

Whole House Air Purification System

The Elderly and Air Quality – Clean Air Systems

When the National Institutes of Health published information about air quality effects on the elderly, many caregivers and family members took notice. The reason: Increased risk of cardiovascular problems and pneumonia – the two conditions that cause hospitalization and death in our senior population. With this new information, consumers have become aware of the necessity for whole house air purification with a cHEPA/HEPAfast filter system.

Where does the danger come from?

A four-year study showed that fine particulate matter (less than 2.5 microns) in the air was causing the problems. This is partially due to a lessened ability to filter out these particles in the aged, combined with a lowered immune function. As we age, we produce less mucus, mucus that is not as sticky or with as many antibodies, and we become less efficient at moving mucus out of the respiratory system. The consequences are that more fine particles reach deep into the lungs and are not removed properly.

Auto exhaust and industrial production were the focus of the study, and these are certainly a cause for concern, but other particles of similar size – like those found in most homes – would also merit attention. For example, smoke particles fall into that range, along with fine dusts. Chemical vapors are much smaller, making clean air systems that handle volatile fumes an added benefit.

Another concern for the elderly population is that their home is where they spend the vast majority of their time. If the house has poor or polluted air, they are essentially trapped in an environment that may be harmful. Notably, hospitals and nursing homes use air purification systems on a regular basis for their patients and residents.

Whole house air purification system



Air purifiers are rated, not just on what size particle they can remove, but also on the amount of air they are able to clean over a set period. The larger the volume of air, the greater capacity clean air systems need. For some, the solution is to use a smaller unit in an enclosed or partially enclosed room – usually where the elderly person will spend most of their time. This may be a bedroom, for example.

However, whole house air purification is very difficult. Putting a home HEPA filter system in an existing ductwork furnace/central air conditioner design is possible, but the problem is air flow. A standalone unit is designed to move the air it is rated at and will list the square footage of coverage, a central unit simply cannot move enough air quickly enough to prevent pollutants from settling out or mixing with air that never reaches the filter. Although they are advertised as clean air systems, only the air that reaches the unit has any chance of passing through the filter.

A second problem is the likelihood of leaks. With a sealed unit at the point of air delivery, all the air drawn into the unit is filtered – this simply can't happen with ductwork or a filter at the furnace. Only a sealed unit can generate the proper pressure to push air through a filter efficiently, without leaking.

For this reason, it is actually better to use two or more units, rather than trying to achieve whole house air purification from a central location. For example, the [Airgle Clean Room Air Purifier AG800](#) have coverage of 679 square feet with an air flow of 530 cubic feet per minute. In combination, these units can effectively achieve whole house air purification. Both use a cHEPA/HEPAfast filter system along with carbon filters designed to remove chemical pollutants as well. Furthermore, our purification systems do not use ozone, a possible hazard to the elderly. They run quietly and use a remote control. They are even Energy Star Certified.