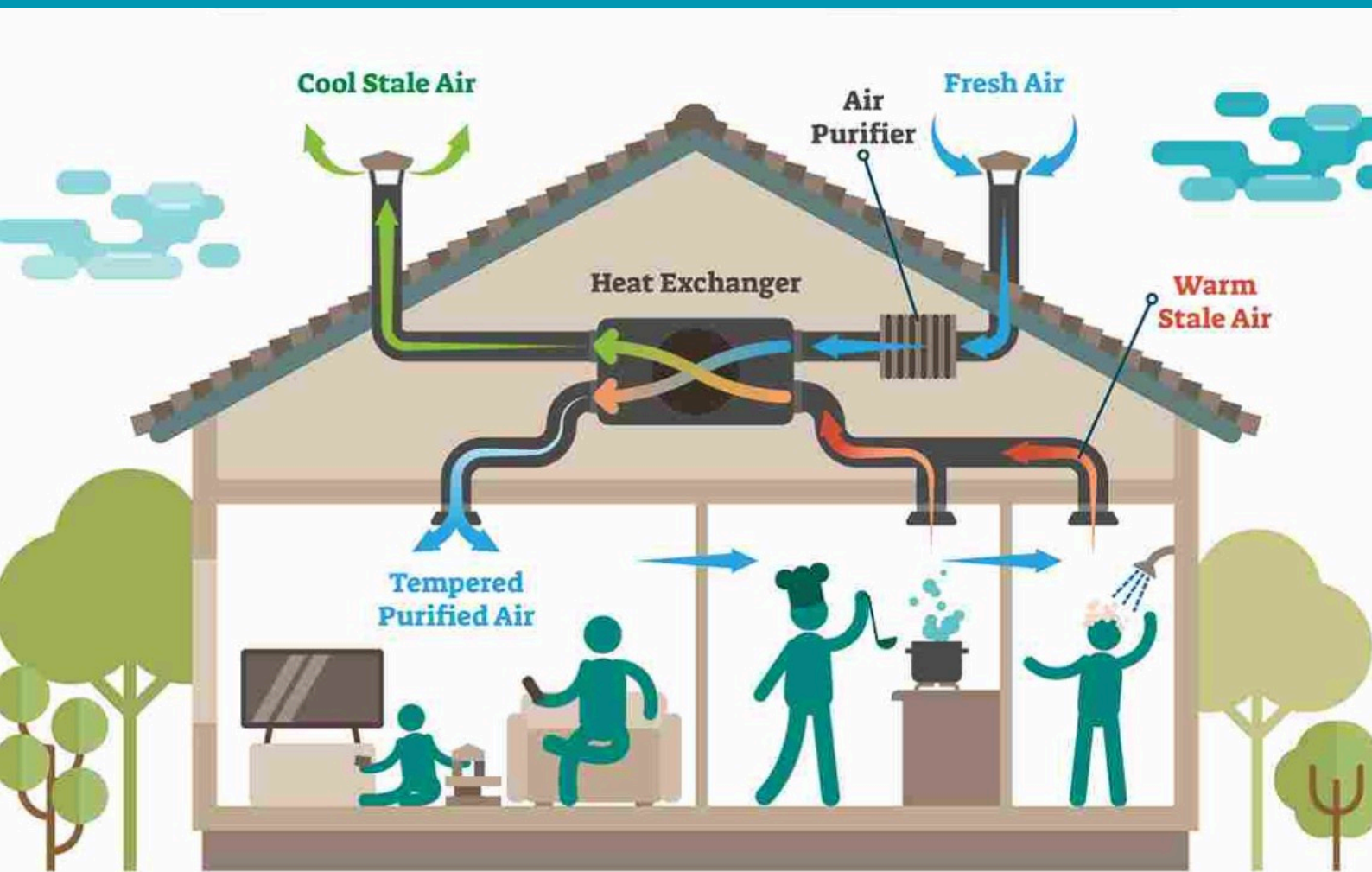


# A Complete Guide to Home Ventilation Systems: Types and Benefits



## Abstract

This comprehensive guide explores the essential role of home ventilation systems in maintaining healthy indoor environments. It delves into the various types of ventilation systems, including natural, mechanical, exhaust, supply, and balanced ventilation, explaining how each operates and its unique benefits. The guide emphasizes the importance of effective ventilation in improving indoor air quality, reducing allergens, and preventing issues such as mold growth and excess humidity.

Additionally, it provides practical insights on selecting the right ventilation system based on individual needs and home characteristics. Readers will also learn about maintenance tips to ensure optimal performance and energy efficiency. Whether you're a homeowner looking to enhance your living space or someone interested in the science of indoor air quality, this guide offers valuable information to promote healthier and more comfortable home environments.

## Getting Started

Improving your home's ventilation is a vital step toward ensuring a healthy living environment. To begin, assess your current ventilation situation by identifying areas in your home that may feel stuffy, damp, or poorly aired. Check for visible signs of moisture, mold, or unpleasant odors, which can indicate inadequate air circulation.

Next, familiarize yourself with the different types of ventilation systems available, such as natural ventilation, mechanical ventilation, and exhaust systems. Understanding how each type works will help you determine which system is best suited for your home and lifestyle.

Consider your specific needs, such as the size of your home, local climate, and any existing health concerns, like allergies or asthma. Finally, consult with professionals or conduct thorough research to make informed decisions on installation and maintenance. With the right approach, you can create a comfortable and healthy indoor space for you and your family.

