

UCIAQ Personal Air Purifier Fact Sheet

What is a Personal Air Purifier (PAP)?

A PAP is a device used to remove contaminants from the surrounding air. There are various types of PAPs available to consumers. The two most common mechanisms use for removing contaminants are mechanical air filtration and air ionizing filtration. The effectiveness of a unit depends on the filtration mechanism, brand, contaminant type and the environment in which they are used.

Should You Use A PAP?

PAPs alone cannot adequately remove all pollutants typically found in indoor air; source mitigation and ventilation are the best control measures. Many factors need to be considered prior to using a PAP in a particular setting and the decision for its use should be left to the building occupants.

Air Purifiers UCIAQ Recommends

Mechanical air purifiers draw air through a fibrous or metal filter with different sized pores that trap particles. Disposable high efficiency (HEPA) or medium-efficiency filters should be used. In addition charcoal filters may be used to reduce odors.

PAPs UCIAQ Does Not Recommend

Electronic PAPs include Ozone Generators (banned for sale in CA in 2009 by California Air Resources Board) and Ion Generators. These act by charging the particles that pass through the device. The charged particles are then attracted to the charged collector in addition to walls, floors, draperies, etc. This may cause these surfaces to become soiled over time.

“Hybrid” devices, which contain two or more of the particle removal devices discussed above are also not recommended by the UCIAQ Committee.

Will Air Purifying Reduce Health Effects?

PAPs may reduce the health effects from some contaminants such as small solid substances suspended in air. Some controversy exists about whether PAPs can reduce the allergic reactions produced by larger particles such as pollen, house dust allergens, mold and animal dander. Most of these particles are found on surfaces where they have settled in the home, rather than in the air. Thus, they cannot be removed by an air purifier unless disturbed and re-suspended in the air.

Additional Factors to Consider Before Purchasing a PAP

1. Check the room size rating of the unit; use the appropriately sized unit for your situation.
2. Ion generators and electronic PAPs may produce ozone (long irritant), particularly if they are not properly installed and maintained.

3. Gases and odors from particles collected by the devices may be re-dispersed into the air.
4. Some devices scent the air to mask odors, which may lead you to believe that the odor-causing pollutants have been removed.
5. Ion generators, especially those that do not contain a collector, may cause soiling of walls and other surfaces.
6. Noise from portable PAPs may be bothersome, even at low speeds.
7. A decrease in performance may occur between maintenance periods. Maintenance costs, such as costs for the replacement of filters, may be significant. You should consider these costs in addition to the initial cost of purchase. In general, the most effective units are also the most costly.

Obtaining Adequate Performance

In addition to regular maintenance proper placement is important to the overall effectiveness of your PAP

Place portable PAPs so:

- They are near a specific pollutant source, if one exists.
- They force the filtered air into occupied areas.
- Airflow inlets and outlets are not blocked by walls, furniture, or other obstructions.
- PAPs perform most efficiently when used in an enclosed office.

For More Information

This handout was based on the EPA's Residential PAP Devices guidelines:
<http://www.epa.gov/iaq/pubs/residair.html#What%20Types%20are%20Available>