

# Indoor Air Quality Quiz



## QUESTION

Name four key kinds of air pollutants that are found in homes and commercial facilities

## ANSWER

There are principally four kinds of groupings.

- Cigarette smoke
- Dust
- Mold and mildew
- Chemical pollutants

## WHY IS IT RIGHT

### INDOOR AIR QUALITY (IAQ) ' DEFINITION

Indoor air quality describes how the air inside a building or facility affects a person's health, comfort, and ability to work. It's a major concern to businesses, employees, and rental managers because indoor air can have a huge impact on the well-being and productivity of employees.

### POOR (IAQ)

Indoor air pollution is perhaps one of the most underrated health concerns in commercial and institutional buildings. And it isn't hard to see why. Outdoor air, when heavily polluted, can be easily noticed (dark smoke, toxic smell, and bitter taste). But indoor air is different. It hides behind the cool and comforting air blown by the AC and the calming smell of air fresheners. And because people don't see it, it's easy to dismiss the fact that it exists.

### WHY THE POLLUTION

There are hundreds of air pollutants commonly found in homes and commercial facilities. Including the following:

- Cigarette smoke

Even if you or your employees do not smoke inside the building, cigarette smoke can linger on the smoker's skin and clothes. That's why when a smoker enters the office, you could smell it right away.

Cigarette smoke contains more than 4000 chemical compounds, most of which are highly toxic and detrimental to the respiratory system.

- **Dust**

Dust and other environmental pollutants such as mites contribute to indoor air pollution. Without sufficient ventilation, these tiny pollutants can easily circulate around your office, triggering allergy symptoms in some people.

- **Mold and mildew**

When the temperature outside drops and the indoor air is heated, condensation can form around windows, causing moisture. High moisture content in indoor air provides the perfect environment for mold and mildew to thrive. Furthermore, if you have water damage issues in the office, there's a very high chance that mold and mildew are present too.

- **Chemical pollutants**

Building materials, office equipment; furniture, wall and floor coverings, upholstery, and virtually every commercially manufactured item in your workplace emit chemical pollutants. They include polybrominated biphenyl (PBB), polychlorinated biphenyl (PCB), polyurethane, formaldehyde, and VOCs.

### **Indoor Air Quality-how is it monitored'**

- Outside air: Types and amounts of dust, bacteria and gases should be measured prior to being filtered, heated or chilled. This will act as a benchmark to demonstrate that the air inside your building is at least equal to the air outside.
- Indoor air: Dust and bacteria should be measured in the workplace, to ensure that the filters are removing the majority of the contaminants from the outside air.
- Ventilation rates should also be measured, to ensure that they are satisfactory and are therefore removing contaminants such as carbon dioxide (which at high levels can cause lethargy).
- Specific gases, such as carbon monoxide and carbon dioxide, should be monitored to ensure that the levels present are within the occupational exposure limits established by HSE.

### **HEALTH EFFECTS OF IAQ**

- Symptoms related to poor IAQ are varied, depending on the type of contaminant. They can easily be mistaken for symptoms of other illnesses. The usual clue is that people feel ill while inside the building, and the symptoms go away shortly after leaving the building.
- Symptoms such as headaches, fatigue, trouble concentrating, and irritation of the eyes, nose, throat, and lungs are typical. Also, some diseases have been linked to specific air contaminants or indoor environments, such as asthma with damp indoor environments.
- Whenever excessive moisture is present within the workplace, bacteria,

mold, and fungi can grow and can lead to respiratory issues such as allergic reactions, asthma, coughing, wheezing, shortness of breath, sinus congestion, sneezing, nasal congestion, and sinusitis. Asthma is both caused by and worsened by dampness in the building.

- OSHA suggests that a proactive approach be taken to address IAQ concerns. Failure to respond expeditiously and effectively to IAQ concerns can quickly lead to more numerous or serious adverse health issues.

## **WHY IS EVERYTHING ELSE WRONG**

There are important recommendations and to follow to establish and maintain the quality of indoor air.

## **RECOMMENDATIONS**

1. Maintain a communication system with employees for when building-related issues arise. Make sure to provide information on response actions to all employees, including posting exposure and environmental assessment reports. If not already formed, consider starting a health and safety committee that consists of employees, management, and maintenance. This can help increase communication between Page 18 Health Hazard Evaluation Report 2018-0046-3346 employees and management and help alleviate concerns.
2. Evaluate your existing housekeeping program with attention to keeping horizontal surfaces dust- free and carpet cleanliness. a. Vacuum the carpet regularly with a vacuum equipped with a HEPA filter. Ensure HEPA vacuums are well-maintained and the HEPA filters are changed according to the manufacturer's recommendations. b. Use a damp cloth or mop on nonporous surfaces rather than dry materials to clean up dust. This prevents dust from becoming airborne and resettling.
3. Follow the manufacturer's recommended maintenance schedules for the HVAC system, including replacing air filters, checking drip pans, ensuring thermostats are in working order, and checking and cleaning ventilation system dampers to ensure proper functioning.
4. Maintain indoor temperature and relative humidity levels according to the guidelines discussed.
5. Routinely inspect the building for water intrusion and damage and correct these upon discovery. During and after heavy rains, walk through the building and check for water incursion.
  - Identify any potential sources of dampness or mold through visual inspection and make proper repairs to prevent further problems from occurring.
  - If dampness or mold is not identified during visual inspections but is suspected because of musty odors or continued health complaints, consider other methods (e.g., infrared camera or borescope) to look for hidden problems.
  - Monitor repaired areas to ensure repairs and remedial actions are effective.
  - Keep a record of when and where mold or water-damaged materials are discovered and what has been done to promptly fix the underlying problem leading to the water damage.

6. Evaluate the content or enforcement of current rules or policies surrounding personal workspaces that could be contributing to indoor environmental quality concerns, including:

- Acceptable locations for employee food preparation, storage, and consumption, including personal refrigerators and microwaves.
- Employee fish tanks.
- Fragrances in the workplace.

7. Establish an individualized management plan to relocate employees (such as at home or a remote site) who are still suffering from health implications even after response actions have been taken.

8. Encourage employees to report new, persistent, or worsening symptoms, particularly those with a work-related pattern, to their healthcare providers and, as instructed by their employer, to a designated individual at their workplace.

### **HOW TO PREVENT THE ILL EFFECTS OF IAQ**

Most people are at the mercy of airborne chemicals and toxic fumes interacting in ways that are difficult for the average person to understand or control, which means Americans will have to follow Benjamin Franklin's suggestion to open the window, if possible, just to be safe.

#### **A preventative maintenance program includes:**

- Ensure good quality and regular inspections of all critical components of the ventilation system.
- Regular inspections of all critical components of the ventilation system; regular inspections for conditions such as water leaks or stagnant water pools that would promote the growth of micro-organisms;
- Correction of any deficiencies found; repair or replacement of malfunctioning components, such as filters and belts, and cleaning of air distribution systems, ducts and dampers;
- Adequate treatment of open-water systems associated with ventilation systems, such as cooling towers and humidifiers;
- And maintenance of furnaces, space heaters and water heaters to ensure proper burning and exhausting of waste gases.

**The bottom line of appropriate prevention is to maintain a clean workplace.**

### **Conclusion**

Indoor air quality should be one of the most important concerns in your workplace as it directly affects the overall health and wellbeing of your staff and employees. Poor IAQ can increase the risk of many health problems, from respiratory illnesses to infections. It can even compromise your mental health.