**Breathe easy and transform your home into a sanctuary of fresh air with our complete guide to home ventilation systems.**

## 1. What is Home Ventilation?

Ventilation refers to the exchange of indoor and outdoor air. Without proper ventilation, an otherwise insulated and airtight house will seal in harmful pollutants, such as carbon monoxide, and moisture that can damage a house. Proper ventilation helps keep a home energy-efficient, safe, and healthy. Why Ventilate? Gasses from combustion appliances, like stoves and fireplaces, can accumulate in a poorly ventilated home and threaten your health and safety. Excessive moisture in the home can also threaten your health, and can lead to mold growth, ruin insulation, and even cause structural damage. Additionally, elevated levels of humidity can

make cooling equipment work harder, leading to more costly energy bills. Ventilating a home combines the physical aspects of the house with techniques you can complete after the construction phase. Ductwork and exhaust fans can remove combustion gasses from a home. Additionally, there are many ways you can prevent moisture from entering and accumulating in your home.



**Avoiding Moisture Problems Means Good Ventilation** When moist air encounters a colder surface, some of the moisture will condense and become a liquid. This happens on the surface of an iced tea glass, which is why you need a coaster to avoid water damage to a wooden table. In a similar way, moisture condensing inside a wall or in the attic can lead to wood rot and permit the growth of mold. To avoid moisture problems and ensure good ventilation, follow these steps:

### **Stop air leaks**

Home moisture issues often directly relate to uncontrolled air flow where warm, moist air comes into contact with cold surfaces, causing condensation. Seal all air-leakage paths between living spaces and other unconditioned parts of the house, such as attics, basements, and crawl spaces. Insulation alone cannot prevent moisture problems.

### **Control water**

Minimize the chance of water entering your house by keeping the roof in good condition. Check caulking and flashing around windows, doors, tubs, and showers. Clear roof gutters of debris and drain moisture away from the house.

### **Ventilate indoor moisture**

The materials used in building a new 2,000-square-foot home contain about six tons of water that must escape during the first year. Inhabitants of a home also generate moisture when they cook, shower, and do laundry. Just by breathing and perspiring, a typical family adds about three gallons of water per day to their indoor air. If a clothes dryer is not vented outside, or if the outdoor vent is closed off or clogged, all that moisture will enter the living space, too.

- Kitchen and bathroom vents should lead directly outside and should never be vented into the attic, where moisture can cause serious problems and pose potential health problems.
- Consider adding controlled ventilation after you air seal. It may be necessary to provide fresh air to avoid buildup of stale air and indoor air pollutants. Special air-to-air heat exchangers, or heat-recovery ventilators, can do this.

## **2. Why Is Home Ventilation Important?**

Ventilation helps your home rid itself of moisture, smoke, cooking odours, and indoor pollutants. Structural ventilation controls heat levels in the attic, moderates dampness in the crawlspace and basement, and keeps moisture out of uninsulated walls. It is also good to have an airflow that is uninterrupted, as anything blocking the airflow in your home can cause damage to both your home and your health. One of the reasons ventilation is so important is because it controls how much moisture is lingering in your home.

Without a ventilation system in place, you have no control of the air flow in a building.

### **Reasons Why Your Home Needs Good Ventilation**

#### **1. To remove condensation which causes damage to the home**

A recent My Health My Home survey found that 58% of homes experience condensation. Everyone knows what condensation is, but what causes condensation and what can be done about it?

If you have ever noticed the droplets of water that form on the outside of a canned drink when you take it out of the fridge, then you have seen condensation first hand. The reason why this happens is all to do with temperature, air, and water vapour. The temperature on the surface of the can is reduced as air passes over it. As the air gets cooler its relative humidity rises and the water vapour turns into moisture. The air passing over the can is unable to hold onto the moisture which ends up as droplets running down the side of the can's cold surface.

This leads to musty smells, damage to the fabric of the house and it can even result in health problems.

Introducing adequate ventilation, with a condensation control unit, gently ventilates the home from a central position such as the landing to transform a stagnant and stale atmosphere into a fresh, healthy and condensation free environment.



## **2. To make a healthier living environment and reduce asthma**

Did you know that damp and mouldy conditions can be major triggers for asthma?

If a home does not have an adequate ventilation system and humidity is high, this can provide a perfect breeding grounds for dust mites. These dust mites and their airborne detritus thrive in homes that are not effectively ventilated. When their detritus encounters the skin or is inhaled, it can cause allergic reactions, resulting in asthma attacks, eczema, watering eyes, itching, sneezing and a runny nose. These issues can be significantly reduced with an effective ventilation system and some asthma sufferers have seen immediate benefits when such a system has been fitted in their homes.

## **3. To help alleviate symptoms of hay fever**

In the summer, hay fever causes misery and suffering for many people. An effective ventilation system can filter out larger particles, such as pollen, preventing them from entering the home. Having a ventilation system in place means there is no need to open the window, which can cause a problem for those with pollen allergies. A ventilation system could be the answer to a more comfortable summer.

Some sufferers of seasonal health conditions, such as hay fever and pollen allergies, have noticed improvements in their condition when an effective ventilation system is fitted. A constant supply of filtered fresh air entering the home can help to control pollutants in the indoor atmosphere, which can have a positive impact on health.

