EMPLOYER TIP SHEET

Protecting Your Employees From Unhealthy Air Quality

SUMMER 2024

HEALTH ACTION ALLIANCE | NATIONAL COMMISSION ON Climate and Workforce Health

Unhealthy air quality is bringing new health hazards to the nation's workforce. More than 83 million Americans, about one in four people, are exposed to unhealthy outdoor and indoor air quality every year, and that number is only expected to rise due to more frequent and severe climate events, such as wildfires, heatwaves, and droughts. Here's what to know about the risks to your workforce and business health — and what you can do to protect your employees.

Unhealthy Air Quality's Toll on Business

Over 1.2 billion workers worldwide are exposed to air pollution. Workers across multiple industries — including agriculture, health care, construction, emergency response, transportation, call centers, professional sports, and manufacturing — are vulnerable to the health impacts of poor air quality, and indoor workers are no exception. In fact, indoor air pollution is often between two and five times greater than outdoor air pollution due to poor ventilation and filtration.

While the human cost of the air pollution crisis is incalculable, the business cost is in the billions of dollars due to excess health care costs and reduced productivity.

About 860,000 outdoor workers worldwide die each year due to air pollution.

Air pollution-related health care costs globally are projected to increase from $21 billion in 2015 to $175 billion in 2060.

In the U.S., air pollution-related injuries cost employers $22.8 billion in productivity loss in 2000. Adjusted for inflation, this amounts to a loss of $38 billion today.

By 2060, the number of working days lost annually due to air pollution will reach 3.7 billion worldwide, up from 1.2 billion.

Having about twice as much clean air moving into rooms reduces sick leave by 35%.

By investing $40 per worker per year to double ventilation rates, employers can recoup $6,000-$7,000 per person per year in higher productivity.

Health Hazards of Poor Air Quality

As many as 200,000 people in the United States die each year partly due to air pollution. Microscopic air pollutant particles in the lungs can enter the bloodstream and circulate to the entire body, resulting in significant health conditions.

Workers breathing polluted air are at a higher risk for:

- Allergies
- Cancer
- Cardiovascular challenges
- Cognitive impairment
- Depression
- Exacerbation of chronic health conditions
- Eye irritation
- Inflammation
- Mental health effects
- Pregnancy complications
- Premature death
- Reduced immune function
- Respiratory conditions (COPD, pneumonia)
- Skin conditions
- Suicide
- Vision problems

Monitoring Indoor and Outdoor Air Quality

Indoor Air Quality (IAQ)

Indoor Air Quality (IAQ) refers to the condition of the air within a building or an enclosed space. Several factors can lead to problems with IAQ, with the most prevalent causes being:

- Insufficient ventilation
- Dampness
- Occupant activities (e.g., remodeling, industrial work)
- Moisture damage
- Contaminated air

Air Quality Index (AQI)

The Air Quality Index (AQI) is a metric that quantifies outdoor air pollution levels on a scale from 0 to 500, assessing associated health risks. To monitor the AQI in your area, visit AirNow.gov.

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 - 50	Air quality is satisfactory, and air pollution poses little to no risk.
Yellow	Moderate	51 - 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for sensitive groups	101 - 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 - 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 - 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	300+	Health warning of emergency conditions: Everyone is more likely to be affected.

(Source)

Implement an Air Quality Plan

Business leaders can prepare for and help workers build resilience against the health risks of poor air quality by developing an effective air quality plan.

Here are some factors to consider:

VENTILATION, PURIFIERS, AND FILTERS

Invest in ventilation and purifier systems appropriate to each specific workspace, taking into account the number of people occupying the area. Use high-efficiency particulate air (HEPA) filters, and maintain an adequate clean air delivery rate (CADR). If occupancy or equipment changes, your HVAC system may need to be updated to maintain proper ventilation.

- Work with your facilities management team to properly maintain and care for your HVAC system and equipment.
- If you have a remote workforce, consider providing or subsidizing in-home purifiers.

