The Polluter Next Door:

PSR Pennsylvania

A Report on the Mental and Emotional Effects of Industrial Pollution on Fenceline Communities

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Cover photos:
Melanie Meade in Clairton, PA. Photo credit: Breathe Project.
Empty storefronts in Montrose, PA. Photo credit: Rebecca Cardin.
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Two week supply of household water in Montrose, PA.
Used by the Cardin family to replace their contaminated tap water - 08/2025.

Introduction

Millions of Americans live in fenceline communities—neighborhoods situated next to refineries, petrochemical plants, gas wells, and other industrial sites. These residents face a daily reality of polluted air, unsafe water, constant noise, and diminished property values. The result is a compounded health burden: higher rates of respiratory and cardiovascular disease, elevated cancer risk, and growing evidence of mental health impacts such as anxiety, depression, and cognitive decline.

These harms fall most heavily on low—income communities and communities of color, reflecting systemic environmental classism and racism. Living under a constant threat—from chemical spills to invisible pollution—creates chronic stress that damages the brain, weakens the immune system, and worsens existing health conditions. At the same time, limited access to medical care and political power leaves many residents with few options for protection or recourse.

This report brings together research, case studies, and community voices to document how environmental exposures intersect with social and economic inequities. It calls on healthcare professionals to recognize environmental conditions as a critical determinant of health and to use their influence to advocate for patients whose well-being is jeopardized not by individual choices, but by the toxic environments in which they are forced to live.

Defining Fenceline Communities and Environmental Justice

Toxic industries have had a long history of polluting the environment, but communities living in close proximity to these industries have felt the greatest impact. Coined "fenceline communities," the people living in these areas have had a front row seat to the devastating impact of their industrial neighbors. They are the first people to feel the mental, emotional, physical, and economic toll of polluters, and carry the highest burden of the effects. Through lived experience, people in fenceline communities have become experts on the health effects of pollution, though their expertise is often ignored by public officials, polluters, and even health professionals. "Most fence-line communities in the United States are low-income individuals and communities of color who experience systemic oppression such as environmental racism" (NAACP, 2017).

Sacrifice zones are commonly defined as areas where people live with a high exposure to pollution from concentrated industry, often caused by lack of government regulation. The unspoken policy is that the industry has to go somewhere, and it is often placed in areas with lower incomes, communities of color, or neighborhoods without the political influence to block it. A 2016 report found that people of color make up nearly half the population in fenceline communities. The health and safety of people living in these zones is sacrificed for the profit of industry (Mcfate et al., n.d.).

There are famous examples of fenceline communities that have made national news and inspired research. Among the most notable is "Cancer Alley," a stretch of land along the Mississippi River in Louisiana spanning from Baton Rouge to New Orleans. This region, heavily populated with petrochemical plants, refineries, and other toxic industries, has become synonymous with environmental injustice. The pollution from these facilities has led to devastating health consequences for residents, with cancer rates in some areas rising to as many as 50 times the national average. The disproportionate impact on black and low-income communities has made Cancer Alley a symbol of environmental racism, where marginalized groups suffer the most from corporate negligence and regulatory failures (Juhasz, 2024).

Similarly, Love Canal in Niagara Falls, New York, is infamous for its role in sparking nationwide awareness of hazardous waste dumping and its health implications. In the 1970s, residents of the Love Canal neighborhood began experiencing a range of unexplained illnesses, including high rates of birth defects and cancer. The source of the contamination was eventually traced to a chemical waste dump buried beneath the area, originally used by Hooker Chemical Company. The disaster led to the evacuation of hundreds of families and the establishment of the Superfund program, which aimed to address toxic waste sites across the country. The emotional toll on residents, many of whom had to leave their homes and endure years of uncertainty, highlighted the deep psychological distress of living in proximity to hazardous industries (Kleiman, 2025).

Both Cancer Alley and Love Canal exemplify the long-lasting emotional and physical harm of living near toxic industries, with residents often feeling powerless as their health and communities deteriorate.

