

We have listed 10 common air pollution causes along with their effects. They have serious implications for you and your loved ones health on a daily basis.

1. The Burning of Fossil Fuels

Most of the air pollution takes place due to the incomplete burning of fossil fuels. These include coal, oil, and gasoline to produce energy for electricity or transportation. The release of CO at a high level indicates how much fossil fuel is burned. This also emits other toxic pollutants like nitrogen oxides into the air. Inhaling air induced with pollutants due to the burning of natural gas and fossil fuel reduces the heart's ability to pump enough oxygen. Hence causing one to suffer from various respiratory and heart illnesses. Furthermore, the nitrogen oxides are responsible for acid rain and the formation of smog.

When fossil fuels are burned, they emit more than just CO₂.

- Coal-fired power stations alone account for 35% of harmful mercury emissions in the US.
- Two-thirds of SO₂ emissions cause acid rain
- The great majority of dust (particle pollution) is released in our air due to fossil fuel burning.

2. Industrial Emission

Industrial activities emit several pollutants in the air that affect the air quality more than we can even imagine. Particulate matter 2.5 and 10, NO₂, SO₂, and CO are key pollutants that are emitted from industries that use coal and wood as their primary energy source for the production of their goods. Industrial pollution effects associated with your health can range from

- Irritation in your eyes and throat

- Breathing issues
- At times can even lead to chronic illness
- VOCs and other emissions from industries can aggregate respiratory disorders like asthma and bronchitis.
- O₃ is also released from industries that can increase in asthma attacks.

Huge amounts of organic chemicals like CO₂, hydrocarbons, etc. are released by the industries including other toxicants. They furthermore affect the climate as CO₂ causes a greenhouse effect. Hence, causing the heat to be trapped within the earth's atmosphere. Therefore, the temperature and humidity increase. More and more industries are being built as the demand grows. And as a result the emissions also increase day by day. We are already observing the after-effects of this, as the earth's temperature rises by 1 degree Celsius per decade.

3. Indoor Air Pollution

Use of toxic products also called Volatile Organic Compounds (VOCs), inadequate ventilation, uneven temperature, and humidity level can cause indoor air pollution, whether you are in an office, school, or at your comfortable home. House air pollution can take place due to ignorant factors, for instance, smoking tobacco inside a room or leaving mold-infected walls untreated. The use of wood stoves or space heaters is capable of increasing the humidity

level which can directly affect the health of a person in no time. Carcinogens and toxins from indoor air pollution cause 17% of deaths from lung cancer.

According to the '[Household air pollution and Health](#)' report published by the WHO in 2018, "Pneumonia is the cause of 27% of yearly deaths attributed to indoor air pollution and 45% of all pneumonia deaths in children under five years old." The report further added that, "In 2020, household air pollution was predicted to be responsible for 3.2 million deaths per year, including approximately 2,37,000 deaths of children under the age of five."

4. Wildfires

Climate change is not just increasing wildfire but also spiking air pollution. [Burning stubble and farm residue](#) is also a major contribution to wildfire. It causes increased [PM2.5](#) in the air which collides with other harmful substances like chemical gas and pollen creating smog. Smog makes the air hazy and people find it difficult to breathe. Visibility also decreases as a result of this smog. Difficulty in breathing, irritation in the eyes, nose, and throat, itchiness in the respiratory tract, etc. are all symptoms of inhaling smog.

- As many as 90% of the wildfires are caused by anthropogenic reasons, a small spark can turn acres of forest area into ashes.
- The soot and dust particles, smoke (that contains several toxic chemicals) can stay suspended in the air for days.
- The average temperature is increasing day by day due to the greenhouse effect. As a result, the rise in [temperature affects the rate of wildfires](#).

- More the temperature, more the cases of wildfires and forest fires. Wildlife, plants, and animals are all impacted by wildfires.