PERSONAL PROTECTIVE EQUIPMENT

When air quality is unhealthy, protect your workers with masks that have specially fitted and high-filtration systems, such as the N95s, KN95s, and KN94s. Outdoor and agricultural workers exposed to pesticides, chemicals, or other substances in the air may require additional full-body protection, such as protective clothing, face shields, eyewear, gloves, boots, and proximity suits.

AIR POLLUTANTS

Avoid products that may release particles in the air, such as chemical cleaning and pest control sprays. Establish protocols to keep air clean during remodeling or renovation jobs before construction begins.

SMOKING

Adopt an effective smoking policy that eliminates workers' potential exposure to secondhand smoke.

WORK MODIFICATIONS

Relocate or reschedule work tasks to pollution- or smoke-free areas, and reduce levels of physical activity, especially strenuous and heavy work. Ensure workers take breaks away from areas with unhealthy air quality.

WILDFIRE PLAN

Prepare for wildfires in your community by creating an evacuation plan, storing emergency supplies, and identifying and addressing wildfire smoke hazards. Involve employees in developing and reviewing the plan to ensure it's practical. Communicate the plan clearly to all workers, and identify a point person or safety manager to oversee training and implementation.

HEAT STRESS PLAN

Extreme heat can exacerbate the impacts of poor air quality. Protect workers from poor air quality by implementing a heat stress plan that includes training, prevention strategies, and emergency response. Check out HAA's Extreme Heat Tip Sheet to get started.

SAFE REPORTING CHANNELS

Implement an anonymous reporting system for workers to share concerns about workplace health and safety practices, and make sure all workers know who to contact.

HEALTH HAZARD EVALUATION

Consider a third-party health hazard evaluation. At no cost, the National Institute for Occupational Safety and Health (NIOSH) can investigate workplace health hazards in response to requests from employers, employees, and their representatives.

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About one in four Americans is exposed to unhealthy outdoor and indoor air quality every year, and that number is only expected to rise due to wildfires, heatwaves, droughts, and air pollution. Here's what you need to know about the risks — and how to protect yourself.

Health Risks of Poor Air Quality

As many as 200,000 people in the United States die each year partly due to air pollution. Both indoor and outdoor workers across a variety of industries — including agriculture, health care, construction, emergency response, transportation, call centers, professional sports, and manufacturing — are vulnerable.

Microscopic air pollutant particles in the lungs can enter the bloodstream and circulate to the entire body, resulting in significant health conditions.

Workers breathing in polluted air are at a higher risk for:

- Allergies
- Cancer
- Cardiovascular challenges
- Cognitive impairment
- Depression
- Exacerbation of chronic health conditions
- Eye irritation
- Inflammation
- Mental health effects
- Pregnancy complications
- Premature death
- Reduced immune function
- Respiratory conditions (COPD, pneumonia)
- Skin conditions
- Suicide
- Vision problems

Health Symptoms To Watch Out For

Monitor yourself and your coworkers for health symptoms of poor air quality, including:

- Chest pain
- Dizziness or feeling light-headed
- Fatigue
- Headaches
- Heart palpitations
- Itchy or red eyes
- Memory problems
- Nausea
- Shortness of breath
- Sneezing, congestion, runny nose
- Sore throat
- Wheezing or coughing

If you are experiencing symptoms, move to a smoke- or pollution-free area and seek medical attention.

Monitor Outdoor and Indoor Air Quality

Be proactive about checking air quality reports and alerts for your area. For outdoor air quality, check the Air Quality Index (AQI) at AirNow.gov before you leave your home. Learn more about the AQI in the chart below. Additionally, you can sign up for air quality alerts from your municipality and look out for reduced visibility and changes in the color of the sky to identify outdoor air pollution.

