

- **Is the air we breathe placing us at risk?** Droplets we know how to protect ourselves
- **Who really knows what they are inhaling?** Droplet nuclei are small and ride in the air
- **We cannot see what is in the air.** We cannot see a virus in the air
- **What if I have filters in my HVAC System?** Even the best HVAC systems do not typically have filters able to catch airborne virus
- **How big are the droplets?** COVID -19 is $.06\ \mu\text{m}$ - $.14\ \mu\text{m}$ (very small)
- **How long does COVID-19 live?** It may live up to 3-hours, so in most homes and buildings it is enough time to be recirculated 18 times using your heating and cooling blower, therefore sending it out through all the space served by that unit

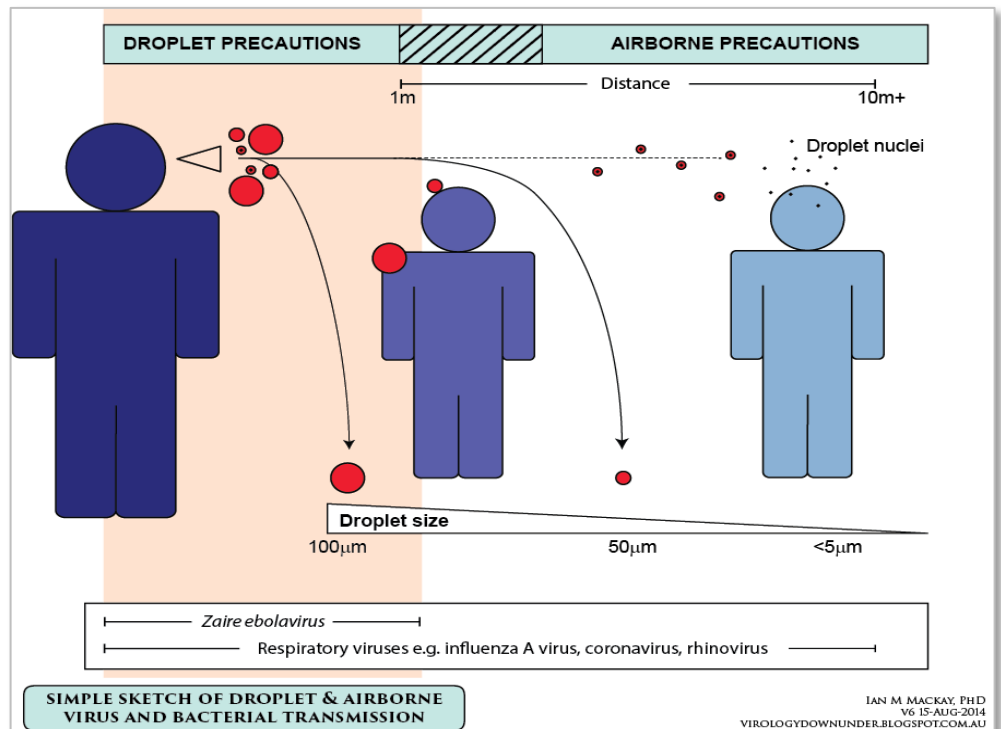
Even the best filters may let the smallest airborne droplet nuclei pass through

COVID-19

- Size $.06\ \mu\text{m}$ - $.14\ \mu\text{m}$
- 1/5th the size of the most penetrating particle size

Half/Life

- 2.7 hours
- As an airborne droplet nuclei



Information from Virology Down Under: <https://virologydownunder.com/flight-of-the-aerosol/>

HEPA Filters:

HEPA filters are commonly used in individual and collective protection applications and are very efficient at removing particulate matter from the air. They are rated to be 99.97% efficient at collecting the most penetrating particle ($0.3\ \mu\text{m}$) (Lee 1980). While this is an impressive collection efficiency, it is not absolute; 0.03% of matter at the most penetrating size does penetrate the HEPA filter.

Sources:

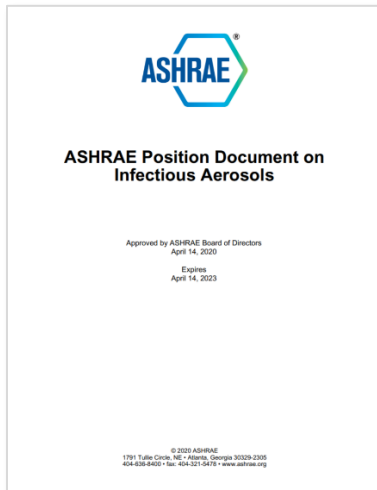
- Viral Penetration of High Efficiency Particulate Air (HEPA) Filters (PREPRINT) https://www.researchgate.net/publication/235048517_Viral_Penetration_of_High_Efficiency_Part particulate_Air_HEPA_Filters_PREPRINT
- New England Journal of Medicine, "Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1A" https://www.nejm.org/doi/full/10.1056/NEJMc2004973?query=featured_home
- Primary source document from: <https://www.medrxiv.org/content/10.1101/2020.03.09.20033217v1.full.pdf>

Too Small to Capture: Kill or Break it Down Instead

Third party tested Genesis/TCACS panels as part of an overall risk management plan



Lab tested - Field confirmed reduction of airborne mold spores, bacteria & virus
Not a filter to pass through / Not a UV light alone to move past too fast



ASHRAE Position Paper, April 2020

- Can air handling units spread infection riding along in the airstream? Yes
- **Source:** https://www.ashrae.org/file%20library/about/position%20documents/pd_infectiousaerosols_2020.pdf



Genesis /TCACS CenterPoint™ PCO

- Panels destroy
- Create Reactive Oxygen Species
- It is like putting peroxide on a cut/kills living cells
- Static drop .05 at 500fpm
- Easy to retro fit
- Scalable (194 UL variations)
- Reduce risk, destroy on the fly, before it lands