5. Microbial Decaying Process

Manufacturing, chemical, and textiles industries release a large number of CO, hydrocarbons, chemicals, and organic compounds which contaminate our environment. Bacteria and fungi play a fundamental role in the biogeochemical cycles in nature. They are the key indicators of abnormal environmental conditions. Decaying of these microorganisms present in the surroundings releases methane gas which is highly toxic. Breathing toxic gas like methane may lead to death.

Decaying process releases carbon, methane, and nitrogen that can affect the quality of air to some extent. As these microbes stay suspended in the air, they can cause

- Asthma aggregation
- Many other discomforts
- Irritation in the eyes, nose, and throat.
- Chances of having skin allergies also increases.

6. Transportation

Cars on the roads are increasing day by day. There is no denying that vehicle pollution is the major contributor to air pollution, especially in urban cities, where car ownership rates are more as compared to rural areas. When the car burns gasoline, it emits pollutants in the air which is as harmful as smoking 10 cigarettes a day. Your vehicle emits:

1. Carbon monoxide,
2. Hydrocarbons,
3. Nitrogen oxide, and
4. Particulate matter (PM2.5 and PM10)

When vehicle pollution is high in the atmosphere, it creates a hole in the ozone layer contributing to smog and causing various health issues.

Large numbers of cars and other vehicles on the roads contribute to traffic congestion on the roads, affecting the air quality of that particular area to a great extent. This necessitates the need to [monitor the air quality](#) at local level, for each area, so that identifying the sources and taking the proper measures can be done.

Taking proper and effective measures as individuals to control vehicular emissions such as carpooling, using public transportation (metros, buses, rails) will help in reducing the vehicular emissions.

7. Open Burning of Garbage Waste

Open burning of garbage is much more harmful to your health and the environment than one may think. As per Engage EPW, Delhi Air Pollution is choking public health. [Delhi generates](#) a whopping 9500 tons of waste every day, which makes it India's second waste dumping city. Exposure to open burning of garbage waste can pose serious health risks including:

1. Cancer

2. Liver issues
3. Impairment of the immune system
4. Reduced reproductive functions
5. Can also affect the developing nervous system.

Open air garbage burning releases toxins such as black carbon, soot, and carcinogens. It actively contributes to the greenhouse effect, and in turn to climate change. Black carbon and soot gets deposited on the ice peaks, which results in their meltdown.

Open garbage burning causes skin irritation, aggravates asthma and other respiratory diseases and illnesses, increases the risk of heart diseases, and difficulties in breathing, nausea and headaches.

8. Construction and Demolition

During the clean air act movement, the Central Pollution Control Board (CPCB) registered the highest number of air pollution complaints in the [Delhi NCR due to construction pollution](#) and demolition activities. With the rise of population in the city, construction and demolition is a part of the ever-going development phase of the national capital. Several construction sites and raw materials such as bricks and concrete cause haze and foul air which is hazardous for people especially, children and elderly citizens.

Why is air quality a concern at construction and demolition sites? This is due to the following reasons:

- Construction and demolition sites are a rich source of PM and other air pollutants including VOCs, etc.
- People living near these sites experience various health concerns like difficulty in breathing, irritation in the eyes, nose, and throat, etc.
- The workers and personnel working on-site are exposed to these air pollutants everyday. These pollutants affect their health to a great extent as well.
- Therefore, it becomes important to monitor the air quality at construction and demolition sites to comply with the standards.
- It is important to maintain the air quality at these sites, so as to maintain the air quality standards and limit the excessive usage of toxin and PM generating activities.

9. Agricultural Activities

Agricultural activities have had a serious impact on the decreasing air quality. To begin with, pesticides and fertilizers are the main sources that contaminate the surrounding air.

Nowadays, pesticides and fertilizers are mixed with new invasive species which are not found in nature, for quick growth of the crops and vegetation. Once they are sprayed over, the smell and the effect of the pesticides are left in the air. Some mix with water and some seeps into the ground which not only destroys the crops but also causes numerous health-related issues.