Implications for Healthcare Professionals

A person cannot choose to eat healthier foods if they are unavailable or unaffordable, just as they cannot choose to breathe clean air if the air where they live is polluted. This is where the concept of environmental justice becomes critical.

Environmental exposures, such as poor air quality or contaminated water, are foundational influences to one's physical health and mental well-being. People may be exposed to these hazards where they live, work, attend school or daycare, or spend time outdoors doing recreational activities. Polluted air and water are part of the broader framework of social determinants of health, alongside factors such as economic stability, quality of education, access to healthcare, availability of nutritious food, and safe housing (Healthy People 2030, n.d.).

When communities face unhealthy environmental conditions in combination with other social inequities, their health outcomes are often far worse than those of individuals living in wealthier or less polluted areas. This is not a matter of individual choice; it is a matter of systemic conditions that either protect or harm health.

It is imperative for healthcare professionals to recognize that promoting healthy behaviors alone is not enough to improve patient outcomes. A person cannot choose to eat healthier foods if they are unavailable or unaffordable, just as they cannot choose to breathe clean air if the air where they live is polluted. This is where the concept of environmental justice becomes critical. Environmental justice calls for equal protection from environmental health hazards for all people, as well as equal access to decision-making processes that affect their communities (Learn about the Origins of Environmental Justice, 2022).

When healthcare professionals understand these concepts, they are better equipped to provide effective, compassionate, context-aware care and to advocate for the structural changes their patients need. For residents of overburdened communities, scientific data may simply confirm what they already know: Their environment is making them sick. They are experiencing the health effects firsthand, but often lack access to the information or resources necessary to advocate effectively for themselves.

Healthcare providers have both the opportunity and the responsibility to validate these lived experiences and to use their credibility as trusted voices to push for changes that protect public health. In doing so, they can bridge the gap between clinical care and community advocacy, helping to address not just the symptoms of illness, but its root causes.

Environmental Health Impacts and Stressors

Environmental exposures in fenceline communities rarely arise alone; most residents live with multiple, overlapping stressors that impact health through both direct physiological pathways and indirect psychological strain. The most common of these are air pollution, water contamination, noise pollution, and continuous artificial light.

Air Pollution

It is well established in scientific research that poor air quality has negative impacts on health at every stage of life, from the reproductive system to decreasing life expectancy. The American Lung Association's State of the Air report found that 36% of Americans, or almost 120 million people, live in counties with unhealthy air quality. For people of color, this burden is significantly greater, with disproportionate exposure linked to systemic environmental injustice (American Lung Association, 2023).

One form of air pollution is called particle pollution, or particulate matter. These small bits of solids and liquids dispersed in the air we breathe can come from factories, power plants, oil and gas operations, exhaust from motor vehicles, and many other sources that exist near fenceline communities. The smaller the particles, the more dangerous they are to our health. The fine particles can get into our lungs and become trapped in the air sacs, with the tiniest particles passing into our bloodstream and transported to other organs.

Studies estimate that Particulate Matter 2.5 (fine inhalable particles with diameters of 2.5 micrometers or less) causes nearly 48,000 premature deaths annually in the United States, primarily due to respiratory and cardiovascular disease (Health Effects Institute, 2020). People raised in these environments endure higher rates of asthma, further exacerbating the immediate effects of exposure (Ni et al., 2024).

Both short-term exposure (hours to days at high levels) and long-term exposure (years at lower levels) are linked to increased mortality. These impacts are often compounded in fenceline communities by the intersectionality of residential and occupational factors: dangerous health conditions at work (Abas Shkembi et al., 2025). Importantly, health risks have been documented even when particle levels meet or fall below current federal standards (Di et al., 2017; Schwartz et al., 2018). Long-term exposure is also associated with higher lung cancer risk in people who have never smoked (Pope et al., 2019).

Water Quality

Water contamination is another persistent health threat for fenceline communities. Industrial activity can introduce heavy metals, volatile organic compounds (VOCs), and endocrine-disrupting chemicals into drinking water sources. Contaminants such as benzene, arsenic, and PFAS ("forever chemicals") have been linked to increased risks of cancer, reproductive harm, and developmental delays in children (Fenton et al., 2020). Even when utilities meet legal standards, gaps in testing and regulation, such as not screening for fracking-related pollutants, can leave dangerous exposures unrecognized.