## **4. To reduce the effects of naturally occurring Radon gas**

Some parts of the country are affected by Radon gas. This is a colourless, odourless radioactive gas, which is formed by the decay of small amounts of uranium that occur naturally in all rocks and soils. When this occurs, it produces another radioactive element called Radon's Daughters,

which can attach themselves to dust particles in the air and, if inhaled, they will stick to the airways of the lung. The World Health Organization (WHO) has linked Radon exposure to between 3 and 14 per cent of all lung cancer cases.

Radon is mainly found in areas with high levels of granite and other igneous rocks and is prevalent in areas such as the South West and the East Midlands. If you are in a Radon-affected area, it is worth having tests carried out in your home and it may be the case that a Positive Input Ventilation system can help to reduce Radon to safe levels, reducing the risks to your health.

### **5. To lessen the impact of VOCs**

Volatile Organic Compounds - or VOCs as they are often known – are invisible gases that can lead to many health problems in the home. The Scientific Committee on Health and Environmental Risks calculates there are up to 900 chemicals in indoor air, with negative side-effects much more common in properties without adequate ventilation. In fact, figures from the Environmental Protection Agency show the air inside homes could be 70 per cent more polluted than it is outdoors!

VOCs originate from a wide range of sources including cosmetics, air fresheners, through to permanent markers. Following certain activities such as cleaning and stripping paint, VOC levels could be as much as 1,000 times higher than background outdoor levels. Homeowners can take steps to protect themselves and their families by installing an effective ventilation system fitted to constantly introduce clean, fresh air from the outside to dilute and control VOCs in the home.

## **3. What are the Different Types of Home Ventilation Systems?**

There are exhaust-only, supply-only and balanced home ventilation systems. When it comes to mechanical ventilation, which is best? And why is mechanical ventilation superior to natural and spot ventilation?

Ventilation is a crucial and necessary process for every indoor space. It has an impact on a little bit of everything in our daily life.

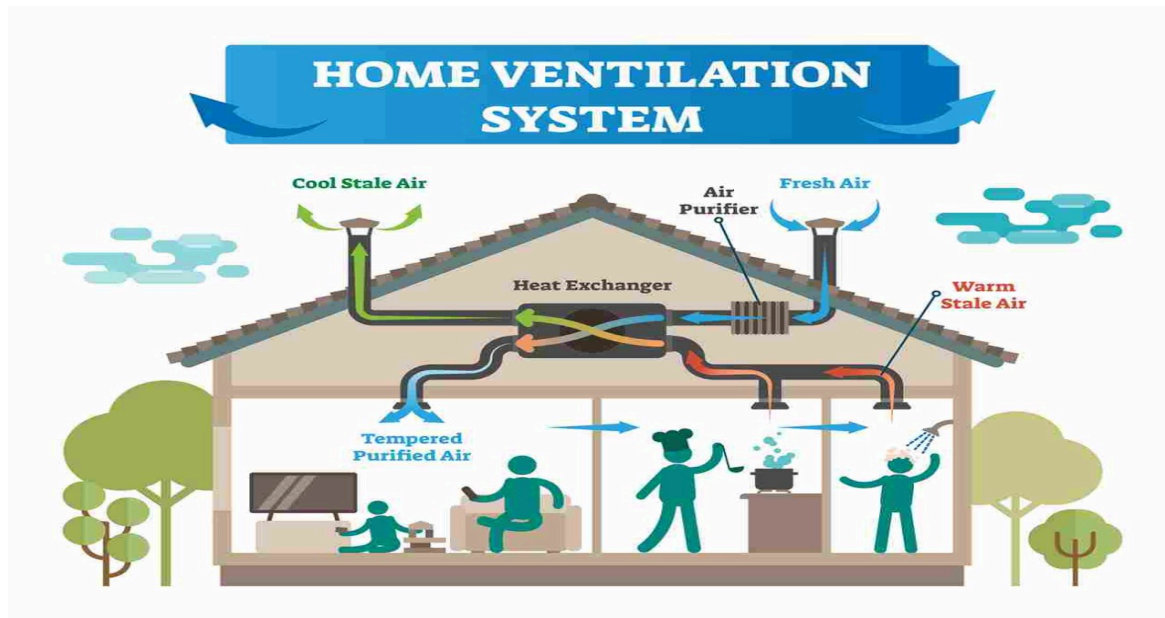
Good ventilation benefits house quality as well as the health and well-being of those living in the home. A well-ventilated space helps reduce indoor odors, mold growth, harmful pollutants, headaches and even allergies.

But what are the best home ventilation systems to ensure this process?

We break down the three types of ventilation and why relying on the previously thought of go-to isn't enough anymore. We also break down the three types of mechanical ventilation systems and why whole-home upgrades are best.

Ventilation has a tremendous effect on indoor air quality which is why your home ventilation system matters.

Ventilation is particularly important today as modern building standards and construction codes have resulted in more airtight homes and buildings.



Air used to seep into homes through cracks in the home's foundation and breaks around windows or doors.

Without the help of natural ventilation and the inability to control or filter natural ventilation sources, the sole importance is on mechanical ventilation.

### Three Types of Ventilation

To understand the whole-home mechanical ventilation options, you first need a better understanding of how ventilation is at work in your home already.

#### Natural Ventilation

Natural ventilation is simply uncontrolled air. Compared to fan-forced ventilation (AKA mechanical ventilation), natural ventilation is caused by natural factors. It is quite literally outdoor air entering an indoor space on its own. In every kind of space, opening windows or doors and letting fresh air in is an example of natural ventilation. A strong breeze is the easiest manifestation.