According to the FAO (Food and Agriculture Organization), "About 40% of world emissions come from livestock, 16% from mineral fertilizers, 17% from burning biomass, and 8% come from agricultural wastes." Agricultural activities include 4 activities that generate toxins that are released into the air. These are fertilizers and pesticides, animal husbandry, agricultural waste, and salts from applied irrigation water. Agricultural solids and waste are burnt in order to clear out the area for next cultivation, but this causes release of soot, PM, and other toxins into the air.

10. Use of chemical and synthetic products

Talking about air pollution, we always consider outdoor air pollution dangerous for our lives but never talk about indoor air pollution. [Household products cause indoor air](#)

[pollution](#) which is 10 times more harmful than outdoor air pollution. We spend more than 90% of our lives indoors, which makes the indoor air pollution impacts more serious and concerning. Volatile Organic Compounds (VOCs) found in paints, cleaners and personal care products such as perfume and deodorants are a reason for common health issues. These are silent killers that can cause risks like asthma or other respiratory issues and lung disease are other issues caused by inhaling poor house air quality.

- The vast variety of sources indoors release various harmful toxins that affect children, old age people, and even pets.

- These sources include cooking, smoking, furniture, paints, hobby craft, furnaces, coal powered heaters, and many more. Indoor air pollution has caused over 4 million premature deaths per year.
- Healthy air is very important for development in children, even in their prenatal phase. Air pollution has caused more than 50% of all cases of respiratory infection in children less than 5 years old.
- It is responsible for various lung and heart diseases in children and old people such as bronchitis, pneumonia, and aggravation of asthma.

Monitoring the indoor air quality will not only give you the power of seeing the invisible air pollutants, but will also assist you in maintaining your indoor air quality.

Control the damage caused by Air Pollution

At the rate with which air pollution is increasing in the country, immediate action has become an absolute necessity. Not only does it affect human lives but also causes havoc in nature.

Nelson Mandela once expressed his concern about air pollution and particularly its effect on human lives, saying, "Everyone has the right to an environment that is not harmful to their health or well-being; and to have that environment protected, for the benefit of present and future generations."

1. Conserving the energy is the first step toward a better future with clean air to breathe.
2. Understanding the concept and imbibing the habit of reducing, reusing, and recycling is crucial.

3. Use public transport whenever it is feasible to save fuel and reduce vehicle pollution.

What Are the Causes of Water Pollution?

Water is uniquely vulnerable to pollution. Known as a “universal solvent,” water is able to dissolve more substances than any other liquid on earth. It’s the reason we have Kool-Aid and brilliant blue waterfalls. It’s also why water is so easily polluted. Toxic substances from farms, towns, and factories readily dissolve into and mix with it, causing water pollution.

Here are some of the major sources of water pollution worldwide:

Agricultural

Not only is the agricultural sector the biggest consumer of global freshwater resources, with farming and livestock production using about [70 percent of the earth’s surface water supplies](#), but it’s also a serious water polluter. Around the world, agriculture is the leading cause of water degradation. In the United States, [agricultural pollution](#) is the top source of contamination in rivers and streams, the second-biggest source in wetlands, and the third main source in lakes. It’s also a major contributor of contamination to estuaries and groundwater. Every time it rains, fertilizers, pesticides, and animal waste from farms and livestock operations wash nutrients and pathogens—such bacteria and viruses—into our waterways. [Nutrient pollution](#), caused by excess nitrogen and phosphorus in water or air, is the number-one threat to water quality worldwide and can [cause algal blooms](#), a toxic soup of blue-green algae that can be harmful to people and wildlife.

Sewage and wastewater

Used water is wastewater. It comes from our sinks, showers, and toilets (think sewage) and from commercial, industrial, and agricultural activities (think metals, solvents, and toxic sludge). The term also includes [stormwater runoff](#), which occurs when rainfall carries road salts, oil, grease, chemicals, and debris from impermeable surfaces into our waterways

[More than 80 percent of the world’s wastewater](#) flows back into the environment without being treated or reused, according to the United Nations; in some least-developed countries, the figure tops 95 percent. In the United States, wastewater treatment facilities process about [34 billion gallons of wastewater per day](#). These facilities reduce the amount of pollutants such as pathogens, phosphorus, and nitrogen in sewage, as well as heavy metals and toxic chemicals in industrial waste, before discharging the treated waters back into waterways. That’s when all goes well. But according to [EPA estimates](#), our nation’s aging and

easily overwhelmed sewage treatment systems also release more than 850 billion gallons of untreated wastewater each year.