The EPA (Environmental Protection Agency) and the state of Pennsylvania do not regulate private water wells, or require any water quality testing. For residents, this creates a double burden: the physical risks of contamination and the financial strain of buying bottled water or installing costly filtration systems.

Noise Pollution

Noise is more than a nuisance, it is an environmental hazard with well-documented health effects. Chronic exposure to industrial noise from truck traffic, heavy equipment, and facility operations is associated with high blood pressure, cardiovascular disease, cognitive impairment, and hearing loss (Basner et al., 2014). Noise also disrupts sleep quality, increases stress hormone production, and can exacerbate mental health conditions such as anxiety and PTSD. The EPA recognizes noise pollution alongside air and water pollution as a public health concern with the potential to cause widespread harm (EPA, 2018). Similar to differences in long-term and short-term pollution exposure, there are different ways to measure noise exposure. Noise is measured in decibels. The average level dB(A) shows the cumulative noise burden throughout a day, and the peak level dB(C) catches potentially harmful spikes that occur instantly. Together, they offer a fuller picture of environmental noise risk.

Environmental exposures like air pollution not only damage the lungs or heart, but alter brain function and increase vulnerability to psychiatric disorders.

Artificial Light at Night

Continuous artificial light exposure, such as from industrial floodlights, can disrupt circadian rhythms and melatonin production. Epidemiological studies suggest an association between night-time light exposure and increased breast cancer risk in women, as well as sleep disorders, neurological damage, and metabolic disturbances (Stevens, 2009)(Carvalhas-Almeida et al., 2023). In fenceline communities, industrial lighting often spills directly into homes, compounding stress and making restful sleep difficult.

These stressors rarely occur in isolation. A resident may simultaneously breathe air with elevated PM 2.5, drink water containing unregulated contaminants, endure nightly industrial noise, and try to sleep under glaring lights. Each exposure independently affects physical health, but together they create synergistic effects that drive systemic inflammation, cardiovascular strain, and chronic psychological stress. This intersection of environmental hazards and persistent stress sets the stage for significant mental health problems. As the research discussed below shows, environmental exposures like air pollution not only damage the lungs or heart, but alter brain function and increase vulnerability to psychiatric disorders.

Air Pollution Impacts on Mental Health

A major issue facing fenceline communities is air pollution from industry. Air pollution affects more than cardiovascular and respiratory health. In fact, as Kristina Marusic reports in *Environmental Health News*, researchers now understand that air pollution affects every organ in the body, including the brain. Scientists believe that ultra-fine particles found in air pollution, such as PM 2.5 and nitrogen oxides, can enter the bloodstream and cross into the central nervous system, triggering inflammation, which disrupts mood regulation, cognition, and stress response (Marusic, 2021).

Children are particularly vulnerable. Exposure to air pollution in childhood is especially concerning for mental health, since neurodevelopment starts prenatally and continues through adolescence. Disruption during these critical windows can cause permanent changes to brain structure and function, elevating long-term psychiatric risk (Reuben et al). New observational data demonstrates a troubling link between childhood exposure to air pollution and mental health disorders in adulthood. A large-scale study covering 151 million individuals in the United States and 1.4 million in Denmark found that higher long-term pollution exposure was associated with a 31% increased risk of bipolar disorder, 104% schizophrenia, 210% personality disorder, and 68% major depression, even after adjusting for socioeconomic factors (Reuben et al). "Emerging observational evidence has implicated air pollutants in risk for varied psychiatric disorders, including attention-deficit/hyperactivity disorder, depression, anxiety, and schizophrenia" (Reuben et al., 2021).

Reuben's study echoes similar studies. Research from Cincinnati Children's Hospital Medical Center examined over 6,800 psychiatric-related ER visits in children under 18. It revealed that short-term spikes in PM 2.5, even though they were well within U.S. regulatory limits, were followed by noticeable increases in emergency visits for anxiety, depression, bipolar disorder, suicidality, and psychosis (Marusic, 2021).