In older homes and builds specifically, natural ventilation is also the air that enters through unsealed spaces. This can be cracks in the wall or foundation of the home as well as a basement or crawl space and is known as infiltration.

Historically, this was the most common ventilation method and part of the reason mechanical ventilation was largely unnecessary until recently. Because most indoor spaces were leaky or drafty and allowed a certain amount of air in, additional forced ventilation processes weren't needed.

## **Spot Ventilation**

Spot ventilation is the use of localized exhaust fans. It is a form of mechanical ventilation. Spot ventilation uses fans to exchange air, but it is localized to a specific area of the home only. Think kitchen or bath fans, for example.

These extremely concentrated ventilation systems aim to remove pollutants and odors (like those caused by cooking) or remove excess moisture from a space (as caused by a shower). These localized systems used to be the extent of mechanical ventilation in homes.

## **Whole-Home Ventilation**

Now, mechanical ventilation systems have evolved into whole-home ventilation systems. A whole-home or whole-building system uses one or multiple fans and ductwork to effectively bring fresh outdoor air indoors and remove stale indoor air.

The goal of a home ventilation system is to both improve indoor air quality and effectively ventilate a large space.

A whole-home system is incredibly beneficial. There is a consistent influx of fresh air and the removal of stagnant air. It is consistently working to improve the quality of the air supply. Because the process can use a space's existing ductwork and installs directly into the HVAC system, whole-home ventilation systems can provide controlled ventilation to an entire house. Plus, by using the existing HVAC system, the air is also filtered, resulting in cleaner, healthier indoor air.

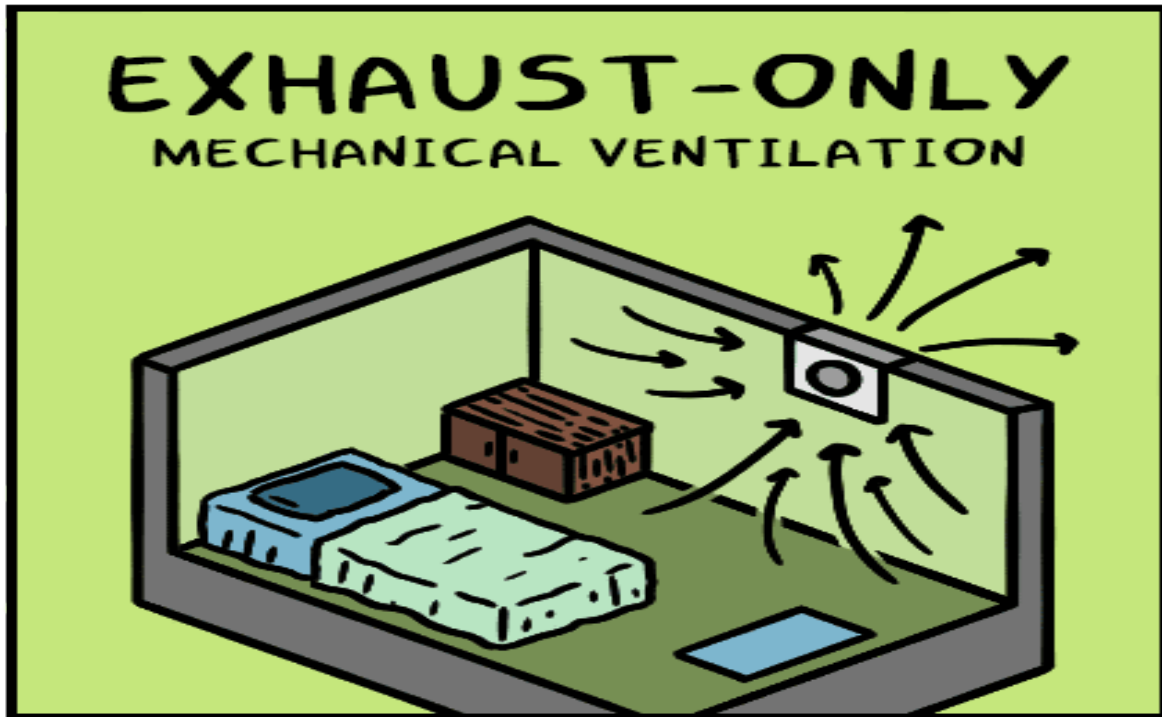
## **Three Types of Whole-Home Mechanical Ventilation Systems**

Think of ventilation quite literally as your home's lungs. Proper ventilation keeps homes fresh and occupants healthy. This is why we recommend upgrading to a whole-home mechanical ventilation system. When it comes to whole-house ventilation options, there are a few types to choose from.

### **Exhaust-Only**

Exhaust-only ventilation effectively rids a space of stale indoor air. It is relatively inexpensive and an easy ventilation system to maintain. It usually only requires one fan and one exhaust point in the home. (Again—think of localized bathroom or stove exhaust fans.) This ventilation process improves indoor air quality because it removes stale air, which is often full of harmful and hazardous indoor air pollutants. Exhaust-only systems usually work better in colder weather climates.





