

Health and Environmental Risks of Gas Stations

Extensive research demonstrates that gas stations pose significant health and environmental risks to nearby communities. Gasoline releases volatile organic compounds (VOCs), most notably benzene—a confirmed human carcinogen.

Several case-control and registry studies, including one in Northern Italy, have found that children who live near petrol stations have a substantially higher risk of developing childhood leukemia, especially acute lymphoblastic leukemia. Other studies similarly link residential proximity to sources of benzene (traffic, gas stations) with increases in respiratory illness, asthma flare-ups, and reduced lung function among children.

The risks also extend to workers. A study of 150 gasoline station workers (fueling workers and cashiers) showed that over 70% face elevated lifetime cancer risk attributable to benzene exposure, and more than half show non-cancer health risk (hazard quotients above safe thresholds). Chronic exposure has also been associated with neurological issues, reproductive harm, and immune system impairment in more limited studies.

Environmental hazards present further concern. Decades of data on leaking underground storage tanks in the U.S. indicate widespread contamination of soil and groundwater, including drinking water sources, with fuel components such as benzene. These leaks degrade environmental quality and can depress property values in affected neighborhoods.

Even under modern safety regulations, benzene emissions can travel significant distances. Some studies indicate that emissions from petrol stations and traffic sources can affect air quality and health outcomes hundreds of meters from the source, meaning many existing zoning rules may not offer sufficient protection. (Implication drawn from the buffer analyses in proximity studies.)

This evidence shows that both living and working near gas stations are associated with increased risks of cancer, respiratory disease, and long-term environmental harm.

References

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4. *Occupational Exposure of Gasoline Station Workers to BTEX Compounds in Bangkok, Thailand*. Examines benzene and related VOC exposures, with lifetime cancer risk estimates. ([PubMed](#))
5. *Tank Leaks and Environmental Risk from Underground Storage Tanks*. U.S. EPA/GAO reports on leakage from underground fuel tanks contaminating groundwater and public drinking water sources. ([Government Accountability Office](#))
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Public Safety Risks

Gas stations and truck stops are consistently identified as higher-risk locations for crime, with impacts on both employees and surrounding communities.

According to the U.S. National Institute for Occupational Safety and Health (NIOSH), gas station workers experience some of the highest rates of workplace homicide among retail industries, with about **5.6 homicides per 100,000 employees annually** in gas station environments. The FBI and industry data further show that **convenience stores and gas stations account for roughly 13.8% of robberies nationwide**, and about **4.5% of all violent crimes** occur at these locations.

Truck stops and highway rest areas present similar safety issues due to their remote locations and transient populations. Studies and law enforcement reports have documented frequent incidents of robbery, drug trafficking, and even human trafficking around such sites. Nationally, thousands of crimes are reported at rest areas each year, with thefts being most common but with notable levels of robbery, assault, and vandalism.

The evidence shows that gas stations and truck stops are disproportionately represented in crime statistics, functioning as recurring crime hot spots. Their presence can elevate safety risks not only for workers but also for nearby residents and communities.

References

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3. The Sun (2023). *St. Louis gas station shut down after 6,000 emergency calls, 21 shootings*. [the-sun.com](#)
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