Residents of environmental justice communities, in this case, Western Pennsylvania towns with some of the worst air and water quality in the U.S., report 14 or more days per month of poor mental health, and these rates are elevated in low-income and communities of color (Marusic, 2021).

These mental health risks are compounded in fenceline or environmental justice communities, which tend to face elevated pollution exposure, higher poverty levels, and limited access to mental health services. Chronic stress and pollutant-driven inflammation can act together, further increasing vulnerability. As Marusic reports, both stress and air pollution drive inflammatory processes throughout the body and brain, creating a feedback loop that exacerbates risk (Marusic, 2021) .

Marusic spotlights how recognizing the mental health dimension of air pollution exposure is vital, especially in highly polluted, resource-deprived communities. The evidence underscores the fact that environmental exposures can reshape brain health similarly to other chronic health stressors (Marusic, 2021).

Recognition of the interplay between environmental factors and stress related health impacts can lead to effective mechanisms to reduce both risk factors. Efforts such as Physicians for Social Responsibility Pennsylvania's Air Monitoring Program provide air monitoring equipment, networking opportunities, and education to help impacted residents. With these resources, individuals can both monitor and better communicate the variables that impact their daily lives. Citizen science programs such as this one increase self-efficacy to empower residents, potentially increasing overall resiliency.

Community Health Impacts

The effects of living near toxic industries extend far beyond individual physical and mental health. They influence the social, economic, and cultural fabric of entire communities. One measurable impact is on home values. Properties located in close proximity to industrial sites often experience significant devaluation due to concerns over pollution, noise, and perceived risk. A 2015 study showed an 11% decrease in home values within half a mile of industrial plant openings (Currie et al., 2015). This decline in property values reduces residents' ability to build generational wealth, limits their financial mobility, and in some cases leaves them trapped in unsafe environments because selling would mean taking a financial loss and knowingly exposing a future home buyer to health risks of living near industry.

Melanie Meade and Rebecca Cardin are two people, living in opposite corners of Pennsylvania, who have both felt the mental and emotional strain of living near industry. Meade lives in a third generation family home in the Mon Valley, overlooking US Steel's Clairton Coke Works. Rebecca Cardin moved to Montrose, PA in 2021 with her husband, a combat veteran disabled by PTSD, drawn by the promise of a small peaceful town. Their new home sits amid twelve active gas wells, with one just 700 and another 1,000 feet away. Both women described feeling deeply disempowered in the face of industrial pollution, with little ability to make meaningful changes, and frustration towards those with authority to make changes, such as healthcare providers, politicians, and regulators, who were largely dismissive of their challenges.

Meade has found doctors to be largely dismissive of a connection between her health issues and nearby industrial pollution.

The social impacts of industrial neighbors are compounded by "othering" discourses that portray fenceline communities as less deserving of protection, implicitly or explicitly blaming residents for their own circumstances. This can take the form of dismissive attitudes from policymakers, industry representatives, or even neighbors in less impacted areas. Such narratives reinforce environmental classism and racism by normalizing the placement of toxic facilities in certain communities, as though the harm is inevitable or acceptable for certain people. Meade stated that people began to normalize the health disparities because they were so prevalent. Cardin described being socially isolated after expressing concerns about fracking. "I introduced myself to town by complaining about it," she said. "I didn't realize asking questions about the industry was controversial. We can't do a lot of local advocacy because it means our kids will have no friends." These attitudes, and the industry itself, can erode residents' sense of place, which is tied to emotional well-being. Industrial encroachment disrupts communities, replacing once calming landscapes with noise, odors, bright lights, and heavy truck traffic. Over time, the physical markers of industrial pollution become intertwined with a sense of loss, grief, and alienation from one's home environment. Rebecca states her daily life is dictated by industry. "We have to be careful about when we go outside, especially with the kids," she says. Constant truck traffic, blasting, and heavy equipment noise disrupt their sleep and strain her husband's mental health. "We specifically chose this place for quiet. Now it's trucks all day."