There are a few drawbacks to an exhaust-only system that are worth mentioning. The main problem is that the process draws air out of the home without a dedicated source to provide fresh air to make up for the difference. The resulting change in pressure, or depressurization, means the space itself actively pulls in air from cracks, leaks and vents in the home to create the necessary balance. Depressurization is even more harmful in warmer climates because moisture isn't removed from the air before it enters the home. Thus, the change in pressure increases the threat of moisture damage. Because exhaust-only systems cannot dry the air before it enters the space, these ventilation systems also often increase heating and cooling costs, making them less energy-efficient and cost-effective.

### **Supply-Only**

Supply-only ventilation does the opposite of exhaust-only systems, instead, filling an indoor space with fresh outdoor air. It does so by using a fan or several fans to draw outdoor air indoors. Examples of supply-only systems are an attic HVAC fan. With supply-only, to ensure good indoor air quality, make sure to choose one location to serve as the fresh air source. This will limit the number of indoor pollutants entering the home. Supply-only ventilation systems work best in warm climates.

Similar to exhaust-only, there is no dedicated balance method. In this case, that means there is no process that helps rid the space of old stale air, resulting in pressurization. This ventilation system simply forces old air to leak out of the home or building through existing cracks and holes as well as localized fans and vents. Also similar to the exhaust-only system, moisture is not removed from the incoming air beforehand. Meaning—moisture damage is still a threat and increased AC and heating costs are also likely.

Supply-only ventilation systems are able to provide fresh air for several rooms in a home. Most homeowners will choose to focus the supply-only home ventilation system's efforts on the rooms they occupy the most.

### **Balanced**

As the name suggests, a balanced home ventilation system combines the exhaust and supply processes. It takes the best of the exhaust-only and supply-only systems, without any of the additional problems to create the best overall whole-home ventilation system.

Balanced home ventilation systems effectively bring in fresh outdoor air (supply) and force out stale polluted indoor air (exhaust). Depressurization and pressurization are not a concern with balanced home ventilation systems because they efficiently provide and remove equal amounts of air, keeping the home in a state of equilibrium.

To break down home ventilation one final time ... there are two types of balanced home ventilation systems.

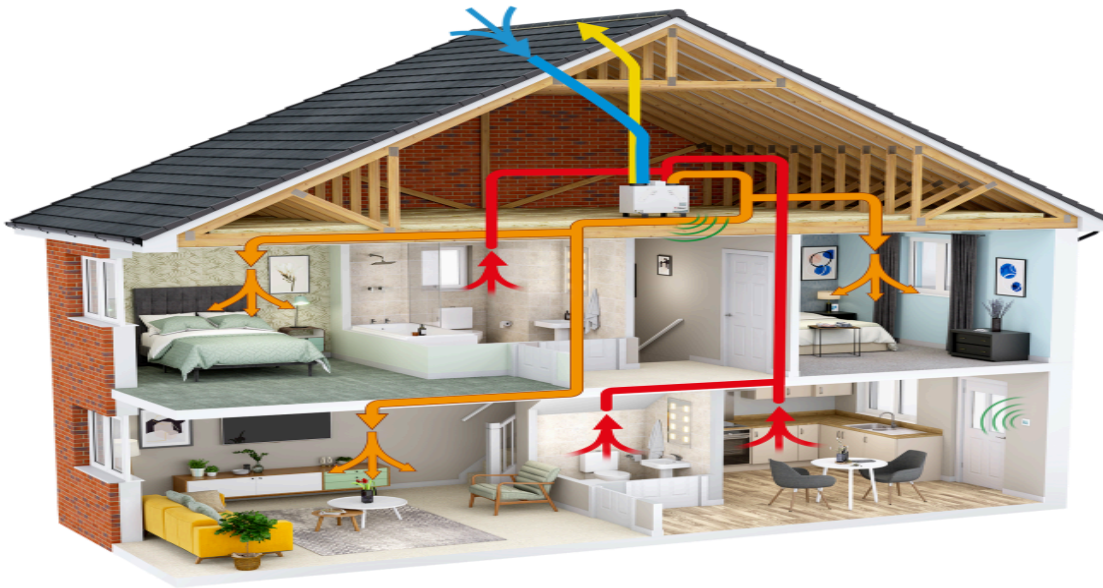
### **Heat Recovery Ventilator**

A heat recovery ventilation system (HRV) transfers heat between the old exhaust air and new fresh air. The air streams never mix during this process. Because an HRV effectively transfers heat, the system also helps keep heating costs low. An HRV is often recommended for colder climates.

### **Energy Recovery Ventilator**

An energy recovery ventilation system (ERV) transfers both heat and moisture between the old exhaust air and new fresh air. The goal is to minimize energy loss during the ventilation process. And because it exchanges heat and moisture, ERVs help with temperature control. An ERV keeps the air moist, cool and humid during the summer and warm in the winter. ERVs are usually recommended for warmer climates.

## Upgrading to a Balanced Whole-Home Ventilation System



Whether you opt for an HRV or ERV, both are incredibly helpful whole-home ventilation systems. Ensuring consistent good ventilation for your indoor space has almost immediately noticeable effects. We can help you better understand which whole-home system would work best in your space or help find an IAQ expert in your area!

### **4. How Proper Ventilation Enhances Indoor Air Quality and Health**

Stuffy and airless living spaces not only make you feel suffocated but also impact your mood and health. Homes designed with minimal windows and closed spaces can make you feel claustrophobic and stuck. They evoke the feeling of entering an odd-smelling and stifling room after returning from a long vacation. These unventilated spaces affect your mental health and overall well-being because of limited air circulation.

