

AIR PURIFICATION AND CORONAVIRUS

In the midst of our preparations for dealing with the current outbreak, let's pause and consider: What do we know about air purification and coronavirus?

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By [Doug Hoffman](#)

There is a flurry of information floating about regarding concerns over COVID-19 and much of it, frankly, is either simply common sense or flat-out wrong. Recommendations from the World Health Organization seem to be right on point with what my mother taught me years ago. Let's address the common sense first.

Wash hands

Regularly washing your hands consistently and thoroughly is never a bad idea. It's frankly comforting to know that more and more people are heeding this advice and we look forward to a less threatening flu season this year as a result. In 1847 when Semmelweis proposed the practice of washing hands, skeptics abounded, and he never lived long enough to see the benefits. Since then, this standard practice has saved tens of thousands, maybe millions of lives and continues to be the "go-to" method to prevent contact transmission of disease. Using sanitizers before you shake hands or serve others is a good practice, and it's not a bad idea to do this if we understand the limitations of hand sanitizers. Alcohol-based sanitizers, when not in short supply, require a specific procedure leaving the goop on your hands long enough to kill the micro-organism. To be effective against coronavirus, look for sanitizers that are at least 60% alcohol; however, washing your hands with soap for at least 20 seconds is still the best method of prevention.

Respiratory hygiene

When you sneeze, droplets can spread the virus. To protect the people around you, cover your mouth and nose with your bent elbow or tissue when you cough or sneeze. Mother taught us this when we were young but sometimes, we forget. It's still a very good idea.

Social distancing

In our current lifestyle, avoiding large crowds is difficult but should be considered. Stuffy subways, crowded elevators, large events, and packed airports or bus terminals can be a breeding ground for all sorts of disease. The recommendation to avoid such areas has correctly been followed with the suggestion that these could be especially problematic for immunocompromised or elderly individuals. Young, healthy adults are less at risk for severe illness, but there is still the consideration that you could carry the virus to others who may be more at risk, which is why social distancing is important for everyone.

Air purification

What hasn't been discussed in a lot of detail is air purification and coronavirus. Up to this point, it has been thought that the novel coronavirus is not airborne, but a [new study](#) indicates that it may be possible for the virus to survive in the air for several hours. HEPA, high efficiency particulate air, has been touted as a good solution for purifying the air, but its limited effectiveness against sub-micron particles, like viruses, has been largely overlooked. Even the best filter on the market must allow some particles to pass so that no strain is put on the blower motor. These filters are passive in nature and require bringing the pollution into the filtration system in order to filter out contaminants. Viruses, if they could be drawn to the filter, typically go right through the media and are recycled back into the breathing environment. Additionally, coronavirus is also transmitted through droplets that land on surfaces that others may touch, and passive air filters are not helpful for those transmissions.

The most effective air purification technologies proactively send oxidizers into the environment, kill or neutralize all microbes, and leave the air **and surfaces** free from microbial contamination. **Photo-catalytic oxidation**, a technology that has been utilized for years to reduce indoor environments of mold, bacteria, and viruses that live in the air and on surfaces.

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