Safety concerns are both physical and psychological. Residents may fear chemical spills, explosions (such as the recent US Steel explosion in Clairton, Pennsylvania), intimidation and trespassing by industry workers, and long-term health effects from exposure. This chronic state of vigilance adds another layer of stress that compounds physical and mental health burdens. In Rebecca Cardin's case, even their Veterans Affairs home loan failed to test for the right contaminants. Now, they rely on bottled water and check air quality daily. "Just trying to mitigate the risk, because we can't get rid of it," she said.

Healthcare and community support often feel out of reach. "It can take six to nine months to see a therapist locally," Cardin explained, and even conversations with doctors are cut short when environmental exposure is mentioned: "The physicians make me feel like I'm crazy. If I were deliberately exposing my kids to these chemicals, I'd be in trouble, but because it's this company, it's okay." Meade has found doctors to be largely dismissive of the connection between her health issues and nearby industrial pollution. Meade explains that many people in her community struggle with mental health, not necessarily diagnosed, but exacerbated by constant stress and the trauma of losing loved ones to illness.

The imbalance of power between industry and residents fosters a deep sense of disempowerment. Decision-making processes are often one sided, and community members' concerns may be dismissed or minimized by local officials and regulatory agencies. Without access to timely, transparent information, communities are left in the dark. "The most helpful thing would just be accessible information," Cardin said. "If we know what we're exposed to, we can know what to do about it." Meade emphasized the dire need for mental health resources and support groups, as many feel neglected and believe that no one cares about their plight.

Taken together, these factors illustrate that the health of a community is not measured solely in hospital visits or medical diagnoses. It is also reflected in the stability of housing markets, the strength of social cohesion, the ability to feel safe in one's home, and the sense that one's life and place are valued. To address the true scope of harm in fenceline communities, public health approaches must consider these interconnected social, emotional, economic, and environmental factors, and listen to the lived experiences of the people most impacted. Melanie Meade and Rebecca Cardin's shared experiences reflect a broader pattern in fenceline communities, where environmental harm is compounded by systems that fail to address it. Medical professionals need to be prepared and willing to discuss and address environmental health concerns with their patients.

Climate Anxiety

Another layer of harm emerges when considering the long-term impacts of these experiences on community well-being. Living with the ongoing reality of environmental threats places sustained strain on the nervous system, creating cumulative psychological stress. National survey data reflects this broader burden: In the most recent and extensive National Youth Survey, 85% of respondents reported being worried about the impact of climate change on people and the planet (Lewandowski et al., 2024).

It is therefore unsurprising that heightened worry, intrusive thoughts, and fear related to environmental change are contributing to what is increasingly recognized as climate anxiety (Pihnkala, 2020).

While this report does not focus specifically on climate anxiety, it is important to acknowledge the overlap. In outpatient mental health settings, particularly those working with youth and young adults, the repercussions of environmental distress are already visible. In Pennsylvania's Lehigh Valley, clinicians are noting this trend. Dr. Gorigoitia, an outpatient mental health provider in Allentown, explains: "I see young people sharing the existential fear of what-ifs…the air will not be clean, the heat will be too much…and that is creating a shadow in their own experience of being a young human being in the midst of it all." This testimony highlights the lived reality of how environmental concerns extend beyond physical health risks, shaping identity, development, and emotional well-being, particularly for younger generations who are acutely aware of the uncertain future ahead.

Chronic stress is a potent immune suppressant. It can slow wound healing, increase vulnerability to infections, and even promote the progression of some cancers.

The Effect of Stress on Health

Stress is often misunderstood as a purely mental or emotional concern, but in reality it has far-reaching consequences for virtually every system in the human body. It is defined as "any intrinsic or extrinsic stimulus that evokes a biological response" (Yaribeygi et al., 2017). This response can be mild, such as a temporary increase in heart rate, or severe enough to contribute to life-threatening illness. Stress can be a causal factor in the development of disease or can exacerbate pre-existing conditions. People who live or work in chronically stressful environments, such as those near heavy industry, are at elevated risk for multiple health disorders.