These rooms experience an increase in temperature and a rise in the presence of allergens and toxins. Poor ventilation severely impacts indoor air quality and leads to health issues in the family, such as respiratory infections and irritation in the eyes and throat.

Here is how you can improve the health of your loved ones with better home ventilation. These tips will help you create a refreshing and airy environment and are recommended by expert end of lease cleaning Sydney professionals.

## 1. Improve Ventilation in the House

Ventilation can be enhanced by increasing the air circulation in the house. It requires allowing fresh air from outside to flow into the rooms and flush out the toxins. So, open the doors and windows and place portable fans close to them to let the inside air move out quickly and remove all the allergens. Switch on the ceiling fans in the rooms and exhaust fans in the kitchen and bathrooms to boost airflow.

The windows placed in opposite directions must be kept open to improve cross ventilation during the early morning and evening hours. This will help you enjoy the fresh breeze and stay cool naturally. If it is unsafe to open windows because of kids and pets, you can install flyscreen windows with pet mesh or fibreglass mesh. These prevent bugs and flies from entering your homes.

## 2. Maintain the HVAC Systems



HVAC (Heating, Ventilation, and Air Conditioning) systems help maintain indoor air quality and optimal temperature. They provide air filtration and ventilation to keep the atmosphere comfortable in all seasons. They keep heat, dust, and smoke away to provide the best air quality.

The HVAC system must be maintained effectively and its filter must be changed every three months for optimal functioning. The air ducts in the house should be cleaned regularly to remove dust build-up and drive away allergens. It is also recommended to buy pleated filters that are more efficient and should be installed correctly.

### **3. Use Natural Cleaning Products**

The store-bought commercial cleaners are filled with volatile organic compounds (VOCs) that are released into the air and pollute it. They degrade the indoor air-quality and cause health problems. Thus, if you wish to improve the air in your home, you must use natural cleaning products.

Most renowned companies offering end of lease cleaning Sydney use eco-friendly products for the same reason. It ensures they do not pollute the surroundings while cleaning and sanitising the rental properties for inspection. Non-toxic cleaning solutions are usually prepared from natural ingredients available in the house.

### **4. Keep Indoor Allergens Away**

Dust, mould, mildew, and dust mites are common causes of household allergies. Regular house cleaning can remove them by driving away dirt and germs with vacuum cleaners and natural disinfectants. Busy professionals and students may find it hard to clean the house daily. However, neglecting this chore can prove harmful to their health.

Time-pressed individuals can hire end of lease cleaning Sydney professionals to complete the task. They deep clean the house including the neglected areas and eliminate all viruses, filth and accumulated dust. In addition, you must change the bed linen regularly and keep yourself and your pets clean.

### **5. Beautify Your Home With Indoor Plants**

Greenery in the house can improve indoor air quality. These plants need minimal sunlight and can thrive inside rooms with light penetrating through the windows. Some [indoor plants](#) are also helpful in removing pollutants, such as spider plant, aloe vera, bamboo palm, peace lily, English ivy, snake plant, etc.

These plants can absorb VOCs and purify the indoor air to offer a clean environment to your family. They add aesthetic appeal to rooms and are mostly low-maintenance plants. They can help reduce your carbon footprint and contribute to sustainable living.

### **6. Maintain Clean Air in the House**

Homeowners and tenants can use air quality test kits to check the level of pollutants in their homes. This will help them realise the extent of the problem. They must ensure that excessive heat from the kitchen does not dissipate into the living areas and that the hazardous air from the bathrooms moves out through the exhaust fans. If any member has a habit of smoking, they must not smoke inside the house.

They can also buy air purifiers and dehumidifiers to maintain the air quality. If dampness in the bathroom is leading to mould, you must hire end of lease cleaning Sydney experts to eliminate the problem. In addition, you must repair leaks and avoid water pooling to reduce moisture and humidity levels.

### **Wrapping up**

Health is wealth. Closed and damp spaces can affect health, leading to problems like asthma, cough, cold, and allergies. Thus, it is best to maintain proper ventilation and clean indoor air through regular maintenance and personal hygiene.

## **5. How Can You Maintain Your Home Ventilation System?**



A newly built home in San Francisco, Residence 950, takes indoor air quality very seriously. Built in 2018 by Troon Pacific, the 9,500-square foot home on Russian Hill has hospital grade air filtration via a Zehnder whole-house ventilation system, which changes all the air in the home every two hours; a central whole-house vacuum system that keeps all areas allergen and dust-free and a below-grade air barrier to keep out all allergens and mitigate dust.

Ventilation, it seems, “is the new frontier for making houses healthy,” says Carl Seville, whose Atlanta-based SK Collaborative does green building consulting and certification. The EPA cites indoor air quality (IAQ) as one of the top five environmental risks to public health. And, a recent study shows that people spend 90% of their time indoors – whether in houses, offices, schools, cars. And, recent Berkeley Labs IAQ findings on ventilation suggest that when lots of people gather together in a small space, the CO<sub>2</sub> they expel into the air can impact their health and cognitive performance. (So, you might not be able to blame the beer for your actions when you and your friends are packed into your kitchen.) Along with CO<sub>2</sub>, according to the National Environmental Education Foundation, indoor air is polluted with lead, dust mites, mold, radon,

pests, carbon monoxide, pet dander, mold, and second hand smoke. Throw in some humidity and you encourage mold to grow.

