure to an increased risk of disease.²⁶⁴ These courts will not be flooded by monitoring claims from “[m]illions of people who use nonstick cooking pans” if those people cannot show actual exposure, that the exposure exceeds background levels, and exposure causes an increased risk of disease.²⁶⁵ In practice, this means courts will only entertain medical monitoring claims where exposure is linked to a discrete event or discrete source; general exposure from a lifetime of participation in the modern world will not suffice. Further, the fears of unlimited liability and economic ruin are effectively addressed by tailored equitable remedies that provide recovery for only necessary testing that currently exists and that supplements current medical care, if any.

It is less clear whether New York’s approach addresses *Buckley*’s concerns as effectively. These concerns persuaded the *Caronia* court, and the court decided against creating an independent cause of action for medical monitoring. In so doing, the court missed an opportunity to explicitly link exposure to disease and limit the remedy, as in *Donovan* and *Sullivan*. Still, both approaches have, so far, limited the monitoring remedy to ensure that

260. *Id.*

261. *Id.*

262. *Id.* at 460 (noting that New York’s causation requirement prevents “flooding the courts with claims”).

263. *Id.* at 466 (discussing the six elements plaintiffs must prove at trial with evidence for a medical monitoring claim).

264. *Baker v. Saint-Gobain Performance Plastics Corp.*, 232 F. Supp. 3d 233, 254 (N.D.N.Y. 2017), *aff’d in part* 959 F.3d 70 (2d Cir. 2020).

265. *Contra* Schwartz & Silverman, *supra* note 4, at 626 (hypothesizing about millions of potential plaintiffs).

cases are meritorious before they go to trial without denying plaintiffs the opportunity to prove their case. Whether plaintiffs can ultimately prove their significant burden remains to be seen.

CONCLUSION

In the context of PFAS exposure, the arguments supporting medical monitoring outweigh the concerns. *Buckley* itself recognized the inequities in placing the cost of monitoring on the plaintiff when a defendant's negligence causes the exposure.²⁶⁶ *Buckley* also recognized that early screenings can potentially catch diseases early, leading to better health outcomes.²⁶⁷ Likewise, *Sullivan* framed its decision as “a choice between competing values,” weighing “unforeseen economic consequences to the defendant” against “the potential saving of lives . . . through early detection and treatment.”²⁶⁸ Finding that this case had a “relatively small, defined class of people,” the balance tipped towards permitting plaintiffs to seek recovery.²⁶⁹

The recognition of subcellular injury has shifted the medical monitoring debate. Courts that hesitate to dispense with the present physical injury requirement need not close their doors to plaintiffs who can demonstrate their exposure through blood accumulation or other physical manifestations. This definition of injury serves to exclude frivolous claims without barring legitimate claims. Courts create the most clarity, however, when they expressly define the additional elements necessary to prove a medical monitoring claim or remedy. In this way, courts can ensure that they limit monitoring remedies to necessary, available, and useful testing that supplements and does not duplicate current medical care.

These PFAS cases demonstrate that, even in light of a previously unknown and widespread contamination crisis, medical monitoring claims do not overwhelm the courts with frivolous cases that threaten economic doom. Instead, courts have fairly applied the relevant standards, dismissing some cases that do not meet requirements while permitting others to proceed. Claims that survive dispositive motions still face a significant burden in proving all elements at trial. Previously, academic debates over injury frequently precluded factfinders from actually weighing plaintiffs' evidence. As more courts use blood accumulation or other physical evidence to support

266. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 444 (1996).

267. *Id.* at 443.

268. *Sullivan v. Saint-Gobain Performance Plastics Corp.*, 431 F. Supp .3d 448, 466 (D. Vt. 2019).

269. *Id.*

the subcellular theory of injury or significant exposure, courts can continue to evaluate whether these policy considerations bear out in practice.