Nervous System

The nervous system, which includes the brain, spinal cord, and peripheral nerves, activates the body's "fight or flight" response during stress. This coordinated reaction prepares the body to respond to perceived threats by altering cardiovascular, respiratory, musculoskeletal, and endocrine activity. When stress is short-lived, these changes are protective. However, chronic stress can harm the brain itself. Studies have shown that prolonged stress exposure can cause atrophy in key brain regions, including the hippocampus and prefrontal cortex, impairing memory, decision-making, and emotional regulation (Lupien et al., 2009). Over time, these changes can contribute to anxiety disorders, depression, and cognitive decline.

Musculoskeletal System

Many of the body systems' response to stress is a reflexive biological response meant to guard the body. This should be health protective, but extended periods of stress can lead to other reactions in the body or stress-related illness. For example, when the body is stressed, muscles tense up to guard against injury. Over time, this can lead to migraines, chronic muscle tension, and chronic pain (American Psychological Association, 2024).

Immune System

Chronic stress is a potent immune suppressant. It can slow wound healing, increase vulnerability to infections, and even promote the progression of some cancers (Reiche et al., 2004). This immune suppression is mediated in part by stress hormones such as cortisol, which, when elevated long-term, can lead to inflammation and decreased immune response.

Gastrointestinal (GI) System

Stress affects digestion in multiple ways. It can suppress appetite, leading to inadequate nutrient intake, or drive overeating and poor dietary choices, which in turn influence the body's ability to cope with stress (Yaribeygi et al., 2017). Stress also impacts how the GI tract functions. Stress reduces nutrient absorption, increases inflammation in the GI tract, and has been linked to the development or worsening of irritable bowel syndrome (IBS) and colitis (Collins, 2001).

Respiratory System

Stress and anxiety often first present with respiratory symptoms, such as taking short rapid breaths and the feeling of being short of breath. The stress response in the body can constrict the airway, making it difficult to breathe comfortably. Healthy bodies with no underlying conditions are able to regulate and manage this change in breathing, but psychological stress can exacerbate respiratory conditions such as asthma and COPD. Studies have shown that acute stress can trigger asthma attacks (Chen & Miller, 2007).

Cardiovascular System

Stress is most well known for its impacts on the cardiovascular system. It can either increase or decrease the heart rate, depending on the body's response (Hall et al., 2004). Stress impacts the cardiovascular system through stimulation of the sympathetic nervous system, which increases vasoconstriction leading to increased blood pressure, blood clotting, and vascular changes, which in turn can lead to heart attacks (Yaribeygi et al., 2017).

Endocrine System

The endocrine system and stress are deeply connected, and their relationship affects all other body systems responses to stress. This is due to the endocrine systems' production of glucocorticoids, including the "stress hormone," or cortisol. These hormones regulate the immune system and the communication between the brain and the endocrine system. Sustained stress can lead to chronic fatigue, diabetes and obesity, and immune disorders (Yaribeygi et al., 2017).

The Overlap Between Stress and Environmental Exposures

As outlined above, stress is not simply a mental state, it is a whole-body condition with measurable physiological effects. Importantly, many of the same health outcomes linked to chronic stress, such as cardiovascular disease, immune suppression, and respiratory impacts, are also associated with long-term exposure to air pollution.

In fenceline communities, these risks often intersect. Residents may experience chronic stress from living alongside industrial facilities due to noise, odors, safety fears, and social tension, while simultaneously being exposed to elevated levels of air pollution. Both stress and pollution drive systemic inflammation, strain the cardiovascular system, and impair the immune system.

Despite this overlap, there is little research on the combined effects of chronic stress and air pollution on health. Given that both factors disproportionately affect marginalized and low income communities, this represents a critical gap in public health research and policy. Addressing either factor in isolation may underestimate the true cumulative health burden faced by these populations.

Healthcare professionals are often on the front lines when it comes to identifying and addressing the mental health impacts of living near toxic industries.