Oil pollution

Big spills may dominate headlines, but consumers account for the vast majority of oil pollution in our seas, including oil and gasoline that drips from millions of cars and trucks every day. Moreover, nearly half of the [estimated 1 million tons of oil](#) that makes its way into marine environments each year comes not from tanker spills but from land-based sources such as factories, farms, and cities. At sea, tanker spills account for about 10 percent of the oil in waters around the world, while regular operations of the shipping industry—through both [legal](#) and [illegal](#) discharges—contribute about one-third. Oil is also [naturally released](#) from under the ocean floor through fractures known as seeps.

Radioactive substances

[Radioactive waste](#) is any pollution that emits radiation beyond what is naturally released by the environment. It's generated by uranium mining, nuclear power plants, and the production and testing of military weapons, as well as by universities and hospitals that use radioactive materials for research and medicine. Radioactive waste can persist in the environment for thousands of years, making disposal a major challenge. Consider the [decommissioned Hanford nuclear weapons production site](#) in Washington, where the cleanup of 56 million gallons of radioactive waste is expected to cost more than \$100 billion and last through 2060. [Accidentally released or improperly disposed of](#) contaminants threaten groundwater, surface water, and marine resources.

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What type of water is being impacted?

Groundwater pollution

When rain falls and seeps deep into the earth, filling the cracks, crevices, and porous spaces of an aquifer (basically an underground storehouse of water), it becomes groundwater—one of our least visible but most important natural resources. [Nearly 40 percent of Americans](#) rely on groundwater, pumped to the earth's surface, for drinking water. For some folks in rural areas, it's their only freshwater source. Groundwater gets polluted when contaminants—from pesticides and fertilizers to waste leached from landfills and septic systems—make their way into an aquifer, rendering it unsafe for human use. Ridding groundwater of contaminants can be difficult to impossible, as well as costly. Once polluted,

an aquifer may be unusable for decades, or even thousands of years. Groundwater can also spread contamination far from the original polluting source as it seeps into streams, lakes, and oceans.

Surface water pollution

Covering about [70 percent of the earth](#), surface water is what fills our oceans, lakes, rivers, and all those other blue bits on the world map. Surface water from freshwater sources (that is, from sources other than the ocean) accounts for more than 60 percent of the water delivered to American homes. But a significant pool of that water is in peril. According to the most recent surveys on national water quality from the U.S. Environmental Protection Agency, nearly half of our rivers and streams and more than one-third of our lakes are polluted and unfit for swimming, fishing, and drinking. Nutrient pollution, which includes nitrates and phosphates, is the leading type of contamination in these freshwater sources. While plants and animals need these nutrients to grow, they have become a major pollutant due to farm waste and fertilizer runoff. Municipal and industrial waste discharges contribute their fair share of toxins as well. There's also all the random junk that industry and individuals dump directly into waterways.

Ocean water pollution

Eighty percent of [ocean pollution](#) (also called marine pollution) originates on land—whether along the coast or far inland. Contaminants such as chemicals, nutrients, and heavy metals are carried from farms, factories, and cities by streams and rivers into our bays and estuaries; from there they travel out to sea. Meanwhile, marine debris—[particularly plastic](#)—is blown in by the wind or washed in via storm drains and sewers. Our seas are also sometimes spoiled by oil spills and leaks—[big](#) and [small](#)—and are consistently soaking up carbon pollution from the air. The ocean absorbs as much as [a quarter of man-made carbon emissions](#).

What Are the Effects of Water Pollution?

