

Q+A: Home Ventilation and Fresh Air Circulation

What do you think of as ventilation in your home? Maybe that breath of fresh air from an open window, or perhaps the exhaust fan you turn on after a shower to un-fog the mirror? Or maybe you think of ventilation simply as the HVAC system itself. However, you want to think of it—home ventilation is absolutely crucial. At its most basic, [ventilation](#) is the exchange of air. But of course, ensuring good ventilation in your indoor space is a bit more complicated. Our experts are answering your questions about home ventilation!

Home Ventilation Basics

Question: How much fresh air does a house really need?

Answer: The short answer: as much as possible. To get into specifics ... us humans take roughly 23,000 breaths a day. That's around 3,000 gallons of air every day for every human. You want that air to be as fresh and clean as possible. Good home ventilation is a way to breathe fresh air. When homes have closed windows and doors, or a home is considered airtight with little to no natural ventilation (as most new builds are), humans suffer. There are so many sources and factors in our home or indoor living space that impacts indoor air quality. Ventilation simply helps dilute those pollutants. Mechanical ventilation automates this process so that even if your home is completely closed, you can still bring fresh air inside.

Question: What air ventilation rate is actually healthy for my house?

Answer: In technical terms—the ideal ventilation air exchange rate for a residential home is [0.35 air changes per hour](#) (ACH). Or, 15 cubic feet per minute per person. How can you make that happen? Opening a window or door usually works. Natural ventilation is the easiest method, but it can bring

other air quality problems. Plus in the summer or winter months, doors and windows are often closed because of temperature, which makes achieving that air exchange rate harder. That's why mechanical ventilation solutions are so important.

A mechanical ventilation system exchanges the stale polluted air inside your home with fresh outdoor air. And it does so without impacting the indoor temperature. Mechanical ventilation is simply a series of fans and ducts that work to bring fresh air in and move stale polluted air out. Upgrading to this system means you remain comfortable indoors while breathing fresh air and easily achieve the ideal air ventilation rate.

Airflow

Question: Why do I feel a cold breeze in my bedroom and living room?

Answer: There are two big possibilities. First, older homes have natural cracks in the home's foundation and structure that allow for breezes and outside air to enter your home. This is otherwise known as natural ventilation. These cracks have been significantly reduced in newer homes because of modern airtight building design. This isn't usually a bad thing, assuming the breeze isn't too bothersome. And fresh air entering your home is good!

The second option is poor airflow balance in the home. This has a noticeable impact from extreme hot or cold spots to odd airflow patterns causing a drafty breeze or a total lack of air movement. Healthy home airflow is important for circulation, ventilation, comfort and your HVAC system's performance. Check out our tips on [how to improve airflow here](#). The only other possibility I can think of is if you have an open fireplace. I remember at my parent's home, if we didn't close it in the winter, you could feel a cold gust periodically. Thanks for the question!

Question: What does "airtight home" mean?

Answer: Airtight refers to a specific style or goal of modern home construction. In order to build energy-efficient homes (a trend that really began in the 1980s), the goal is to minimize air movement in and out of the space. The way

to do this is by sealing the home to prevent leakage or using an airtight drywall approach. While the initial goals of increased energy efficiency and balanced air pressure were admirable, the resulting poor indoor ventilation is not! That's why ventilation upgrades are often helpful for home air quality.

Ventilation Systems

Question: Are ventilation systems supposed to blow air into a building or suck air out of a building?

Answer: Actually, ventilation systems are supposed to do both! Using a series of ducts and fans, either attached to the HVAC system or independent of it, ventilation is both bringing air in and pushing air out. The idea behind ventilation is to dilute and circulate the air in a confined space. As I like to say, dilution is the solution to indoor air pollution! Mechanical ventilation brings in fresh outdoor air while at the same time exhausting stale polluted air from the space. Factors like furniture, fresh paint, pets, babies, sick people, humans overall, household cleaning products, and so much more all impact indoor air.

Question: What ventilation system should I use in my home?

Answer: We suggest using a whole-home balanced ventilation system. There are different versions of whole-home mechanical ventilation systems to choose from. Energy recovery ventilators and heat recovery ventilators. We have an in-depth guide on how to [choose between the two](#).

As a quick answer, both bring in fresh air and get rid of stale air. Both improve ventilation rates and indoor air quality. This style of the whole-home ventilator is the best option! Deciding between an ERV and HRV actually mainly depends on the climate and your home's moisture levels.

Answering Your IAQ Questions

We want to help you understand everything about home ventilation and indoor air quality overall. Is there something specific about ventilation we didn't answer here? Or a different indoor air quality question you want to learn more about? Send us a message or [tweet us @IaqWorks!](#)