Recommendations

Assessing and Supporting Patients Affected by Toxic Industry Proximity

Healthcare professionals are often on the front lines when it comes to identifying and addressing the mental health impacts of living near toxic industries. For patients experiencing emotional distress due to environmental hazards, a sensitive and thorough assessment is essential. It is important to take a comprehensive approach, recognizing the physical, psychological, and social aspects of their experience.

Acknowledging the legitimate fear and frustration that come with living in a toxic environment can help reduce the sense of isolation that many may feel.

When assessing a patient, healthcare professionals should begin by listening empathetically to their concerns, validating the emotional toll of living in areas exposed to pollution. Symptoms of anxiety, depression, PTSD, and chronic stress may manifest in response to the constant fear of illness or the loss of a safe living environment. Providers should explore the patient's experiences of environmental exposure, health concerns, family history, and any specific incidents that may have exacerbated their physical or mental health struggles.

Validating a patient's feelings is crucial. Acknowledging the legitimate fear and frustration that come with living in a toxic environment can help reduce the sense of isolation that many may feel. It is vital to affirm that their emotional responses are a natural reaction to a challenging and often unfair situation.

Additionally, healthcare providers can offer resources to help patients cope. Referrals to mental health professionals, such as therapists familiar with environmental trauma, can provide specialized support. Community-based organizations that advocate for environmental justice can also offer both practical and emotional support. Encouraging patients to connect with local environmental groups or public health campaigns may help them regain a sense of agency and foster community solidarity, while also providing avenues for advocacy and change.

Ultimately, healthcare providers must approach these cases with empathy, recognizing the intersection of environmental exposure and mental health, while offering both therapeutic support and resources to empower affected individuals.

References

Abas Shkembi, Park, S. K., Zelner, J., & Neitzel, R. (2025). Racial and Ethnic Inequities to Cumulative Environmental and Occupational Impacts in Michigan. GeoHealth, 9(6). https://doi.org/10.1029/2025gh001482

American Lung Association. (2024). Key findings | State of the air. https://www.lung.org/research/sota/key-findings

American Psychological Association. (2024, October 21). Stress effects on the body. https://www.apa.org/topics/stress/body

Carvalhas-Almeida, C., Serra, J., Moita, J., Cavadas, C., & Álvaro, A. R. (2023). Understanding neuron-glia crosstalk and biological clocks in insomnia. Neuroscience & Biobehavioral Reviews, 147, 105100. https://doi.org/10.1016/j.neubiorev.2023.105100

Chen, E., & Miller, G. E. (2007). Stress and inflammation in exacerbations of asthma. Brain, Behavior, and Immunity, 21(8), 993–999. https://doi.org/10.1016/j.bbi.2007.03.009

Collins, S. M. (2001). IV. Modulation of intestinal inflammation by stress: Basic mechanisms and clinical relevance. American Journal of Physiology-Gastrointestinal and Liver Physiology, 280(3), G315–G318. https://doi.org/10.1152/ajpgi.2001.280.3.g315

Currie, J., Davis, L., Greenstone, M., & Walker, R. (2015). Environmental health risks and housing values: Evidence from 1,600 toxic plant openings and closings. American Economic Review, 105(2), 678–709. https://doi.org/10.1257/aer.20121656

EPA. (2018, November 29). Clean Air Act Title IV - Noise pollution | US EPA. https://www.epa.gov/clean-air-act-overview/clean-air-act-title-iv-noise-pollution

EPA (2020) Definition of Environmental Justice | US EPA. https://19january2021snapshot.epa.gov/environmentaljustice/ej-2020-glossary_.html

Fenton, S. E., Ducatman, A., Boobis, A., DeWitt, J. C., Lau, C., Ng, C., Smith, J. S., & Roberts, S. M. (2020). Per- and polyfluoroalkyl substance toxicity and human health review: Current state of knowledge and strategies for informing future research. Environmental Toxicology and Chemistry, 40(3), 606–630. https://doi.org/10.1002/etc.4890

Fumes across the fence-line: The health impacts of air pollution from oil & gas facilities on African American communities | NAACP. (2017, November 14). NAACP. https://naacp.org/resources/fumes-across-fence-line-health-impacts-air-pollution-oil-gas-facilities-african-american