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
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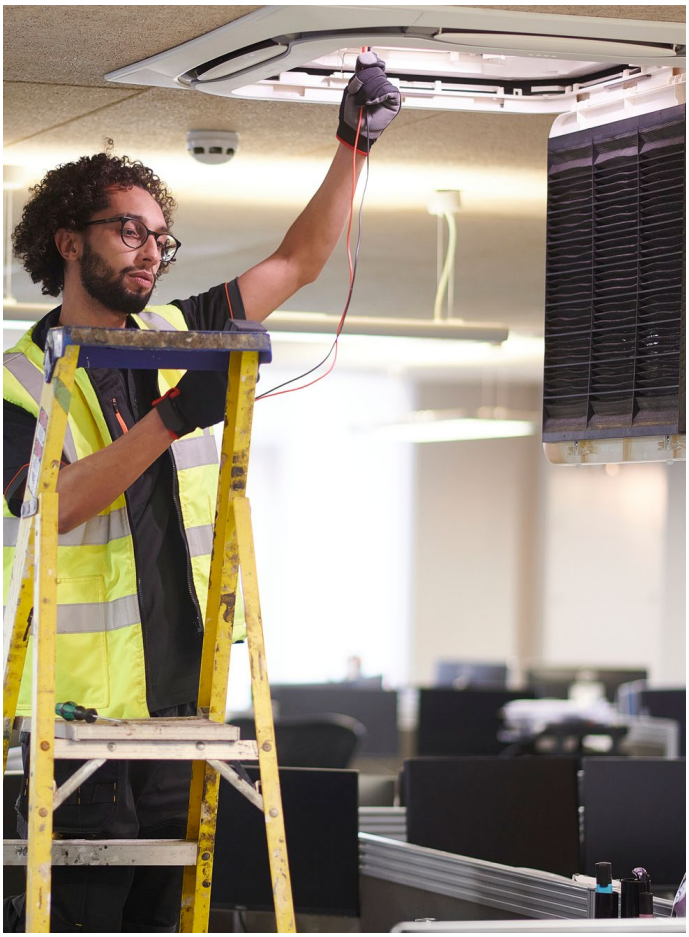
(Source)

Indoor Air Quality

If you suspect an indoor air quality issue in your workplace, tracking the following information can help your employer, doctor, or local public health departments identify potential problems.

- Do you experience symptoms that manifest at work and disappear once you're home? If so, what are your symptoms?
- Do your symptoms align with specific locations, seasons, or times of the day within the workplace?
- Was the onset of your symptoms correlated with new developments, renovations, or construction?
- Have your colleagues experienced symptoms or complaints similar to your own?



Tips for Staying Safe When Air Quality Is Unhealthy

USE PERSONAL PROTECTION

Protect yourself with high-filtration masks, such as the N95s, KN95s, and KN94s. If you are exposed to pesticides, chemicals, or other pollutants, make sure you use appropriate eyewear, face shields, gloves, boots, and other protective clothing.

MOVE SOMEWHERE SAFE

If possible, relocate work tasks to pollution- or smoke-free areas. Reschedule flexible work tasks for a time when air quality has improved.

KEEP INDOOR AIR CLEAN

If you work indoors, keep windows and doors closed to minimize outdoor pollutants, and use air conditioning to increase airflow. If you work remotely, consider investing in a HEPA air purifier for your home office. Check with your employer to see if they offer subsidies or reimbursements for air purifiers.

STAY HYDRATED

Drink plenty of water to stay hydrated, as this can help your body cope with the effects of poor air quality.

TAKE BREAKS, AND TAKE IT EASY

When air quality is poor, reduce your physical activity, especially strenuous or heavy work. Make sure to take frequent breaks away from areas with poor air conditions.

MANAGE YOUR HEALTH RISKS

Be aware of how poor air quality can affect any health conditions you may have, including asthma, allergies, chronic obstructive pulmonary disease (COPD), diabetes, respiratory infections, pregnancy, cancer, and others. Take extra precautions to protect your health during times of poor air quality. For example, if you have asthma, use a rescue inhaler 15 minutes before going outside.

KNOW YOUR COMPANY POLICIES

Familiarize yourself with company policies on air quality and health protection. Understand how to report concerns or seek accommodations if needed.

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EDITORIAL NOTE: This tip sheet was developed by the Health Action Alliance and reviewed by members of the National Commission on Climate and Workforce Health; however, it is not endorsed by every Commission member or their affiliated organizations. The Health Action Alliance is solely responsible for the content of this tip sheet and maintains full editorial control of its resources. For more information about how we work with corporate sponsors, please refer to our Corporate Sponsorship Policy.

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FOR MORE INFORMATION

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