Improve Indoor Air Quality to Promote Health

We all know pollutants, dust, and allergens have a severely negative impact on people’s health. Yet, while most of us are worried about the rising pollution levels outdoors, we tend to forget that most of our time is spent indoors. As a result, we end up breathing in a lot of unwanted substances every time we draw a breath!

Improving Indoor Air Quality

Improving the quality of air inside your home or office is much easier than you might think. There are basically four simple steps that can help you improve Indoor Air Quality:

Control Pollutant Sources

Remove or relocate sources of pollutants or taking steps to reduce emissions can significantly improve air quality in any indoor space.

Improve Ventilation

Concentrations of indoor air pollutants can be reduced by increasing the flow of outdoor air, which allows fresh air to replace the stale air that has accumulated indoors.

Remove or Clean Pollutants

Air filters and mechanical cleaners can be used to filter pollutants and mold from indoor air while improving circulation, too.

Control Humidity

This doesn’t always mean reducing humidity. When the weather is dry or if you use air conditioners indoors all the time, you may need to increase humidity. Overly dry air can irritate sinuses, cause congestion, and increase the risk of colds, flu, and other infections.

Basic Solutions and DIYs

There are a number of methods that can be employed to improve the indoor air quality in homes and office buildings. Some of the best methods are extremely easy to employ and inexpensive, if not free.

Here are some basic changes you could make to improve indoor air quality without the investment of extensive effort or time:

Use Non-Toxic Cleaning Products

Many commercially-available conventional cleaning products contain powerful chemicals that can be as harsh on your health as they are on stains.

Get Rid of Polluting Household Chemicals and Products

Household products like paints, solvents, and pesticides contain poisonous chemicals and pollutants like Volatile Organic Compounds (VOC).

Avoid Conventional Dry-Cleaning

Perchloroethylene (PERC) and Mineral Turpentine Oil (MTO) are commonly used in the dry cleaning industry. Both are known to cause serious health issues, and PERC is a known carcinogen.

Use Natural Ventilation

You can increase ventilation in cooler months by opening the top and bottom of double-hung windows or opening windows on opposite sides to permit cross-ventilation. Aside from reducing pollutant concentrations, you could save a lot on energy and the cost of forced-air cooling devices.

Use an Exhaust Fan or Hob-Chimney

Cooking on a gas range produces carbon dioxide and even more harmful gases like carbon monoxide and nitrogen dioxide. Install hood fans above gas ranges to push exhausts outdoors.

Keep the Indoors Dry

Mold loves damp places, so fix any leaks or drips and clean up spills as soon as possible. Standing water and puddles are a haven for disease-causing microbes and mosquitos. Check for them regularly and deal with them immediately.

Replace Air Filters on Time

Filters on furnaces and air-conditioners can become clogged and ineffective. Additionally, they can be a breeding ground for microbes if they haven’t been used in a while. Clean them regularly and replace them as per the manufacturer’s recommendations.

Don’t Smoke or Let Others Smoke Indoors

While this seems obvious, most people tend to neglect it. Cigarette smoke isn’t just a health hazard for smokers. Second hand smoke is just as dangerous for others.

Design for Better Air Quality

While the tips listed above can be followed as a regular

practice, some design cues can also help improve the indoor air quality in your home or office.

Plan your Remodel

Remodeling means building materials, and that means dust. Toxins and pollutants get suspended in the air easily. Plan to renovate and remodel in cooler months, when you can maximize ventilation from outdoors.

Use “Greener” Materials

Air quality can be improved throughout the year if you use products and materials that have lower emissions of pollutants, like zero-VOC paint or formaldehyde-free insulation. Look for materials certified by Greenguard, Greenfield, and similar organizations.

Reduce and Maintain Carpeting

Carpets absorb moisture and trap contaminants. Never use them in areas where they are likely to be exposed to water or dirt. They should be vacuumed regularly, preferably using a High-Efficiency Particulate Air (HEPA) filtering system.

Increase Ventilation Through Forced-Air Conditioning

Add external ducts to heating and cooling systems that use heat-exchanging or forced-air heating or cooling. This allows a portion of fresh air from outside to be mixed in.

Keep Your Garage Air Separate

Vehicles’ exhausts are basically just pollutants and nothing more. Design the garage so the amount of air exchanged between it and the conditioned space is minimized, if not eliminated. If you’re keen on monitoring the levels, consider a carbon-

monoxide detector or automatic garage door opener.

Mechanical Air-Cleaning and Conditioning

In addition to the other options, there is a wide range of products and equipment that is specifically designed to improve indoor air quality. These products are particularly useful for people who live in high-pollution cities and those who have respiratory issues as well as for commercial establishments like schools, offices, hospitals, and the like.

Common devices used to improve indoor air quality

Energy Recovery Ventilators

These systems connect to existing heating/cooling systems to exchange stale indoor air with fresh air from the outside.

Heat Pump Water Heaters

Apart from being up to 50% cheaper to run, the amount of ventilation provided by these systems is matched to the level of human occupancy and water consumption, which provides excellent moisture control.

Radiant Hydronic Heating Systems

As opposed to forced-air heating systems, these use hot-water flow for indoor heating. The advantage is a reduction of dust and allergens stirred up by blowing hot air. Also, since floors are warmed directly, condensation and water pooling are reduced.

UV Biocide Chambers

One of the most effective ways of dealing with microbes is

with ultra-violet light. Biocide chambers use a UV lamp below and above the cooling coils to kill germs, pathogens, and allergens at an enhanced rate.

Polarized Filters

These are electric air cleaners that use a polarized charge to capture and remove airborne particles. They have zero ozone emissions remove upwards of 95% of particles that aggravate allergies.

HEPA Air Filters

HEPA filters are considered by many as the ultimate in air filtration systems available today. They can filter out 99.97% of microscopic particles as small as 0.3 microns, as well as 90% of bioaerosols and microorganisms as small as 0.01 micron.

Air Humidifiers

Dry air can cause just as many problems as moisture, and studies have linked it to increased nasal congestion, especially when it’s cold. Another worrying study found that flu viruses survive much longer in dry air, so humidifiers are essential for places that have very low humidity.

Conclusion

According to the U.S. Environmental Protection Agency (EPA), indoor air can be up to 100 times more polluted and can even contain carcinogens like Radon. Now there’s a fact that could literally take your breath away!

Further Reading:

- *Inexpensive, Easy Detox – The One Gallon Challenge*
- *Monitoring and Improving Your Indoor Air Quality*
- *Home Detox, Reduce Indoor Pollution*

Sources:

- *Tips to Improve Indoor Air Quality* – Green Guard
- *Duct Cleaning and Indoor Air Filtration Solutions for your entire home* – Service Champions
- *An Introduction to Indoor Air Quality (IAQ)* – EPA
- *Breathe Easy: 5 Ways To Improve Indoor Air Quality* – Web MD