Think about that as you take your next breath of indoor air and know that before the day is over you will breathe approximately 2,500 gallons of the stuff. It's all enough to make you gasp – for fresh air.

Proper maintenance of your home ventilation system is essential for ensuring clean air, energy efficiency, and the overall comfort of your living environment. Whether you have a natural ventilation system or a mechanical one, regular upkeep can prevent issues such as poor air quality, increased energy bills, and potential health hazards. Here are several effective strategies to help you maintain your home ventilation system.

## **1. Regular Inspection**

Conducting regular inspections is the first step in maintaining your ventilation system. Aim to check your system at least twice a year, ideally in the spring and fall. During these inspections, look for any visible signs of wear and tear, such as rust, dirt accumulation, or damaged ducts. Ensure that vents are clear and unobstructed to allow for proper airflow. If you notice any issues, it's important to address them promptly to avoid further complications.

## **2. Clean Air Filters**

One of the most crucial components of your ventilation system is the air filter. Dirty filters can obstruct airflow, forcing your system to work harder and potentially leading to system failure. Depending on your system, you should clean or replace your air filters every 1-3 months. If you have pets or live in an area with high levels of dust, more frequent changes may be necessary. A clean air filter not only improves air quality but also enhances the efficiency of your system.

## **3. Duct Cleaning**

Over time, dust, allergens, and other debris can accumulate in your ductwork. This buildup can lead to poor indoor air quality and can even harbor mold and pests. To maintain a healthy ventilation system, schedule professional duct cleaning every few years. During the cleaning process, technicians will remove debris from the ducts and ensure that air can flow freely throughout your home. If you notice unusual odors or a significant drop in air quality, it may be time to consider duct cleaning sooner.

## **4. Check for Air Leaks**

Air leaks in your home can significantly affect the performance of your ventilation system. Check around windows, doors, and vents for drafts that may allow outside air to enter or conditioned air to escape. Use caulk or weatherstripping to seal these gaps. Additionally, inspecting the ductwork for leaks is crucial. If you find any leaks in the ducts, consider sealing them with mastic sealant or duct tape. This will help maintain consistent airflow and improve the overall efficiency of your system.

## 5. Monitor Humidity Levels

Maintaining proper humidity levels is vital for both comfort and air quality. High humidity can lead to mold growth and exacerbate respiratory issues, while low humidity can cause dry skin and discomfort. Use a hygrometer to monitor indoor humidity levels, aiming for a range of 30-50%. If humidity is too high, consider using a dehumidifier. Conversely, if the air is too dry, a humidifier can help restore moisture levels.

## 6. Essential Tips for Improving Home Ventilation



You might often come across news stories about air pollution and its impacts on public health. But how frequently do you think about the quality of the air indoors?

While outdoor air pollution certainly poses a concern, it might be easy to forget that the quality of the air you breathe at home may be just as important.

According to the Environmental Protection Agency (EPA), levels of air pollutants indoors may not only be up to 100 times higher than outdoor air pollutants, they could also have a greater effect on your health.

The health impacts of indoor air pollution depend on the type of pollutant present in your air, but they can include:

- cancer
- pneumonia
- asthma
- allergic reactions
- heart disease
- low birth weight



People with respiratory or heart conditions, as well as young children and older adults, may also have a greater risk of developing some health concerns connected to low indoor air quality. Unexplained respiratory symptoms could offer a clue that it may be time to check the air quality in your living space. But other times, even pollutants with the potential to cause harm go completely undetected for years.

Taking steps to boost your indoor air quality can help you lower your risk of developing health conditions and may even improve your quality of life. We've got eight tips to get you started.

## 1. Cut down on pollutants

An important way to keep your indoor air clean involves learning about common sources of pollution and avoiding adding pollutants when you can.

### **Radon**

Radon, a natural radioactive gas, can seep up through cracks in the earth and build up in your home, leading to health problems including lung cancer.

Home test kits offer a simple way to check for unsafe levels of radon in your home. If testing reveals high levels of radon in your air, you can typically reduce radon by sealing the foundation of your home so that the gas can't leak into your living space.

### **Secondhand smoke**

Secondhand smoke refers to exhaled cigarette smoke. Anyone exposed may have a higher risk of developing health concerns, including certain types of cancer. Thirdhand smoke, found on surfaces like clothes or furniture that absorb it, also poses a health risk.

The best way to keep second and thirdhand smoke out of your living space is to avoid smoking indoors. If possible, it could also be a good idea to minimize the habit, since the thirdhand smoke on your clothes may still affect your living space and air quality.

### **Formaldehyde**

Formaldehyde is a common volatile organic compound, or VOC — one of many harmful gasses sometimes emitted by common household items.

Commonly found in glues used in composite wood and many types of furniture, formaldehyde can seep into your indoor air. Too much exposure can cause respiratory issues, including bronchitis.

You can reduce formaldehyde's effects on air quality by:

- opting for used furniture instead of new — furniture tends to release lower amounts of formaldehyde over time
- choosing solid wood furniture over composite wood

### **Cleaning products**

Certain cleaning products contain harmful chemicals that may linger in your air, including:

- glass cleaners
- air fresheners

- bleach
- cleaning sprays

Choosing safer, nontoxic cleaning products can help you keep your home clean, without the excess pollutants contained in some standard cleaning products.



