Air purification seems to be in the public eye more than ever before. While current interest in air purifiers stems from preventing virus transmission, there are many reasons to consider an air purifier for your home or indoor space. After all, air purification has many benefits including improved overall indoor air quality.

When it comes to choosing the best air purifier for your home, weeding through the different kinds of devices and air cleaning technologies and understanding the facts from the fiction–we've got you covered. We've compiled a list of some of the most frequently asked purification questions and asked an IAQ expert for the honest answers. From air purification basics to choosing one for your home to understanding the different kinds of purifiers available, here's how our experts answered your purification questions!

Air Purification Basics

Question: *What is an air purifier? Is it different from an air cleaner?*

Answer: Air purifiers and air cleaners are the same thing. Both are devices that clean the air in an indoor space. The purification process removes indoor air pollutants and airborne contaminants from the air. There are different kinds of air purifiers on the market and varying methods of air cleaning technology available.

Question: *How do air purifiers work?*

Answer: Every type of air purifier works a bit differently–but the general idea is the same. Portable air purifiers collect polluted air using a fan, where it passes through an internal air filter and/or cleaning process in the purifier resulting in cleaner air. Whole-home purification systems follow a similar process–filtering and purifying the air–but for the entire space. A whole-home system installs directly into the home HVAC system and is actively purifying the air. This results in cleaner air throughout the entire home because it purifies in-duct while the HVAC system is on. Overall, air purifiers improve indoor air quality and clean the air because the purification process reduces the amount of contaminants indoors.

Question: *What is CADR?*

Answer: CADR is an acronym that stands for Clean Air Delivery Rate. The rating measures air purifier performance. Think of it as the volume or amount of filtered air an air purifier can provide. The higher the CADR, the faster, and more effective, the purifier is at filtering air. Specifically CADR measures a purifier's effectiveness at removing three particle sizes–tobacco smoke (small), pollen (medium) and dust (large).

Question: *Is it worth it to buy an air purifier?*

Answer: As IAQ professionals, our experienced and biased answer is of course! But we'll break it down beyond that. It really depends on your situation, why you're considering an air purifier and where you live. For example–if you suffer from allergies or asthma, an air purifier is worth the symptom relief! If you live in a location that has seasonal wildfires, purification is a smart investment. If there are lots of pets or just lots of occupants in your living space, purifiers will help. There are many reasons to invest in an air purifier. And most likely, if you're at the point where you're noticing indoor air quality issues, an air cleaner is likely a wise choice. Make sure to do research as not all purifiers work the same. Choose a purifier that suits your needs so you don't waste money!

Choosing an Air Purifier

Question: *How effective are household air purifiers at filtering poor quality air?*

Answer: Air purifiers have come a long way. There are many types of household air purifiers and they vary greatly in efficacy and ability to filter "poor air." First, let's define poor air. According to the Centers for Disease Control and Prevention (CDC), there are three contaminant categories. They are: germs, gases and particulates. Ideally, a purifier should target all three contaminants.

Most devices bought "off the shelf" at big box stores sadly won't do a great job of removing all three. Also, most of these portable devices are passive. This means the air cleaner waits for the contaminant to come to it, to enter the purifier in order to filter out contaminants. This is similar to the air filter in your

home furnace. This also means the filtration level is incredibly important for passive systems–opt for a HEPA filter.

Another option is active air purification, which is a more effective process because it consistently cleans the air in your home. It's an in-duct system, working whenever the HVAC system is on and distributing friendly air scrubbers cleaning both air and surfaces. The better models, such as the DustFree Active effectively reduces all three indoor contaminant types. So, assuming you want a device that removes all three contaminants and can purify the largest space at once–a whole-home purification system is extremely effective.

Question: *How fast can an air purifier clean the air in a medium-sized room?*

Answer: Air purifiers are designed to fit a variety of spaces. Portable air purifiers will list CADR, or clean air delivery rate. CADR is a rating that measures the effectiveness of the purifier in removing different particles sizes per the volume of air. Also, make sure to check the manufacturer's recommendations for the device you are looking into. It should list the purifier's intended room size. On average, portable air purifiers for single rooms cover areas up to 700 sq. ft. effectively. These are helpful metrics to determine the best portable air purifier for your space. Because there are so many different models, it's hard to give one time frame for single-room units.

Whole-home air purifiers are designed to clean the air for the entire space. They install directly into the HVAC system and are also referred to as in-duct purification systems or commercial grade air purifiers. They can cover large areas and multiple rooms. Again, there are many models on the market. But third-party tested purification systems that reduce all three types of contaminants can produce noticeably cleaner air within the first hour of use.

Question: *Should you buy a used air purifier?*

Answer: I would highly caution against that. Assuming it has a filter in it, you're bringing contaminants from somewhere else into your home. Make sure to replace or wash the used filter. Some portable air purifiers also have limited hours of use. If they utilize ultraviolet lamps, the lamps are only good for so

many hours and then need to be replaced. I would recommend investing in a brand new air purifier with new components and a new warranty.

Activated Charcoal Purifiers

Question: *Does activated charcoal purify air?*

Answer: Yes, for some contaminants! Charcoal is typically used to filter out odors and volatile organic compounds (VOCs). Activated charcoal is also called activated carbon. It is a passive way of filtering particles and contaminants out of the air.

Question: *What are bamboo charcoal purifiers?*

Answer: Charcoal has always been regarded for its absorption ability. In fact, you can place charcoal around your home and notice as it absorbs excess moisture from the air. (Tip: This will also improve your home's indoor relative humidity!) I can't imagine there's much of a difference between normal charcoal and bamboo charcoal–but perhaps slight changes? I can say that charcoal or carbon-activated air purifiers are great for targeting and reducing VOCs such as formaldehyde, biological growth, bacteria and odors.

Answering Your IAQ Questions

We hope you found answers to your purification questions. Also make sure to check out our home filtration Q+A! It even includes a couple questions about changing HEPA filters in air purifiers. Looking for a specific IAQ topic or air purifier question we didn't cover here? Tweet, DM or tag us on Twitter @IaqWorks! We look forward to answering all of your indoor air quality concerns and questions.