Hall, M., Vasko, R., Buysse, D., Ombao, H., Chen, Q., Cashmere, J. D., Kupfer, D., & Thayer, J. F. (2004). Acute stress affects heart rate variability during sleep. Psychosomatic Medicine, 66(1), 56–62. https://doi.org/10.1097/01.PSY.0000106884.58744.09

Healthy People 2030. (n.d.). Social determinants of health. Office of Disease Prevention and Health Promotion. https://odphp.health.gov/healthypeople/priority-areas/social-determinants-health

Juhasz, A. (2024, January 25). We're dying here: The fight for life in a Louisiana fossil fuel sacrifice zone. Human Rights Watch. https://www.hrw.org/report/2024/01/25/were-dying-here/fight-life-louisiana-fossil-fuel-sacrifice-zone

Kleiman, J. (2025). Love Canal: A brief history | SUNY Geneseo. https://www.geneseo.edu/history/love_canal_history

Learn About the Origins of Environmental Justice. (2022). Environmental Justice State by State | a Law Library for Community Advocates, Attorneys, Scholars, and Policymakers; EJSBS. https://ejstatebystate.org/ej-101

Lewandowski, RE, Clayton, SD, Olbrich, L, Sakshaug, JW, Wray, B., Schwartz, SEO,

Augustinavicius, J., Howe, PD, Parnes, M., Wright, S., Carpenter, C., Wiśniowski, A.,

Perez-Ruiz, D. Van Susteren, L (2024) The Lancet Planetary Health, volume 8, issue 11

Lupien, S. J., McEwen, B. S., Gunnar, M. R., & Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behaviour and cognition. Nature Reviews Neuroscience, 10(6), 434–445. https://doi.org/10.1038/nrn2639

Marusic, K. (2021, November 18). Air pollution can alter our brains in ways that increase mental illness risk. Environmental Health News. https://www.ehn.org/air-pollution-mental-illness-2655717369.html

Mcfate, K., Moore, D., Administrator, D., Moulton, S., Vann, K., & Saha, R. (n.d.). Living in the shadow of danger. Retrieved August 11, 2025, from https://www.foreffectivegov.org/sites/default/files/shadow-of-danger-highrespdf.pdf

Ni, R., Su, H., Burnett, R. T., Guo, Y., & Cheng, Y. (2024). Long-term exposure to PM2.5 has significant adverse effects on childhood and adult asthma: A global meta-analysis and health impact assessment. One Earth, 7(11). https://doi.org/10.1016/j.oneear.2024.09.022

Ni, R., Su, H., Burnett, R. T., Guo, Y., & Cheng, Y. (2024). Long-term exposure to PM2.5 has significant adverse effects on childhood and adult asthma: A global meta-analysis and health impact assessment. One Earth, 7(11). https://doi.org/10.1016/j.oneear.2024.09.022

Pihkala P. Anxiety and the Ecological Crisis: An Analysis of Eco-Anxiety and Climate Anxiety. Sustainability. 2020;12:7836. doi:10.3390/su12197836. [DOI] [Google Scholar]

Reiche, E. M. V., Nunes, S. O. V., & Morimoto, H. K. (2004). Stress, depression, the immune system, and cancer. The Lancet Oncology, 5(10), 617–625. https://doi.org/10.1016/s1470-2045(04)01597-9

Reuben, A., Arseneault, L., Beddows, A., Beevers, S. D., Moffitt, T. E., Ambler, A., Latham, R. M., Newbury, J. B., Odgers, C. L., Schaefer, J. D., & Fisher, H. L. (2021). Association of air pollution exposure in childhood and adolescence with psychopathology at the transition to adulthood. JAMA Network Open, 4(4), e217508. https://doi.org/10.1001/jamanetworkopen.2021.7508

Yaribeygi, H., Panahi, Y., Sahraei, H., Johnston, T. P., & Sahebkar, A. (2017). The impact of stress on body function: A review. EXCLI Journal, 16(1). https://doi.org/10.17179/excli2017-480