## 2. Test your air quality

If you're concerned about the air quality in your home but aren't sure what changes could help the most, a good place to start involves testing your air quality.

You can either choose the DIY route or call in a pro.

The method you choose can depend on your needs. Doing it yourself is often less expensive, but working with a professional will likely yield more extensive results and personalized info.'

### **DIY air quality testing**

You can find a variety of air quality test kits online. Some kits allow you to check for multiple pollutants, while others test for just one, like radon.

Because many at-home test kits aren't comprehensive, it might make more sense to do at-home testing if you're only interested in checking for one or two particular pollutants. If you want a full panel of results, working with a pro may actually be more efficient in the long run.

Comprehensive at-home tests generally cost up to \$200, but you may need to spend more when checking for more pollutants.

### **Professional air quality testing**

Hiring a professional will likely cost more than using a test kit, but many professionals offer additional services to help you manage any sources of pollution found during the test. For example, pros who offer air quality testing may also specialize in mold prevention and removal.

## **3. Take steps to control allergens**

You'll commonly find a host of allergens and irritants in many indoor spaces, including:

- dust
- mold
- pet dander
- dust mites

Keeping these allergens at bay will usually improve overall air quality in your home, not to mention reduce your chances of experiencing respiratory symptoms, including

- runny nose
- watery eyes
- sore throat
- sneezing
- skin rashes
- itching

Managing allergens in your house requires both prevention and upkeep.

Preventative strategies for controlling allergens include

:

- brushing and bathing your pet regularly
- washing bedding in hot water twice per month to eliminate dust mites
- choosing hypoallergenic pillows and impermeable mattresses to keep dust mites out

You can also remove allergens from indoor air by:

- vacuuming and dusting to keep pet dander, dust, and dust mites from accumulating
- washing mold off non permeable surfaces, like tiles and metal, using a bleach or soap solution
- removing and replacing carpet, wood, or drywall where mold is growing

## 4. Use an air purifier



Bringing an air purifier into your home is one effective way to keep your air cleaner. You may want to opt for an air purifier with a high efficiency particulate absorbing (HEPA) filter, since these tend to do the best job of removing harmful particles from the air.

HEPA filters may remove more than 99 percent of harmful particles from your air, in fact.

Air purifiers can't remove all types of pollution, so you may want to consider an air filter if you want to reduce:

- VOCs
- smoke
- mold spores
- excess carbon dioxide
- allergens like pet dander

An air purifier with a HEPA filter can even help remove flu virus particles from your air.

Searching for an air filter but don't know where to start? Check out our list of the best HEPA air purifiers.

## 5. Improve ventilation

Keeping the air flowing in your home offers a simple (and potentially cost-free) way to improve your air quality. Opening windows and doors to let some outside air flow through is one way to do this — as long as the outdoor air is clean or low in pollen.

But air enters your house through vents as well as weak spots like tiny spaces around doors.

While there's not as much you can do about the air that enters through these openings, it might help to make sure that the air channeling into your living space via vents isn't contributing to the problem.

This means:

- regularly changing out any filters in your home heating and cooling systems
- making sure any air ducts in your home are clean and unobstructed, since dust can build up over time
- checking the filters in appliances that bring air into your home and changing them according to the manufacturer's instructions

A variety of factors can impact the air quality in your living space, and they can contribute to a range of short- and long-term health effects.

Testing your indoor air quality can bring some peace of mind if you're worried about indoor air pollution. From there, taking steps to prevent and reduce specific problem pollutants can help you maximize the quality of the air in your home and minimize any associated health risks.

## Bottom Line

Implementing an effective home ventilation system is essential for maintaining a healthy indoor environment. By understanding the various types of ventilation, you can choose a system that best suits your home's needs and your family's health. Proper ventilation not only improves air quality but also reduces moisture levels, minimizes allergens, and enhances overall comfort. Regular maintenance and attention to your ventilation system will ensure it operates efficiently, providing long-term benefits for your well-being.

Prioritizing good ventilation practices is a simple yet powerful way to invest in your home's health and create a refreshing living space.

## References

What is Home Ventilation | Guide to Home Ventilation, From,

[https://www.energy.gov/sites/prod/files/guide\\_to\\_home\\_ventilation.pdf](https://www.energy.gov/sites/prod/files/guide_to_home_ventilation.pdf)

Why Is Home Ventilation Important? | The Importance of Good Ventilation, From,

<https://www.envirovent.com/help-and-advice/why-ventilate/indoor-air-quality/the-importance-of-good-ventilation/>

What are the Different Types of Home Ventilation Systems? | 3 Types of Home Ventilation Systems, Retrieved 18 Feb, 2024, From,

<https://iaq.works/ventilation/3-types-of-home-ventilation-systems/>

How Proper Ventilation Enhances Indoor Air Quality and Health | How To Improve Your Health With Better Home Ventilation, Retrieved 1 July, 2024, Form,

<https://www.bondcleaning.sydney/improve-your-health-with-better-home-ventilation/>

How Can You Maintain Your Home Ventilation System? | Why You Should Take Home Ventilation Seriously, Retrieved 28 May, 2019, From,

<https://www.forbes.com/sites/staceyfreed/2019/05/28/why-you-should-take-home-ventilation-seriously/>

Essential Tips for Improving Home Ventilation | 8 Ways to Improve Your Air Quality at Home, From,

<https://www.healthline.com/health/how-to-improve-air-quality-at-home>