

## Potential Health Effects Due to Inhalation of Air Pollutants

The table below is aimed at providing a summary of research about the most common air pollutants and should not be considered a comprehensive list of all toxic exposures. This chart may not include the health effects of high-level exposures. All the information is from [Agency for Toxic Substances and Disease Registry \(ATSDR\) ToxProfiles](#). There is a rapidly expanding body of [scientific evidence](#) linking air pollution and health concerns.

Chemical	Short-term Exposures, Acute Health Symptoms	Long-term Exposures, Chronic Health Effects
<b>Volatile Organic Chemicals (VOCs)</b>	<b>Varies by chemical (see below)</b>	<b>Varies by chemical (see below)</b>
Benzene	Headache, dizziness, fatigue, rapid heart rate, tremors, confusion, unconsciousness	Anemia, leukemia, irregular menstrual periods, increased chance of infection, potential impacts to fertility
Toluene	Headache, fatigue, confusion, dizziness, weakness, memory loss, nausea, loss of appetite	Permanent neurological effects, hearing and color vision loss, during pregnancy can lead to developmental effects such as reduced mental abilities and stunted growth
Ethyl Benzene	Eye and throat irritation, dizziness	Cancer, irreversible damage to the inner ear and hearing
Xylene	Eye, nose, throat, and skin irritation; difficulty in breathing and problems with the lungs; memory difficulties; stomach discomfort; changes in liver and kidney; headaches; lack of muscle coordination; dizziness; confusion; changes in balance	Permanent neurological effects
Polycyclic Aromatic Hydrocarbons (PAHs)	Eye and skin irritation, asthma attacks, acute cardiac events, fertility issues, in pregnancy higher rates of birth defects and lower body weights	Contribute to the development or worsening of pulmonary or cardiac diseases; lung, skin, and bladder cancer
Formaldehyde	Nose and eye irritation, increased risk of asthma and allergies, decrease in weight, stomach ulcers, liver and kidney damage	Asthma, eczema, nasal and throat cancer
Methylene Chloride	Decreased attentiveness, difficult hand-eye coordination, dizziness, nausea, tingling of toes and fingers, burning and redness of skin	Chance of cancer was seen in animals exposed, unsure still whether it can cause cancer in humans

Chemical	Short-term Exposures, Acute Health Symptoms	Long-term Exposures, Chronic Health Effects
Hydrogen Sulfide	Eye, nose, and throat irritation; difficulty breathing for asthmatics; headaches; poor memory; fatigue; balance problems	Respiratory distress or arrest if exposed to very high levels, headaches, poor attention span, poor motor function
Diesel Exhaust (contains VOCs and PM <sub>2.5</sub> )	Eye, nose, throat, and lung irritation; Headaches; dizziness; nausea	Worsening respiratory disease, lung cancer
Particulate Matter 2.5 (PM <sub>2.5</sub> )	Asthma attacks, acute bronchitis, heart attacks in individuals with cardiac disease	Reduced lung function, chronic bronchitis, neurodegenerative diseases
Ozone	Chest pain; coughing; throat irritation; congestion; increased symptoms in bronchitis, emphysema, and asthma	Contributes to development of chronic lung disease and worsens pre-existing bronchitis, emphysema, and asthma
Radon	None	Lung cancer
Carbon Monoxide (CO)	Decreased exercise tolerance, decreased vigilance, increased risk for cardiac ischemia in individuals with heart disease	Decreased exercise tolerance, decreased vigilance, increased risk for cardiac ischemia in individuals with heart disease
Nitrogen Oxides (NO <sub>x</sub> )	Respiratory symptoms, worsening asthma	Respiratory disease, worsening heart disease

Some sources of shale gas emissions for air pollutants can include well pads, compressor stations, processing facilities, power plants, impoundments, injection wells, storage wells, landfills, oil refineries, etc. More information on these types of facilities can be found at [Illustrated Stages of Shale Gas Development](#). For more information on protecting your health, visit [Protecting Your Health from Shale Gas Development](#).



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