

What Role Does Ventilation Play in Combating Indoor Air Pollution and Its Long-Term Health Effects?

Most of us think of pollution as something that happens outside. Traffic, smoke, factories. Yet the air indoors is often more polluted than the air on the street. That is a problem, because we spend around 90% of our lives inside.

The culprits are familiar and everyday. Cooking releases fine particles and fumes. Cleaning sprays release chemicals that linger. Candles, incense, paints, carpets, and furniture release volatile compounds. Even breathing and washing add moisture, which encourages mould growth.

The invisible nature of the problem makes it dangerous. If smoke filled your kitchen, you would act. But because indoor pollutants are largely unseen, we ignore them. The damage, however, builds over years. Asthma, allergies, heart disease, poor sleep, and even reduced cognitive function are all linked to poor indoor air.

Ventilation is the simplest and most effective defence. It is not glamorous, but it is vital. By exchanging stale indoor air with fresh outdoor air, ventilation dilutes pollutants and reduces moisture. Over time, this lowers the risk of long-term health problems.

There are several ways to achieve this:

- **Background ventilation:** small but continuous airflow through trickle vents or airbricks.
- **Purge ventilation:** rapid removal of pollutants, such as opening a window while cooking or using an extractor fan.
- **Mechanical systems:** controlled systems such as MVHR, which also recover heat, making fresh air compatible with energy efficiency.
- **Natural ventilation:** airflow through windows, doors, or vents using wind and temperature differences.

The choice of system matters less than the principle: stale air out, fresh air in.

The health case is clear. Ventilation reduces mould spores, lowers chemical build-up, and protects lung health. But the benefits go beyond physical health. Fresh air improves mood, concentration, and sleep quality. A ventilated home feels lighter, cleaner, more alive.

The challenge is cultural as much as technical. People value warmth, but undervalue air. Yet air quality may have the greater long-term impact on health. We need to shift perception. A home that breathes well should be seen as desirable, not optional.

The good news is that small actions can make a large difference. Opening a window for five minutes

can cut indoor pollutants significantly. Fitting a vent or using an extractor fan at the right moment can prevent years of health problems.

The lesson is simple. Ventilation is not just about comfort or compliance with regulations. It is about safeguarding health, lengthening lives, and creating homes where people thrive.