

FEATURE

Pitt Drops A Bombshell

THE PA HEALTH AND ENVIRONMENT STUDIES ON FRACKING



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Since the fracking boom began in Pennsylvania 20 years ago, a large and growing body of public health and scientific data has been collected showing unequivocally that unconventional shale gas development (horizontal drilling, high volume/high pressure hydraulic fracturing or “fracking”) threatens the health and safety of people who live and work near well pads, compressor stations, pipelines, processing facilities, and other natural gas infrastructure. The closer residents live to fracking operations, the research tells us, the greater the risk of harm. Residents who are most vulnerable to health damage from fracking include pregnant women, infants and children, the elderly, people living in poor and marginalized communities, and people suffering from chronic medical conditions.

None of this, of course, should be surprising. Although fracking has been going on in the commonwealth for two decades, drilling for oil and gas has been inherently dangerous since Drake drilled the first conventional (vertical) oil well in Titusville, PA 164 years ago. It is now well-established that fracking degrades the environment and pollutes the air, water, and soil we all

share, in violation of Article 1 Section 27 of the PA Constitution guaranteeing the right to clean air, pure water, and the preservation of a safe environment for all Pennsylvanians, present and future. It is also undeniable that fracking pours greenhouse gases into the atmosphere and accelerates climate change. And we know that fracking makes people who live near it sick.

In May 2019, David Templeton and Don Hope published “The Human Toll” in the Pittsburgh *Post-Gazette*, uncovering 27 cases of Ewing sarcoma — a very rare and frequently fatal bone cancer of childhood — and 40 cases of other rare cancers, for a total of 67 rare cancers in children, teenagers, and young adults living in four heavily fracked counties in Southwestern PA between 2008-2018 (Washington, Westmoreland, Greene, and Fayette).

Only about 200 cases of Ewing sarcoma are diagnosed in the United States each year. In Washington County, Pennsylvania’s most heavily fracked county (where I live and work), six cases of Ewing sarcoma and 30 other rare childhood cancers were counted. These numbers are far more than would be expected to occur in a similarly populated, mostly rural area over a 10-year period, and

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new cases keep popping up. Parents and pediatricians like me are very concerned that pollution and toxic waste from shale gas operations may be to blame for this outbreak of rare childhood cancers.

Six months after “The Human Toll” was published, I had the chance to travel to the Statehouse along with dozens of community members whose health had been impacted by fracking. We spoke with then-Governor Tom Wolf and other lawmakers and demanded a thorough and transparent investigation into the causes of these rare pediatric cancers. Four days after our visit, Gov. Wolf announced the creation of three studies to be conducted by the Pennsylvania Department of Health and the University of Pittsburgh Graduate School of Public Health. Two studies examined health impacts in heavily fracked counties in southwestern Pennsylvania on birth outcomes and asthma, and the third study examined the plausible link between fracking and some of those rare childhood cancers.

On August 15, 2023 — nearly four years after the studies were promised — University of Pittsburgh researchers and staff from PADOH announced the results. Unsurprisingly, the results mirrored dozens of other epidemiological research, hundreds of other medical and scientific peer-reviewed studies, and hundreds more government reports and media investigations contained in the latest edition of the Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking and Associated Gas and Oil Infrastructure, showing the damaging

impacts of fracking on human health, on the environment, and on the planet’s climate system.

For the asthma study, the researchers evaluated children and adults diagnosed with asthma using the University of Pittsburgh Medical Center (UPMC) electronic medical records from 2011-2020. They discovered that asthmatics living in southwestern Pennsylvania within 10 miles of one or more unconventional gas well had 4-5 times the risk for having a severe asthma attack, being seen in the ED, or needing hospitalization to treat their asthma attack compared to people living more than 10 miles away. The biggest association was seen not during the well’s construction, which may take a few weeks, or during the drilling and fracking phase, which takes several weeks or a few months. The biggest risk was later, during the production phase, when gas is flowing out of the well to the surface. The production phase lasts for many years, even decades, after the drilling and hydraulic fracturing of the shale is completed. So even if fracking were to stop tomorrow, the threat won’t stop.

In Washington County, no one lives more than 10 miles away from a fracking well. Most of us live much closer to wells, but also pipelines, compressors, processing facilities, landfills where toxic and radioactive fracking waste is dumped, and all the diesel emissions resulting from fracking activities.

For the cancer study, the researchers examined the PA DOH Cancer Registry between 2010 and 2019. They looked only at 4 types of cancer in children — leukemia, lymphoma, brain and



CNS tumors, and bone tumors like Ewing sarcoma — and found 498 cases in the 8-county area of SWPA. The study found that children living within 1 mile from one or more fracked gas wells had 5-7 times the risk of developing lymphoma compared to kids living more than 5 miles away. While a 2022 study from Yale University found a 2-3 times higher risk of acute lymphoblastic leukemia in children living within 2 km of a fracked well in Pennsylvania, the Pitt researchers found no link to leukemia, to brain/central nervous system tumors, or to bone cancers like Ewing sarcoma.

The birth outcome study used the PA DOH Birth Registry data of more than 185,000 births in the 8-county area of southwestern PA from 2010-2020. They found associations between living up to 10 miles from fracked wells and low birthweight and small for gestational age (SGA). They also found the well-known association of prematurity as a result of exposure to PM 2.5 during pregnancy from any source (not just fracking) in SW PA. Again, the risk of abnormal birth outcomes was seen up to 10 miles from fracked wells. The well site preparation phase and the production phase, which can last for decades, was associated with the greatest risk.

What the Pitt studies tell us with certainty confirms what we've already learned from prior research: There is something about fracking that increases the risk of developing health problems for people living and working nearby. We also know quite clearly that the closer you live and work to fracking operations — to well pads, pipelines, compressor stations, gas processing facilities, and landfills that accept fracking waste — the higher the risk of developing health problems. And we now know that something

related to fracking interferes with normal fetal growth.

The studies don't tell us with certainty what exactly is causing those health problems, though it isn't hard to speculate that endocrine-disrupting chemicals and other toxics used by the shale gas industry could be the culprit for poor birth outcomes. Perhaps volatile organic compounds released during shale gas operations contaminating the air and water — like benzene, a carcinogen, or toluene, a neurotoxin causing permanent nerve damage — or heavy metals and radioactivity brought up from the Marcellus Shale to the surface are what is causing health symptoms in people exposed to fracking pollution. Maybe it's the stress that residents in Pennsylvania's gas patch live under; the studies don't tell us with any certainty.

But that level of certainty isn't required for doctors to begin taking steps to prevent harm to their patients. And absolute certainty isn't required for Gov. Josh Shapiro and the PA legislature to finally adopt health-protective policies to prevent further harm to our health, to our land and water and air, and to Earth's climate. Enough studies have been done about the health impacts caused by fracking. Now it's time for action. •

Dr. Ned Ketyer is President of Physicians for Social Responsibility Pennsylvania. He served on the External Advisory Board for the University of Pittsburgh health studies on fracking. Dr. Ketyer is a member of the American Academy of Pediatrics Council on Environmental Health and Climate Change and medical advisor to Environmental Health Project.