On human health

To put it bluntly: Water pollution kills. In fact, it caused 1.8 million deaths in 2015, according to a study published in [The Lancet](#). Contaminated water can also make you ill. Every year, unsafe water sickens about 1 billion people. And low-income communities are disproportionately at risk because their homes are often closest to the most polluting industries.

Waterborne pathogens, in the form of disease-causing bacteria and viruses from human and animal waste, are a major cause of illness from [contaminated drinking water](#). Diseases spread by unsafe water include cholera, giardia, and typhoid. Even in wealthy nations, accidental or illegal releases from sewage treatment facilities, as well as runoff from farms and urban areas, contribute harmful pathogens to waterways. Thousands of people across the United States are sickened every year by Legionnaires' disease (a severe form of pneumonia contracted from water sources

On the environment

In order to thrive, healthy ecosystems rely on a complex web of animals, plants, bacteria, and fungi—all of which interact, directly or indirectly, with each other. Harm to any of these organisms can create a chain effect, imperiling entire aquatic environments.

When water pollution causes an algal bloom in a lake or marine environment, the proliferation of newly introduced nutrients stimulates plant and algae growth, which in turn reduces oxygen levels in the water. This dearth of oxygen, known as [eutrophication](#), suffocates plants and animals and can create "dead zones," where waters are essentially devoid of life. In certain cases, these [harmful algal blooms](#) can also produce neurotoxins that affect wildlife, from whales to sea turtles.

Chemicals and heavy metals from industrial and municipal wastewater contaminate waterways as well. These contaminants are toxic to aquatic life—most often reducing an organism's life span and ability to reproduce—and make their way up the food chain as predator eats prey. That's how tuna and other big fish accumulate high quantities of toxins, such as mercury.

Marine ecosystems are also threatened by [marine debris](#), which can strangle, suffocate, and starve animals. Much of this solid debris, such as plastic bags and soda cans, gets swept into sewers and storm drains and eventually out to sea, turning our oceans into trash soup and sometimes consolidating to form floating garbage patches. Discarded fishing gear and other types of debris are responsible for harming [more than 200 different species](#) of marine life.

Meanwhile, ocean acidification is making it tougher for [shellfish and coral](#) to survive. Though they absorb about a quarter of the [carbon pollution](#) created each year by burning fossil fuels, oceans are becoming more acidic. This process makes it harder for shellfish and other species to build shells and [may impact the nervous systems](#) of sharks, clownfish, and other marine life.

What Can You Do to Prevent Water Pollution?

With your actions

We're all accountable to some degree for today's water pollution problem. Fortunately, there are [some simple ways](#) you can prevent water contamination or at least limit your contribution to it:

- Learn about the unique qualities of water [where you live](#). Where does your water come from? Is the wastewater from your home treated? Where does stormwater flow to? Is your area in a drought? Start building a picture of the situation so you can discover where your actions will have the most impact—and see if your neighbors would be interested in joining in!
- [Reduce your plastic consumption](#) and reuse or recycle plastic when you can.
- [Properly dispose of](#) chemical cleaners, oils, and nonbiodegradable items to keep them from going down the drain.
- Maintain your car so it doesn't leak oil, antifreeze, or coolant.
- If you have a yard, consider [landscaping that reduces runoff](#) and [avoid applying pesticides and herbicides](#).
- Don't flush your old medications! Dispose of them in the trash to prevent them from entering local waterways.
- Be mindful of anything you pour into storm sewers, since that waste often won't be treated before being released into local waterways. If you notice a storm sewer blocked by litter, clean it up to keep that trash out of the water. (You'll also help prevent troublesome street floods in a heavy storm.)
- If you have a pup, be sure to [pick up its poop](#).

With your voice

One of the most effective ways to stand up for our waters is to speak out in support of the Clean Water Act, which has helped hold polluters accountable for five decades—despite attempts by destructive industries to gut its authority. But we also need regulations that keep pace with modern-day challenges, including microplastics, [PFAS](#), pharmaceuticals, and other contaminants our wastewater treatment plants weren't built to handle, not to mention polluted water that's dumped untreated.

